

AON

Quarterly Investment Review

Colorado Public Employees' Retirement
Association | Fourth Quarter 2023

Investment advice and consulting services provided by Aon Investments
USA Inc.

Nothing in this document should be construed as legal or investment
advice. Please consult with your independent professional for any such
advice. To protect the confidential and proprietary information included in
this material, it may not be disclosed or provided to any third parties
without the approval of Aon.



Table Of Contents

1	Market Environment	1
2	Total Fund	18
3	Global Equity	32
4	Fixed Income	130
5	Real Estate	144
6	Private Equity	150
7	Alternatives	152
8	Cash	155
9	Appendix	157

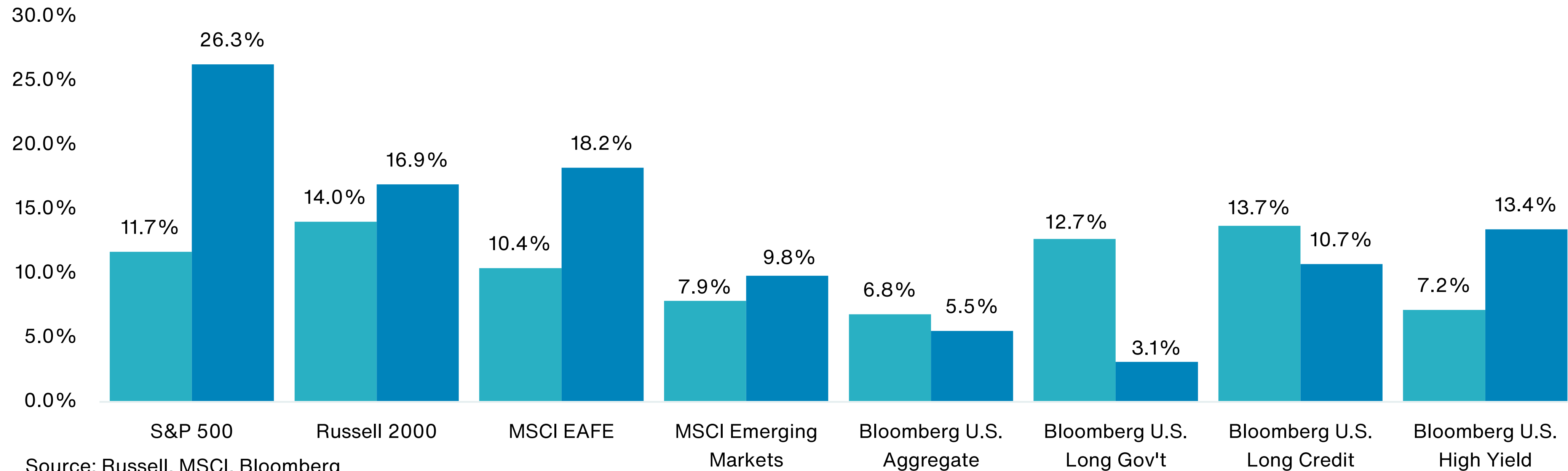
Market Environment



Market Highlights

SHORT TERM RETURNS AS OF 12/31/2023

■ Fourth Quarter 2023 ■ YTD



Source: Russell, MSCI, Bloomberg

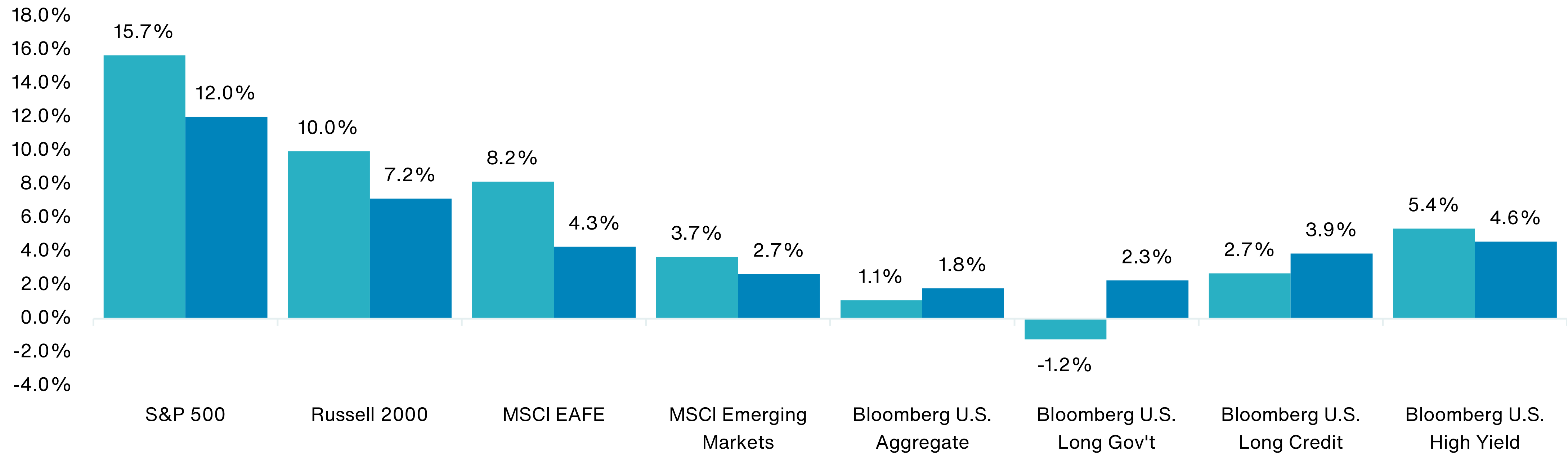
MSCI Indices show net total returns throughout this report. All other indices show gross total returns.

Past performance is no guarantee of future results. Indices cannot be invested in directly. Unmanaged index returns assume reinvestment of any and all distributions and do not reflect fees and expenses. Please see appendix for index definitions and other general disclosures.

Market Highlights

LONG TERM ANNUALIZED RETURNS AS OF 12/31/2023

■ Five-Year ■ Ten-Year



Source: Russell, MSCI, Bloomberg

Past performance is no guarantee of future results. Indices cannot be invested in directly. Unmanaged index returns assume reinvestment of any and all distributions and do not reflect fees and expenses. Please see appendix for index definitions and other general disclosures.

Market Highlights

Returns of the Major Capital Markets						
	Period Ending 12/31/2023					
	Fourth Quarter	YTD	1-Year	3-Year ¹	5-Year ¹	10-Year ¹
Equity						
MSCI All Country World IMI	11.14%	21.58%	21.58%	5.46%	11.49%	7.77%
MSCI All Country World	11.03%	22.20%	22.20%	5.75%	11.72%	7.93%
Dow Jones U.S. Total Stock Market	12.13%	26.06%	26.06%	8.43%	15.05%	11.40%
Russell 3000	12.07%	25.96%	25.96%	8.54%	15.16%	11.48%
S&P 500	11.69%	26.29%	26.29%	10.00%	15.69%	12.03%
Russell 2000	14.03%	16.93%	16.93%	2.22%	9.97%	7.16%
MSCI All Country World ex-U.S. IMI	9.81%	15.62%	15.62%	1.53%	7.18%	3.97%
MSCI All Country World ex-U.S.	9.75%	15.62%	15.62%	1.55%	7.08%	3.83%
MSCI EAFE	10.42%	18.24%	18.24%	4.02%	8.16%	4.28%
MSCI EAFE (Local Currency)	4.96%	16.16%	16.16%	8.64%	9.49%	6.61%
MSCI Emerging Markets	7.86%	9.83%	9.83%	-5.08%	3.68%	2.66%
Equity Factors						
MSCI World Minimum Volatility (USD)	6.84%	8.14%	8.14%	4.05%	7.60%	7.97%
MSCI World High Dividend Yield	7.18%	10.14%	10.14%	7.32%	9.18%	6.73%
MSCI World Quality	12.55%	32.97%	32.97%	9.41%	17.05%	12.18%
MSCI World Momentum	12.17%	12.25%	12.25%	2.17%	11.98%	10.32%
MSCI World Enhanced Value	8.30%	20.27%	20.27%	9.66%	8.84%	6.05%
MSCI World Index Growth	13.40%	37.31%	37.31%	5.75%	16.31%	11.28%
MSCI USA Minimum Volatility (USD)	7.79%	9.79%	9.79%	6.46%	10.30%	10.41%
MSCI USA High Dividend Yield	8.31%	6.83%	6.83%	7.83%	9.32%	9.39%
MSCI USA Quality	12.03%	36.30%	36.30%	10.39%	18.13%	13.81%
MSCI USA Momentum	12.76%	9.50%	9.50%	0.70%	11.13%	11.72%
MSCI USA Enhanced Value	12.30%	14.42%	14.42%	8.34%	10.12%	8.44%
MSCI USA Equal Weighted	12.70%	17.63%	17.63%	7.07%	12.97%	9.80%
MSCI USA Growth	13.68%	46.72%	46.72%	8.01%	19.94%	14.83%

Returns of the Major Capital Markets						
	Period Ending 12/31/2023					
	Fourth Quarter	YTD	1-Year	3-Year ¹	5-Year ¹	10-Year ¹
Fixed Income						
Bloomberg Global Aggregate	8.10%	5.72%	5.72%	-5.51%	-0.32%	0.38%
Bloomberg U.S. Aggregate	6.82%	5.53%	5.53%	-3.31%	1.10%	1.81%
Bloomberg U.S. Long Gov't	12.69%	3.11%	3.11%	-11.35%	-1.23%	2.27%
Bloomberg U.S. Long Credit	13.71%	10.73%	10.73%	-6.50%	2.70%	3.88%
Bloomberg U.S. Long Gov't/Credit	13.24%	7.13%	7.13%	-8.68%	1.12%	3.22%
Bloomberg U.S. TIPS	4.71%	3.90%	3.90%	-1.00%	3.15%	2.42%
Bloomberg U.S. High Yield	7.16%	13.45%	13.45%	1.98%	5.37%	4.60%
Bloomberg Global Treasury ex U.S.	9.29%	4.24%	4.24%	-8.34%	-2.39%	-0.99%
JP Morgan EMBI Global (Emerging Market)	9.26%	10.45%	10.45%	-3.14%	1.94%	3.06%
Commodities						
Bloomberg Commodity Index	-4.63%	-7.91%	-7.91%	10.76%	7.23%	-1.11%
Goldman Sachs Commodity Index	-10.73%	-4.27%	-4.27%	19.18%	8.72%	-3.60%
Hedge Funds						
HFRI Fund-Weighted Composite ²	3.59%	7.52%	7.52%	4.32%	7.00%	4.53%
HFRI Fund of Funds ²	3.41%	6.35%	6.35%	2.25%	5.14%	3.25%
Real Estate						
NAREIT U.S. Equity REITS	16.22%	13.73%	13.73%	7.21%	7.39%	7.65%
FTSE Global Core Infrastructure Index	11.42%	1.58%	1.58%	4.09%	7.18%	7.01%
Private Equity						
Burgiss Private iQ Global Private Equity ³			2.47%	19.41%	15.14%	14.53%

MSCI Indices show net total returns throughout this report. All other indices show gross total returns.

¹ Periods are annualized.

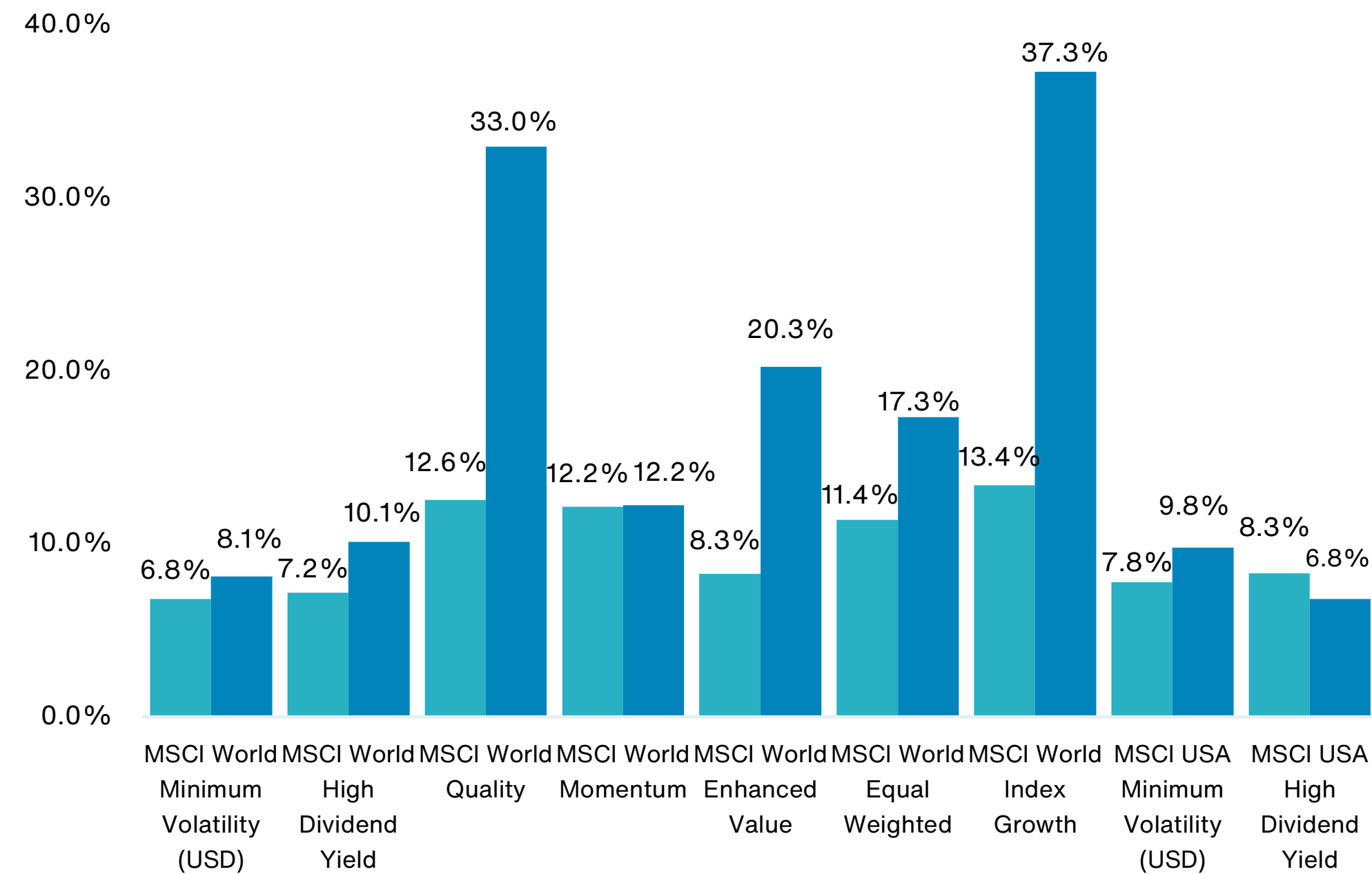
² Latest 5 months of HFR data are estimated by HFR and may change in the future.

³ Burgiss Private iQ Global Private Equity data is as at June 30, 2023

Past performance is no guarantee of future results. Indices cannot be invested in directly. Unmanaged index returns assume reinvestment of any and all distributions and do not reflect fees and expenses. Please see appendix for index definitions and other general disclosures.

Factor Indices

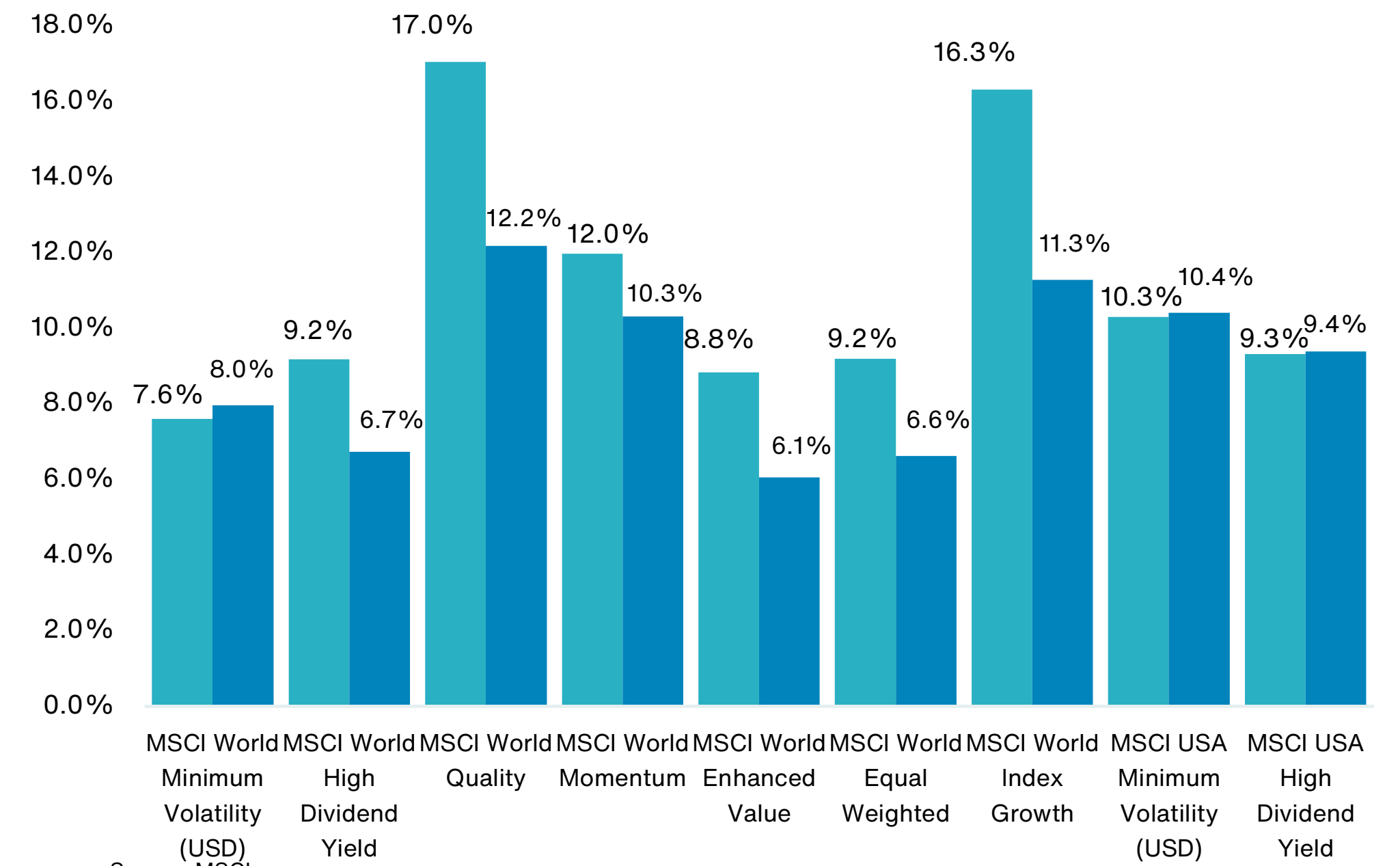
SHORT TERM RETURNS AS OF 12/31/2023 ■ Fourth Quarter 2023 ■ YTD



Source: MSCI

MSCI Indices show net total returns throughout this report. All other indices show gross total returns..

LONG TERM ANNUALIZED RETURNS AS OF 12/31/2023 ■ Five-Year ■ Ten-Year



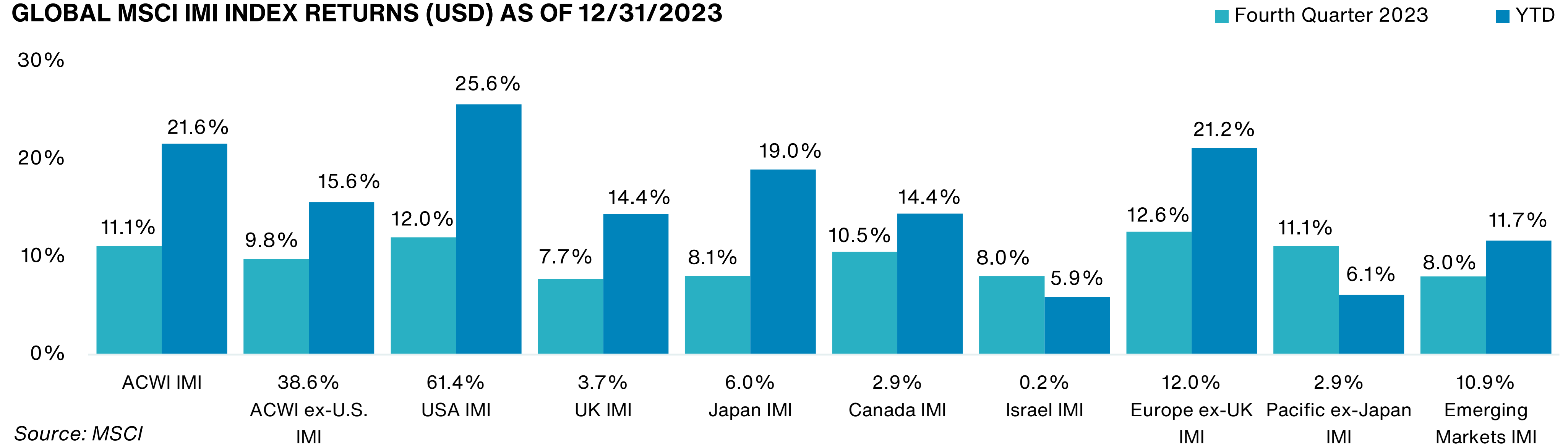
Source: MSCI

MSCI Indices show net total returns throughout this report. All other indices show gross total returns..

Past performance is no guarantee of future results. Indices cannot be invested in directly. Unmanaged index returns assume reinvestment of any and all distributions and do not reflect fees and expenses. Please see appendix for index definitions and other general disclosures.

Global Equity Markets

GLOBAL MSCI IMI INDEX RETURNS (USD) AS OF 12/31/2023



Source: MSCI

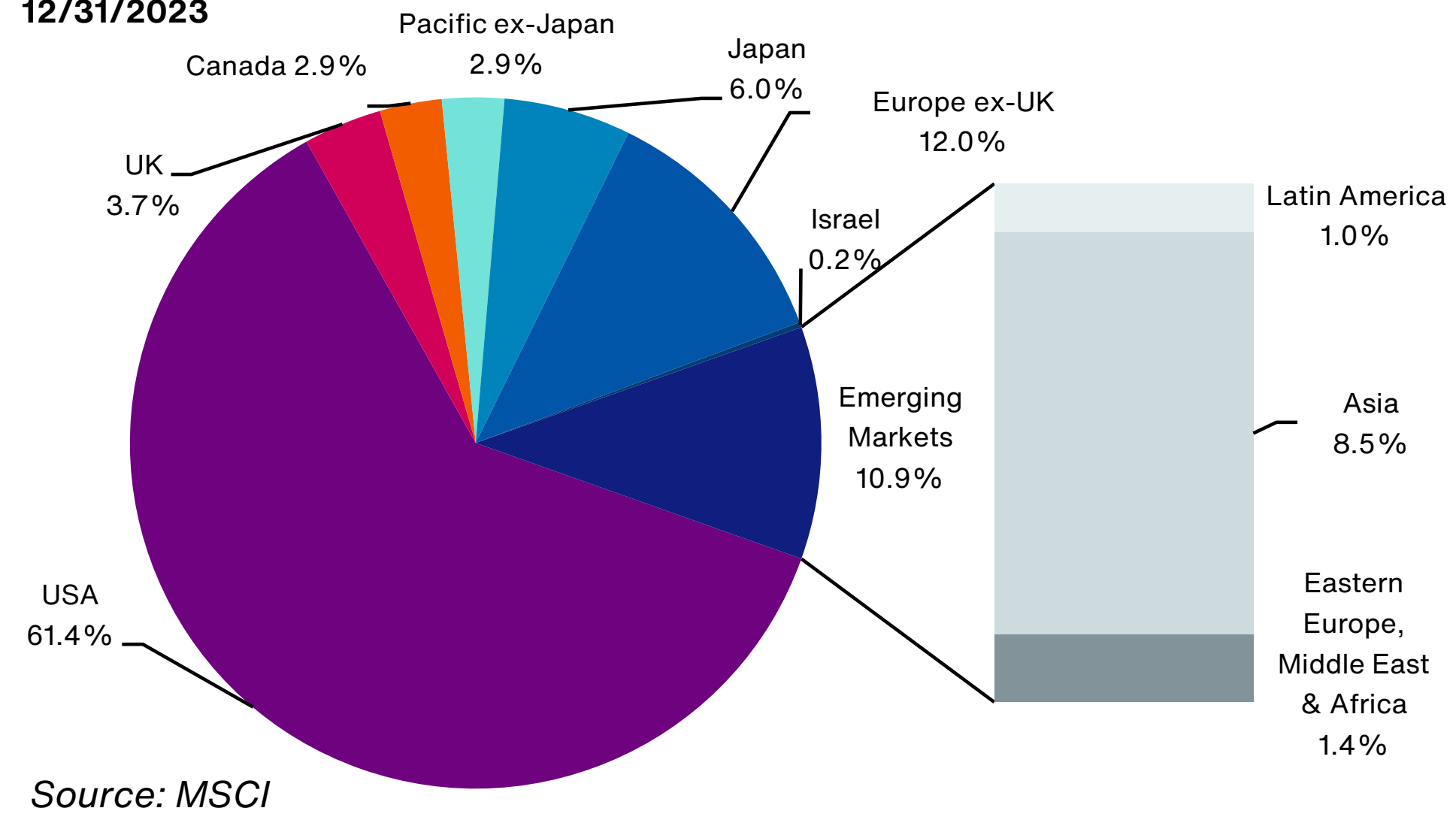
- In Q4 2023, global equity markets rose due to a strong rally in November and December as market participants anticipated a higher probability of interest rate cuts in 2024. The MSCI ACWI posted its strongest annual performance in USD terms (22.8%) since 2019. Volatility fell sharply throughout the quarter as the CBOE Volatility Index (VIX) fell to 12.5 in Q4 from 17.5 in the previous quarter, well below its 20-year average of 19.1. The MSCI All Country World Investable Market Index (ACWI IMI) returned 11.1% for the quarter and was up 21.6% on the year.
- Across international markets, all regions posted positive returns. U.S. equities posted strong returns over the quarter and in 2023 with major contribution coming from the Information Technology sector.
- Europe ex-UK IMI equities were the best regional performer with a return of 12.6%. Economically sensitive sectors including Financials and Industrials outperformed.

Past performance is no guarantee of future results. Indices cannot be invested in directly. Unmanaged index returns assume reinvestment of any and all distributions and do not reflect fees and expenses. Please see appendix for index definitions and other general disclosures.

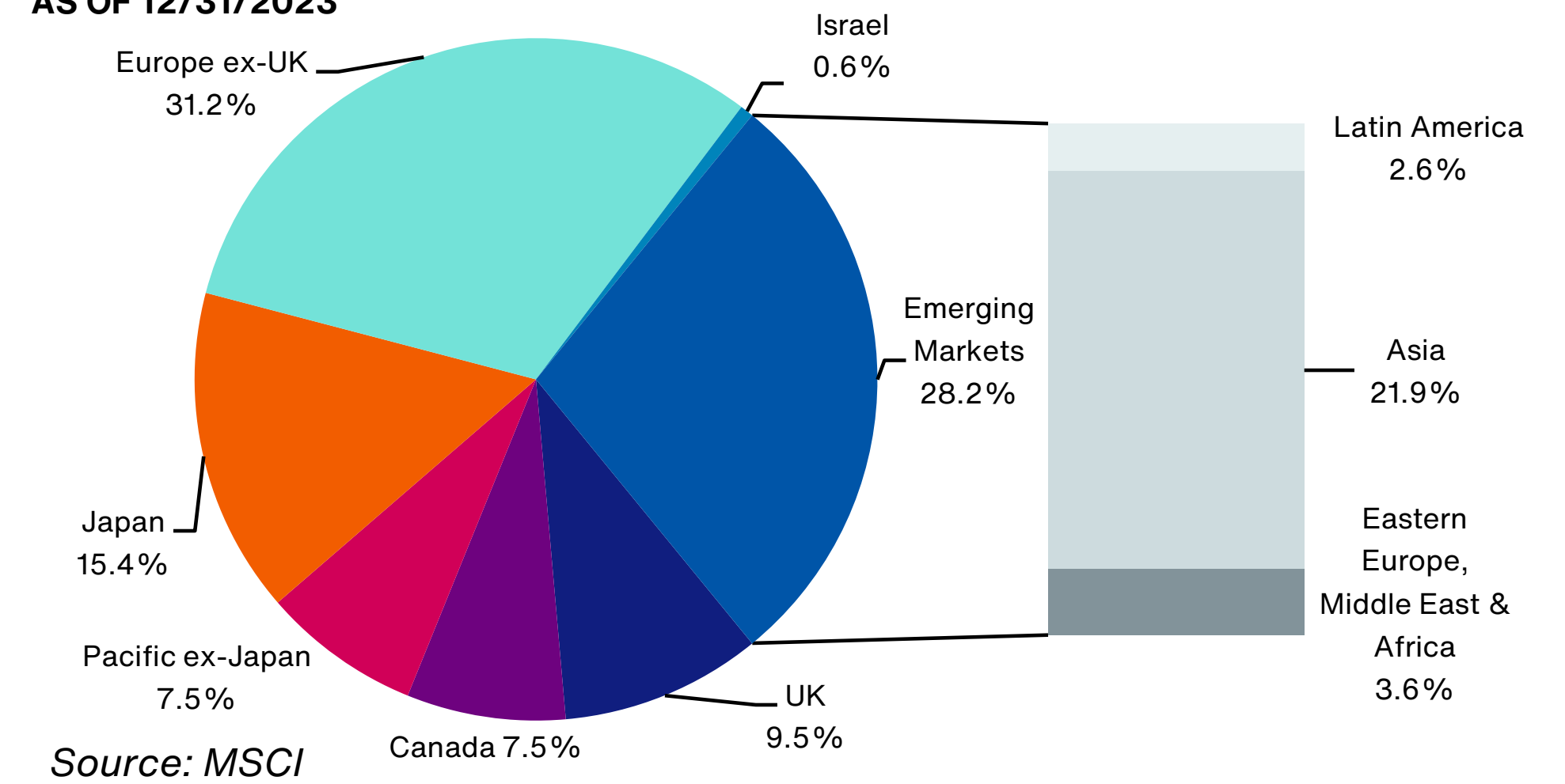
Global Equity Markets

Below is the country/region breakdown of the global and international equity markets as measured by the MSCI All Country World IMI Index and the MSCI All Country World ex-U.S. IMI Index, respectively.

MSCI ALL COUNTRY WORLD IMI INDEX GEOGRAPHIC ALLOCATION AS OF 12/31/2023



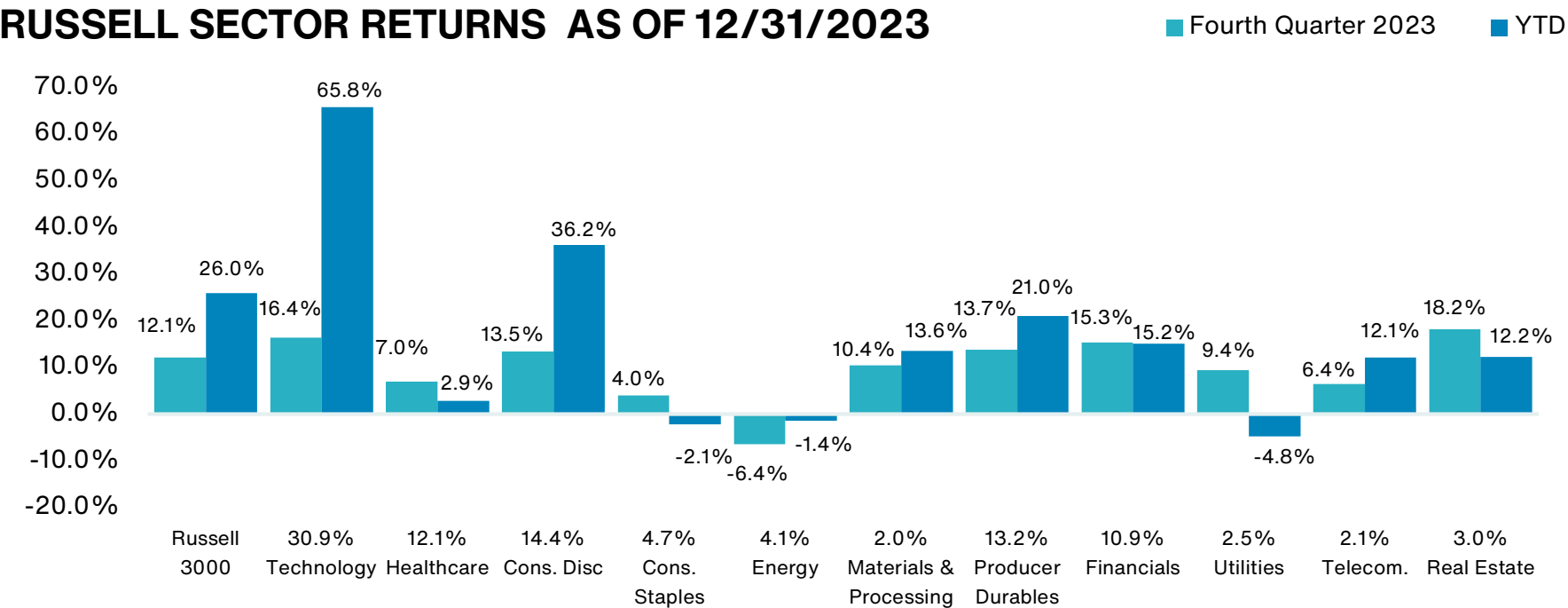
MSCI ALL COUNTRY WORLD EX-U.S. IMI INDEX GEOGRAPHIC ALLOCATION AS OF 12/31/2023



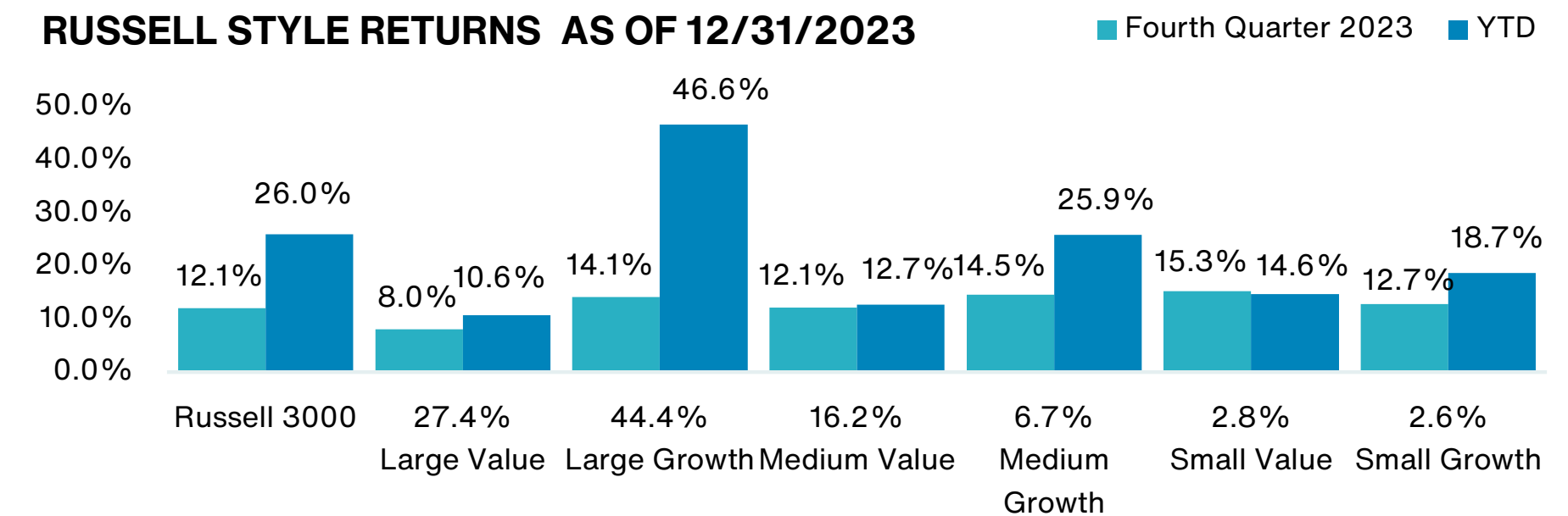
U.S. Equity Markets

- U.S. equities had positive performance during the quarter with the S&P 500 index rising by 11.7% amidst anticipated interest rate cuts in 2024.
- The speaker of the U.S. House of Representatives, Kevin McCarthy, became the first leader in the history of the lower chamber of Congress to be removed from the position after infighting within the Republican party. McCarthy lost a no-confidence vote 216-210, as eight Republicans sided with 208 Democrats to remove him as a speaker. Mike Johnson, a Louisiana Republican, was elected as the new Speaker of the House in the fourth round of voting. Johnson received the unanimous backing of all 220 Republicans, surpassing the 215-majority mark. Following this, the U.S. Congress averted a government shutdown as lawmakers approved a short-term stop-gap funding bill to keep the government funded until early next year.
- Meanwhile, Moody's downgraded their U.S. credit outlook from 'stable' to 'negative' amidst sharp rises in debt service costs. Moody's updated outlook highlighted increasing downside risks to U.S. fiscal strength and added that the drastic rise in Treasury yields this year "has increased pre-existing pressure on U.S. debt affordability".
- The U.S. economy expanded by an annualized rate of 4.9% over the third quarter, higher than the 2.1% recorded in the previous quarter but below the forecasted 5.2%. A sharp rise in consumer spending and business spending on inventories helped to boost the economy in the third quarter.
- The Russell 3000 Index rose 12.1% during the fourth quarter and 26% on a YTD basis. Real estate (18.2%) and Technology (16.4%) were the best performers while Energy (-6.4%) and Consumer Staples (4.0%) were the worst performers.
- On a style basis, growth outperformed value across market capitalization except for small-cap stocks over the quarter.

RUSSELL SECTOR RETURNS AS OF 12/31/2023



RUSSELL STYLE RETURNS AS OF 12/31/2023

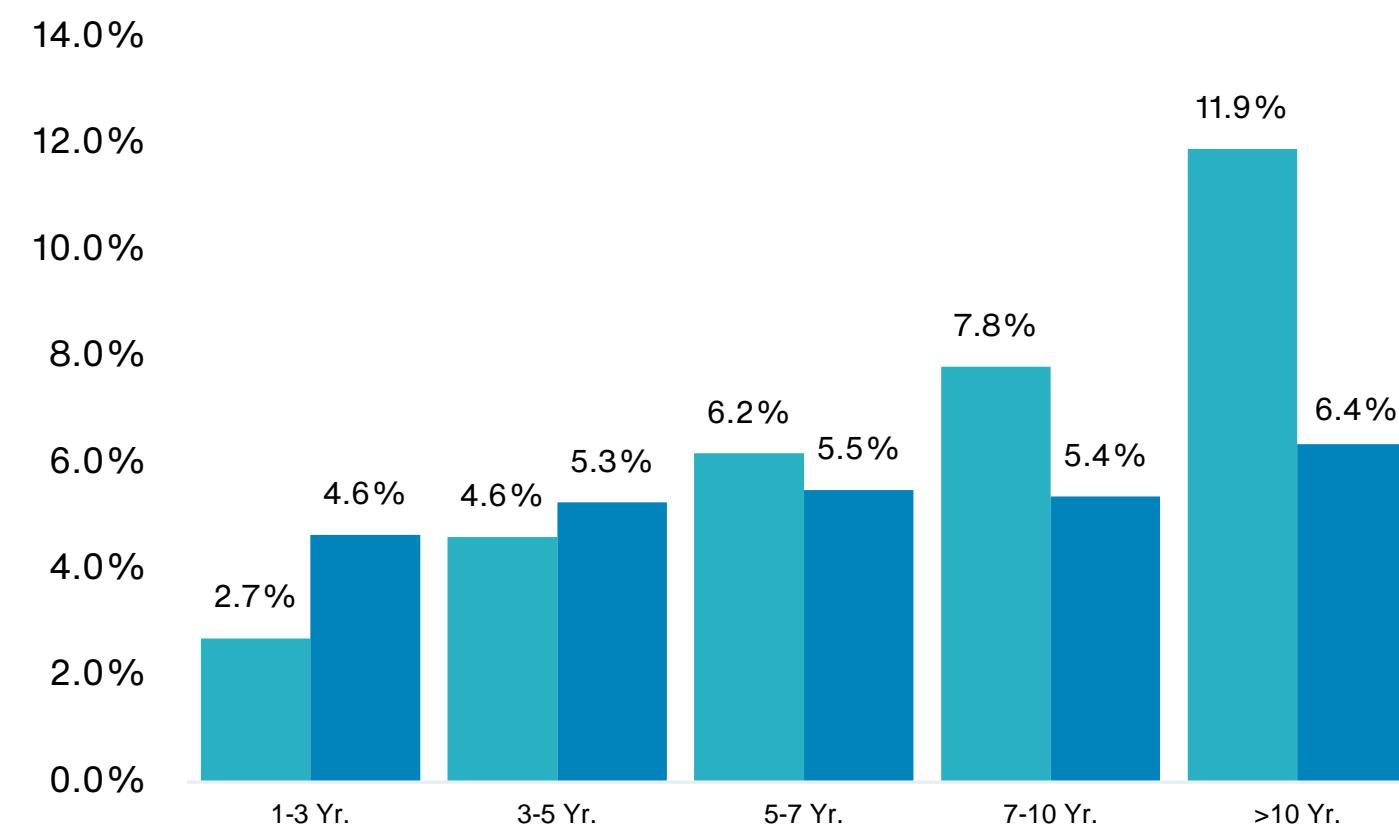


Source: Russell Indexes

Past performance is no guarantee of future results. Indices cannot be invested in directly. Unmanaged index returns assume reinvestment of any and all distributions and do not reflect fees and expenses. Please see appendix for index definitions and other general disclosures.

U.S. Fixed Income Markets

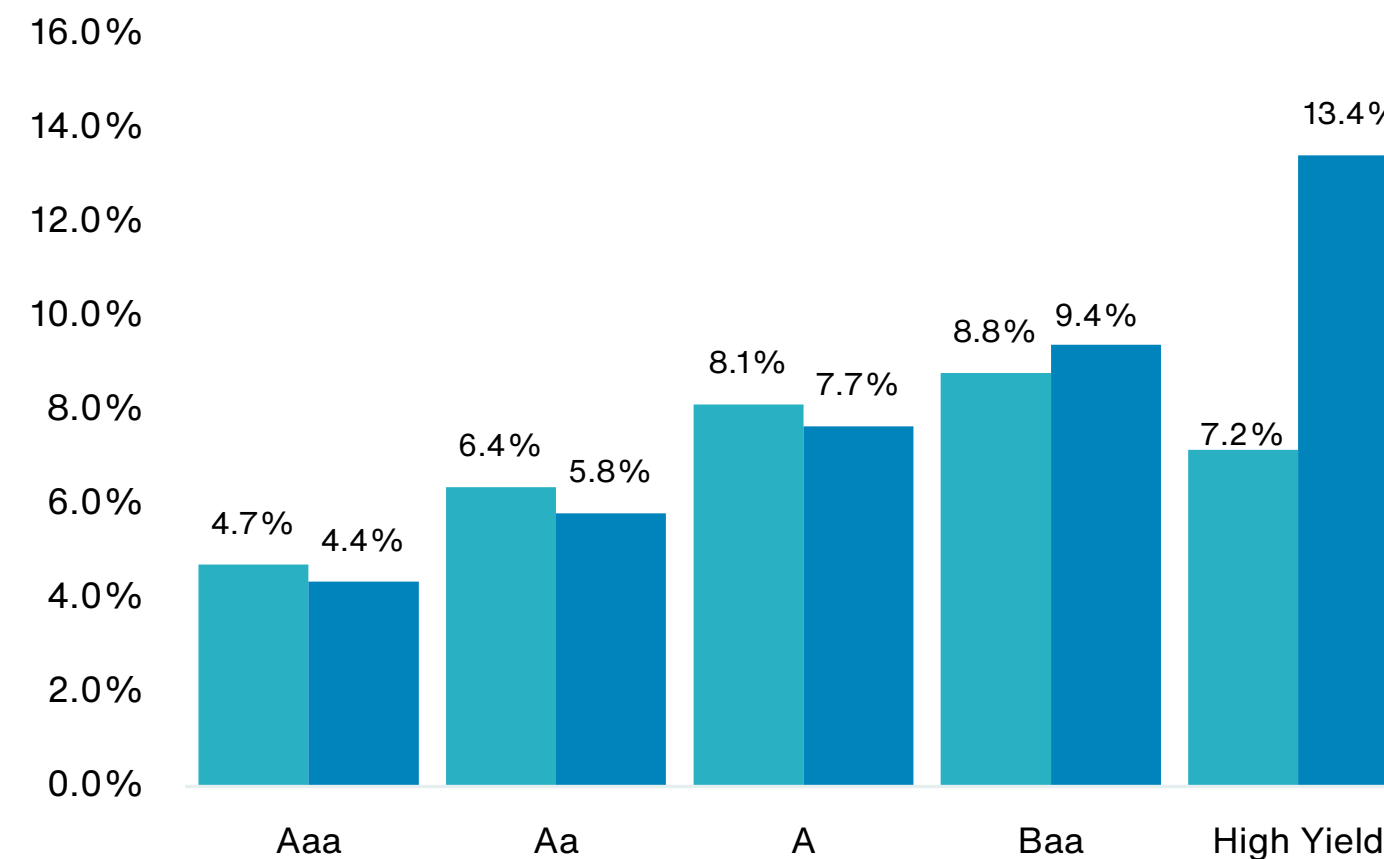
BLOOMBERG AGGREGATE RETURNS BY MATURITY AS OF 12/31/2023



Source: FactSet

■ Fourth Quarter 2023 ■ YTD

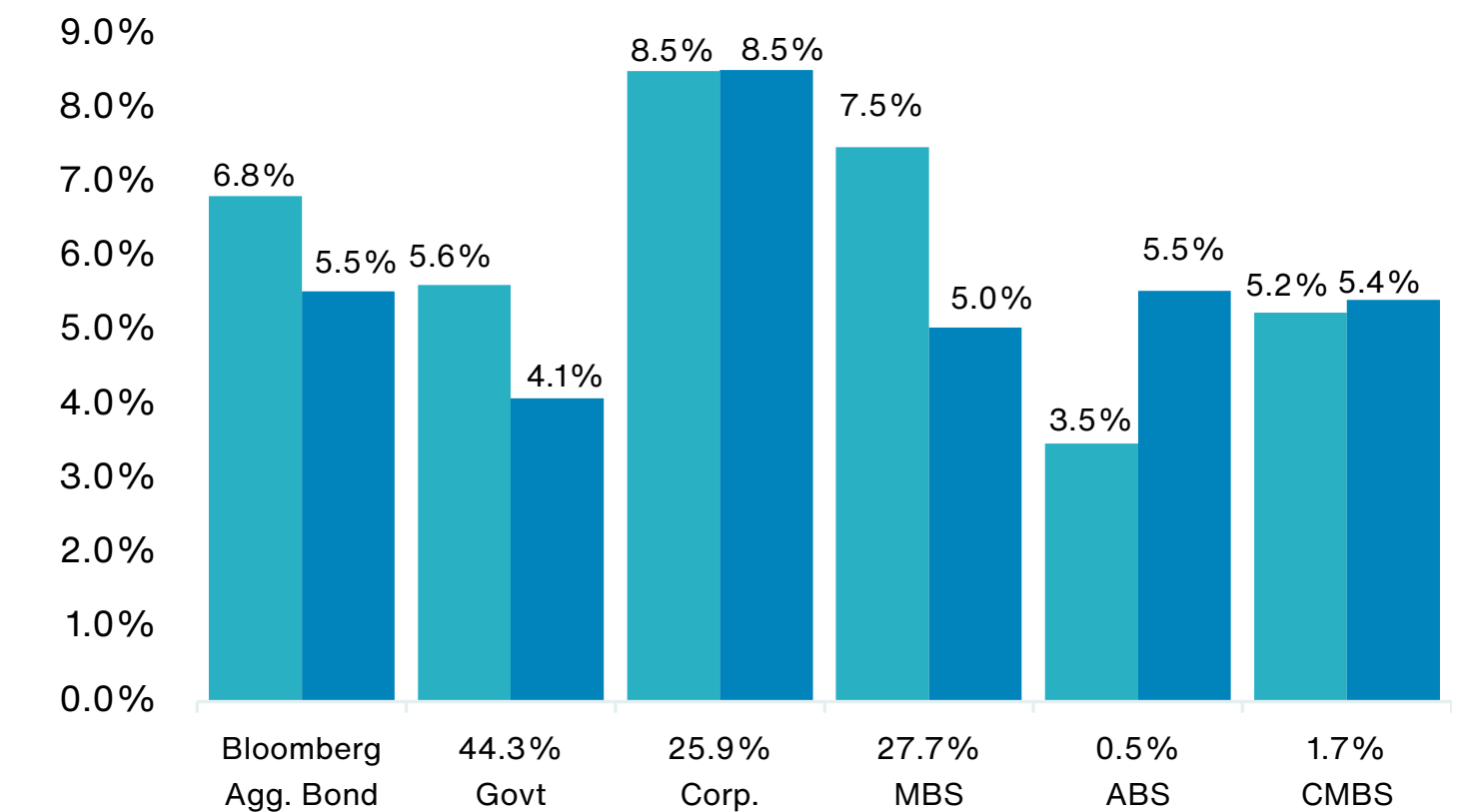
BLOOMBERG AGGREGATE RETURNS BY QUALITY AND HIGH YIELD RETURNS AS OF 12/31/2023



Source: FactSet

■ Fourth Quarter 2023 ■ YTD

BLOOMBERG AGGREGATE RETURNS BY SECTOR AS OF 12/31/2023



Source: FactSet

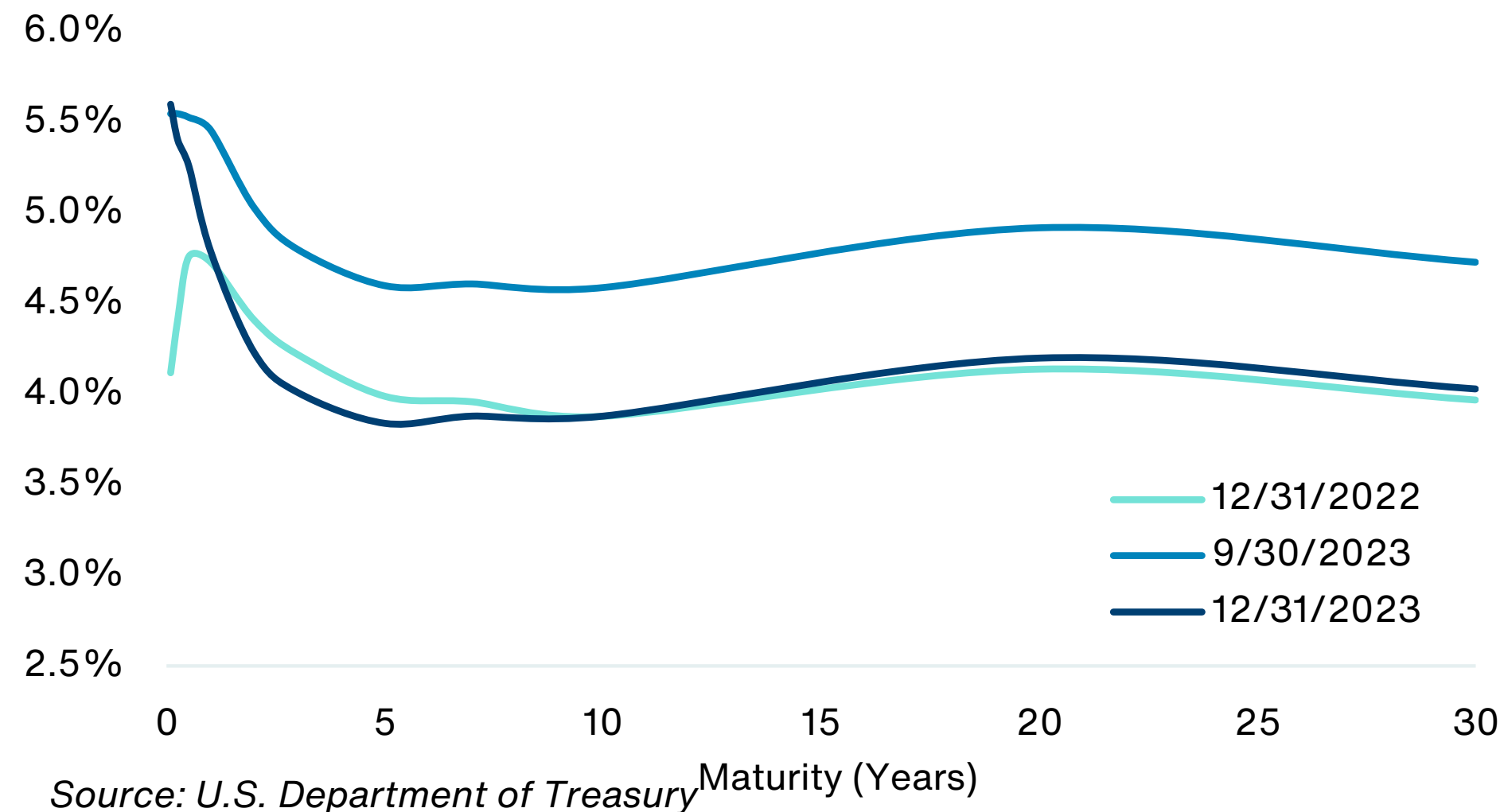
■ Fourth Quarter 2023 ■ YTD

- The U.S. Federal Reserve (Fed) kept its benchmark policy rate unchanged at 5.25%-5.5% for the third consecutive meeting. Fed chair Jerome Powell commented that the interest rate is now “likely at or near its peak for this tightening cycle”.
- The Bloomberg U.S. Aggregate Bond Index was up 6.8% over the quarter and 5.5% on a YTD basis.
- Across durations, all maturities finished the quarter in positive territory with longer maturities rising more.
- Within investment-grade bonds, lower credit quality generally outperformed higher-quality issues, with Baa bonds comparatively rising more. High-yield bonds rose by 7.2%. On a YTD basis, High Yield bonds outperformed indicating an increase in risk appetite.

Past performance is no guarantee of future results. Indices cannot be invested in directly. Unmanaged index returns assume reinvestment of any and all distributions and do not reflect fees and expenses. Please see appendix for index definitions and other general disclosures.

U.S. Fixed Income Markets

U.S. TREASURY YIELD CURVE



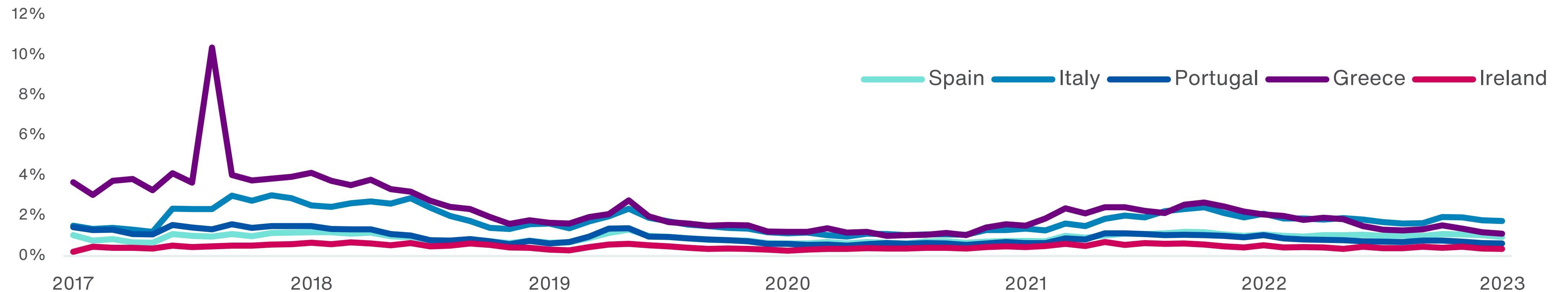
U.S. 10-YEAR TREASURY AND TIPS YIELDS



- U.S. Treasury yields fell significantly across maturities except at the shortest end of the curve as the yield curve shifted downwards over the quarter and the yield curve continues to be inverted. The 10-year Treasury yield fell by 71bps to 3.88%, and the 30-year Treasury yield fell by 70bps to 4.03% over the quarter.
- The U.S. headline consumer price index (CPI) edged lower to 3.1% year-on-year in November, meeting economists' expectations and marginally down from the 3.2% increase recorded in the previous month. U.S. Core inflation, which excludes food and energy costs, remained unchanged from the previous month at 4% year-on-year in November.
- The 10-year TIPS yield fell by 52bps over the quarter to 1.72%.

European Fixed Income Markets

EUROZONE PERIPHERAL BOND SPREADS (10-YEAR SPREADS OVER GERMAN BUNDS)



Source: FactSet

- European government bond spreads over 10-year German bunds narrowed across the Euro Area. The European Central Bank (ECB) kept its interest rate unchanged at 4.0% for the second consecutive meeting. ECB policymakers signaled interest rates will be kept at “sufficiently restrictive levels for as long as necessary”. The ECB also announced it would reduce the reinvestments of maturing securities by €7.5bn a month from July 2024 before ending the program at the end of next year.
- Greek and Italian government bond yields fell by 124bps and 100bps to 3.10% and 3.74%, respectively over the quarter while Irish and Spanish government bond yields fell by 87bps and 95bps to 2.35% and 2.95%, respectively.
- German bund yields fell by 81bps to 2.0% over the quarter.
- Eurozone headline inflation rose at the slowest pace since July 2021 as the CPI fell to 2.4% year-on-year in November, down from the previous month’s rate of 2.9% and lower than economists’ expectations of 2.7%. A fall in energy prices and a slower pace of growth in food and services prices proved to be primary factors. Core inflation also slowed to 3.6% in the year to November, down from October’s 4.2%.

Credit Spreads

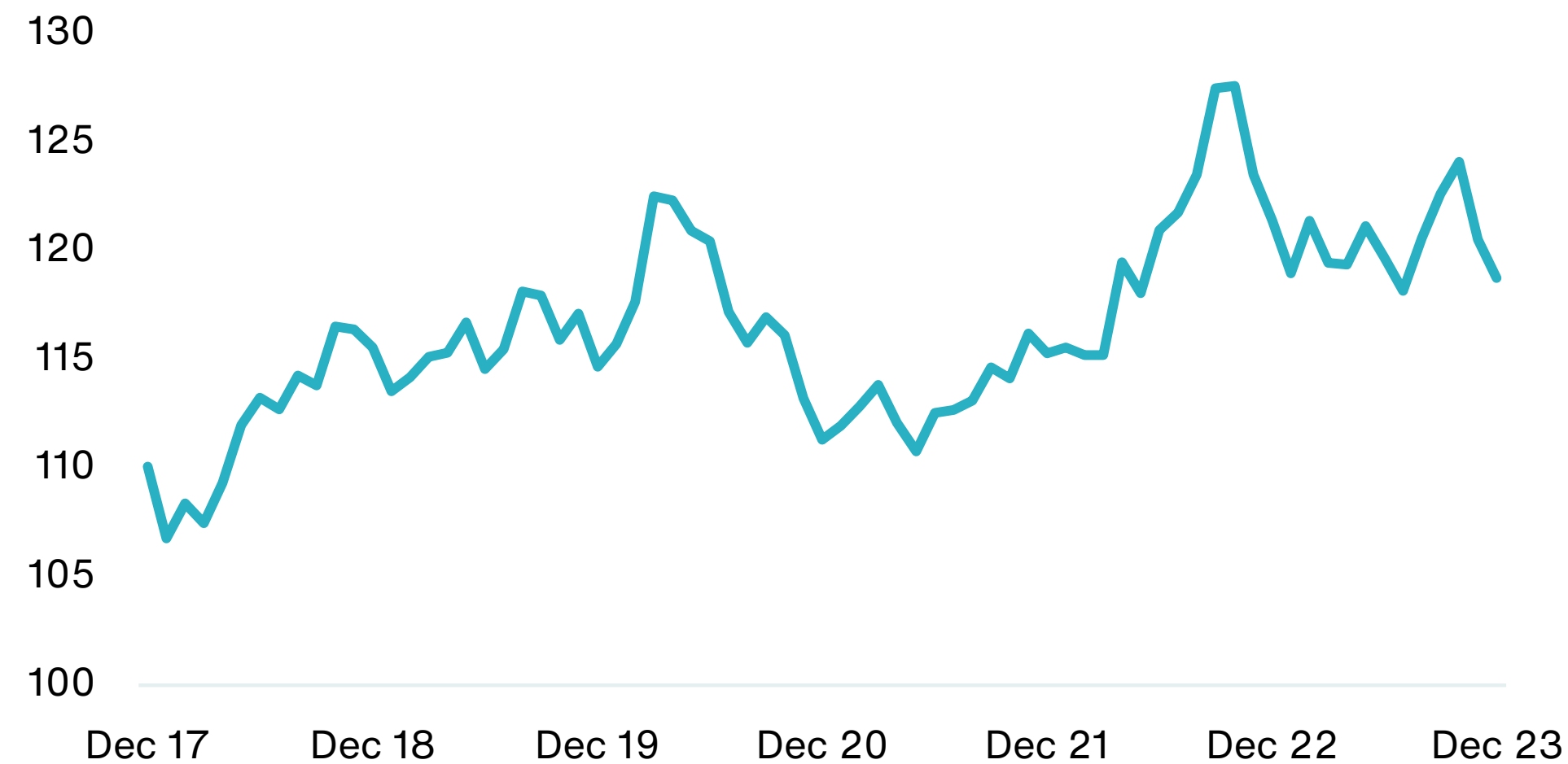
Spread (bps)	12/31/2023	9/30/2023	6/30/2023	Quarterly Change (bps)	YTD
U.S. Aggregate	42	52	51	-10	-9
Long Gov't	2	0	2	2	0
Long Credit	117	133	157	-16	-40
Long Gov't/Credit	62	71	87	-9	-25
MBS	47	66	51	-19	-4
CMBS	126	130	120	-4	6
ABS	68	67	76	1	-8
Corporate	99	121	130	-22	-31
High Yield	323	394	469	-71	-146
Global Emerging Markets	294	313	332	-19	-38

Source: FactSet, Bloomberg

- Credit markets rose amid increasing risk tolerance sentiment, with spreads narrowing.
- High Yield and Corporate spreads narrowed by 71bps and 22bps, respectively. Meanwhile, Long Gov't and ABS Credit spreads widened by 2bps and 1bp, respectively.

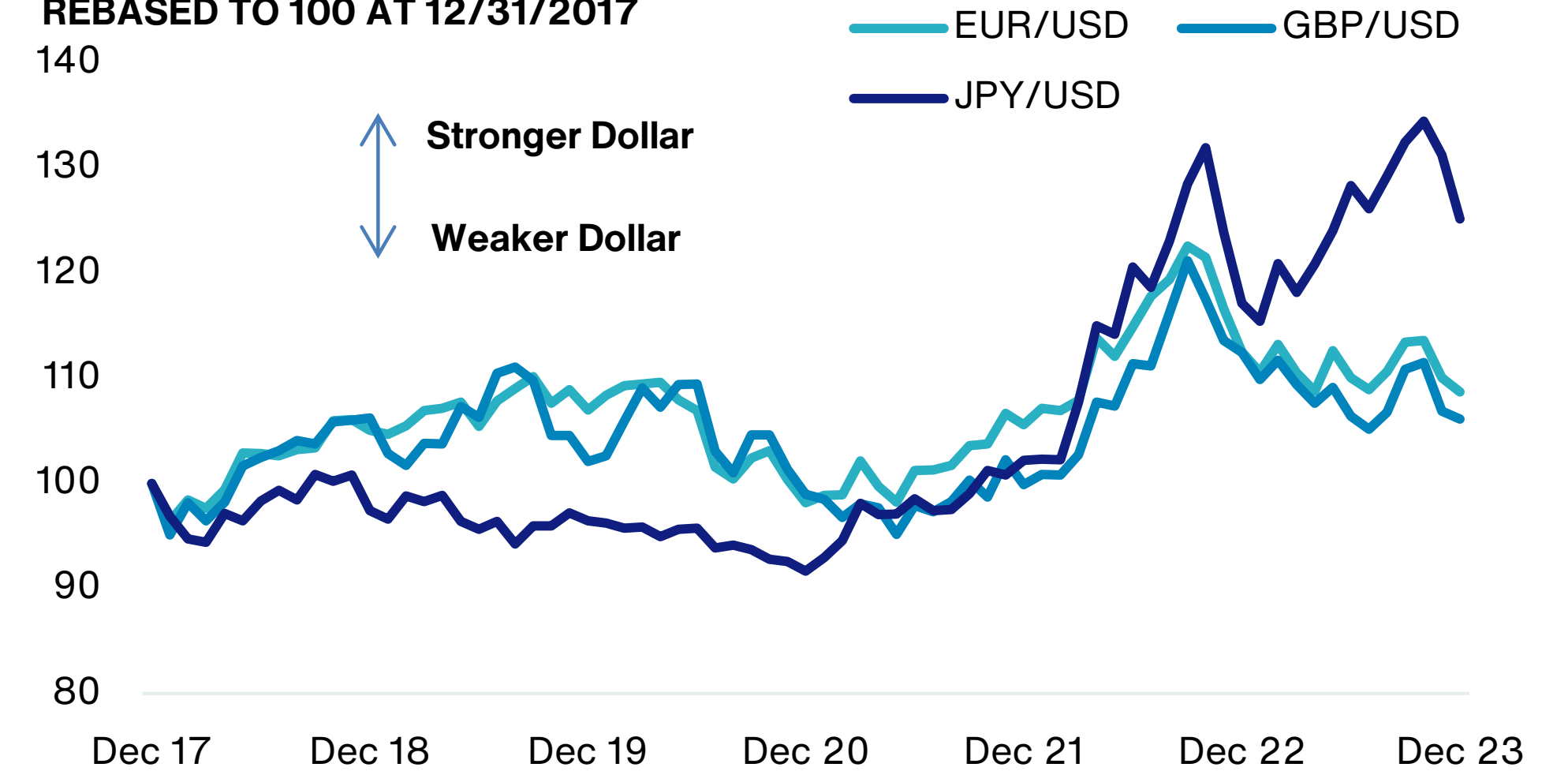
Currency

**TRADE WEIGHTED U.S. DOLLAR INDEX
(2006 = 100)**



Source: Federal Reserve

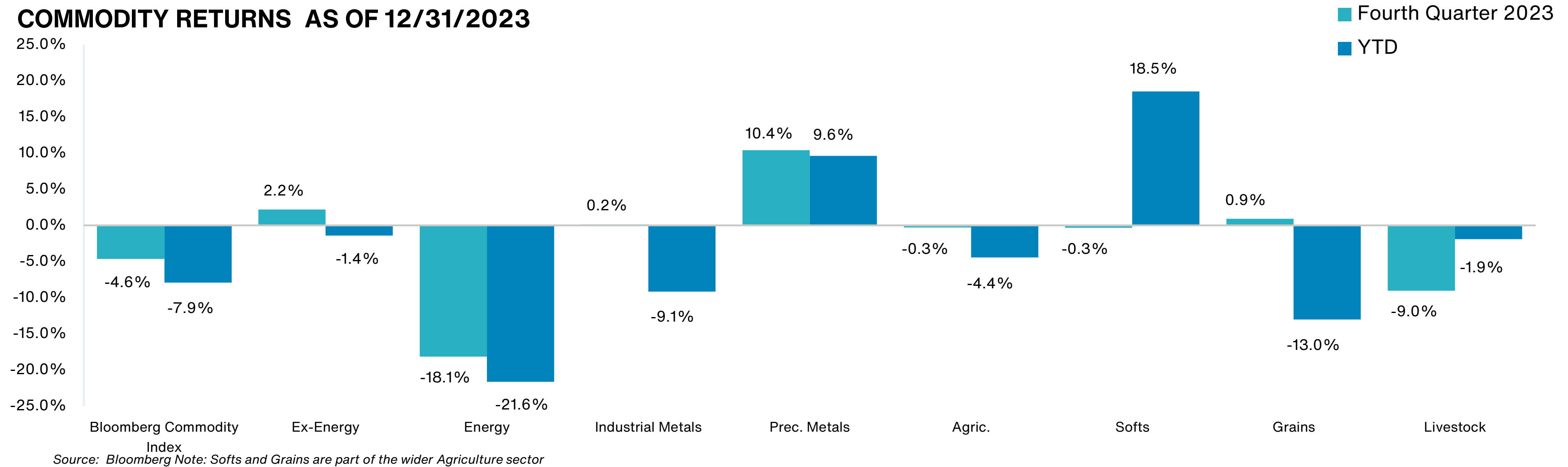
**U.S. DOLLAR RELATIVE TO EUR, GBP AND JPY
REBASED TO 100 AT 12/31/2017**



Source: FactSet

- The U.S. dollar depreciated against all major currencies over the quarter. On a trade-weighted basis, the U.S. dollar depreciated by 3.2%.
- Sterling appreciated by 4.3% against the U.S. dollar. The Bank of England (BoE) kept its interest rate unchanged at 5.25% for the third consecutive meeting. The Monetary Policy Committee (MPC) voted six to three in favour of maintaining the current interest rate, with three members preferring a 25bps increase. The MPC indicated that interest rates would likely need to be kept high for an “extended period of time” and kept the option open for further rate rises “if there were evidence of more persistent inflationary pressures”.
- The U.S. dollar depreciated by 4.2% against the Euro and by 5.5% against the yen.

Commodities

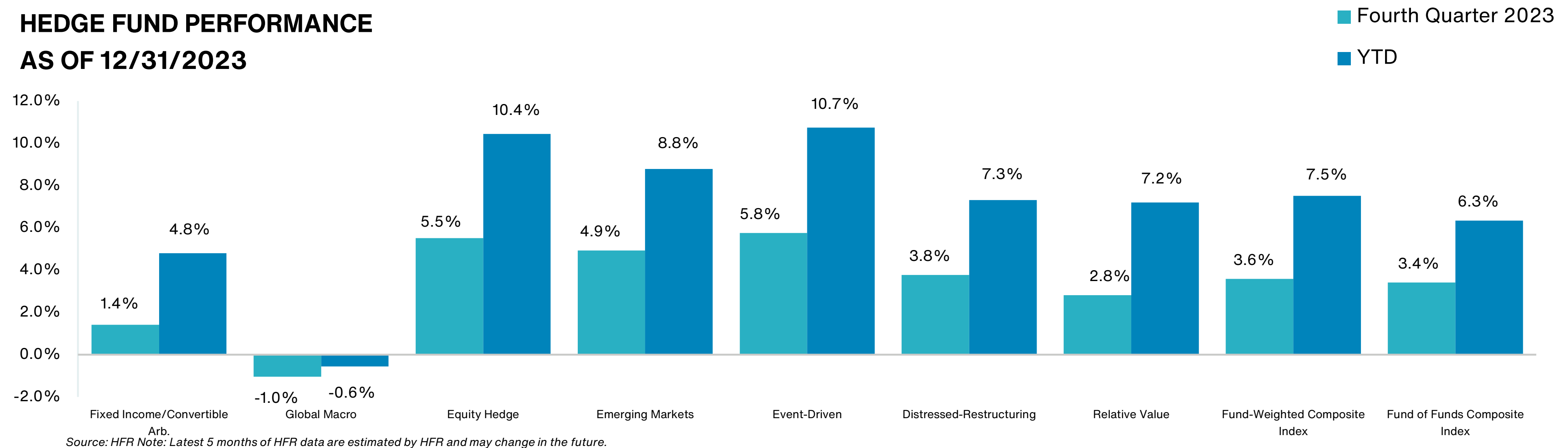


- Commodity prices fell over the quarter with the Bloomberg Commodity Index falling by 4.6% for the quarter.
- The energy sector was the worst performer as it fell 18.1% over the quarter and 21.6% on a YTD basis. The price of WTI crude oil was significantly down by 21.1% to U.S.\$72/BBL.
- Precious Metals rose the most over the quarter at 10.4%.
- Meanwhile, OPEC members announced voluntary oil production cuts until Q1 2024. Saudi Arabia pledged to extend an ongoing 1mn barrels per day (bpd) production cut while Russia will increase its export reduction from the current 300,000 bpd to 500,000 bpd. OPEC aims for a total of 2mn bpd production cut with the help of other members.

Past performance is no guarantee of future results. Indices cannot be invested in directly. Unmanaged index returns assume reinvestment of any and all distributions and do not reflect fees and expenses. Please see appendix for index definitions and other general disclosures.

Hedge Funds Market Overview

HEDGE FUND PERFORMANCE AS OF 12/31/2023

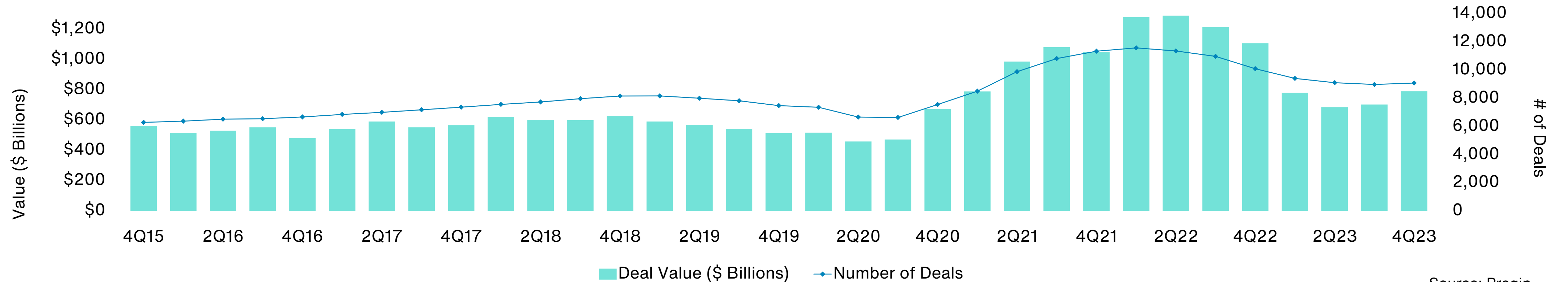


- Hedge fund performance was positive over the quarter except for Global Macro.
- The HFRI Fund-Weighted Composite and HFRI Fund of Funds Composite Index produced returns of 3.6% and 3.4% over the quarter, respectively.
- Over the quarter, Event Driven was the best performer with a return of 5.8%.
- Global Macro was the worst performer with a return of -1.0% over the quarter.
- On a YTD basis, Event Driven has outperformed all other strategies while Global Macro has performed the worst.

Past performance is no guarantee of future results. Indices cannot be invested in directly. Unmanaged index returns assume reinvestment of any and all distributions and do not reflect fees and expenses. Please see appendix for index definitions and other general disclosures.

Private Equity Overview – Fourth Quarter 2023

LTM Global Private Equity-Backed Buyout Deal Volume



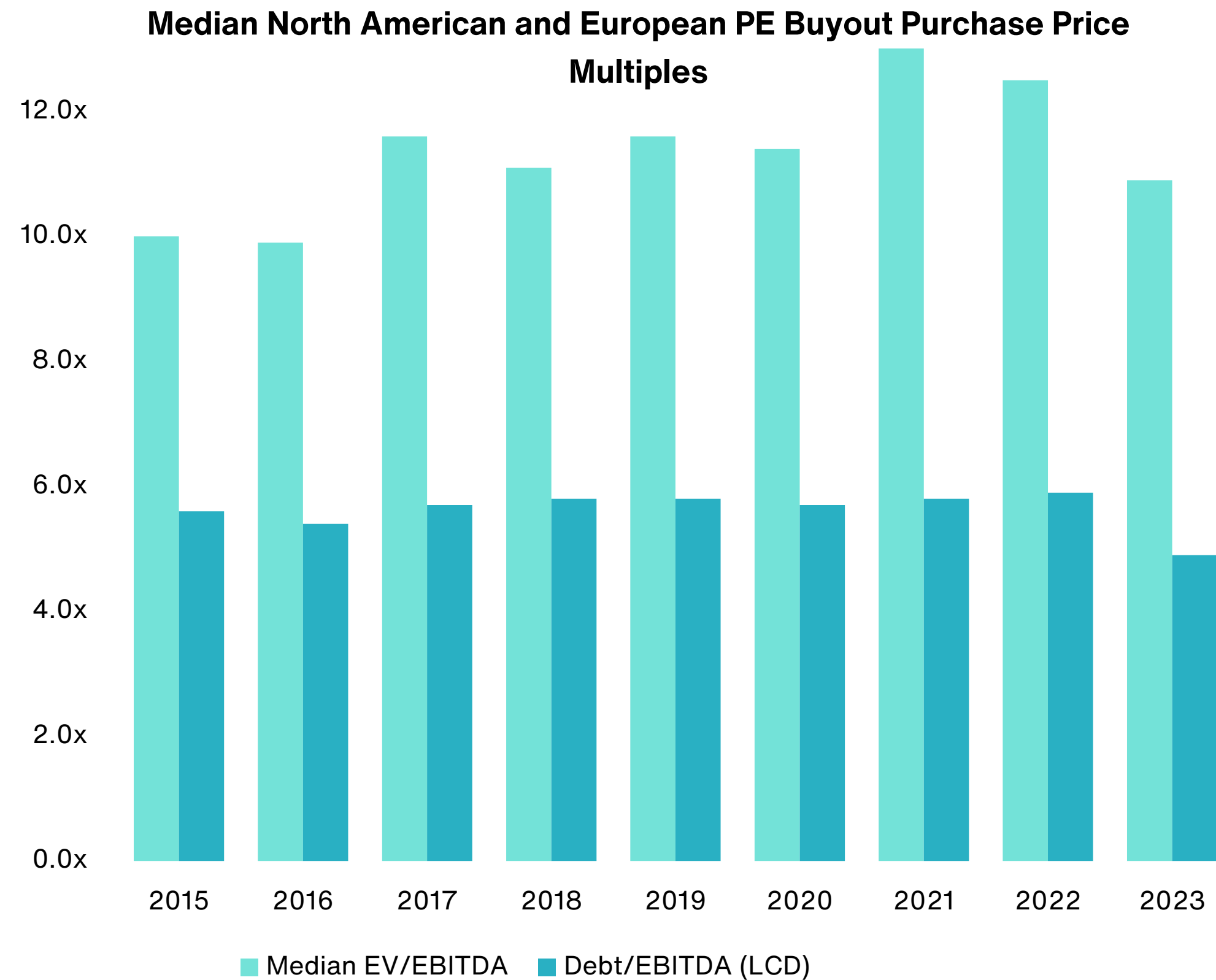
Source: Preqin

- **Fundraising:** In 2023, \$1.1 trillion was raised by 2,544 funds, which was a decrease of 14.4% on a capital basis and a decrease of 41.1% by number of funds over the prior year. Dry powder stood at \$3.2 trillion at the end of the year, an increase of 15.9% and 39.4% compared to year-end 2022 and the five-year average, respectively.¹
- **Buyout:** Global private equity-backed buyout deals totaled \$788.6 billion in 2023, which was a decrease on a capital basis of 28.6% compared to 2022 but 30.6% higher compared to the five-year average.¹ During the year, the median purchase price multiple for all North American and European private equity buyouts was 10.9x EBITDA, down from 12.5x in 2022 and down from the five-year average (12.0x). The median purchase price multiple for North American PE buyouts ended the year at 11.8x EBITDA, while European LBO transactions ended the year at 10.2x EBITDA.² Globally, buyout exit value totaled \$444.7 billion across 2,077 deals during the year, down from \$498.4 billion in value from 2,030 deals during 2022.¹
- **Venture:** During the year, an estimated 15,766 venture-backed transactions totaling \$170.6 billion were completed, which was a decrease on both a capital and deal count basis over the prior year's total of \$242.2 billion across 17,592 deals. This was also a decrease of 19.5% compared to the five-year average of \$212.0 billion. Total U.S. venture-backed exit value decreased during the year, totaling approximately \$61.5 billion across an estimated 1,129 completed transactions, compared to \$78.6 billion across 1,401 exits in 2022. This was meaningfully below the \$796.8 billion of exit value from 1,990 transactions during 2021.³

Sources: 1 Preqin 2 Pitchbook/LCD 3 PitchBook/NVCA Venture Monitor 4 Fitch Ratings 5 Jefferies

Notes: FY=Fiscal year ended 12/31; YTD=Year to date; LTM=Last 12 months (aka trailing 12 months); PPM=Purchase Price Multiples: Total Purchase Price ÷ EBITDA.

Private Equity Overview (cont.)



Source: Pitchbook, LCD

- **Mezzanine:** 28 funds closed on \$38.6 billion during the year. This was an increase from the prior year's total of \$27.1 billion raised by 52 funds and represented an increase of 72.6% from the five-year average of \$22.4 billion. Estimated dry powder was \$65.5 billion at the end of 2023, up from \$57.7 billion at the end of the prior year.¹
- **Distressed Debt/Special Situations:** The TTM U.S. high-yield default rate was 3.0% as of December 2023, which was up from December 2022's TTM rate of 1.3%. Fitch expects the high-yield default rate to continue trending higher through 2024, with forecasted default rates of 5.0% to 5.5%.⁴ During the year, \$53.2 billion was raised by 61 funds, down from the \$62.8 billion raised by 70 funds during 2022. Dry powder was estimated at \$164.0 billion at the end of Q4 2023, which was down 1.4% from Q4 2022. This remained above the five-year average level of \$142.1 billion.¹
- **Secondaries:** 58 funds raised \$93.8 billion during 2023, up substantially from the \$36.2 billion raised by 70 funds in 2022. This was an increase compared to the five-year average of \$42.0 billion.¹ The average discount rate for LP buyout and venture capital portfolios finished the year at 9.0% and 32.0%, respectively.⁵
- **Infrastructure:** \$77.6 billion of capital was raised by 84 funds in 2023 compared to \$177.0 billion of capital raised by 159 partnerships in 2022. Infrastructure funds are staying in market longer, with 55.2% of closed funds fundraising for two years or more. Infrastructure managers completed 2,067 deals for an aggregate deal value of \$308.2 billion in 2023 compared to 2,652 deals totaling \$420.4 billion in 2022.¹
- **Natural Resources:** During 2023, 27 funds closed on \$10.5 billion compared to 39 funds totaling \$5.7 billion in 2022. 277 energy and utilities deals were completed in 2023 totaling \$40.0 billion, an increase compared to 237 completed deals totaling \$36.7 billion in 2022.¹

Sources: 1 Preqin 2 Pitchbook/LCD 3 PitchBook/NVCA Venture Monitor 4 Fitch Ratings 5 Jefferies

Total Fund



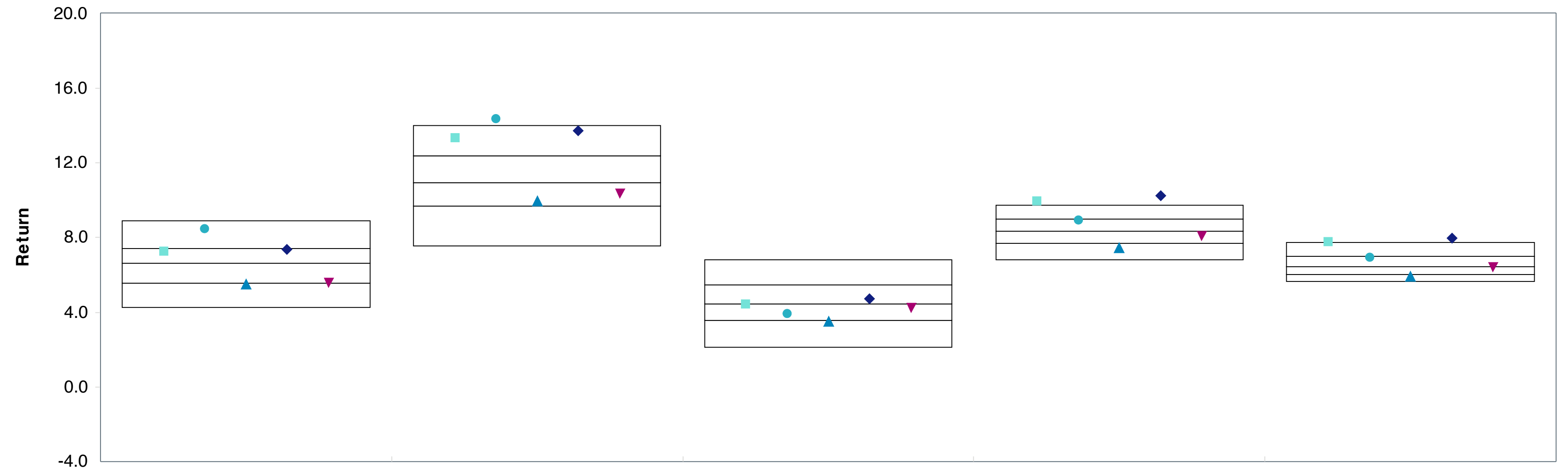
Total Fund – Asset Allocation & Performance

As of December 31, 2023

	Allocation		Performance (%)						Inception Date
	Market Value (\$000)	%	1 Quarter	1 Year	3 Year	5 Year	10 Year	Since Inception	
Total Fund	61,462,819.2	100.0	7.3	13.4	4.5	10.0	7.8	8.3	01/01/95
<i>Policy Benchmark</i>			8.5	14.4	3.9	8.9	6.9	-	
<i>Public Fund Universe (Mean)</i>			5.5	10.0	3.5	7.4	5.9	7.5	
<i>Total Fund (GOF)</i>			7.4	13.7	4.7	10.3	8.0	8.5	
<i>Public Fund Universe (Mean) (GOF)</i>			5.6	10.4	4.2	8.1	6.5	8.1	
Global Equity	33,789,271.7	55.0	11.9	23.8	5.2	13.1	9.0	8.9	01/01/95
<i>Global Equity Custom Benchmark</i>			11.2	21.9	5.7	11.8	7.9	-	
<i>Global Equity (GOF)</i>			11.9	23.9	5.3	13.2	9.1	9.0	
Fixed Income	11,640,181.0	18.9	7.0	6.2	-3.0	1.5	2.2	4.8	01/01/95
<i>Fixed Income Custom Benchmark</i>			6.8	5.5	-3.3	1.1	2.0	4.8	
<i>Fixed Income (GOF)</i>			7.0	6.2	-3.0	1.5	2.2	-	
Real Estate	6,221,721.7	10.1	-7.1	-9.9	8.5	7.8	10.1	9.7	01/01/95
<i>Real Estate Custom Benchmark</i>			-4.9	-12.2	4.5	3.8	6.8	7.3	
<i>Real Estate (GOF)</i>			-7.0	-9.4	9.2	8.5	10.5	10.9	
Private Equity	5,358,075.8	8.7	2.6	4.7	10.9	13.2	12.0	12.6	01/01/95
<i>Private Equity Custom Benchmark</i>			11.6	23.4	7.2	13.3	12.4	12.7	
<i>Burgiss Pooled Avergae</i>			2.6	6.0	10.2	13.6	12.2	15.0	
Alternatives	4,232,152.3	6.9	3.3	7.8	8.2	7.8	6.2	4.9	01/01/08
<i>Alternatives Custom Benchmark</i>			4.1	9.4	6.2	7.9	5.9	4.3	
<i>Total Fund ex- Alts Benchmark</i>			8.8	14.7	3.8	9.0	7.0	6.3	
Cash	221,416.7	0.4	1.4	5.2	2.3	1.9	1.3	2.6	04/01/95
<i>ICE BofAML U.S. 3 Month T-Bill Index</i>			1.4	5.0	2.2	1.9	1.3	2.4	

Plan Sponsor Peer Group Analysis vs. Public Plans >\$1B

As of December 31, 2023



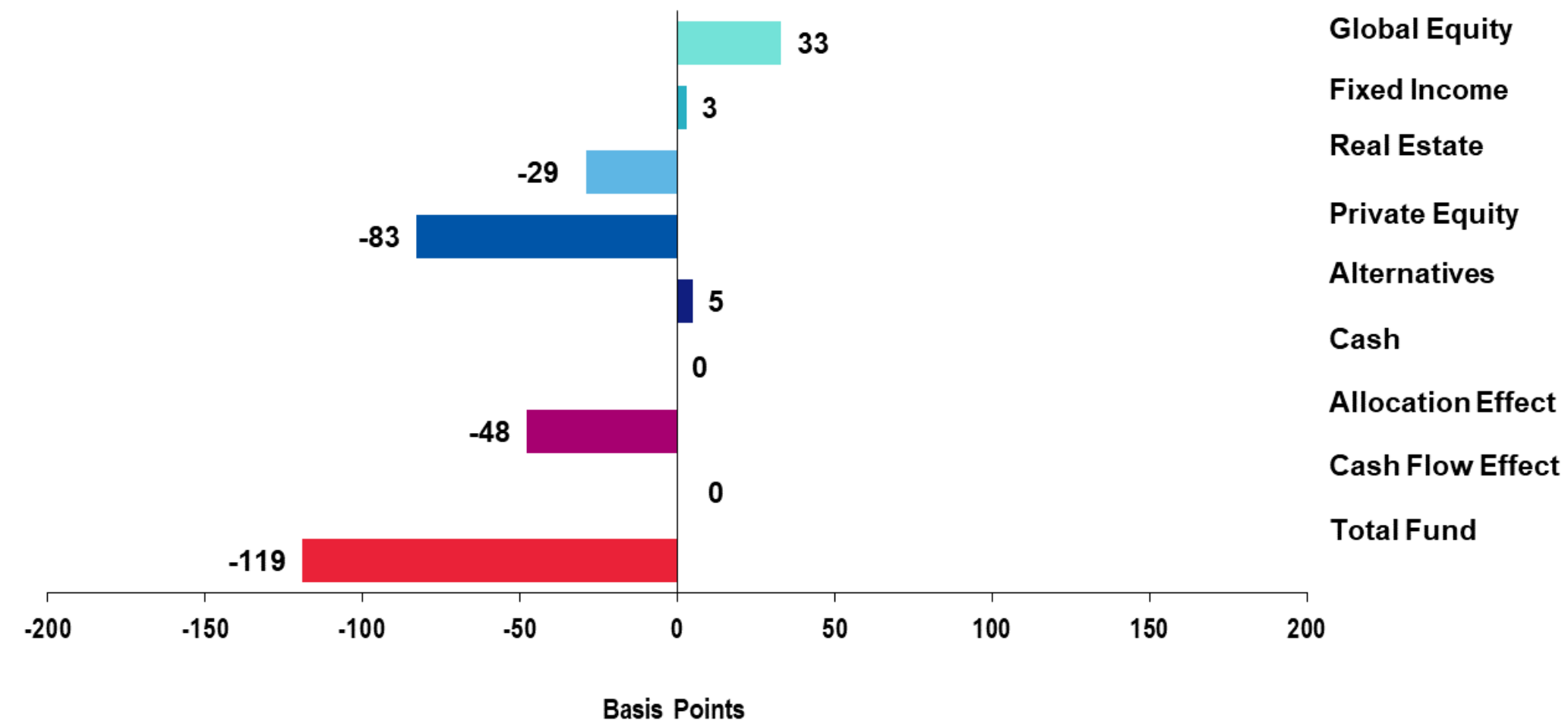
	1 Quarter	1 Year	3 Years	5 Years	10 Years
Total Fund	7.3 (30)	13.4 (11)	4.5 (50)	10.0 (4)	7.8 (5)
Policy Benchmark	8.5 (11)	14.4 (4)	3.9 (60)	8.9 (31)	6.9 (27)
Public Fund Universe (Mean)	5.5 (78)	10.0 (74)	3.5 (76)	7.4 (90)	5.9 (85)
Total Fund (GOF)	7.4 (26)	13.7 (10)	4.7 (42)	10.3 (3)	8.0 (4)
Public Fund Universe (Mean) (GOF)	5.6 (75)	10.4 (67)	4.2 (54)	8.1 (61)	6.5 (48)
5th Percentile	8.9	14.0	6.8	9.7	7.7
1st Quartile	7.4	12.4	5.5	9.0	7.0
Median	6.6	10.9	4.4	8.4	6.4
3rd Quartile	5.6	9.7	3.5	7.7	6.0
95th Percentile	4.3	7.5	2.1	6.8	5.7
Population	108	75	67	62	54

Note: The Universe above includes 108 public pension funds with over \$1 billion in assets and was compiled by BNY Mellon Performance & Risk Analytics and Investment Metrics as of most recent quarter end.

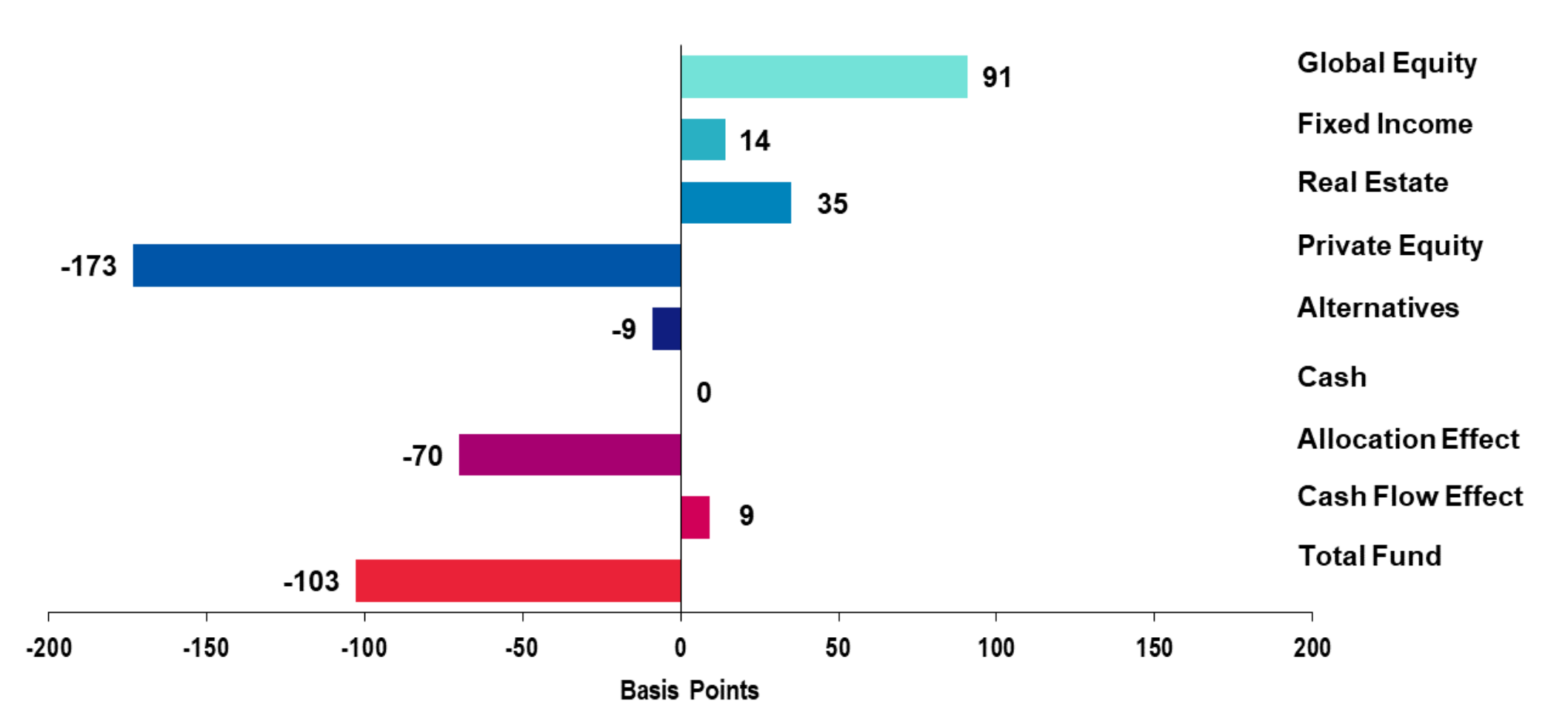
Total Fund – Attribution

As of December 31, 2023

Total Fund Attribution Analysis
3 Months Ending 12/31/2023



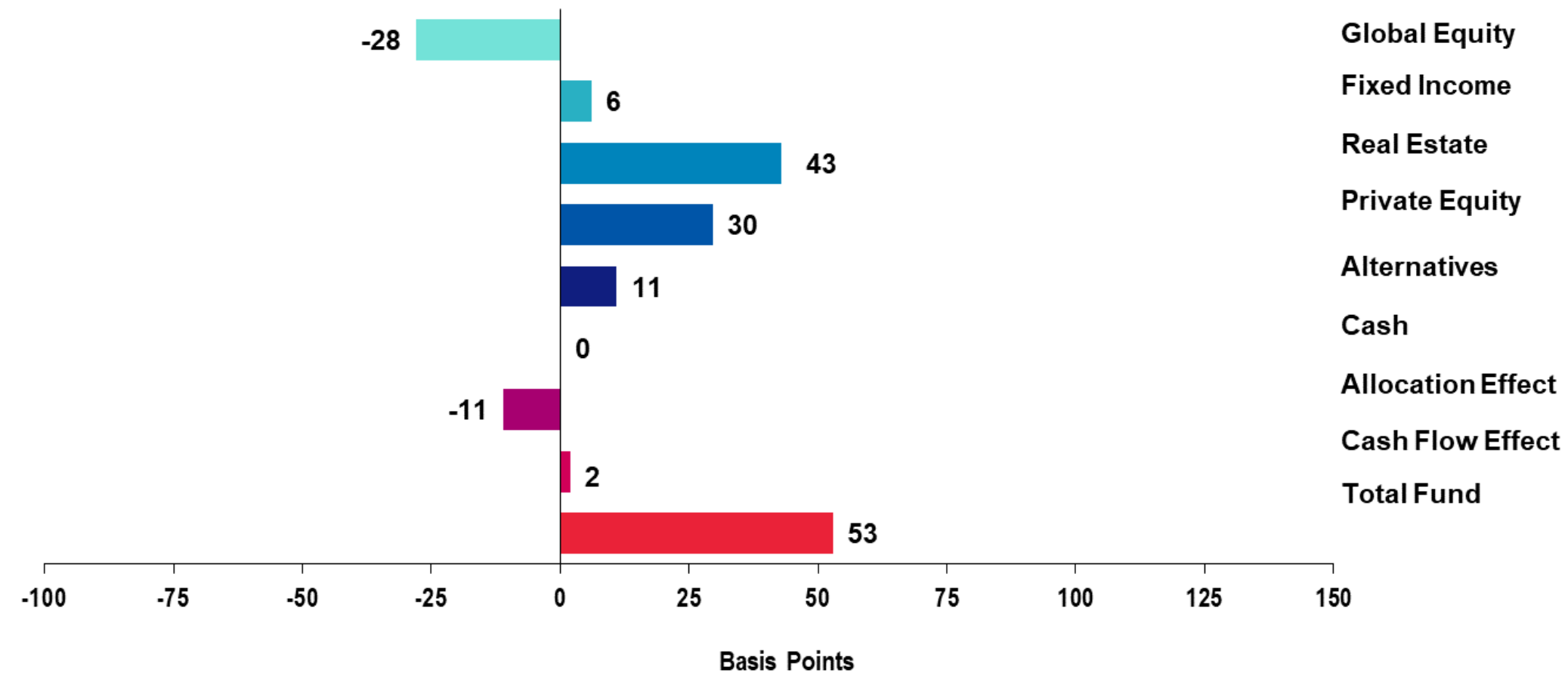
Total Fund Attribution Analysis
1 Year Ending 12/31/2023



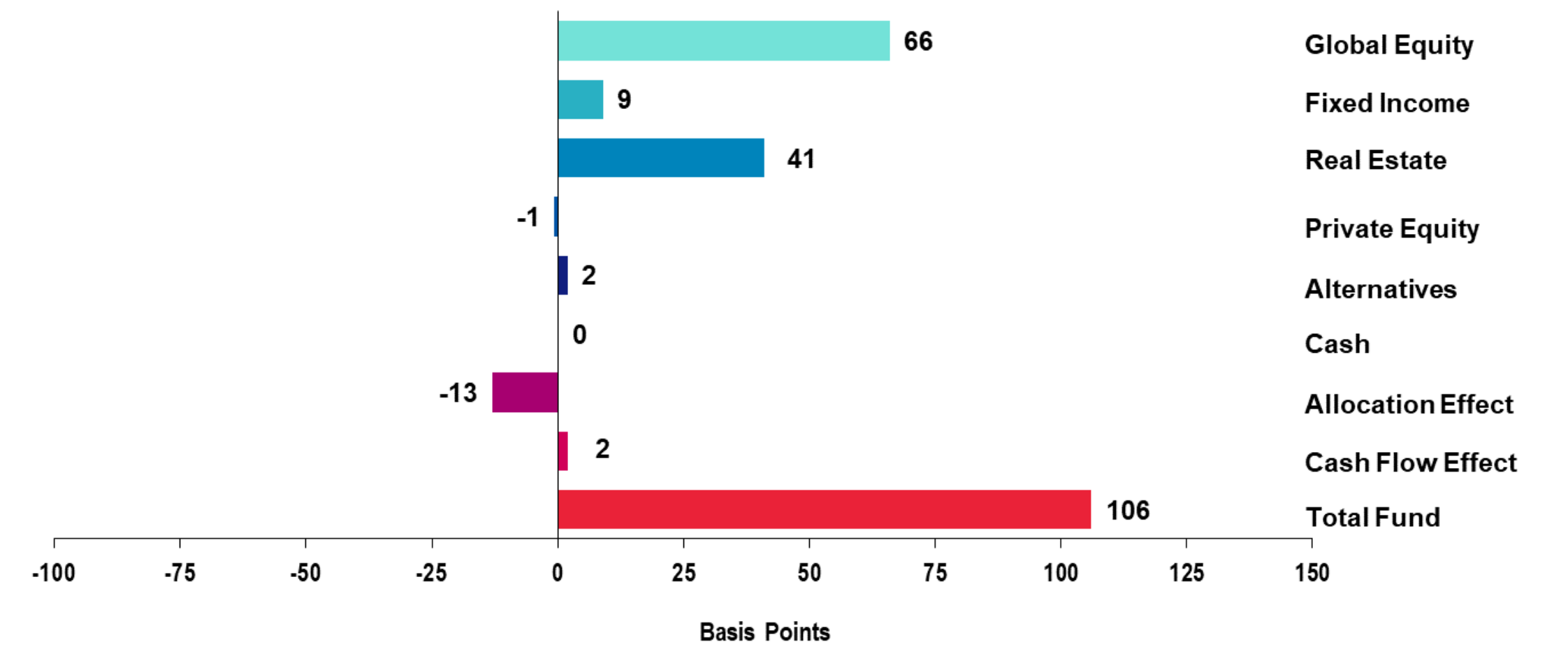
Total Fund – Attribution

As of December 31, 2023

Total Fund Attribution Analysis
3 Years Ending 12/31/2023



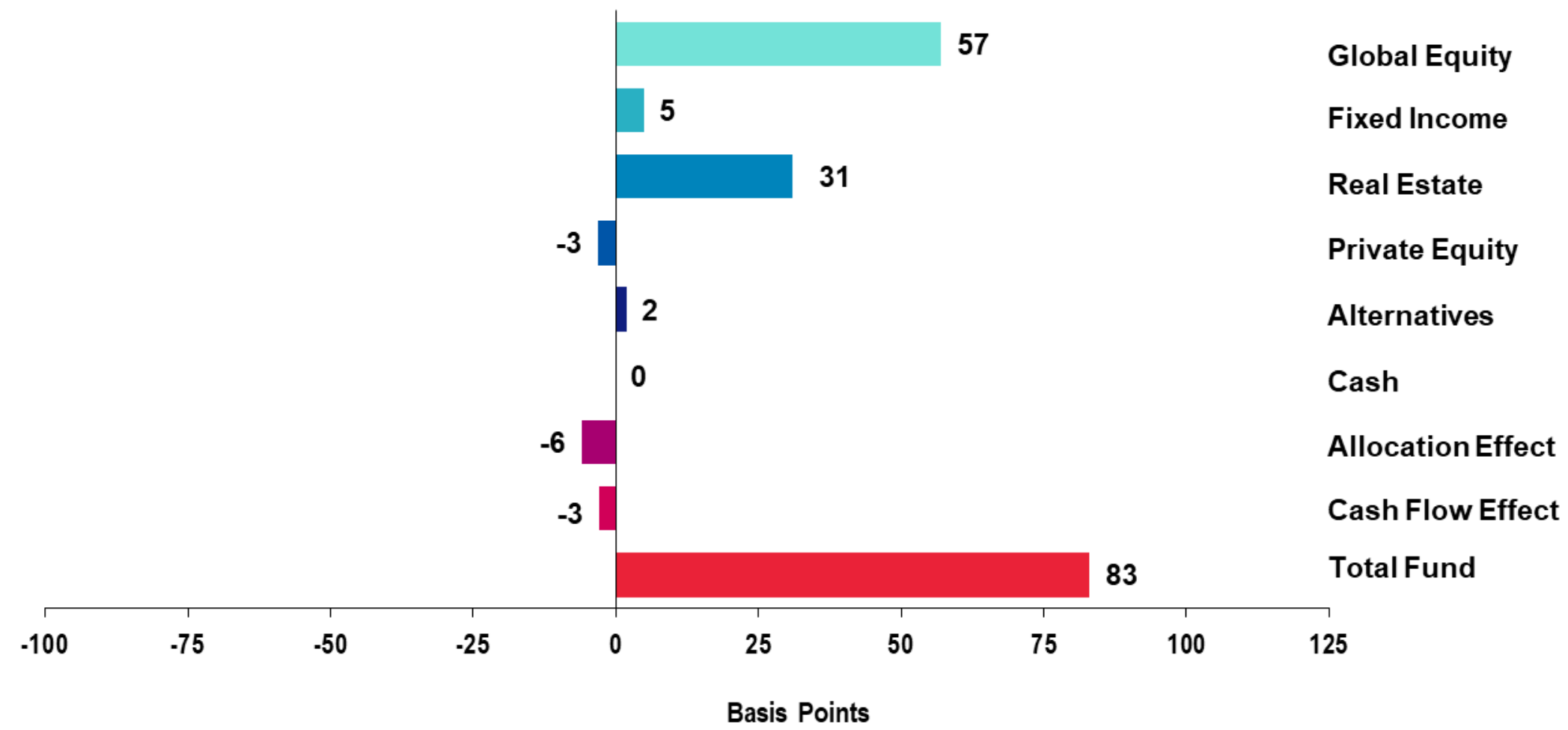
Total Fund Attribution Analysis
5 Years Ending 12/31/2023



Total Fund – Attribution

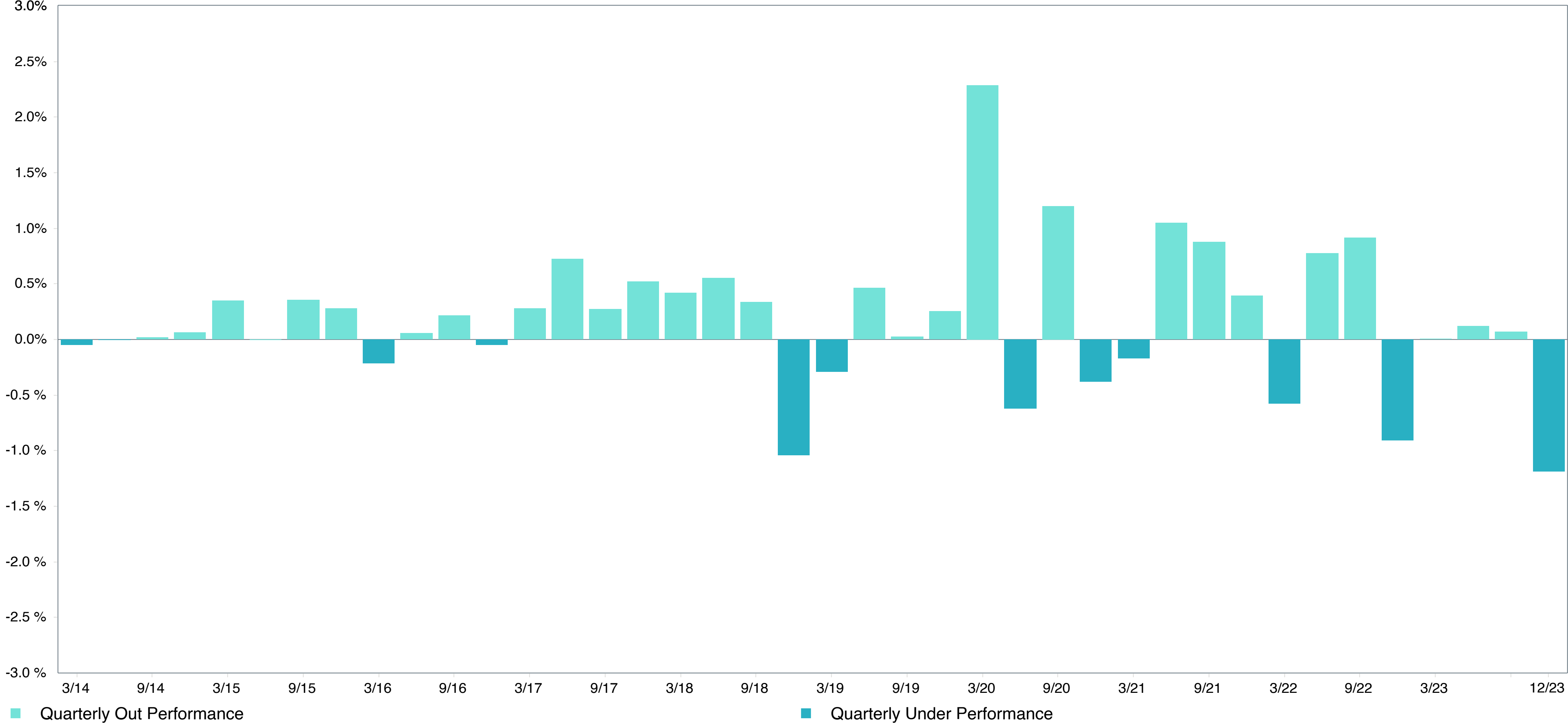
As of December 31, 2023

Total Fund Attribution Analysis
10 Years Ending 12/31/2023



Rolling Excess Performance - Total Fund vs. Policy Bench

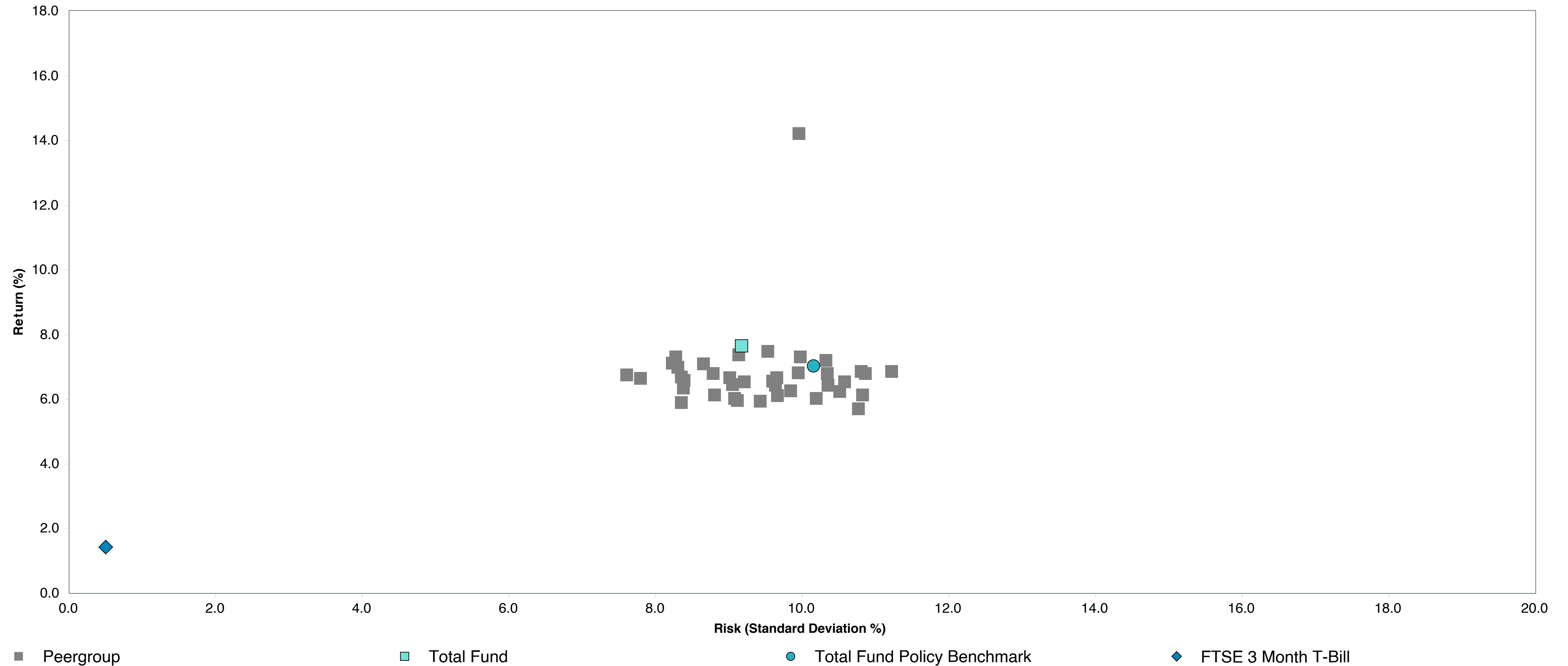
Quarterly Excess Performance



Total Fund - Risk & Return

As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation
April 1, 2004 to December 31, 2023



Asset Allocation & Performance

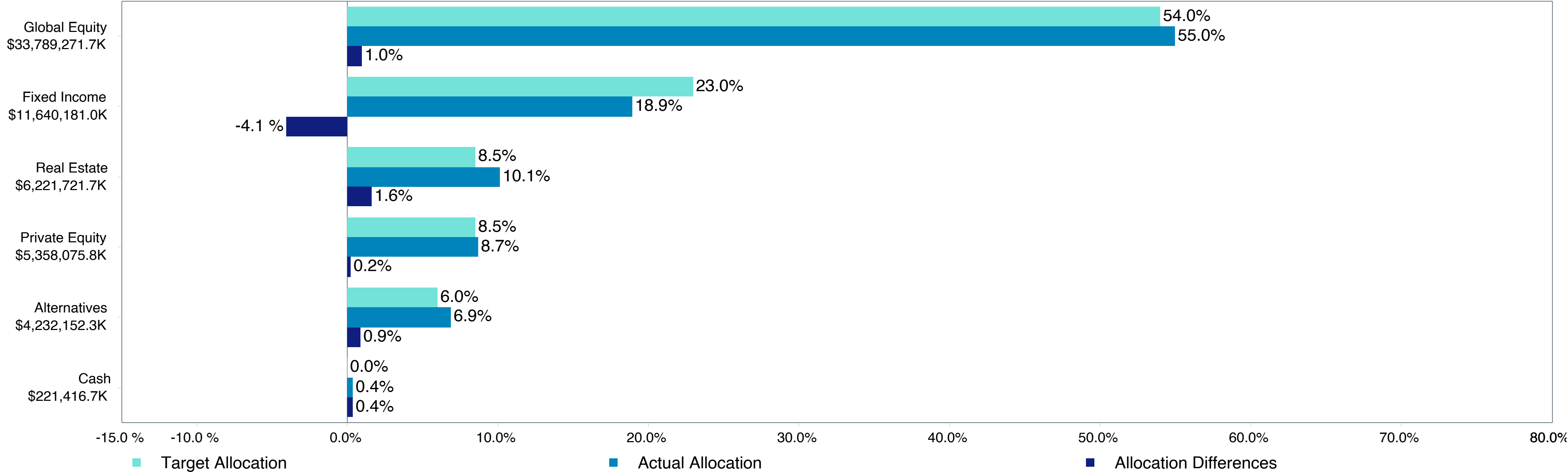
Calendar Year Performance

	Market Value \$ (\$)	%	Performance %									
			2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total Fund	61,462,819.2	100.0	13.4	-13.4	16.1	17.4	20.3	-3.5	18.1	7.3	1.5	5.7
<i>Policy Benchmark</i>			14.4	-13.7	13.7	14.1	19.8	-3.6	16.0	7.3	0.5	5.7
<i>Public Fund Universe (Mean)</i>			10.0	-10.9	13.2	10.8	16.4	-3.7	14.4	6.9	-0.6	6.3
<i>Total Fund (GOF)</i>			13.7	-13.1	16.3	17.7	20.6	-3.4	18.2	7.4	1.6	5.8
<i>Public Fund Universe (Mean) (GOF)</i>			10.4	-10.4	14.5	11.5	16.9	-3.4	14.8	7.3	-0.2	6.6

Asset Allocation Compliance

As of December 31, 2023

	Market Value* \$000	Current Allocation %	Target Allocation %
Total Fund	61,462,819.2	100.0	100.0
Global Equity	33,789,271.7	55.0	54.0
Fixed Income	11,640,181.0	18.9	23.0
Real Estate	6,221,721.7	10.1	8.5
Private Equity	5,358,075.8	8.7	8.5
Alternatives	4,232,152.3	6.9	6.0
Cash	221,416.7	0.4	0.0

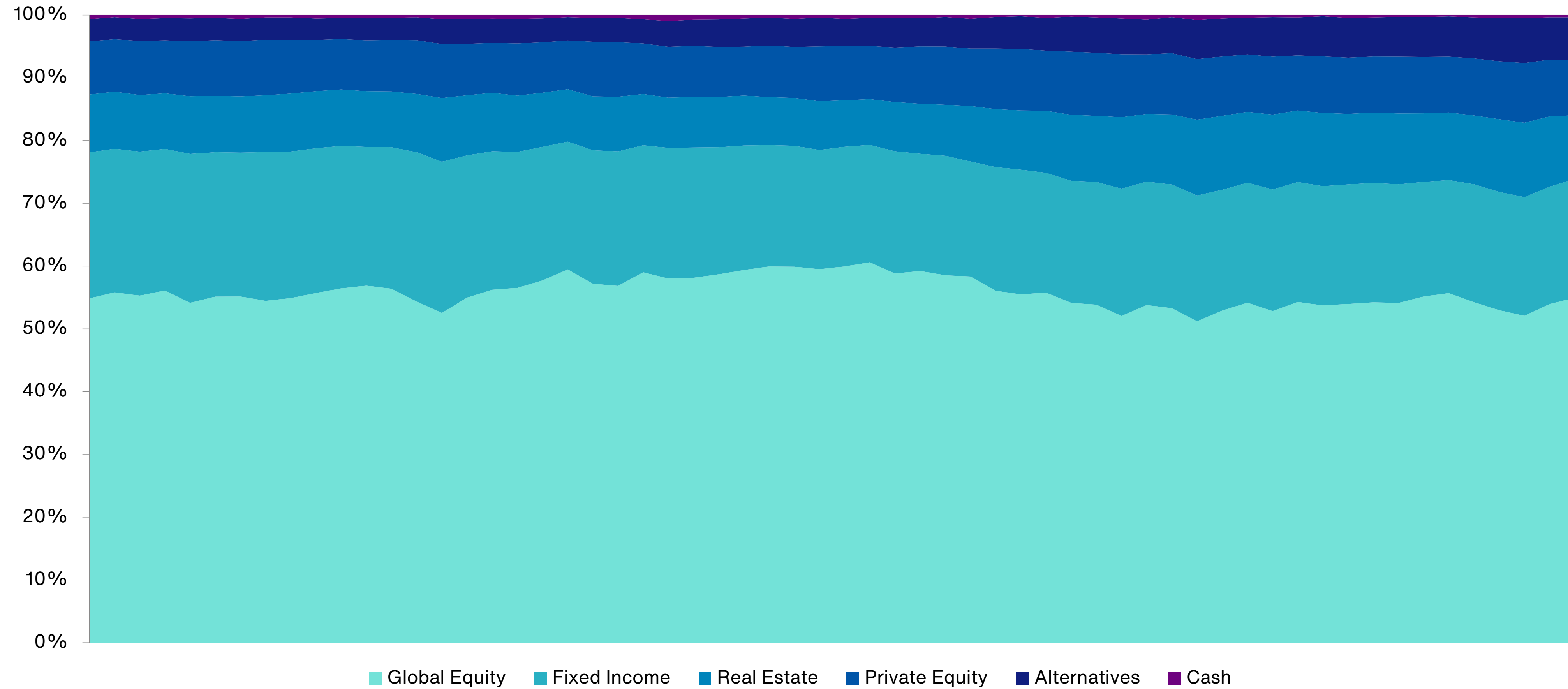


* Does not include cash overlay exposure.



Total Fund – Historical Asset Allocation by Asset Class

5 Years As of December 31, 2023



Asset Allocation

As of September 30, 2023

ASSET ALLOCATION AS OF 12/31/2023

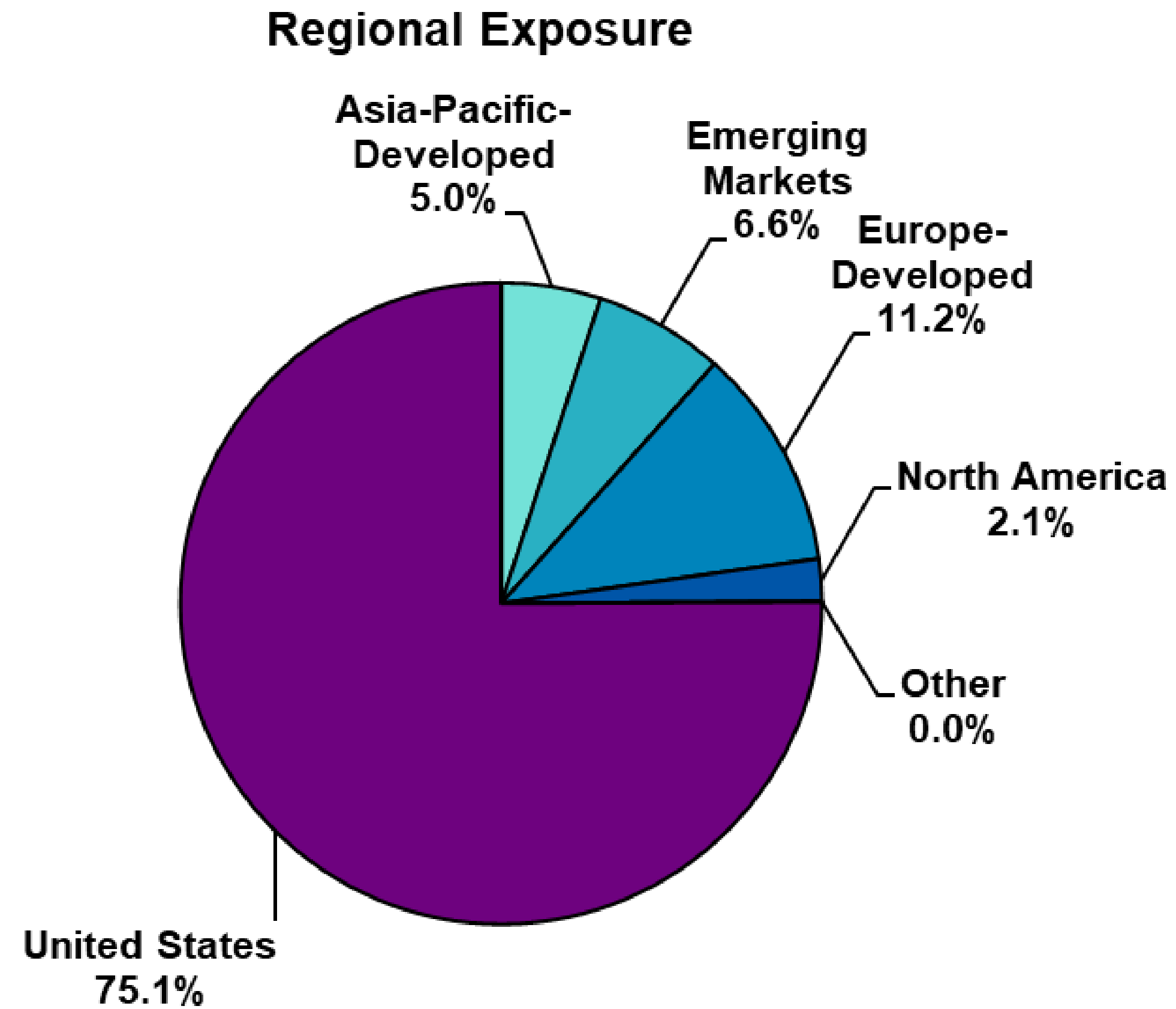
(\$ in thousands)

	U.S. Equity	Non-U.S. Equity	U.S. Bond	Non-U.S. Bond	Real Estate	Private Equity	Alternatives	Cash	Total	Percent of Total	Policy
PERA U.S. Equity	\$14,884,348	\$159,669	--	--	--	--	--	\$69,820	\$15,113,837	24.6%	
Schroder International	--	\$2,212	--	--	--	--	--	\$0	\$2,212	0.0%	
Schroders International	--	\$282,260	--	--	--	--	--	\$6,009	\$288,269	0.5%	
Mondrian	--	\$1,885,666	--	--	--	--	--	\$27,550	\$1,913,216	3.1%	
PERA International Equity	\$2,318	\$4,498,873	--	--	--	--	--	\$50,892	\$4,552,084	7.4%	
William Blair	--	\$936,347	--	--	--	--	--	\$28,860	\$965,206	1.6%	
Global Tax Reclaims ¹	--	--	--	--	--	--	--	\$1,065	\$1,065	0.0%	
Schroder Emerging Markets	--	\$436,277	--	--	--	--	--	\$10,408	\$446,685	0.7%	
Schroder Emerging Markets SF	--	\$290,495	--	--	--	--	--	\$6,930	\$297,425	0.5%	
Baillie Gifford Emerging Markets	--	\$714,302	--	--	--	--	--	\$9,408	\$723,710	1.2%	
BlackRock EM Small Cap	--	\$423,801	--	--	--	--	--	\$0	\$423,801	0.7%	
PERA All Country Equity	\$3,939,416	\$1,422,477	--	--	--	--	--	\$111,175	\$5,473,068	8.9%	
Acadian	\$1,866,335	\$1,032,221	--	--	--	--	--	\$22,979	\$2,921,535	4.8%	
Baillie Gifford All Country	\$658,165	\$0	--	--	--	--	--	\$4,814	\$662,978	1.1%	
Global Equity Liquidation	\$0	\$4,059	--	--	--	--	--	\$0	\$4,060	0.0%	
Global Equity Transition	--	\$0	--	--	--	--	--	\$119	\$119	0.0%	
Global Equity	\$21,350,582	\$12,088,659	--	--	--	--	--	\$349,911	\$33,789,272	55.0%	55.0%
PERA Fixed Income	--	--	\$10,783,572	\$683,587	--	--	--	\$173,021	\$11,640,181	18.9%	
Fixed Income	--	--	\$10,783,572	\$683,587	--	--	--	\$173,021	\$11,640,181	18.9%	23.5%
Real Estate	--	--	--	--	\$6,221,722	--	--	--	\$6,221,722	10.1%	
Real Estate	--	--	--	--	\$6,221,722	--	--	--	\$6,221,722	10.1%	8.5%
Private Equity	--	--	--	--	--	\$5,358,076	--	--	\$5,358,076	8.7%	
Private Equity	--	--	--	--	--	\$5,358,076	--	--	\$5,358,076	8.7%	8.5%
Opportunistic	--	--	--	--	--	--	\$1,537,128	--	\$1,537,128	2.5%	
Real Assets	--	--	--	--	--	--	\$1,521,027	--	\$1,521,027	2.5%	
Risk Mitigation	--	--	--	--	--	--	\$1,173,997	--	\$1,173,997	1.9%	
Alternatives	--	--	--	--	--	--	\$4,232,152	--	\$4,232,152	6.9%	4.5%
Cash	--	--	--	--	--	--	--	\$145,015	\$145,015	0.2%	
Cash Overlay	--	--	--	--	--	--	--	\$76,402	\$76,402	0.1%	
Cash	--	--	--	--	--	--	--	\$221,417	\$221,417	0.4%	0.0%
Total Fund	\$21,350,582	\$12,088,659	\$10,783,572	\$683,587	\$6,221,722	\$5,358,076	\$4,232,152	\$744,349	\$61,462,819	100.0%	100.0%
Percent of Total	34.7%	19.7%	17.5%	1.1%	10.1%	8.7%	6.9%	1.2%	100.0%		

¹See Appendix I for more details on the Global Tax Reclaims account.

Total Fund – Portfolio Breakdown

As of December 31, 2023



(This page is left blank intentionally)

Global Equity



Asset Allocation & Performance

As of December 31, 2023

	Allocation		Performance %						
	Market Value \$ (\$)	%	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Global Equity	33,789,271.7	100.0	11.9	23.8	5.2	13.1	9.0	8.9	01/01/1995
Global Equity Custom Benchmark			11.2	21.9	5.7	11.8	7.9	-	
Global Equity (GOF)			11.9	23.9	5.3	13.2	9.1	9.0	
PERA U.S. Equity Index	5,222,601.3	15.5	12.2	26.3	8.9	15.5	11.7	9.9	04/01/2004
MSCI USA IMI (Gross)			12.1	26.2	8.8	15.4	11.3	9.6	
PERA Large Cap Core	7,590,077.5	22.5	12.6	31.0	8.8	16.5	12.3	10.7	07/01/2006
MSCI USA Large Cap (Gross)			11.8	28.9	9.6	16.1	12.2	10.1	
PERA Mid Cap Core	1,074,763.1	3.2	11.3	14.6	3.1	11.7	10.0	9.3	07/01/2000
MSCI USA Mid Cap (Gross)			13.1	15.3	5.8	13.4	9.8	8.3	
PERA Small Cap Core	1,226,395.4	3.6	13.0	15.3	4.4	10.7	8.7	10.4	01/01/1995
MSCI USA Small Cap (Gross)			13.9	18.4	5.5	12.2	9.2	11.0	
PERA International Passive	4,333,858.1	12.8	10.5	17.8	4.4	8.8	4.9	6.6	05/01/2012
MSCI EAFE + Canada IMI			10.5	17.2	3.7	8.2	4.3	6.1	
PERA International Small Cap Passive	218,225.5	0.6	10.7	13.1	0.6	7.6	5.1	6.5	03/01/2013
MSCI EAFE + Canada Small Cap			10.6	12.6	-0.2	7.1	4.6	6.0	
Schroder Emerging Markets SF	297,424.9	0.9	8.2	9.1	-	-	-	-7.4	12/01/2021
MSCI Emerging Markets Index (Net)			7.9	9.8	-	-	-	-5.2	
Schroder Emerging Markets SF (GOF)			8.4	9.8	-	-	-	-6.9	
Schroder International	2,212.1	0.0	-4.7	-3.9	-8.9	1.4	2.1	6.4	01/01/1995
MSCI All Country World ex-U.S. Small Cap			10.1	15.7	1.5	7.9	4.9	6.4	
Schroder International (GOF)			-5.3	-4.3	-8.8	1.6	2.4	7.3	
Schroders International	288,268.8	0.9	-	-	-	-	-	18.3	11/01/2023
MSCI ACWI Small Cap ex US Net			-	-	-	-	-	16.6	
Schroders International (GOF)			-	-	-	-	-	18.3	

Portfolio benchmarks listed represent the current benchmark, while historical performance is linked to the current benchmark. The complete history of each portfolio's benchmark can be found in Appendix I.

Asset Allocation & Performance

As of December 31, 2023

	Allocation		Performance %						
	Market Value \$ (\$)	%	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Mondrian	1,913,216.1	5.7	9.1	19.2	3.9	6.0	3.5	6.1	10/01/1999
MSCI All Country World ex-U.S. Index (Net)			9.8	15.6	1.5	7.1	3.8	4.4	
Mondrian (GOF)			9.2	19.6	4.3	6.4	3.9	6.5	
William Blair	965,206.4	2.9	13.9	16.4	-2.7	10.1	5.5	7.6	11/01/2011
MSCI All Country World ex-U.S. IMI (Net)			9.8	15.6	1.5	7.2	4.0	5.3	
William Blair (GOF)			14.0	16.7	-2.3	10.5	5.9	8.0	
Schroder Emerging Markets	446,685.0	1.3	8.4	8.7	-6.7	4.1	3.3	5.0	01/01/2000
MSCI Emerging Markets Index (Net)			7.9	9.8	-5.1	3.7	2.7	5.6	
Schroder Emerging Markets (GOF)			8.5	9.4	-6.1	4.8	4.0	5.8	
Baillie Gifford Emerging Markets	723,710.0	2.1	6.8	10.5	-6.8	7.5	5.5	7.6	07/01/2005
MSCI Emerging Markets Index			7.9	9.8	-5.1	3.7	2.7	5.8	
Baillie Gifford Emerging Markets (GOF)			7.0	11.1	-6.1	8.3	6.2	8.3	
BlackRock EM Small Cap	423,801.3	1.3	8.4	22.4	5.8	9.5	-	9.0	12/01/2018
MSCI Emerging Markets Small Cap Index (Net)			8.9	23.9	6.5	9.9	-	9.4	
BlackRock EM Small Cap (GOF)			8.5	22.5	5.9	9.6	-	9.1	
PERA All Country	4,619,597.1	13.7	13.4	26.5	4.9	15.8	10.7	11.6	07/01/2009
MSCI All Country World Index (Net) with USA Gross			11.1	22.6	6.0	12.0	8.1	10.0	
Acadian	2,921,535.3	8.6	11.1	26.7	11.2	14.8	9.1	11.3	02/01/2009
MSCI All Country World IMI (Net) with USA Gross			11.2	21.9	5.7	11.8	7.9	11.0	
Acadian (GOF)			11.2	26.9	11.4	15.0	9.4	11.6	
Baillie Gifford All Country	662,978.4	2.0	16.4	37.6	-8.5	16.0	14.2	17.3	02/01/2009
MSCI All Country World Index (Net) with USA Gross			11.1	22.6	6.0	12.0	8.1	11.1	
Baillie Gifford All Country (GOF)			16.5	38.2	-8.2	16.5	14.7	17.8	
PERA Global Focus	853,470.8	2.5	14.5	28.7	5.4	18.2	-	15.8	02/01/2016
MSCI All Country World Index (Net) with USA Gross			11.1	22.6	6.0	12.0	-	11.0	

Total Global Equity includes Global Tax Reclaims, All Country Transition, Domestic Equity Liquidation, and Global Equity Liquidation. See the Asset Allocation table on Page 29 for details.

Portfolio benchmarks listed represent the current benchmark, while historical performance is linked to the current benchmark. The complete history of each portfolio's benchmark can be found in Appendix I.

Asset Allocation & Performance

As of December 31, 2023

	Allocation		Performance %									
	Market Value \$ (\$)	%	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Global Equity	33,789,271.7	100.0	23.8	-20.6	18.6	22.4	29.5	-9.1	26.3	7.4	-0.3	4.0
Global Equity Custom Benchmark			21.9	-18.2	18.5	16.6	26.8	-9.9	23.9	8.4	-2.2	3.8
Global Equity (GOF)			23.9	-20.5	18.7	22.5	29.6	-9.0	26.5	7.5	-0.2	4.1
PERA U.S. Equity Index	5,222,601.3	15.5	26.3	-19.1	26.3	21.3	31.1	-5.1	21.4	12.7	0.8	12.7
MSCI USA IMI (Gross)			26.2	-19.2	26.1	21.1	31.1	-5.5	20.6	12.0	0.0	11.9
PERA Large Cap Core	7,590,077.5	22.5	31.0	-22.2	26.5	22.4	35.9	-3.8	23.9	10.7	0.0	12.8
MSCI USA Large Cap (Gross)			28.9	-19.7	27.2	21.4	31.8	-4.4	21.8	12.0	1.4	13.7
PERA Mid Cap Core	1,074,763.1	3.2	14.6	-23.7	25.3	22.6	29.3	-6.3	25.9	11.9	6.2	6.8
MSCI USA Mid Cap (Gross)			15.3	-18.2	25.5	21.0	30.8	-10.3	19.9	14.8	2.0	7.6
PERA Small Cap Core	1,226,395.4	3.6	15.3	-15.6	17.1	20.3	21.6	-4.4	16.8	20.5	3.1	-0.1
MSCI USA Small Cap (Gross)			18.4	-17.2	19.6	18.9	27.4	-8.5	13.2	26.6	-2.0	5.8
PERA International Passive	4,333,858.1	12.8	17.8	-14.6	13.0	8.7	23.4	-14.0	25.4	3.5	-1.4	-4.0
MSCI EAFE + Canada IMI			17.2	-15.3	12.4	8.3	22.9	-14.7	25.2	3.0	-2.0	-4.5
PERA International Small Cap Passive	218,225.5	0.6	13.1	-19.8	12.2	12.8	25.4	-17.3	30.9	5.1	5.7	-4.6
MSCI EAFE + Canada Small Cap			12.6	-20.6	11.1	12.8	25.4	-18.1	31.0	4.3	5.5	-5.3
Schroder Emerging Markets SF	297,424.9	0.9	9.1	-20.7	-	-	-	-	-	-	-	-
MSCI Emerging Markets Index (Net)			9.8	-20.1	-	-	-	-	-	-	-	-
Schroder Emerging Markets SF (GOF)			9.8	-20.3	-	-	-	-	-	-	-	-
Schroder International	2,212.1	0.0	-3.9	-28.8	10.7	19.1	18.9	-22.2	38.7	0.6	10.5	-4.3
MSCI AC World ex-U.S. Small Cap			15.7	-20.0	12.9	14.2	22.4	-18.2	31.6	3.9	2.6	-4.0
Schroder International (GOF)			-4.3	-28.6	11.1	19.5	19.3	-22.0	39.3	1.0	10.9	-3.9
Schroders International	288,268.8	0.9	-	-	-	-	-	-	-	-	-	-
MSCI ACWI Small Cap ex US Net			-	-	-	-	-	-	-	-	-	-
Schroders International (GOF)			-	-	-	-	-	-	-	-	-	-

Portfolio benchmarks listed represent the current benchmark, while historical performance is linked to the current benchmark. The complete history of each portfolio's benchmark can be found in Appendix I.

Asset Allocation & Performance

As of December 31, 2023

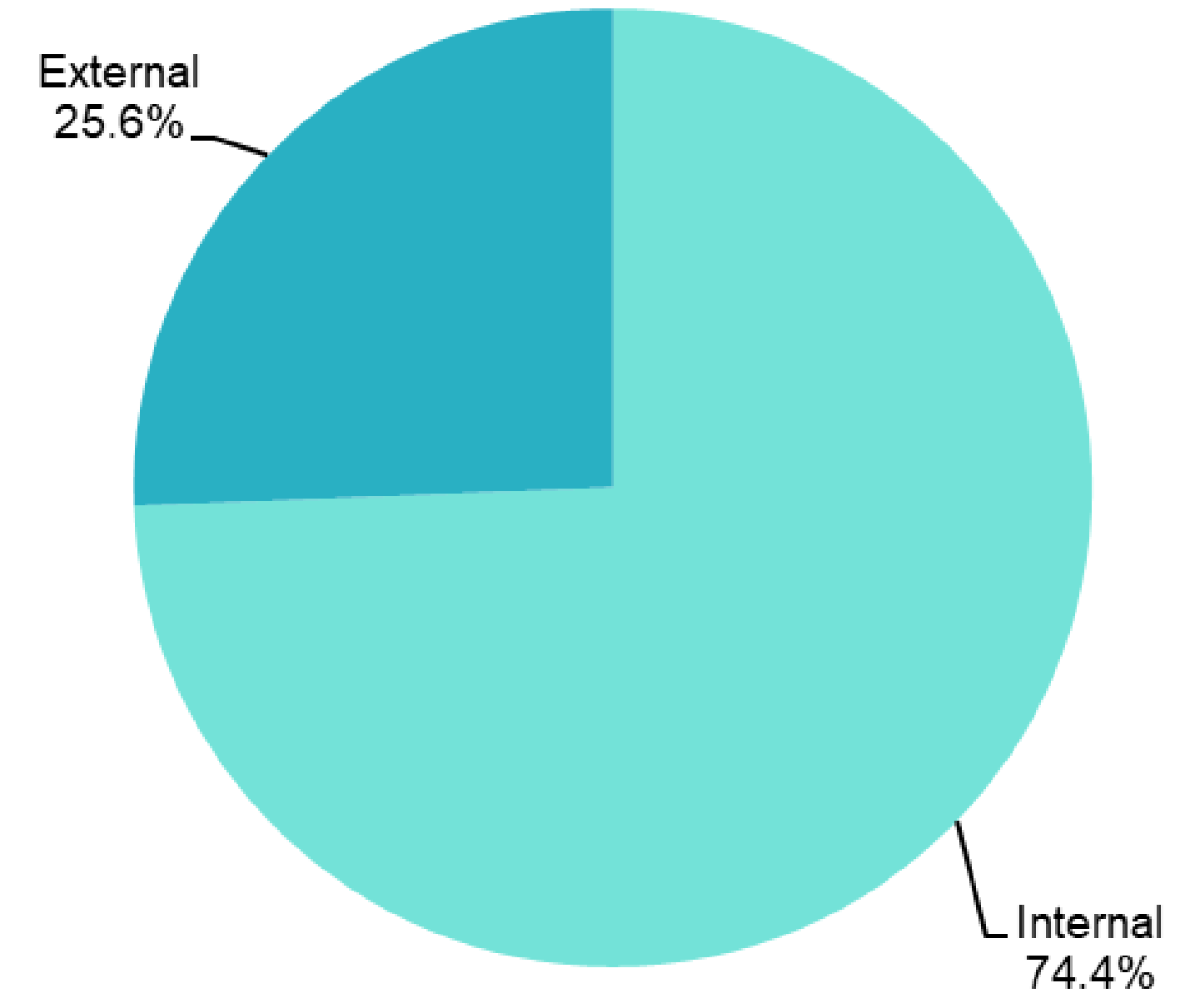
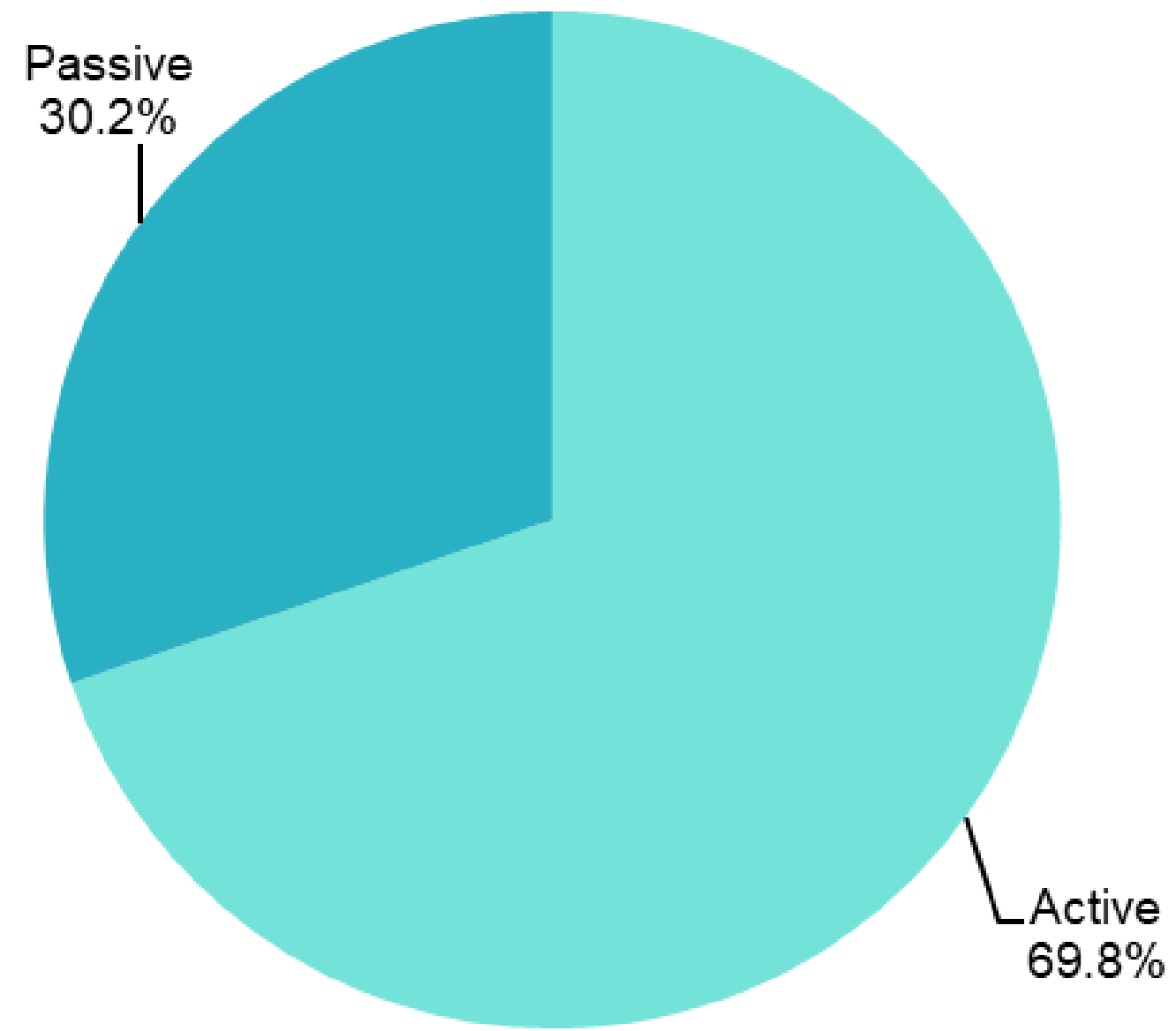
	Allocation		Performance %									
	Market Value \$ (\$)	%	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Mondrian	1,913,216.1	5.7	19.2	-12.0	7.0	0.0	19.2	-12.0	23.0	5.1	-5.7	-1.5
MSCI All Country World ex-U.S. Index (Net)			15.6	-16.0	7.8	10.7	21.5	-14.2	27.2	4.5	-5.7	-3.9
Mondrian (GOF)			19.6	-11.6	7.4	0.4	19.7	-11.7	23.5	5.5	-5.3	-1.1
William Blair	965,206.4	2.9	16.4	-28.1	10.3	33.0	32.1	-17.1	30.3	-1.4	0.9	-1.5
MSCI All Country World ex-U.S. IMI (Net)			15.6	-16.6	8.5	11.1	21.6	-14.8	27.8	4.4	-4.6	-3.9
William Blair (GOF)			16.7	-27.9	10.6	33.5	32.5	-16.9	30.7	-1.0	1.2	-1.2
Schroder Emerging Markets	446,685.0	1.3	8.7	-21.6	-4.7	22.9	22.7	-15.2	41.6	11.1	-12.0	-3.8
MSCI Emerging Markets Index (Net)			9.8	-20.1	-2.5	18.3	18.4	-14.6	37.3	11.2	-14.9	-2.2
Schroder Emerging Markets (GOF)			9.4	-21.1	-4.1	23.7	23.5	-14.6	42.6	11.9	-11.4	-3.1
Baillie Gifford Emerging Markets	723,710.0	2.1	10.5	-21.0	-7.4	36.0	30.7	-14.9	50.0	3.5	-8.2	-2.0
MSCI Emerging Markets Index			9.8	-20.1	-2.5	18.3	18.4	-14.6	37.3	11.2	-14.9	-2.2
Baillie Gifford Emerging Markets (GOF)			11.1	-20.0	-6.9	36.9	31.5	-14.3	50.9	4.1	-7.6	-1.4
BlackRock EM Small Cap	423,801.3	1.3	22.4	-18.1	18.1	19.1	11.8	-	-	-	-	-
MSCI Emerging Markets Small Cap Index (Net)			23.9	-18.0	18.8	19.3	11.5	-	-	-	-	-
BlackRock EM Small Cap (GOF)			22.5	-18.0	18.1	19.2	11.9	-	-	-	-	-
PERA All Country	4,619,597.1	13.7	26.5	-24.3	20.5	29.9	39.0	-6.4	28.9	6.8	-1.5	4.2
MSCI All Country World Index (Net) with USA Gross			22.6	-18.1	18.8	16.6	27.0	-9.3	24.0	7.9	-2.4	4.2
Acadian	2,921,535.3	8.6	26.7	-15.1	28.0	20.0	21.0	-12.5	27.7	6.6	-4.0	5.1
MSCI All Country World IMI (Net) with USA Gross			21.9	-18.2	18.5	16.6	26.8	-9.9	23.9	8.4	-2.2	3.8
Acadian (GOF)			26.9	-15.0	28.2	20.1	21.1	-12.4	28.0	6.9	-3.7	5.4
Baillie Gifford All Country	662,978.4	2.0	37.6	-45.9	2.9	104.1	34.6	-1.1	54.5	-3.5	13.8	6.7
MSCI All Country World Index (Net) with USA Gross			22.6	-18.1	18.8	16.6	27.0	-9.3	24.0	7.9	-2.4	4.2
Baillie Gifford All Country (GOF)			38.2	-45.7	3.3	104.9	35.1	-0.7	55.2	-3.0	14.3	7.2
PERA Global Focus	853,470.8	2.5	28.7	-27.4	25.3	35.5	45.3	-4.5	30.0	-	-	-
MSCI All Country World Index (Net) with USA Gross			22.6	-18.1	18.8	16.6	27.0	-9.3	24.0	-	-	-

Total Global Equity includes Global Tax Reclaims, All Country Transition, Domestic Equity Liquidation, and Global Equity Liquidation. See the Asset Allocation table on Page 29 for details.

Portfolio benchmarks listed represent the current benchmark, while historical performance is linked to the current benchmark. The complete history of each portfolio's benchmark can be found in Appendix I.

Global Equity – Portfolio Breakdown

As of December 31, 2023

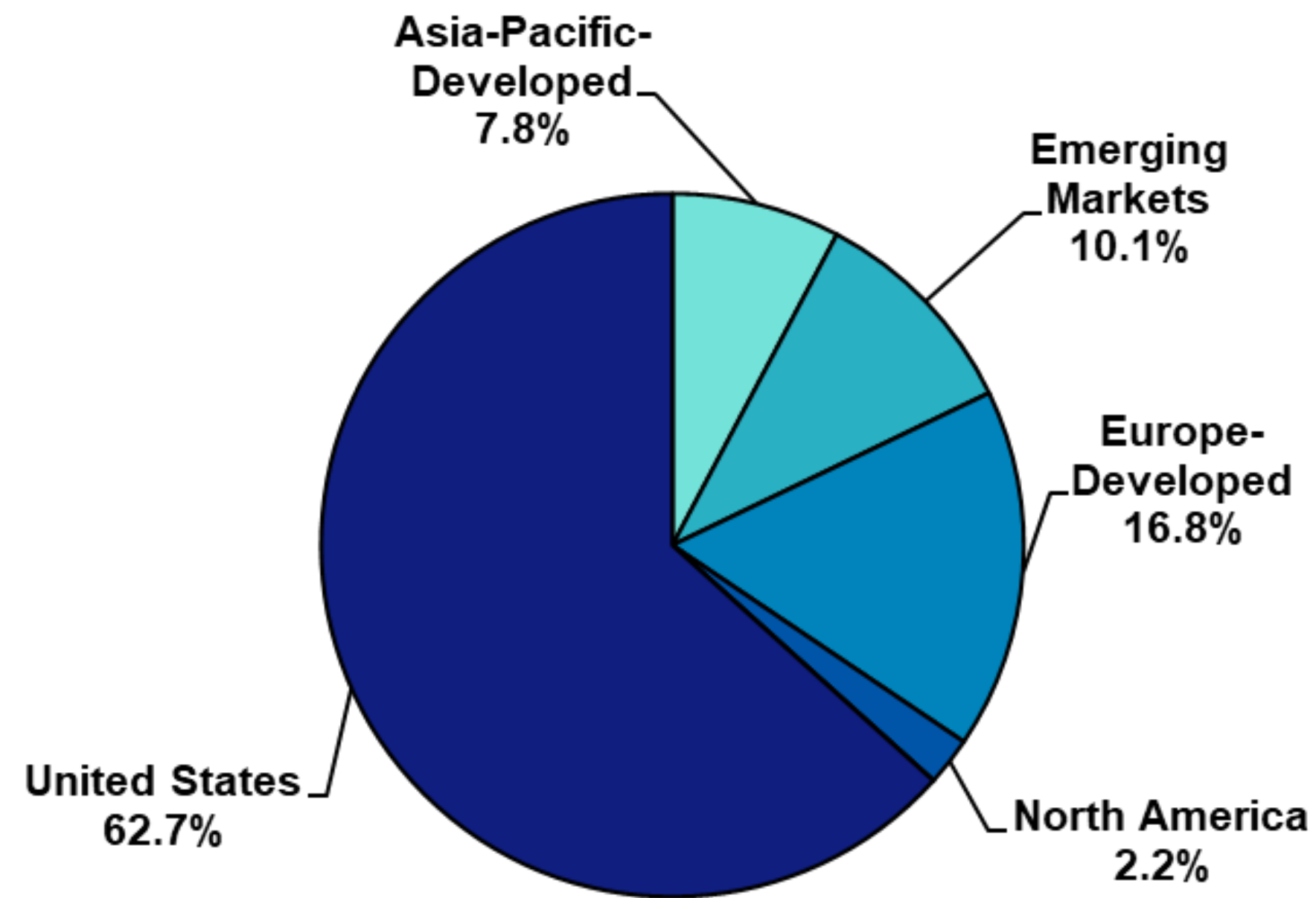


Global Equity – Portfolio Breakdown

As of December 31, 2023

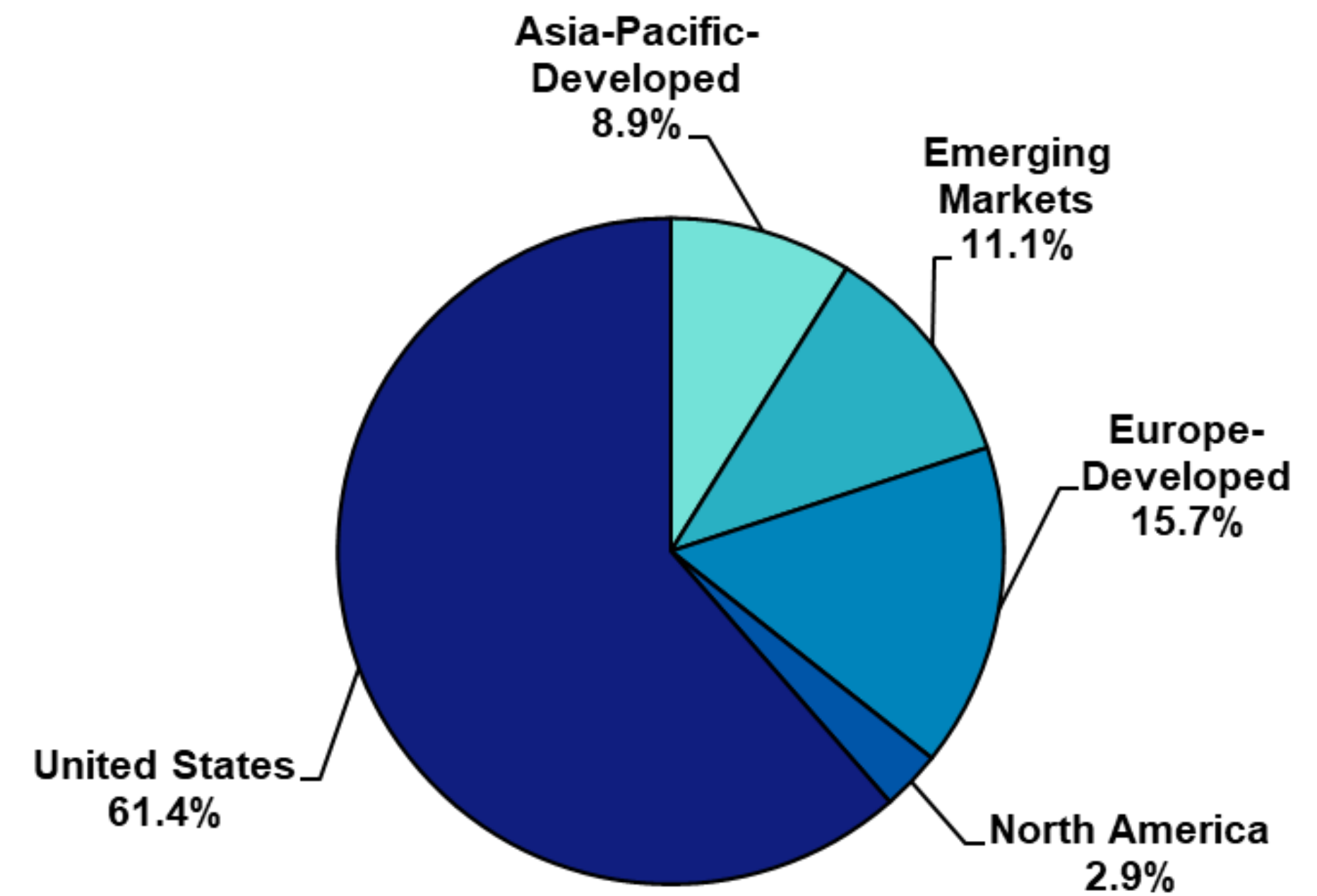
Portfolio

Regional Exposure



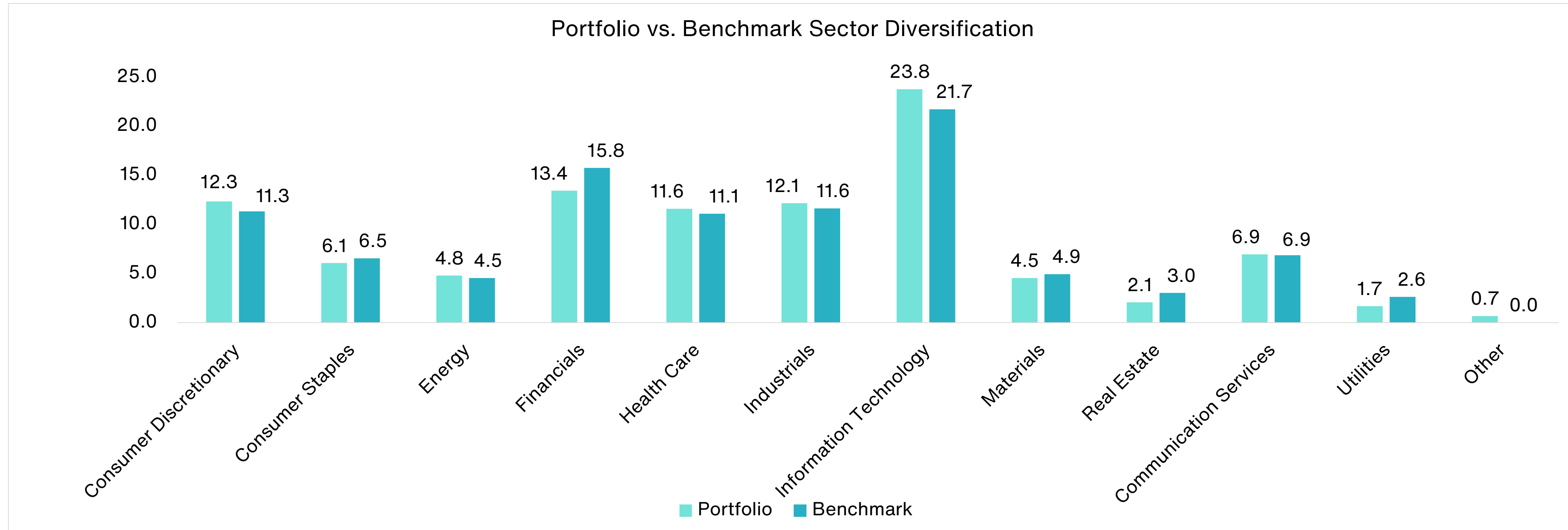
Benchmark

Regional Exposure



Global Equity – Portfolio Breakdown

As of December 31, 2023



Portfolio Analysis (Holdings-based)

As of December 31, 2023

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	459,927	411,234
Median Mkt. Cap (\$M)	1,832	1,999
Price/Earnings ratio	20.31	18.38
Price/Book ratio	3.91	3.38
5 Yr. EPS Growth Rate (%)	16.13	14.41
Current Yield (%)	1.83	2.09
Beta (5 Years, Monthly)	1.00	1.00
Number of Stocks	7,652	9,084

Top Ten Equity Holdings				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Apple Inc	4.37	3.97	0.40	12.60
Microsoft Corp	3.94	3.50	0.44	19.34
Amazon.com Inc	2.78	1.86	0.92	19.52
Alphabet Inc	2.55	1.09	1.46	6.75
NVIDIA Corporation	2.22	1.61	0.61	13.86
Meta Platforms Inc	1.32	1.04	0.28	17.90
UnitedHealth Group Incorporated	1.17	0.64	0.53	4.78
Visa Inc	1.06	0.55	0.51	13.43
Costco Wholesale Corp	1.05	0.39	0.66	19.68
SALESFORCE INC	0.87	0.34	0.53	29.77

% of Portfolio	21.33	14.99	6.34
-----------------------	--------------	--------------	-------------

Top Ten Contributors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Microsoft Corp	3.68	3.25	0.43	19.34
Apple Inc	4.23	3.93	0.30	12.60
Amazon.com Inc	2.42	1.71	0.71	19.52
NVIDIA Corporation	2.27	1.57	0.70	13.86
Meta Platforms Inc	1.24	0.97	0.27	17.90
SALESFORCE INC	0.71	0.29	0.42	29.77
Costco Wholesale Corp	1.06	0.37	0.69	19.68
Alphabet Inc	2.68	1.13	1.55	6.75
Blackrock Inc	0.59	0.14	0.45	26.42
Visa Inc	1.04	0.54	0.50	13.43

% of Portfolio	19.92	13.90	6.02
-----------------------	--------------	--------------	-------------

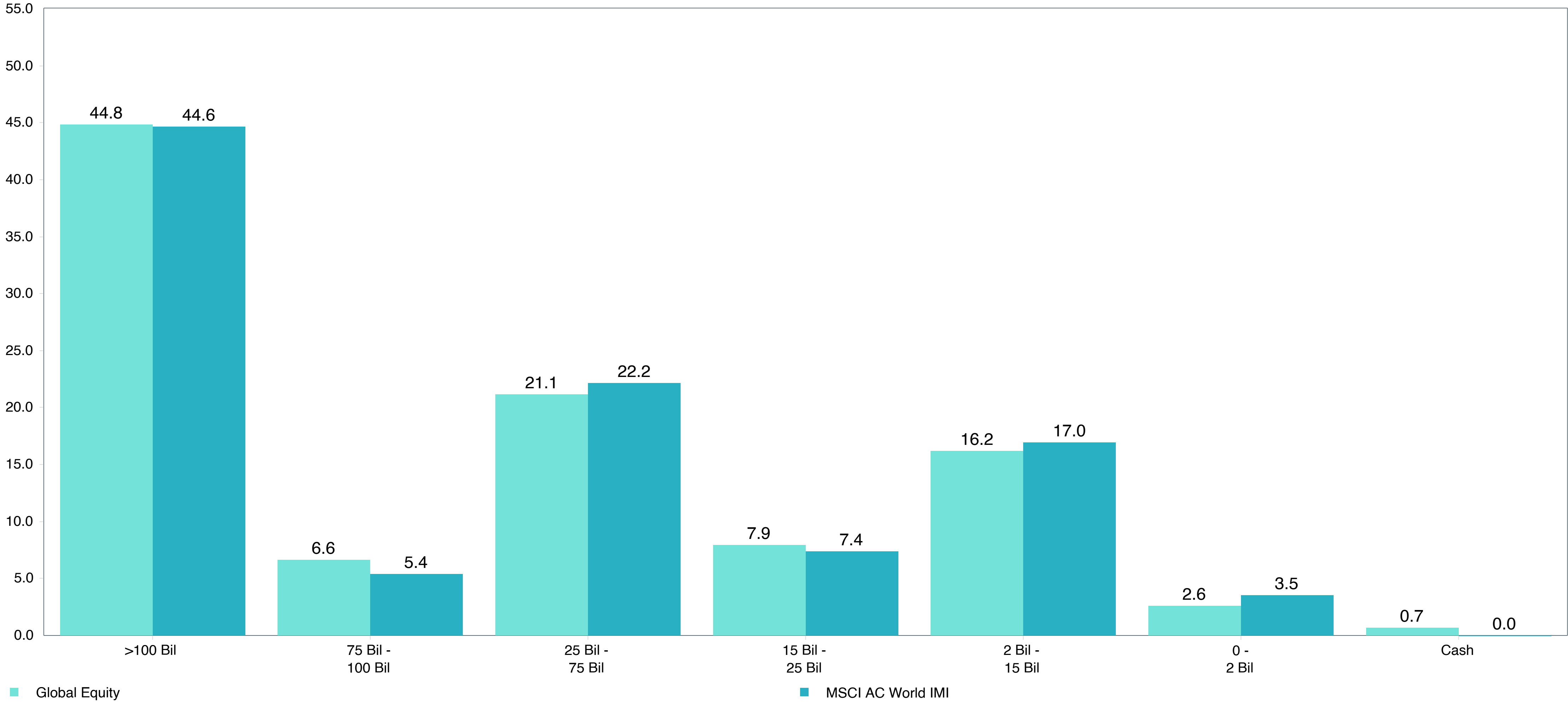
Top Ten Detractors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Chevron Corp	0.60	0.45	0.15	-10.60
First Quantum Minerals Ltd	0.08	0.02	0.06	-65.33
Meituan	0.11	0.11	0.00	-28.32
Alibaba Group Holding Ltd	0.26	0.26	0.00	-10.23
Ping An Insurance Group	0.13	0.06	0.07	-20.95
Exxon Mobil Corp	0.18	0.69	-0.51	-14.19
LONZA GROUP AG	0.22	0.05	0.17	-9.67
Sanofi	0.22	0.18	0.04	-7.71
Contemporary Amperex Technology Co Ltd	0.09	0.01	0.08	-17.19
Petrochina Co Ltd	0.12	0.02	0.10	-12.28

% of Portfolio	2.01	1.85	0.16
-----------------------	-------------	-------------	-------------

Portfolio Analysis (Holdings-based)

As of December 31, 2023

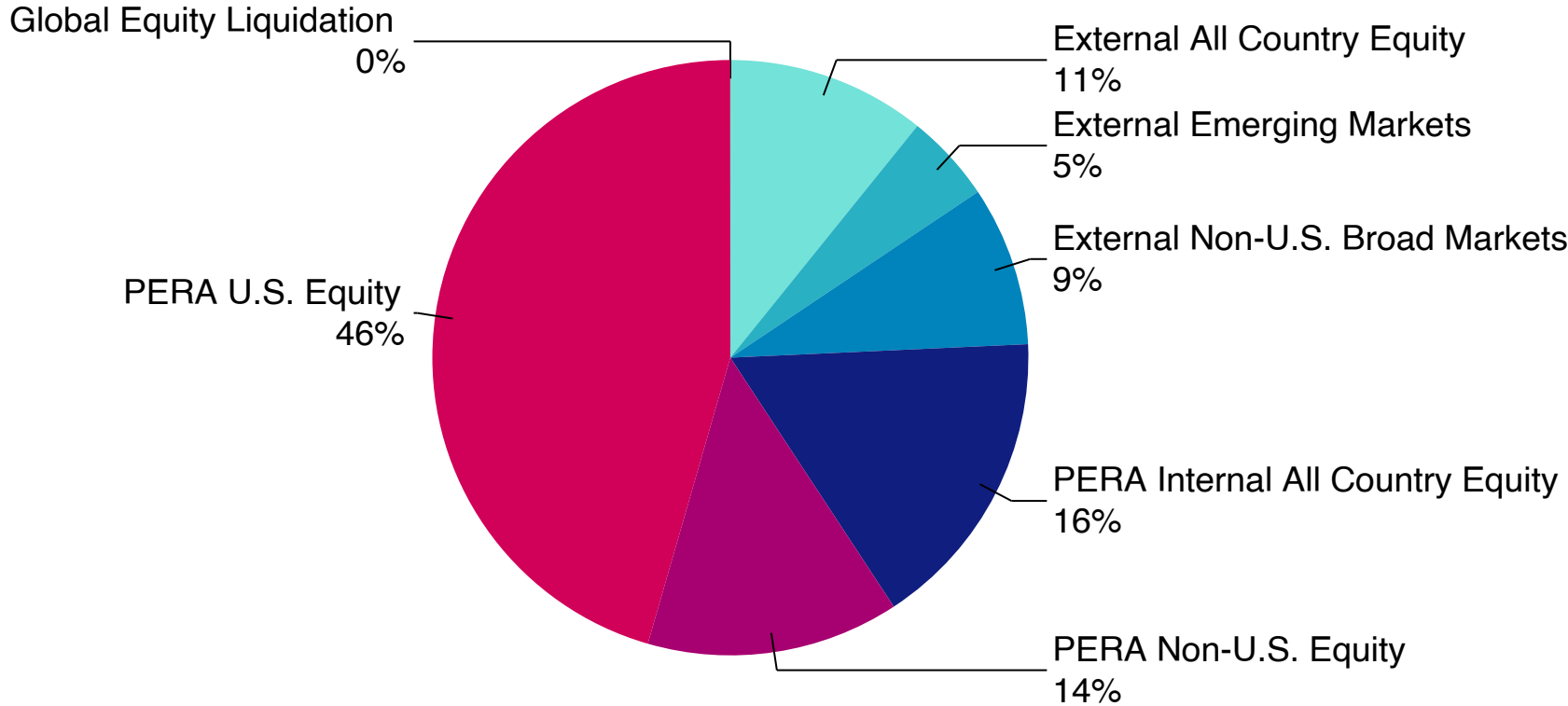
Distribution of Market Capitalization (%)



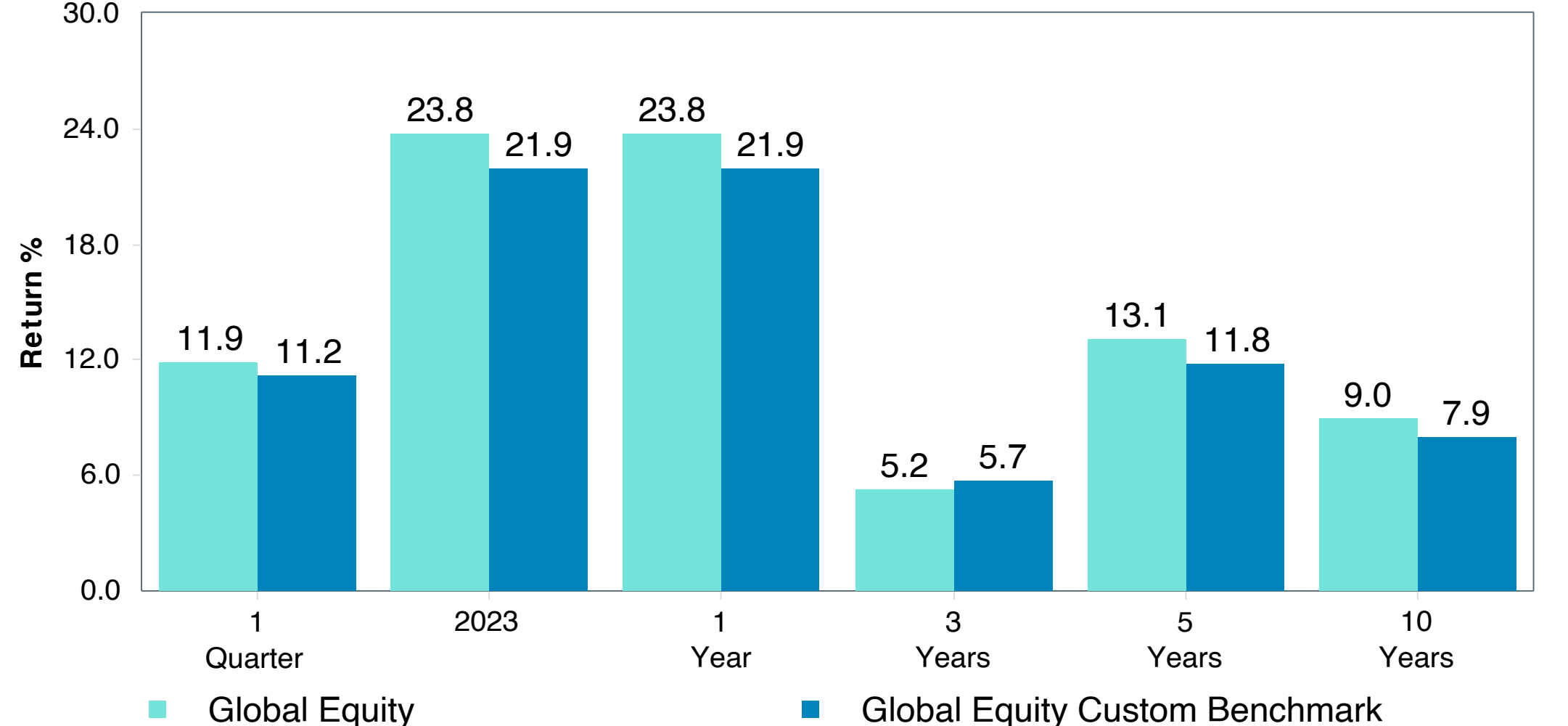
Composite Portfolio Overview Global Equity

As of December 31, 2023

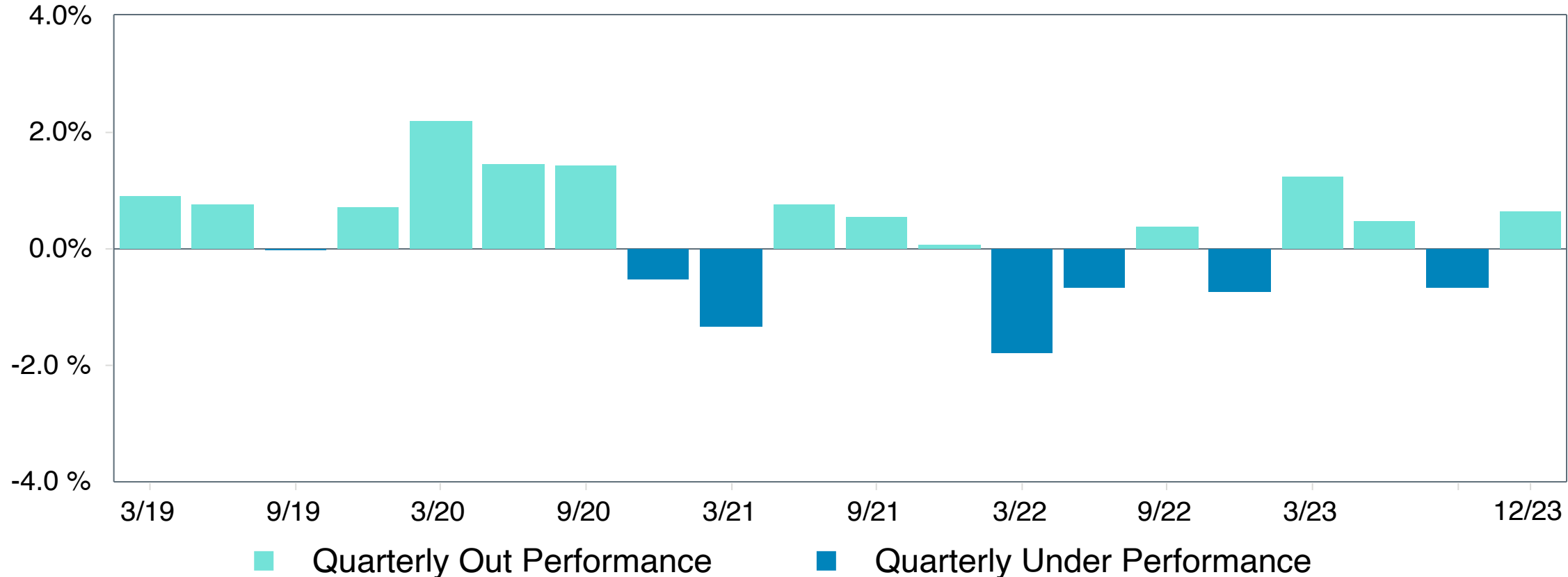
Current Allocation
 December 31, 2023 : \$33,203,458,422



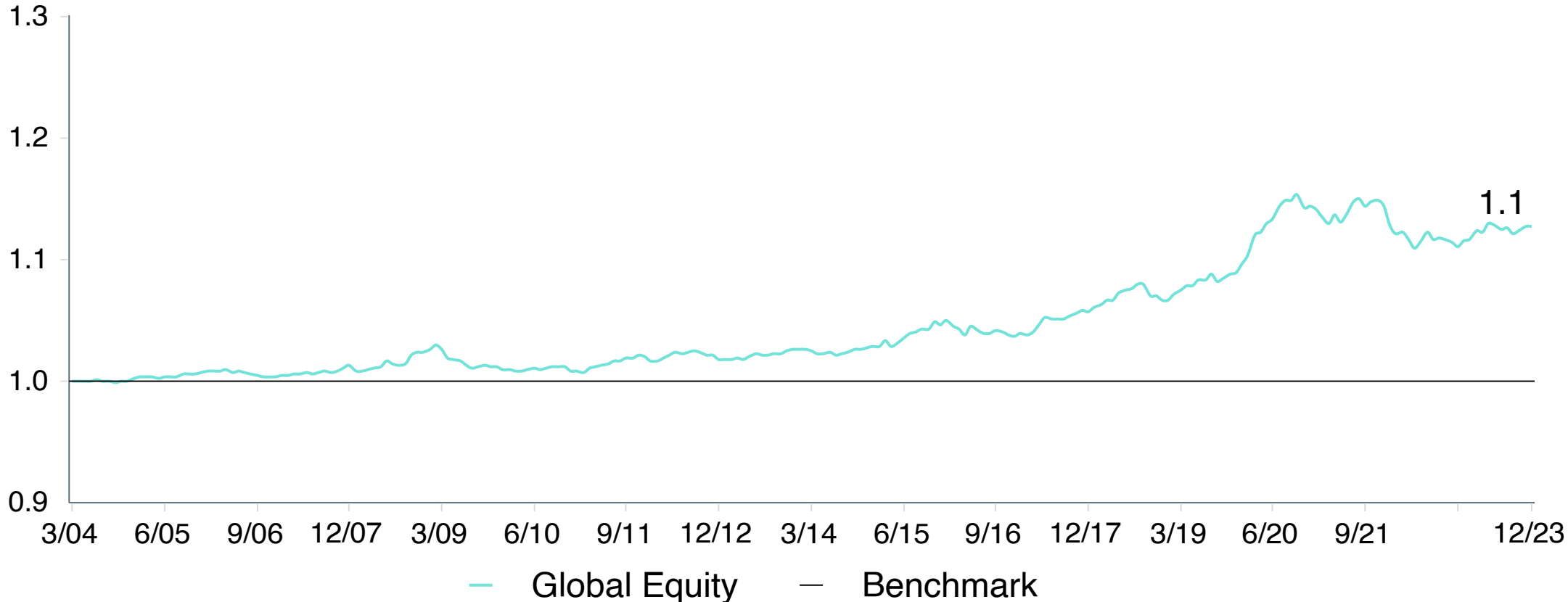
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - April 1, 2004 To December 31, 2023



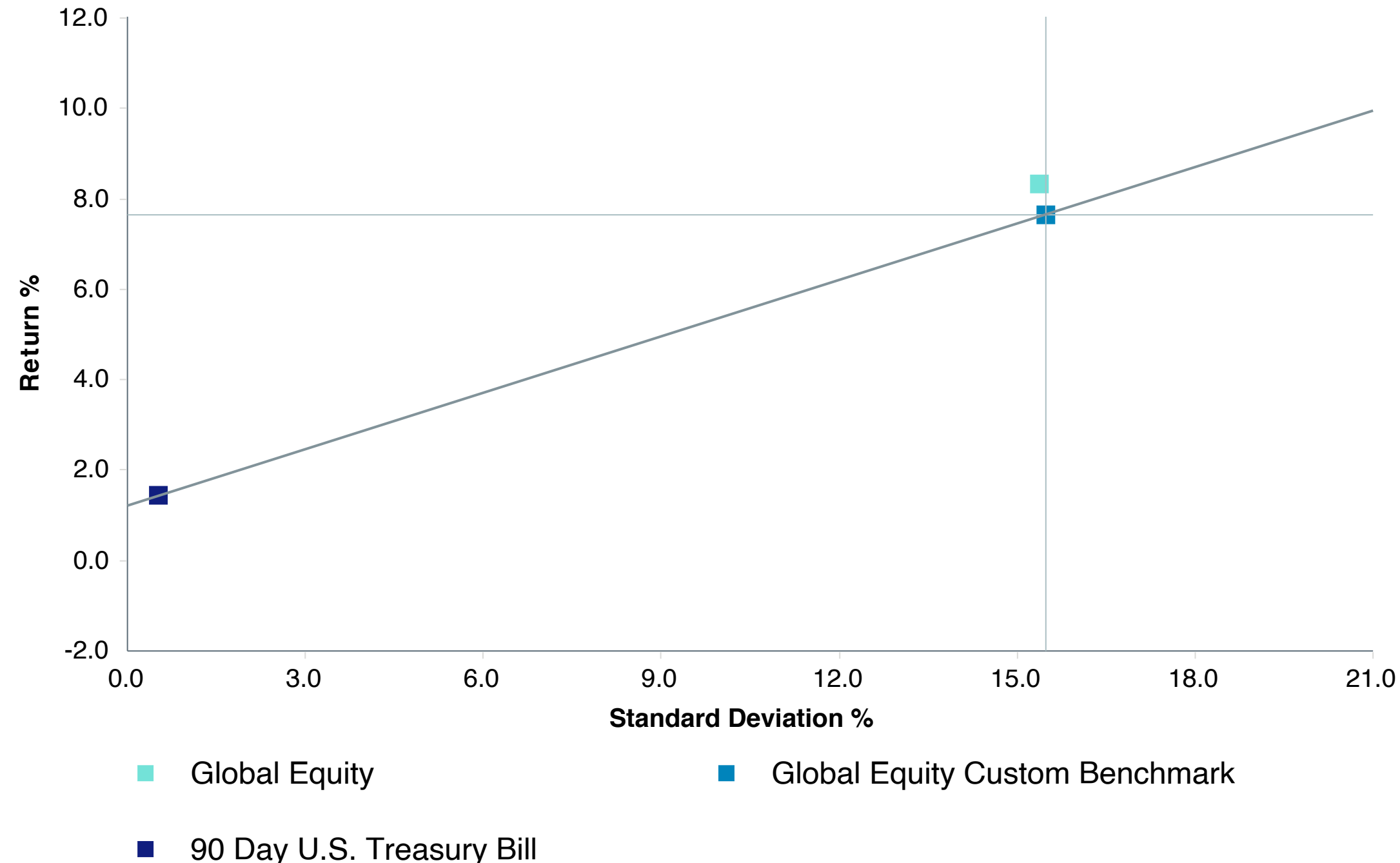
Note: April 1, 2004 represents the inception of the Global Equity Custom Benchmark as the primary performance objective for the Global Equity portfolio.



Risk Profile Global Equity

As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation
April 1, 2004 To December 31, 2023



Standard Deviation Rolling 5 Years



April 1, 2004 To December 31, 2023 Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Global Equity	0.59	1.09	0.54	1.00	0.51	0.68	0.99	8.32	15.37	1.00
Global Equity Custom Benchmark	0.00	0.00	-	1.00	0.46	0.00	1.00	7.66	15.48	1.00
90 Day U.S. Treasury Bill	-7.19	15.52	-0.46	0.00	-	1.45	0.00	1.43	0.51	-0.06

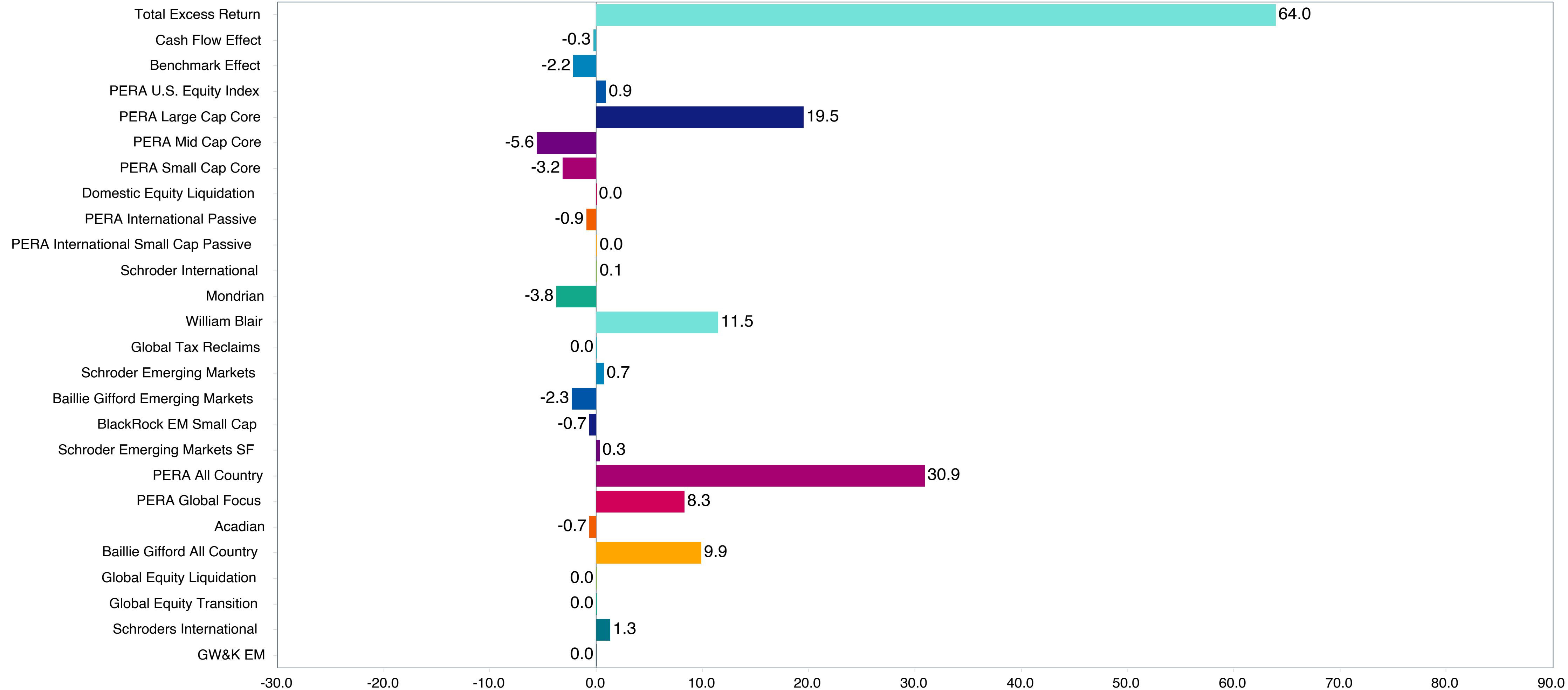
Note: April 1, 2004 represents the inception of the Global Equity Custom Benchmark as the primary performance objective for the Global Equity portfolio.



Asset Class Attribution

1 Quarter Ending December 31, 2023

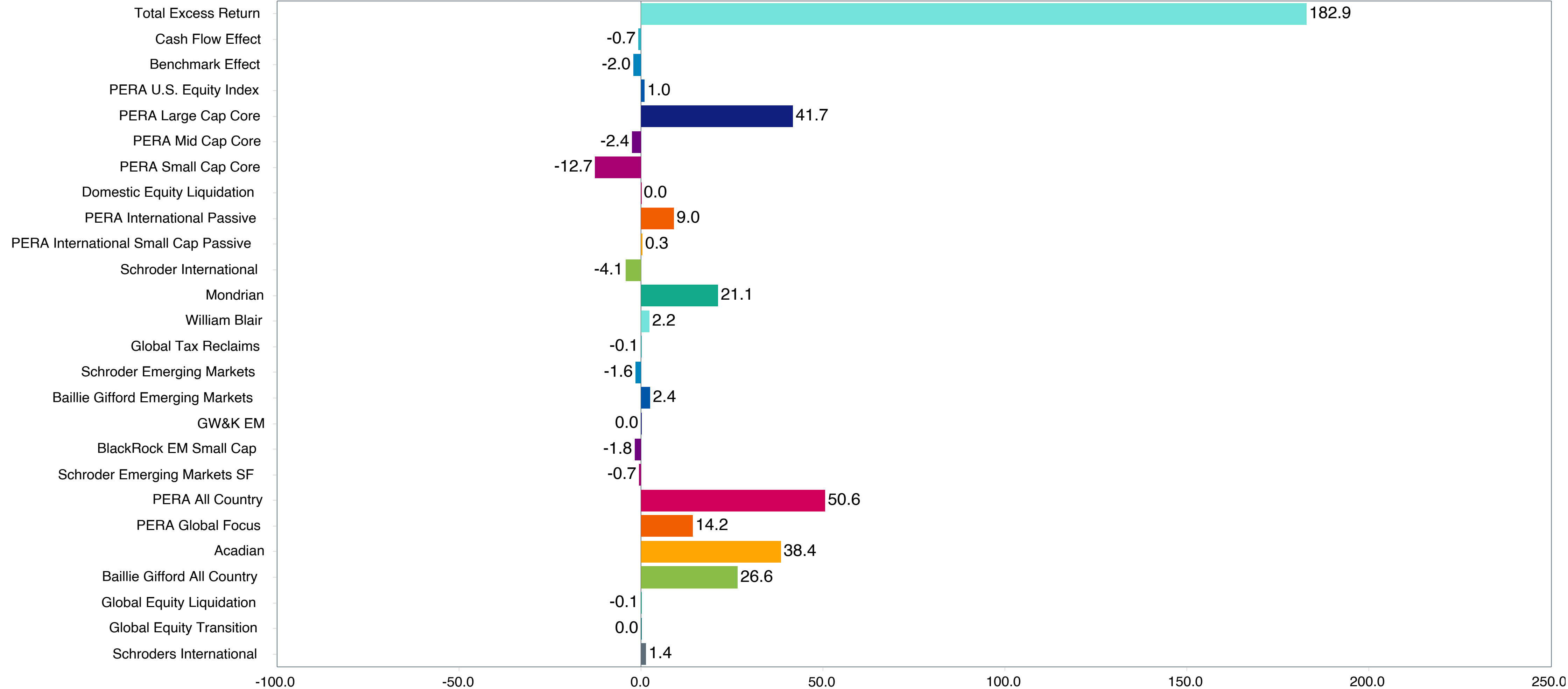
1 Quarter



Asset Class Attribution

1 Year Ending December 31, 2023

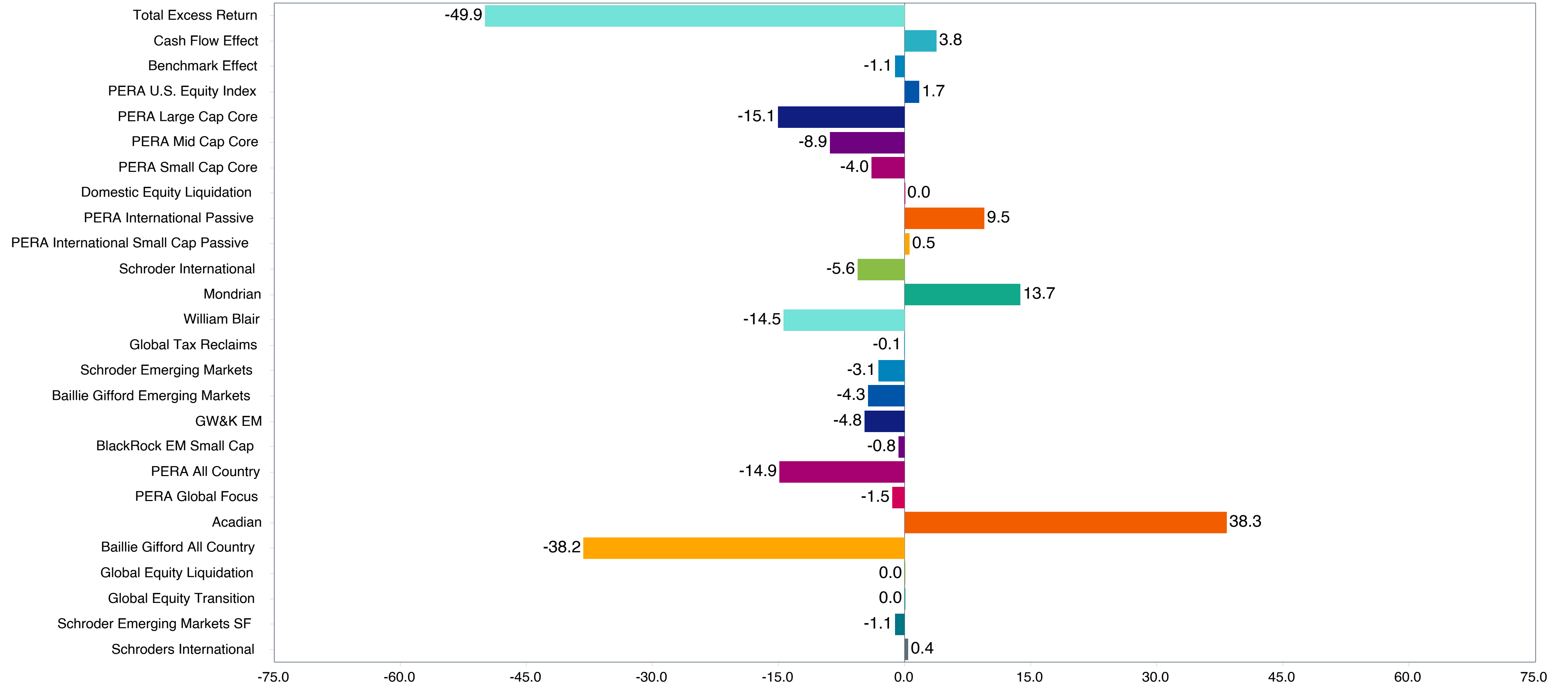
1 Year



Asset Class Attribution

3 Years Ending December 31, 2023

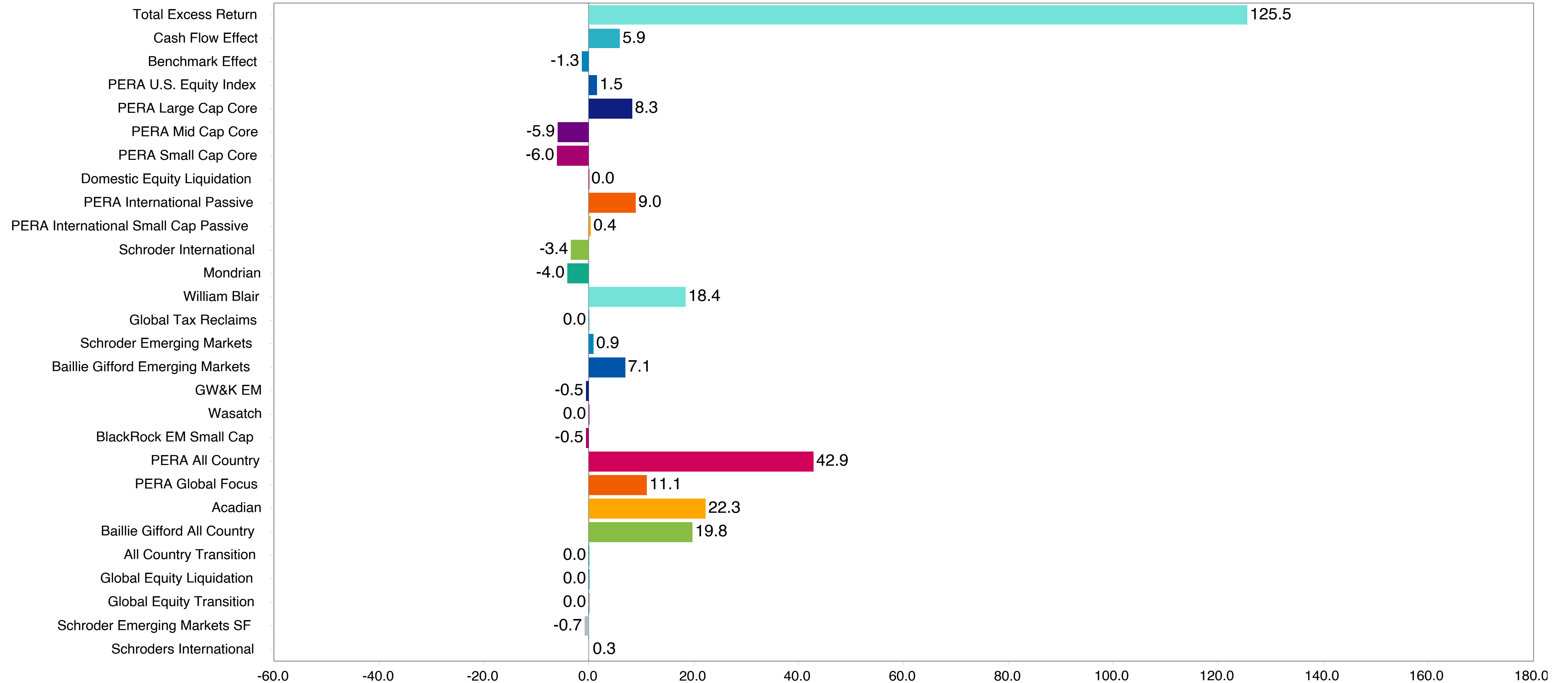
3 Years



Asset Class Attribution

5 Years Ending December 31, 2023

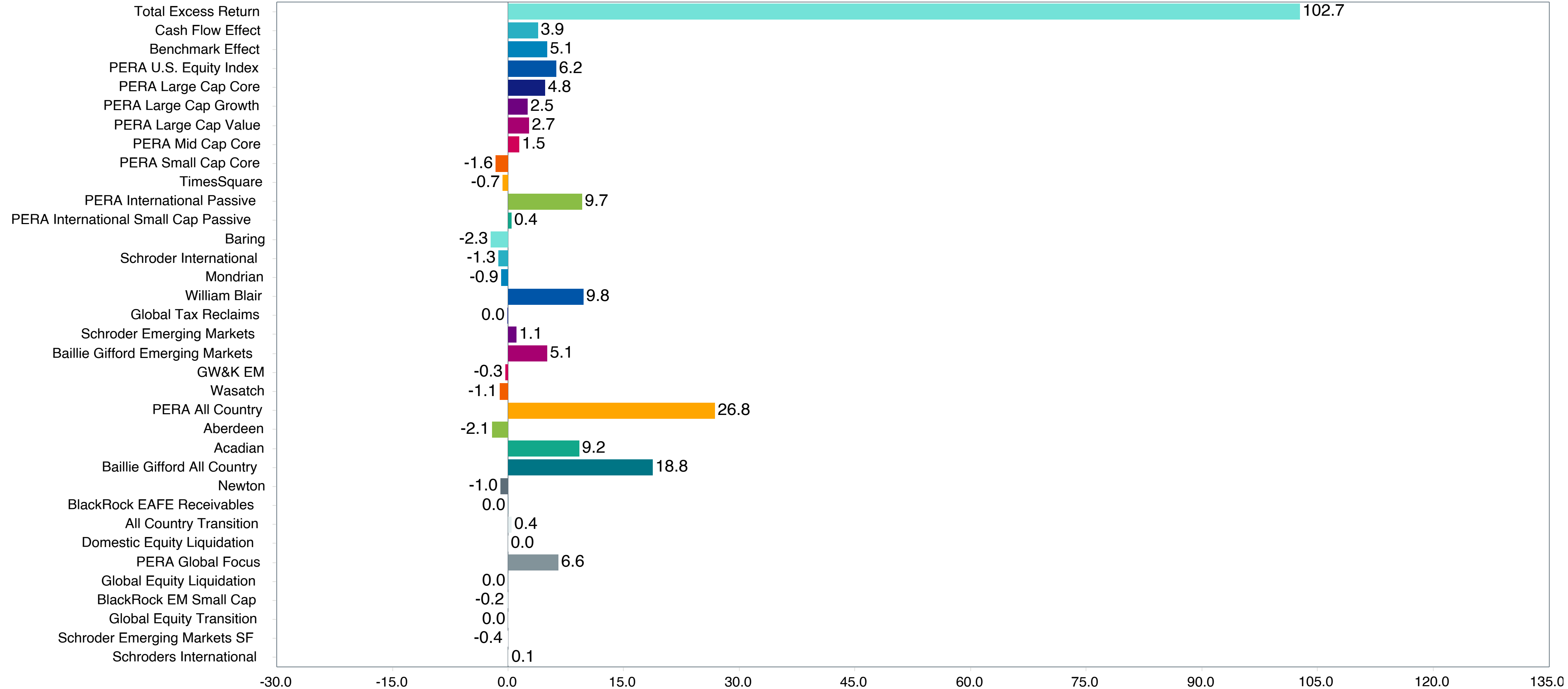
5 Years



Asset Class Attribution

10 Years Ending December 31, 2023

10 Years



Correlation Matrix

5 Years Ending December 31, 2023

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	
A	1.00																						
B	0.98	1.00																					
C	0.96	0.93	1.00																				
D	0.93	0.88	0.96	1.00																			
E	0.88	0.86	0.87	0.84	1.00																		
F	0.83	0.78	0.77	0.80	0.87	1.00																	
G	0.77	0.73	0.73	0.74	0.82	0.89	1.00																
H	0.77	0.73	0.73	0.72	0.79	0.85	0.97	1.00															
I	0.97	0.98	0.95	0.90	0.88	0.80	0.79	0.80	1.00														
J	0.96	0.92	0.93	0.93	0.89	0.84	0.80	0.77	0.92	1.00													
K	0.80	0.81	0.78	0.73	0.71	0.62	0.73	0.77	0.87	0.74	1.00												
L	0.93	0.92	0.93	0.90	0.91	0.82	0.81	0.81	0.96	0.92	0.86	1.00											
M	0.92	0.89	0.89	0.89	0.93	0.95	0.84	0.81	0.90	0.93	0.70	0.92	1.00										
N	0.92	0.89	0.91	0.90	0.95	0.92	0.83	0.80	0.90	0.94	0.71	0.93	0.98	1.00									
O	0.85	0.80	0.80	0.81	0.86	0.89	0.89	0.87	0.82	0.88	0.69	0.84	0.88	0.90	1.00								
P	0.90	0.86	0.86	0.87	0.92	0.97	0.91	0.88	0.89	0.91	0.73	0.92	0.99	0.97	0.92	1.00							
Q	0.76	0.72	0.72	0.73	0.82	0.90	0.99	0.96	0.78	0.79	0.72	0.80	0.84	0.84	0.90	0.92	1.00						
R	0.99	0.97	0.94	0.92	0.92	0.90	0.84	0.83	0.97	0.96	0.80	0.95	0.97	0.96	0.89	0.96	0.84	1.00					
S	0.91	0.87	0.87	0.87	0.93	0.95	0.83	0.80	0.89	0.91	0.69	0.92	1.00	0.97	0.87	0.98	0.83	0.96	1.00				
T	0.91	0.87	0.87	0.88	0.93	0.97	0.91	0.88	0.90	0.92	0.73	0.92	0.99	0.97	0.92	1.00	0.91	0.96	0.98	1.00			
U	0.99	0.96	0.94	0.93	0.92	0.90	0.84	0.83	0.96	0.97	0.79	0.95	0.97	0.96	0.90	0.96	0.84	1.00	0.96	0.97	1.00		
V	1.00	0.98	0.96	0.93	0.88	0.83	0.77	0.77	0.97	0.96	0.80	0.93	0.92	0.92	0.85	0.90	0.76	0.99	0.91	0.91	0.99	1.00	

- A = PERA U.S. Equity Index
- B = PERA Large Cap Core
- C = PERA Mid Cap Core
- D = PERA Small Cap Core
- E = Schroder International
- F = Mondrian
- G = Schroder Emerging Markets
- H = Baillie Gifford Emerging Markets
- I = PERA All Country
- J = Acadian
- K = Baillie Gifford All Country
- L = William Blair
- M = PERA International Passive
- N = PERA International Small Cap Passive
- O = BlackRock EM Small Cap

- P = MSCI All Country World ex U.S. Index
- Q = MSCI Emerging Markets Index
- R = MSCI All Country World Index
- S = MSCI EAFE Index
- T = MSCI All Country World ex USA IMI
- U = MSCI All Country World IMI
- V = MSCI USA IMI

(This page is left blank intentionally)

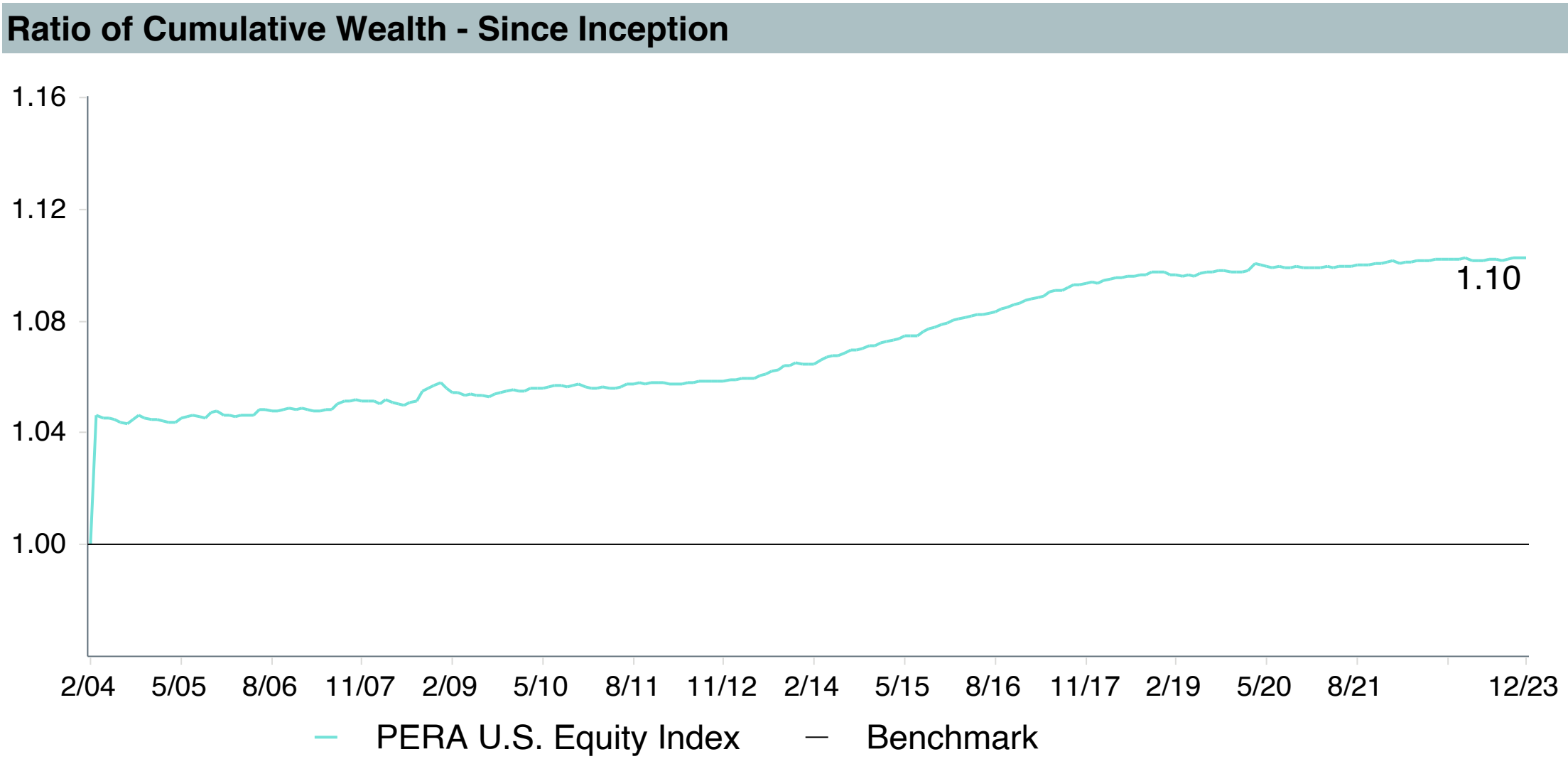
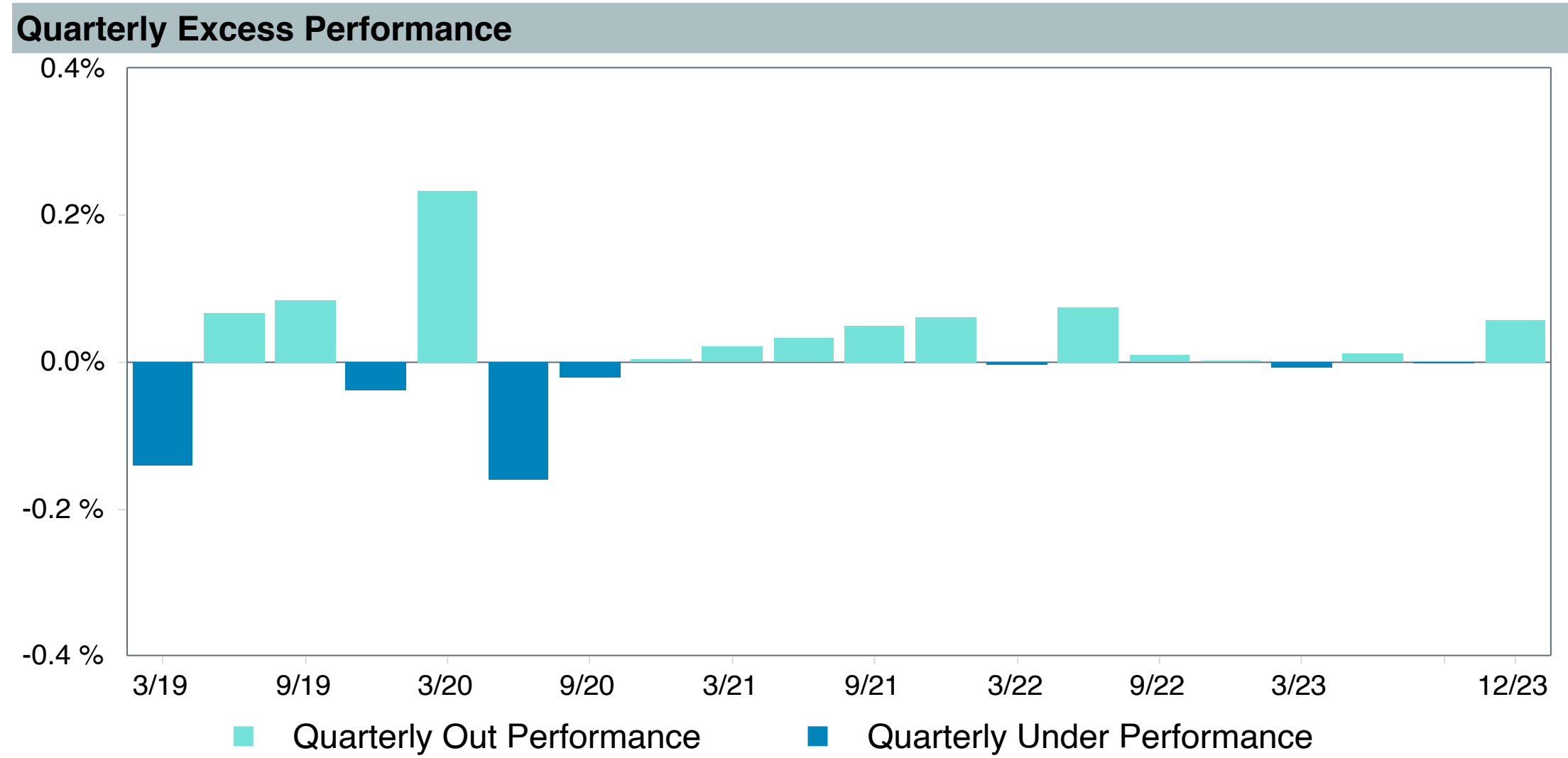
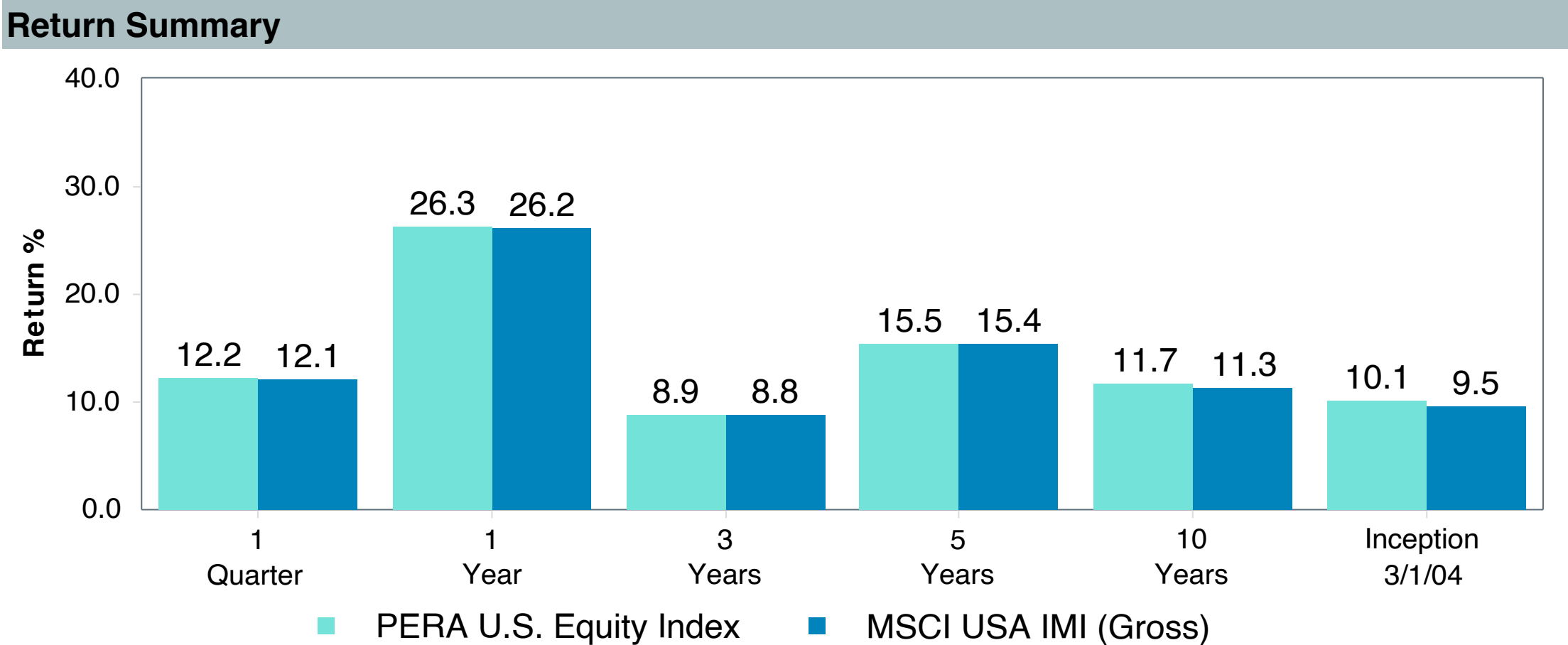
Internal U.S Equity



Manager Performance Summary PERA U.S. Equity Index

As of December 31, 2023

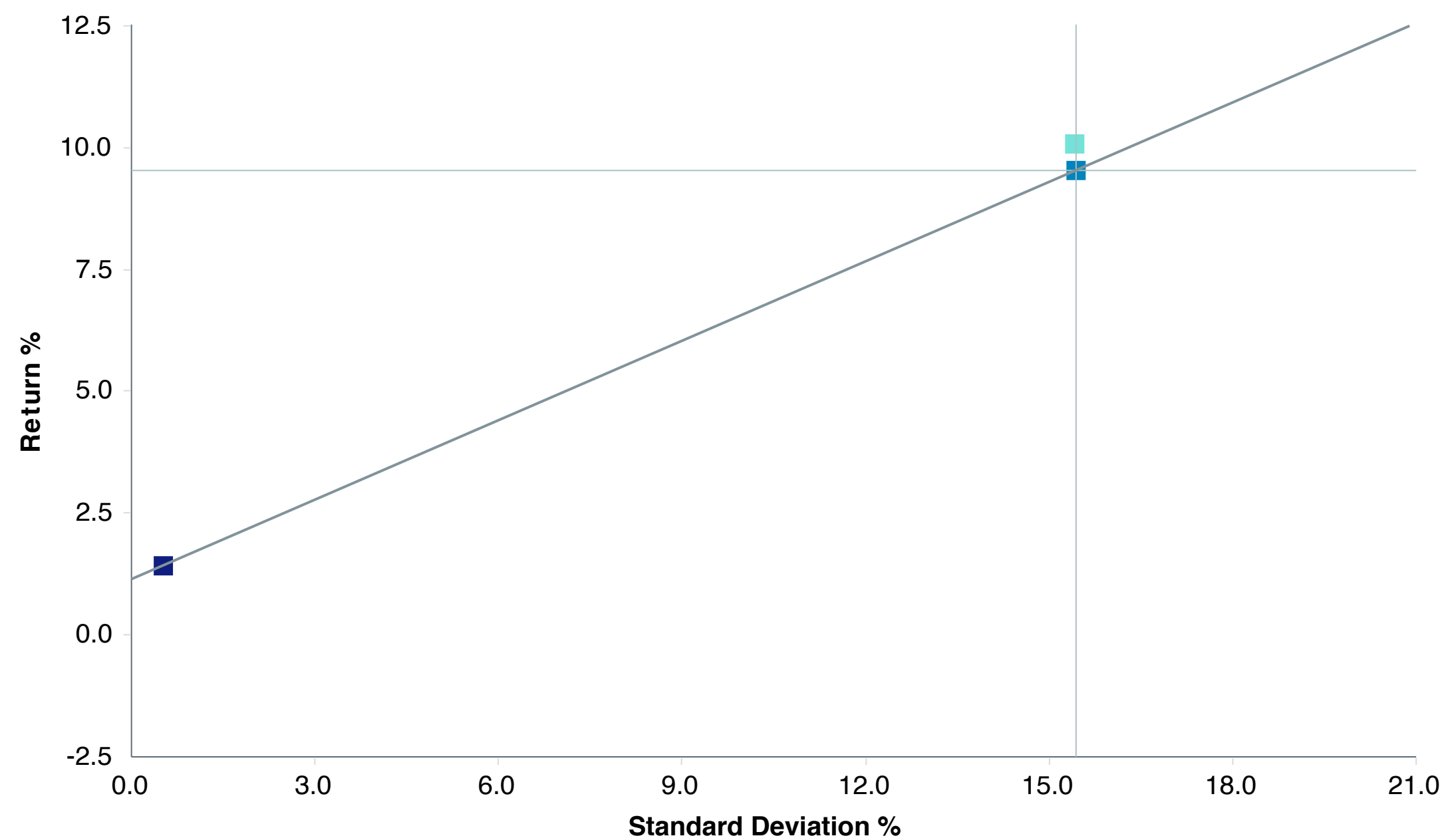
Account Information	
Account Name	PERA U.S. Equity Index
Inception Date	04/01/2004
Account Structure	Separate Account
Asset Class	US Equity
Benchmark	MSCI USA IMI (Gross)
Peer Group	



Risk Profile PERA U.S. Equity Index

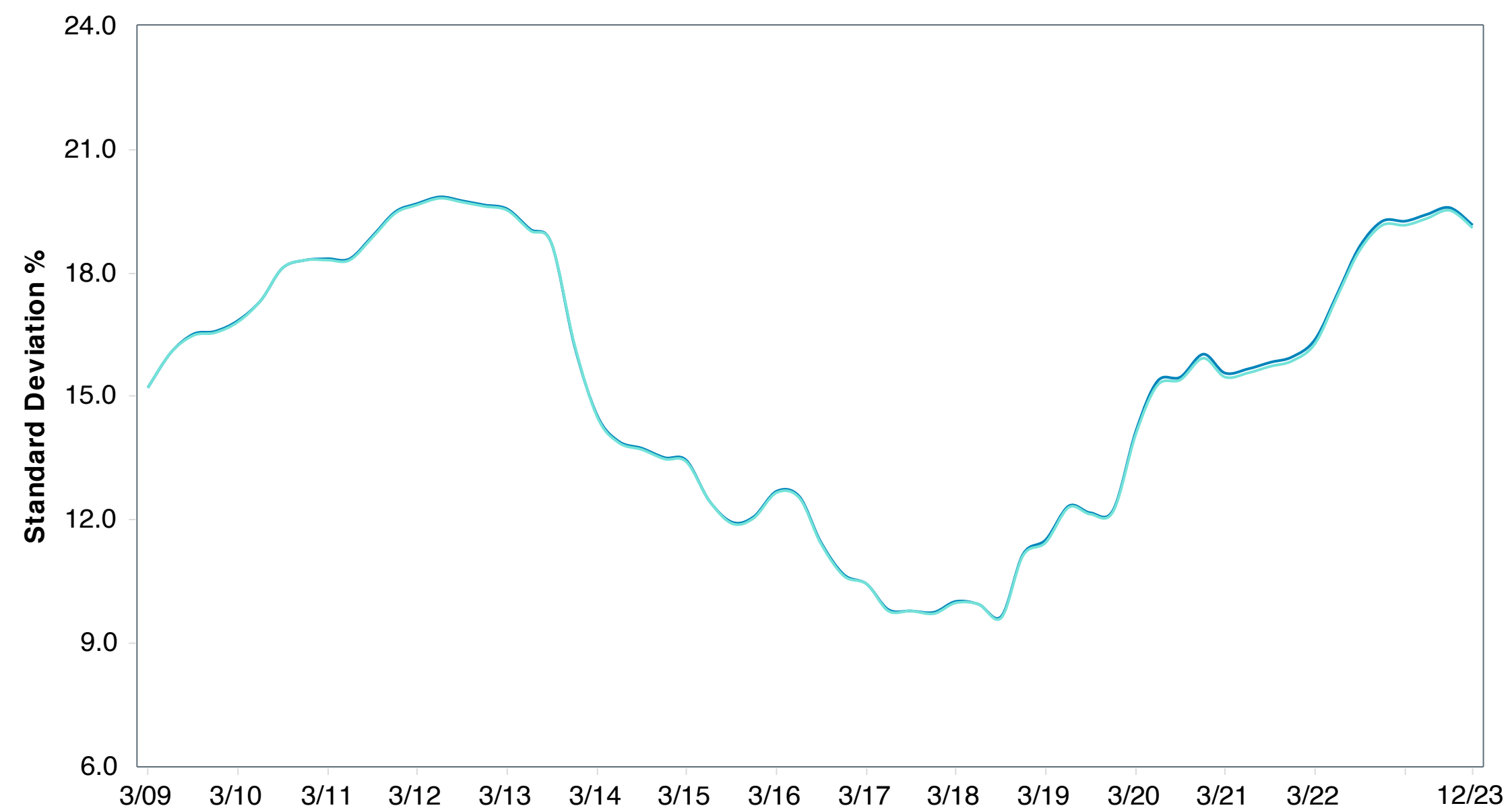
As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation Since Inception



■ PERA U.S. Equity Index ■ MSCI USA IMI (Gross) ■ 90 Day U.S. Treasury Bill

Standard Deviation Rolling 5 Years



— PERA U.S. Equity Index — MSCI USA IMI (Gross)

Since Inception Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation	Inception Date
PERA U.S. Equity Index	0.49	1.05	0.47	1.00	0.61	0.54	1.00	10.08	15.41	1.00	03/01/2004
MSCI USA IMI (Gross)	0.00	0.00	-	1.00	0.58	0.00	1.00	9.54	15.44	1.00	03/01/2004
90 Day U.S. Treasury Bill	-8.93	15.49	-0.58	0.01	-	1.46	0.00	1.43	0.51	-0.08	03/01/2004



Portfolio Analysis (Holdings-based)

As of December 31, 2023

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	619,227	620,456
Median Mkt. Cap (\$M)	5,009	3,225
Price/Earnings ratio	23.14	23.05
Price/Book ratio	4.22	4.21
5 Yr. EPS Growth Rate (%)	16.76	16.80
Current Yield (%)	1.48	1.47
Beta (5 Years, Monthly)	1.00	1.00
Number of Stocks	1,867	2,400

Top Ten Equity Holdings			
	Portfolio Weight %	Benchmark Weight %	Quarterly Return %
Apple Inc	6.45	6.47	12.60
Microsoft Corp	5.69	5.70	19.34
Amazon.com Inc	3.03	3.03	19.52
NVIDIA Corporation	2.62	2.63	13.86
Alphabet Inc	1.78	1.78	6.75
Meta Platforms Inc	1.69	1.69	17.90
Alphabet Inc	1.58	1.58	6.89
Tesla Inc	1.52	1.52	-0.70
Broadcom Inc	1.07	1.06	35.01
JPMorgan Chase & Co	1.06	1.06	18.16

% of Portfolio	26.49	26.52
-----------------------	--------------	--------------

Top Ten Contributors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Microsoft Corp	5.32	5.33	-0.01	19.34
Apple Inc	6.42	6.43	-0.01	12.60
Amazon.com Inc	2.80	2.80	0.00	19.52
NVIDIA Corporation	2.57	2.57	0.00	13.86
Broadcom Inc	0.82	0.82	0.00	35.01
Meta Platforms Inc	1.59	1.59	0.00	17.90
JPMorgan Chase & Co	1.01	1.01	0.00	18.16
Advanced Micro Devices Inc	0.40	0.40	0.00	43.37
Intel Corp	0.35	0.35	0.00	41.82
SALESFORCE INC	0.47	0.47	0.00	29.77

% of Portfolio	21.75	21.77	-0.02
-----------------------	--------------	--------------	--------------

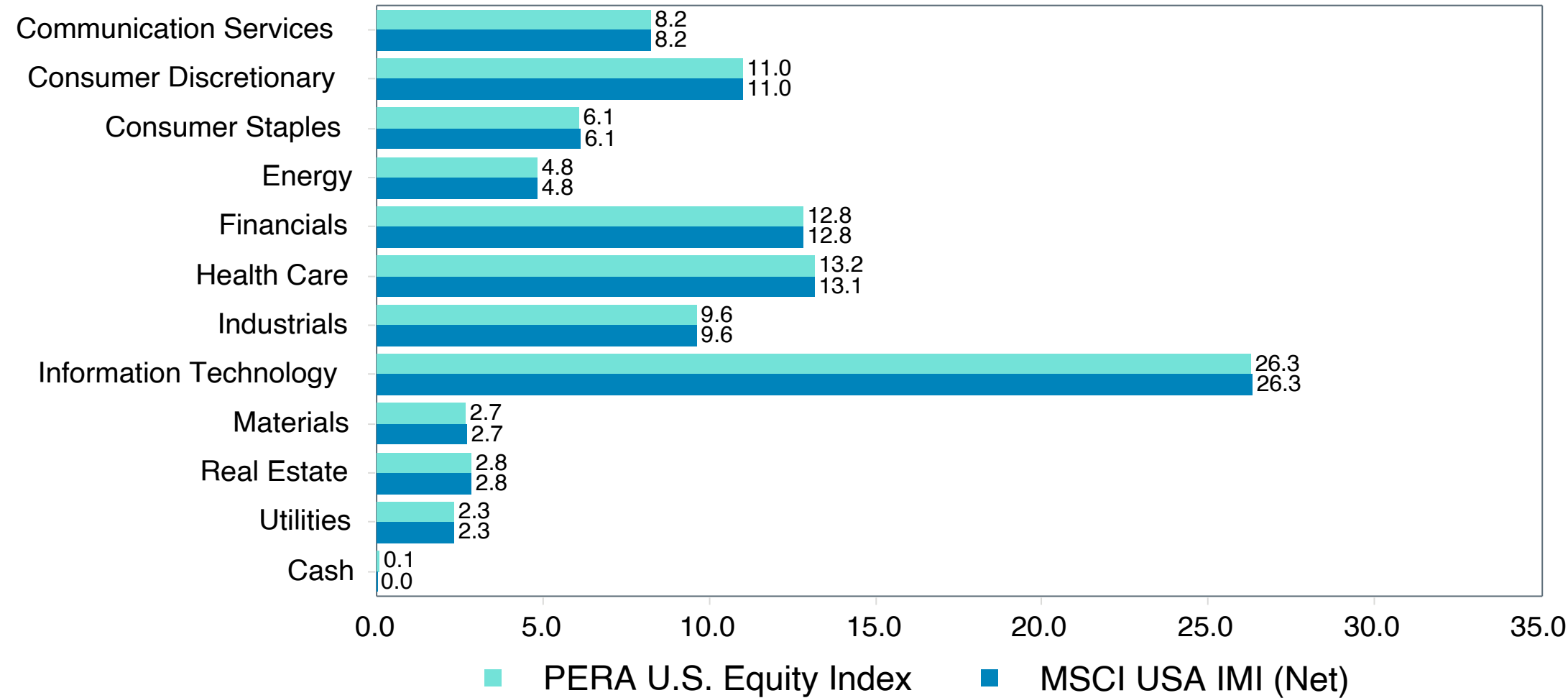
Top Ten Detractors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Exxon Mobil Corp	1.14	1.14	0.00	-14.19
Chevron Corp	0.73	0.73	0.00	-10.60
Pfizer Inc	0.45	0.45	0.00	-12.01
Bristol-Myers Squibb Co	0.29	0.29	0.00	-10.70
Cisco Systems Inc	0.52	0.52	0.00	-5.34
Schlumberger Ltd	0.20	0.20	0.00	-10.30
Aon plc	0.16	0.16	0.00	-10.06
Tesla Inc	1.71	1.71	0.00	-0.70
Charter Communications Inc	0.10	0.10	0.00	-11.63
ON Semiconductor Corp	0.10	0.10	0.00	-10.13

% of Portfolio	5.40	5.40	0.00
-----------------------	-------------	-------------	-------------

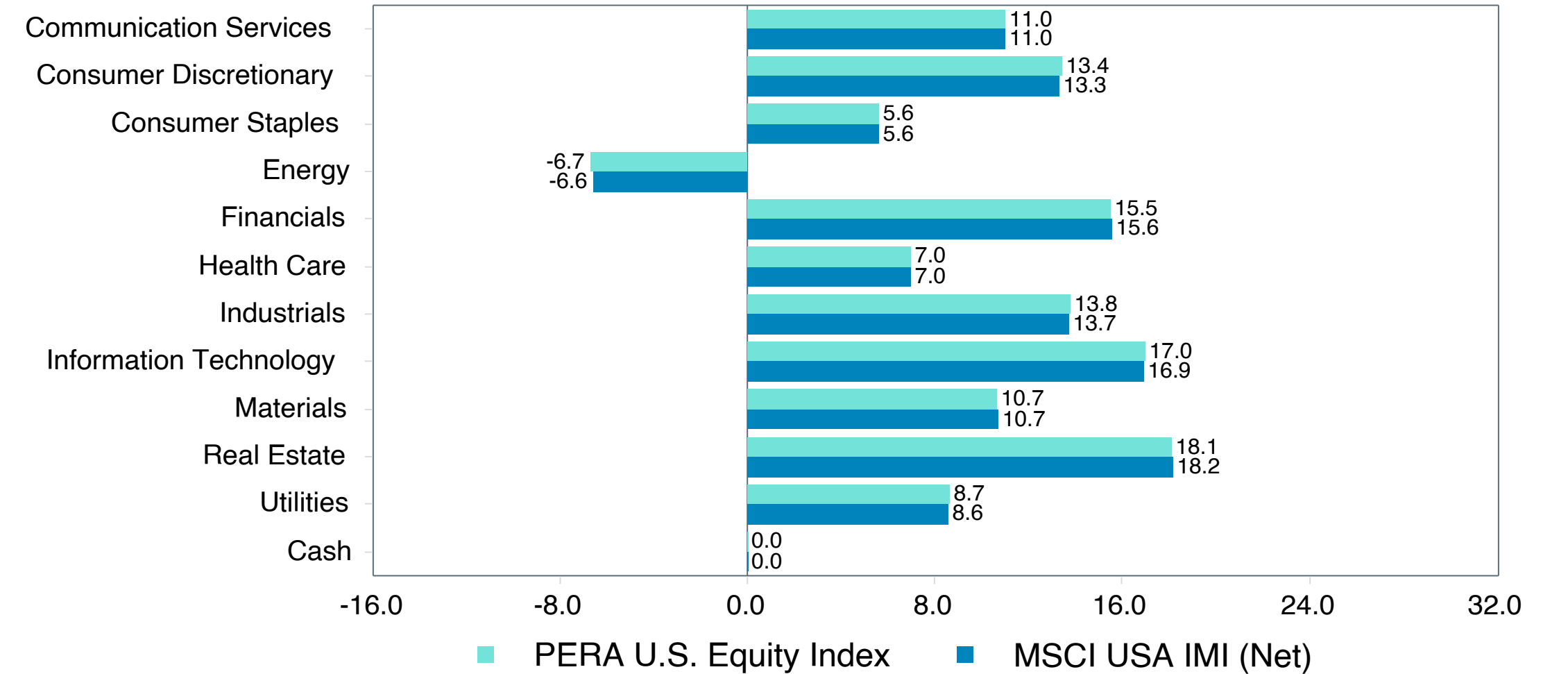
PERA U.S. Equity Index Sector Attribution

As of December 31, 2023

Sector Weights %



Performance %



Attribution

	Stock	Sector	Interaction	Total
Communication Services	0.00	0.00	0.00	0.00
Consumer Discretionary	0.02	0.00	0.00	0.02
Consumer Staples	0.00	0.00	0.00	0.00
Energy	-0.01	0.00	0.00	0.00
Financials	0.00	0.00	0.00	0.00
Health Care	0.00	0.00	0.00	0.00
Industrials	0.00	0.00	0.00	0.00
Information Technology	0.01	0.00	0.00	0.01
Materials	0.00	0.00	0.00	0.00
Real Estate	0.00	0.00	0.00	0.00
Utilities	0.00	0.00	0.00	0.00
Cash	0.00	-0.01	0.00	-0.01
Total	0.02	-0.01	0.00	0.01

Note: weights depicted here are as of the beginning of the quarter.



PERA U.S. Equity Index

As of December 31, 2023

Rolling 3 Year Period Effective Style Map
Since April 1, 2004



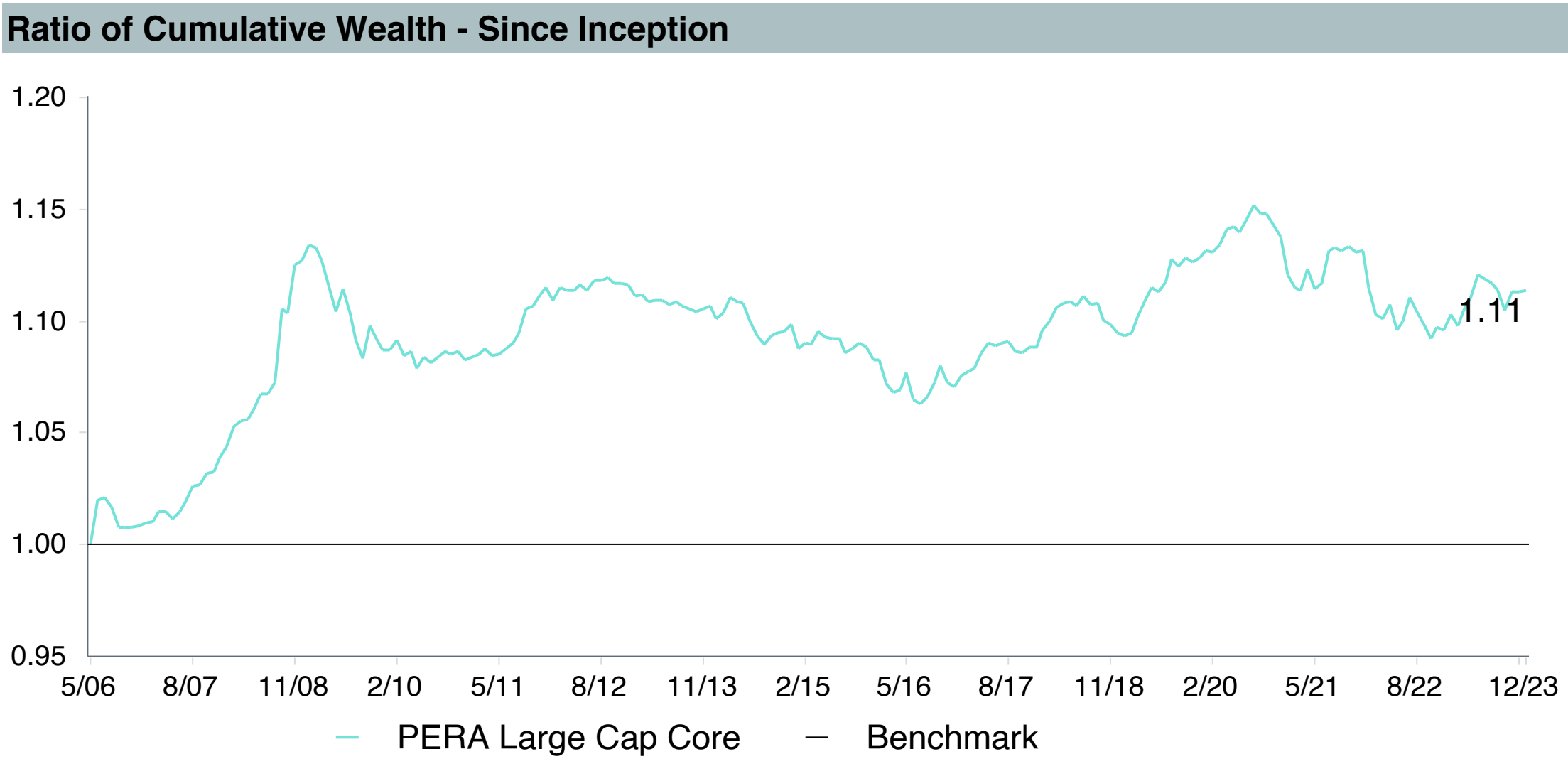
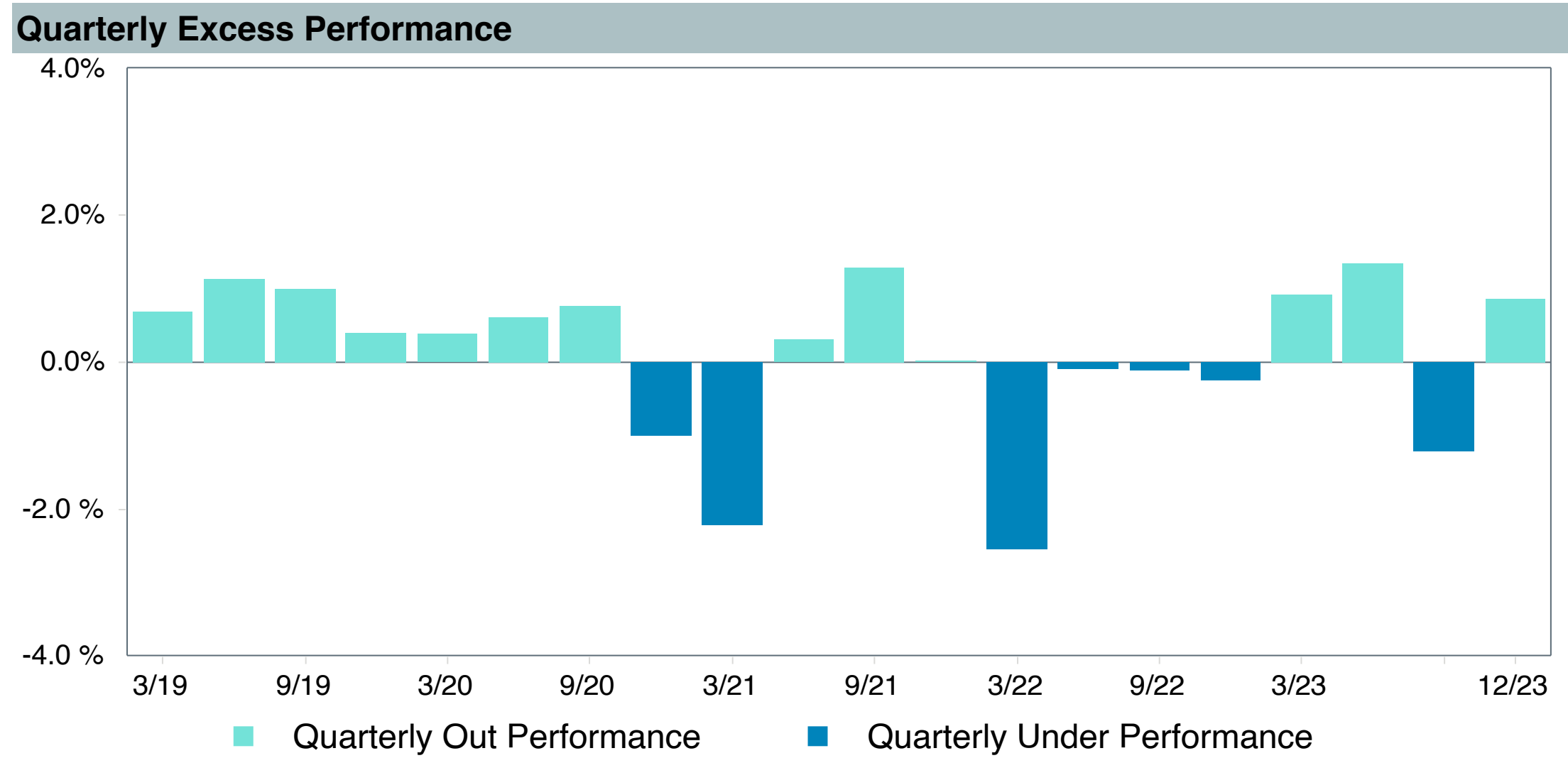
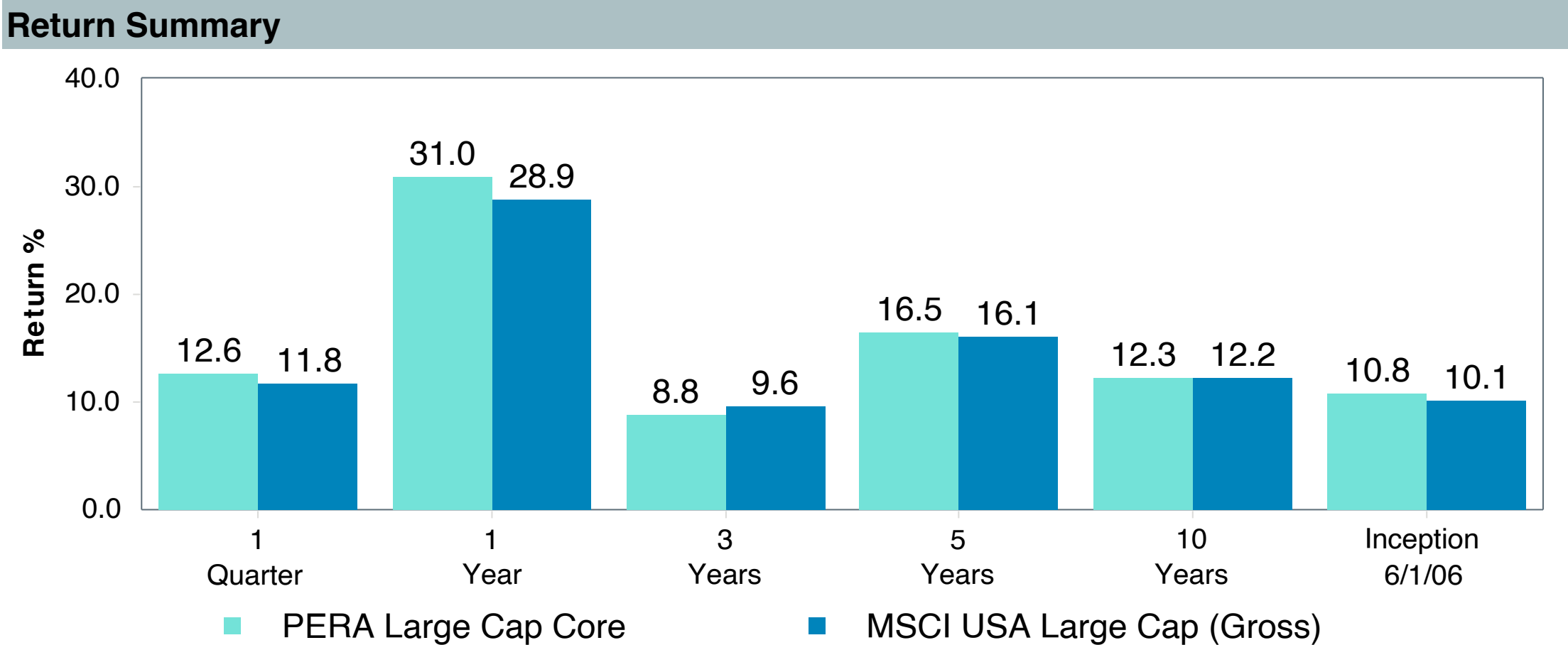
Philosophy and Process

The portfolio attempts to match the risk and return characteristics of the MSCI USA IMI. Instead of a direct replication approach, PERA has chosen to utilize optimization tools which allow PERA to hold a subset of the benchmark universe with the goal of minimizing tracking error and trading costs.

Manager Performance Summary PERA Large Cap Core

As of December 31, 2023

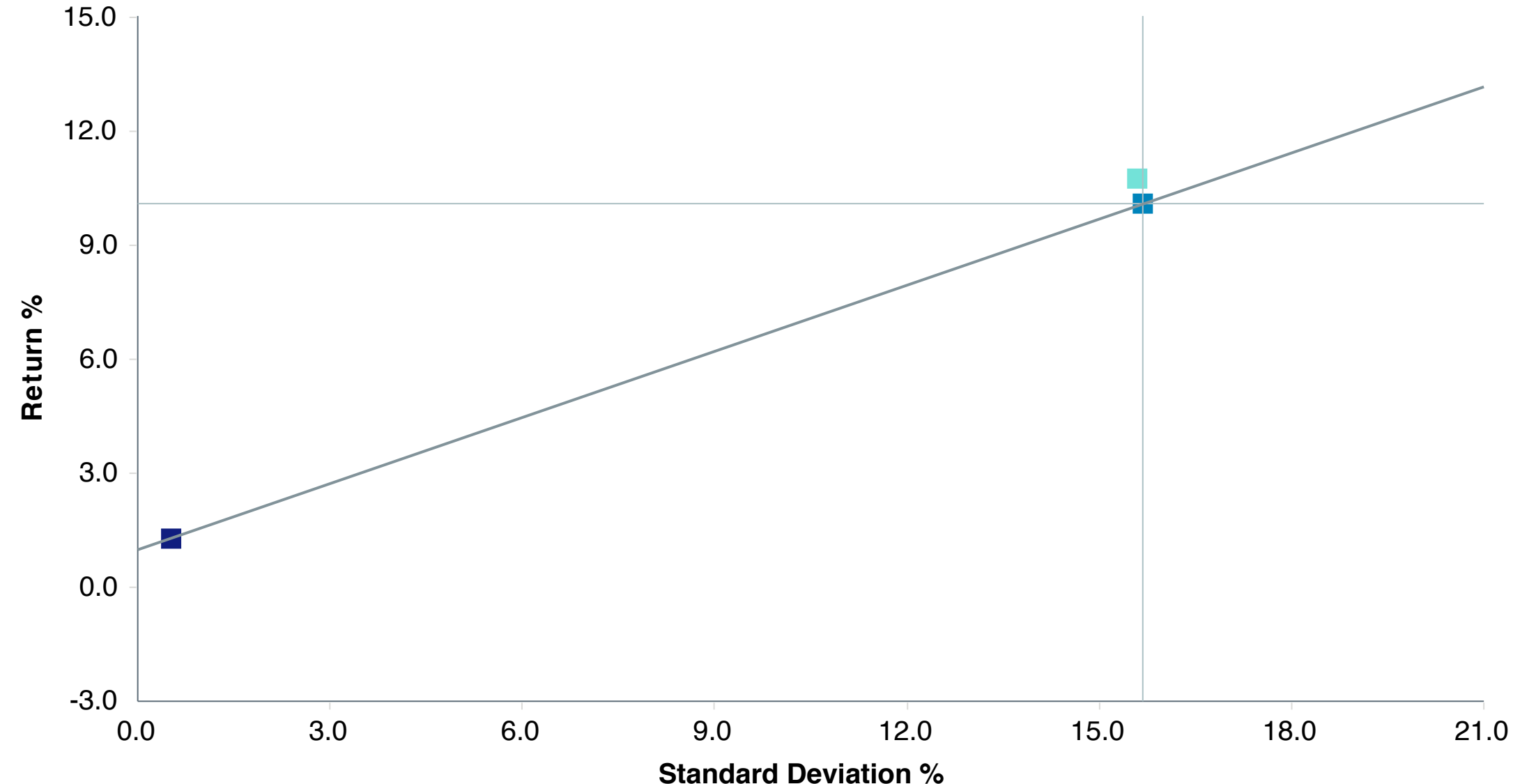
Account Information	
Account Name	PERA Large Cap Core
Inception Date	07/01/2006
Account Structure	Separate Account
Asset Class	US Equity
Benchmark	MSCI USA Large Cap (Gross)
Peer Group	



Risk Profile PERA Large Cap Core

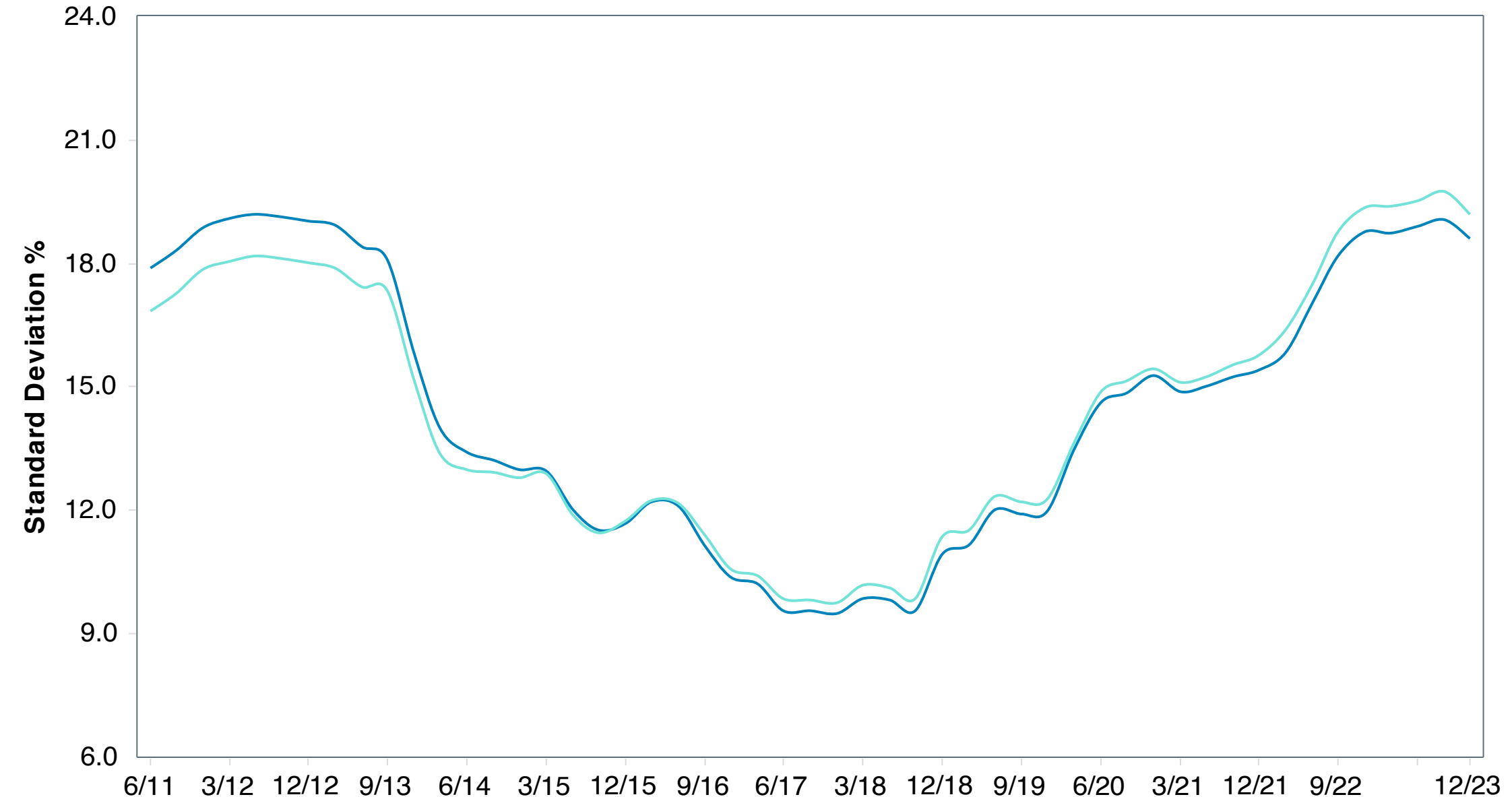
As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation Since Inception



- PERA Large Cap Core
- MSCI USA Large Cap (Gross)
- 90 Day U.S. Treasury Bill

Standard Deviation Rolling 5 Years



- PERA Large Cap Core
- MSCI USA Large Cap (Gross)

Since Inception Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation	Inception Date
PERA Large Cap Core	0.60	1.93	0.31	0.98	0.65	0.75	0.99	10.77	15.60	0.99	06/01/2006
MSCI USA Large Cap (Gross)	0.00	0.00	-	1.00	0.61	0.00	1.00	10.10	15.68	1.00	06/01/2006
90 Day U.S. Treasury Bill	-9.61	15.73	-0.61	0.01	-	1.32	0.00	1.30	0.52	-0.08	06/01/2006



Portfolio Analysis (Holdings-based)

As of December 31, 2023

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	871,531	772,755
Median Mkt. Cap (\$M)	104,849	58,267
Price/Earnings ratio	28.13	24.76
Price/Book ratio	6.23	4.82
5 Yr. EPS Growth Rate (%)	18.87	17.88
Current Yield (%)	1.06	1.45
Beta (5 Years, Monthly)	1.02	1.00
Number of Stocks	62	299

Top Ten Equity Holdings			
	Portfolio Weight %	Benchmark Weight %	Quarterly Return %
Apple Inc	9.03	8.09	12.60
Microsoft Corp	8.39	7.13	19.34
Alphabet Inc	5.70	2.23	6.75
Amazon.com Inc	5.29	3.79	19.52
NVIDIA Corporation	3.95	3.29	13.86
Meta Platforms Inc	2.75	2.11	17.90
UnitedHealth Group Incorporated	2.64	1.31	4.78
Visa Inc	2.36	1.12	13.43
JPMorgan Chase & Co	2.16	1.33	18.16
Walmart Inc	1.94	0.63	-1.06

% of Portfolio	44.21	31.03
-----------------------	--------------	--------------

Top Ten Contributors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Microsoft Corp	7.92	6.65	1.27	19.34
Apple Inc	9.02	8.03	0.99	12.60
Amazon.com Inc	4.63	3.50	1.13	19.52
NVIDIA Corporation	4.20	3.20	1.00	13.86
Meta Platforms Inc	2.62	1.98	0.64	17.90
Alphabet Inc	6.00	2.32	3.68	6.75
SALESFORCE INC	1.33	0.59	0.74	29.77
JPMorgan Chase & Co	2.07	1.26	0.81	18.16
Blackrock Inc	1.31	0.29	1.02	26.42
Visa Inc	2.34	1.11	1.23	13.43

Top Ten Detractors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Chevron Corp	1.62	0.91	0.71	-10.60
Walmart Inc	2.22	0.71	1.51	-1.06
Diageo PLC	0.95	0.00	0.95	-2.36
Pioneer Natural Resources Co	1.32	0.16	1.16	-0.67
Oracle Corp	1.83	0.51	1.32	-0.10
VERISK ANALYTICS INC	0.93	0.10	0.83	1.25
Estee Lauder Companies Inc.	0.78	0.10	0.68	1.71
Johnson & Johnson	1.68	1.12	0.56	1.43
American Water Works Company Inc	0.42	0.07	0.35	7.21
General Motors Co	0.64	0.14	0.50	9.26

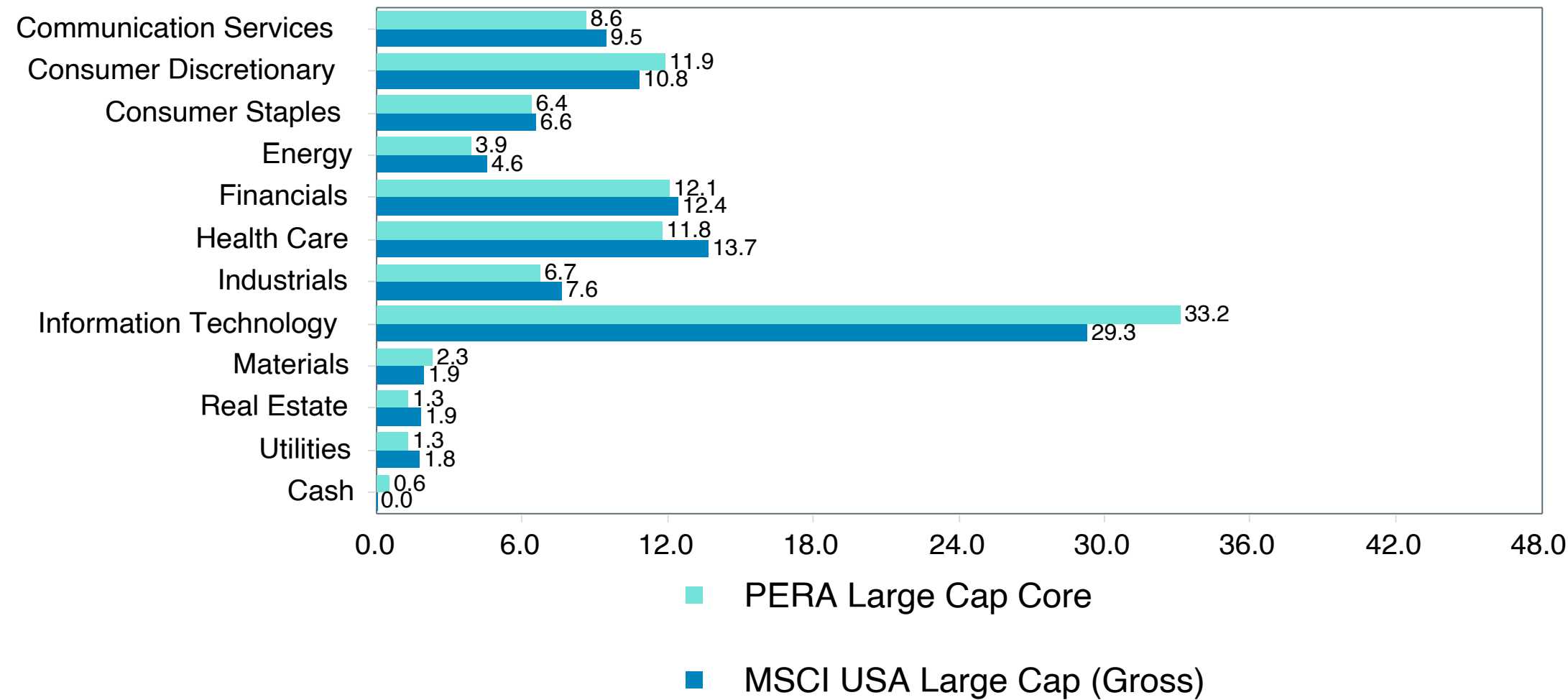
% of Portfolio	12.39	3.82	8.57
-----------------------	--------------	-------------	-------------

% of Portfolio	41.44	28.93	12.51
-----------------------	--------------	--------------	--------------

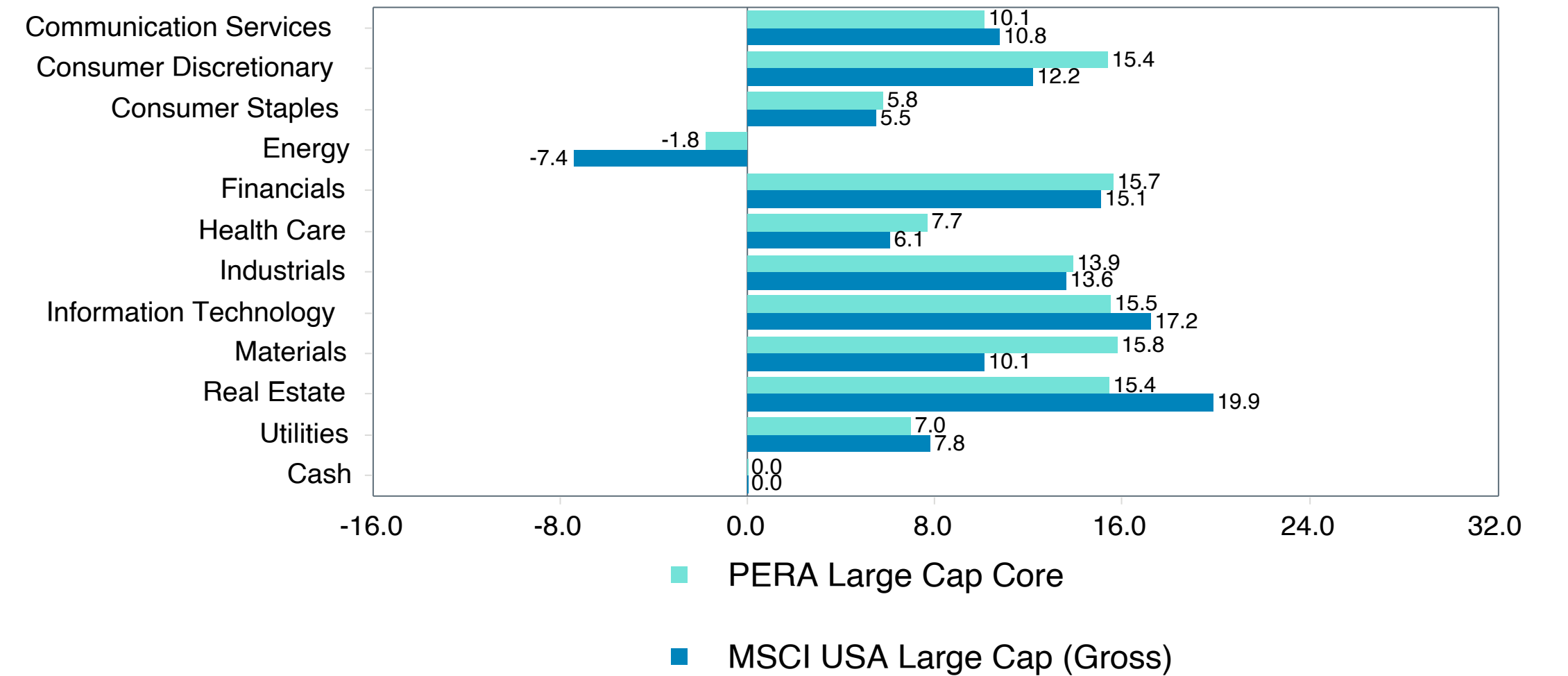
PERA Large Cap Core Sector Attribution

As of December 31, 2023

Sector Weights %



Performance %



Attribution

	Stock	Sector	Interaction	Total
Communication Services	-0.06	0.01	0.01	-0.05
Consumer Discretionary	0.35	0.00	0.04	0.39
Consumer Staples	0.02	0.01	0.00	0.03
Energy	0.26	0.14	-0.04	0.35
Financials	0.07	-0.01	0.00	0.05
Health Care	0.21	0.11	-0.03	0.29
Industrials	0.02	-0.02	0.00	0.00
Information Technology	-0.51	0.21	-0.07	-0.37
Materials	0.11	-0.01	0.02	0.12
Real Estate	-0.08	-0.04	0.02	-0.10
Utilities	-0.02	0.02	0.00	0.01
Cash	0.00	-0.07	0.00	-0.07
Total	0.37	0.35	-0.05	0.67

Note: weights depicted here are as of the beginning of the quarter.

PERA Large Cap Core

As of December 31, 2023

Rolling 3 Year Period Effective Style Map
Since July 1, 2006



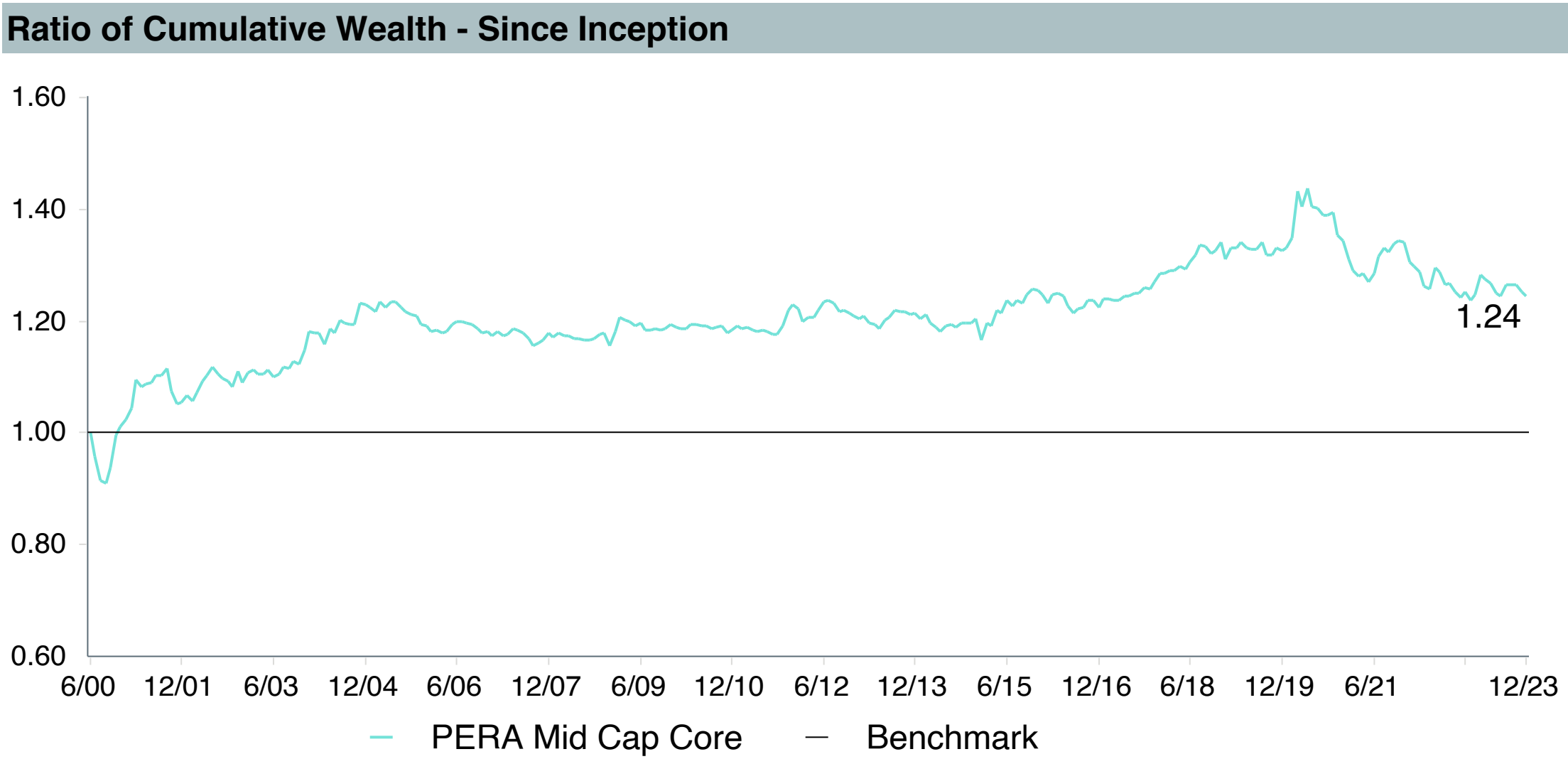
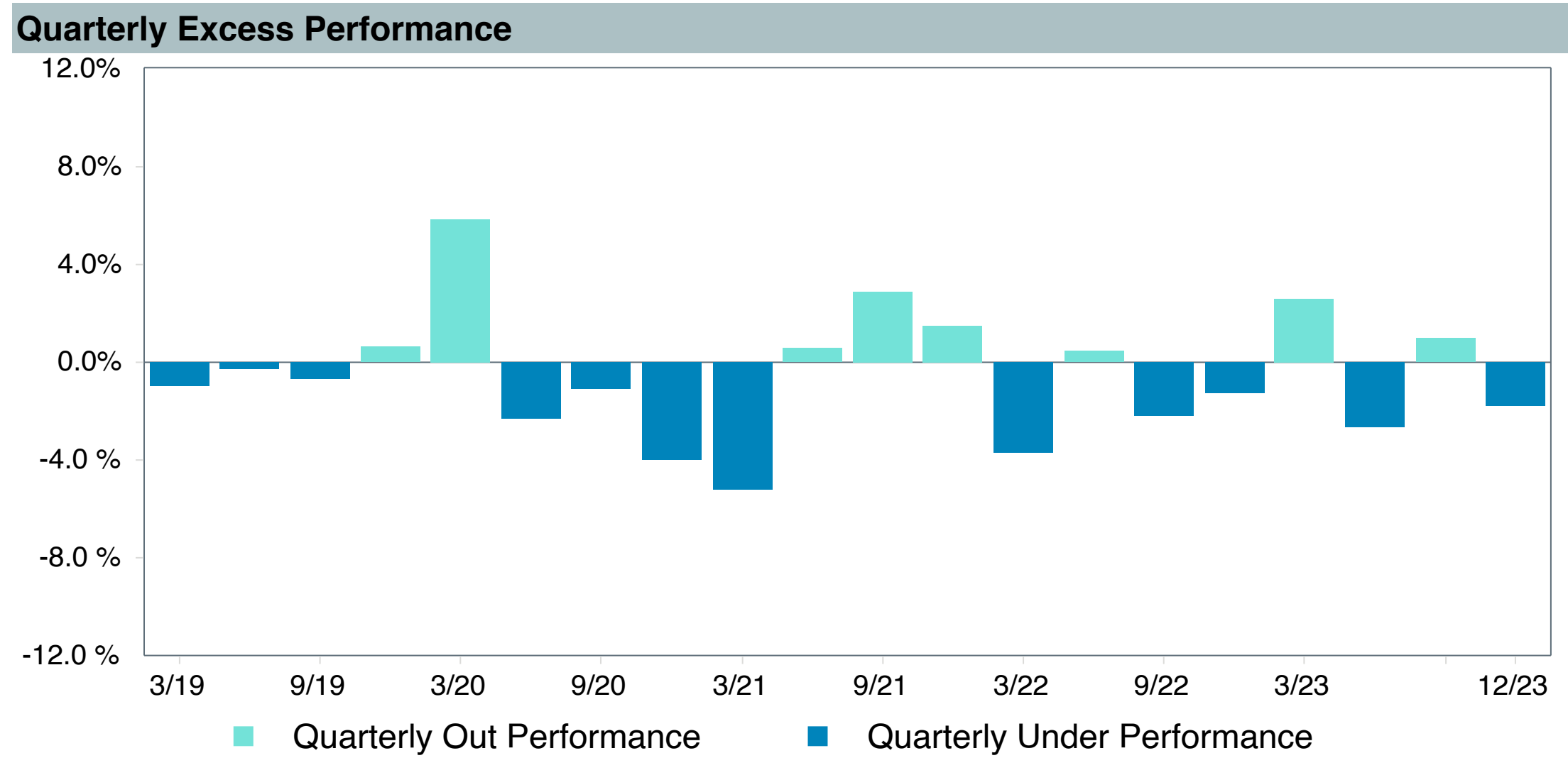
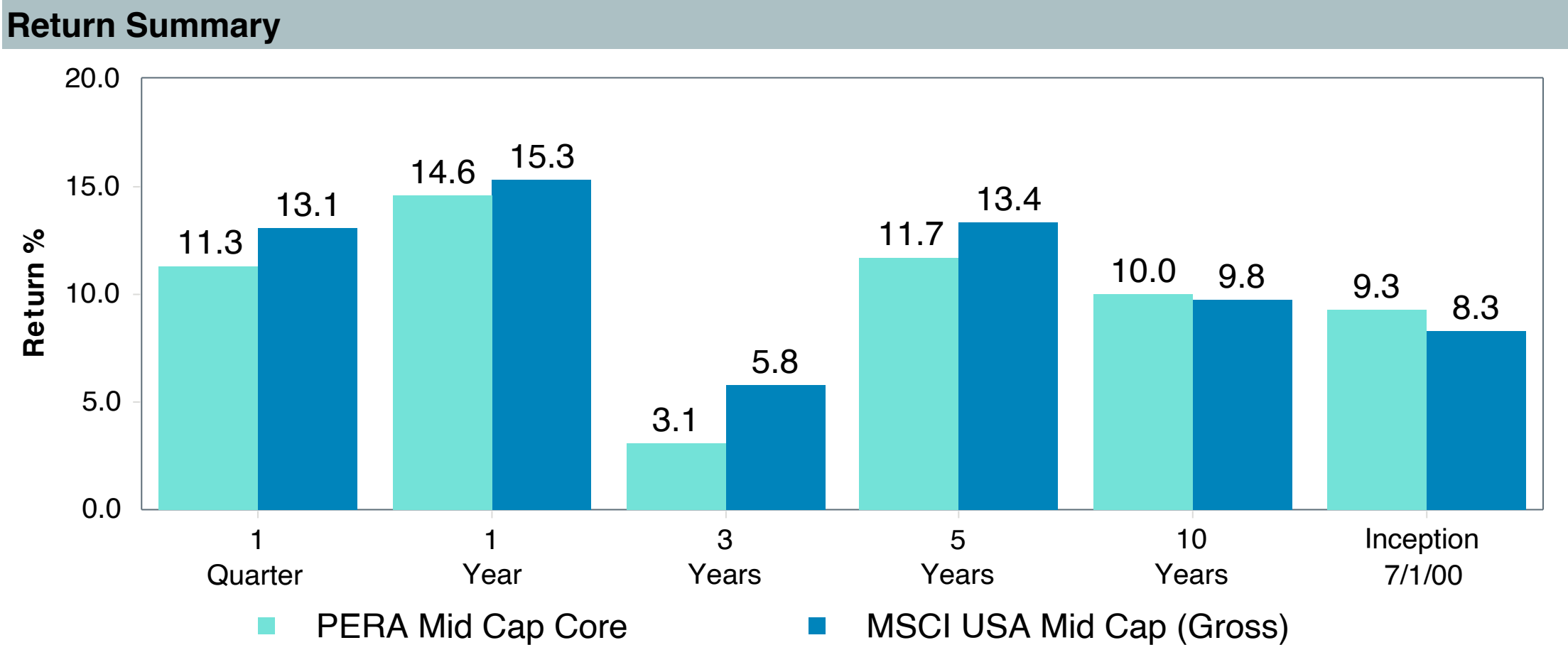
Philosophy and Process

PERA staff manages the Large Cap Core Fund by using fundamental analysis. Employing a bottom-up investment process, the Fund seeks to hold U.S. companies with superior earnings prospects and reasonable stock price valuations.

Manager Performance Summary PERA Mid Cap Core

As of December 31, 2023

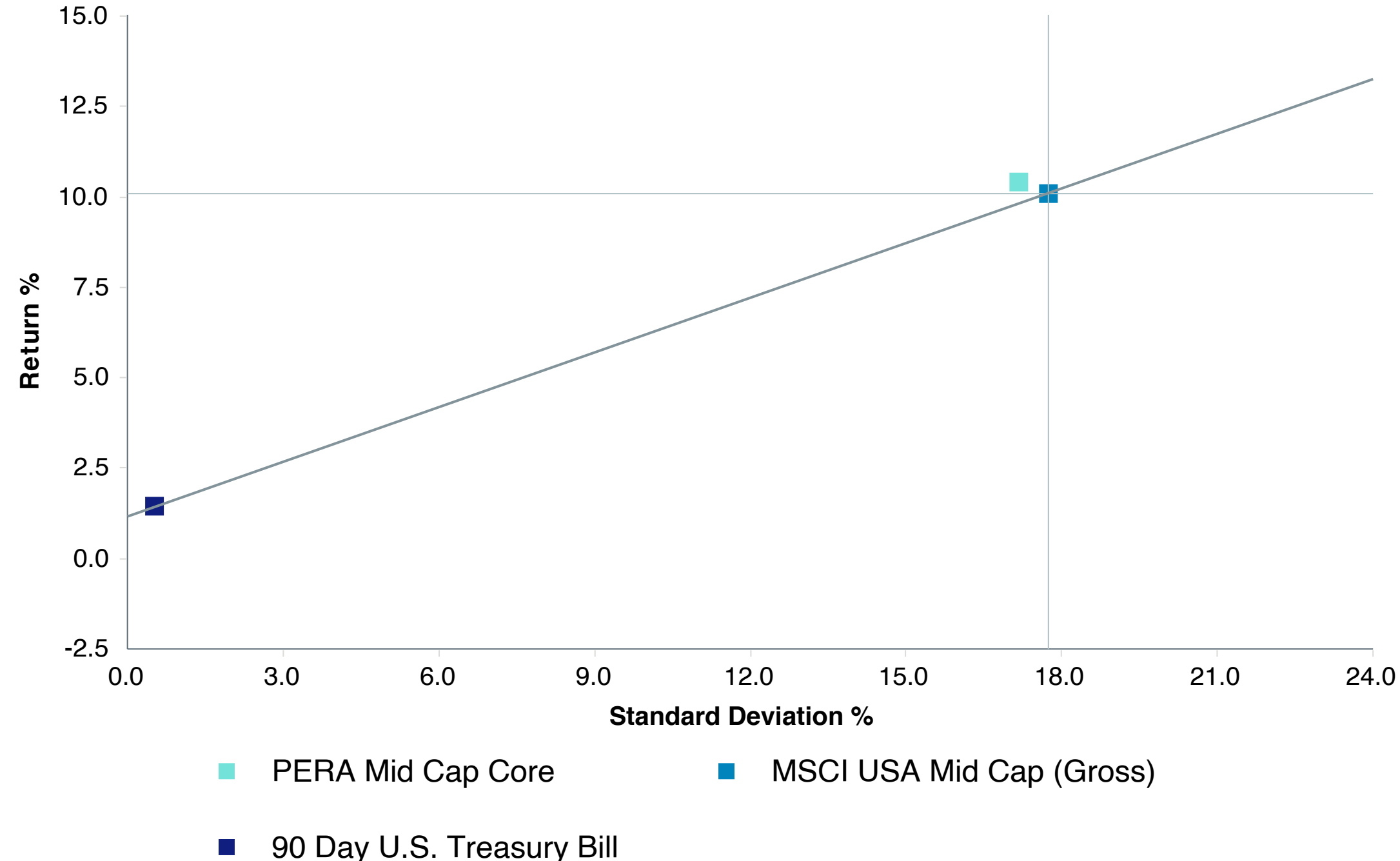
Account Information	
Account Name	PERA Mid Cap Core
Inception Date	07/01/2000
Account Structure	Separate Account
Asset Class	US Equity
Benchmark	MSCI USA Mid Cap (Gross)
Peer Group	



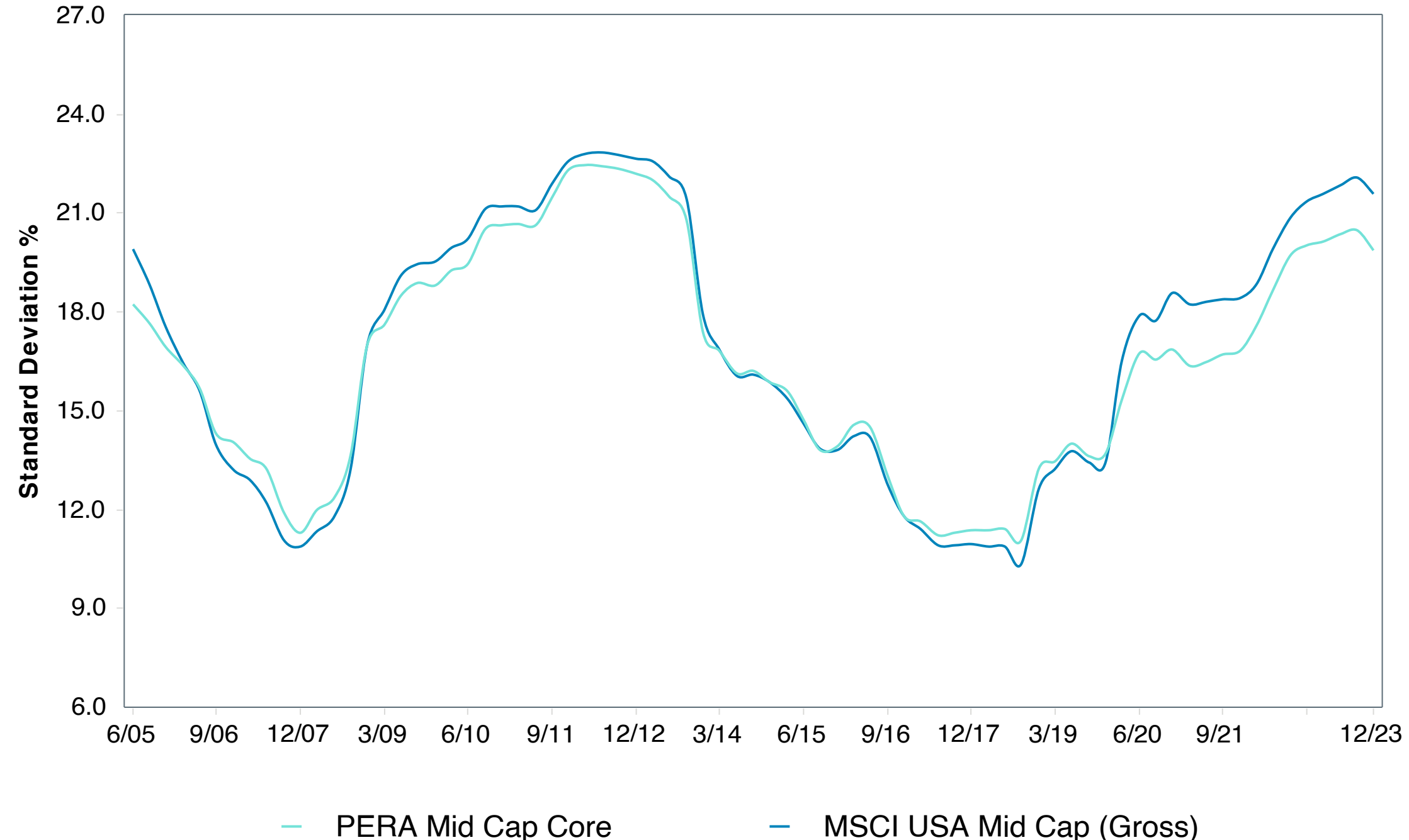
Risk Profile PERA Mid Cap Core

As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation
April 1, 2004 To December 31, 2023



Standard Deviation Rolling 5 Years



April 1, 2004 To December 31, 2023 Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
PERA Mid Cap Core	0.17	3.72	0.05	0.96	0.58	0.78	0.95	10.40	17.17	0.98
MSCI USA Mid Cap (Gross)	0.00	0.00	-	1.00	0.55	0.00	1.00	10.09	17.73	1.00
90 Day U.S. Treasury Bill	-9.82	17.80	-0.55	0.01	-	1.47	0.00	1.43	0.51	-0.11



Portfolio Analysis (Holdings-based)

As of December 31, 2023

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	19,780	17,812
Median Mkt. Cap (\$M)	18,529	12,549
Price/Earnings ratio	25.92	18.55
Price/Book ratio	3.61	2.98
5 Yr. EPS Growth Rate (%)	10.75	11.42
Current Yield (%)	1.12	1.54
Beta (5 Years, Monthly)	0.89	1.00
Number of Stocks	59	459

Top Ten Equity Holdings			
	Portfolio Weight %	Benchmark Weight %	Quarterly Return %
Ingersoll Rand Inc	2.49	0.53	21.41
Diamondback Energy Inc	2.45	0.44	2.29
Take-Two Interactive Software Inc	2.40	0.46	14.64
Vulcan Materials Co	2.40	0.51	12.60
AMETEK Inc	2.35	0.00	11.77
Broadridge Financial Solutions Inc	2.31	0.41	15.39
Teledyne Technologies Inc.	2.22	0.35	9.23
Fair Isaac Corporation	2.20	0.49	34.02
RPM International Inc	2.14	0.24	18.30
ANSYS Inc	2.12	0.00	21.96

% of Portfolio	23.08	3.43
-----------------------	--------------	-------------

Top Ten Contributors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Fair Isaac Corporation	2.17	0.41	1.76	34.02
Monolithic Power Systems Inc	1.81	0.40	1.41	36.75
Ingersoll Rand Inc	2.43	0.49	1.94	21.41
Zscaler Inc	1.16	0.26	0.90	42.40
PTC Inc	2.01	0.30	1.71	23.49
ANSYS Inc	1.91	0.00	1.91	21.96
Burlington Stores Inc	0.93	0.17	0.76	43.74
RPM International Inc	1.99	0.23	1.76	18.30
Ulta Salon	1.60	0.38	1.22	22.67
Nordson Corp	1.91	0.22	1.69	18.68

% of Portfolio	17.92	2.86	15.06
-----------------------	--------------	-------------	--------------

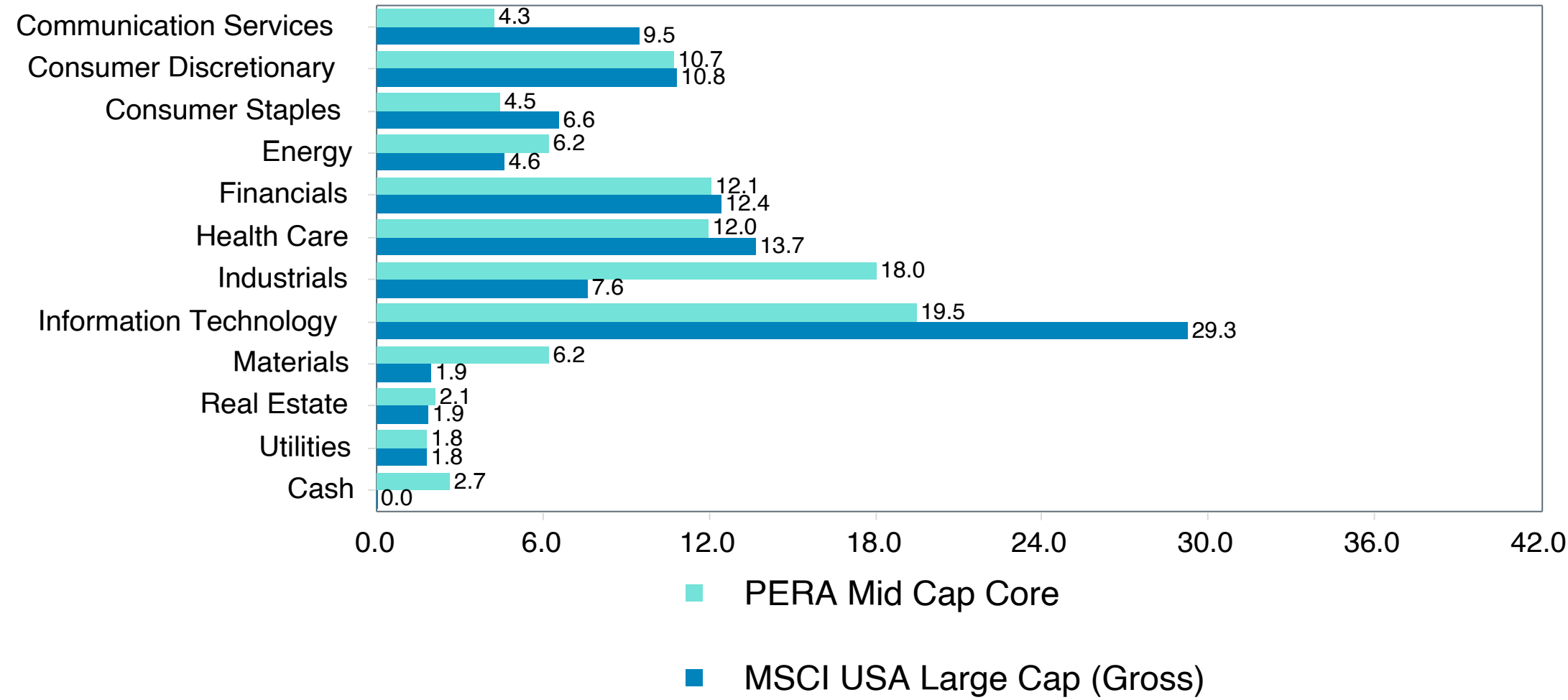
Top Ten Detractors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Paycom Software Inc	1.36	0.26	1.10	-20.10
Albemarle Corp	0.95	0.38	0.57	-14.80
McCormick & Co Inc	1.66	0.36	1.30	-8.44
West Pharmaceutical Services Inc.	1.97	0.53	1.44	-6.10
Ovintiv Inc	1.40	0.24	1.16	-7.04
FMC Corp.	0.91	0.16	0.75	-4.99
Genuine Parts Co	1.33	0.39	0.94	-3.39
Cable One Inc	0.44	0.05	0.39	-9.09
Revvity Inc	1.63	0.27	1.36	-1.19
Catalent Inc	0.98	0.16	0.82	-1.32

% of Portfolio	12.63	2.80	9.83
-----------------------	--------------	-------------	-------------

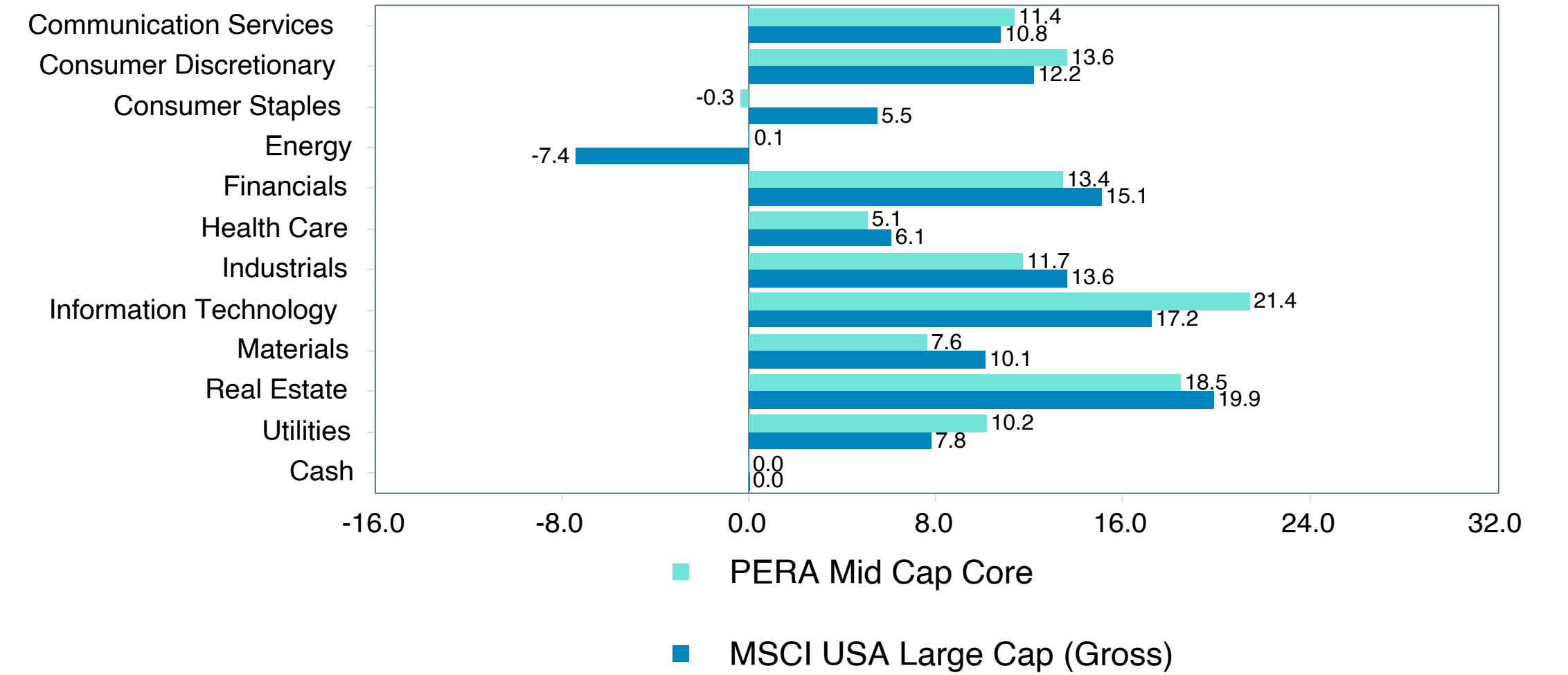
PERA Mid Cap Core Sector Attribution

As of December 31, 2023

Sector Weights %



Performance %



Attribution

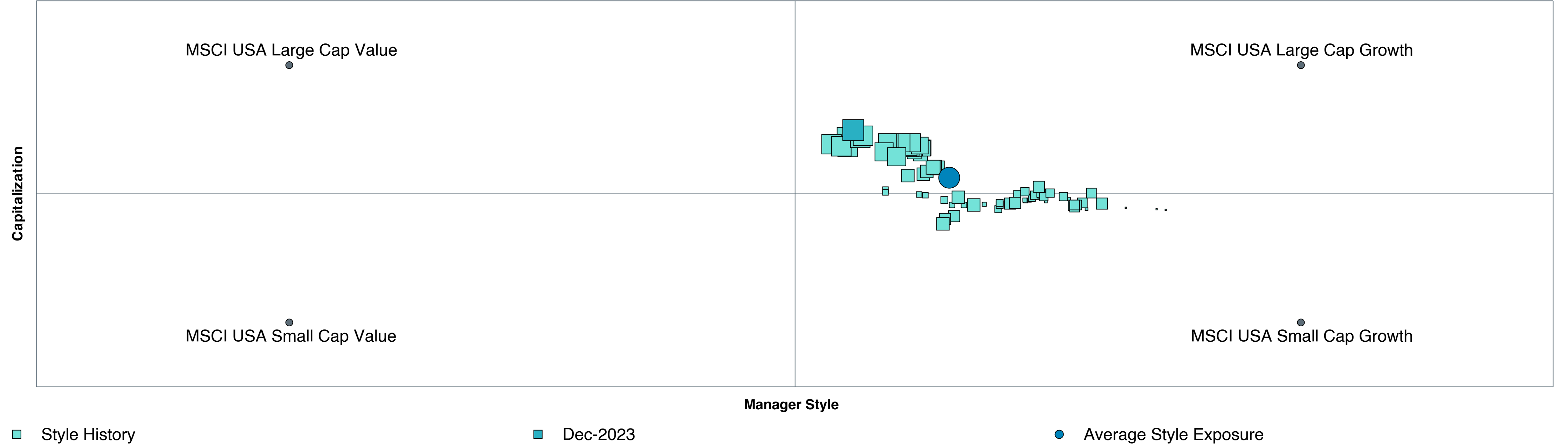
	Stock	Sector	Interaction	Total
Communication Services	0.06	0.06	-0.03	0.08
Consumer Discretionary	0.15	0.00	0.00	0.15
Consumer Staples	-0.38	0.13	0.12	-0.13
Energy	0.34	-0.31	0.12	0.15
Financials	-0.21	-0.01	0.01	-0.22
Health Care	-0.14	0.10	0.02	-0.02
Industrials	-0.14	0.18	-0.20	-0.16
Information Technology	1.23	-0.53	-0.41	0.29
Materials	-0.05	-0.07	-0.11	-0.23
Real Estate	-0.03	0.02	0.00	-0.01
Utilities	0.04	0.00	0.00	0.04
Cash	0.00	-0.32	0.00	-0.32
Total	0.87	-0.75	-0.49	-0.37

Note: weights depicted here are as of the beginning of the quarter.

PERA Mid Cap Core

As of December 31, 2023

Rolling 3 Year Period Effective Style Map
Since January 1, 2014



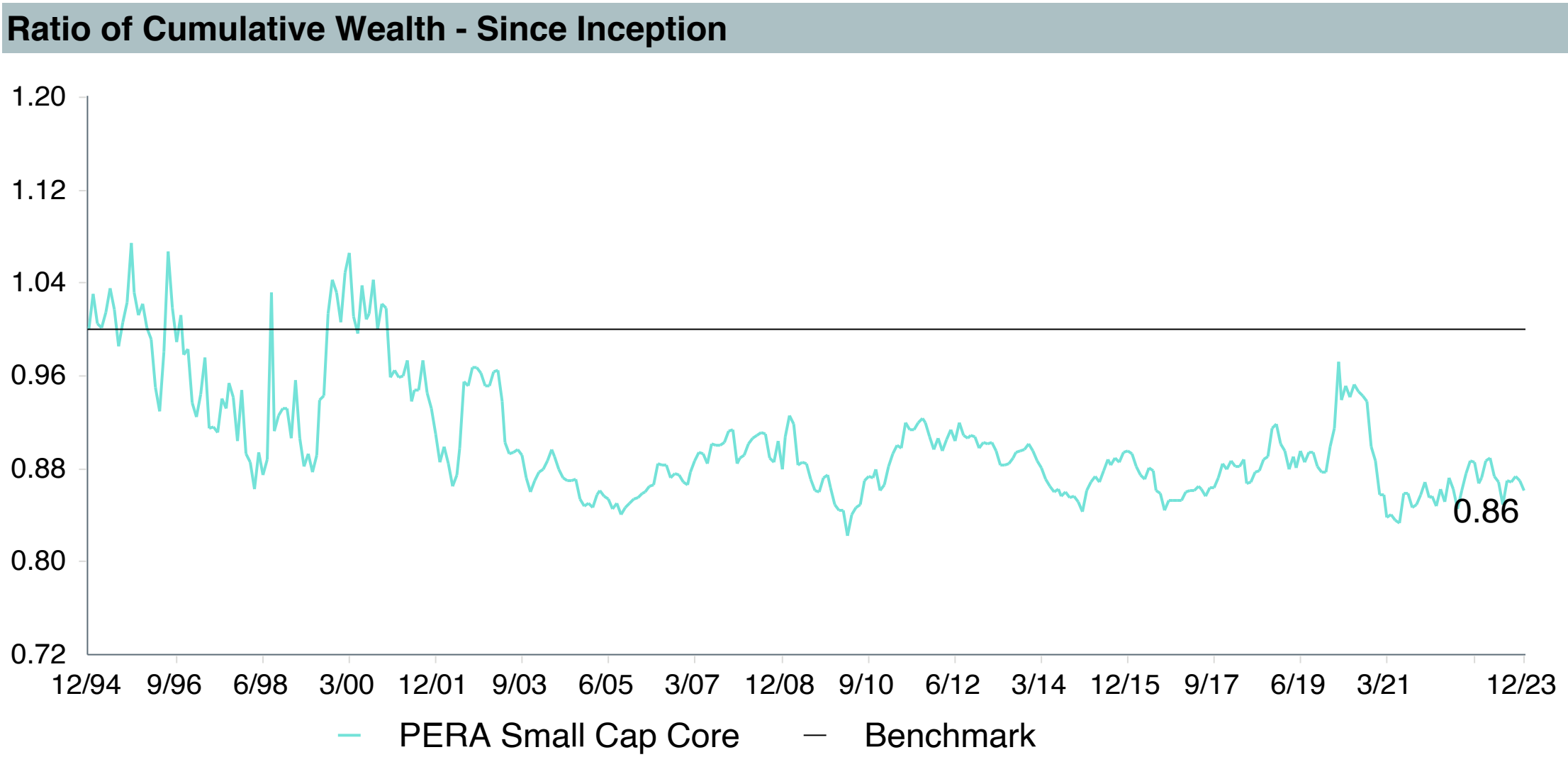
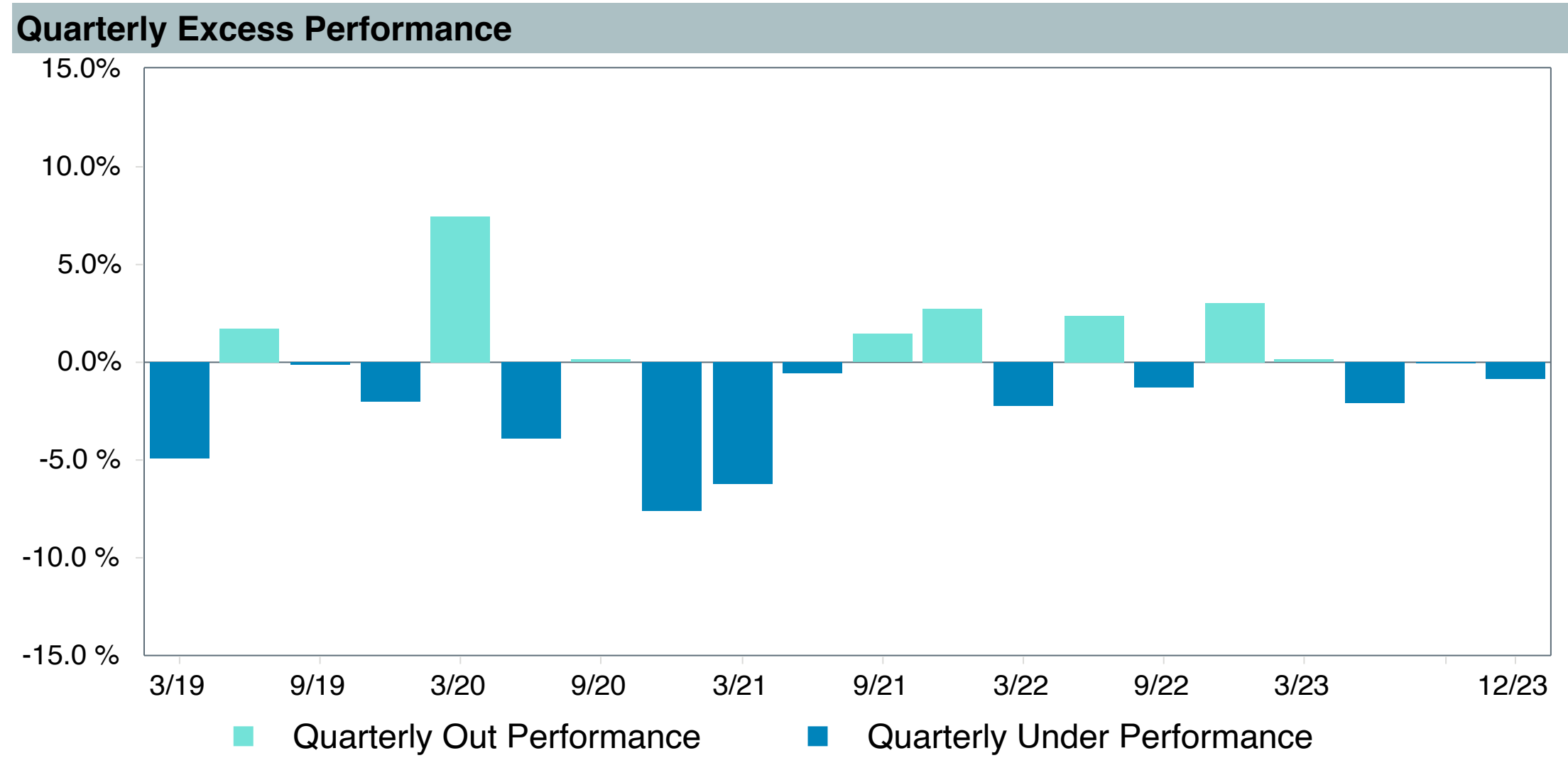
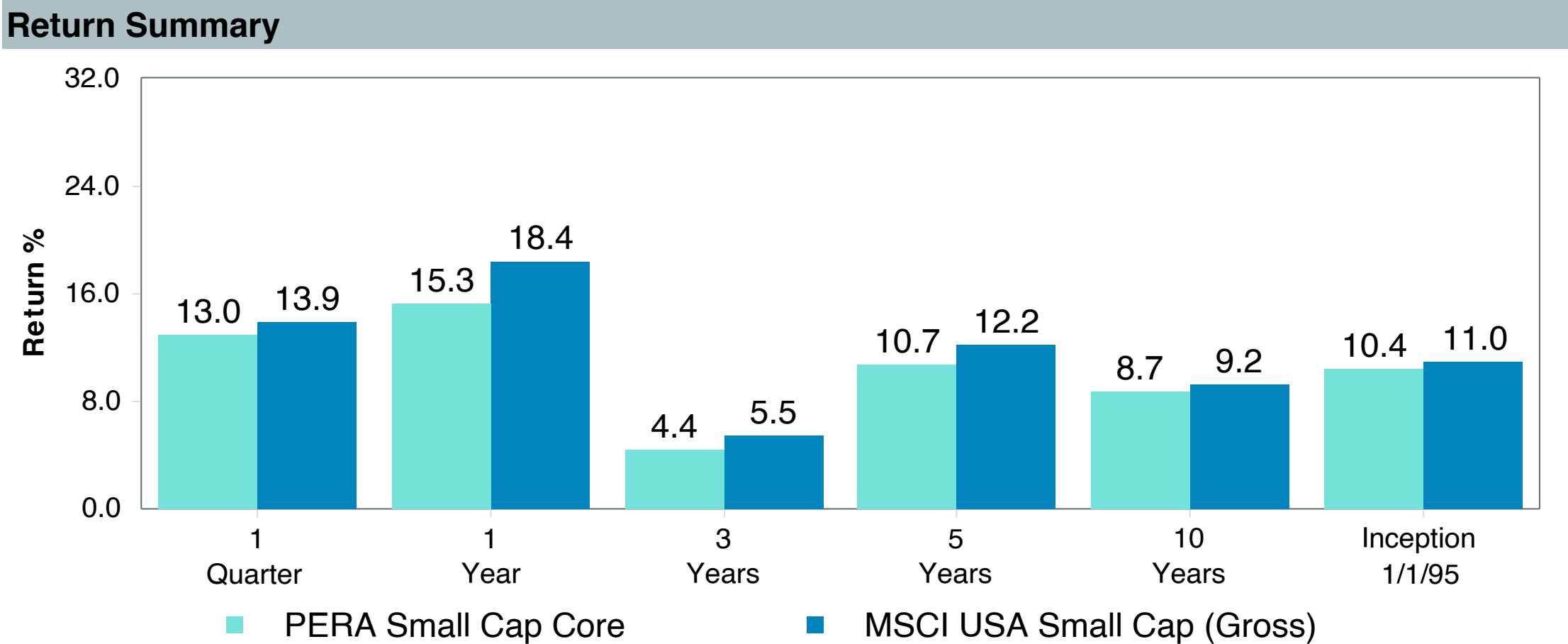
Philosophy and Process

PERA staff manages the Mid Cap Core Fund by utilizing fundamental analysis. Employing a bottom-up investment process that relies mostly on fundamental analysis, the Fund seeks to hold U.S. mid cap companies with superior earnings prospects and reasonable stock price valuations.

Manager Performance Summary PERA Small Cap Core

As of December 31, 2023

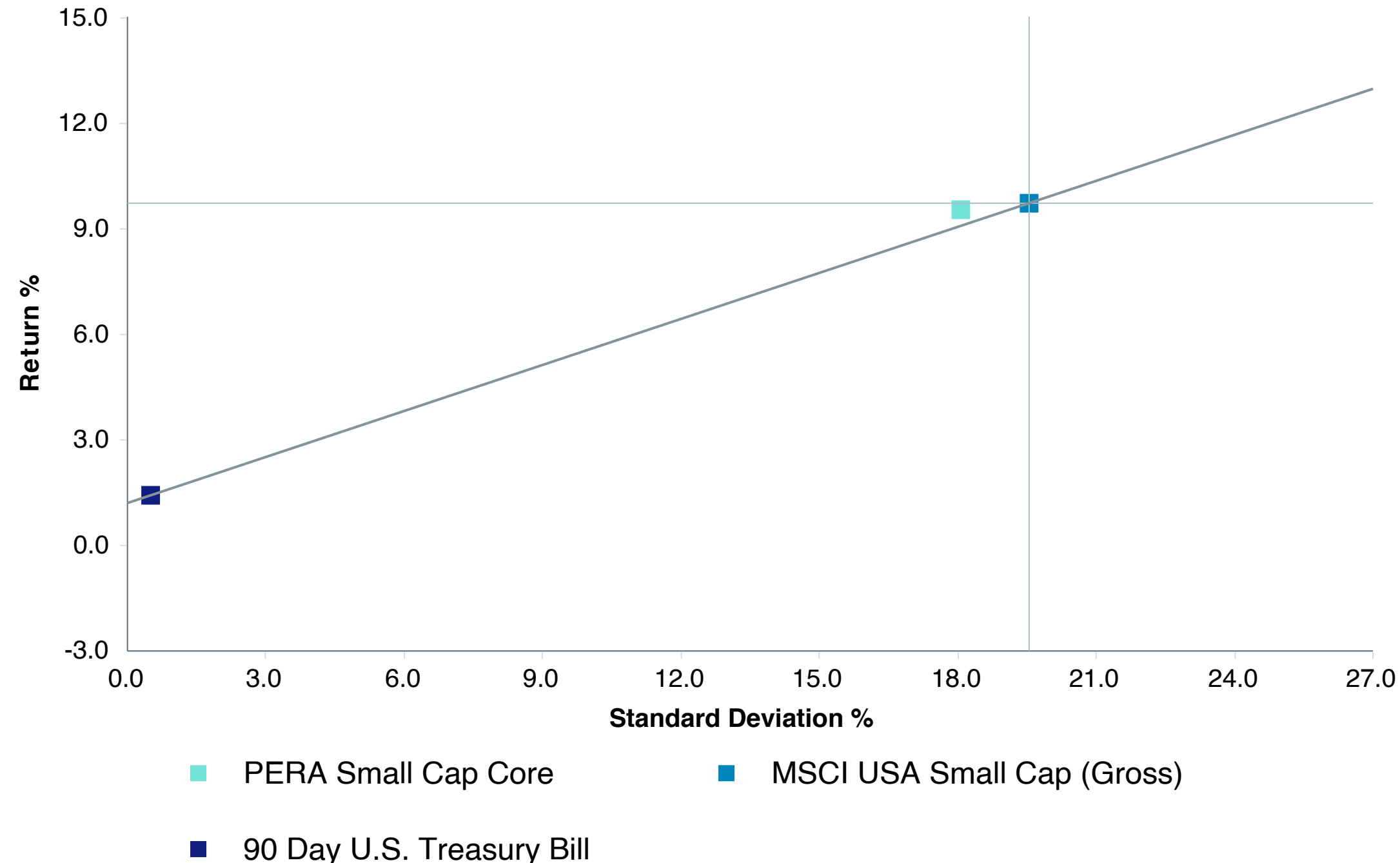
Account Information	
Account Name	PERA Small Cap Core
Inception Date	01/01/1995
Account Structure	Separate Account
Asset Class	US Equity
Benchmark	MSCI USA Small Cap (Gross)
Peer Group	



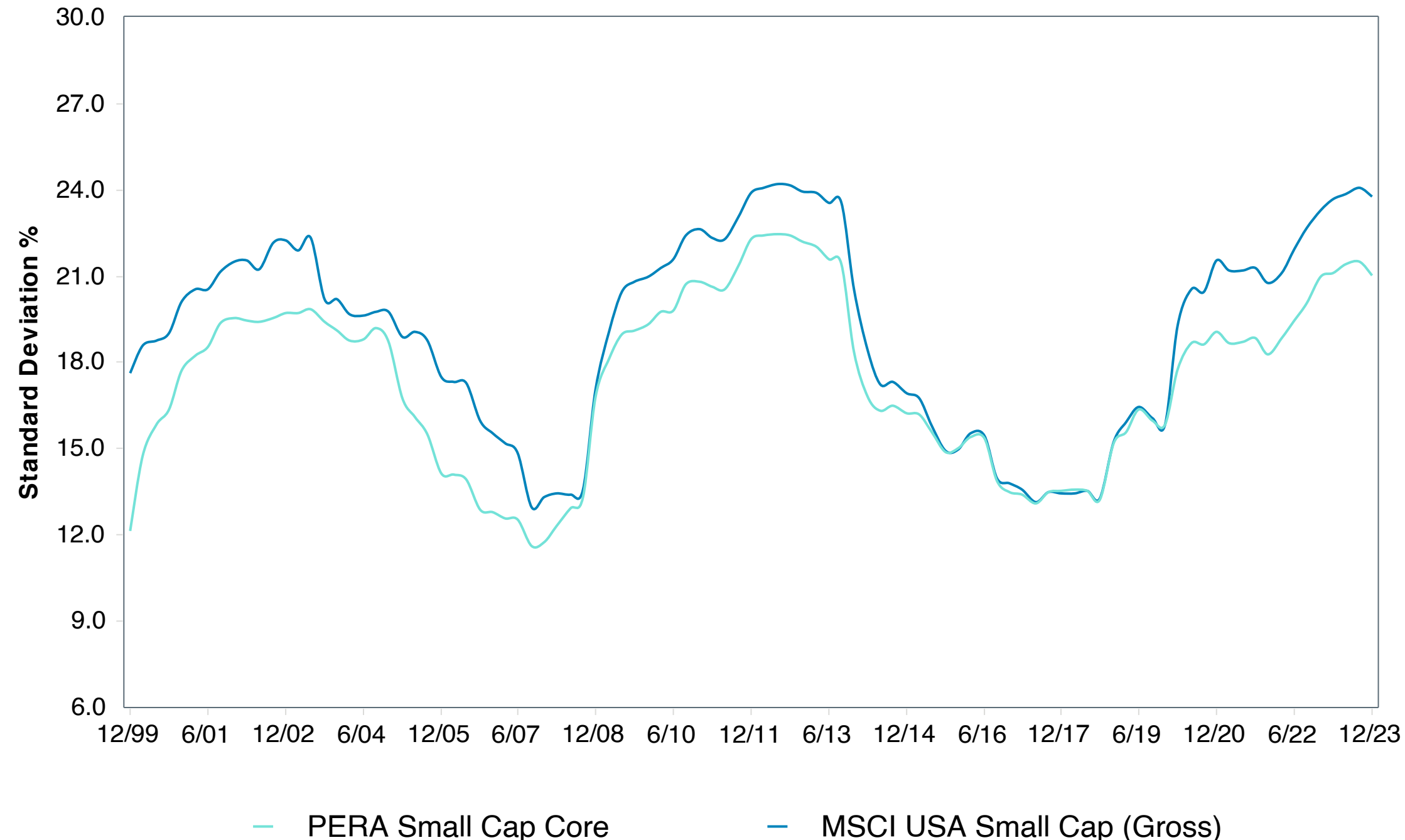
Risk Profile PERA Small Cap Core

As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation
April 1, 2004 To December 31, 2023



Standard Deviation Rolling 5 Years



April 1, 2004 To December 31, 2023 Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
PERA Small Cap Core	-0.43	4.41	-0.10	0.95	0.52	0.67	0.90	9.57	18.08	0.98
MSCI USA Small Cap (Gross)	0.00	0.00	-	1.00	0.50	0.00	1.00	9.73	19.54	1.00
90 Day U.S. Treasury Bill	-9.82	19.60	-0.50	0.01	-	1.47	0.00	1.43	0.51	-0.11



Portfolio Analysis (Holdings-based)

As of December 31, 2023

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	6,114	4,131
Median Mkt. Cap (\$M)	5,272	1,658
Price/Earnings ratio	22.68	15.17
Price/Book ratio	2.96	2.43
5 Yr. EPS Growth Rate (%)	10.65	10.37
Current Yield (%)	1.47	1.56
Beta (5 Years, Monthly)	0.85	1.00
Number of Stocks	69	1,738

Top Ten Equity Holdings			
	Portfolio Weight %	Benchmark Weight %	Quarterly Return %
RBC Bearings Inc	2.33	0.24	21.68
Curtiss-Wright Corp	2.31	0.25	13.99
nVent Electric plc	2.25	0.00	11.92
McGrath RentCorp	2.08	0.08	19.87
Blackbaud Inc	2.06	0.11	23.29
CubeSmart	2.06	0.00	22.90
Terreno Realty Corp	2.03	0.15	11.14
Novanta Inc	1.99	0.17	17.41
Integer Holdings Corp	1.97	0.09	26.33
Comfort Systems USA Inc	1.95	0.21	20.84

% of Portfolio	21.03	1.30
-----------------------	--------------	-------------

Top Ten Contributors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Installed Building Products Inc	1.40	0.10	1.30	46.65
First Merchants Corp	1.55	0.05	1.50	34.76
Quaker Houghton	1.55	0.06	1.49	33.80
Texas Roadhouse Inc	1.86	0.21	1.65	27.81
Coca-Cola Bottling Co Consol	1.11	0.10	1.01	46.01
ACI Worldwide Inc	1.40	0.08	1.32	35.64
RBC Bearings Inc	2.30	0.22	2.08	21.68
Integer Holdings Corp	1.76	0.08	1.68	26.33
Columbia Banking System Inc	1.36	0.14	1.22	33.59
Comfort Systems USA Inc	2.11	0.20	1.91	20.84

% of Portfolio	16.40	1.24	15.16
-----------------------	--------------	-------------	--------------

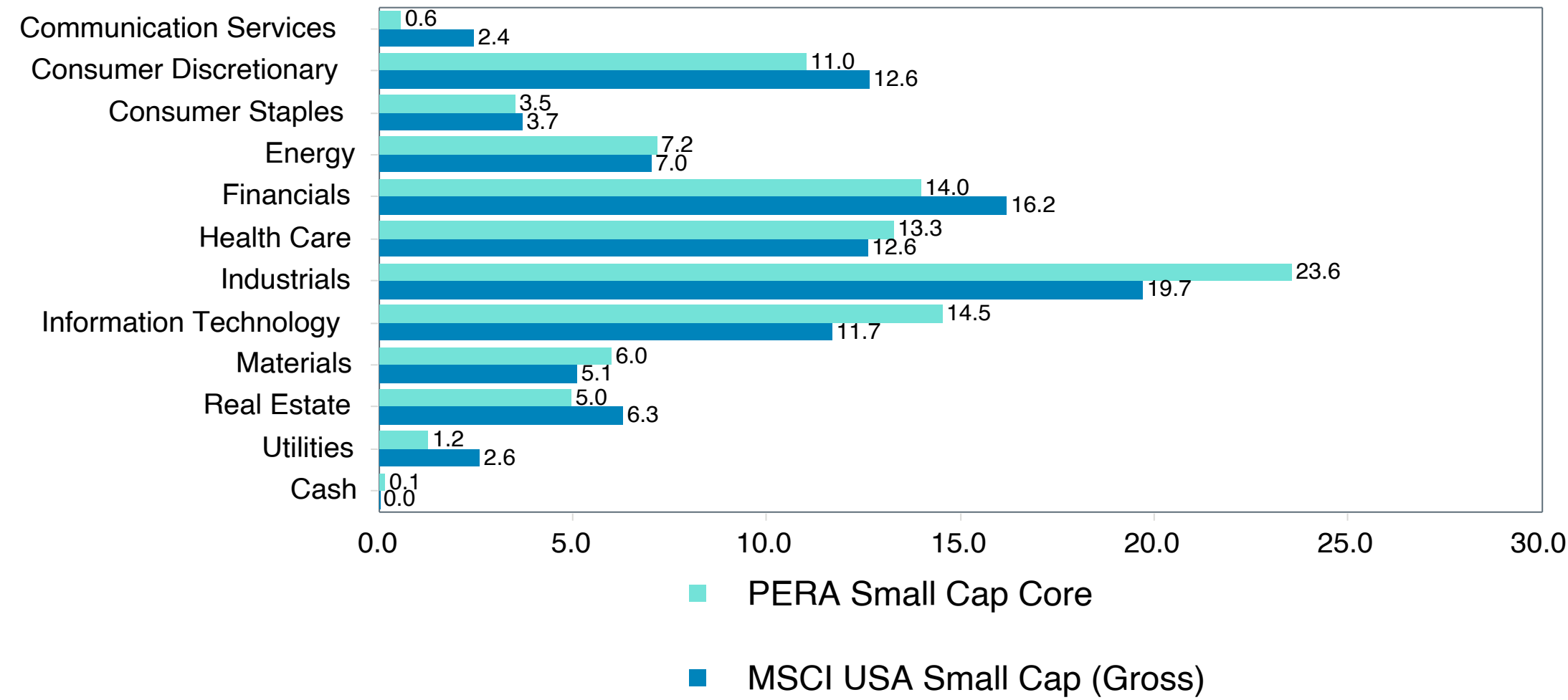
Top Ten Detractors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Lattice Semiconductor Corporation	1.68	0.00	1.68	-19.71
AMN Healthcare Services Inc.	1.93	0.11	1.82	-12.09
Envista Holdings Corp	1.57	0.15	1.42	-13.70
agilon health inc	0.73	0.00	0.73	-29.34
Cactus Inc	2.02	0.10	1.92	-9.32
Helix Energy Solutions Group Inc	1.67	0.05	1.62	-7.97
Ovintiv Inc	1.51	0.00	1.51	-7.04
Matador Resources Co	1.96	0.22	1.74	-4.06
Selective Insurance Group Inc	2.43	0.20	2.23	-3.25
Hayward Holdings Inc	0.96	0.07	0.89	-3.55

% of Portfolio	16.46	0.90	15.56
-----------------------	--------------	-------------	--------------

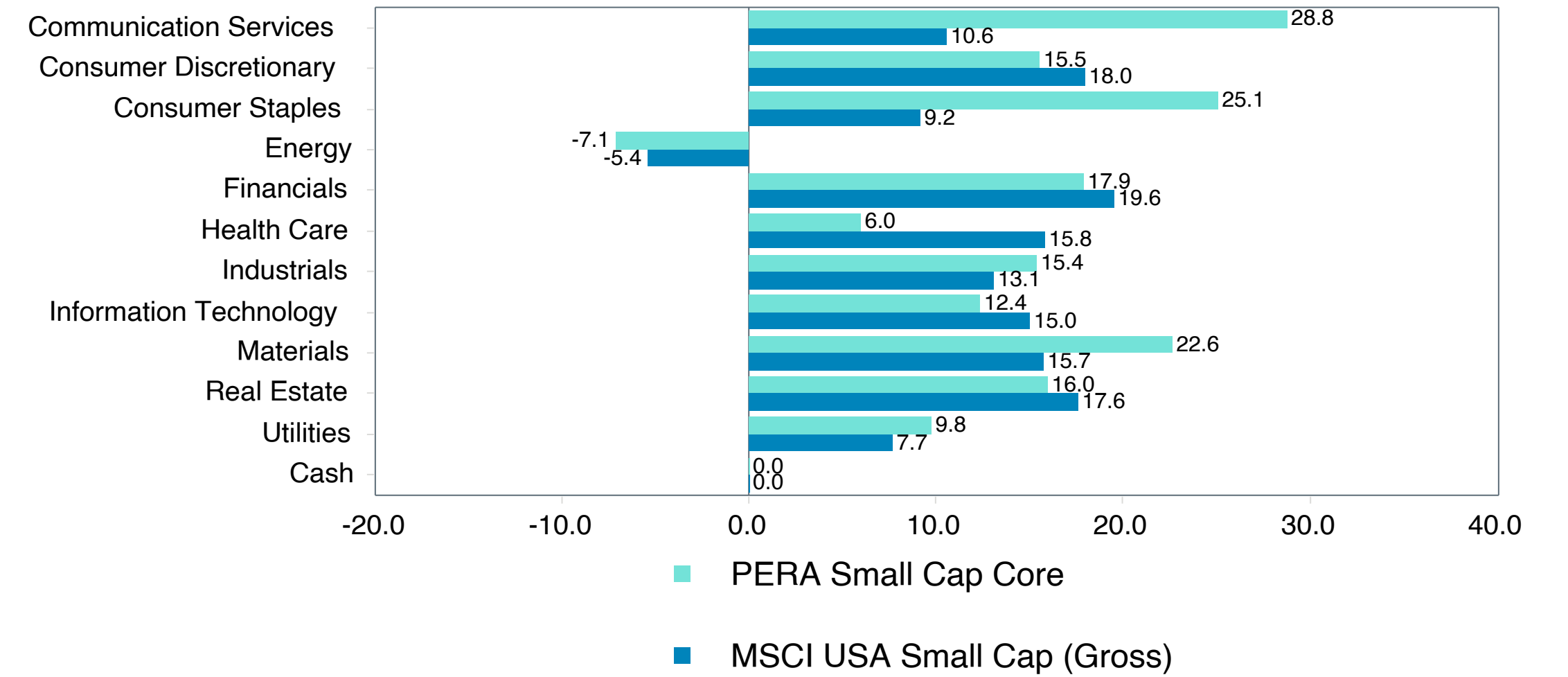
PERA Small Cap Core Sector Attribution

As of December 31, 2023

Sector Weights %



Performance %



Attribution

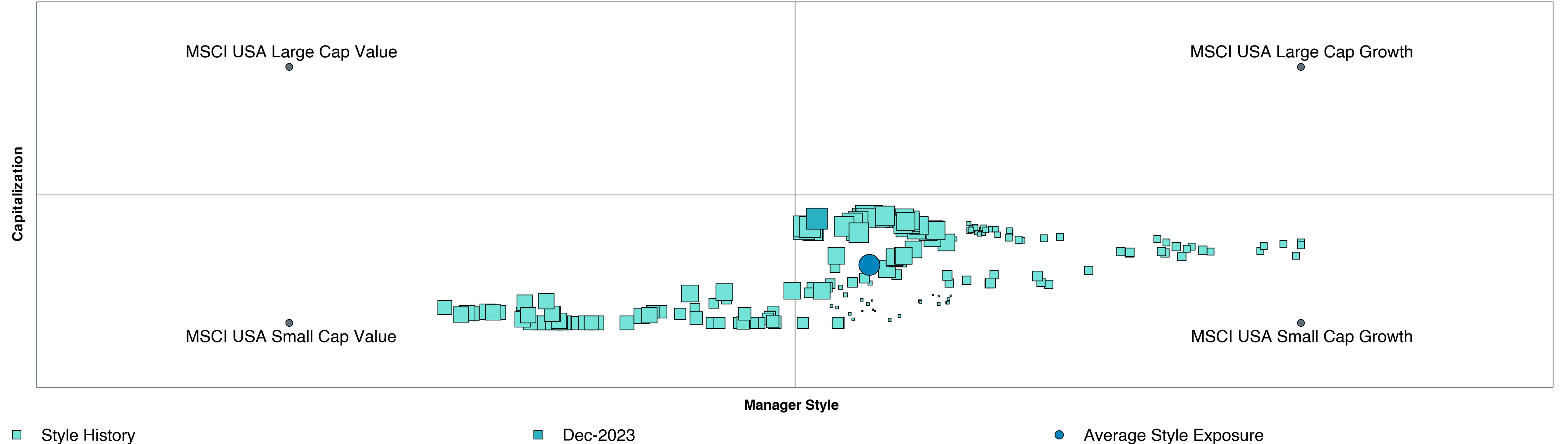
	Stock	Sector	Interaction	Total
Communication Services	0.44	0.07	-0.34	0.17
Consumer Discretionary	-0.31	-0.06	0.04	-0.33
Consumer Staples	0.59	0.01	-0.03	0.57
Energy	-0.12	-0.02	0.00	-0.14
Financials	-0.27	-0.12	0.04	-0.36
Health Care	-1.24	0.01	-0.07	-1.30
Industrials	0.45	-0.04	0.09	0.50
Information Technology	-0.31	0.03	-0.08	-0.36
Materials	0.35	0.01	0.06	0.42
Real Estate	-0.10	-0.05	0.02	-0.12
Utilities	0.05	0.09	-0.03	0.11
Cash	0.00	-0.02	0.00	-0.02
Total	-0.47	-0.10	-0.30	-0.87

Note: weights depicted here are as of the beginning of the quarter.

PERA Small Cap Core

As of December 31, 2023

Rolling 3 Year Period Effective Style Map
Since April 1, 2004



Philosophy and Process

PERA staff manages the Small Cap Core Fund by employing fundamental analysis. Employing a bottom-up investment process that relies mostly on fundamental analysis, the Fund seeks to hold U.S. small cap companies that offer above average capital appreciation potential.

(This page is left blank intentionally)

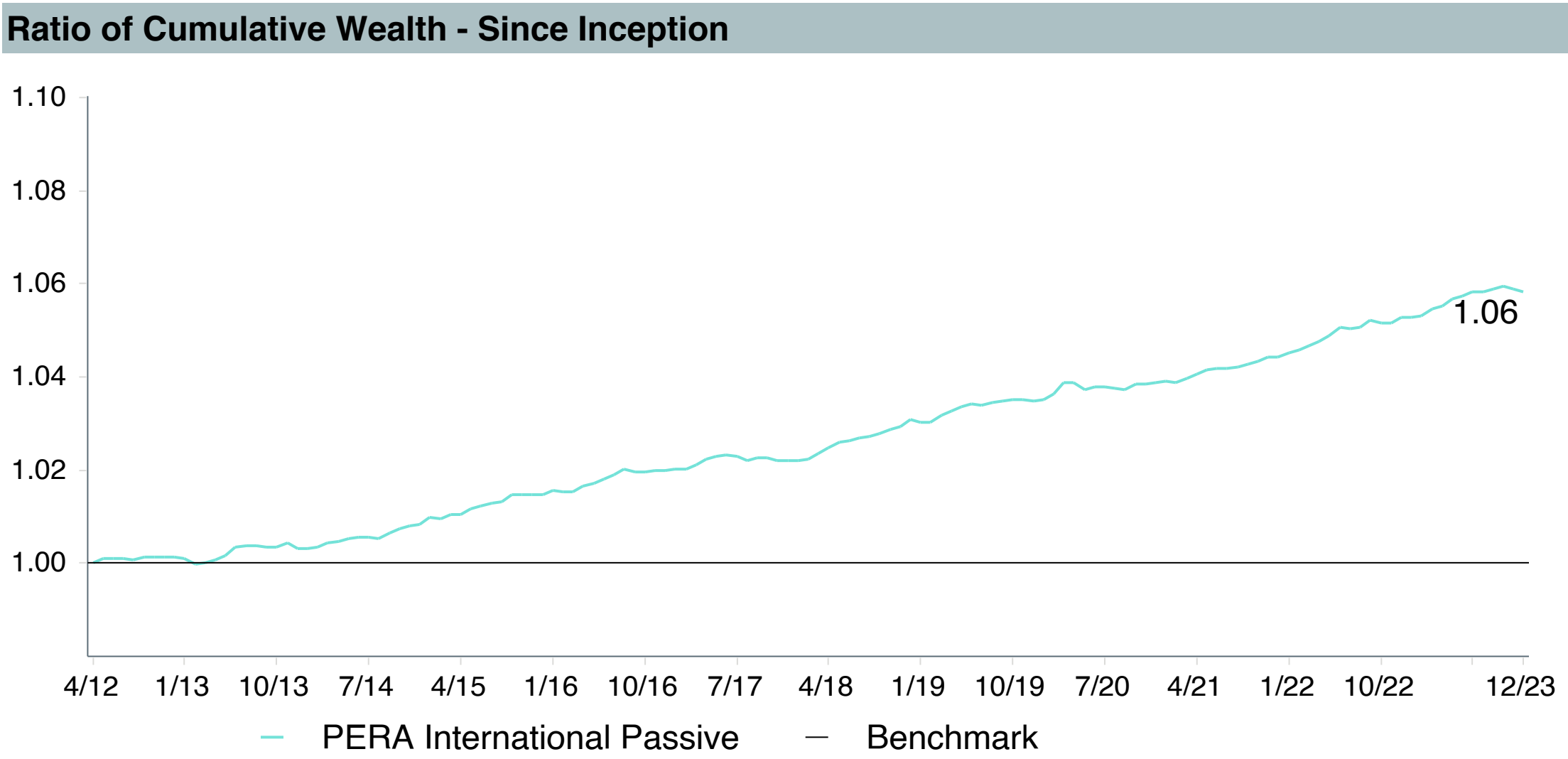
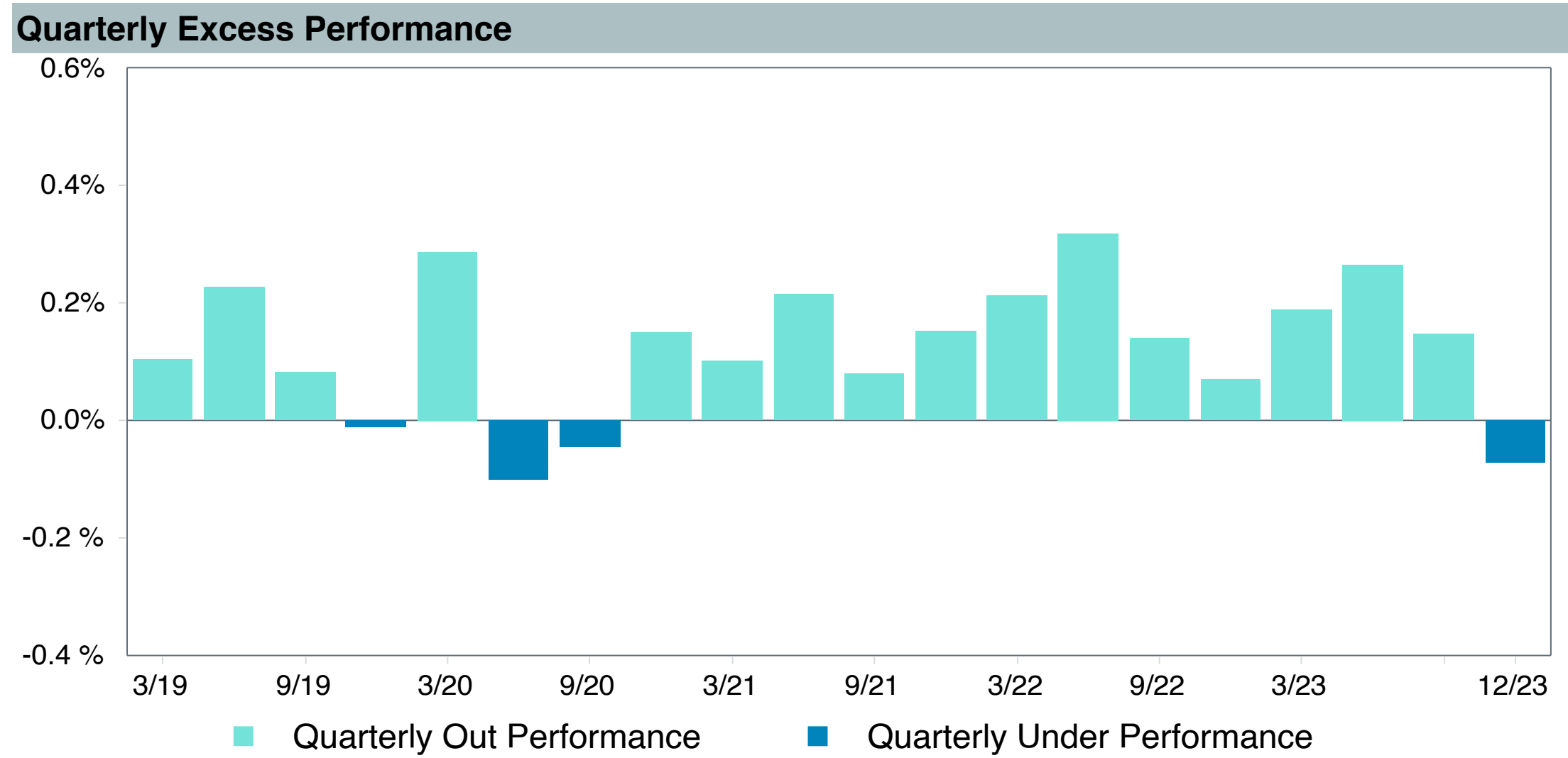
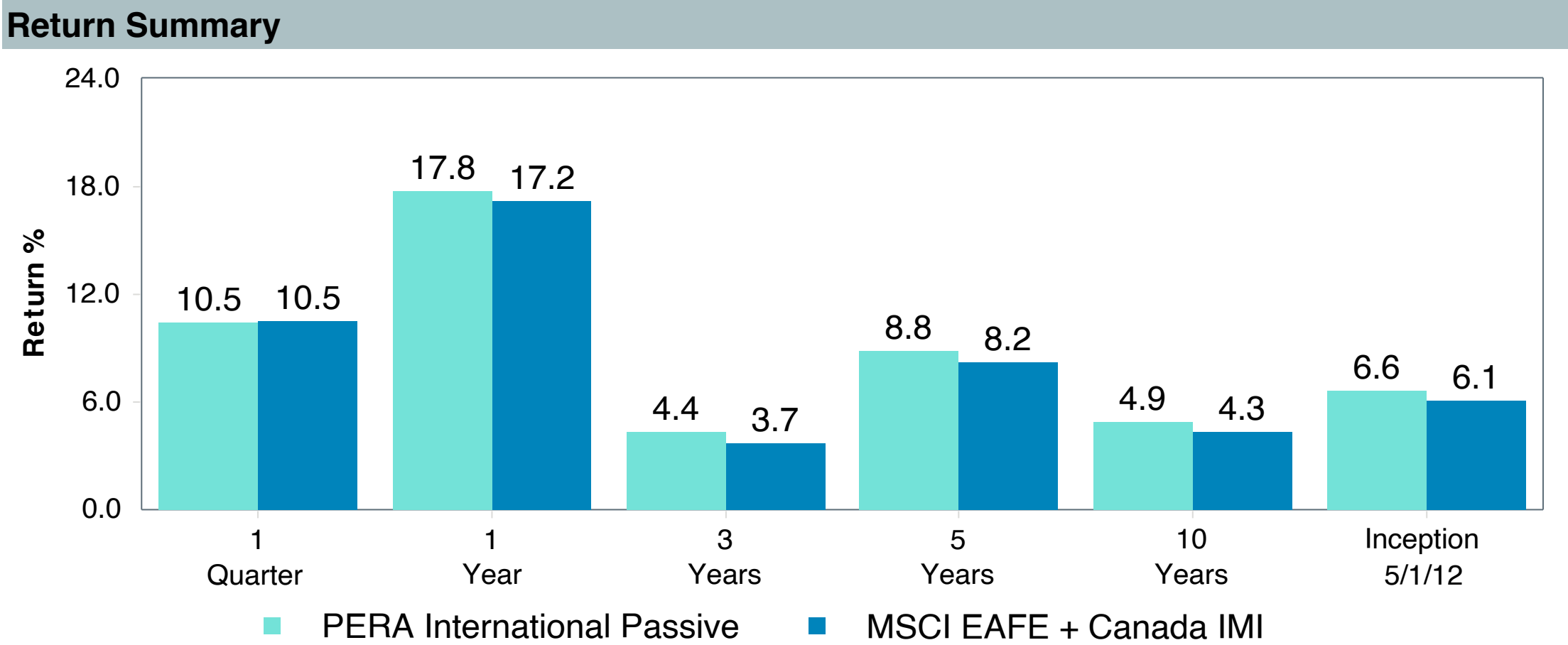
Internal Non-U.S. Broad Markets



Manager Performance Summary PERA International Passive

As of December 31, 2023

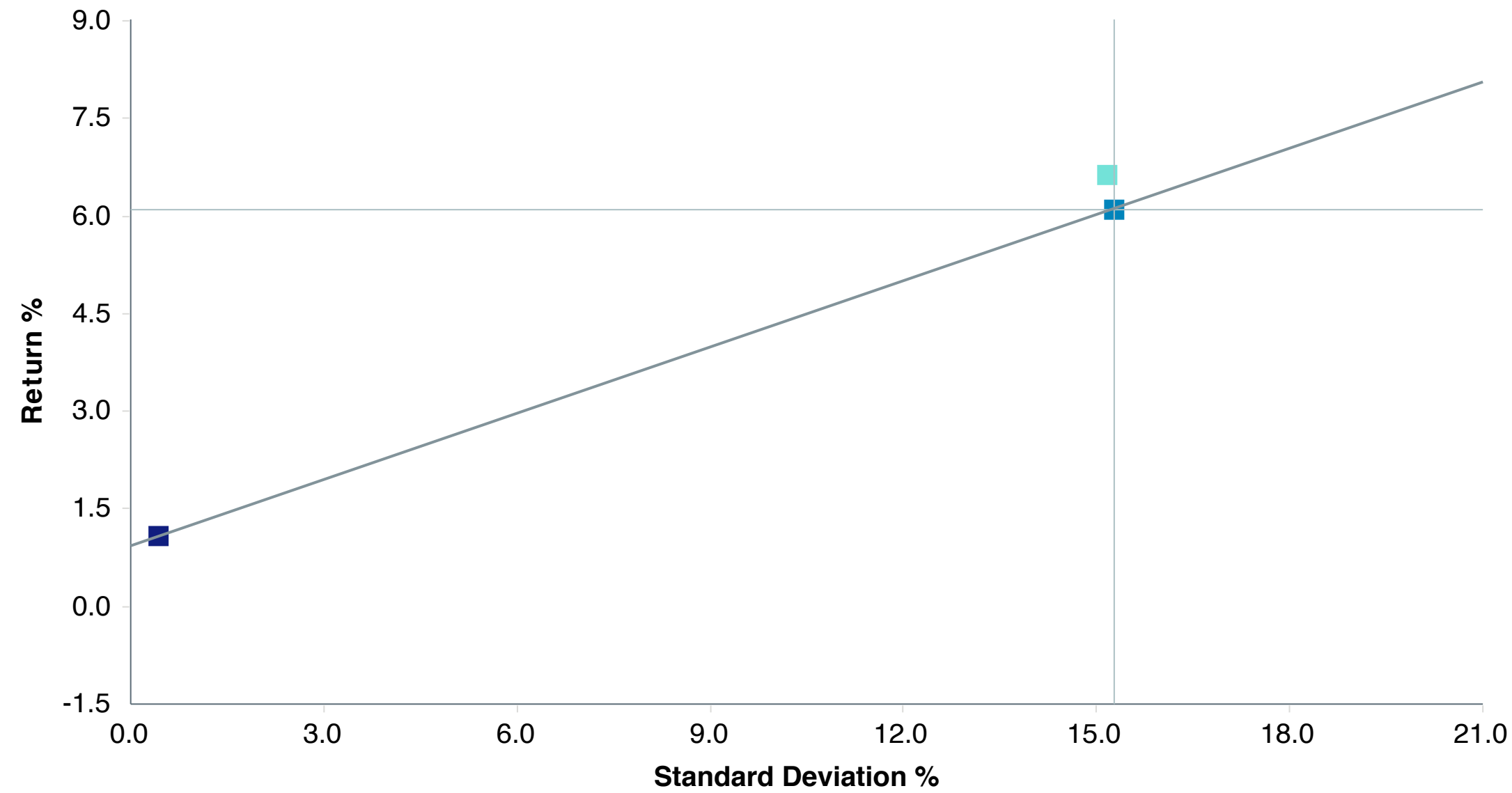
Account Information	
Account Name	PERA International Passive
Inception Date	05/01/2012
Account Structure	Separate Account
Asset Class	Global Equity
Benchmark	MSCI EAFE + Canada IMI
Peer Group	



Risk Profile PERA International Passive

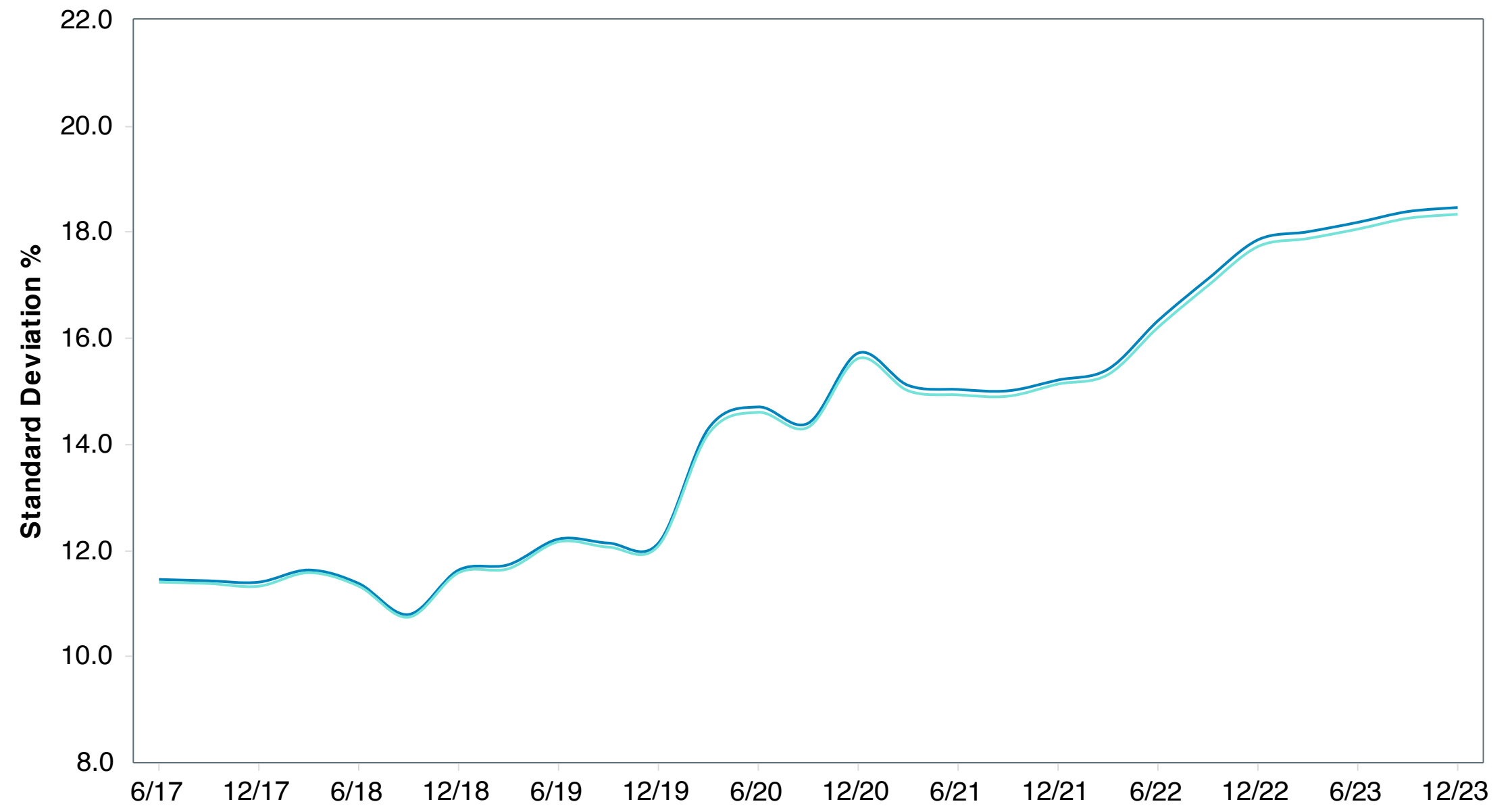
As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation Since Inception



■ PERA International Passive ■ MSCI EAFE + Canada IMI
■ 90 Day U.S. Treasury Bill

Standard Deviation Rolling 5 Years



— PERA International Passive — MSCI EAFE + Canada IMI

Since Inception Historical Statistics											
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation	Inception Date
PERA International Passive	0.47	0.21	2.28	1.00	0.43	0.52	0.99	6.62	15.17	1.00	05/01/2012
MSCI EAFE + Canada IMI	0.00	0.00	-	1.00	0.40	0.00	1.00	6.11	15.26	1.00	05/01/2012
90 Day U.S. Treasury Bill	-6.04	15.28	-0.40	0.00	-	1.08	0.00	1.07	0.44	-0.03	05/01/2012



Portfolio Analysis (Holdings-based)

As of December 31, 2023

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	73,355	73,725
Median Mkt. Cap (\$M)	4,559	1,961
Price/Earnings ratio	13.83	13.83
Price/Book ratio	2.43	2.43
5 Yr. EPS Growth Rate (%)	9.60	9.57
Current Yield (%)	3.19	3.19
Beta (5 Years, Monthly)	0.99	1.00
Number of Stocks	1,947	3,257

Top Ten Equity Holdings			
	Portfolio Weight %	Benchmark Weight %	Quarterly Return %
Novo Nordisk A/S	1.61	1.61	13.16
Nestle SA	1.46	1.47	2.16
ASML Holding NV	1.45	1.45	27.54
Louis Vuitton, Paris	1.07	1.07	7.68
Shell Plc	1.03	1.03	4.14
Astrazeneca PLC	0.99	1.00	-0.28
Novartis AG	0.97	0.98	3.66
Roche Holding AG	0.96	0.97	6.11
Toyota Motor Corp	0.93	0.93	2.41
BHP Group Ltd	0.82	0.83	20.44

% of Portfolio	11.29	11.34
-----------------------	--------------	--------------

Top Ten Contributors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
ASML Holding NV	1.25	1.25	0.00	27.54
Novo Nordisk A/S	1.56	1.56	0.00	13.16
Siemens AG	0.57	0.57	0.00	30.68
BHP Group Ltd	0.75	0.76	-0.01	20.44
Shopify Inc	0.35	0.34	0.01	42.67
SAP AG	0.70	0.71	-0.01	18.49
Shin-Etsu Chemical Co Ltd	0.28	0.28	0.00	44.21
UBS Group AG	0.42	0.43	-0.01	25.03
Royal Bank of Canada	0.61	0.64	-0.03	17.18
Tokyo Electron Ltd	0.33	0.34	-0.01	30.78

Top Ten Detractors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Bayer AG	0.24	0.25	-0.01	-22.80
First Quantum Minerals Ltd	0.08	0.07	0.01	-65.33
Sanofi	0.63	0.64	-0.01	-7.71
BP plc	0.58	0.59	-0.01	-7.24
arGEN-X SE	0.15	0.14	0.01	-22.19
Cenovus Energy Inc	0.17	0.16	0.01	-19.45
Woodside Energy Group Ltd	0.24	0.23	0.01	-10.01
Franco-Nevada Corp	0.14	0.13	0.01	-16.74
Rentokil Initial PLC	0.09	0.10	-0.01	-24.55
Honda Motor Co Ltd	0.27	0.27	0.00	-7.74

% of Portfolio	2.59	2.58	0.01
-----------------------	-------------	-------------	-------------

PERA International Passive

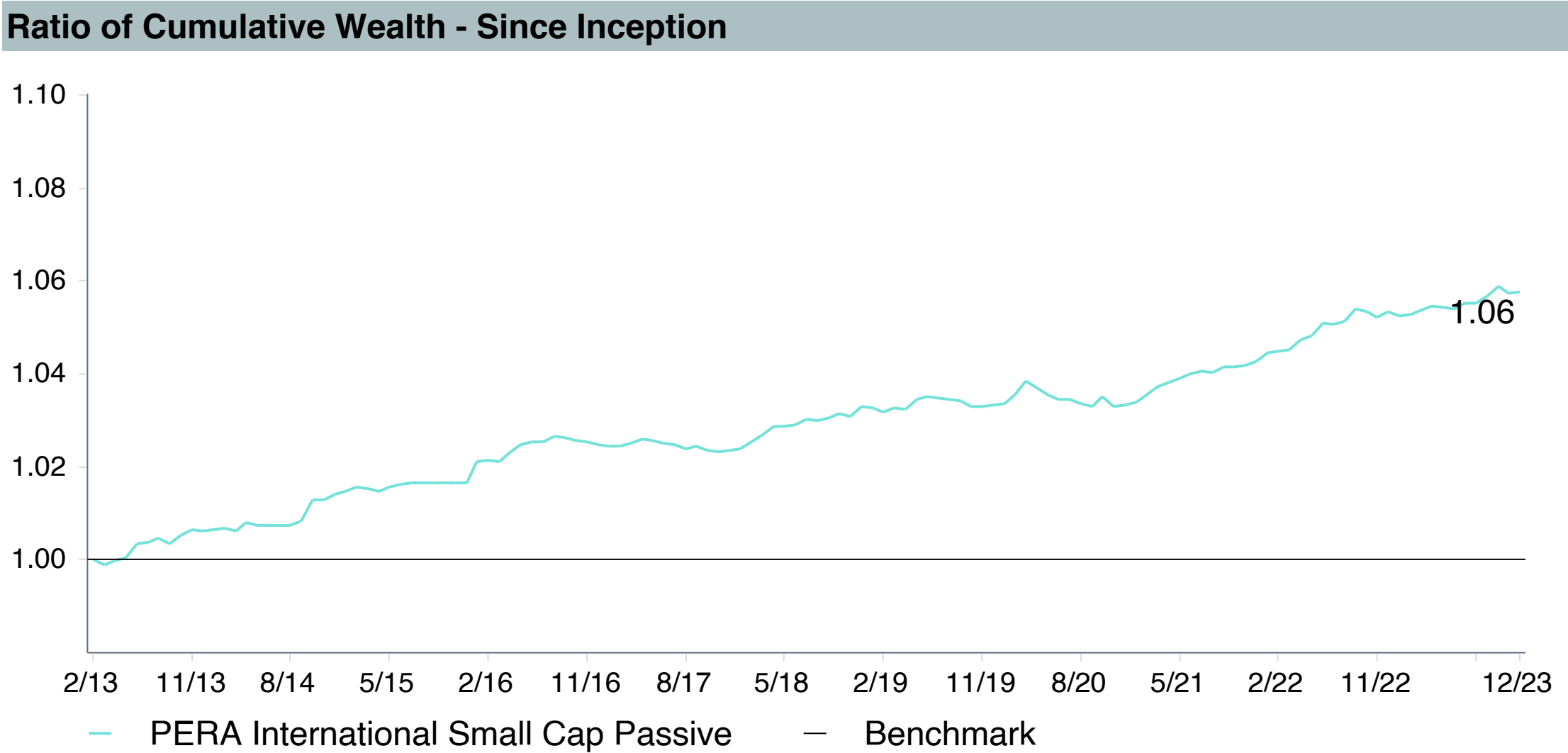
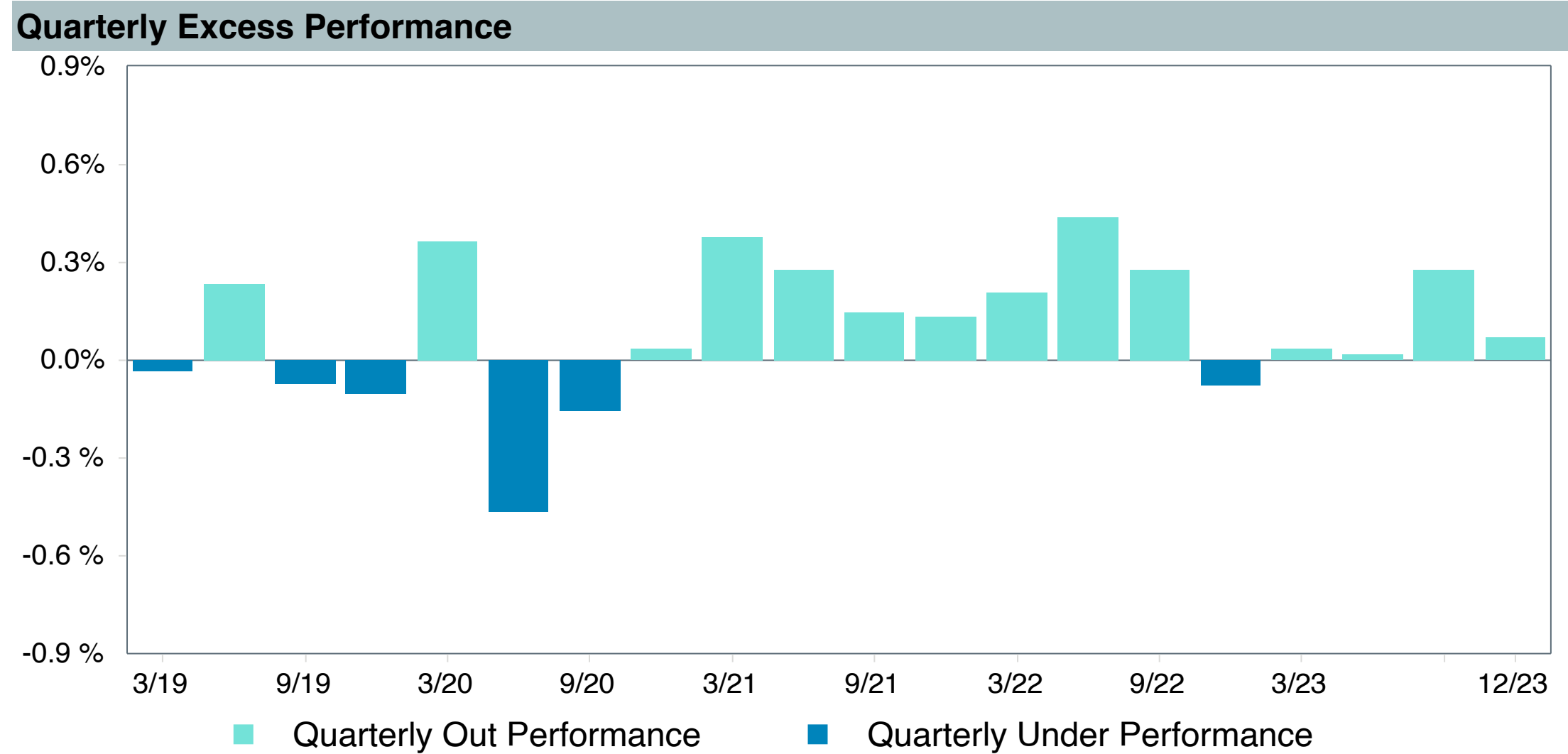
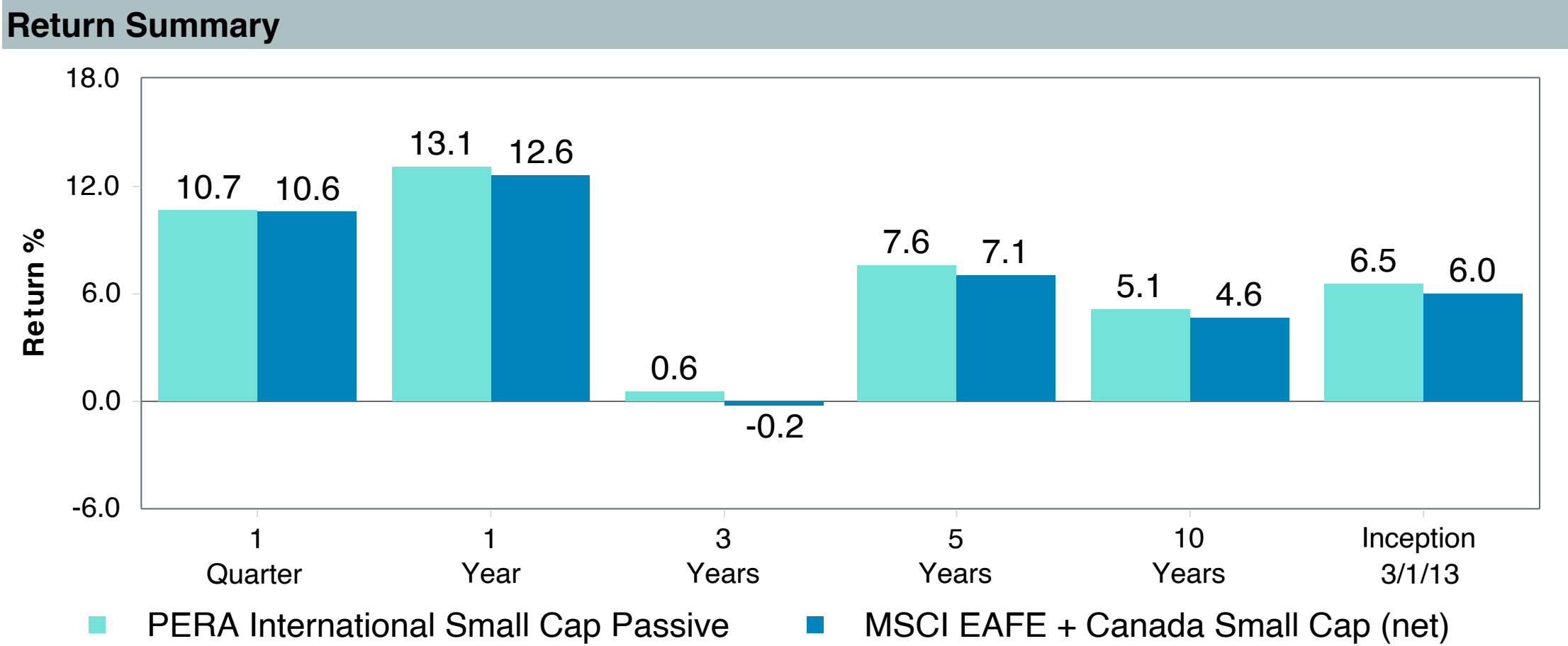
Philosophy and Process

The portfolio attempts to match the risk and return characteristics of the MSCI EAFE + Canada IMI. Instead of a full replication approach, PERA has chosen to utilize optimization tools which allow PERA to hold a subset of the benchmark universe with the goal of minimizing tracking error and trading costs.

Manager Performance Summary PERA International Small Cap Pass

As of December 31, 2023

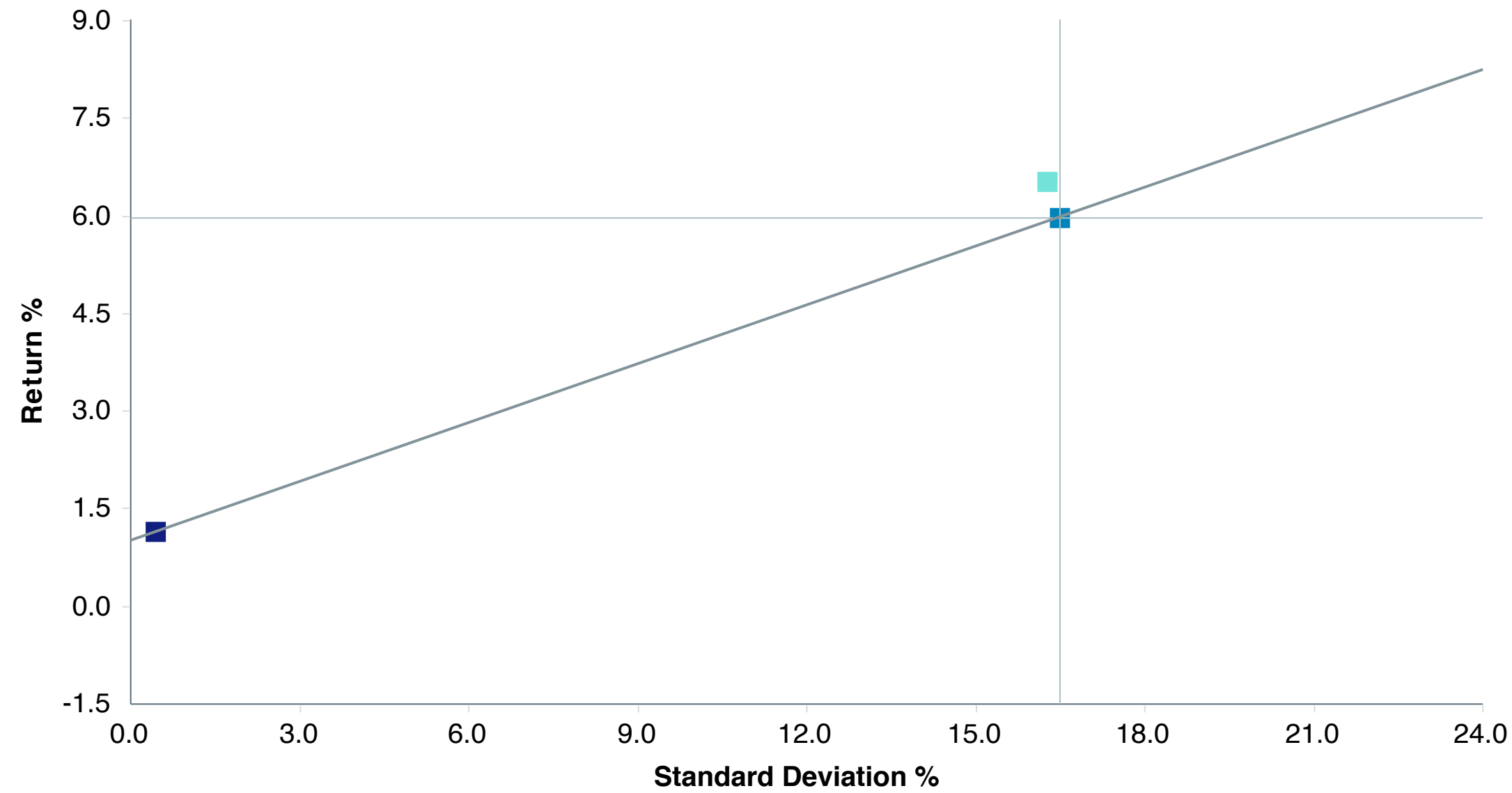
Account Information	
Account Name	PERA International Small Cap Passive
Inception Date	03/01/2013
Account Structure	Separate Account
Asset Class	Global Equity
Benchmark	MSCI EAFE + Canada Small Cap (net)
Peer Group	



Risk Profile PERA International Small Cap Passive

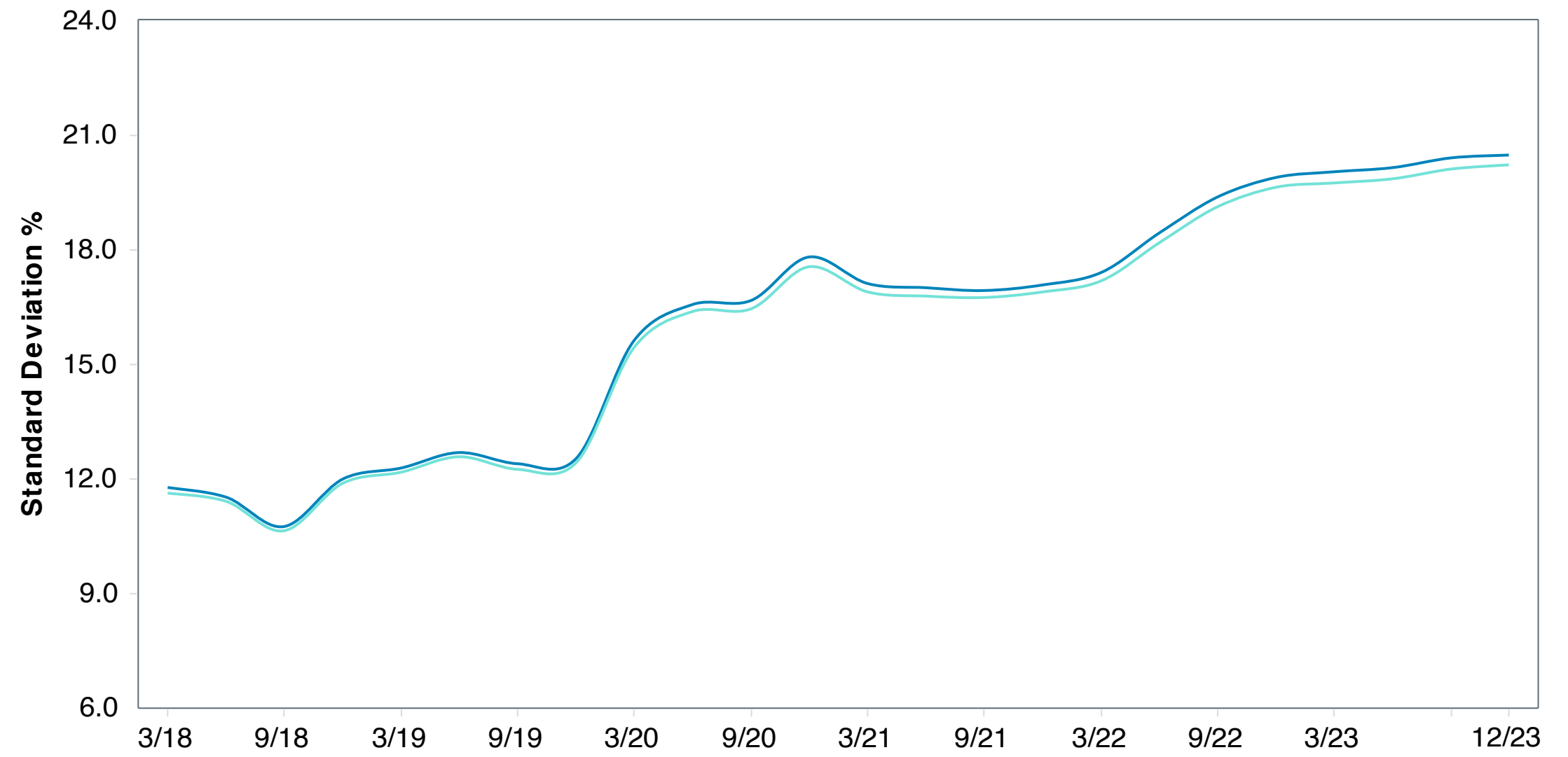
As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation Since Inception



- PERA International Small Cap Passive
- MSCI EAFE + Canada Small Cap (net)
- 90 Day U.S. Treasury Bill

Standard Deviation Rolling 5 Years



- PERA International Small Cap Passive
- MSCI EAFE + Canada Small Cap (net)

Since Inception Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation	Inception Date
PERA International Small Cap Passive	0.48	0.37	1.32	1.00	0.40	0.58	0.99	6.53	16.27	1.00	03/01/2013
MSCI EAFE + Canada Small Cap (net)	0.00	0.00	-	1.00	0.39	0.00	1.00	7.33	18.42	1.00	01/01/2001
90 Day U.S. Treasury Bill	-6.04	16.52	-0.37	0.00	-	1.16	0.00	1.15	0.45	-0.07	03/01/2013



Portfolio Analysis (Holdings-based)

As of December 31, 2023

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	2,820	2,810
Median Mkt. Cap (\$M)	1,401	1,274
Price/Earnings ratio	13.38	13.36
Price/Book ratio	2.06	2.07
5 Yr. EPS Growth Rate (%)	8.34	8.21
Current Yield (%)	3.05	3.05
Beta (5 Years, Monthly)	0.99	1.00
Number of Stocks	2,303	2,386

Top Ten Equity Holdings			
	Portfolio Weight %	Benchmark Weight %	Quarterly Return %
SCREEN Holdings Co Ltd	0.26	0.24	73.43
Rexel SA	0.24	0.23	21.33
B&M European Value Retail SA	0.24	0.24	0.73
Trelleborg AB	0.24	0.26	33.70
Diploma PLC	0.23	0.21	24.54
Marks and Spencer Group PLC	0.22	0.24	20.72
Psp Swiss Property AG, Zug	0.22	0.22	18.13
Georg Fischer AG Schaffhausen	0.22	0.21	28.58
Weir Group PLC	0.22	0.22	4.63
Intermediate Capital Group PLC	0.22	0.22	28.96

% of Portfolio	2.31	2.29
-----------------------	-------------	-------------

Top Ten Contributors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
SCREEN Holdings Co Ltd	0.17	0.15	0.02	73.43
Trelleborg AB	0.20	0.22	-0.02	33.70
Addtech AB	0.17	0.16	0.01	36.23
Castellum Ab, Gothenburg	0.15	0.15	0.00	38.73
Intermediate Capital Group PLC	0.19	0.19	0.00	28.96
Georg Fischer AG Schaffhausen	0.19	0.18	0.01	28.58
Diploma PLC	0.20	0.19	0.01	24.54
Ebara Corp	0.18	0.17	0.01	27.53
CAR Group Limited	0.27	0.26	0.01	17.83
SSAB Corp	0.12	0.14	-0.02	38.26

% of Portfolio	1.84	1.81	0.03
-----------------------	-------------	-------------	-------------

Top Ten Detractors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Rohto Pharmaceutical Co Ltd	0.20	0.20	0.00	-25.79
Liontown Resources Ltd	0.11	0.11	0.00	-40.66
Indivior PLC	0.12	0.11	0.01	-30.43
Whitecap Resources Inc	0.18	0.20	-0.02	-19.19
UBI Soft Entertainment SA	0.13	0.12	0.01	-21.61
Crescent Point Energy Corp	0.17	0.17	0.00	-15.23
Sega Sammy Holdings Inc	0.10	0.11	-0.01	-24.34
BlackBerry Ltd	0.10	0.10	0.00	-25.05
Baytex Energy Corp	0.10	0.12	-0.02	-24.65
Mitsubishi Motors Corp	0.09	0.11	-0.02	-27.04

% of Portfolio	1.30	1.35	-0.05
-----------------------	-------------	-------------	--------------

PERA International Small Cap Passive

Philosophy and Process

The portfolio attempts to match the risk and return characteristics of the MSCI EAFE + Canada Small Cap Index. Instead of a full replication approach, PERA has chosen to utilize optimization tools which allow PERA to hold a subset of the benchmark universe with the goal of minimizing tracking error and trading costs.

(This page is left blank intentionally)

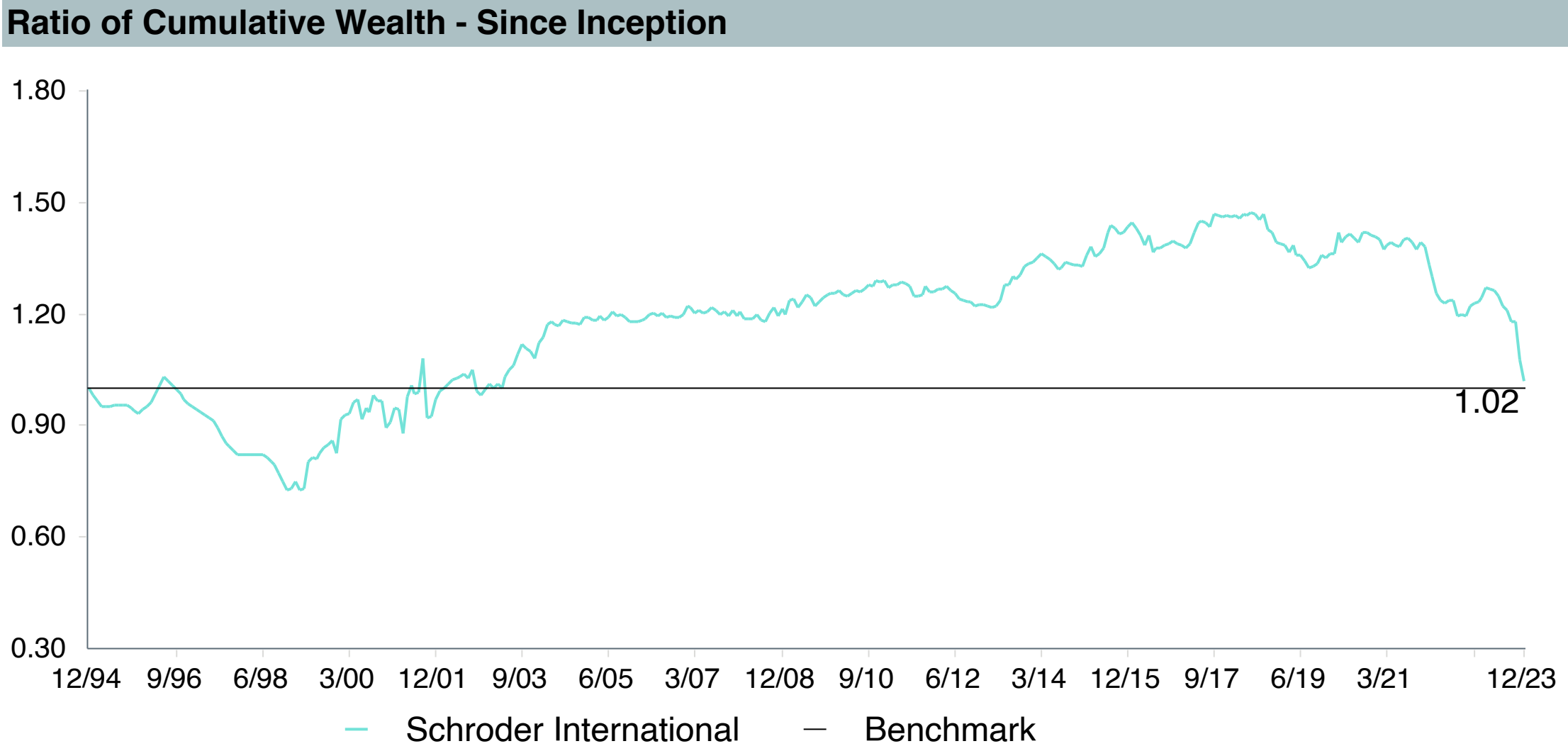
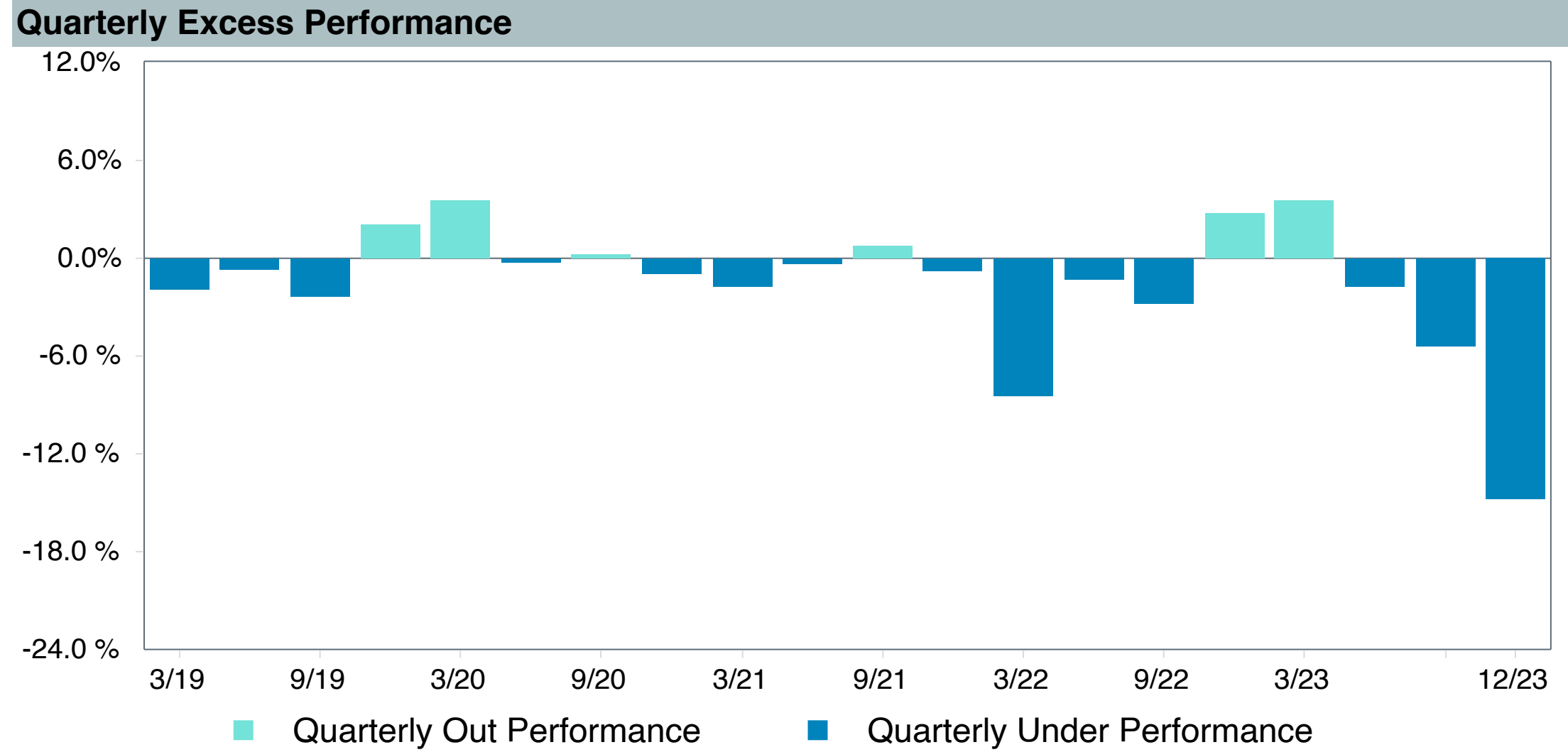
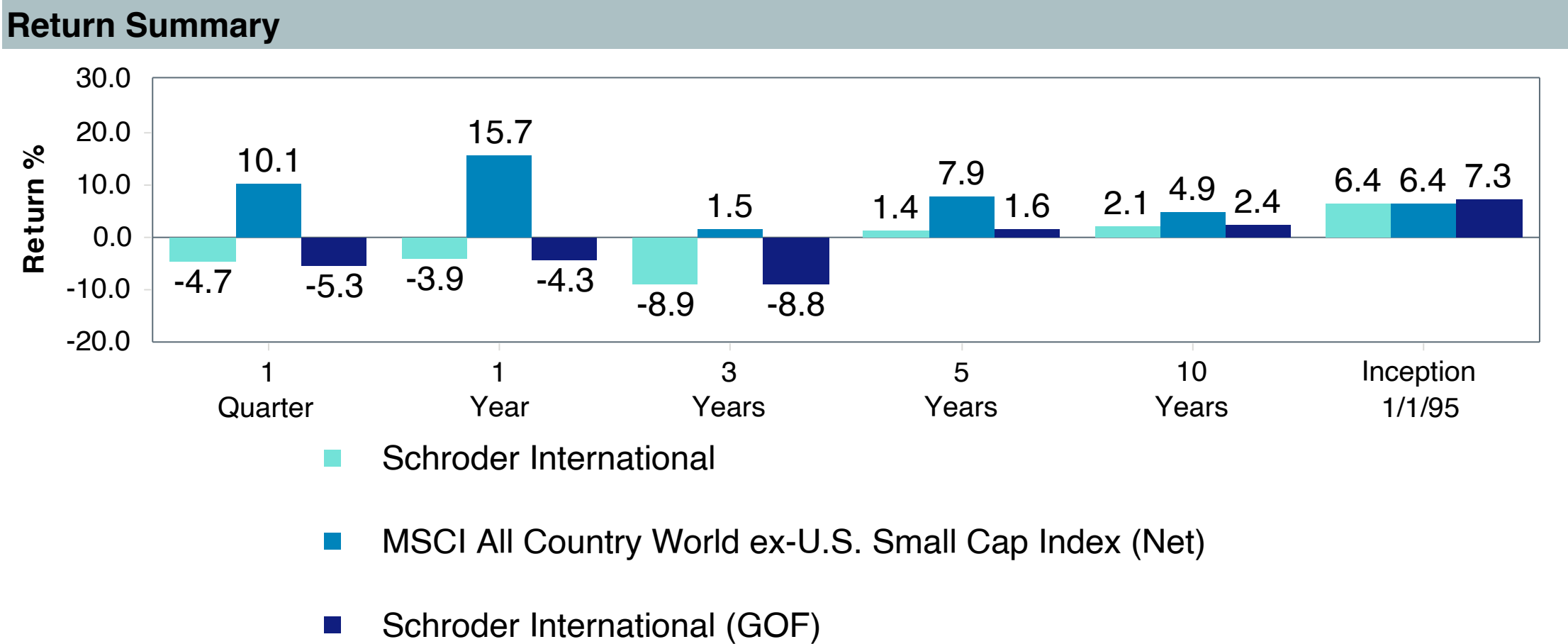
External Non-U.S. Broad Markets



Manager Performance Summary Schroder International

As of December 31, 2023

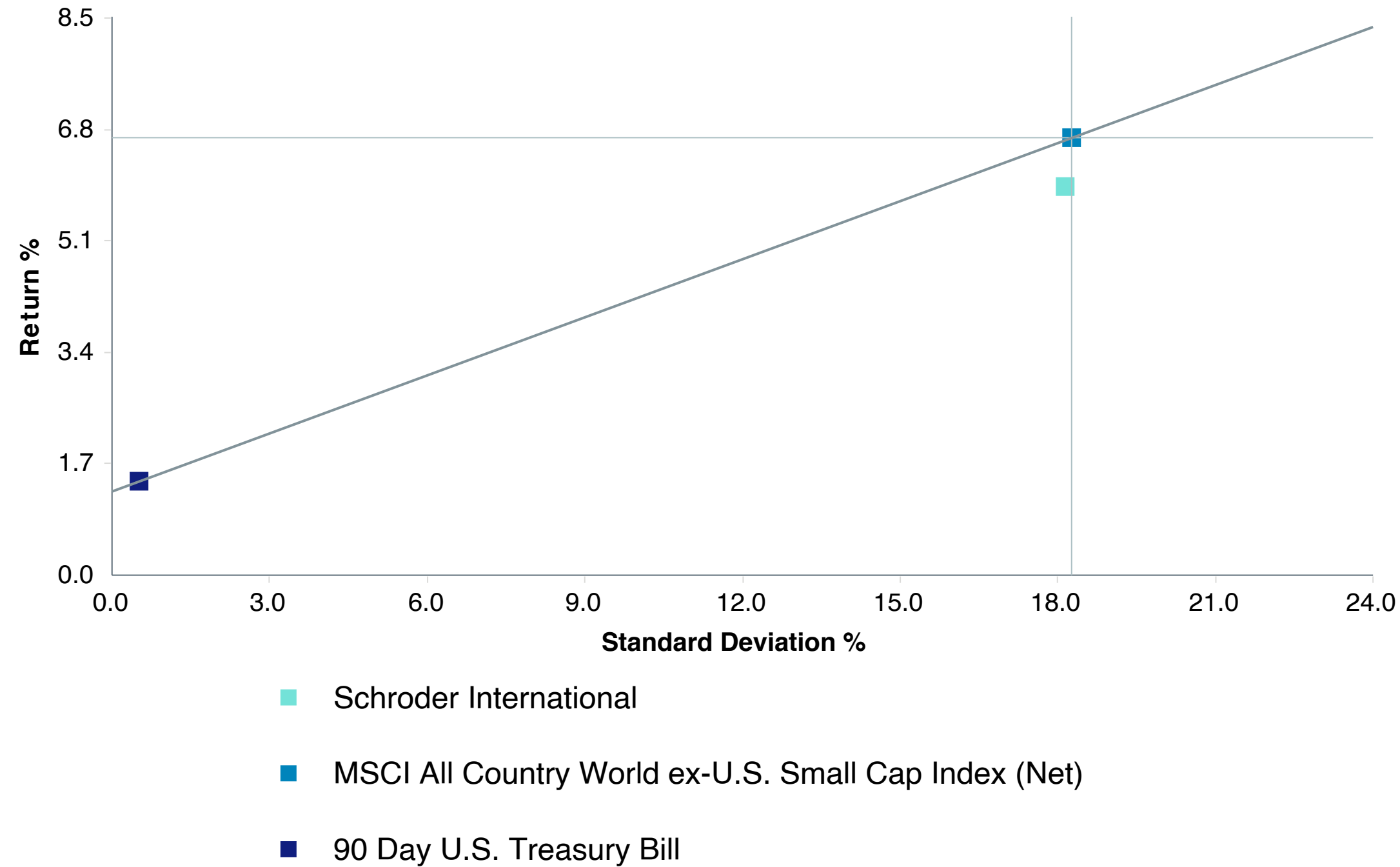
Account Information	
Account Name	Schroder International
Inception Date	01/01/1995
Account Structure	Commingled Fund
Asset Class	Global Equity
Benchmark	MSCI All Country World ex-U.S. Small Cap Index (Net)
Peer Group	



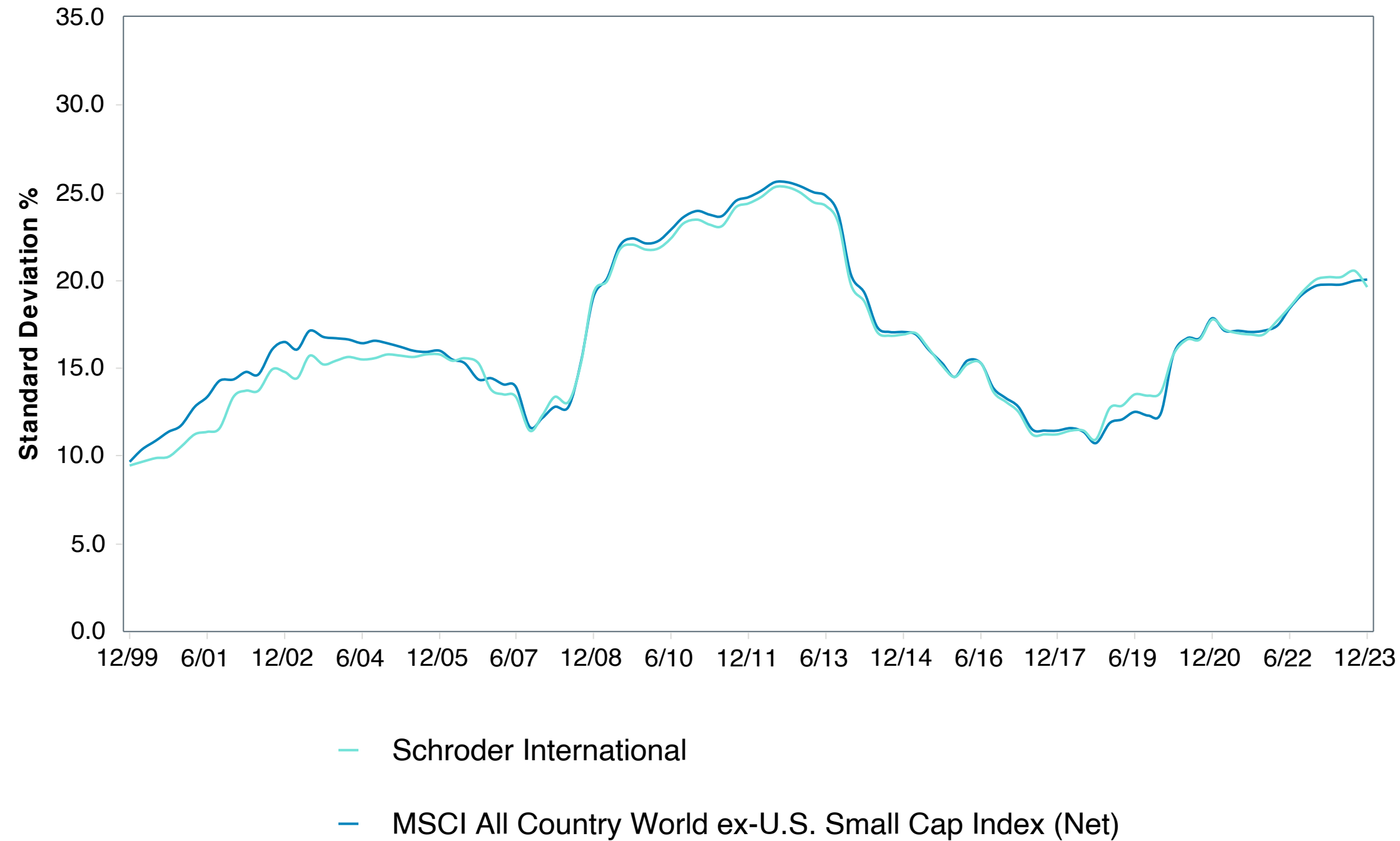
Risk Profile Schroder International

As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation
April 1, 2004 To December 31, 2023



Standard Deviation Rolling 5 Years



April 1, 2004 To December 31, 2023 Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Schroder International	-0.73	4.71	-0.15	0.93	0.33	-0.40	0.96	5.93	18.14	0.97
MSCI All Country World ex-U.S. Small Cap Index (Net)	0.00	0.00	-	1.00	0.37	0.00	1.00	6.67	18.25	1.00
90 Day U.S. Treasury Bill	-6.76	18.29	-0.37	0.00	-	1.45	0.00	1.43	0.51	-0.06



Portfolio Analysis (Holdings-based)

As of December 31, 2023

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	3,996	2,506
Median Mkt. Cap (\$M)	2,657	1,091
Price/Earnings ratio	18.24	13.61
Price/Book ratio	2.58	2.22
5 Yr. EPS Growth Rate (%)	8.36	9.60
Current Yield (%)	2.45	2.84
Beta (5 Years, Monthly)	0.92	1.00
Number of Stocks	124	4,372

Top Ten Equity Holdings			
	Portfolio Weight %	Benchmark Weight %	Quarterly Return %
Japan Material Co Ltd	1.73	0.03	15.81
Hemnet Group AB	1.72	0.05	34.91
Trusco Nakayama Corp	1.72	0.02	6.69
Cranswick PLC	1.68	0.06	12.62
Nec Networks & Sys	1.67	0.03	28.21
Warehouses De Pauw SA	1.67	0.00	26.86
SBI Holdings Inc	1.66	0.00	6.66
Harmonic Drive Systems Inc	1.58	0.04	32.63
AI Holdings Corp	1.56	0.01	6.54
Trigano SA	1.56	0.03	20.41
% of Portfolio	16.55	0.27	

Top Ten Contributors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
James Hardie Industries Plc	1.15	0.00	1.15	46.42
Rorze Corp	0.91	0.02	0.89	54.31
Hemnet Group AB	1.41	0.04	1.37	34.91
Montana Aerospace AG	0.61	0.01	0.60	70.47
DO & CO AG	1.22	0.02	1.20	35.09
Nec Networks & Sys	1.44	0.02	1.42	28.21
Harmonic Drive Systems Inc	1.24	0.03	1.21	32.63
Trigano SA	1.48	0.03	1.45	20.41
Ypsomed Holding AG	1.27	0.03	1.24	22.20
Azelis Group NV	1.13	0.00	1.13	23.69
% of Portfolio	11.86	0.20	11.66	

Top Ten Detractors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Hellofresh Se	2.08	0.00	2.08	-47.20
Nippon Shinyaku Co Ltd	1.27	0.06	1.21	-16.45
Bank Of Ireland Group Plc	1.76	0.00	1.76	-7.70
Royal Unibrew	0.97	0.11	0.86	-13.74
Nittoku Co. Ltd.	0.79	0.00	0.79	-14.15
SIG Group AG	1.32	0.00	1.32	-7.10
Chroma Ate Inc	0.46	0.09	0.37	-18.83
Oisix ra daichi Inc	0.73	0.01	0.72	-10.40
Barco NV, Kortrijk	1.20	0.03	1.17	-6.05
Iluka Resources Ltd	0.75	0.06	0.69	-9.14
% of Portfolio	11.33	0.36	10.97	

Schroder International

Philosophy and Process

Schroders applies a rigorous fundamental research process to identify small company securities offering above-market long-term growth at reasonable valuations. The firm seeks to add value primarily through stock selection and secondarily through country allocations. The manager focuses on smaller companies in the developed markets and select emerging markets, those that represent the bottom 20% of the market cap of institutional investable assets available in each country. Given the relatively high costs of trading non-U.S. small caps, the firm's research efforts focus on assessing long-term business fundamentals and to hold stocks for an average of three years. The firm holds a relatively large portfolio which is well diversified across regions to mitigate the higher security specific risk in the small cap market. Schroders builds portfolios of 150-250 stocks through a process with top-down and bottom-up perspectives, remains fully invested, generates low turnover, and will hedge currency exposures when appropriate.

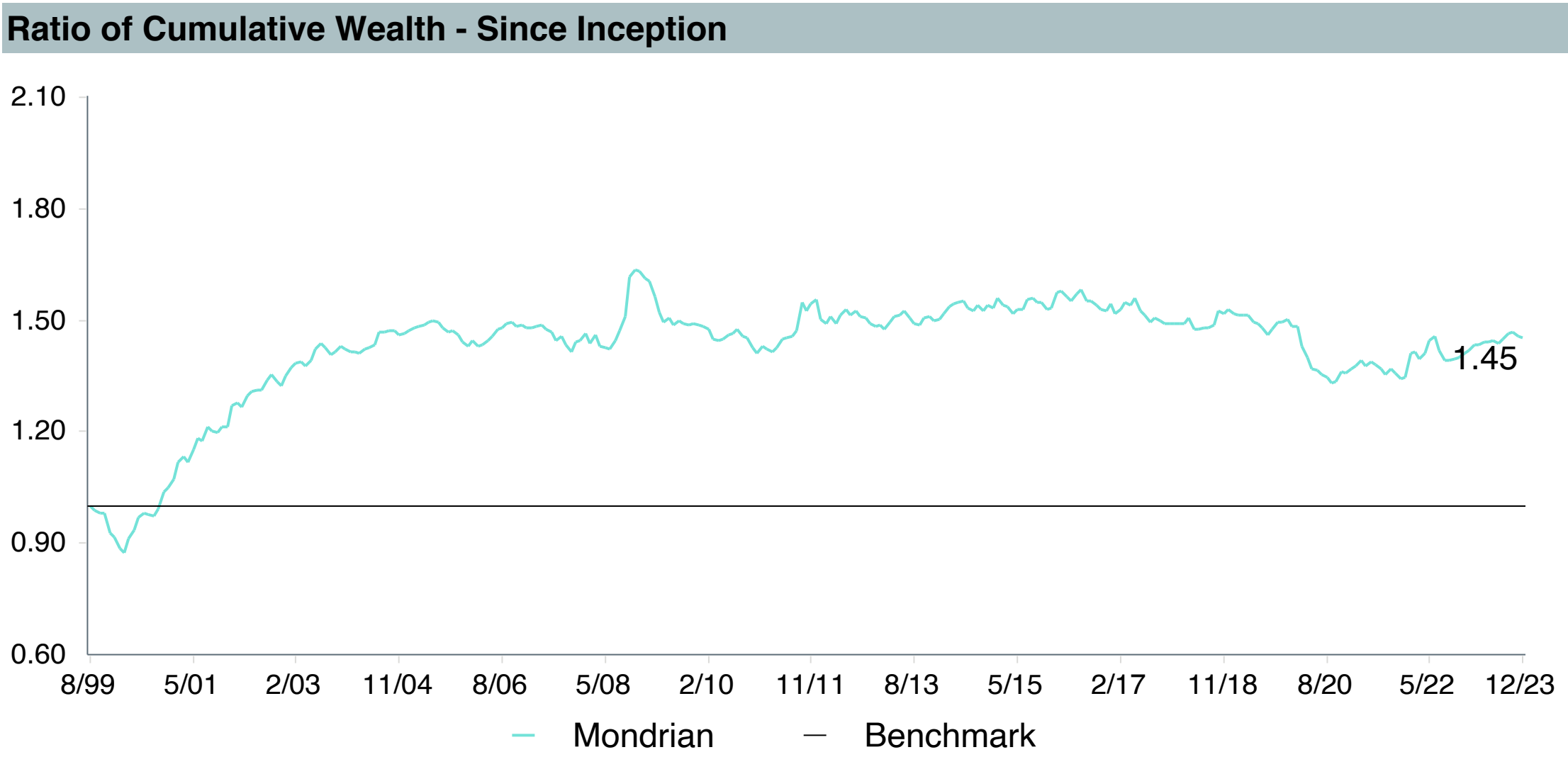
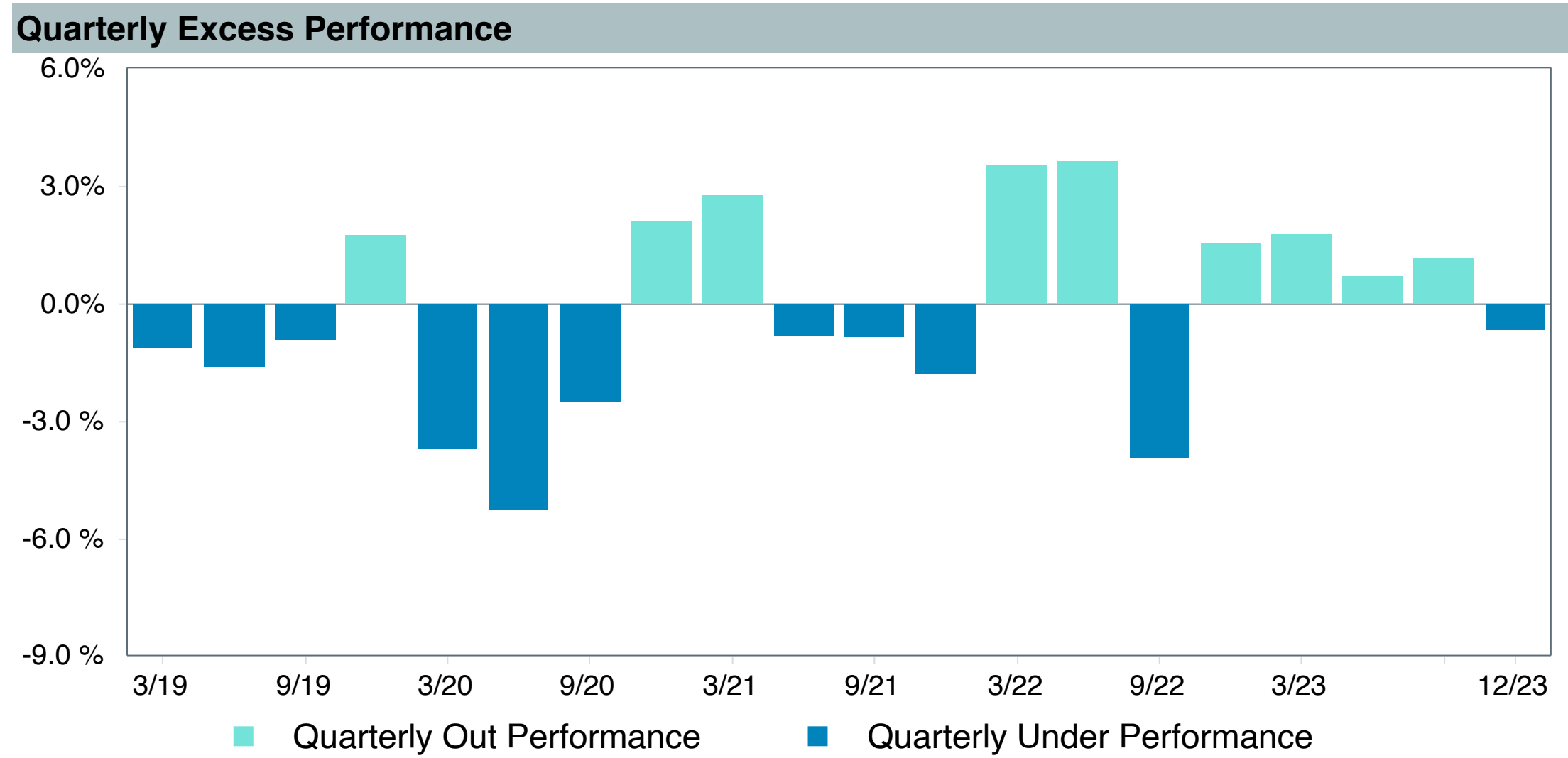
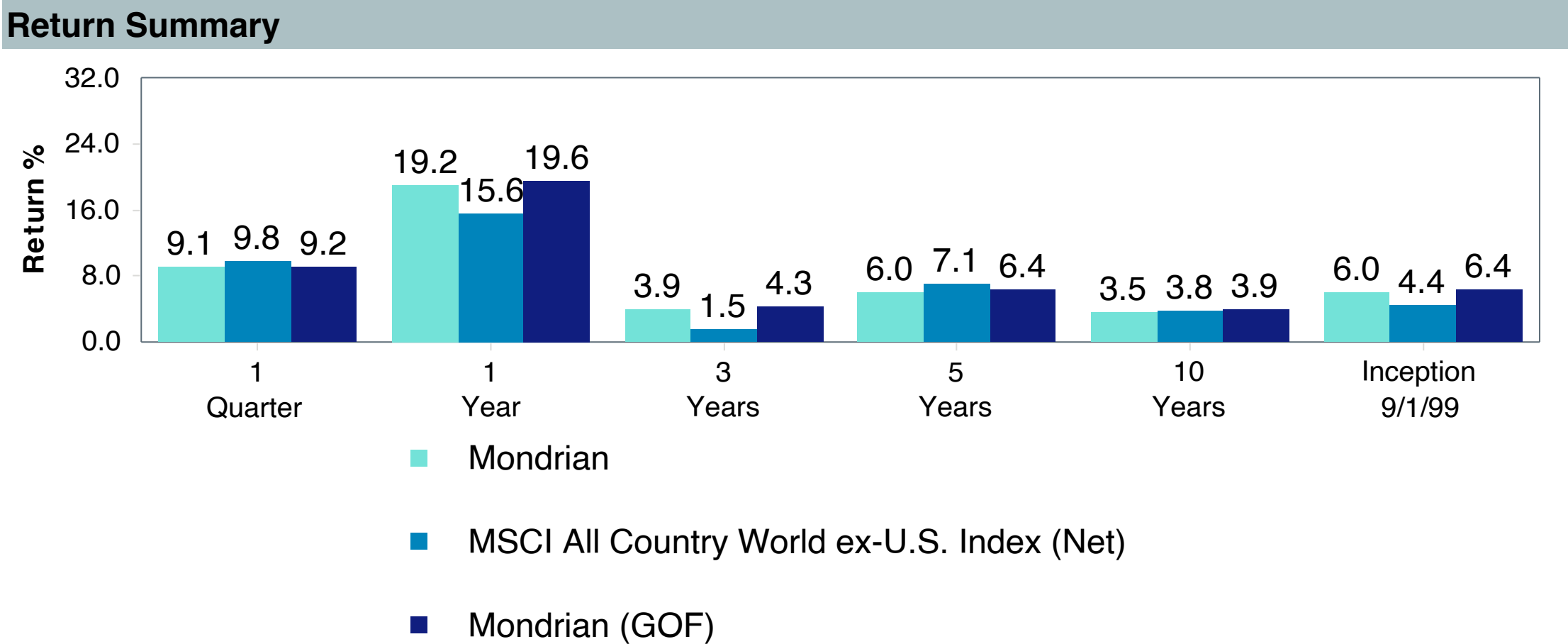
Organizational Update

Aon last met with Schroders in December 2023. Schroders began paying out-of-pocket for sell-side research in 2018. After recent meetings with Schroders, Aon has moved Schroders International to Qualified.

Manager Performance Summary Mondrian

As of December 31, 2023

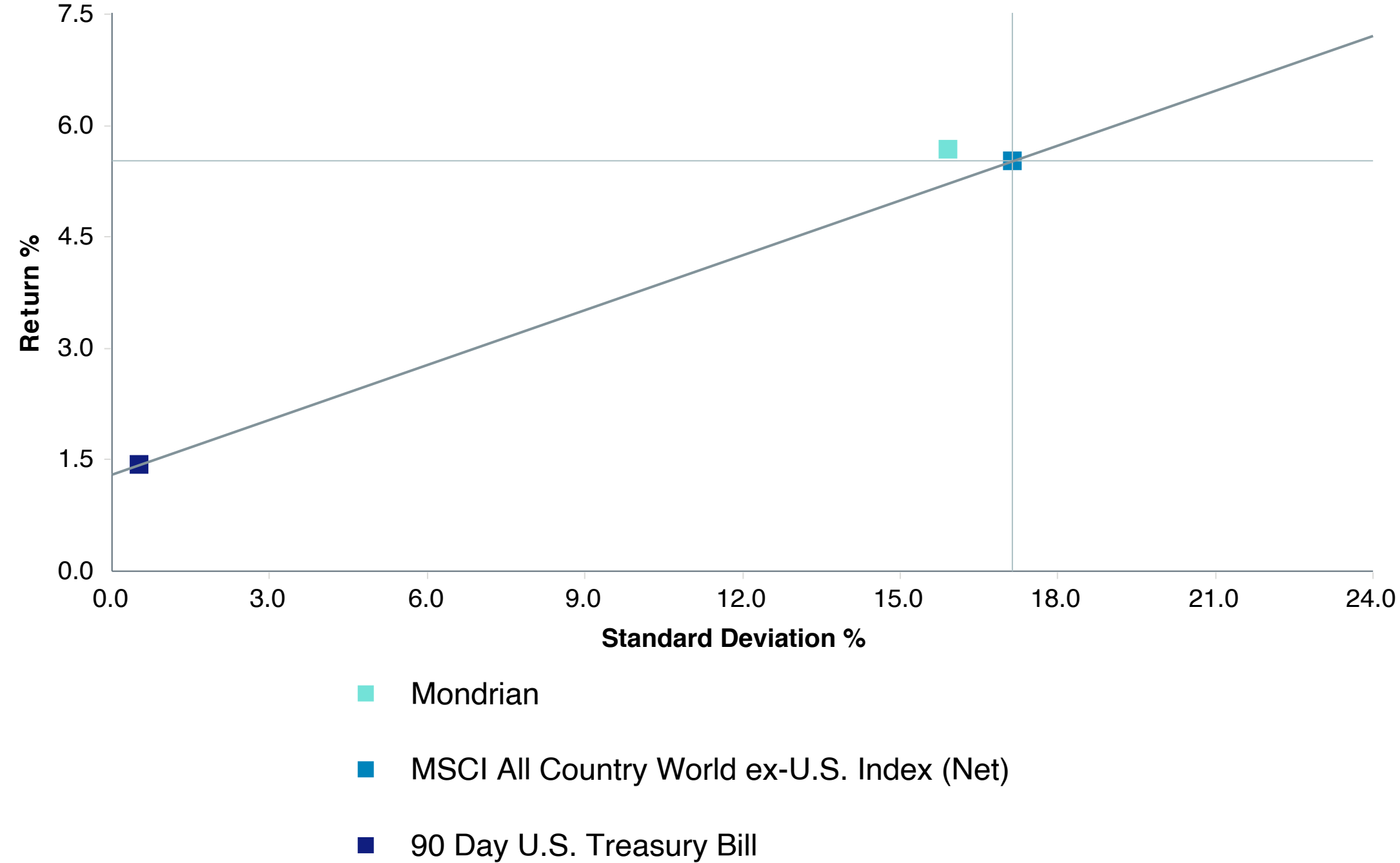
Account Information	
Account Name	Mondrian
Inception Date	10/01/1999
Account Structure	Separate Account
Asset Class	Global Equity
Benchmark	MSCI All Country World ex-U.S. Index (Net)
Peer Group	



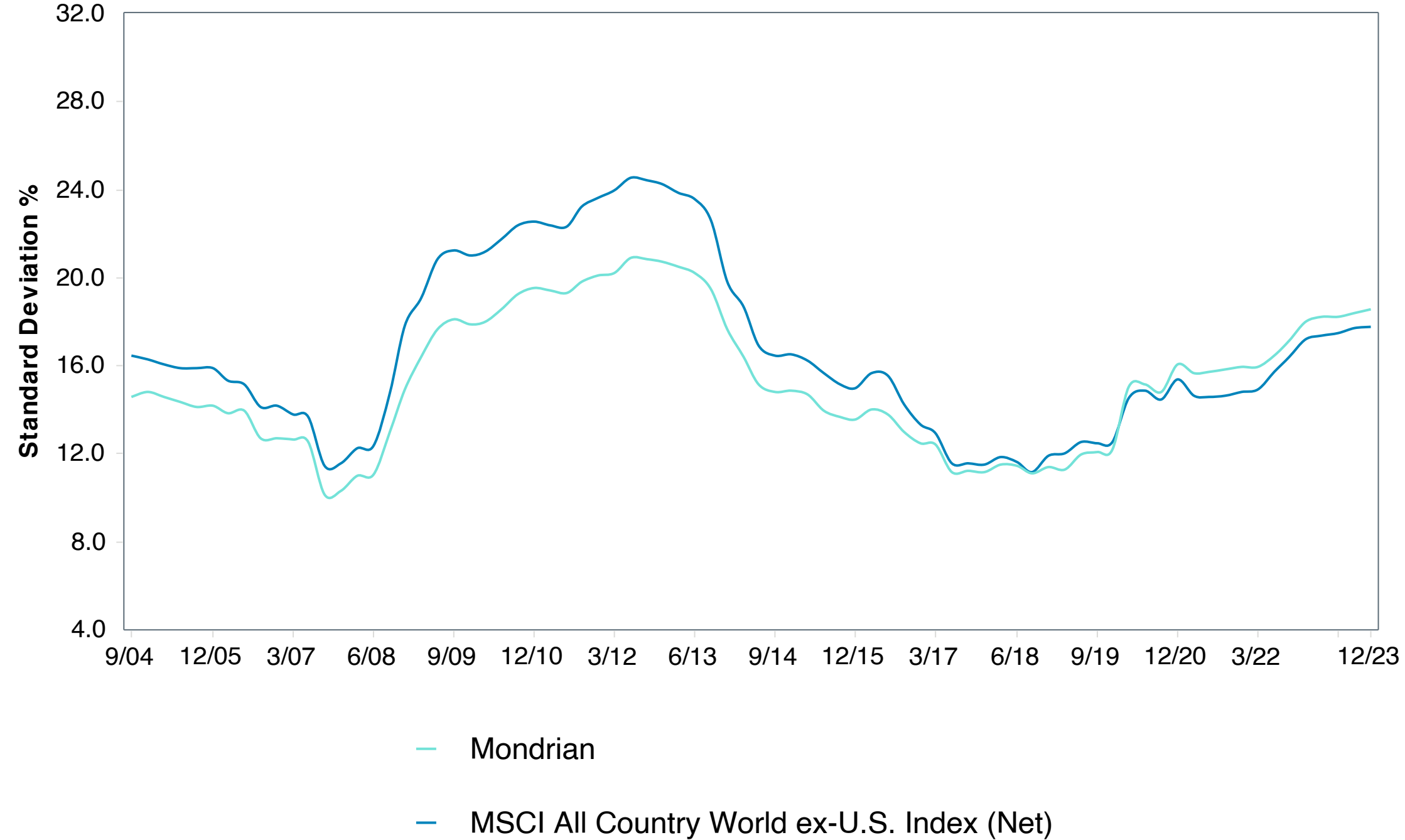
Risk Profile Mondrian

As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation
April 1, 2004 To December 31, 2023



Standard Deviation Rolling 5 Years



April 1, 2004 To December 31, 2023 Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Mondrian	-0.06	4.22	-0.01	0.94	0.34	0.63	0.90	5.68	15.91	0.97
MSCI All Country World ex-U.S. Index (Net)	0.00	0.00	-	1.00	0.32	0.00	1.00	5.52	17.15	1.00
90 Day U.S. Treasury Bill	-5.46	17.16	-0.32	0.00	-	1.44	0.00	1.43	0.51	-0.02



Portfolio Analysis (Holdings-based)

As of December 31, 2023

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	66,457	90,266
Median Mkt. Cap (\$M)	27,274	9,828
Price/Earnings ratio	11.42	13.62
Price/Book ratio	1.85	2.49
5 Yr. EPS Growth Rate (%)	7.47	10.40
Current Yield (%)	3.81	3.09
Beta (5 Years, Monthly)	1.02	1.00
Number of Stocks	103	2,312

Top Ten Equity Holdings			
	Portfolio Weight %	Benchmark Weight %	Quarterly Return %
Banco Santander SA	2.69	0.27	11.52
Enel Ente Nazionale Per L'Energia	2.66	0.24	20.65
Lloyds Banking Group PLC	2.63	0.15	12.31
Fujitsu Ltd	2.52	0.11	27.95
Sony Group Corporation	2.48	0.48	15.97
Taiwan Semiconductor Manu Co.	2.35	1.89	19.87
Koninklijke Philips NV	2.35	0.07	15.99
TC Energy Corp	2.20	0.16	15.66
Allianz SE	2.14	0.43	11.85
Sanofi	2.12	0.45	-7.71

% of Portfolio	24.14	4.25
-----------------------	--------------	-------------

Top Ten Contributors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Fujitsu Ltd	2.17	0.09	2.08	27.95
Enel Ente Nazionale Per L'Energia	2.45	0.22	2.23	20.65
Taiwan Semiconductor Manu Co.	2.19	1.73	0.46	19.87
Associated British Foods PLC	1.74	0.04	1.70	21.84
Koninklijke Philips NV	2.14	0.08	2.06	15.99
Sony Group Corporation	2.14	0.45	1.69	15.97
Banco Santander SA	2.81	0.27	2.54	11.52
Imperial Brands PLC	1.82	0.08	1.74	16.38
Mediatek Incorporation	0.66	0.15	0.51	45.25
Lloyds Banking Group PLC	2.32	0.15	2.17	12.31

% of Portfolio	20.44	3.26	17.18
-----------------------	--------------	-------------	--------------

Top Ten Detractors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Sanofi	2.33	0.53	1.80	-7.71
Alibaba Group Holding Ltd	1.56	0.78	0.78	-10.23
BP plc	2.10	0.49	1.61	-7.24
Takeda Pharmaceutical Co Ltd	2.01	0.21	1.80	-7.54
Ping An Insurance Group	0.66	0.17	0.49	-20.95
Jardine Matheson Holdings Ltd	1.19	0.03	1.16	-11.22
Honda Motor Co Ltd	1.60	0.23	1.37	-7.74
Xinyi Solar Holdings Ltd	0.30	0.02	0.28	-21.95
LONGi Green Energy Technology Co Ltd	0.42	0.01	0.41	-13.55
China Merchants Bank Co Ltd	0.43	0.02	0.41	-13.10

% of Portfolio	12.60	2.49	10.11
-----------------------	--------------	-------------	--------------

Mondrian

Philosophy and Process

Mondrian is a value-oriented defensive manager. The firm believes that a security's value is determined by the future inflation-adjusted cash flow stream that it will generate. As such, the firm evaluates the fundamental value of potential investments using a dividend discount model which is applied consistently across all markets and securities. The firm believes that significant inefficiencies exist throughout the international securities markets. The dividend discount model assists the firm in identifying and exploring inappropriate valuations, resulting in superior returns with defensive risk characteristics. Mondrian builds portfolios of stocks through a process with top-down and bottom-up perspectives, remains fully invested, generates low-turnover, and will hedge currency exposures when appropriate.

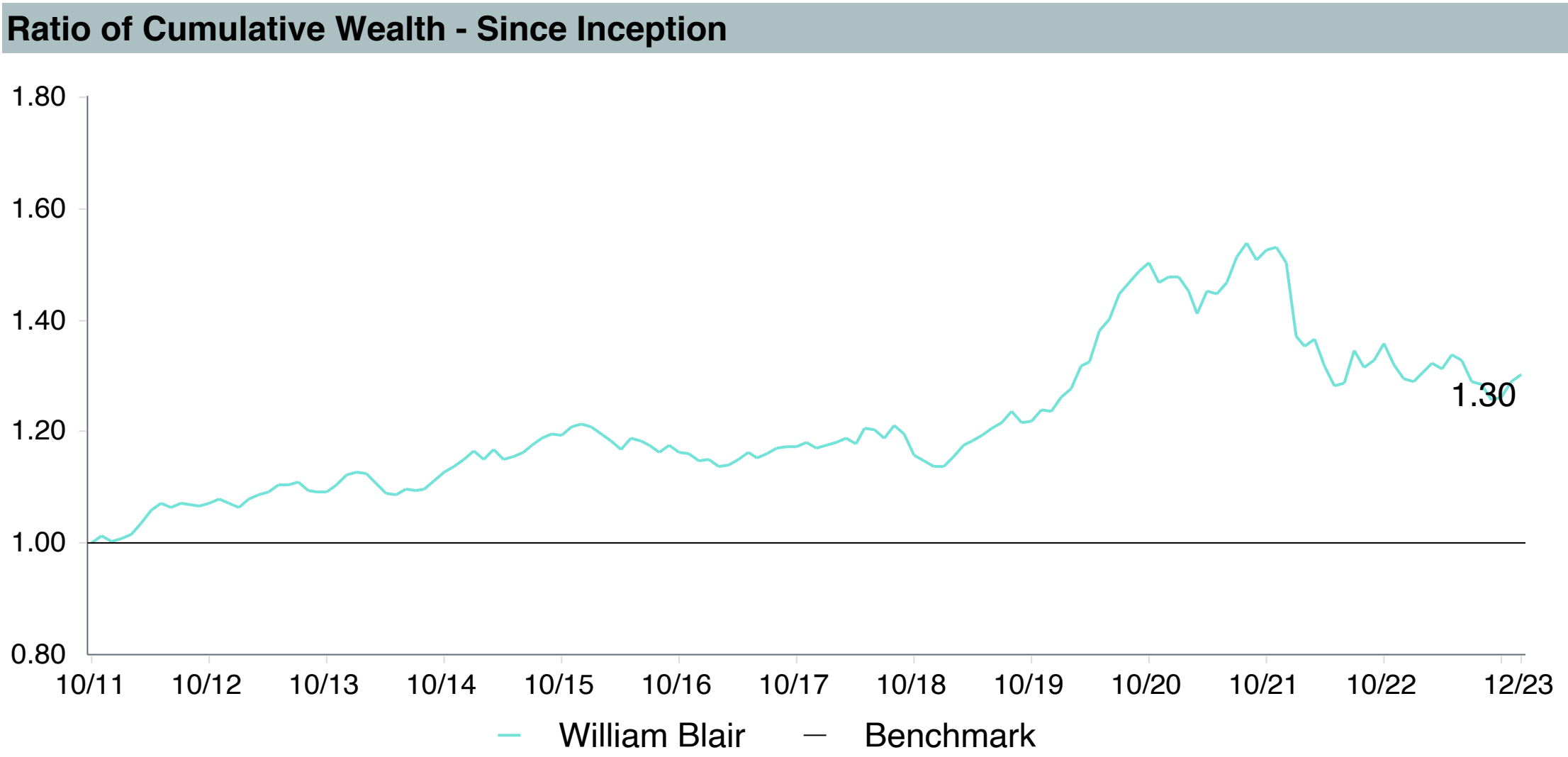
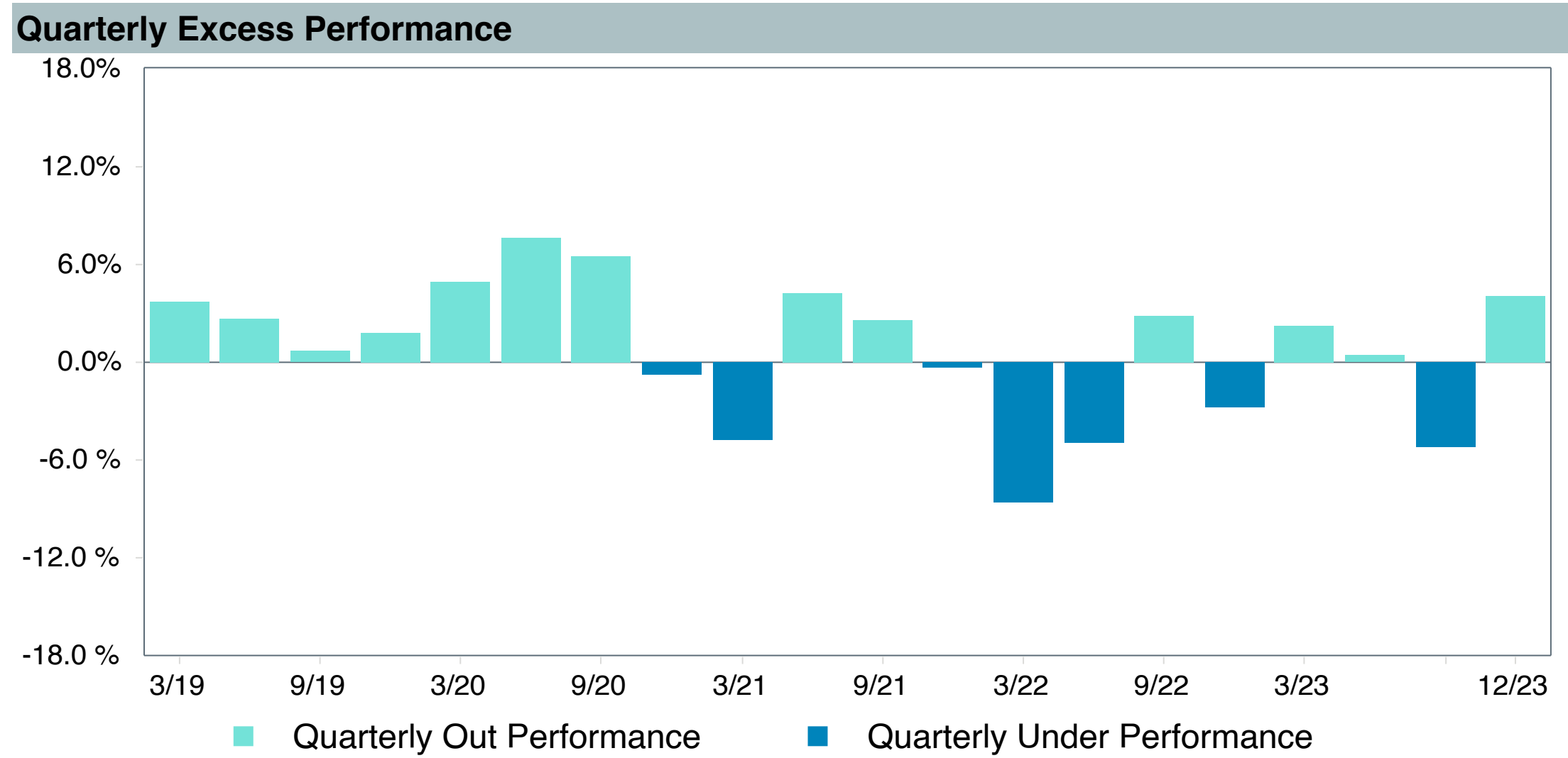
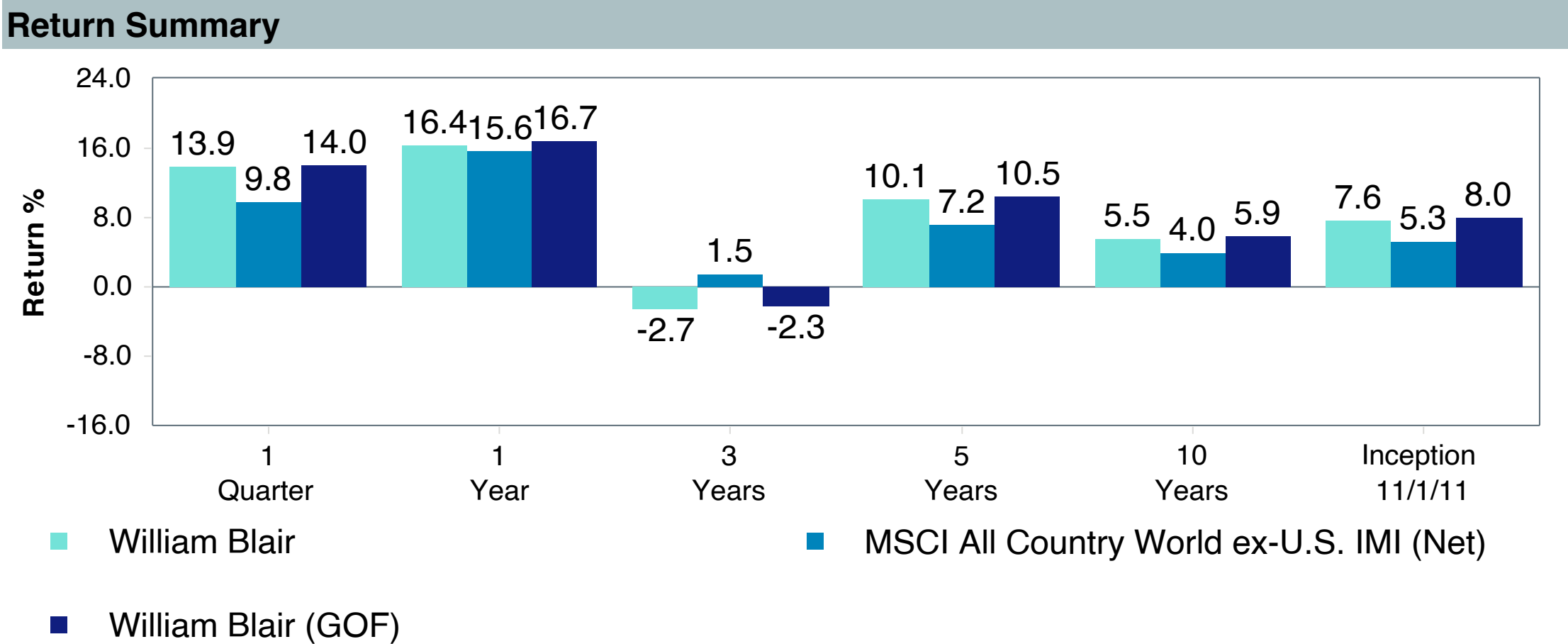
Organizational Update

Aon last met with Mondrian in October 2023. Mondrian began paying out-of-pocket for sell-side research in 2018. As of March 2024, Mondrian International Equity continues to have a Qualified rating.

Manager Performance Summary William Blair

As of December 31, 2023

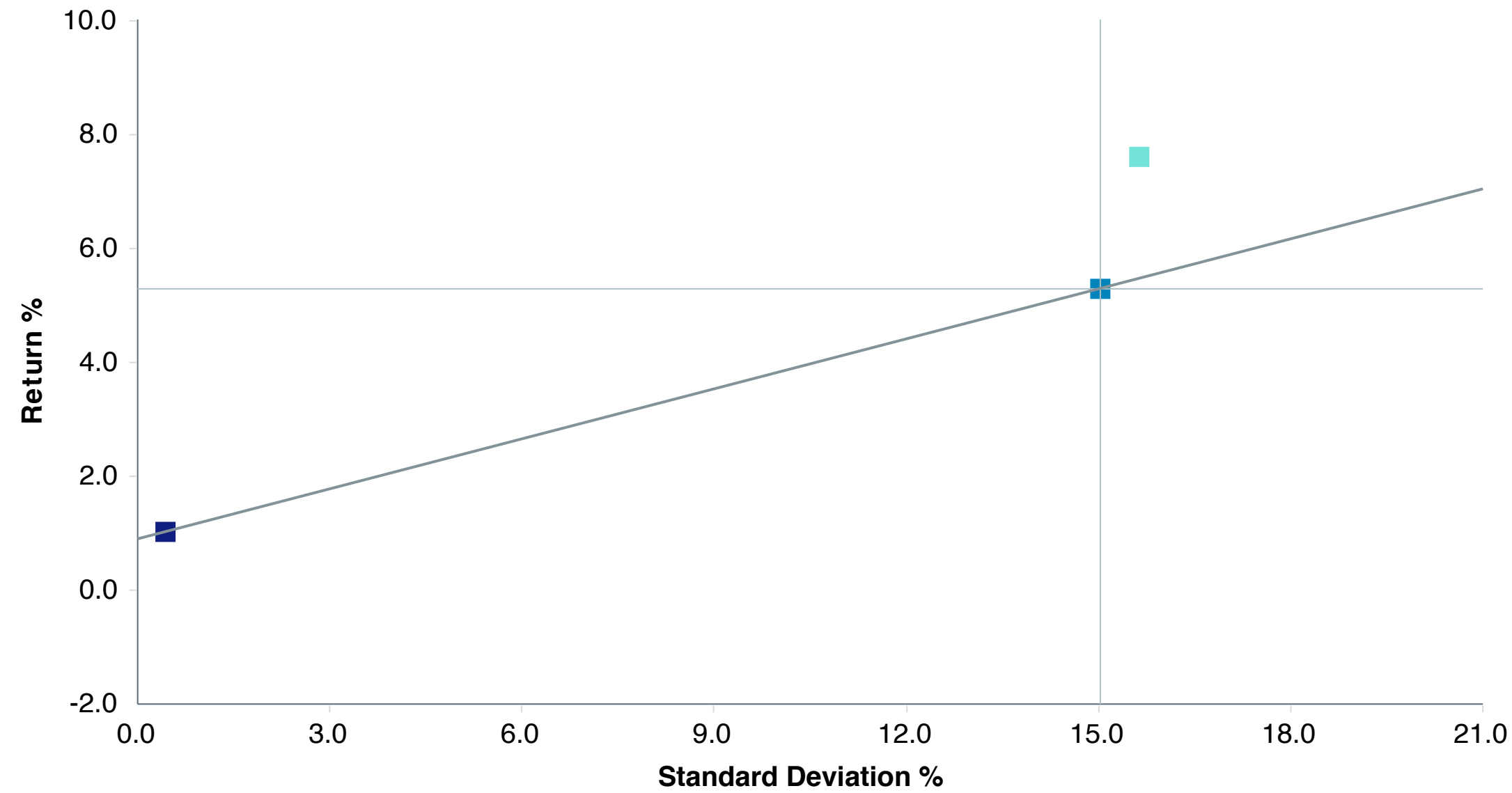
Account Information	
Account Name	William Blair
Inception Date	11/01/2011
Account Structure	Separate Account
Asset Class	Global Equity
Benchmark	MSCI All Country World ex-U.S. IMI (Net)
Peer Group	



Risk Profile William Blair

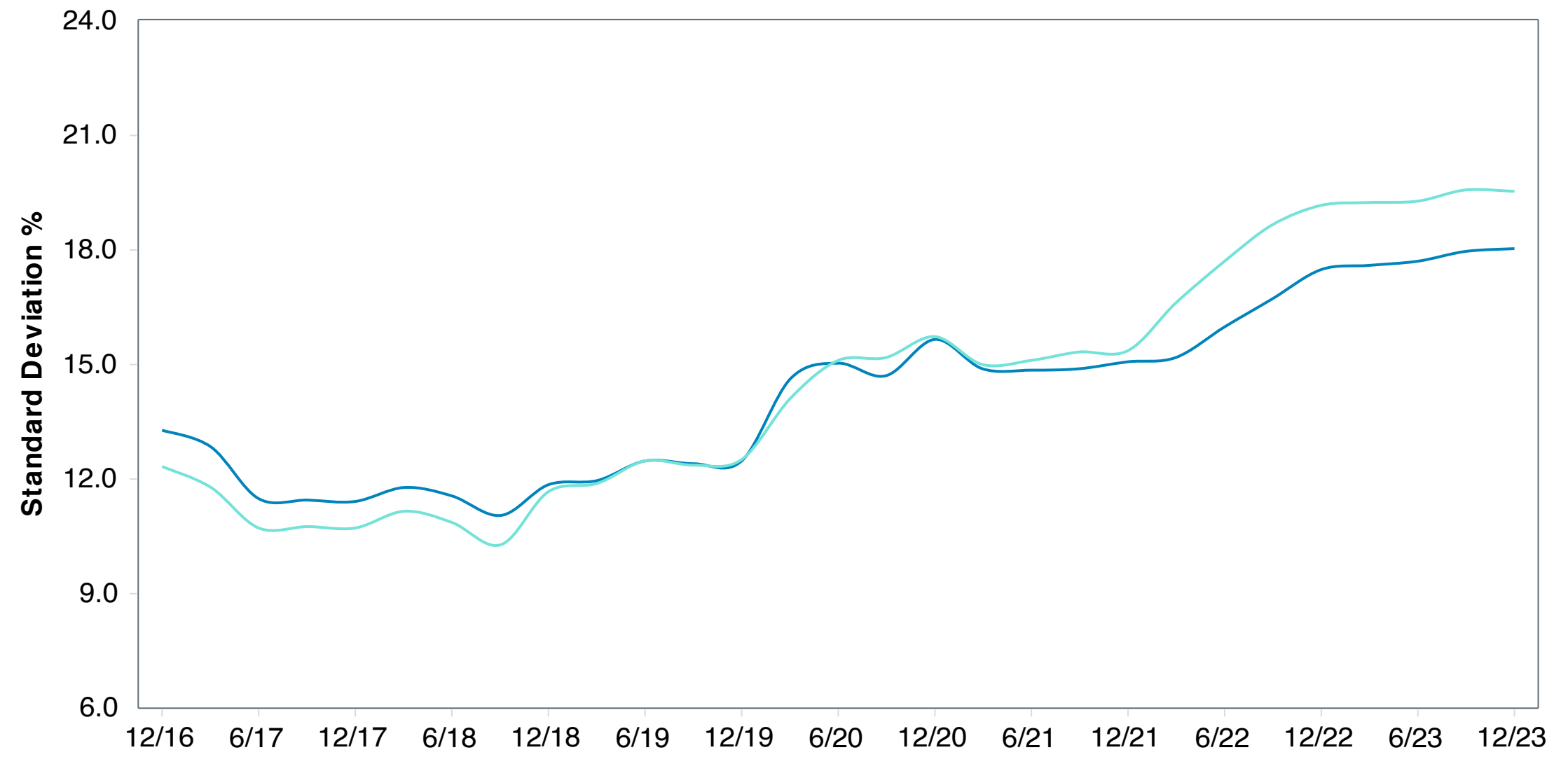
As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation Since Inception



- William Blair
- MSCI All Country World ex-U.S. IMI (Net)
- 90 Day U.S. Treasury Bill

Standard Deviation Rolling 5 Years



- William Blair
- MSCI All Country World ex-U.S. IMI (Net)

Since Inception Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation	Inception Date
William Blair	2.28	5.61	0.41	0.87	0.48	2.49	0.97	7.61	15.64	0.93	11/01/2011
MSCI All Country World ex-U.S. IMI (Net)	0.00	0.00	-	1.00	0.35	0.00	1.00	5.29	15.03	1.00	11/01/2011
90 Day U.S. Treasury Bill	-5.27	15.04	-0.35	0.00	-	1.04	0.00	1.03	0.43	-0.03	11/01/2011



Portfolio Analysis (Holdings-based)

As of December 31, 2023

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	84,521	78,110
Median Mkt. Cap (\$M)	15,766	1,672
Price/Earnings ratio	24.99	13.62
Price/Book ratio	3.92	2.45
5 Yr. EPS Growth Rate (%)	13.95	10.31
Current Yield (%)	1.69	3.06
Beta (5 Years, Monthly)	1.00	1.00
Number of Stocks	178	6,684

Top Ten Equity Holdings			
	Portfolio Weight %	Benchmark Weight %	Quarterly Return %
Taiwan Semiconductor	2.27	1.63	20.23
Novo Nordisk A/S	1.98	1.15	13.16
ASML Holding NV	1.95	1.04	27.54
Samsung Electronics Co.	1.58	1.00	20.25
London Stock Exchange Grp	1.49	0.17	17.64
Keyence Corp	1.42	0.29	18.47
European Aeronautic	1.42	0.31	14.85
Astrazeneca PLC	1.40	0.72	-0.28
Dassault Systemes SA	1.40	0.11	30.76
Reliance Industries Ltd	1.30	0.32	10.00

% of Portfolio	16.21	6.74
-----------------------	--------------	-------------

Top Ten Contributors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Shin-Etsu Chemical Co Ltd	1.10	0.20	0.90	44.21
ASML Holding NV	1.75	0.89	0.86	27.54
Dassault Systemes SA	1.22	0.09	1.13	30.76
Taiwan Semiconductor	1.80	1.49	0.31	20.23
Novo Nordisk A/S	2.14	1.12	1.02	13.16
Sika AG, Baar	0.99	0.14	0.85	27.62
Lululemon Athletica Inc	0.84	0.00	0.84	32.59
Mediatek Incorporation	0.60	0.13	0.47	45.25
Ryanair Holdings PLC	0.71	0.00	0.71	37.19
London Stock Exchange Grp	1.44	0.16	1.28	17.64

% of Portfolio	12.59	4.22	8.37
-----------------------	--------------	-------------	-------------

Top Ten Detractors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Rentokil Initial PLC	1.16	0.07	1.09	-24.55
De Sammensluttede Vognmaend	1.52	0.13	1.39	-6.20
Genmab A/S	0.76	0.09	0.67	-10.32
InMode Ltd	0.22	0.01	0.21	-26.99
LONZA GROUP AG	0.60	0.13	0.47	-9.67
Contemporary Amperex Technology Co Ltd	0.23	0.03	0.20	-17.19
SIG Group AG	0.49	0.03	0.46	-7.10
Tencent Holdings LTD	0.91	0.98	-0.07	-3.83
Diageo PLC	0.98	0.31	0.67	-1.68
Stevanato Group S p A	0.16	0.00	0.16	-8.18

% of Portfolio	7.03	1.78	5.25
-----------------------	-------------	-------------	-------------

William Blair

Philosophy and Process

William Blair's investment process combines both quantitative analysis and in-depth fundamental research. The quantitative tools are largely focused on identifying companies that exhibit attractive quality, growth, and valuation characteristics. Fundamental research is focused on identifying companies with strong management teams, competitively positioned products/services, and strong financial characteristics. The International Growth team is led by Simon Fennell and Ken McAtamney. The co-portfolio managers implement the strategy's investment process, and are supported by a talented team of research analysts with responsibilities divided by both sector and market capitalization. The co-managers will invest across the market capitalization spectrum, and the portfolio generally maintains a significant allocation to emerging markets. William Blair will occasionally hedge currencies on a defensive basis.

Organizational Update

Aon last met with William Blair in January 2024. William Blair began paying out-of-pocket for sell side research in 2018 for brokers that are willing to accept a check. Aon continues to have a favorable opinion of this manager.

(This page is left blank intentionally)

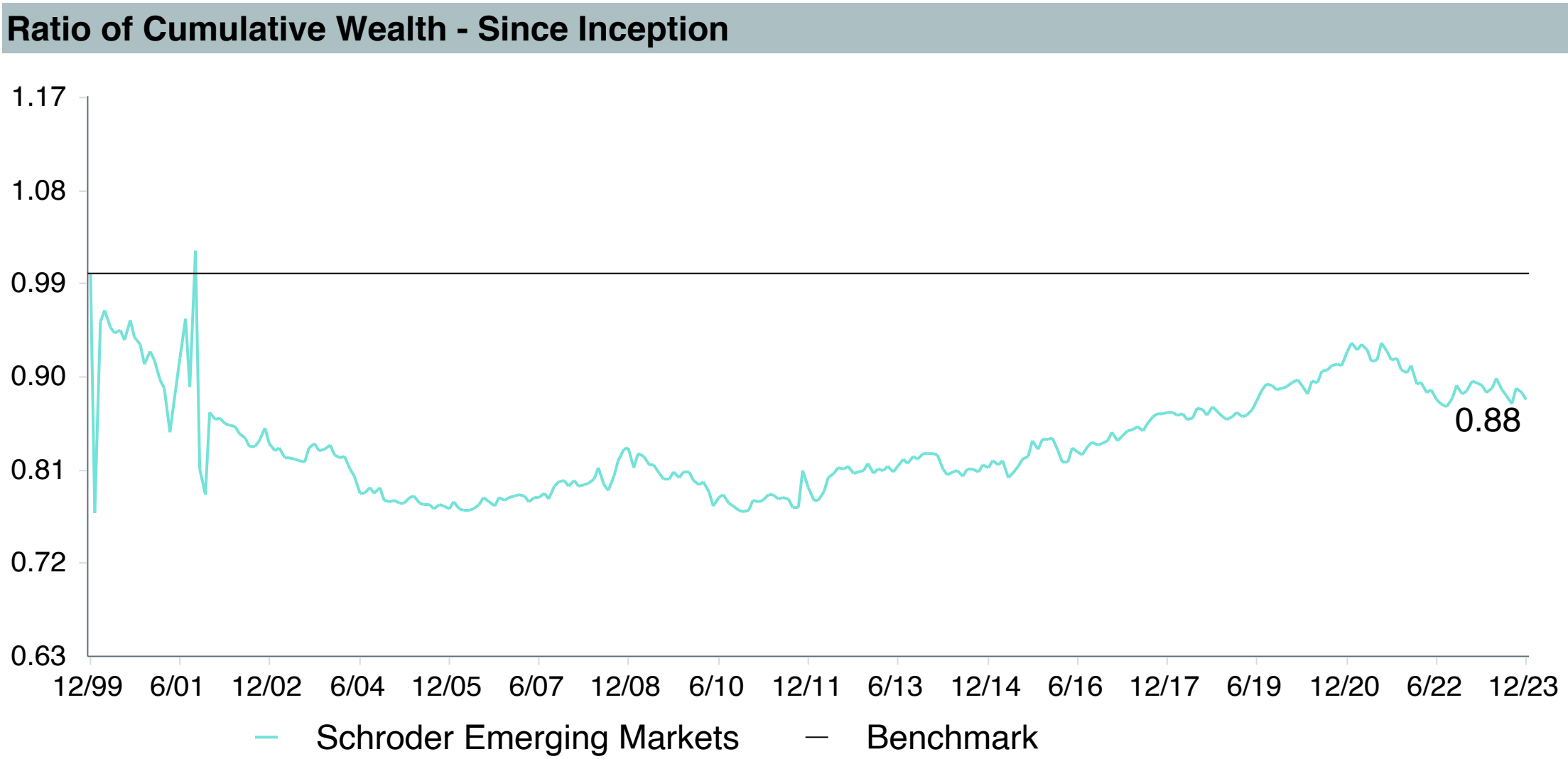
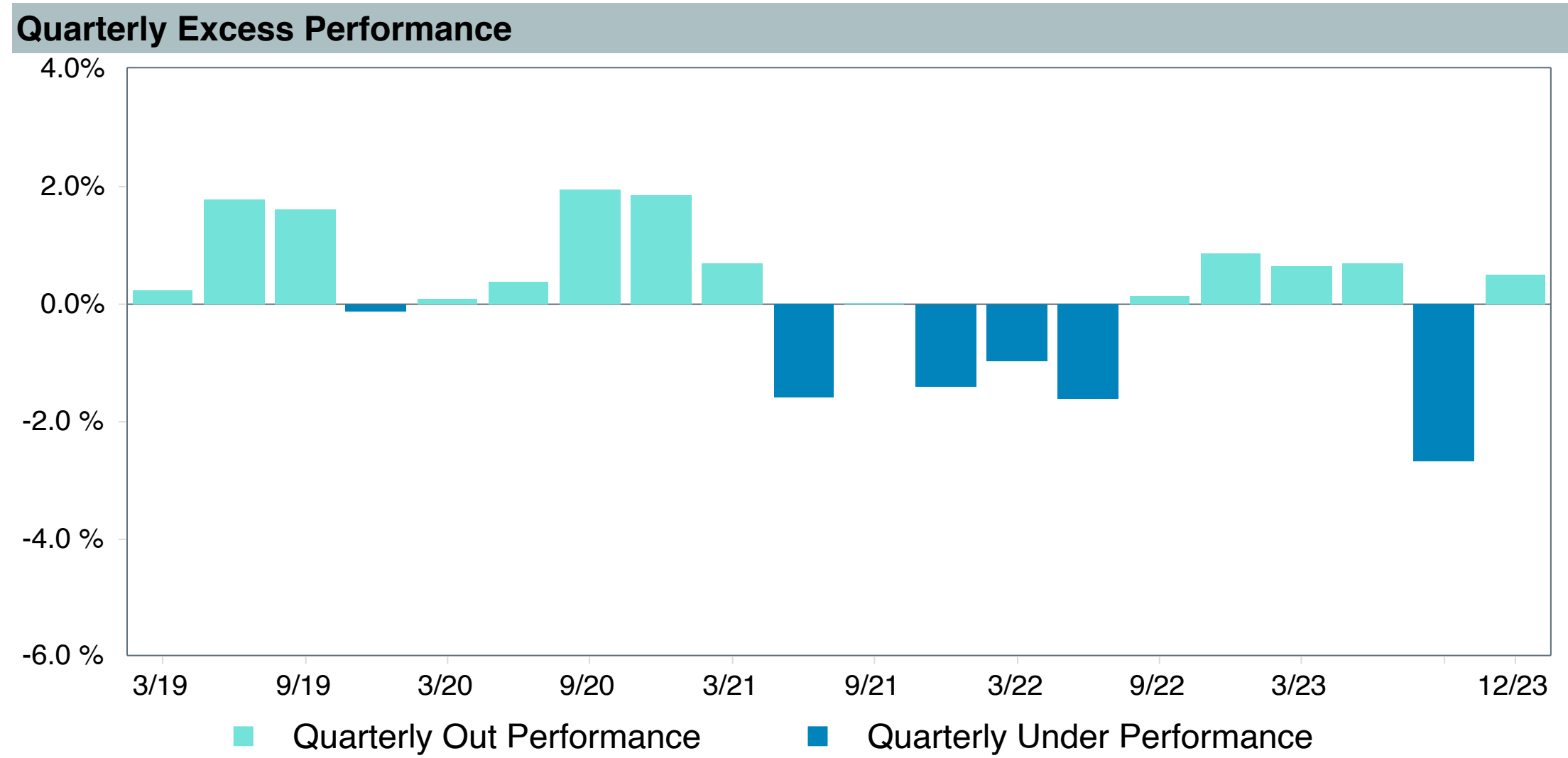
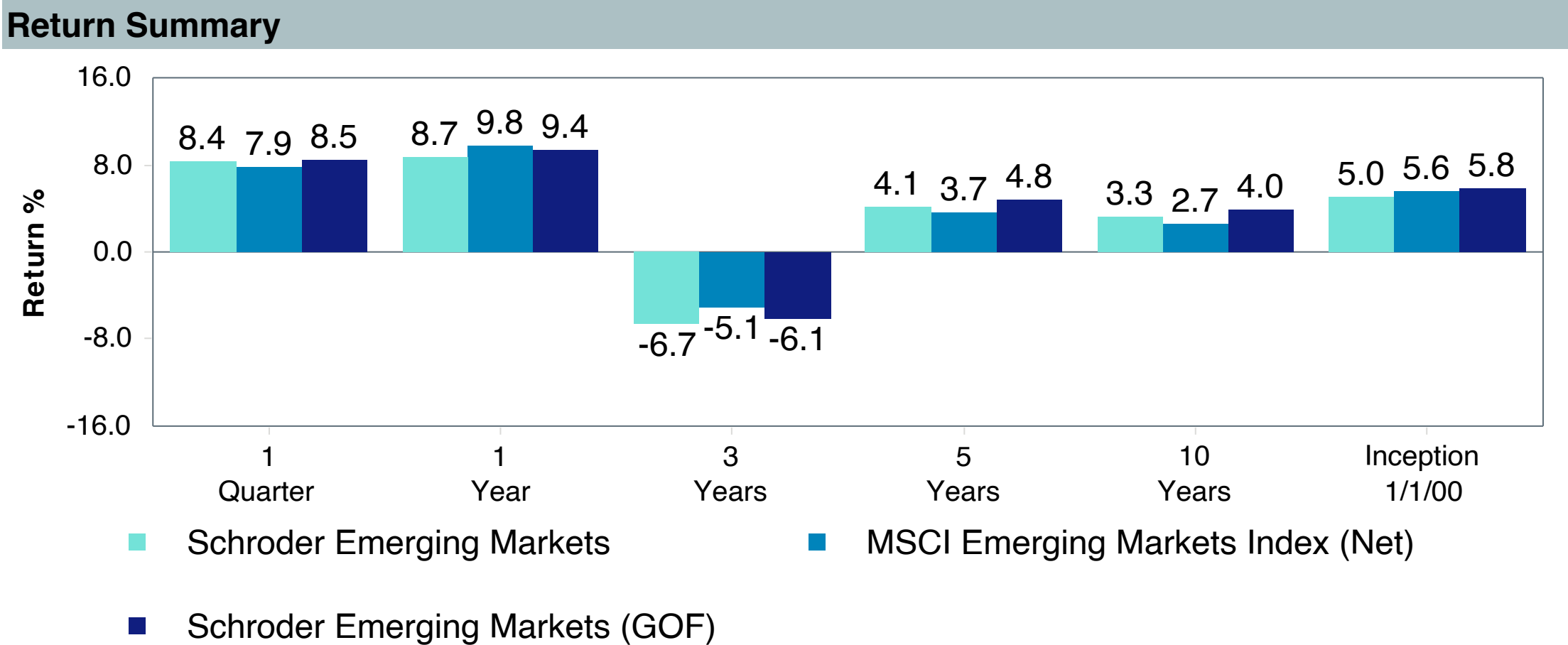
External Emerging Markets



Manager Performance Summary Schroder Emerging Markets

As of December 31, 2023

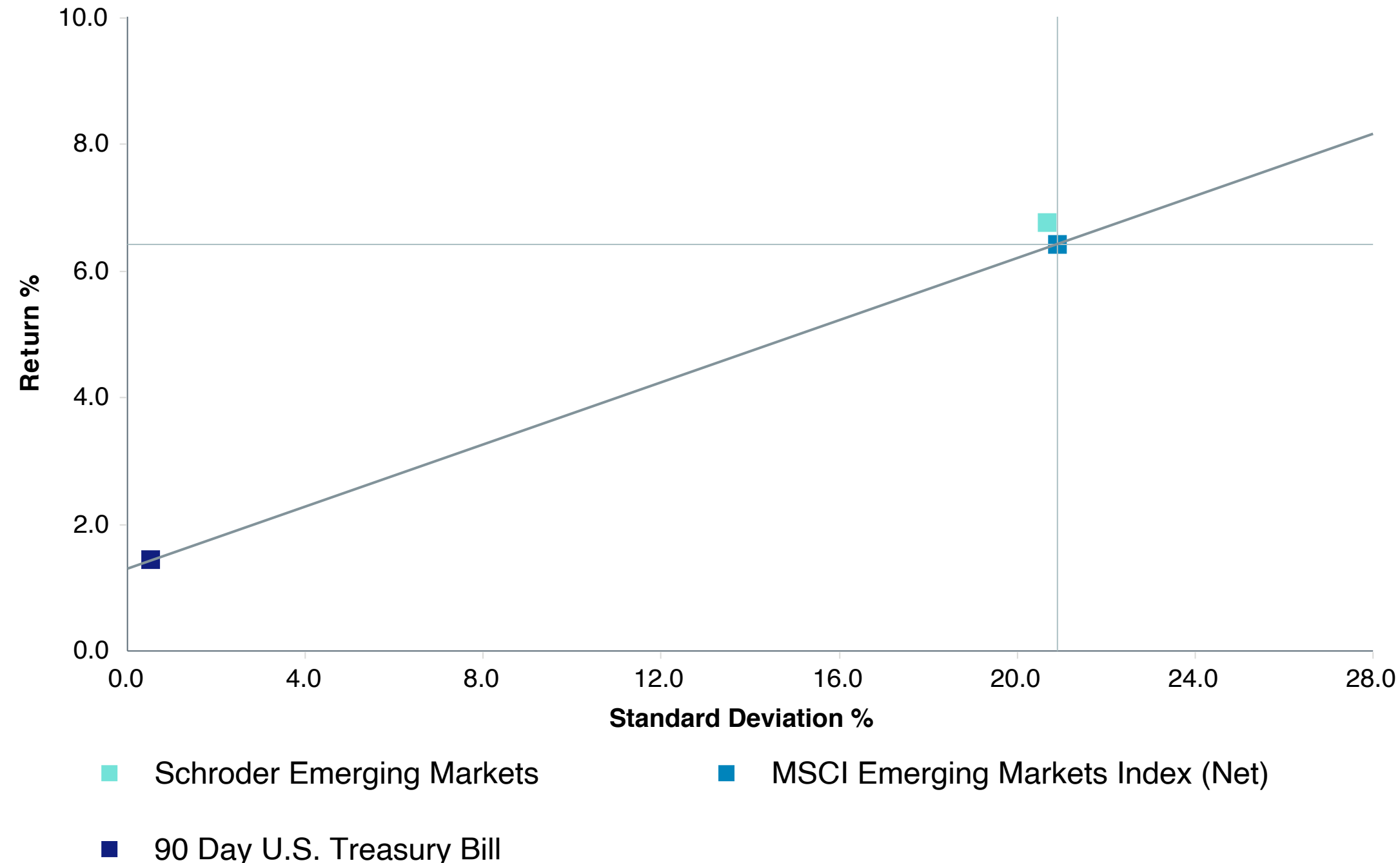
Account Information	
Account Name	Schroder Emerging Markets
Inception Date	01/01/2000
Account Structure	Commingled Fund
Asset Class	International-Emerging Equity
Benchmark	MSCI Emerging Markets Index (Net)
Peer Group	



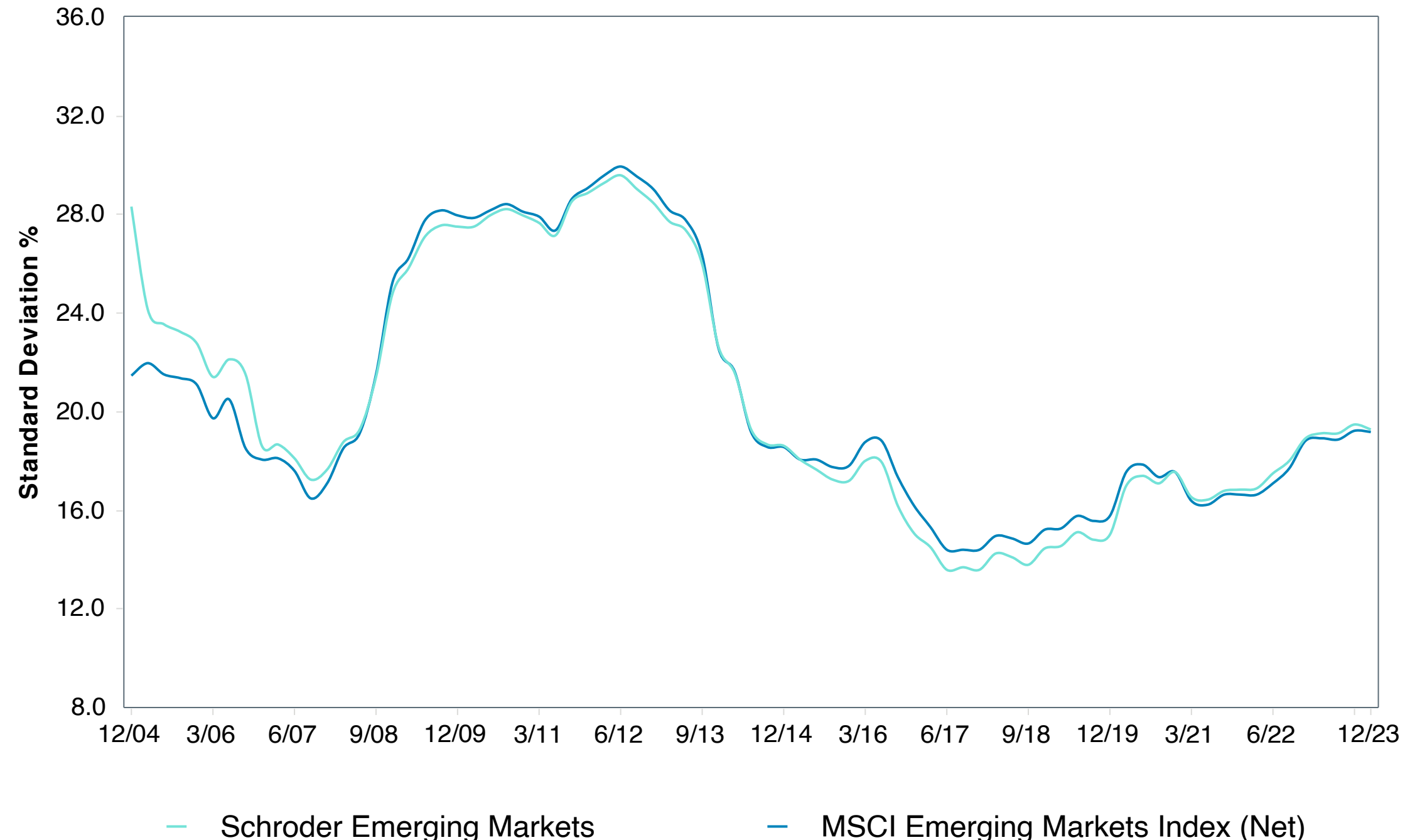
Risk Profile Schroder Emerging Markets

As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation
April 1, 2004 To December 31, 2023



Standard Deviation Rolling 5 Years



April 1, 2004 To December 31, 2023 Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Schroder Emerging Markets	0.27	2.97	0.09	0.98	0.35	0.45	0.98	6.77	20.67	0.99
MSCI Emerging Markets Index (Net)	0.00	0.00	-	1.00	0.34	0.00	1.00	6.43	20.91	1.00
90 Day U.S. Treasury Bill	-7.03	20.91	-0.34	0.00	-	1.43	0.00	1.43	0.51	0.00



Portfolio Analysis (Holdings-based)

As of December 31, 2023

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	139,640	103,754
Median Mkt. Cap (\$M)	17,981	6,968
Price/Earnings ratio	13.13	12.92
Price/Book ratio	2.33	2.50
5 Yr. EPS Growth Rate (%)	16.01	12.28
Current Yield (%)	2.58	2.79
Beta (5 Years, Monthly)	0.99	1.00
Number of Stocks	131	1,441

Top Ten Equity Holdings			
	Portfolio Weight %	Benchmark Weight %	Quarterly Return %
Taiwan Semiconductor Manu Co.	9.97	6.73	19.87
Samsung Electronics Co.	6.66	4.12	20.25
Tencent Holdings LTD	4.42	3.55	-3.83
Alibaba Group Holding Ltd	2.87	2.23	-10.23
SK Hynix Inc	2.42	0.85	29.26
H D F C Bank Ltd	2.24	0.82	11.75
Axis Bank Ltd	2.13	0.43	6.11
Itau Unibanco Holding SA	1.81	0.48	30.75
Tata Consultancy Services Ltd	1.73	0.59	7.56
Icici Bank Ltd	1.68	0.88	4.48

% of Portfolio	35.93	20.68
-----------------------	--------------	--------------

Top Ten Contributors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Taiwan Semiconductor Manu Co.	9.11	6.12	2.99	19.87
Samsung Electronics Co.	6.72	3.71	3.01	20.25
Mediatek Incorporation	1.20	0.53	0.67	45.25
SK Hynix Inc	1.67	0.71	0.96	29.26
Itau Unibanco Holding SA	1.57	0.40	1.17	30.75
Bank Polska Kas Opie-GrPe SA,W	0.47	0.07	0.40	67.20
Firststrand Ltd	1.27	0.26	1.01	22.26
Banco Bradesco S A	0.89	0.23	0.66	28.54
Vale SA	1.08	0.70	0.38	22.01
Gold Fields Ltd	0.60	0.15	0.45	39.38

% of Portfolio	24.58	12.88	11.70
-----------------------	--------------	--------------	--------------

Top Ten Detractors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Alibaba Group Holding Ltd	3.68	2.75	0.93	-10.23
WuXi Biologics (Cayman) Inc	0.81	0.34	0.47	-34.97
Tencent Holdings LTD	5.05	4.02	1.03	-3.83
Contemporary Amperex Technology Co Ltd	1.06	0.11	0.95	-17.19
Yum China Holdings Inc	0.74	0.36	0.38	-23.63
China Pacific Insurance (Group)	0.86	0.10	0.76	-19.35
China Mengniu Dairy Co	0.82	0.16	0.66	-19.76
Meituan	0.53	1.14	-0.61	-28.32
China Merchants Bank Co Ltd	0.86	0.25	0.61	-16.57
H World Group Limited	0.99	0.13	0.86	-12.83

% of Portfolio	15.40	9.36	6.04
-----------------------	--------------	-------------	-------------

Schroder Emerging Markets

Philosophy and Process

Schroders applies a rigorous, fundamental research process to identify emerging markets securities offering strong long-term growth at reasonable valuations. The firm seeks to add value through a mixture of bottom-up security selection and top-down country analysis. Analysts provide the bottom-up analysis, as they are responsible for valuations and recommendations reflecting the best ideas from their research area. The emerging markets strategist uses macro-economic models to generate a recommended country-allocation model portfolio. Based on these inputs, the Investment Committee sets country allocations and reviews sector weights and risk characteristics, making adjustments as necessary. Schroders seeks to add 50% of their value from stock specific factors and 50% from macro factors such as country, sector, and style analysis. The manager holds a moderately large number of securities to diversify the relatively high stock-specific and country-specific risks in emerging markets. Schroders builds portfolios of approximately 100 stocks, remains fully invested, generates moderate turnover, and will hedge currency exposures when appropriate.

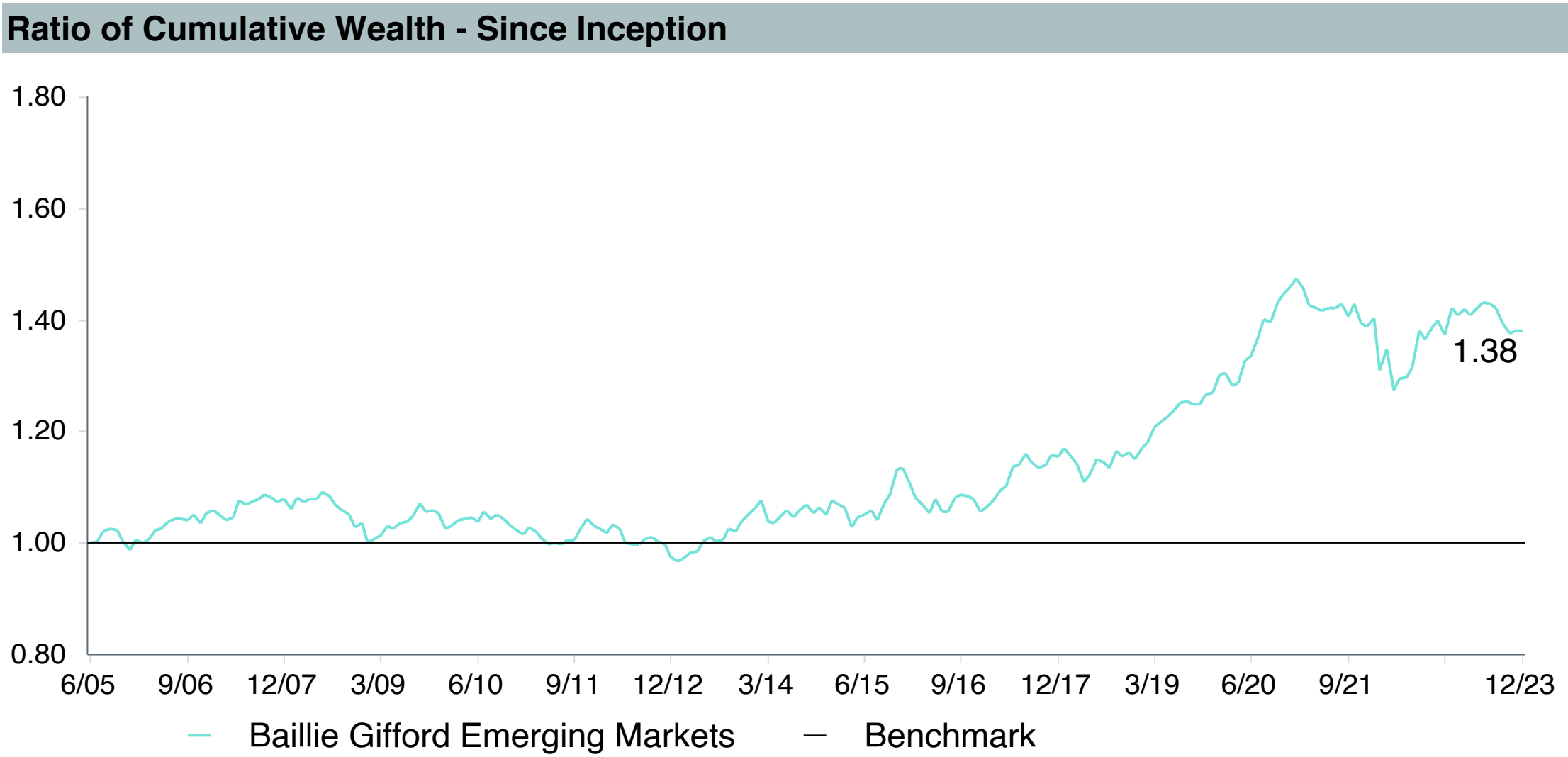
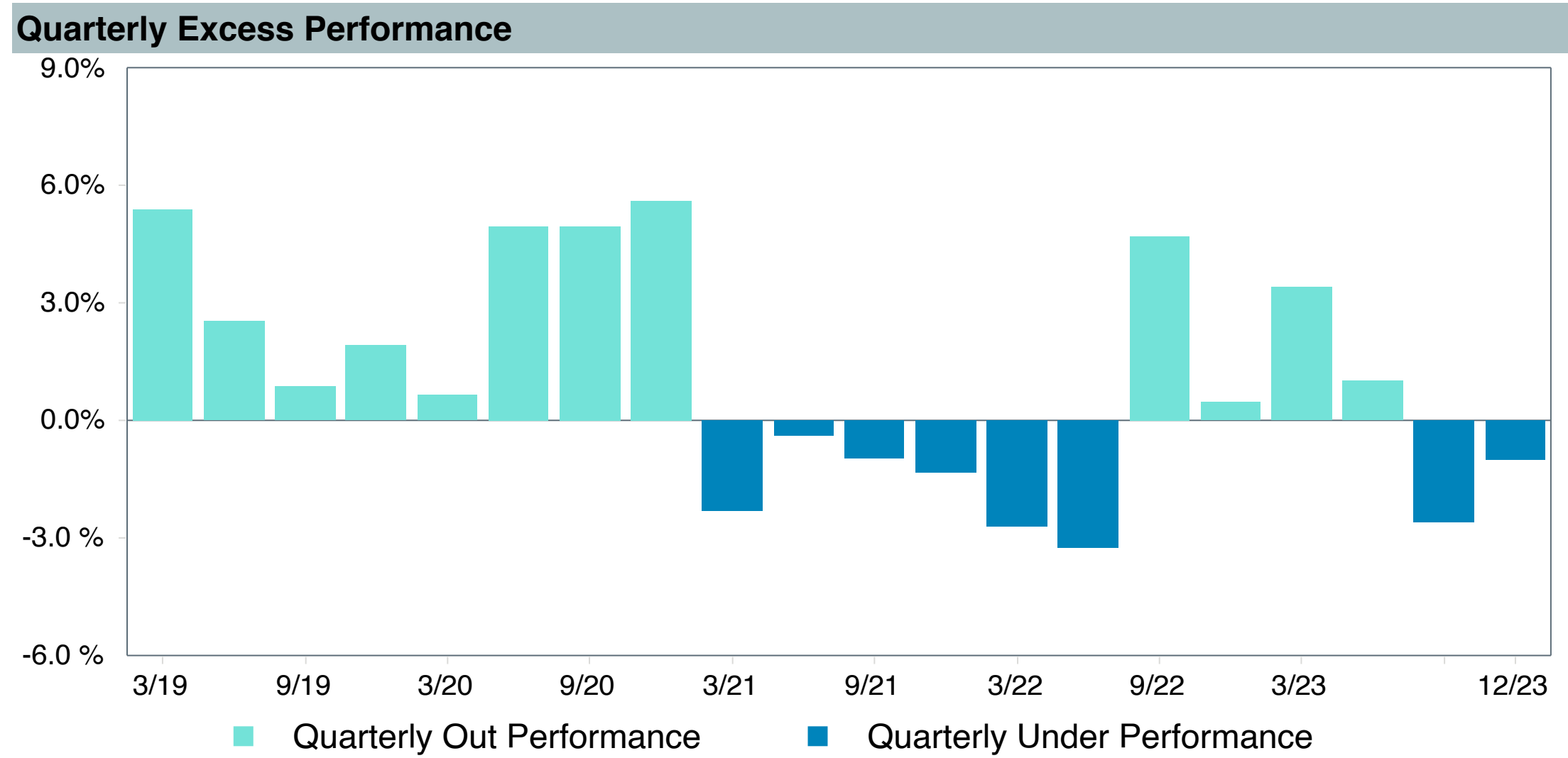
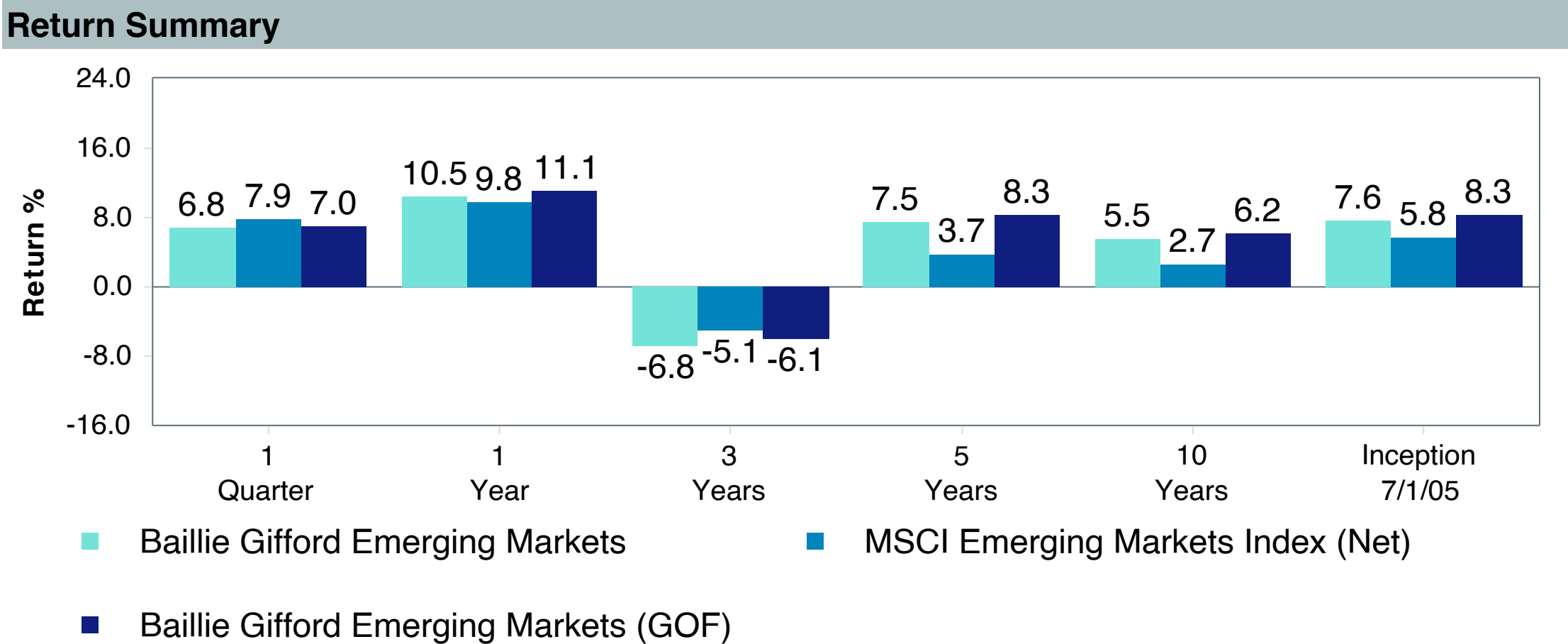
Organizational Update

Aon last met with Schroders in August 2023. Schroders began paying out-of-pocket for sell-side research in 2018. There are no new organizational updates. Aon continues to have a favorable opinion of this manager.

Manager Performance Summary Baillie Gifford Emerging Markets

As of December 31, 2023

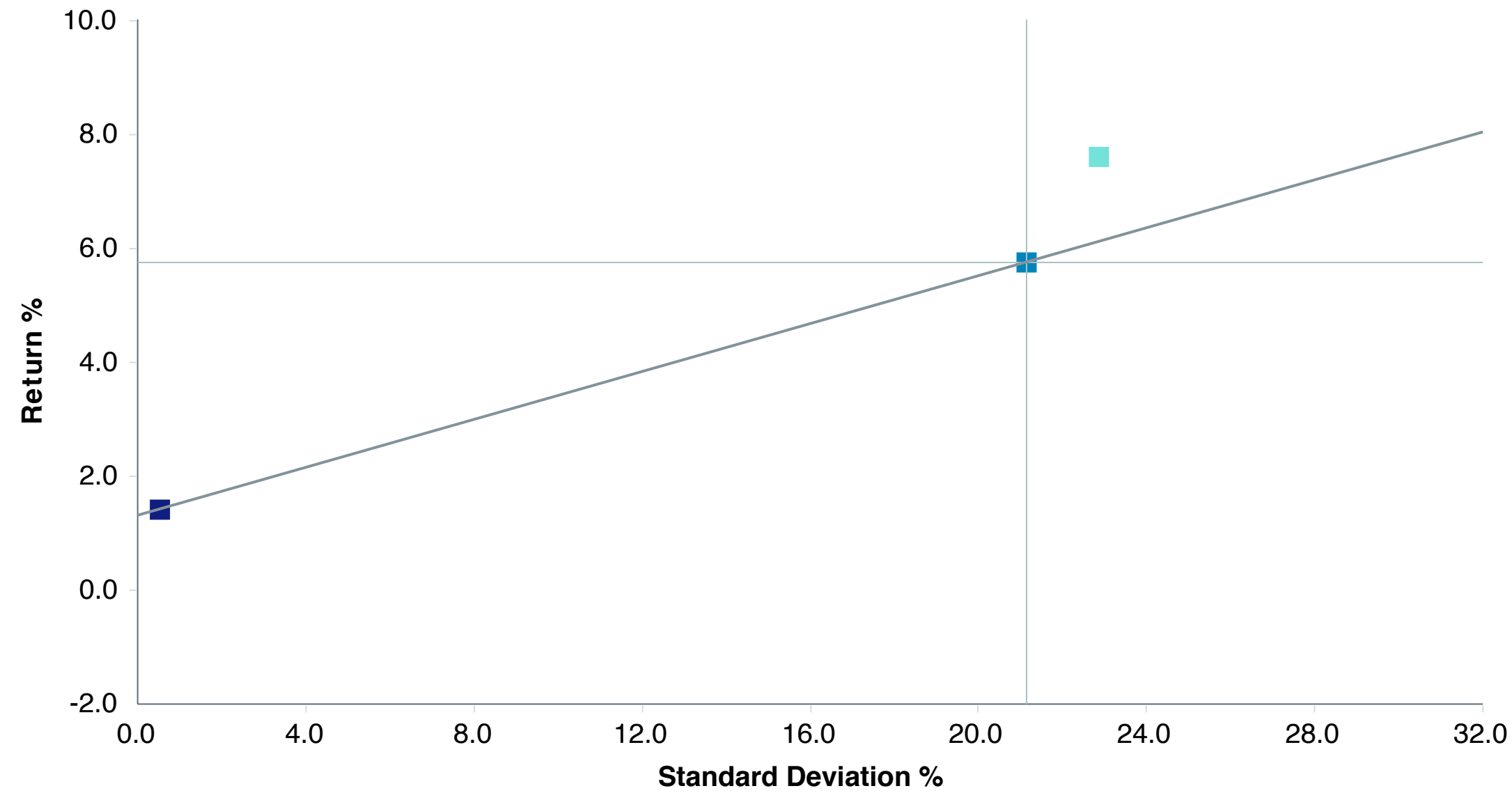
Account Information	
Account Name	Baillie Gifford Emerging Markets
Inception Date	07/01/2005
Account Structure	Separate Account
Asset Class	International-Emerging Equity
Benchmark	MSCI Emerging Markets Index (Net)
Peer Group	



Risk Profile Baillie Gifford Emerging Markets

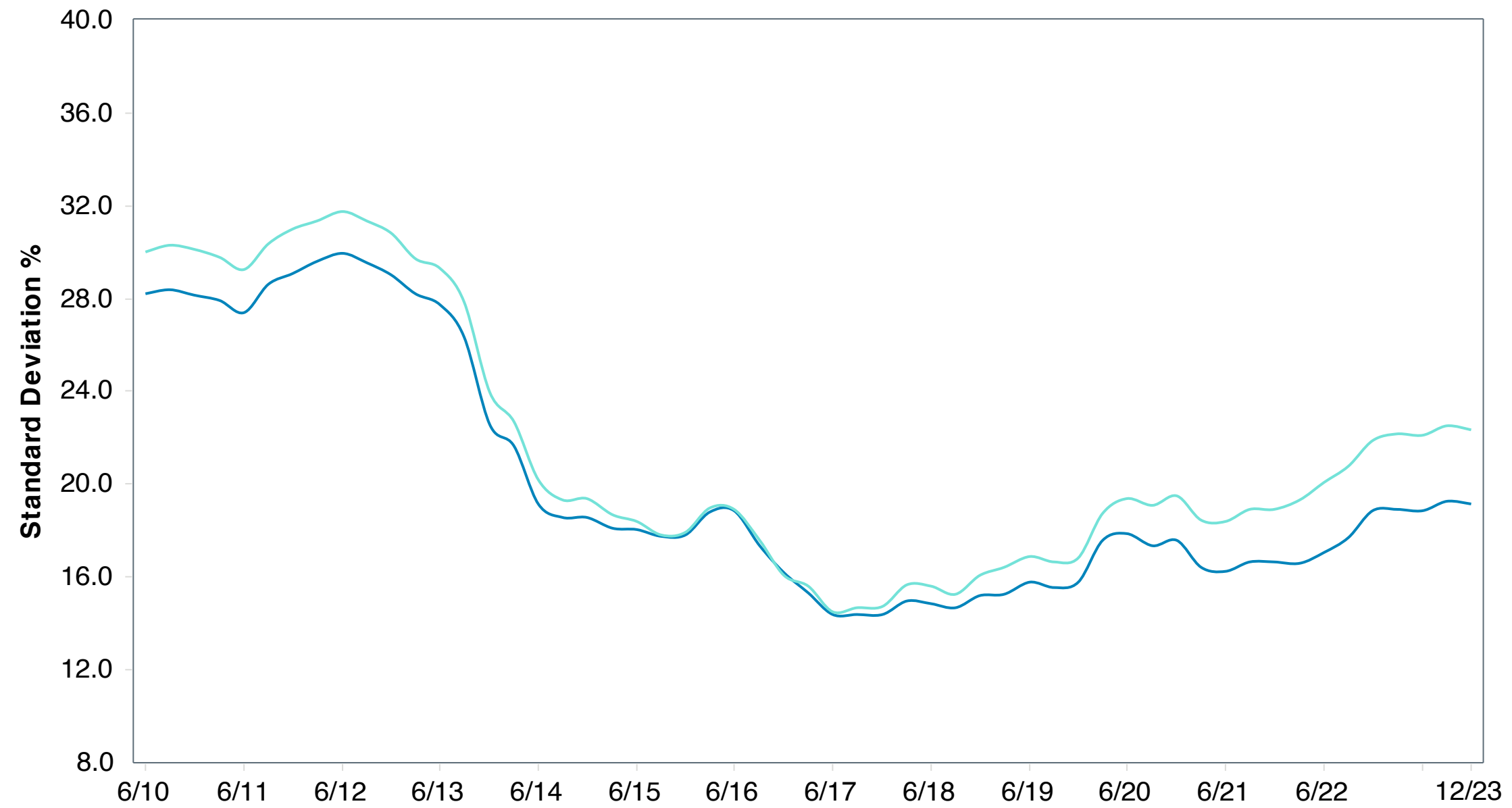
As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation Since Inception



- Baillie Gifford Emerging Markets
- MSCI Emerging Markets Index (Net)
- 90 Day U.S. Treasury Bill

Standard Deviation Rolling 5 Years



- Baillie Gifford Emerging Markets
- MSCI Emerging Markets Index (Net)

Since Inception Historical Statistics											
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation	Inception Date
Baillie Gifford Emerging Markets	2.14	5.29	0.40	0.95	0.38	1.73	1.05	7.62	22.87	0.97	07/01/2005
MSCI Emerging Markets Index (Net)	0.00	0.00	-	1.00	0.31	0.00	1.00	5.76	21.14	1.00	07/01/2005
90 Day U.S. Treasury Bill	-6.47	21.14	-0.31	0.00	-	1.42	0.00	1.42	0.53	0.00	07/01/2005



Portfolio Analysis (Holdings-based)

As of December 31, 2023

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	160,157	103,754
Median Mkt. Cap (\$M)	29,443	6,968
Price/Earnings ratio	13.09	12.92
Price/Book ratio	2.41	2.50
5 Yr. EPS Growth Rate (%)	17.38	12.28
Current Yield (%)	3.17	2.79
Beta (5 Years, Monthly)	1.13	1.00
Number of Stocks	49	1,441

Top Ten Equity Holdings			
	Portfolio Weight %	Benchmark Weight %	Quarterly Return %
Taiwan Semiconductor Manu Co.	11.45	6.73	19.87
Samsung Electronics Co.	9.21	4.12	20.25
MercadoLibre Inc	4.95	0.00	23.95
Petroleo Brasileiro Sa Petrobras	4.87	0.52	10.35
Reliance Industries Ltd	4.50	1.34	10.00
Tencent Holdings LTD	4.37	3.55	-3.83
H D F C Bank Ltd	4.18	0.82	11.75
Alibaba Group Holding Ltd	3.42	2.23	-10.23
Ping An Insurance Group	2.95	0.43	-20.95
Mining and Metallurgical Co Norilsk Nickel PJSC	2.60	0.00	15.12

% of Portfolio	52.50	19.74
-----------------------	--------------	--------------

Top Ten Contributors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Taiwan Semiconductor Manu Co.	10.24	6.12	4.12	19.87
Samsung Electronics Co.	8.18	3.71	4.47	20.25
Silergy Corp	1.53	0.05	1.48	72.71
MercadoLibre Inc	4.26	0.00	4.26	23.95
PDD Holdings Inc	1.55	0.90	0.65	49.19
SK Hynix Inc	1.92	0.71	1.21	29.26
Petroleo Brasileiro Sa Petrobras	4.87	0.51	4.36	10.35
H D F C Bank Ltd	3.99	0.79	3.20	11.75
Grupo Financiero Banorte	1.68	0.33	1.35	27.54
Reliance Industries Ltd	4.36	1.32	3.04	10.00

Top Ten Detractors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
First Quantum Minerals Ltd	3.00	0.00	3.00	-65.33
Ping An Insurance Group	3.99	0.59	3.40	-20.95
Meituan	2.25	1.14	1.11	-28.32
Alibaba Group Holding Ltd	4.12	2.75	1.37	-10.23
Li Ning Company Limited	0.80	0.15	0.65	-36.38
Baidu Inc	2.05	0.59	1.46	-12.71
China Merchants Bank Co Ltd	1.45	0.25	1.20	-16.57
Tencent Holdings LTD	4.85	4.02	0.83	-3.83
Byd Company Ltd	1.55	0.49	1.06	-11.14
Contemporary Amperex Technology Co Ltd	0.93	0.11	0.82	-17.19

% of Portfolio	24.99	10.09	14.90
-----------------------	--------------	--------------	--------------

Baillie Gifford Emerging Markets

Philosophy and Process

Baillie Gifford follows a bottom-up approach for stock selection with a strong emphasis on free cash flow analysis, company specifics, and sound qualitative judgment on a company's management. The manager has a consistent growth bias in its investment process. It tries to identify companies that have a strong competitive advantage in a favorable industry or sector, along with significant financial strength, and an upbeat management attitude. Since the manager believes that local factors play a greater role in influencing stock movements, the investment team at Baillie Gifford is divided into geographical groups, with each group having its own sector experts. Individual stock ideas are first exchanged with other groups and sector teams; then, if found superior as compared to other stocks in the same sector, are recommended to the Investment Policy Committee by each group. The Investment Policy Committee comprises the senior most investment professionals at the firm. This Committee is responsible for making the final decision to include any stock in the portfolio, as well as for determining specific stock, sector, and country weights. The portfolios are put together by the institutional clients department, which ensures adherence of client guidelines for different portfolios.

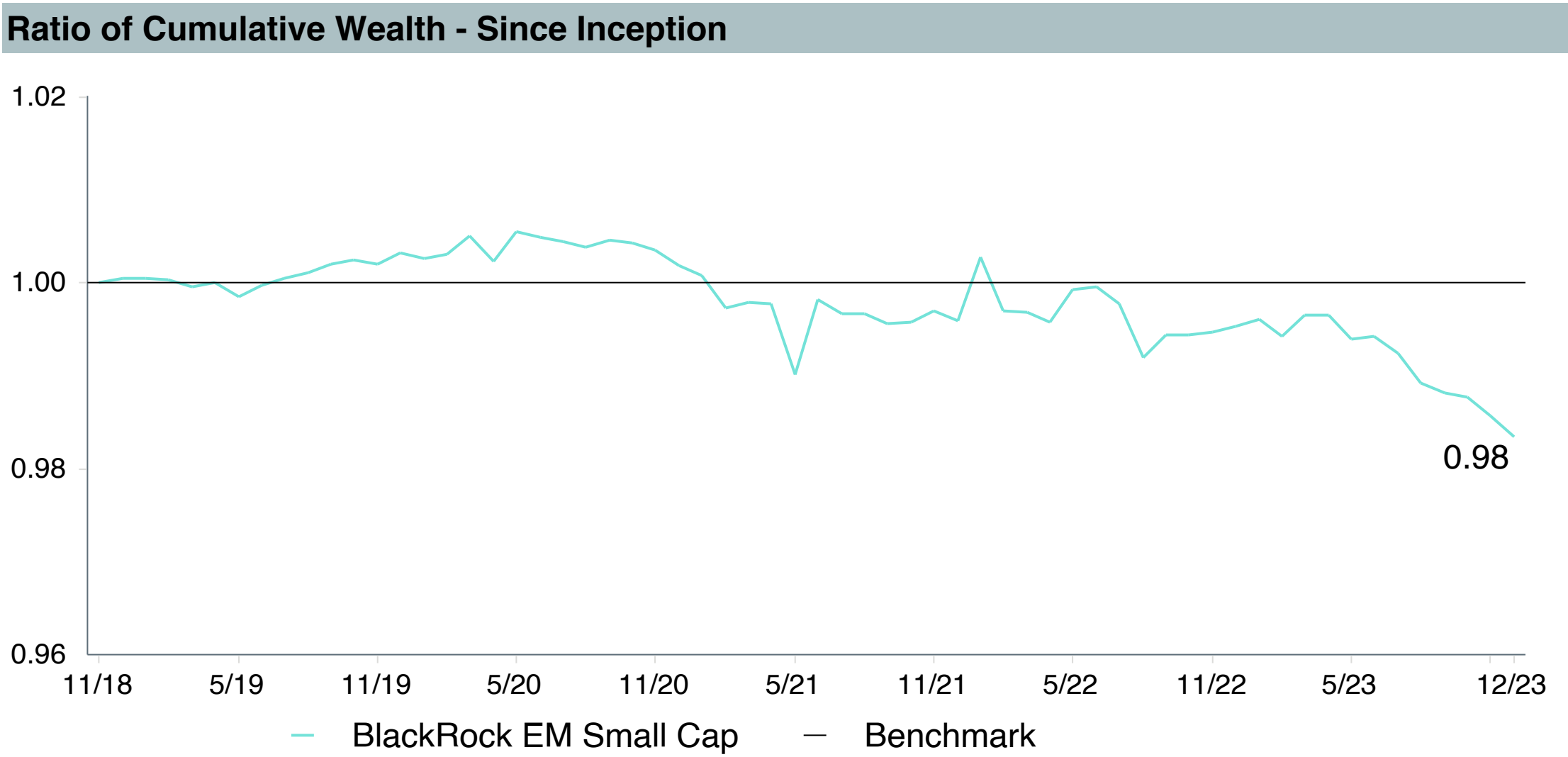
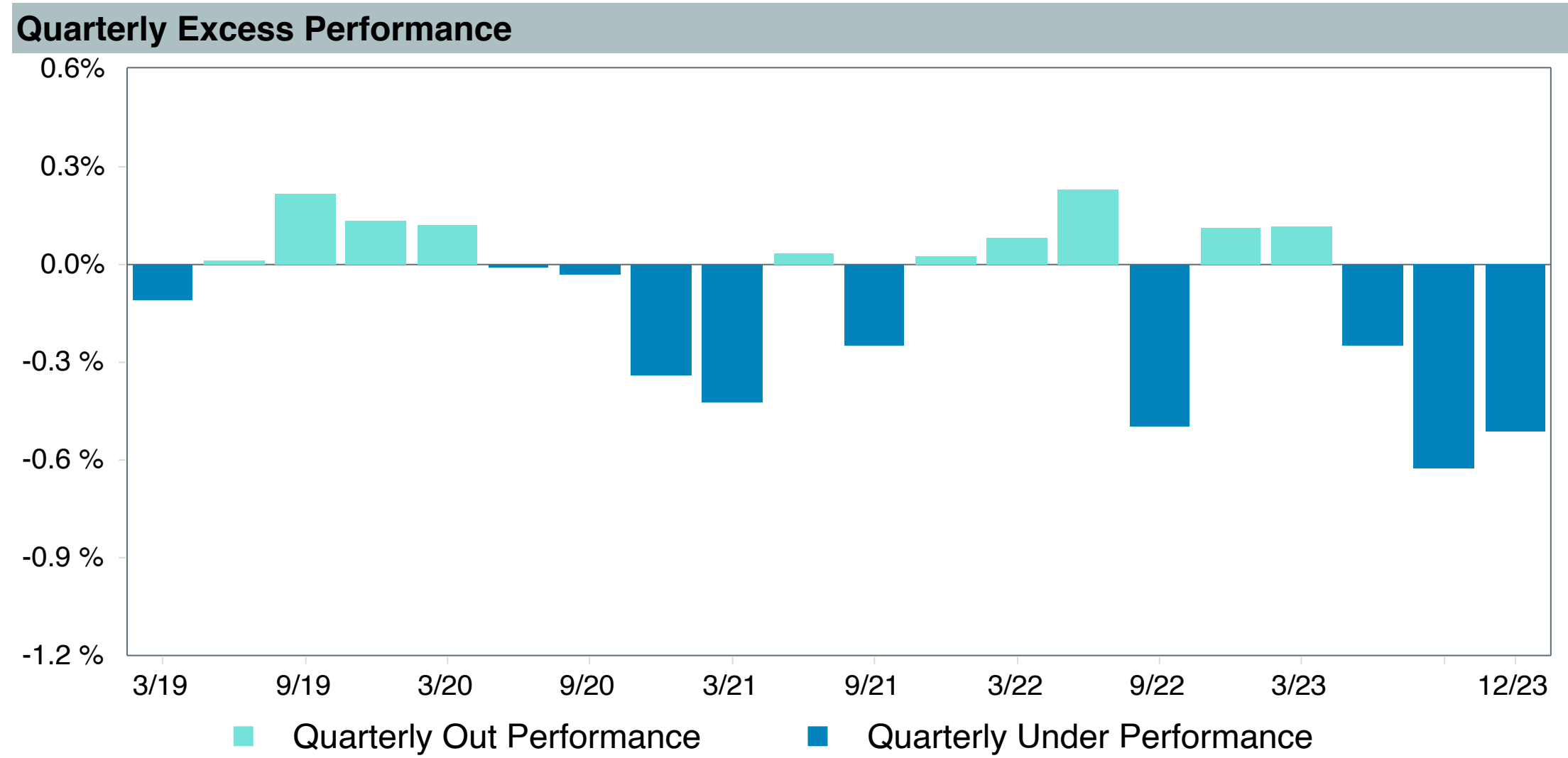
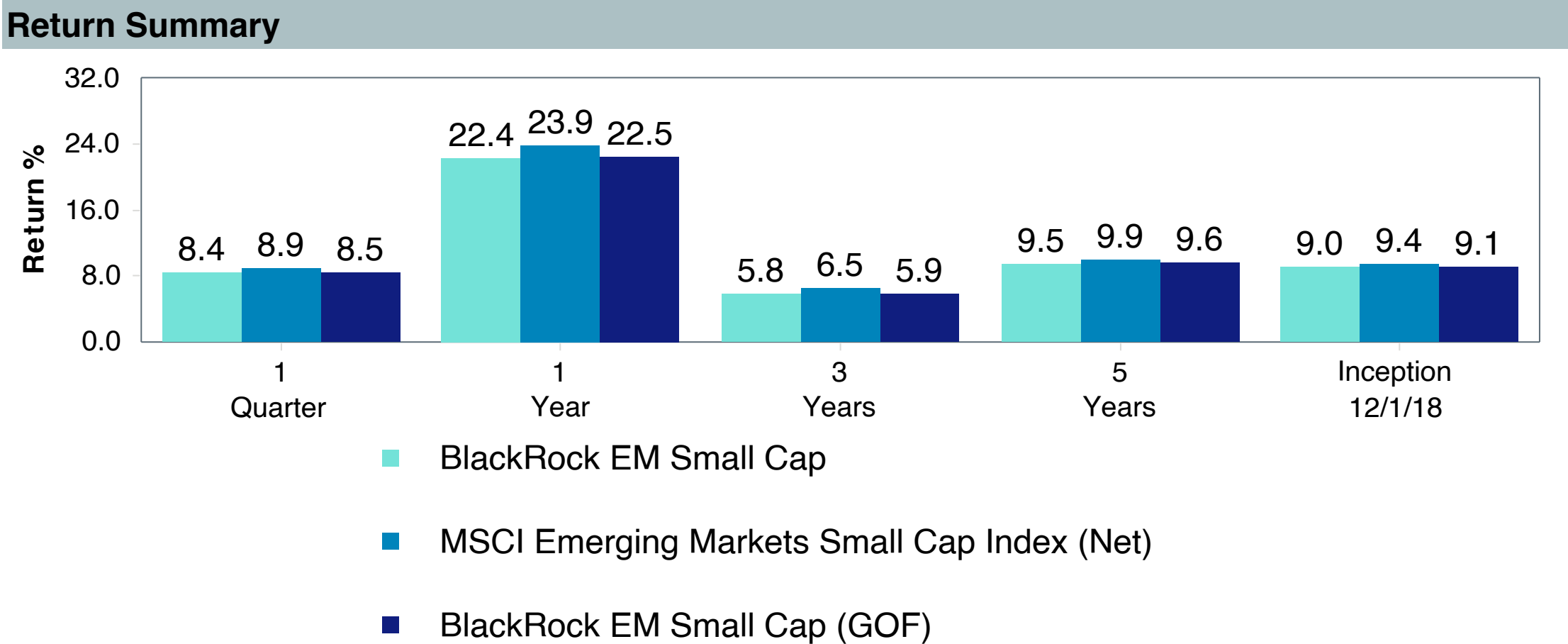
Organizational Update

Aon last met with Baillie Gifford in October 2023. Baillie Gifford began paying out-of-pocket for sell-side research in 2018. Aon continues to have a favorable opinion of this manager.

Manager Performance Summary BlackRock EM Small Cap

As of December 31, 2023

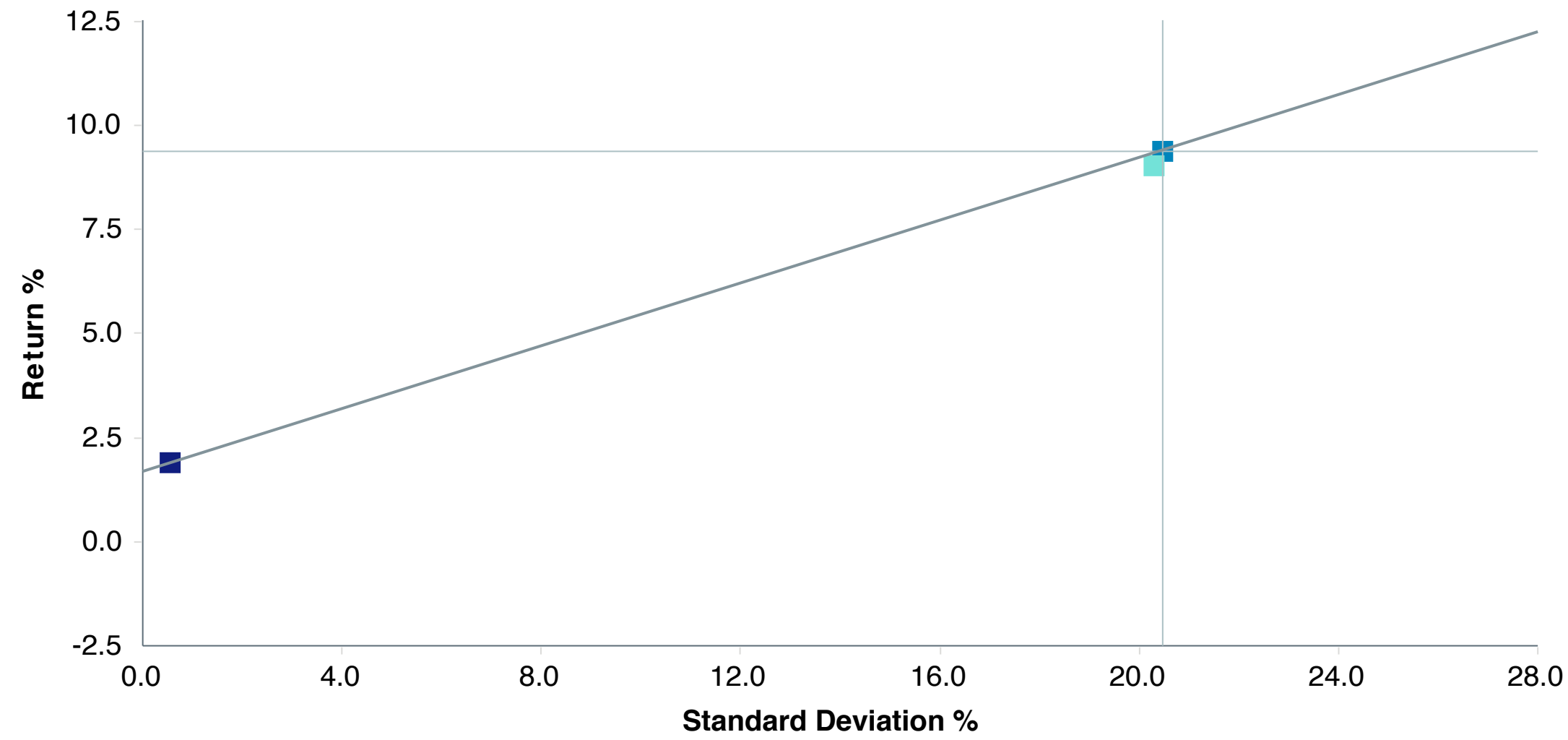
Account Information	
Account Name	BlackRock EM Small Cap
Inception Date	11/27/2018
Account Structure	Commingled Fund
Asset Class	Global Equity
Benchmark	MSCI Emerging Markets Small Cap Index (Net)
Peer Group	



Risk Profile BlackRock EM Small Cap

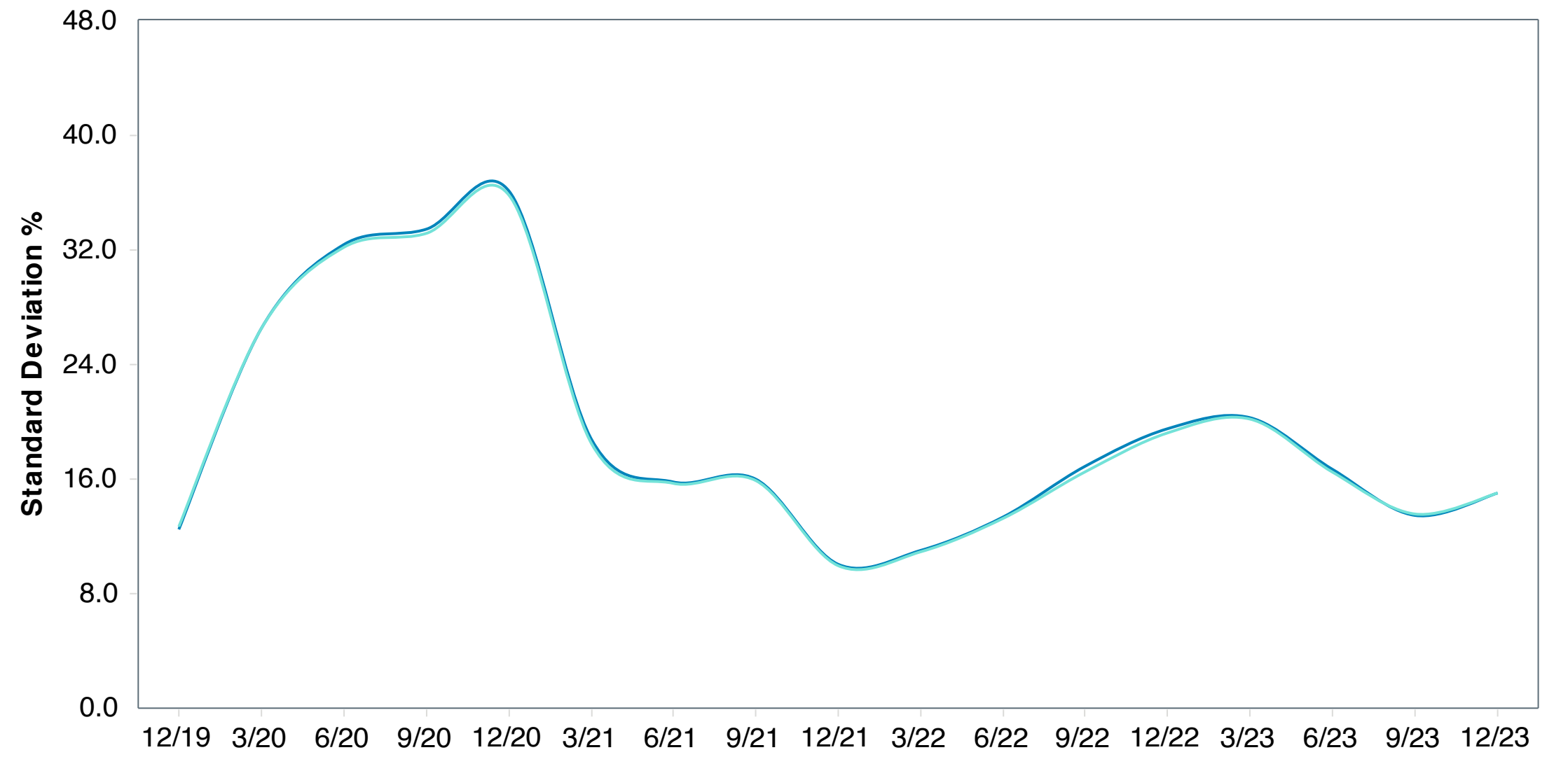
As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation Since Inception



- BlackRock EM Small Cap
- MSCI Emerging Markets Small Cap Index (Net)
- 90 Day U.S. Treasury Bill

Standard Deviation Rolling 1 Year



- BlackRock EM Small Cap
- MSCI Emerging Markets Small Cap Index (Net)

Since Inception Historical Statistics											
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation	Inception Date
BlackRock EM Small Cap	-0.36	0.84	-0.43	1.00	0.44	-0.26	0.99	9.04	20.30	1.00	12/01/2018
MSCI Emerging Markets Small Cap Index (Net)	0.00	0.00	-	1.00	0.45	0.00	1.00	9.40	20.46	1.00	12/01/2018
90 Day U.S. Treasury Bill	-9.28	20.52	-0.45	0.01	-	1.91	0.00	1.88	0.55	-0.09	12/01/2018



Portfolio Analysis (Holdings-based)

As of December 31, 2023

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	1,790	1,790
Median Mkt. Cap (\$M)	965	965
Price/Earnings ratio	14.24	14.24
Price/Book ratio	2.64	2.64
5 Yr. EPS Growth Rate (%)	13.19	13.19
Current Yield (%)	2.38	2.38
Beta (5 Years, Monthly)	0.99	1.00
Number of Stocks	1,982	1,986

Top Ten Equity Holdings			
	Portfolio Weight %	Benchmark Weight %	Quarterly Return %
COFORGE Limited	0.38	0.38	23.13
Asia Vital Components Co Ltd	0.31	0.31	3.79
Chicony Electronics Co Ltd	0.30	0.30	59.36
Federal Bank Ltd	0.29	0.29	5.86
Elite Material Co Ltd	0.28	0.28	-6.12
Corporacion Inmobiliaria Vesta	0.28	0.28	20.39
Embraer SA	0.28	0.28	33.98
King Yuan Electronics Co Ltd	0.27	0.27	17.50
Sino-American Silicon Products Inc	0.27	0.27	31.31
Powertech Technology Inc	0.27	0.27	46.11

% of Portfolio	2.93	2.93
-----------------------	-------------	-------------

Top Ten Contributors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Alchip Technologies Inc	0.53	0.53	0.00	28.05
Chicony Electronics Co Ltd	0.20	0.20	0.00	59.36
PT Petrindo Jaya Kreasi Tbk	0.03	0.03	0.00	371.17
Suzlon Energy Limited	0.21	0.21	0.00	47.76
Powertech Technology Inc	0.20	0.20	0.00	46.11
Prestige Estates Projects Ltd	0.09	0.09	0.00	95.23
Persistent Systems Ltd	0.32	0.32	0.00	27.21
Alteogen Inc	0.17	0.17	0.00	51.55
FIBRA Prologis	0.22	0.22	0.00	39.57
Posco Dx Company Ltd	0.20	0.20	0.00	43.44

Top Ten Detractors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Chroma Ate Inc	0.30	0.30	0.00	-
Youngpoong Paper Mfg Co Ltd	0.05	0.05	0.00	-
Misr Fertilizer Production Co	0.05	0.05	0.00	-
Kontrolmatik Teknoloji Enerji Ve Muhendislik Anonim Sirketi	0.10	0.10	0.00	-
PT Metro Healthcare Indonesia Tbk	0.05	0.05	0.00	-
JMT Network Services Public Co Ltd	0.08	0.08	0.00	-
EOFLOW Co Ltd	0.04	0.04	0.00	-
OYAK Cimento Fabrikalari Anonim Sirketi	0.09	0.09	0.00	-
PT Bumi Resources TBK	0.08	0.08	0.00	-
SAO Martinho SA	0.12	0.12	0.00	-

% of Portfolio	0.96	0.96	0.00
-----------------------	-------------	-------------	-------------

BlackRock EM Small Cap

Philosophy and Process

The BlackRock EM Small Cap Fund is designed to match the performance and risk characteristics of the MSCI Emerging Markets Small Cap Index.

Organizational Update

Aon last met with BlackRock in February 2024. There have been no significant organizational changes since that time. Aon continues to have a favorable opinion of this manager.

(This page is left blank intentionally)

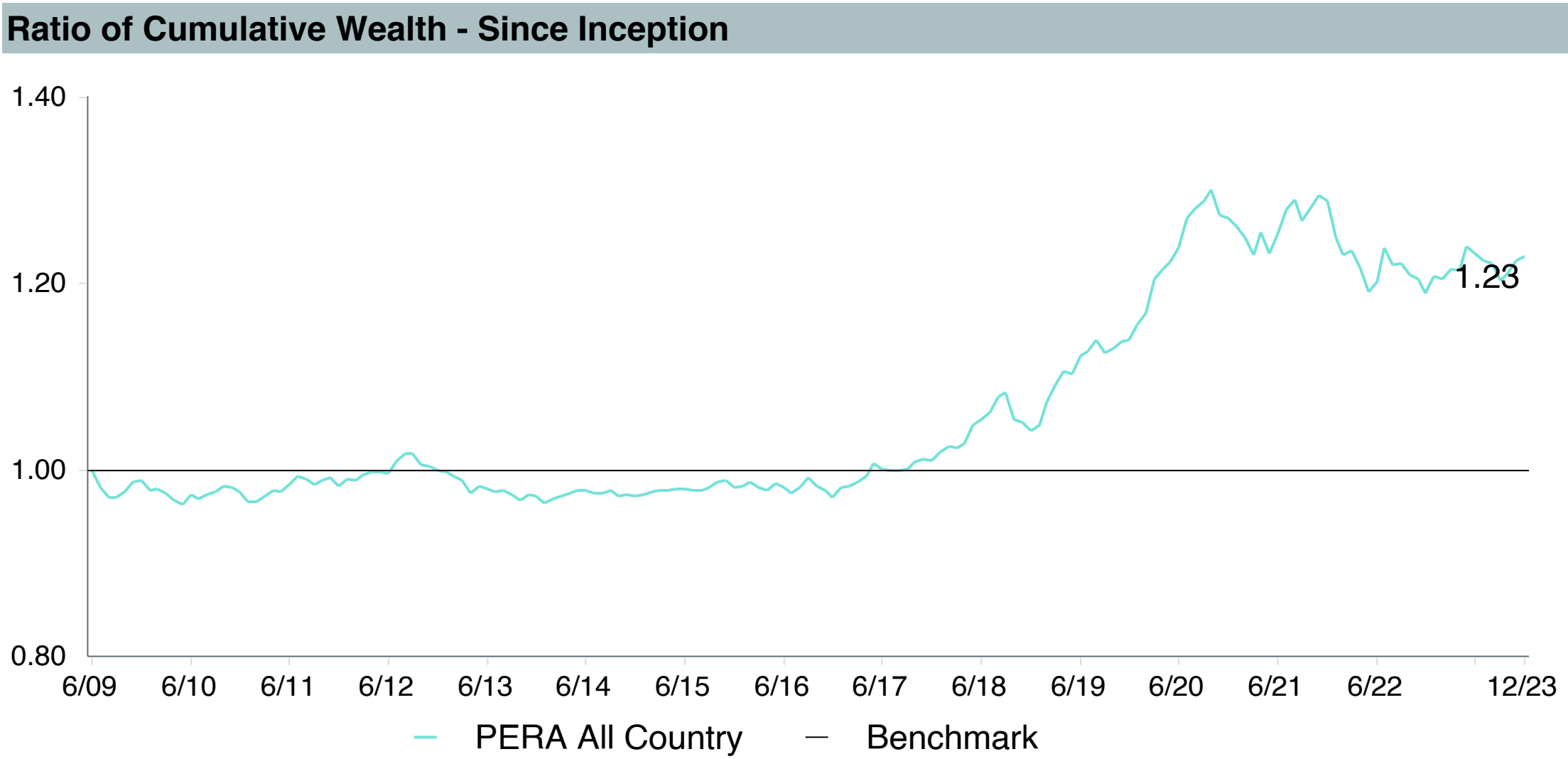
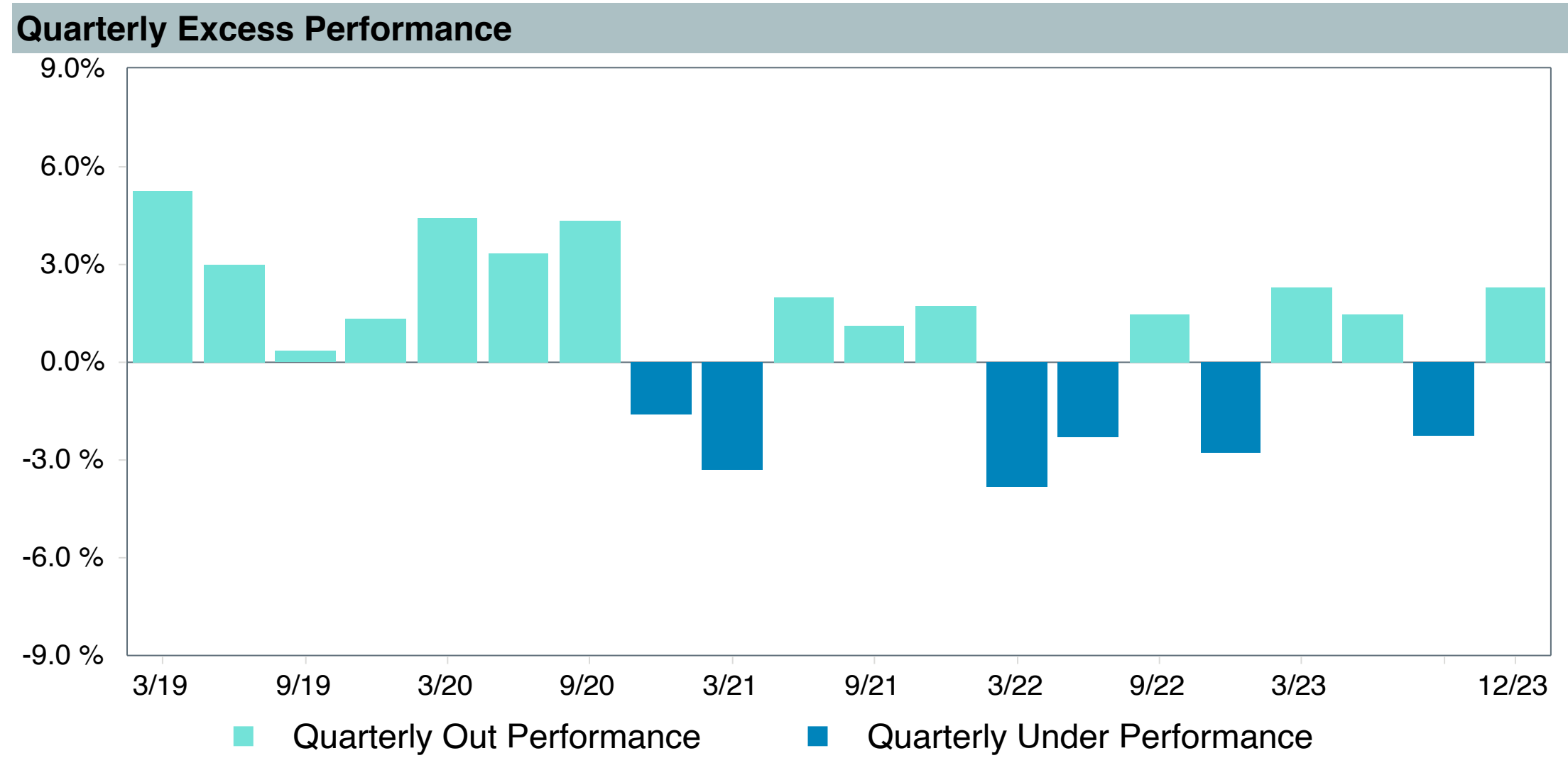
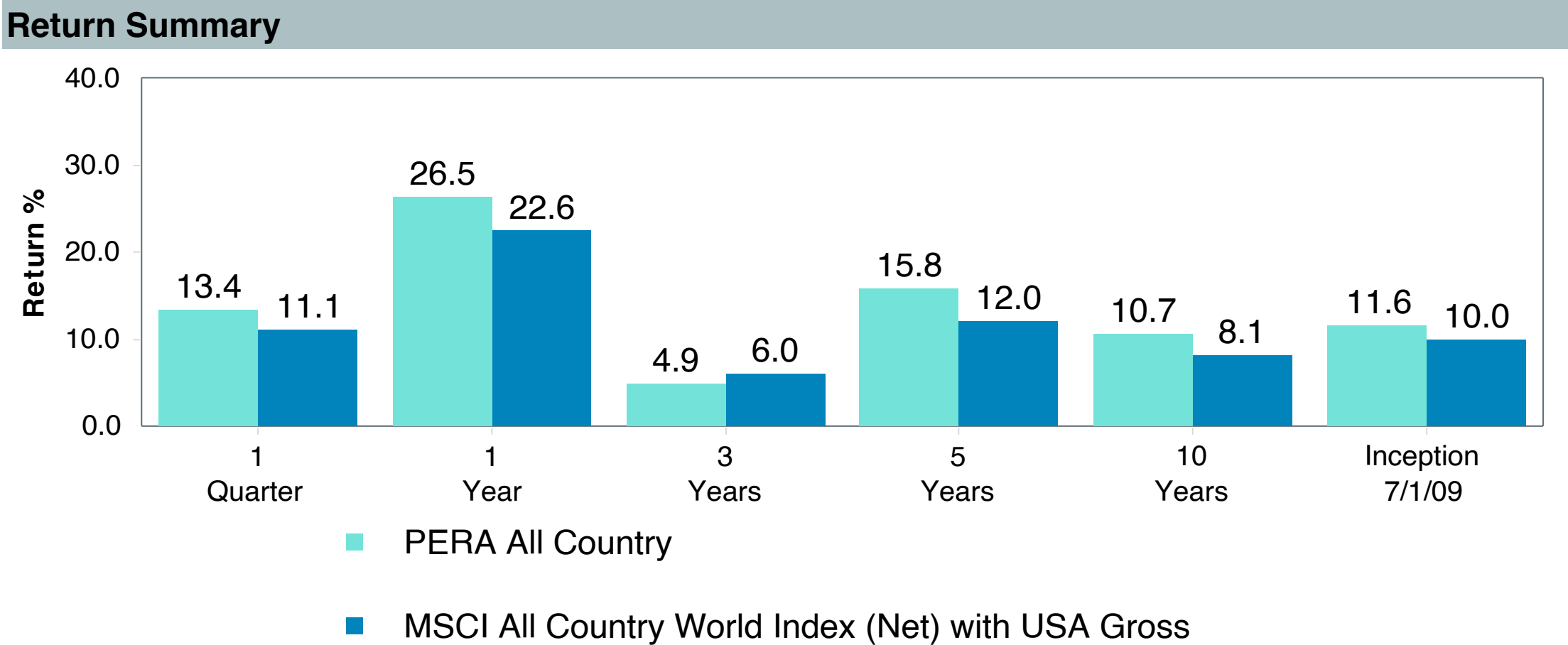
Internal All Country Equity



Manager Performance Summary PERA All Country

As of December 31, 2023

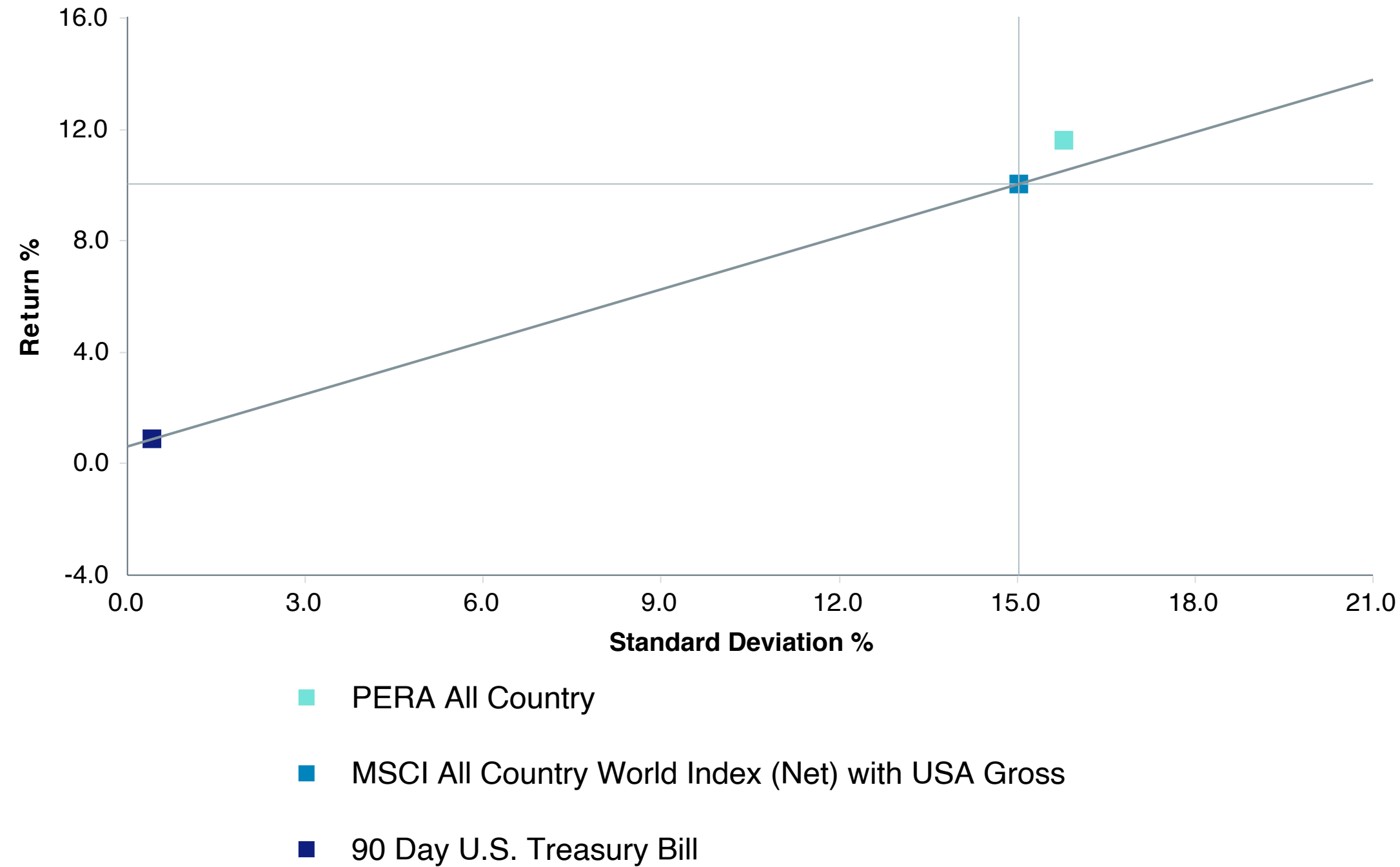
Account Information	
Account Name	PERA All Country
Inception Date	07/01/2009
Account Structure	Separate Account
Asset Class	Global Equity
Benchmark	MSCI All Country World Index (Net) with USA Gross
Peer Group	



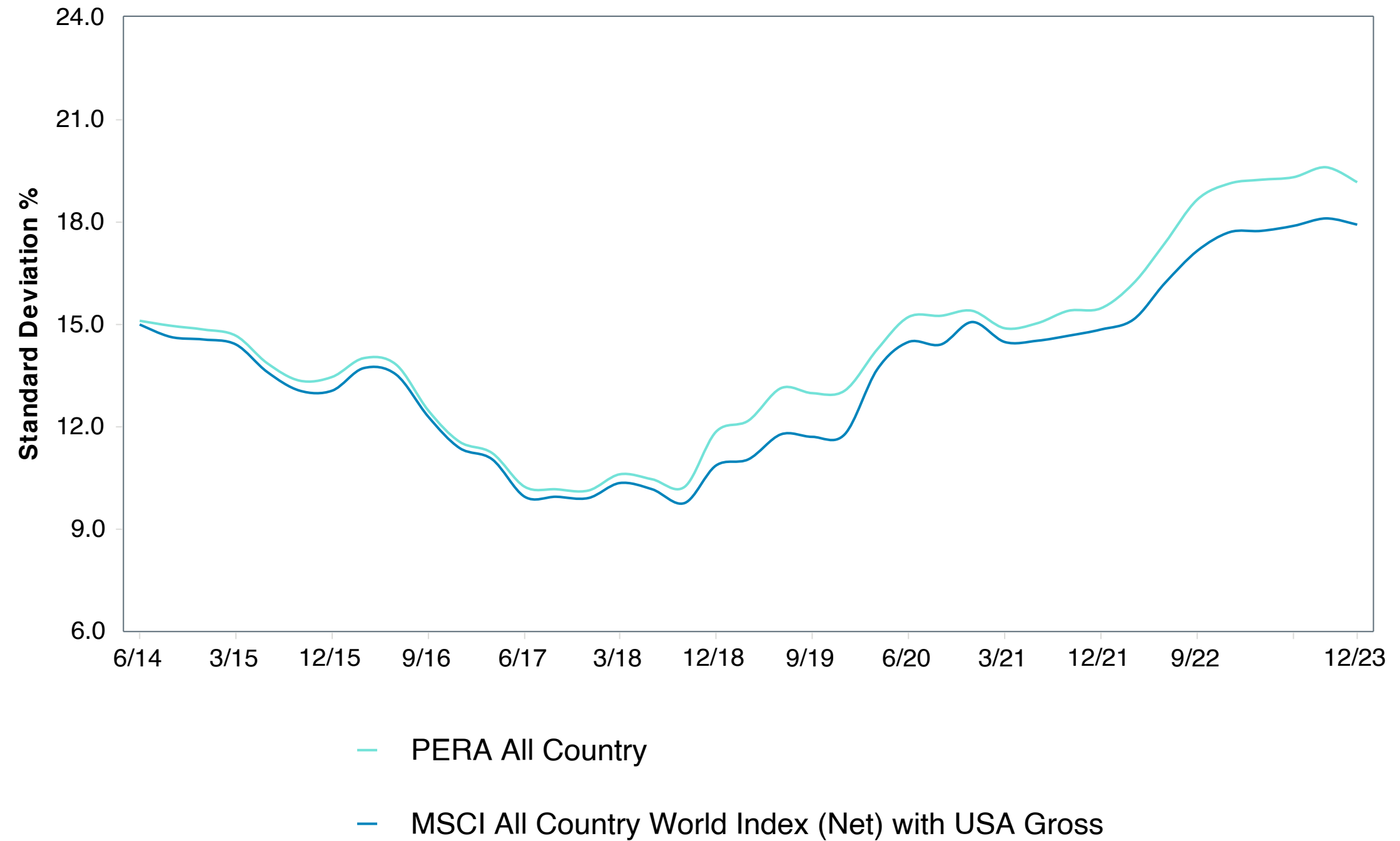
Risk Profile PERA All Country

As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation Since Inception



Standard Deviation Rolling 5 Years



Since Inception Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation	Inception Date
PERA All Country	1.55	3.42	0.45	0.95	0.72	1.28	1.03	11.61	15.78	0.98	07/01/2009
MSCI All Country World Index (Net) with USA Gross	0.00	0.00	-	1.00	0.65	0.00	1.00	10.03	15.02	1.00	07/01/2009
90 Day U.S. Treasury Bill	-9.84	15.04	-0.65	0.00	-	0.90	0.00	0.88	0.41	-0.04	07/01/2009



Portfolio Analysis (Holdings-based)

As of December 31, 2023

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	643,898	462,723
Median Mkt. Cap (\$M)	81,204	12,992
Price/Earnings ratio	30.64	18.93
Price/Book ratio	5.50	3.55
5 Yr. EPS Growth Rate (%)	18.04	14.81
Current Yield (%)	1.20	2.08
Beta (5 Years, Monthly)	1.03	1.00
Number of Stocks	68	2,921

Top Ten Equity Holdings			
	Portfolio Weight %	Benchmark Weight %	Quarterly Return %
Apple Inc	5.99	4.47	12.60
Microsoft Corp	5.79	3.95	19.34
Amazon.com Inc	4.57	2.10	19.52
Alphabet Inc	4.04	1.23	6.75
Costco Wholesale Corp	3.25	0.43	19.68
NVIDIA Corporation	3.16	1.82	13.86
Louis Vuitton, Paris	2.50	0.33	7.68
UnitedHealth Group Incorporated	2.24	0.72	4.78
Abbott Laboratories	2.15	0.28	14.29
SALESFORCE INC	2.06	0.38	29.77

% of Portfolio	35.75	15.71
-----------------------	--------------	--------------

Top Ten Contributors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Microsoft Corp	5.50	3.65	1.85	19.34
Amazon.com Inc	4.12	1.92	2.20	19.52
Apple Inc	6.02	4.41	1.61	12.60
Costco Wholesale Corp	3.62	0.41	3.21	19.68
SALESFORCE INC	1.79	0.32	1.47	29.77
NVIDIA Corporation	3.37	1.76	1.61	13.86
Atlas Copco AB	1.53	0.06	1.47	28.08
MercadoLibre Inc	1.61	0.09	1.52	23.95
Blackrock Inc	1.39	0.16	1.23	26.42
Taiwan Semiconductor	1.59	0.65	0.94	20.23

% of Portfolio	30.54	13.43	17.11
-----------------------	--------------	--------------	--------------

Top Ten Detractors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
LONZA GROUP AG	1.34	0.06	1.28	-9.67
Chevron Corp	0.86	0.50	0.36	-10.60
Diageo PLC	1.62	0.14	1.48	-1.68
JD.com Inc	0.48	0.06	0.42	-1.97
Oracle Corp	1.92	0.28	1.64	-0.10
Estee Lauder Companies Inc.	0.64	0.05	0.59	1.71
Okta Inc	0.27	0.02	0.25	11.07
Kingdee International Software Group Co Ltd	0.20	0.01	0.19	18.40
General Motors Co	0.43	0.08	0.35	9.26
Softbank Group Corp	0.82	0.07	0.75	5.15

% of Portfolio	8.58	1.27	7.31
-----------------------	-------------	-------------	-------------

PERA All Country

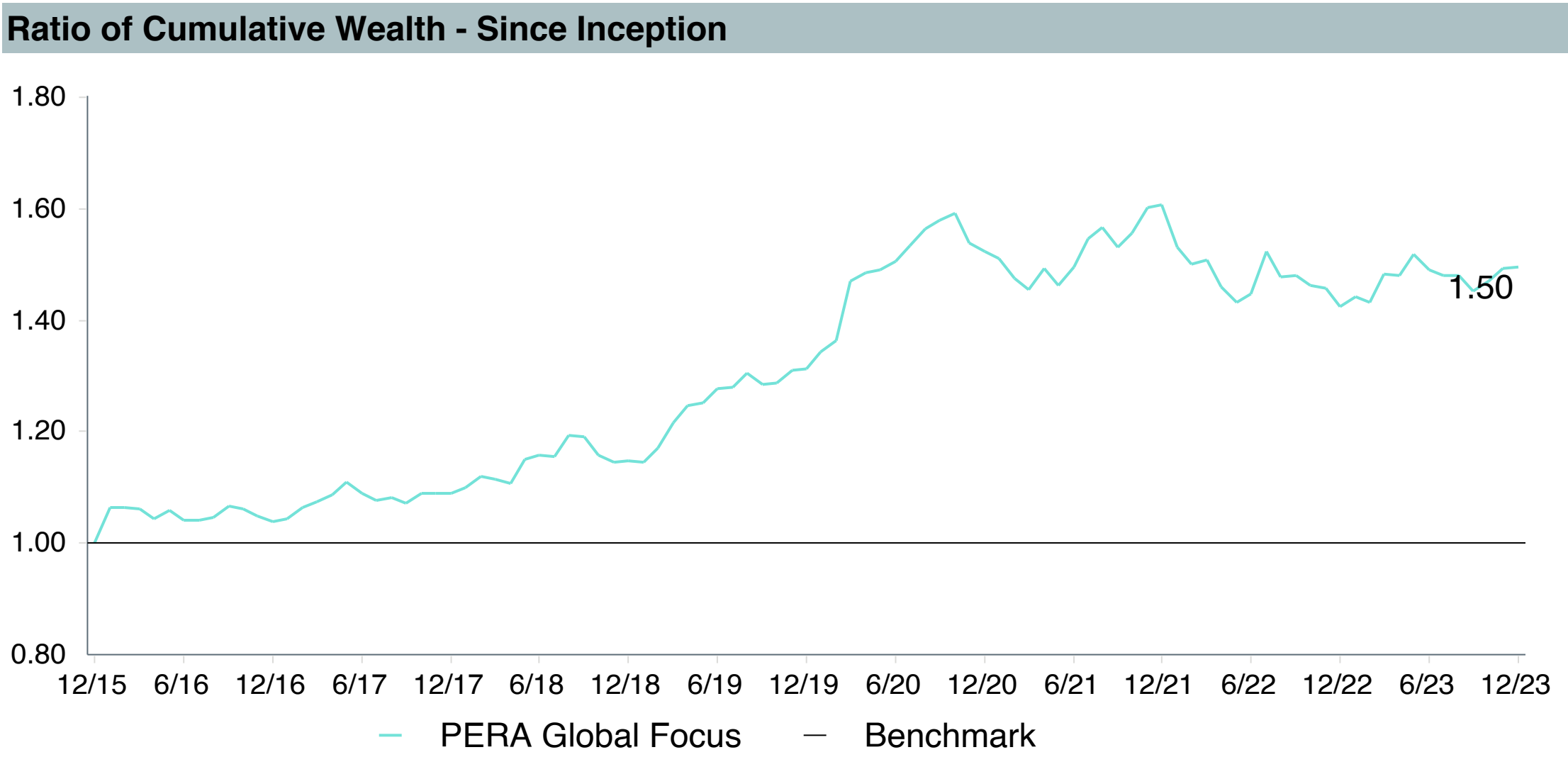
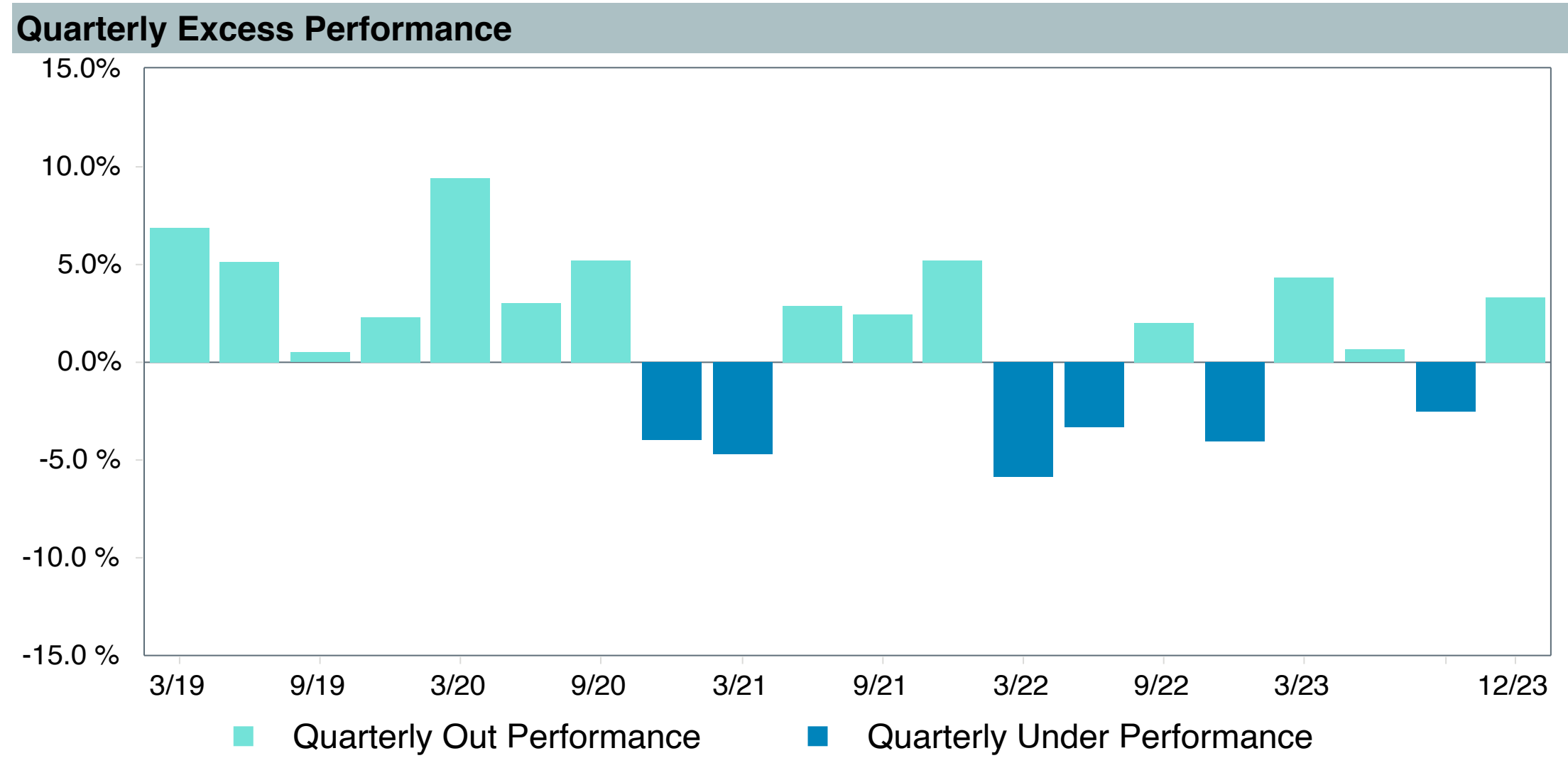
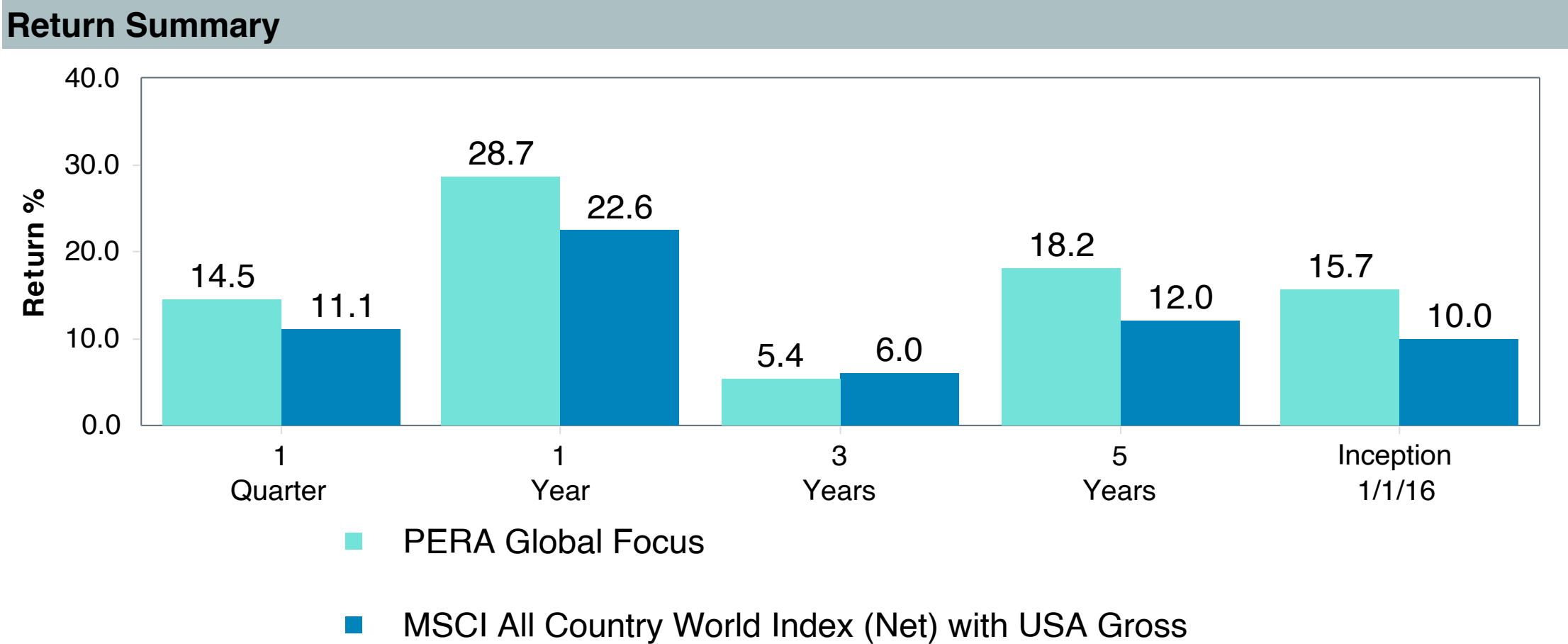
Philosophy and Process

PERA staff manages the PERA All Country Fund by utilizing fundamental analysis. The fund invests in large and mid-cap equities of U.S. and non- U.S. based companies. The investment strategy is rooted in a long-term philosophy and implemented through a multi-faceted and dynamic approach. The strategy employs qualitative techniques to identify the fundamental drivers of stocks. The focus of the fund is identifying high quality growth stocks supported by a global investment theme.

Manager Performance Summary PERA Global Focus

As of December 31, 2023

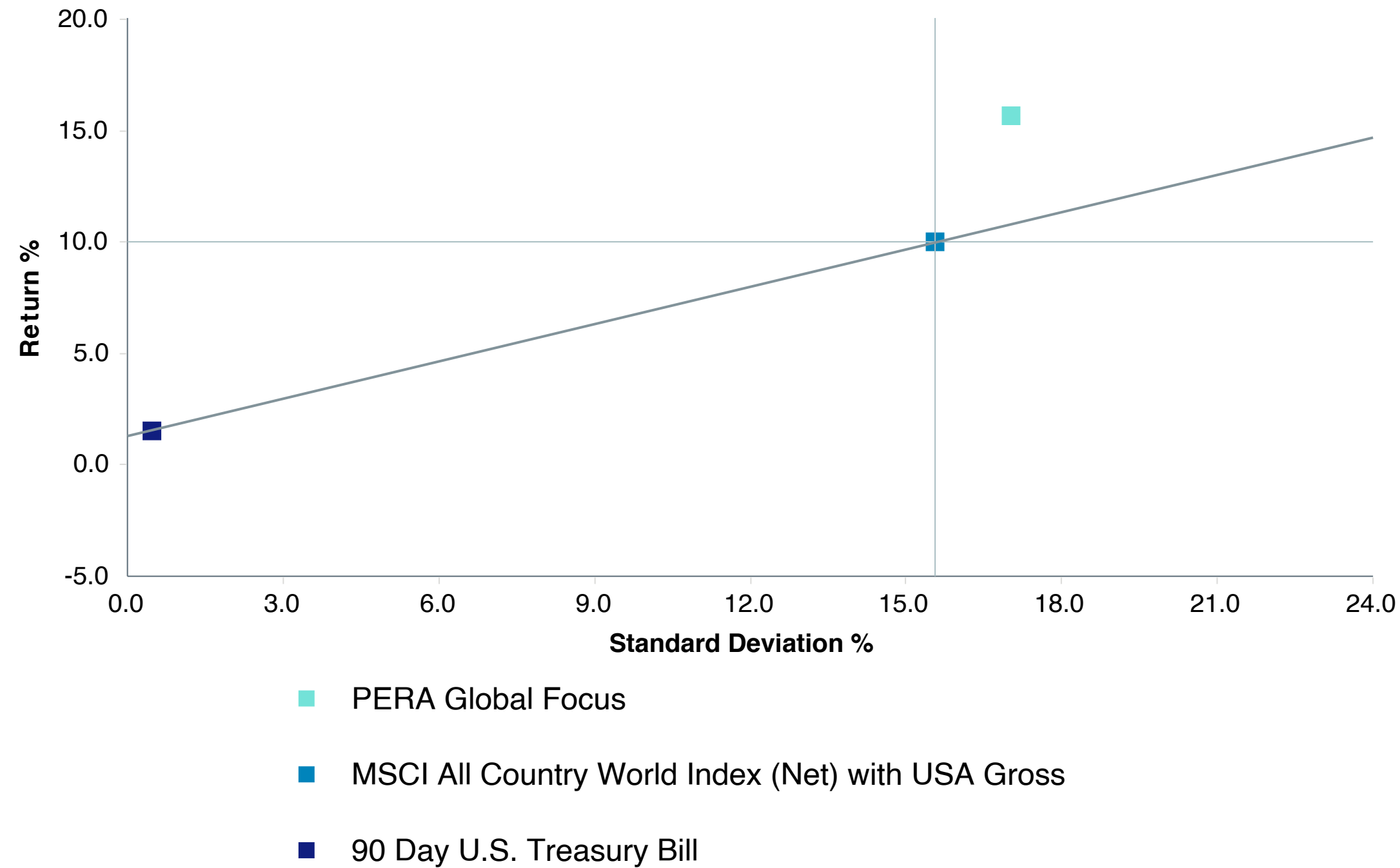
Account Information	
Account Name	PERA Global Focus
Inception Date	02/01/2016
Account Structure	Separate Account
Asset Class	Global Equity
Benchmark	MSCI All Country World Index (Net) with USA Gross
Peer Group	



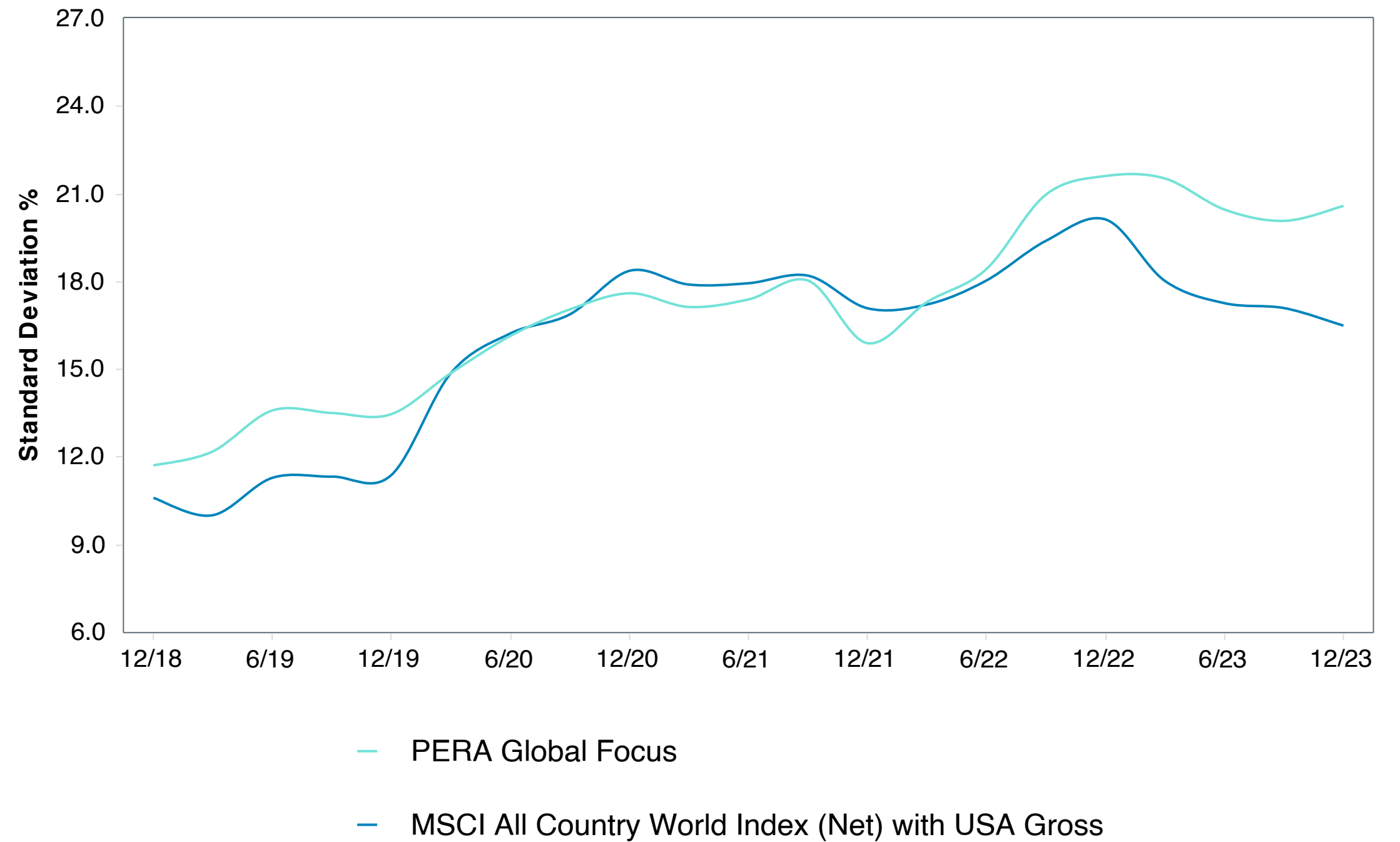
Risk Profile PERA Global Focus

As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation Since Inception



Standard Deviation Rolling 3 Years



Since Inception Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation	Inception Date
PERA Global Focus	5.31	6.99	0.76	0.83	0.85	5.46	1.00	15.67	17.03	0.91	01/01/2016
MSCI All Country World Index (Net) with USA Gross	0.00	0.00	-	1.00	0.59	0.00	1.00	9.99	15.56	1.00	01/01/2016
90 Day U.S. Treasury Bill	-9.23	15.59	-0.59	0.00	-	1.56	0.00	1.55	0.47	-0.05	01/01/2016



Portfolio Analysis (Holdings-based)

As of December 31, 2023

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	847,821	462,723
Median Mkt. Cap (\$M)	170,943	12,992
Price/Earnings ratio	33.09	18.93
Price/Book ratio	7.31	3.55
5 Yr. EPS Growth Rate (%)	19.17	14.81
Current Yield (%)	0.94	2.08
Beta (5 Years, Monthly)	1.01	1.00
Number of Stocks	29	2,921

Top Ten Equity Holdings			
	Portfolio Weight %	Benchmark Weight %	Quarterly Return %
Microsoft Corp	8.67	3.95	19.34
Apple Inc	8.12	4.47	12.60
Amazon.com Inc	6.38	2.10	19.52
Costco Wholesale Corp	5.83	0.43	19.68
Alphabet Inc	5.36	1.23	6.75
Atlas Copco AB	4.36	0.07	28.08
Accenture PLC	4.36	0.33	14.73
Visa Inc	4.24	0.62	13.43
SALESFORCE INC	4.01	0.38	29.77
UnitedHealth Group Incorporated	3.89	0.72	4.78

% of Portfolio	55.22	14.30
-----------------------	--------------	--------------

Top Ten Contributors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Microsoft Corp	8.30	3.65	4.65	19.34
Amazon.com Inc	5.90	1.92	3.98	19.52
Costco Wholesale Corp	5.69	0.41	5.28	19.68
Atlas Copco AB	3.91	0.06	3.85	28.08
SALESFORCE INC	3.52	0.32	3.20	29.77
Apple Inc	8.24	4.41	3.83	12.60
Blackrock Inc	2.89	0.16	2.73	26.42
Accenture PLC	4.35	0.32	4.03	14.73
Visa Inc	4.27	0.61	3.66	13.43
Keyence Corp	2.90	0.12	2.78	18.47

% of Portfolio	49.97	11.98	37.99
-----------------------	--------------	--------------	--------------

Top Ten Detractors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Diageo PLC	3.09	0.14	2.95	-1.68
AIA Group Ltd	1.51	0.15	1.36	6.90
UnitedHealth Group Incorporated	3.76	0.77	2.99	4.78
H D F C Bank Ltd	1.46	0.08	1.38	13.73
Nordson Corp	1.19	0.02	1.17	18.68
Danaher Corp	4.16	0.28	3.88	5.57
NIKE Inc	1.67	0.19	1.48	13.91
Taiwan Semiconductor	1.36	0.65	0.71	20.23
MSCI Inc	2.64	0.07	2.57	10.55
Louis Vuitton, Paris	3.80	0.34	3.46	7.68

% of Portfolio	24.64	2.69	21.95
-----------------------	--------------	-------------	--------------

PERA Global Focus

Philosophy and Process

PERA staff manages the PERA Global Fund (Focus) by using fundamental analysis. The Focus Fund strategy is a concentrated best ideas portfolio that seeks to own the highest conviction holdings from the PERA All Country Fund (Core). Like the Core Fund, the investment philosophy is to own high quality companies that are believed to sustain growth, margins, and returns above peers. Both portfolios use the same bottom-up investment process employed by PERA's internal research staff, both are managed by the same portfolio management team, and both are measured against the MSCI All-Country World Index. The difference between the two funds is the degree of fund concentration and mandate constraints. The Core Fund has a mandate to be diversified by country and sector, and typically holds 70-120 names that are weighted with a view more toward benchmark weighting. The Focus Fund concentrates weight in the research team's 20-40 highest conviction ideas and takes an absolute view of position size. While both funds exhibit quality and growth characteristics, the Core Fund tends to track the benchmark more closely, while the Focus Fund varies more based on the prospects of companies that can deliver meaningfully higher cash flows and returns than the benchmark and peers.

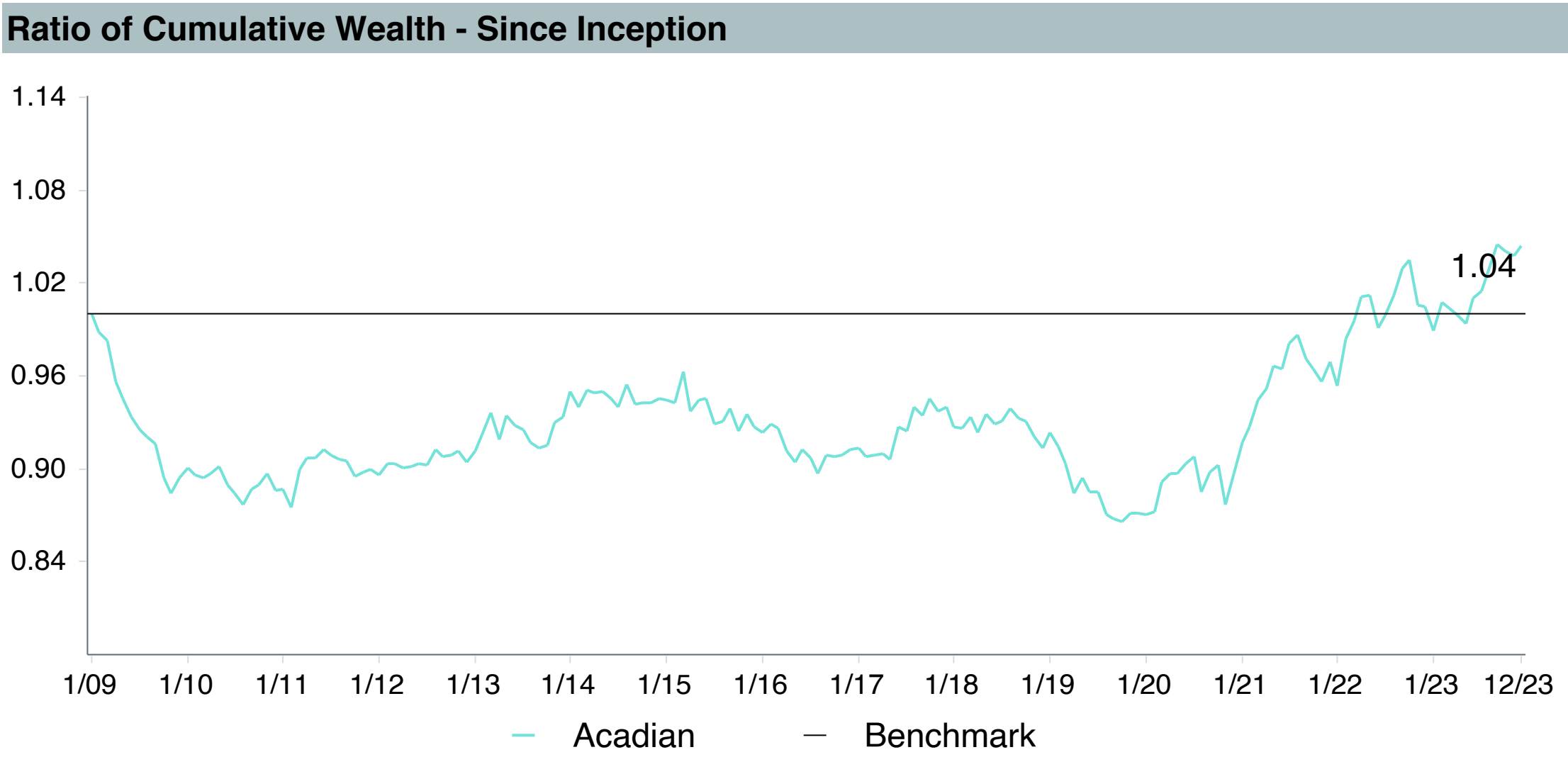
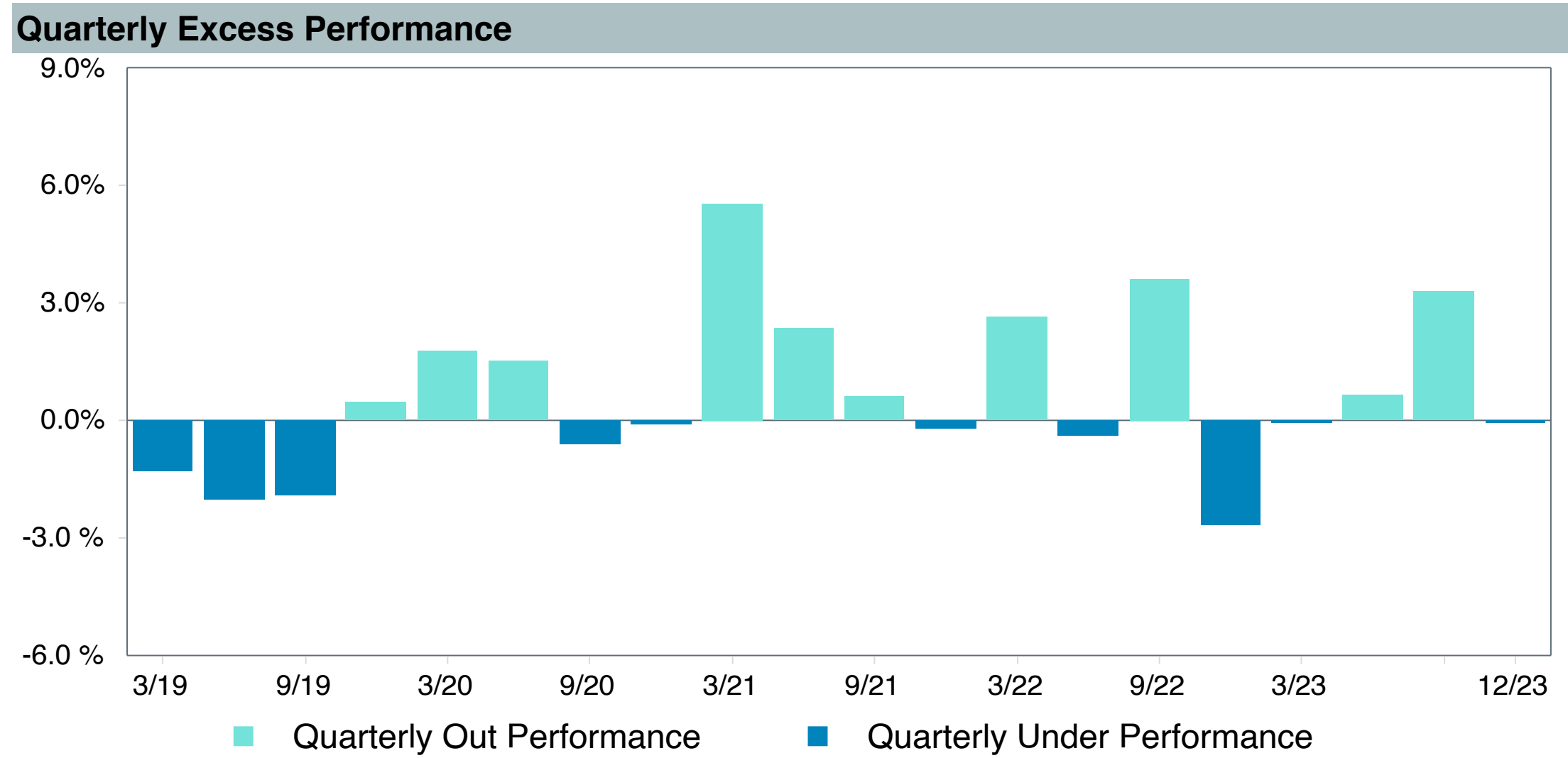
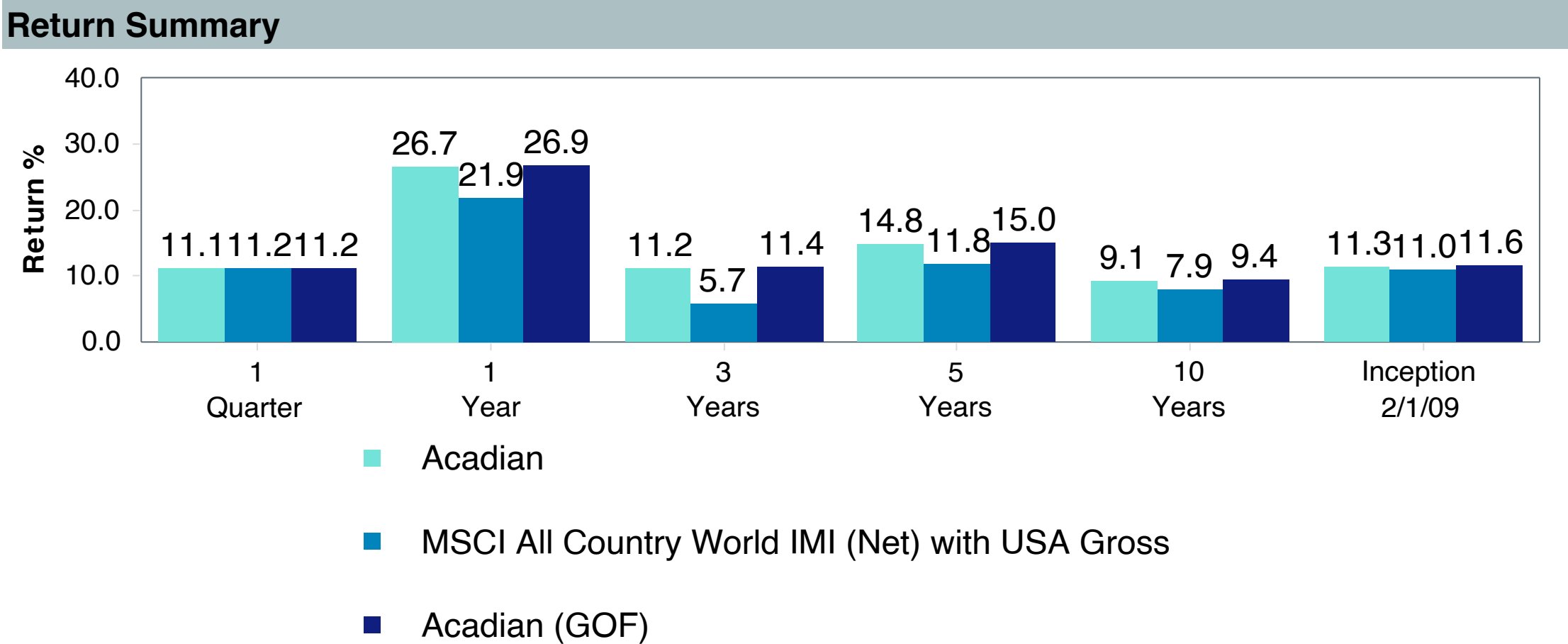
External All Country Equity



Manager Performance Summary Acadian

As of December 31, 2023

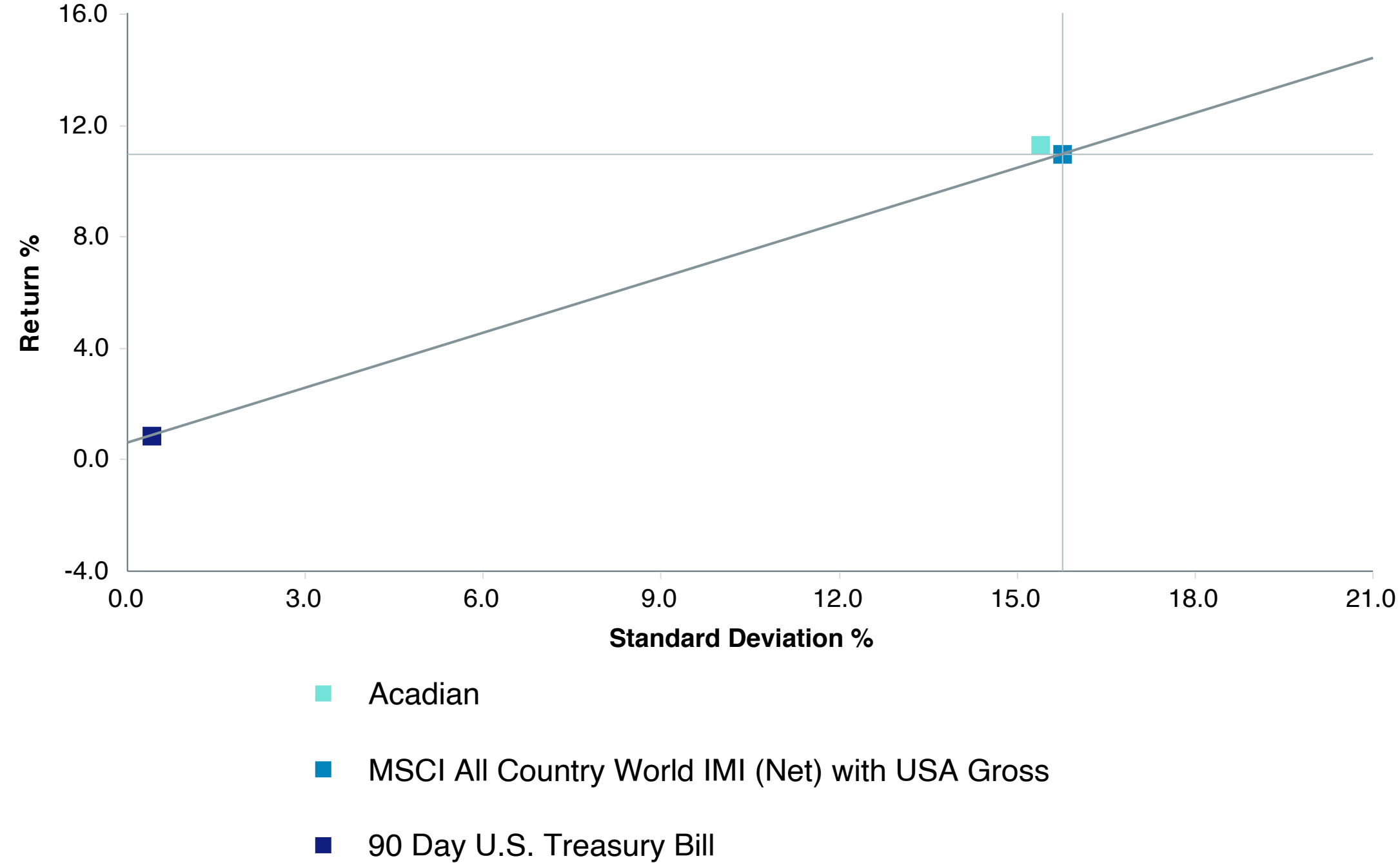
Account Information	
Account Name	Acadian
Inception Date	02/01/2009
Account Structure	Separate Account
Asset Class	Global Equity
Benchmark	MSCI All Country World IMI (Net) with USA Gross
Peer Group	



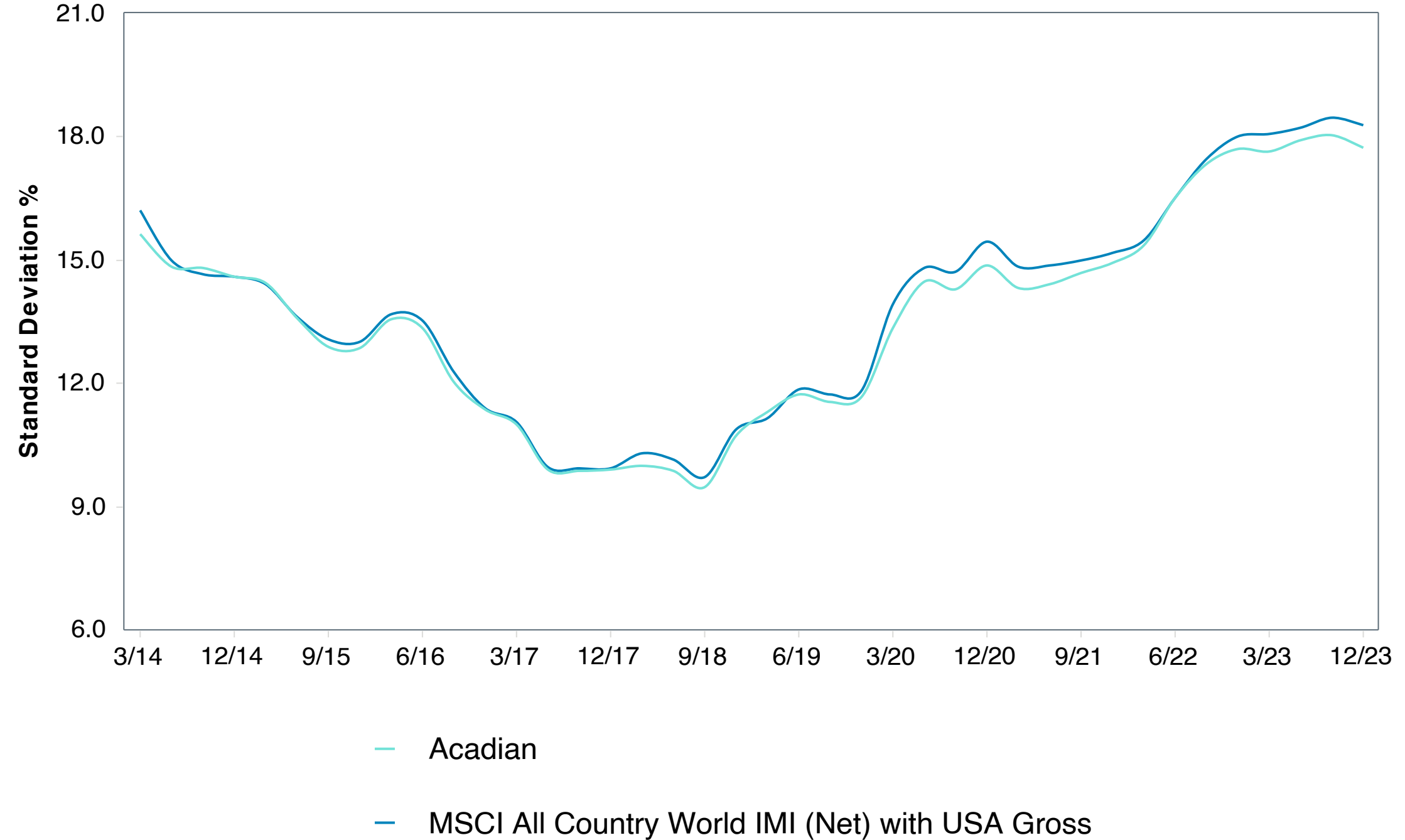
Risk Profile Acadian

As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation Since Inception



Standard Deviation Rolling 5 Years



Since Inception Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation	Inception Date
Acadian	0.24	3.98	0.06	0.94	0.72	0.87	0.95	11.30	15.41	0.97	02/01/2009
MSCI All Country World IMI (Net) with USA Gross	0.00	0.00	-	1.00	0.69	0.00	1.00	10.98	15.76	1.00	02/01/2009
90 Day U.S. Treasury Bill	-10.84	15.78	-0.69	0.00	-	0.88	0.00	0.87	0.40	-0.05	02/01/2009



Portfolio Analysis (Holdings-based)

As of December 31, 2023

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	305,721	411,234
Median Mkt. Cap (\$M)	1,268	1,999
Price/Earnings ratio	13.02	18.38
Price/Book ratio	3.97	3.38
5 Yr. EPS Growth Rate (%)	23.02	14.41
Current Yield (%)	2.54	2.09
Beta (5 Years, Monthly)	0.94	1.00
Number of Stocks	714	9,084

Top Ten Equity Holdings			
	Portfolio Weight %	Benchmark Weight %	Quarterly Return %
Alphabet Inc	3.22	1.09	6.75
Apple Inc	3.08	3.97	12.60
NVIDIA Corporation	2.85	1.61	13.86
Meta Platforms Inc	2.48	1.04	17.90
Industria De Diseno Textil	2.36	0.06	18.72
Booking Holdings Inc	2.27	0.17	15.02
McKesson Corp	2.16	0.08	6.61
Amazon.com Inc	2.12	1.86	19.52
Cardinal Health Inc	1.95	0.03	17.36
Novo Nordisk A/S	1.71	0.45	13.16

% of Portfolio	24.20	10.36
-----------------------	--------------	--------------

Top Ten Contributors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
James Hardie Industries Plc	1.12	0.02	1.10	46.42
Asustek Computer Inc	1.20	0.01	1.19	40.29
Boise Cascade Co	1.38	0.01	1.37	31.52
Industria De Diseno Textil	2.28	0.06	2.22	18.72
Meta Platforms Inc	2.34	0.97	1.37	17.90
Toll Brothers Inc.	1.04	0.01	1.03	39.39
NVIDIA Corporation	2.71	1.57	1.14	13.86
Pinterest Inc	0.89	0.02	0.87	37.03
Booking Holdings Inc	2.12	0.17	1.95	15.02
Cardinal Health Inc	1.75	0.03	1.72	17.36

Top Ten Detractors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Petrochina Co Ltd	1.37	0.02	1.35	-12.28
G-Bits Network Technology (Xiamen) Co Ltd	0.40	0.00	0.40	-30.96
Valero Energy Corp	1.46	0.07	1.39	-7.50
Cisco Systems Inc	2.03	0.32	1.71	-5.34
PBF Energy Inc	0.53	0.01	0.52	-17.43
PT Adaro Energy Indonesia Tbk	0.43	0.00	0.43	-16.18
PT United Tractors TBK	0.34	0.00	0.34	-17.46
Unum Group	0.68	0.01	0.67	-7.38
Genmab A/S	0.46	0.03	0.43	-10.32
Dar Al Arkan Real Estate Development Co	0.36	0.00	0.36	-11.66

% of Portfolio	16.83	2.87	13.96
-----------------------	--------------	-------------	--------------

% of Portfolio	8.06	0.46	7.60
-----------------------	-------------	-------------	-------------

Acadian

Philosophy and Process

Acadian believes that it is possible to earn superior returns by conducting statistical analysis on historical data and implementing the results thereof with a disciplined, quantitative investment process. Acadian uses three sets of combined factors- valuation factors, growth potential factors, and price factors - in its quantitative model for stock selection. The manager believes that the efficacy of these factors differs by market and therefore customizes them for each market. Acadian collects data on over 20 factors but only 8-12 of these are employed in the quantitative model. The next stage of the investment process deals with developing expected returns for each of the 200+ sector/country combinations. Acadian believes that country performance has an overwhelmingly larger effect than sector performance in emerging markets, and therefore, will not look at sector factors for those markets. About 75% of the outperformance is expected to result from stock selection while the remainder is expected from country and sector allocation decisions.

Organizational Update

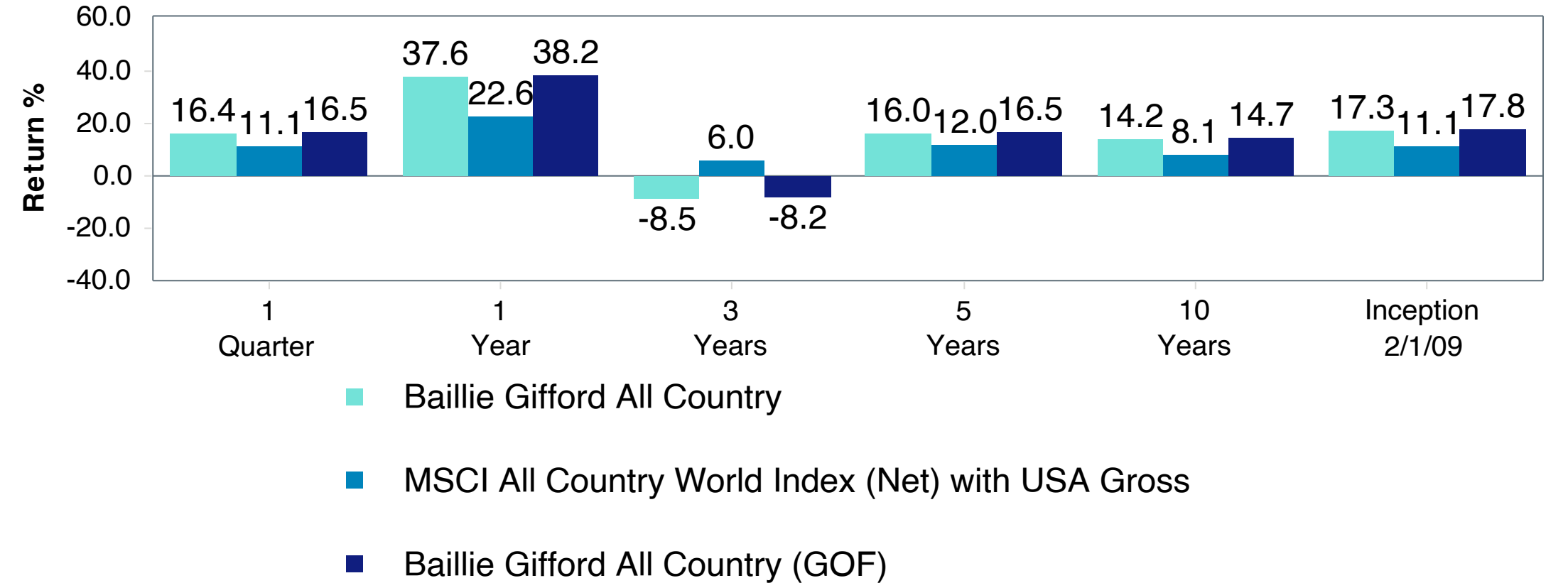
Aon last met with Acadian in May 2023. Acadian began paying out-of-pocket for sell-side research in 2018. As of March 31, 2024, Acadian remains qualified.

Manager Performance Summary Baillie Gifford All Country

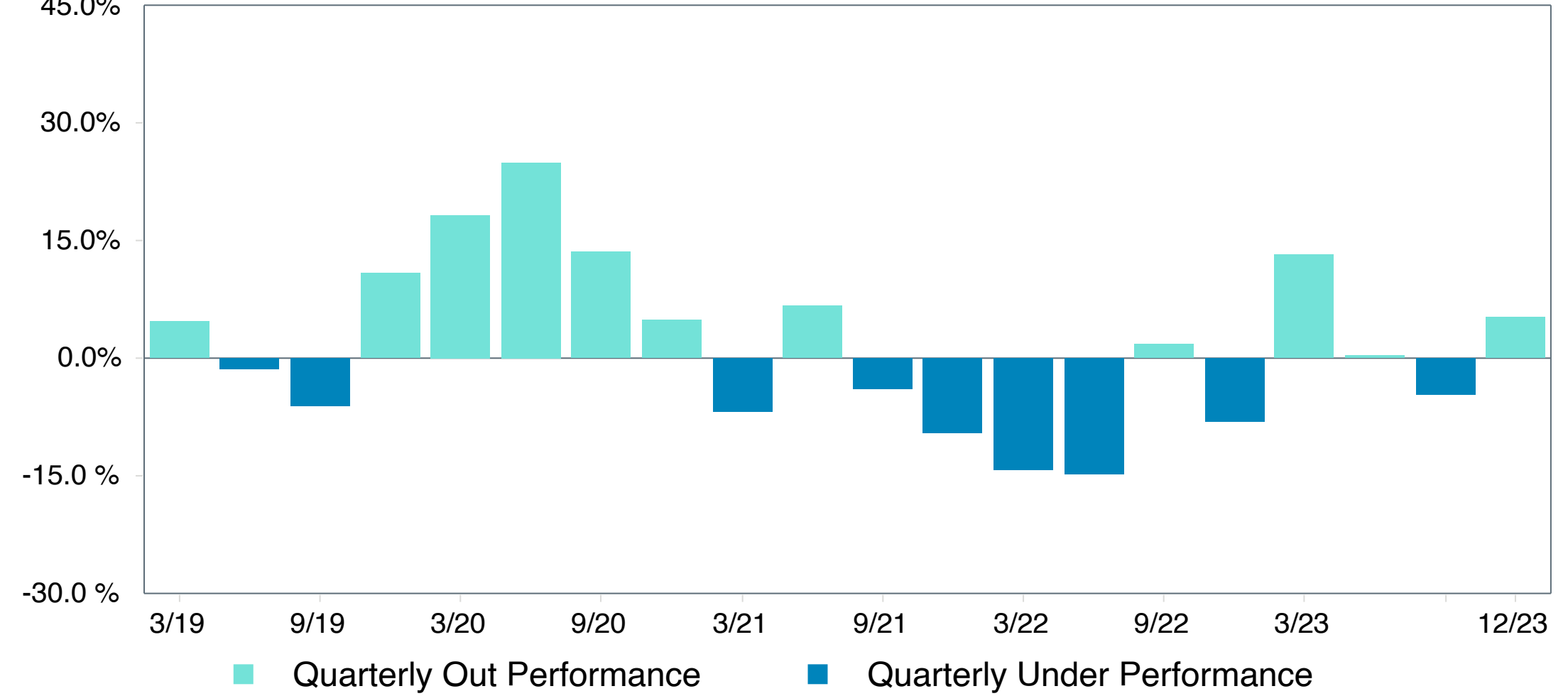
As of December 31, 2023

Account Information	
Account Name	Baillie Gifford All Country
Inception Date	02/01/2009
Account Structure	Separate Account
Asset Class	Global Equity
Benchmark	MSCI All Country World Index (Net) with USA Gross
Peer Group	

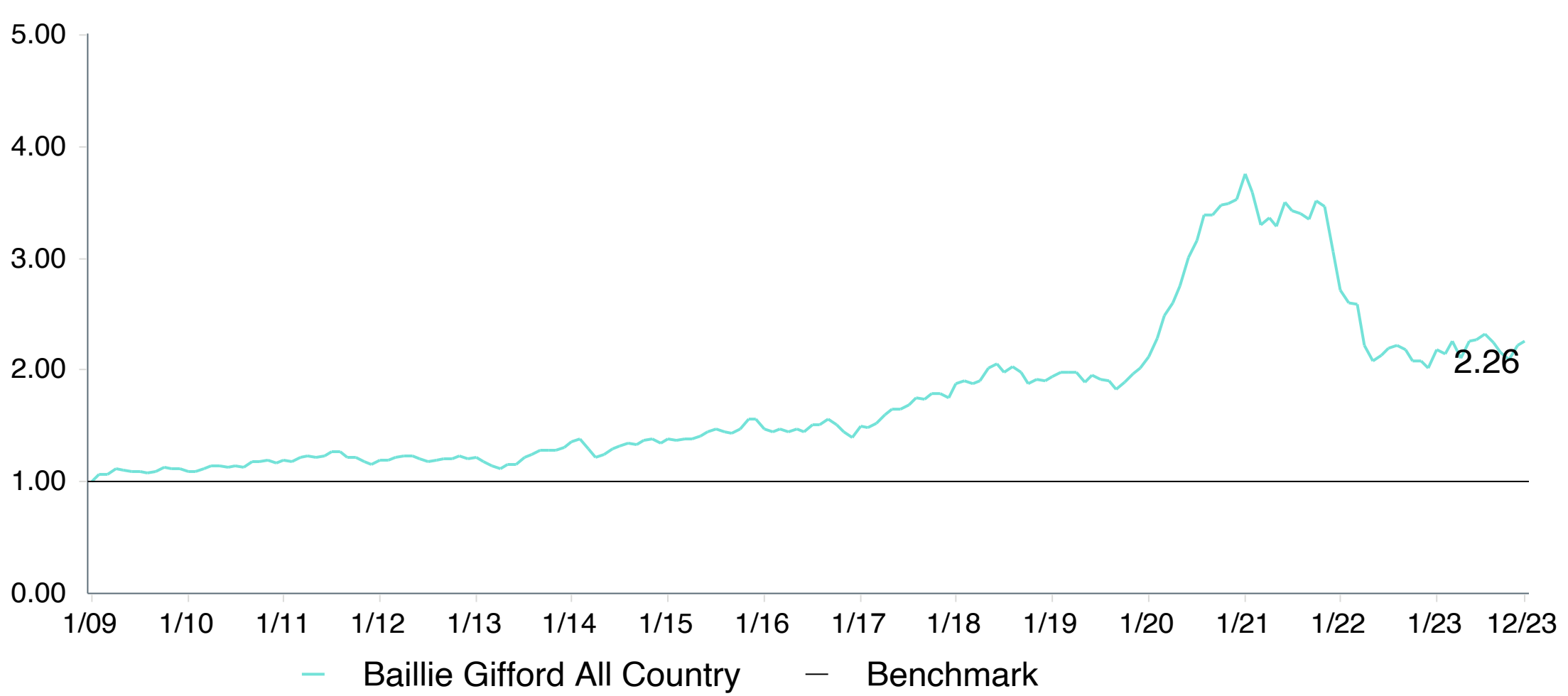
Return Summary



Quarterly Excess Performance



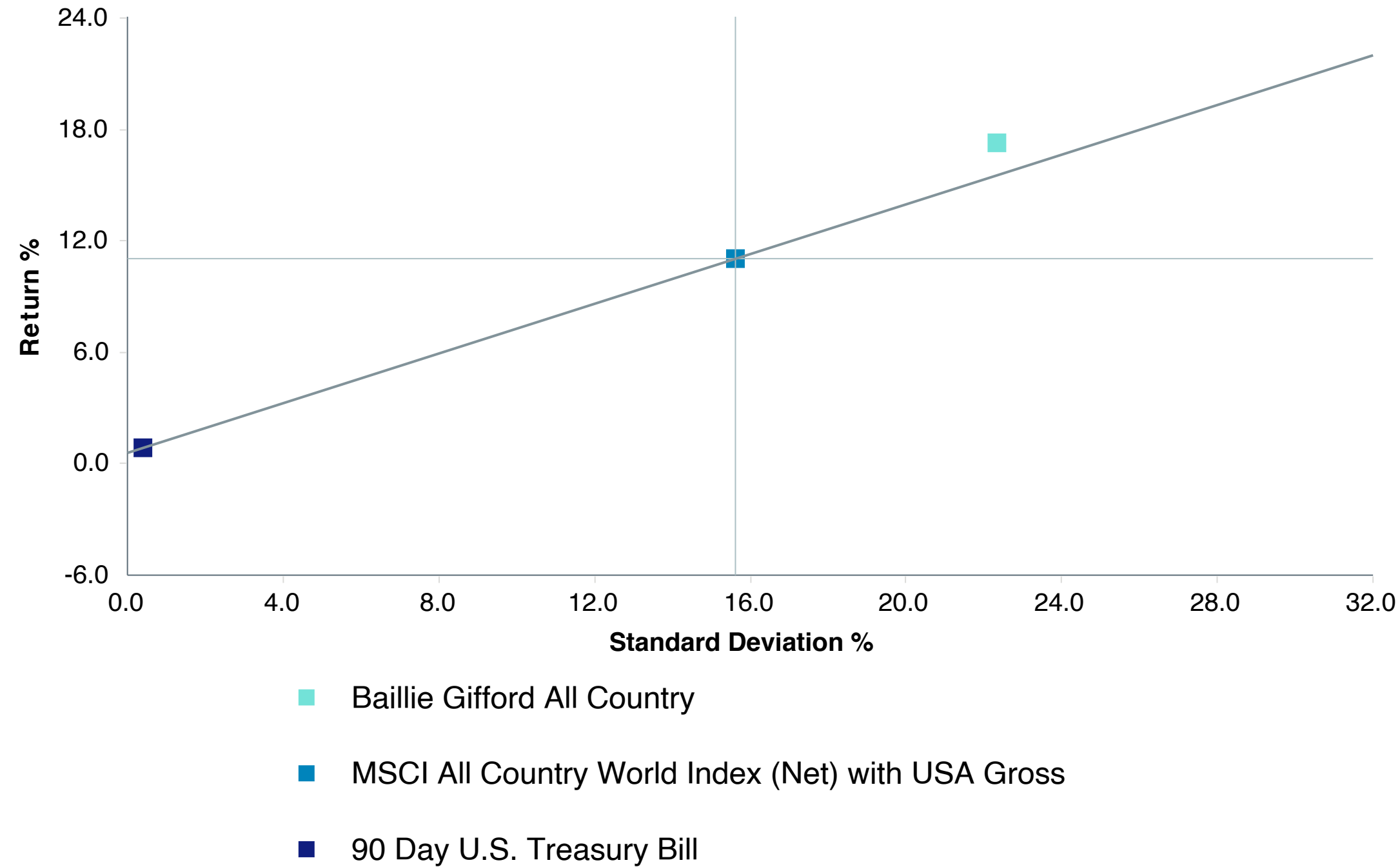
Ratio of Cumulative Wealth - Since Inception



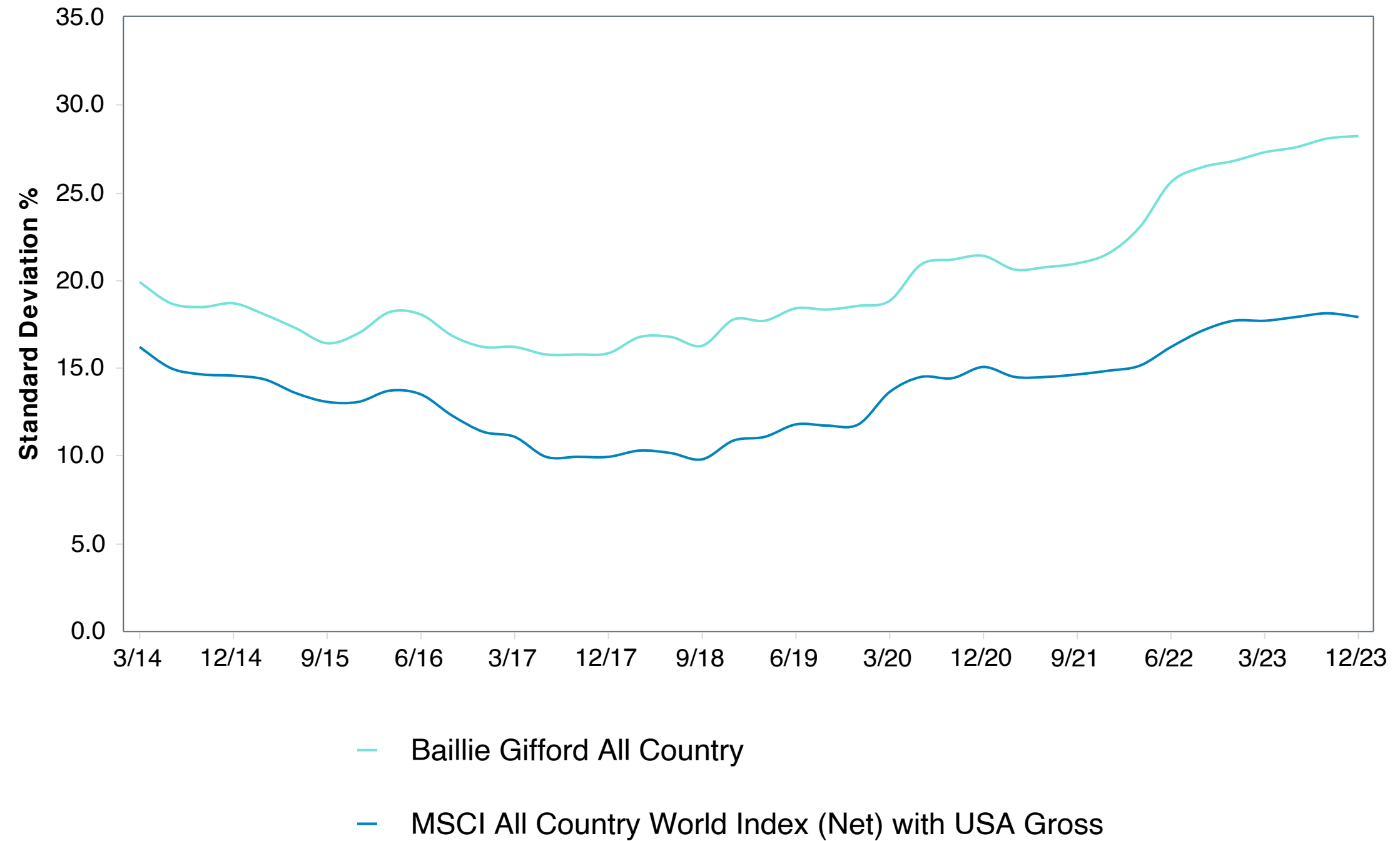
Risk Profile Baillie Gifford All Country

As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation Since Inception



Standard Deviation Rolling 5 Years



Since Inception Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation	Inception Date
Baillie Gifford All Country	6.81	12.78	0.53	0.69	0.79	4.69	1.19	17.30	22.34	0.83	02/01/2009
MSCI All Country World Index (Net) with USA Gross	0.00	0.00	-	1.00	0.70	0.00	1.00	11.05	15.63	1.00	02/01/2009
90 Day U.S. Treasury Bill	-10.88	15.65	-0.70	0.00	-	0.88	0.00	0.87	0.40	-0.04	02/01/2009



Portfolio Analysis (Holdings-based)

As of December 31, 2023

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	294,346	462,723
Median Mkt. Cap (\$M)	43,960	12,992
Price/Earnings ratio	41.80	18.93
Price/Book ratio	7.59	3.55
5 Yr. EPS Growth Rate (%)	27.95	14.81
Current Yield (%)	0.22	2.08
Beta (5 Years, Monthly)	1.25	1.00
Number of Stocks	39	2,921

Top Ten Equity Holdings			
	Portfolio Weight %	Benchmark Weight %	Quarterly Return %
NVIDIA Corporation	7.08	1.82	13.86
PDD Holdings Inc	6.54	0.13	49.19
Amazon.com Inc	6.37	2.10	19.52
ASML Holding NV	4.51	0.45	27.54
Atlassian Corp	4.11	0.05	18.04
DexCom Inc	3.78	0.07	33.00
Shopify Inc	3.62	0.14	42.75
Tesla Inc	3.49	1.06	-0.70
Adyen N.V	3.37	0.04	72.48
Cloudflare Inc	3.32	0.03	32.08

% of Portfolio	46.19	5.89
-----------------------	--------------	-------------

Top Ten Contributors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
PDD Holdings Inc	5.11	0.10	5.01	49.19
Adyen N.V	2.14	0.03	2.11	72.48
Shopify Inc	2.96	0.11	2.85	42.75
Amazon.com Inc	6.21	1.92	4.29	19.52
ASML Holding NV	4.13	0.39	3.74	27.54
DexCom Inc	3.31	0.06	3.25	33.00
Advanced Micro Devices Inc	2.44	0.27	2.17	43.37
NVIDIA Corporation	7.24	1.76	5.48	13.86
Cloudflare Inc	2.93	0.03	2.90	32.08
Workday Inc	2.86	0.07	2.79	28.49

% of Portfolio	39.33	4.74	34.59
-----------------------	--------------	-------------	--------------

Top Ten Detractors				
	Portfolio Weight %	Benchmark Weight %	Active Weight %	Quarterly Return %
Meituan	2.94	0.12	2.82	-28.32
Contemporary Amperex Technology Co Ltd	2.46	0.01	2.45	-17.19
Trade Desk Inc (The)	3.95	0.06	3.89	-7.92
Alibaba Group Holding Ltd	1.64	0.29	1.35	-10.23
Kering	3.44	0.06	3.38	-3.61
Moderna Inc	3.25	0.05	3.20	-3.72
Coupang Inc	2.20	0.00	2.20	-4.77
Sea Limited	1.26	0.03	1.23	-7.85
BioNTech SE	2.31	0.00	2.31	-2.85
Tencent Holdings LTD	1.35	0.43	0.92	-3.83

% of Portfolio	24.80	1.05	23.75
-----------------------	--------------	-------------	--------------

Baillie Gifford All Country

Philosophy and Process

Baillie Gifford follows a bottom-up approach for stock selection with a strong emphasis on free cash flow analysis, company specifics, and sound qualitative judgment on a company's management. The manager has a consistent growth bias in its investment process. It tries to identify companies that have a strong competitive advantage in a favorable industry or sector along with significant financial strength and an upbeat management attitude. Since the manager believes that local factors play a greater role in influencing stock movements, the investment team at Baillie Gifford is divided into geographical groups, with each group having its own sector experts. Individual stock ideas are first exchanged with other groups and sector teams and then, if found superior as compared to other stocks in the same sector, are recommended to the Investment Policy Committee by each group. The Investment Policy Committee comprises the senior most investment professionals at the firm. This Committee is responsible for making the final decision to include any stock in the portfolio as well as for determining specific stock, sector, and country weights. The portfolios are put together by the institutional clients department, which ensures adherence of client guidelines for different portfolios. The Long Term Global Growth strategy is an all-cap product employing a 5 to 10 year outlook. This is a concentrated portfolio as the allowable number of stocks range from 30 to 60. Although no specific weightings apply, the portfolio must be invested in at least six countries and six sectors at any given time.

Organizational Update

Aon last met with Baillie Gifford in October 2023. Baillie Gifford began paying out-of-pocket for sell-side research in 2018. Aon continues to have a favorable opinion of this manager.

(This page is left blank intentionally)

Fixed Income



Asset Allocation & Performance

As of December 31, 2023

	Allocation		Performance %						
	Market Value \$ (\$)	%	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Fixed Income	11,640,181.0	100.0	7.0	6.2	-3.0	1.5	2.2	4.8	01/01/1995
Fixed Income Custom Benchmark			6.8	5.5	-3.3	1.1	2.0	4.8	
PERA Aggregate	11,640,181.0	100.0	7.0	6.2	-3.0	1.5	2.2	4.0	02/01/1998
Blmbg. U.S. Aggregate Index			6.8	5.5	-3.3	1.1	1.8	4.0	
DB Fixed Income Pool	11,640,181.0	100.0	7.0	6.2	-	-	-	-0.9	04/01/2022
Fixed Income Core Benchmark			6.8	5.5	-	-	-	-1.4	
CPERA - ABS	62,586.9	0.5	3.3	5.3	0.2	-	-	0.4	07/01/2020
BBG U.S.Ag Asset Bckd Bnd			3.5	3.6	-0.4	-	-	0.0	
CPERA - CMBS	169,782.9	1.5	5.3	5.0	-2.5	1.8	2.2	4.5	09/01/2003
BBG U.S. Agg CMBS			5.2	5.4	-2.5	1.7	2.1	3.8	
CPERA - FI Alpha	1,580,776.2	13.6	6.5	5.6	-3.3	-	-	0.1	05/01/2019
CPERA - Government Related	499,461.8	4.3	5.7	6.8	-2.1	1.8	2.2	3.1	04/01/2003
BB BC U.S. Agg Govt related			5.5	5.8	-2.4	1.4	2.0	-	
CPERA - Treasury	3,450,904.7	29.6	5.7	4.3	-3.9	0.6	1.3	2.7	04/01/2003
BBG US Agg Treasury Bond			5.7	4.1	-3.8	0.5	1.3	2.7	
CPERA - Corporate Bond	2,777,996.4	23.9	8.5	9.4	-2.8	3.5	3.6	4.6	04/01/2003
BB BC U.S. Agg Corp Bond			8.5	8.5	-3.3	2.6	3.0	4.3	
CPERA - Mortgage Backed	3,098,298.8	26.6	7.4	5.2	-2.7	0.4	1.4	3.0	04/01/2003
BBG US MBS			7.5	5.0	-2.9	0.3	1.4	3.0	
CPERA - Internal Core Cash	371.9	0.0	160.4	164.8	42.6	24.5	12.0	6.6	04/01/2003
ICE BofA 3 Month U.S. T-Bill			1.4	5.0	2.2	1.9	1.3	1.5	
Fixed Income Liquidation	1.5	0.0							

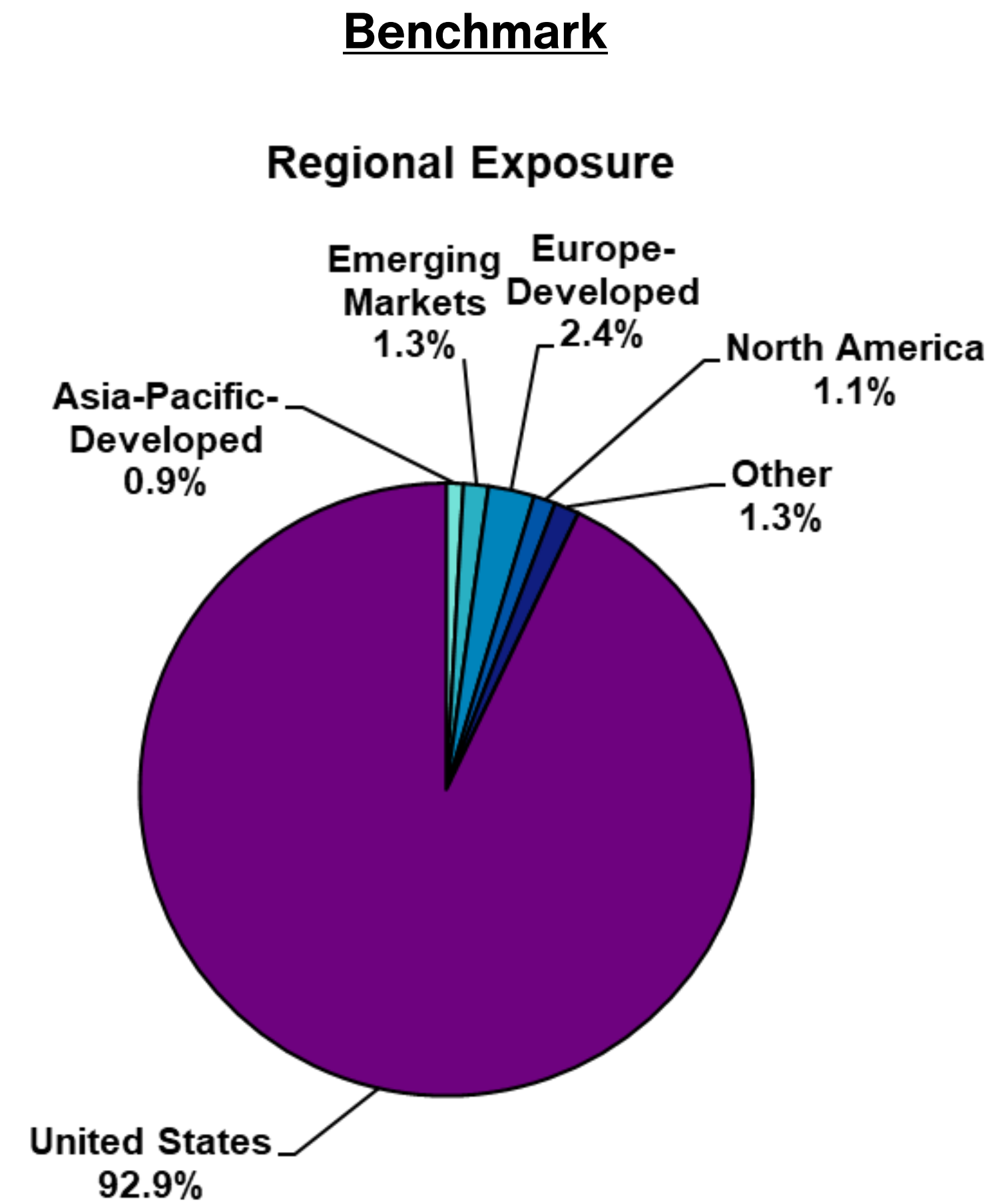
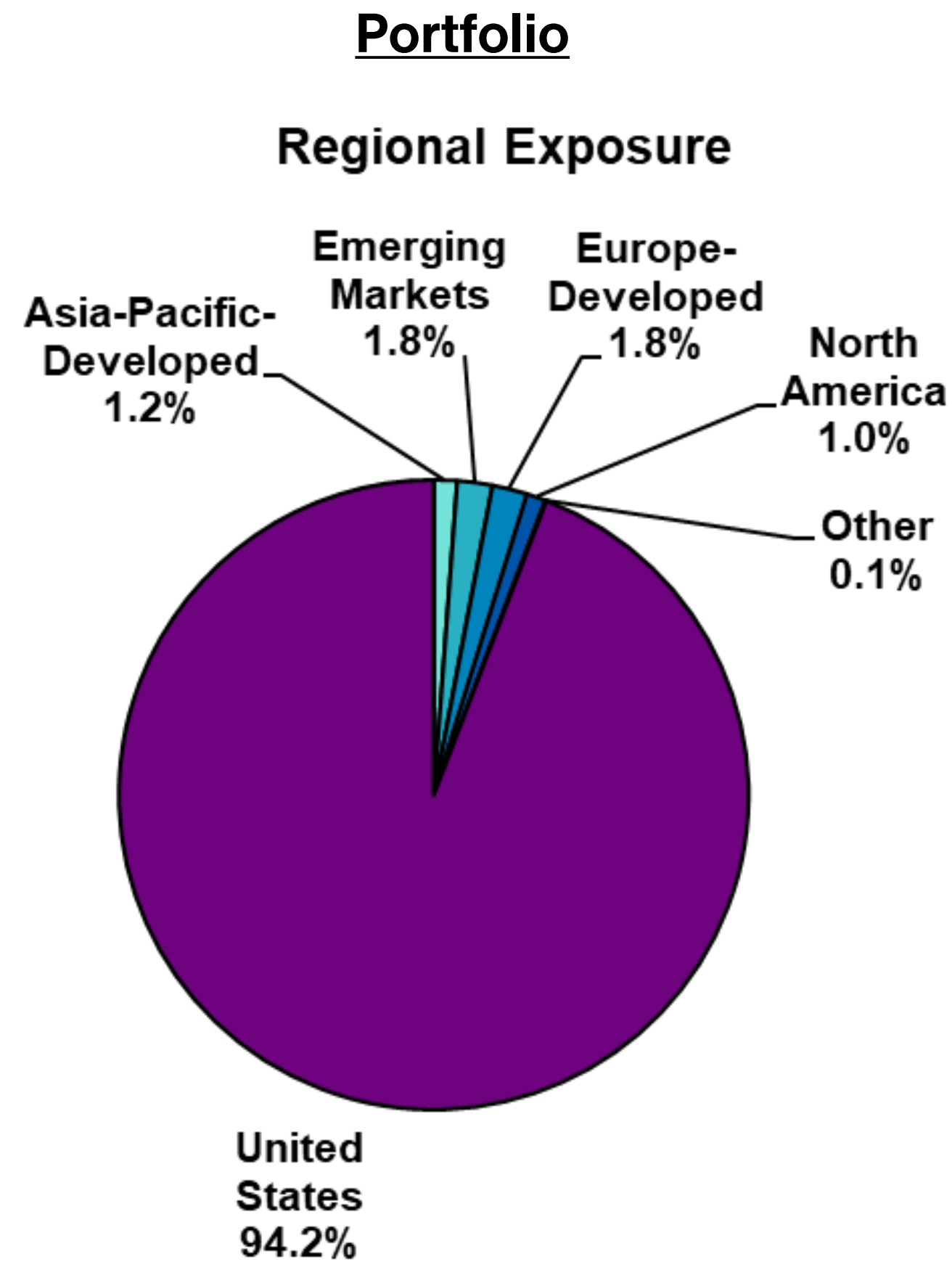
Asset Allocation & Performance

As of December 31, 2023

	Performance %									
	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Fixed Income	6.2	-12.8	-1.4	8.3	9.2	-0.1	4.2	3.9	0.3	6.2
Fixed Income Custom Benchmark	5.5	-13.0	-1.5	7.5	8.7	0.1	4.1	3.9	0.3	5.8
PERA Aggregate	6.2	-12.8	-1.4	8.3	9.2	-0.2	3.8	3.0	0.6	6.8
Blmbg. U.S. Aggregate Index	5.5	-13.0	-1.5	7.5	8.7	0.0	3.5	2.6	0.5	6.0
DB Fixed Income Pool	6.2	-	-	-	-	-	-	-	-	-
Fixed Income Core Benchmark	5.5	-	-	-	-	-	-	-	-	-
CPERA - ABS	5.3	-4.3	-0.1	-	-	-	-	-	-	-
BBG U.S.Ag Asset Bckd Bnd	3.6	-4.3	-0.3	-	-	-	-	-	-	-
CPERA - CMBS	5.0	-10.7	-1.2	8.6	8.9	0.9	3.3	3.7	1.1	3.8
BBG U.S. Agg CMBS	5.4	-10.9	-1.2	8.1	8.3	0.8	3.4	3.3	1.0	3.9
CPERA - FI Alpha	5.6	-13.1	-1.5	7.2	-	-	-	-	-	-
CPERA - Government Related	6.8	-11.0	-1.3	7.0	8.8	0.4	4.1	2.9	-0.1	6.2
BB BC U.S. Agg Govt related	5.8	-11.1	-1.3	5.9	9.0	0.3	4.2	2.8	-0.4	6.2
CPERA - Treasury	4.3	-12.4	-2.8	8.2	7.1	0.7	2.1	1.1	0.8	5.1
BBG US Agg Treasury Bond	4.1	-12.5	-2.3	8.0	6.9	0.9	2.3	1.0	0.8	5.1
CPERA - Corporate Bond	9.4	-15.4	-0.7	11.5	15.8	-2.8	7.0	7.0	0.0	8.4
BB BC U.S. Agg Corp Bond	8.5	-15.8	-1.0	9.9	14.5	-2.5	6.4	6.1	-0.7	7.5
CPERA - Mortgage Backed	5.2	-11.7	-0.8	4.3	6.3	0.8	2.4	1.4	1.4	6.3
BBG US MBS	5.0	-11.8	-1.0	3.9	6.4	1.0	2.5	1.7	1.5	6.1
CPERA - Internal Core Cash	164.8	9.4	0.1	0.7	2.4	2.2	0.7	0.6	0.2	0.1
ICE BofA 3 Month U.S. T-Bill	5.0	1.5	0.0	0.7	2.3	1.9	0.9	0.3	0.1	0.0
Fixed Income Liquidation										

Fixed Income – Portfolio Breakdown

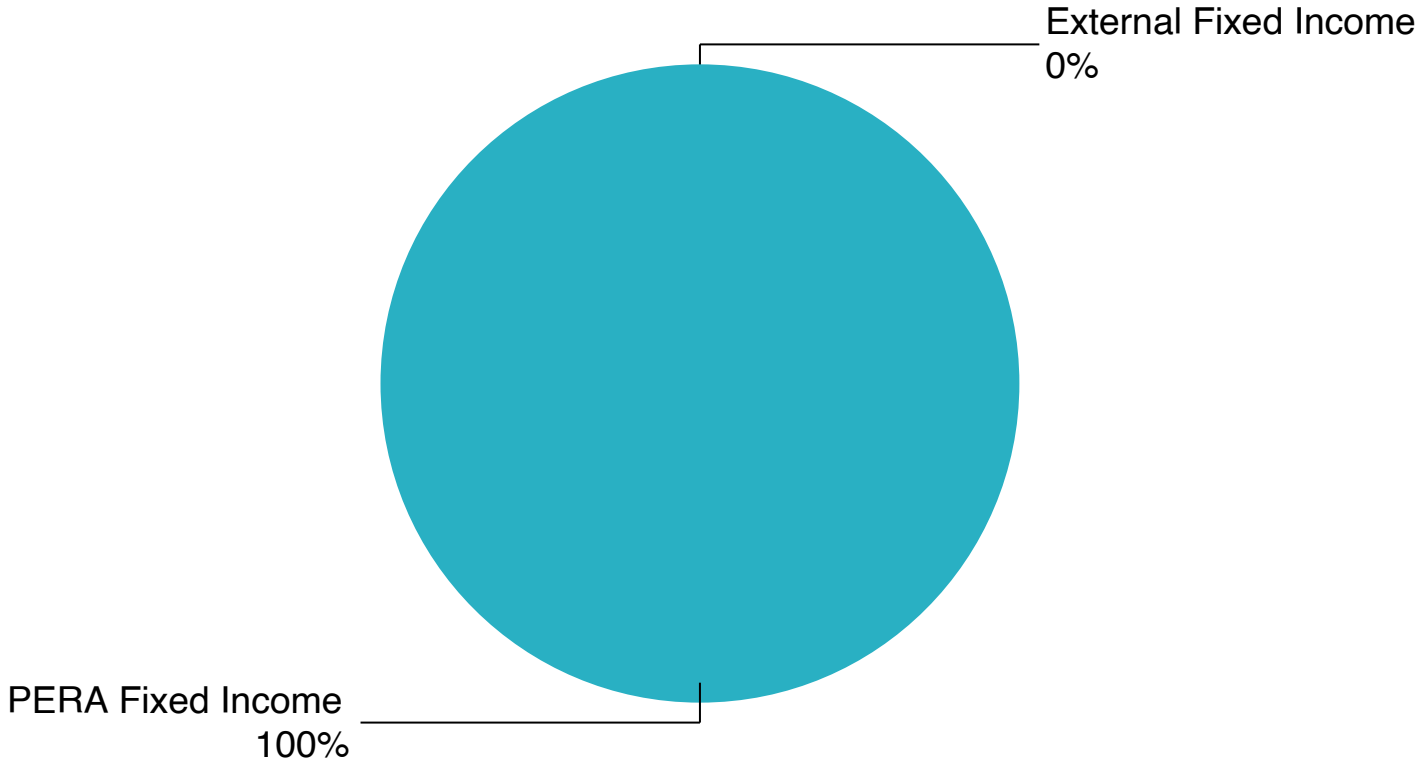
As of December 31, 2023



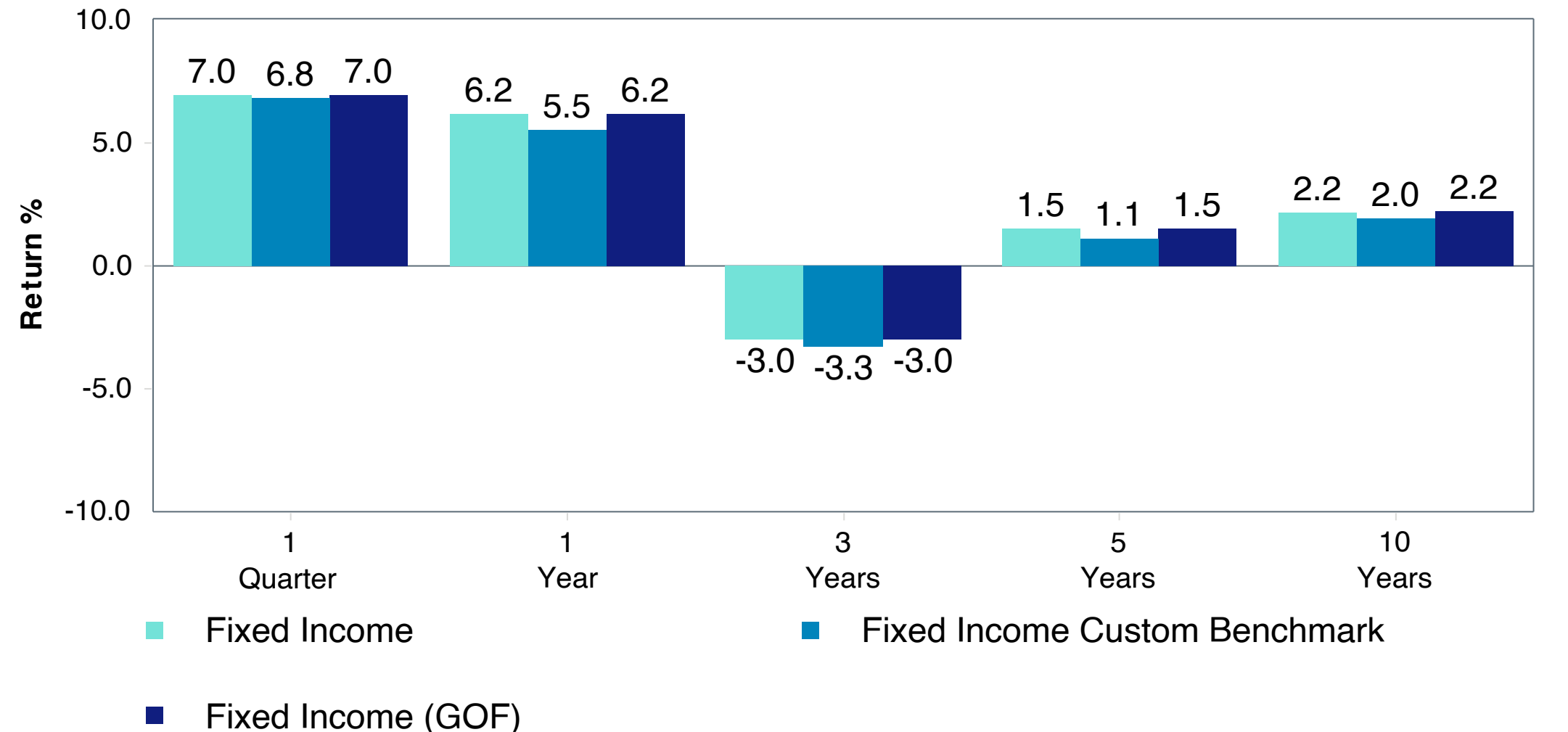
Composite Portfolio Overview Fixed Income

As of December 31, 2023

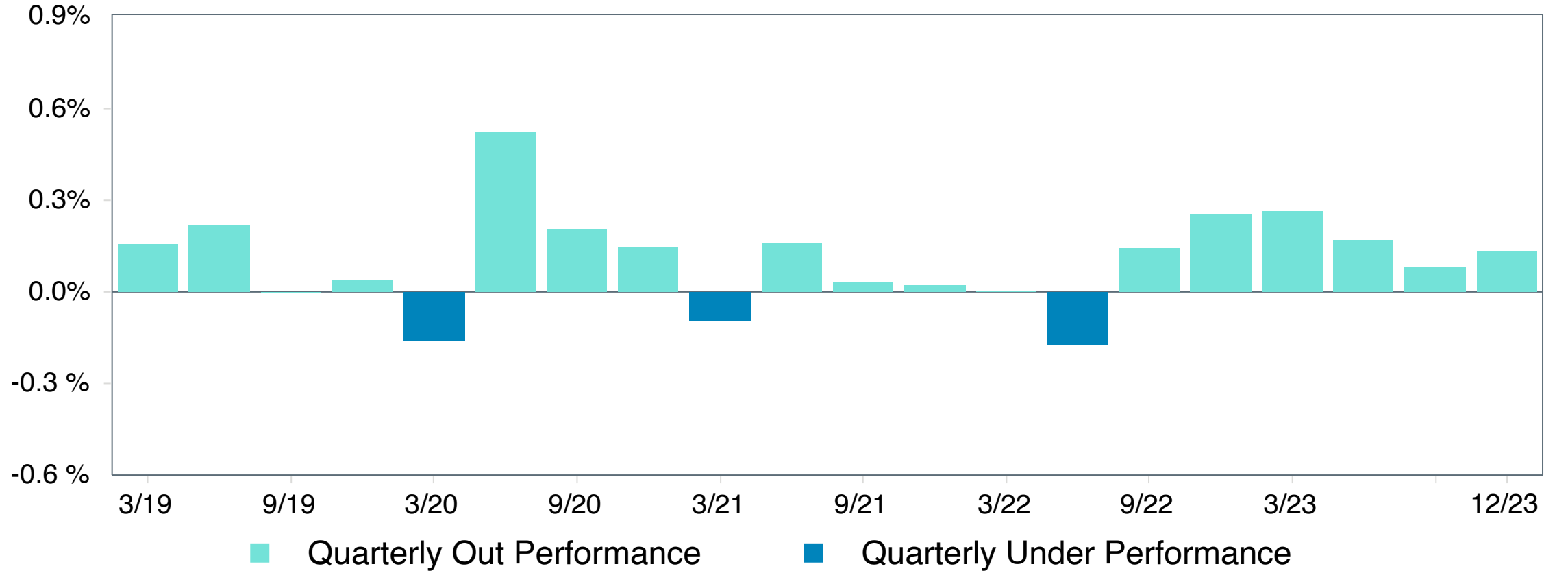
Current Allocation
 December 31, 2023 : \$11,640,182,457



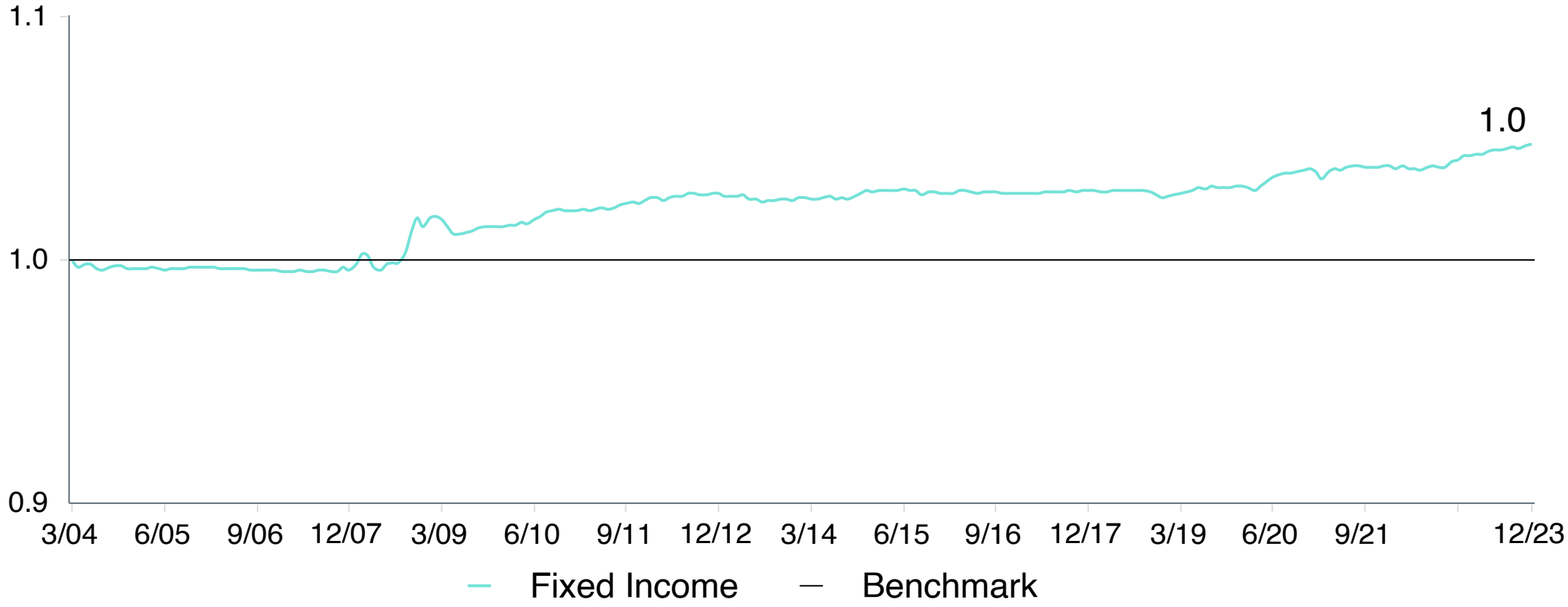
Return Summary



Quarterly Excess Performance



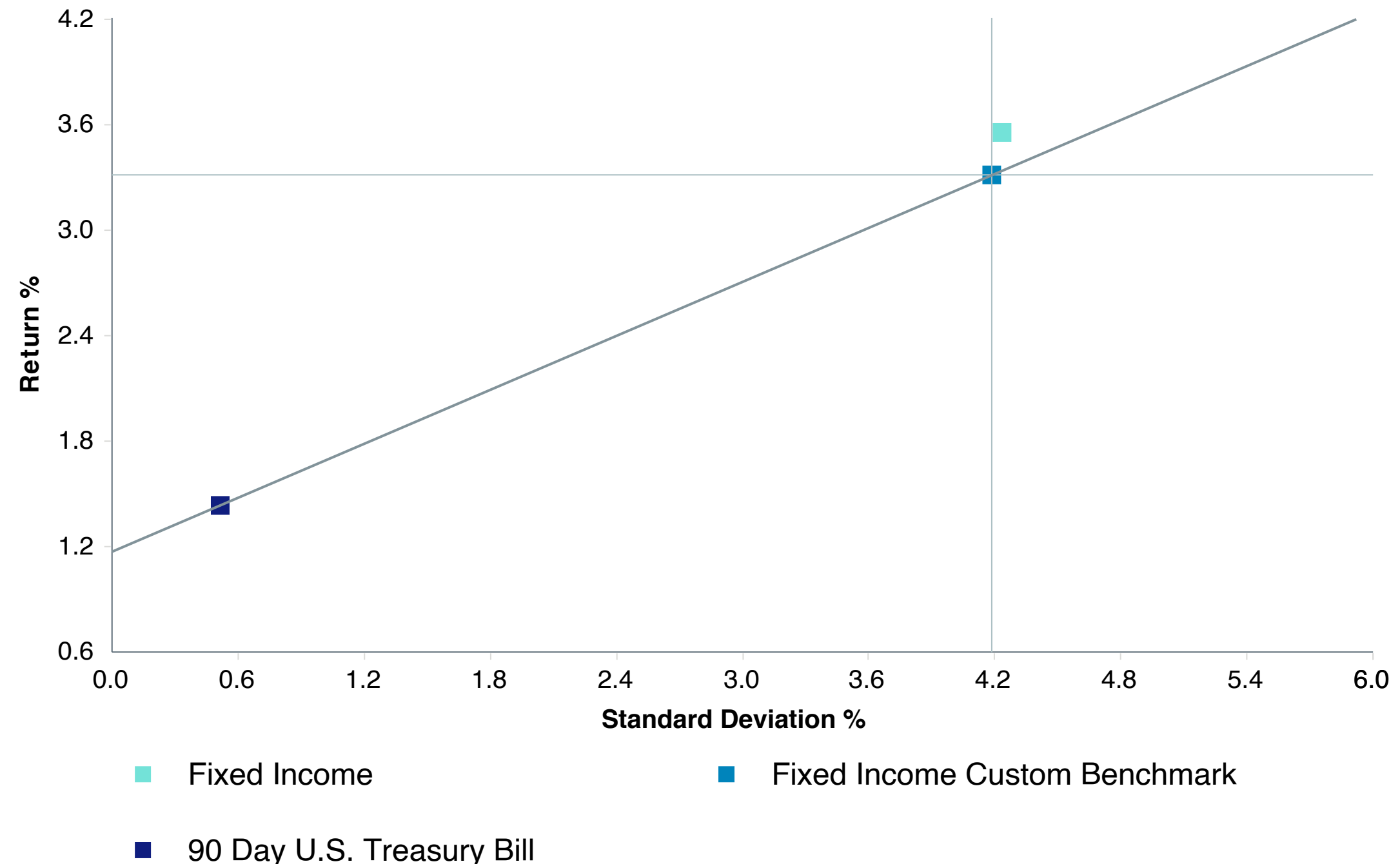
Ratio of Cumulative Wealth - April 1, 2004 To December 31, 2023



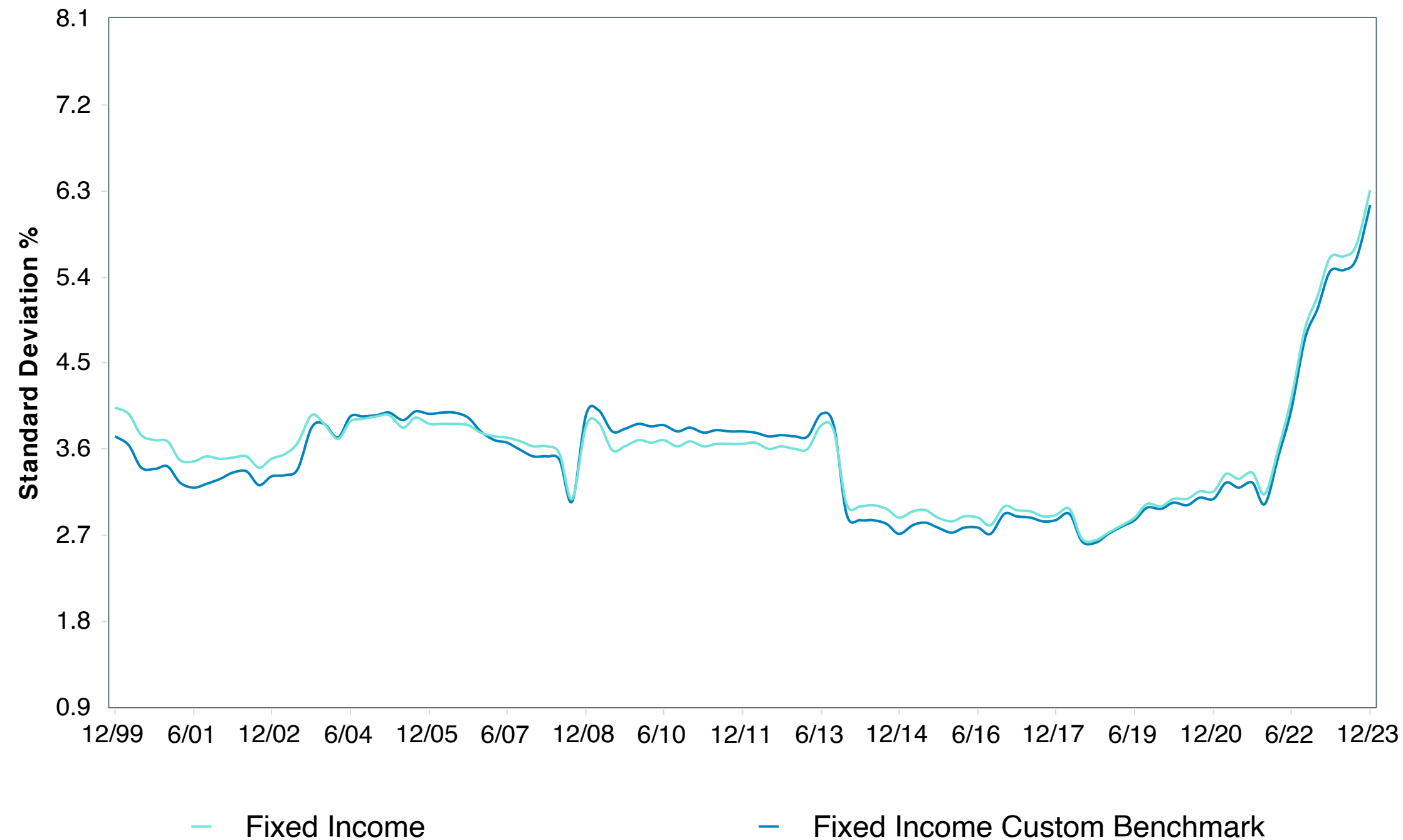
Risk Profile Fixed Income

As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation
April 1, 2004 To December 31, 2023



Standard Deviation Rolling 5 Years



April 1, 2004 To December 31, 2023 Historical Statistics

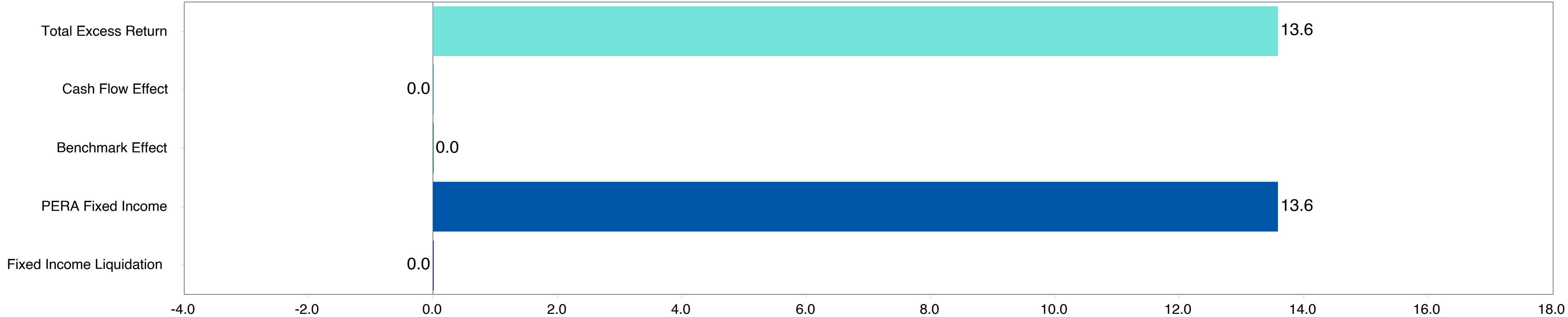
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Fixed Income	0.24	0.41	0.58	0.99	0.51	0.21	1.01	3.55	4.23	1.00
Fixed Income Custom Benchmark	0.00	0.00	-	1.00	0.46	0.00	1.00	3.31	4.18	1.00
90 Day U.S. Treasury Bill	-1.92	4.18	-0.46	0.00	-	1.41	0.01	1.43	0.51	0.07



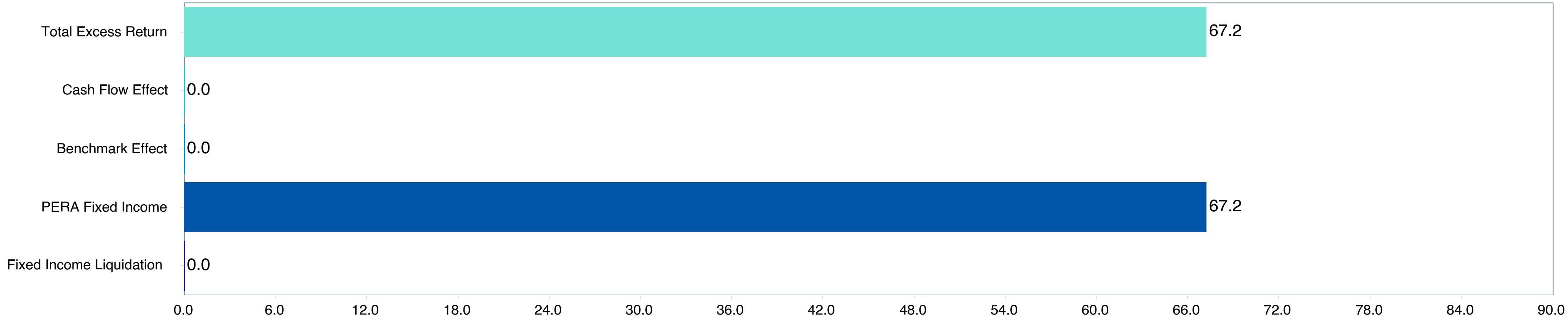
Asset Class Attribution

As of December 31, 2023

1 Quarter



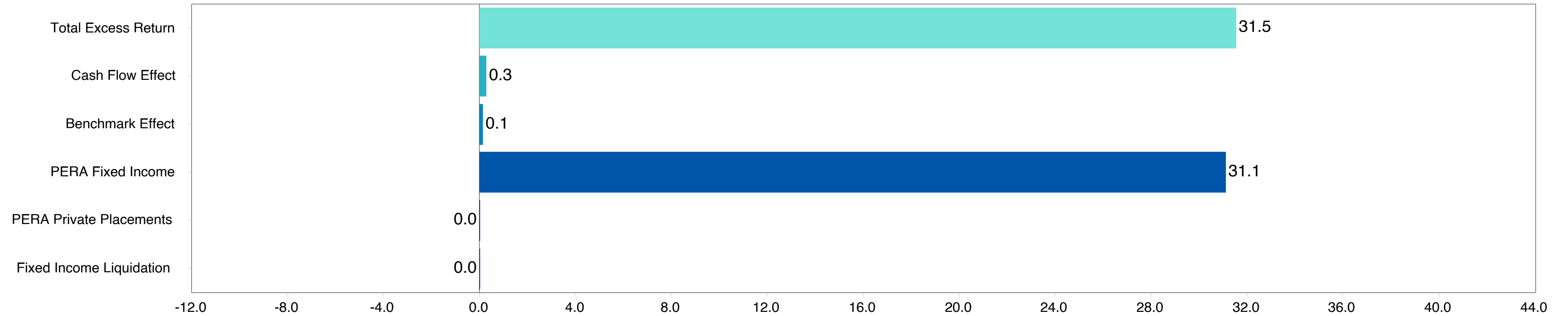
1 Year



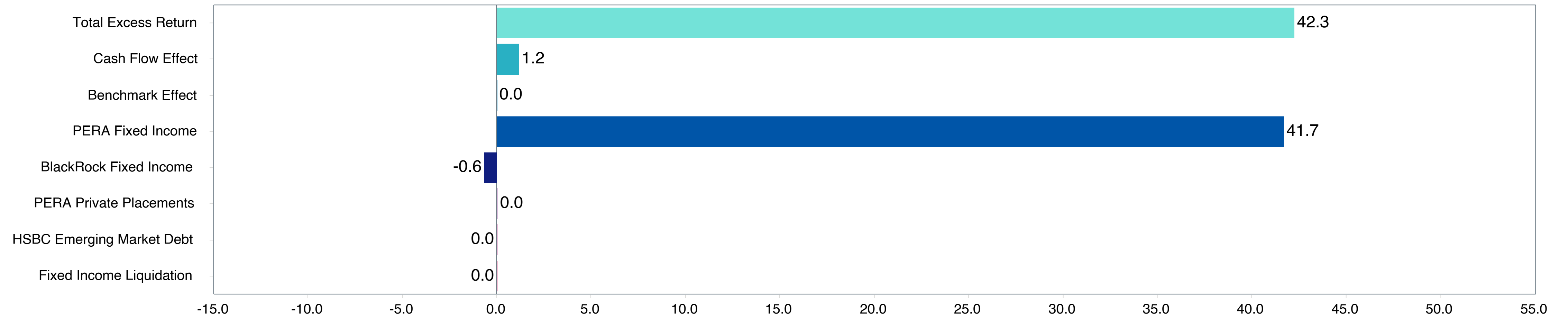
Asset Class Attribution

As of December 31, 2023

3 Years



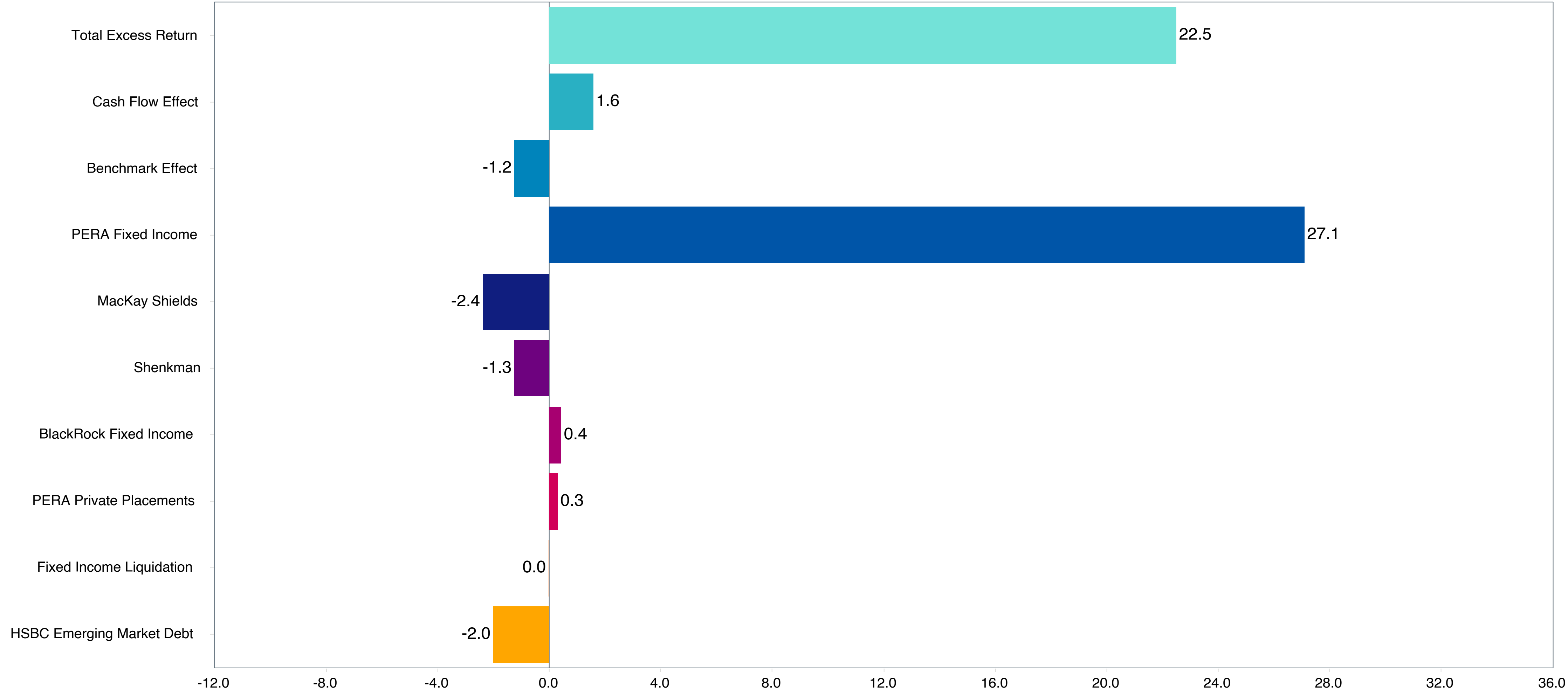
5 Years



Asset Class Attribution

10 Years Ending December 31, 2023

10 Years



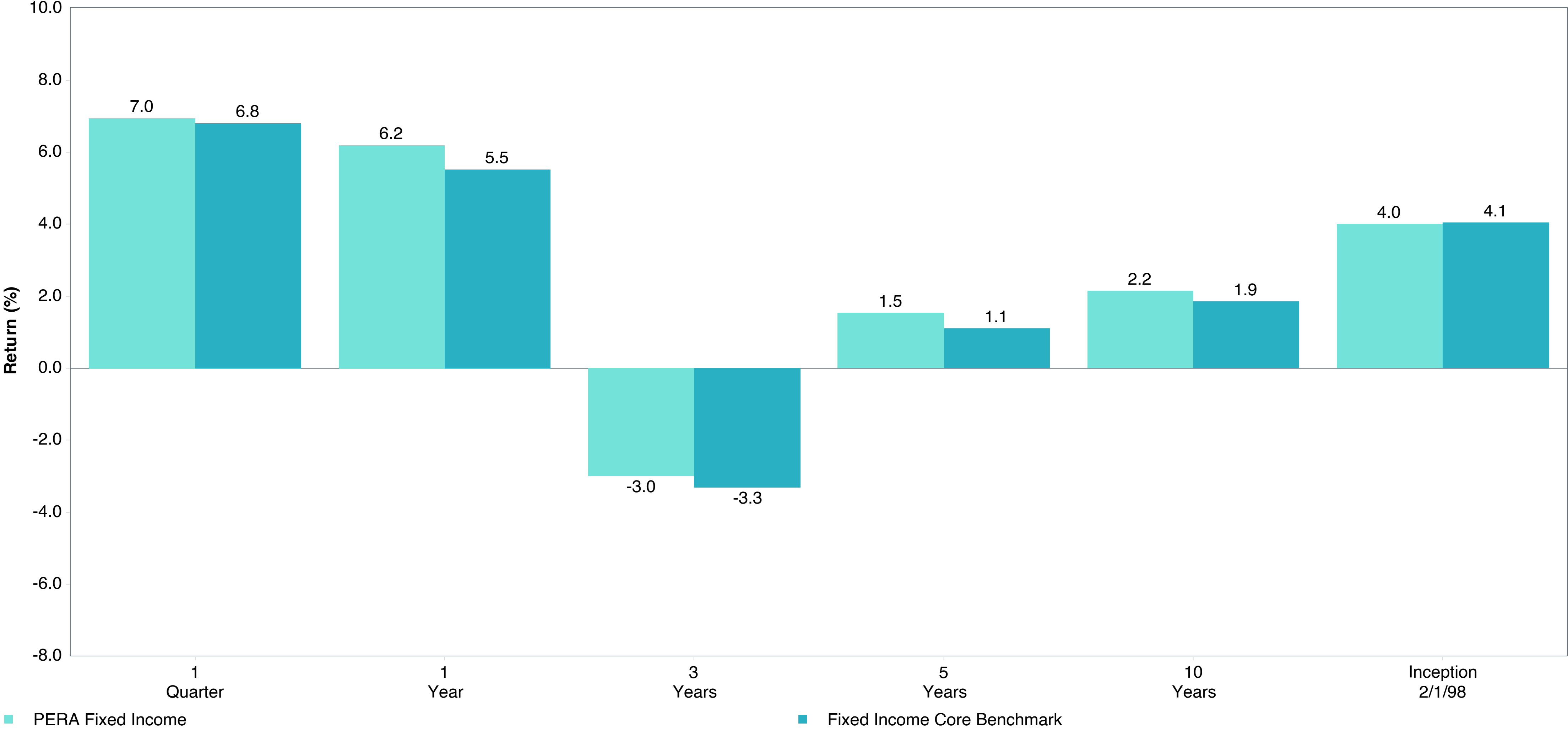
Correlation Matrix

5 Years Ending December 31, 2023

	PERA Fixed Income	Fixed Income Core Benchmark
PERA Fixed Income	1.00	
Fixed Income Core Benchmark	1.00	1.00

Comparative Performance

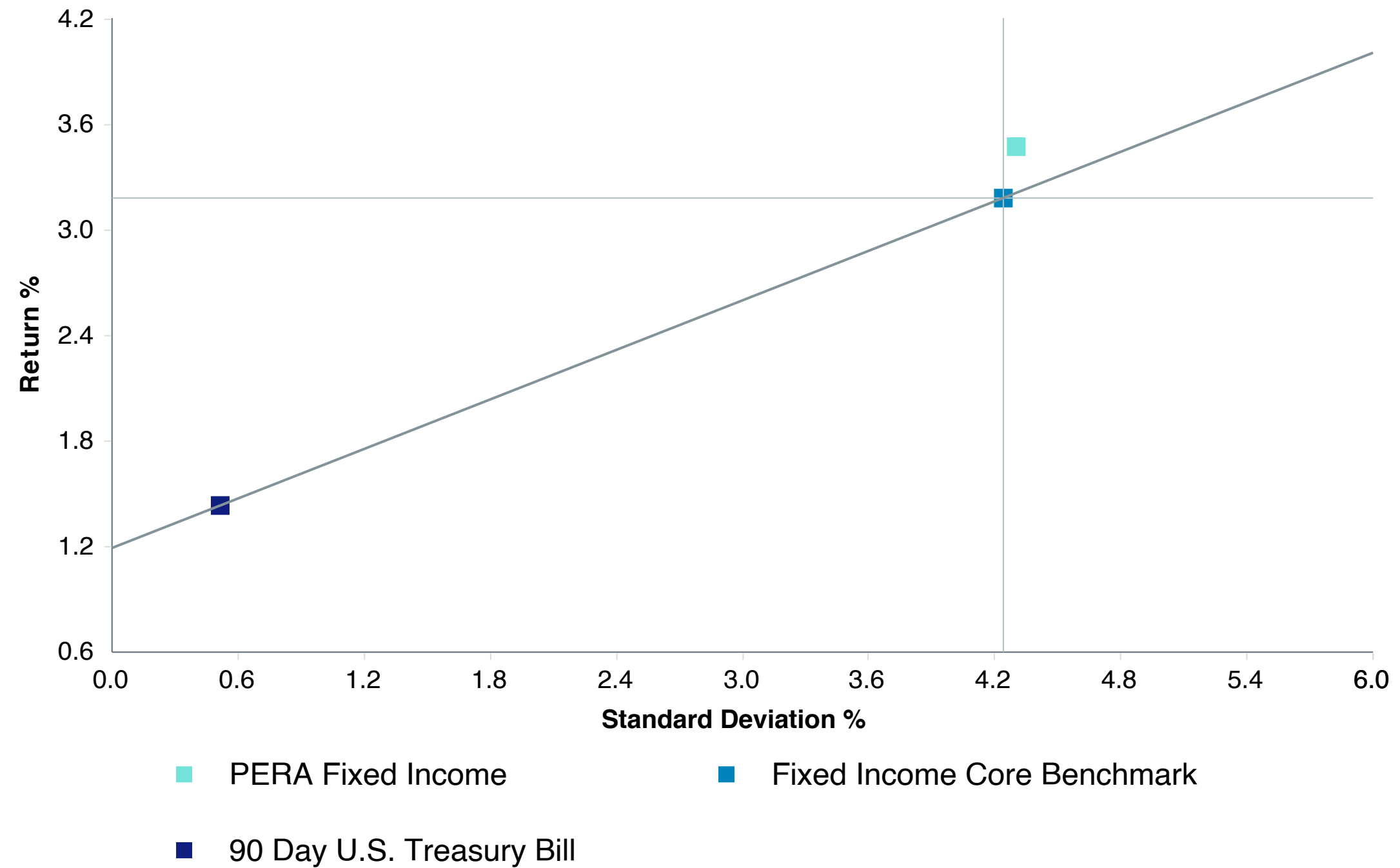
As of December 31, 2023



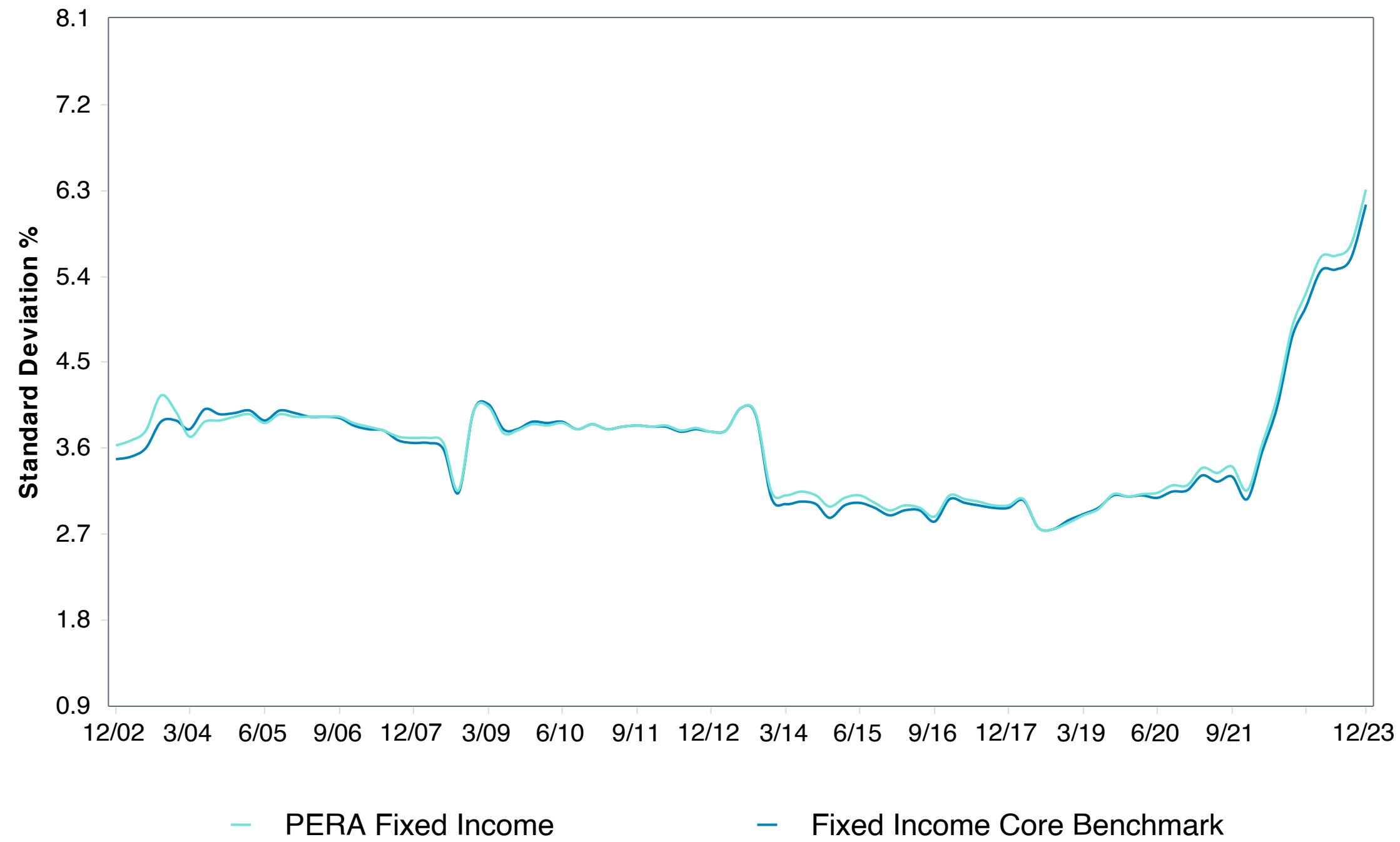
Risk Profile PERA Fixed Income

As of December 31, 2023

Annualized Return vs. Annualized Standard Deviation
April 1, 2004 To December 31, 2023



Standard Deviation Rolling 5 Years



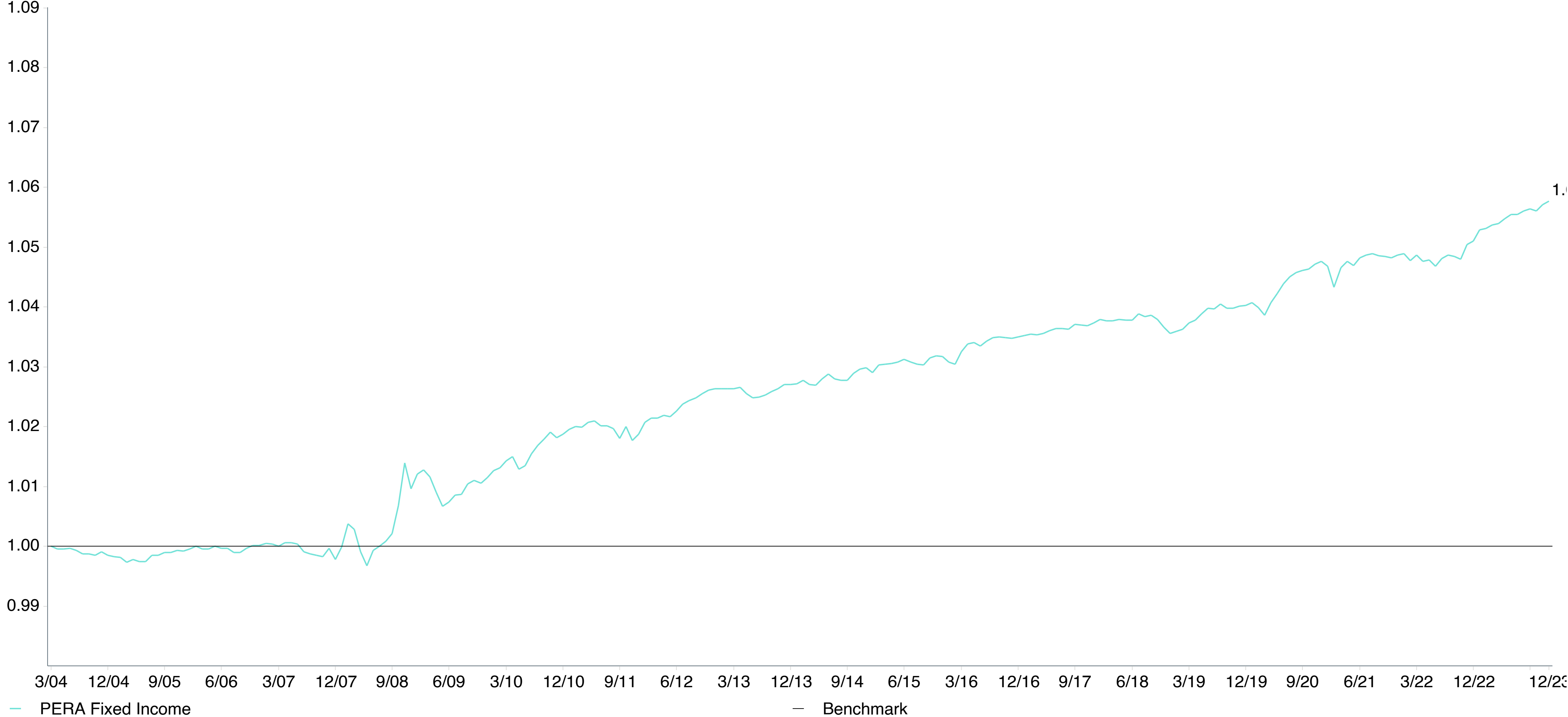
April 1, 2004 To December 31, 2023 Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
PERA Fixed Income	0.29	0.39	0.74	0.99	0.49	0.25	1.01	3.48	4.30	1.00
Fixed Income Core Benchmark	0.00	0.00	-	1.00	0.43	0.00	1.00	3.18	4.24	1.00
90 Day U.S. Treasury Bill	-1.80	4.23	-0.43	0.01	-	1.40	0.01	1.43	0.51	0.08



PERA Fixed Income Ratio of Cumulative Wealth

April 1, 2004 To December 31, 2023



Calculation based on monthly periodicity.



PERA Fixed Income

Philosophy and Process

PERA employs a multi fixed income asset class rotation and security selection investment strategy in managing its internal portfolio. Currently, the portfolio is allowed to invest in U.S. government, corporate, residential mortgage-backed, commercial mortgage-backed, asset-backed, and U.S. and non-U.S. agency securities typically included in the Bloomberg U.S. Aggregate Bond Index. PERA employs a top-down approach to its asset allocation strategy, evaluating research from various providers on the likely direction of interest rates and overall economic growth. Individual securities are then purchased based on internally generated research as well as external research sources.

Real Estate



Real Estate – Asset Allocation & Performance

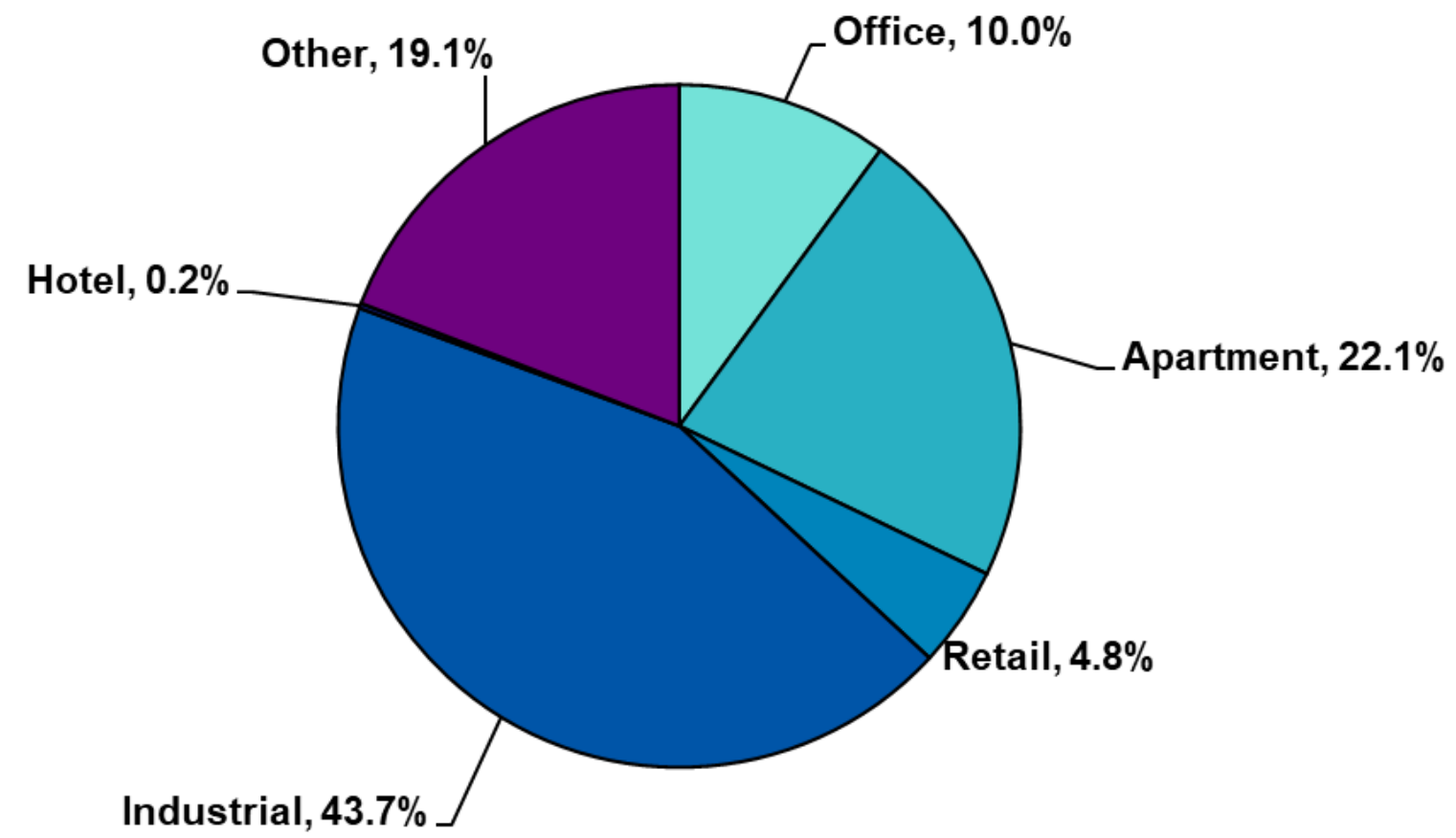
As of December 31, 2023

	Allocation		Performance (%)						
	Market Value (\$000)	%	1 Quarter	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Real Estate	6,221,721.7	10.1	-7.1	-9.9	8.5	7.8	10.1	9.7	01/01/95
Real Estate Custom Benchmark			-4.9	-12.2	4.5	3.8	6.8	7.3	
Real Estate (GOF)			-7.0	-9.4	9.2	8.5	10.5	10.9	

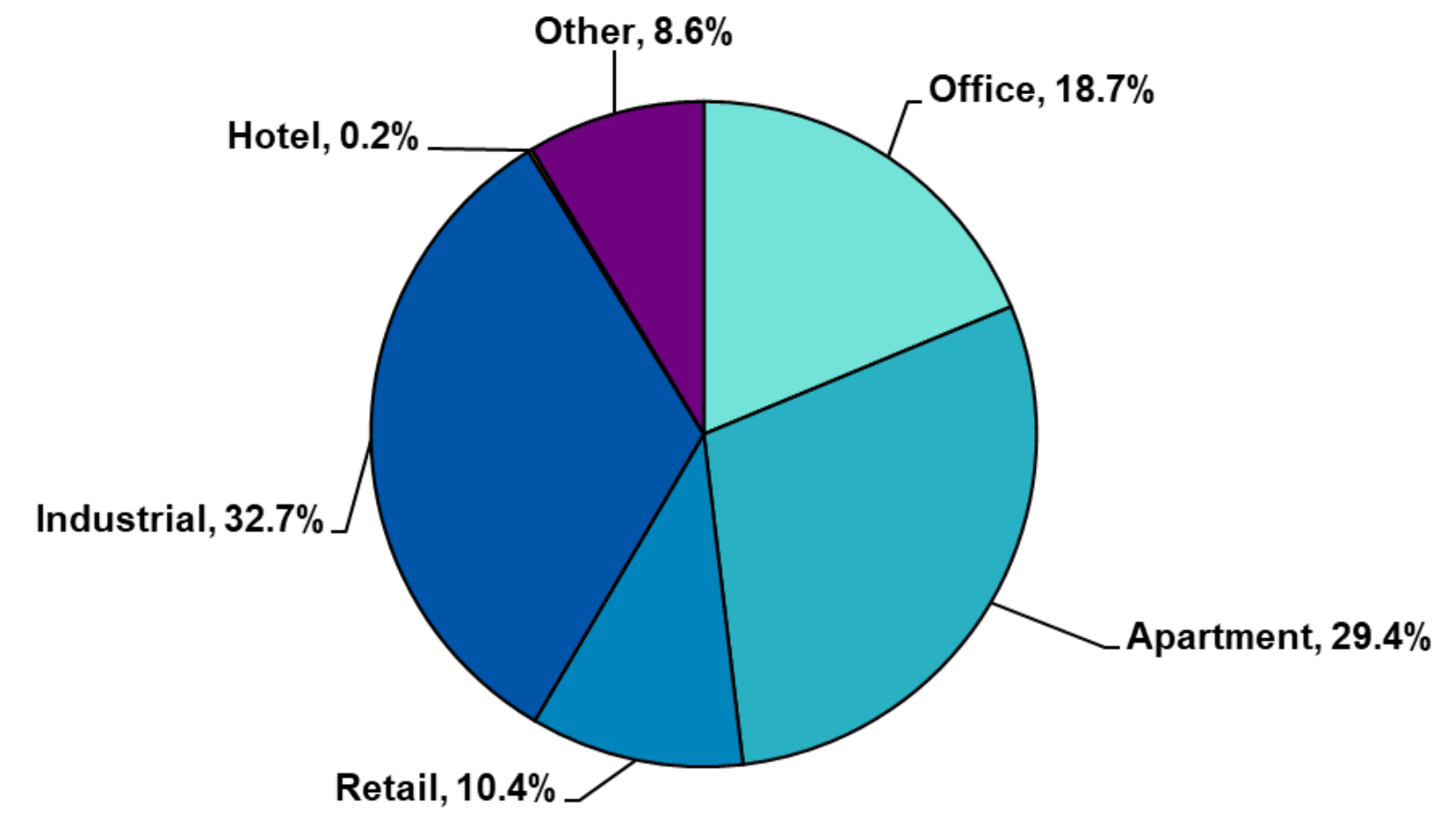
Real Estate

As of December 31, 2023

Real Estate Actual Property Type Allocation



NCREIF-ODCE Actual Property Type Allocation



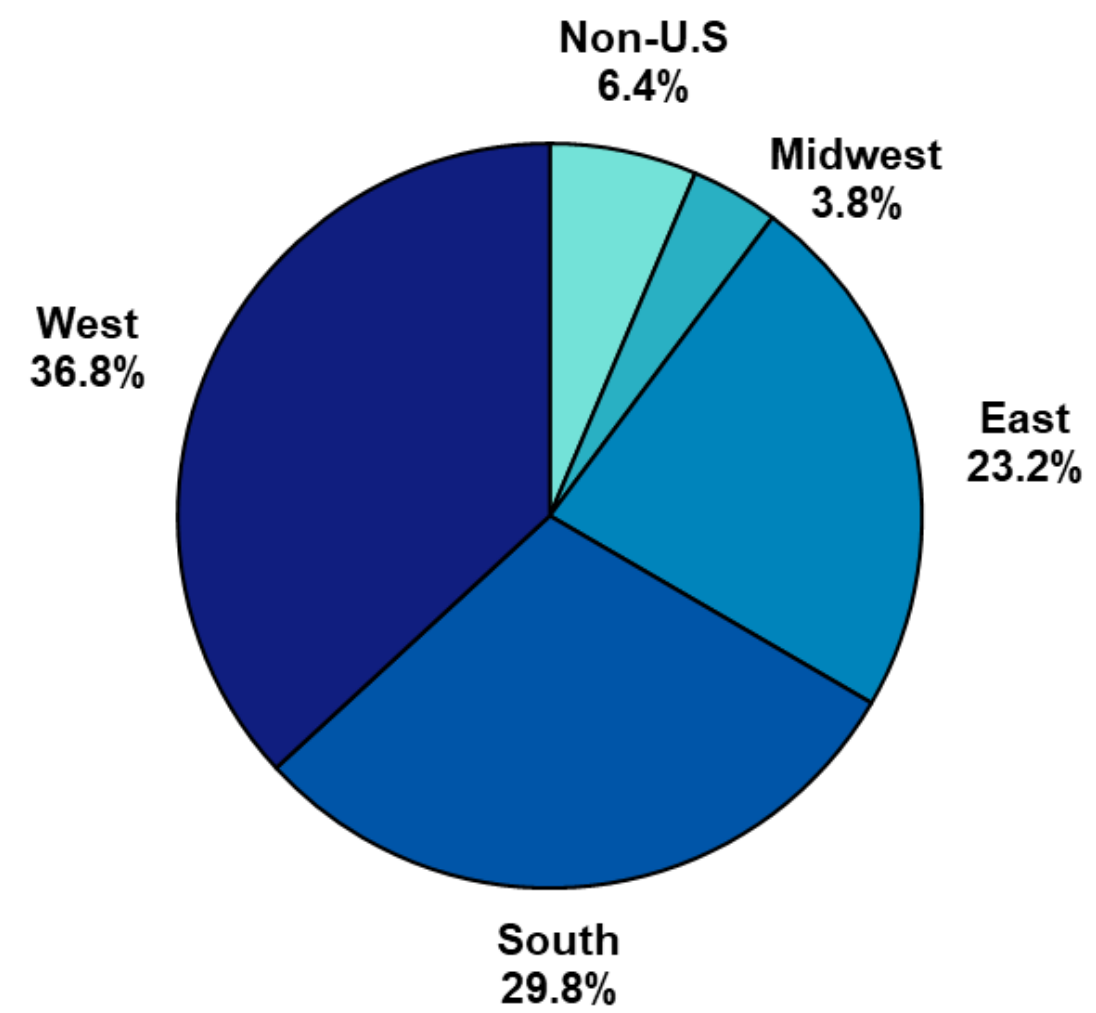
Sector	Actual Allocation	Actual Leverage	Leverage Constraint
Core	42.3%	20.0%	No more than 40%
Value Added	44.7%	36.3%	No more than 65%
Opportunistic	13.0%	42.3%	Unconstrained

Note: Data is as of September 30, 2023. The other category consists of healthcare properties, land for development, and mixed use/other.

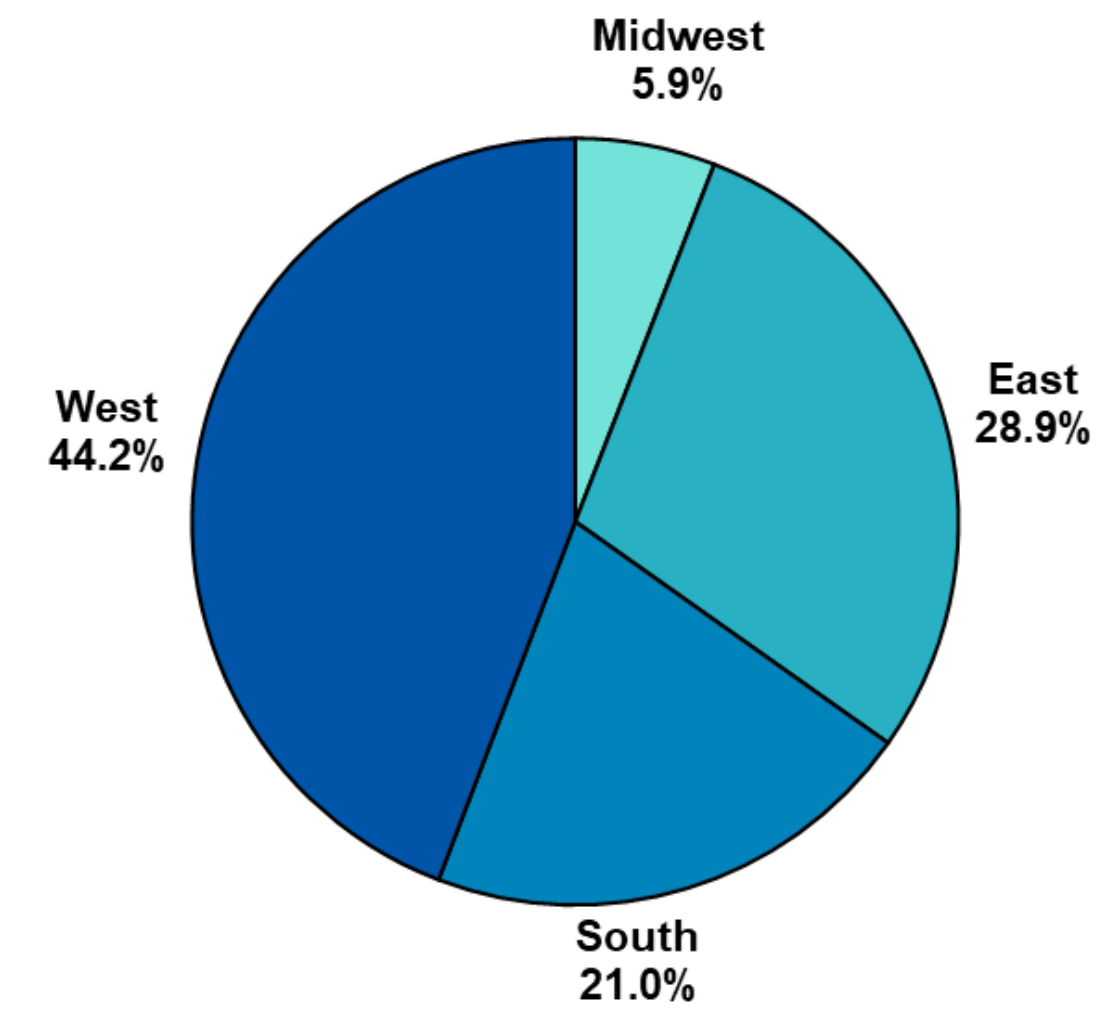
Real Estate – Geographic Allocation

As of December 31, 2023

Real Estate Actual Geographic Allocation

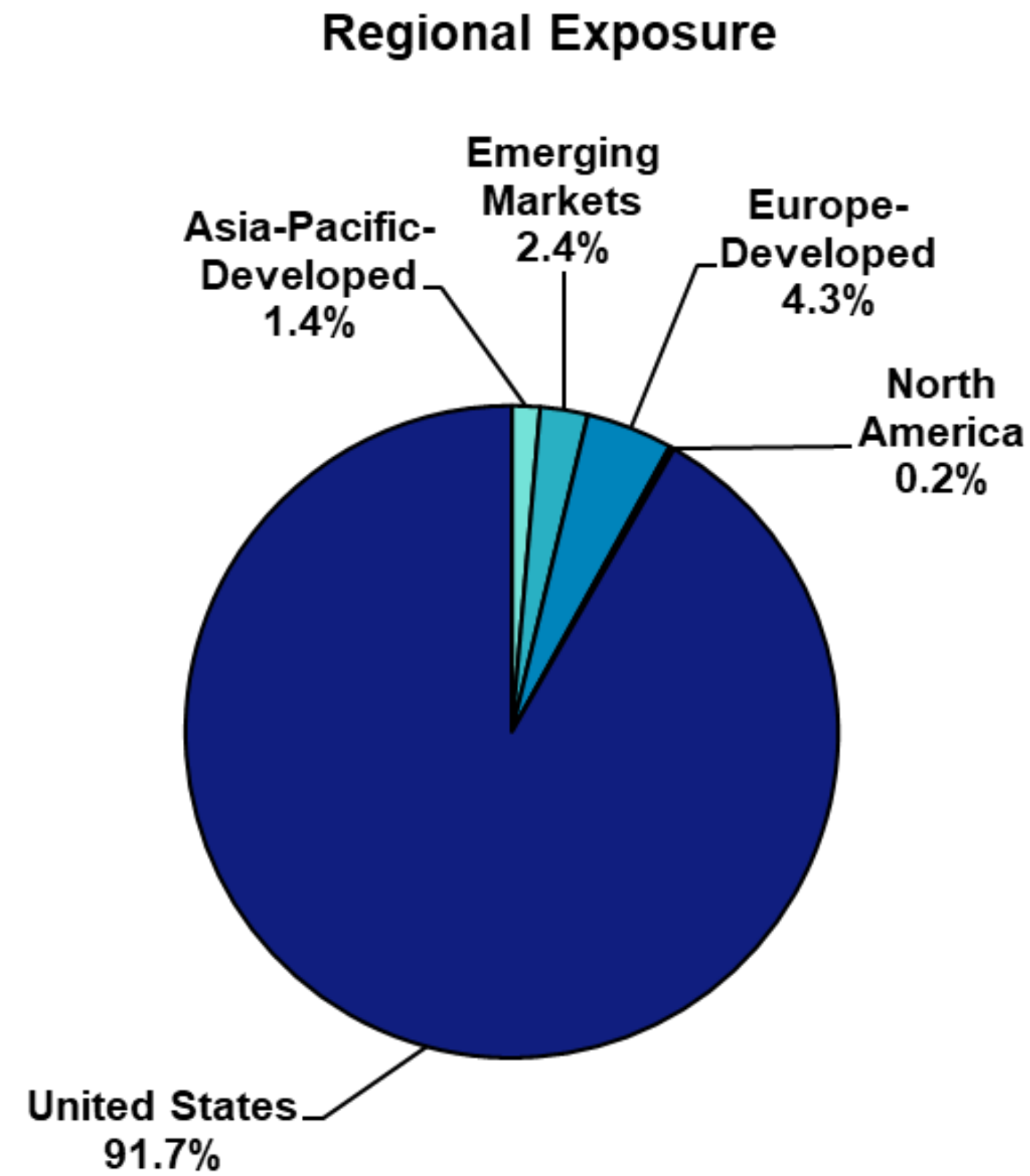


NCREIF – ODCE Geographic Allocation



Real Estate – Portfolio Breakdown

As of December 31, 2023



(This page is left blank intentionally)

Private Equity

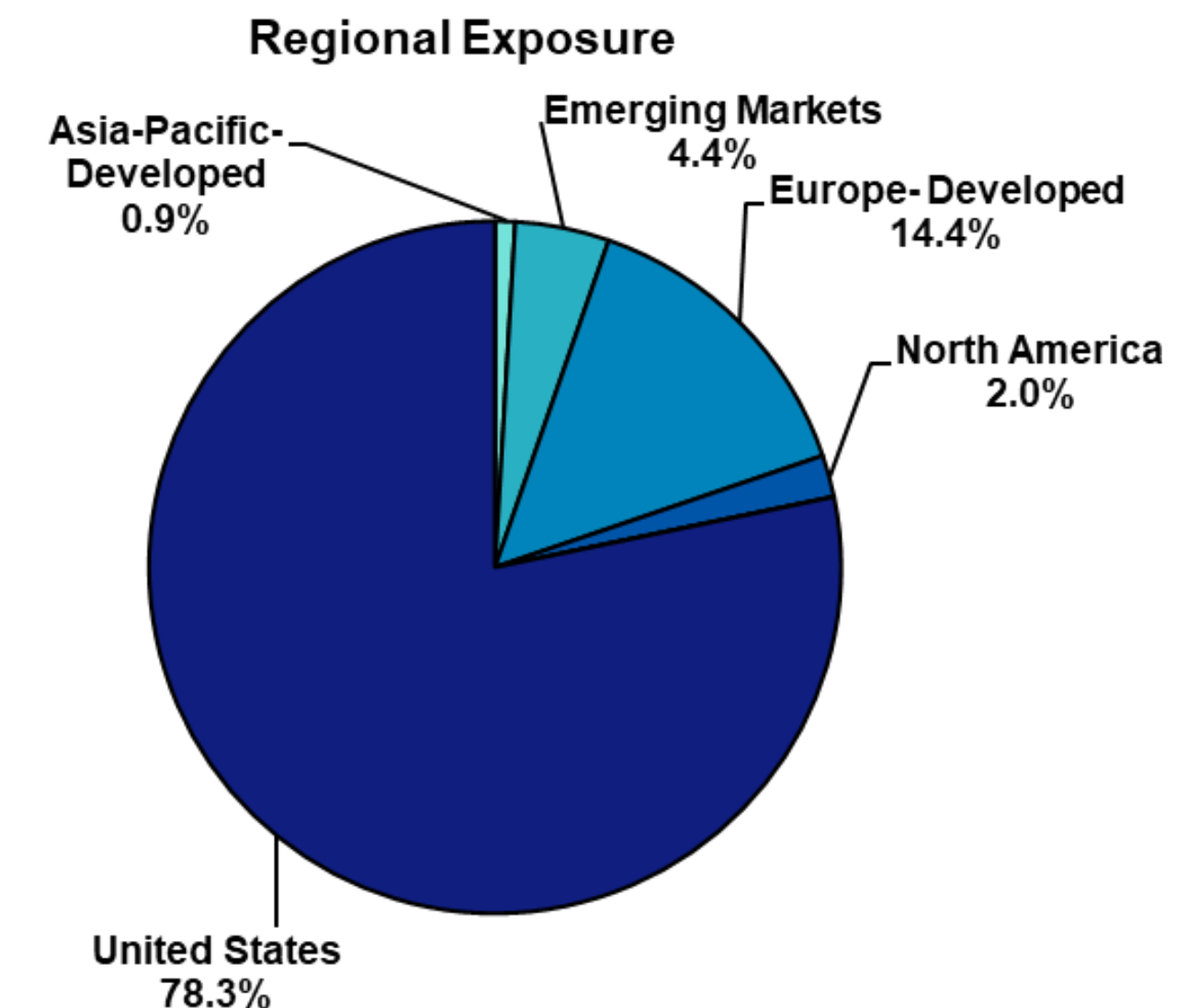
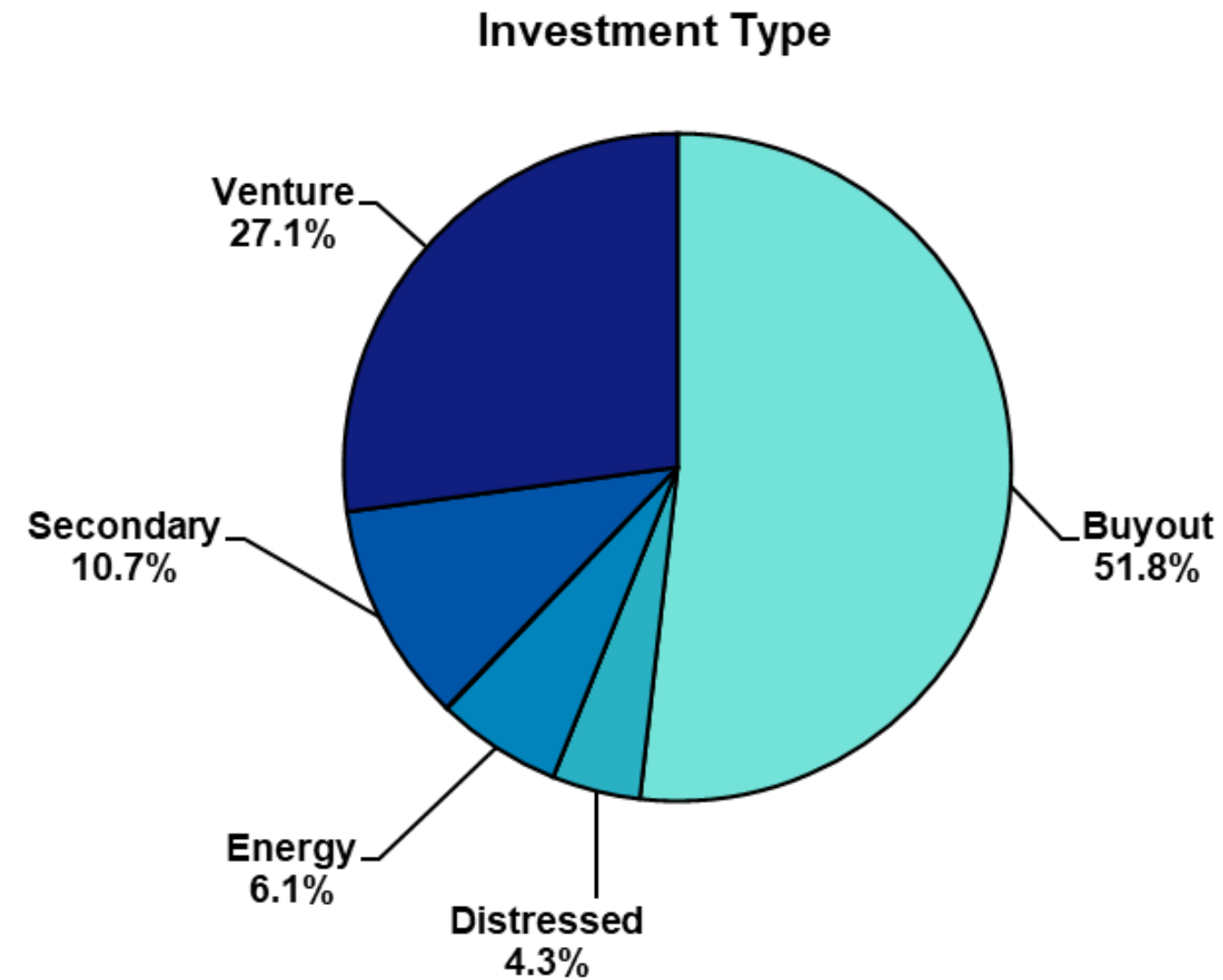


Private Equity – Performance Overview

As of December 31, 2023

	Allocation		Performance (%)						
	Market Value (\$000)	%	1 Quarter	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Private Equity	5,358,075.8	8.7	2.6	4.7	10.9	13.2	12.0	12.6	01/01/95
Private Equity Custom Benchmark			11.6	23.4	7.2	13.3	12.4	12.7	
Burgiss Pooled Average			2.6	6.0	10.2	13.6	12.2	15.0	

	Total Private Equity (10 Year)*	Total Private Equity (15 Year)*	Total Private Equity (Since Inception)
IRR	15.9%	14.2%	10.7%
Benchmark IRR	10.7	10.6	6.9



Vintage Years

Alternatives

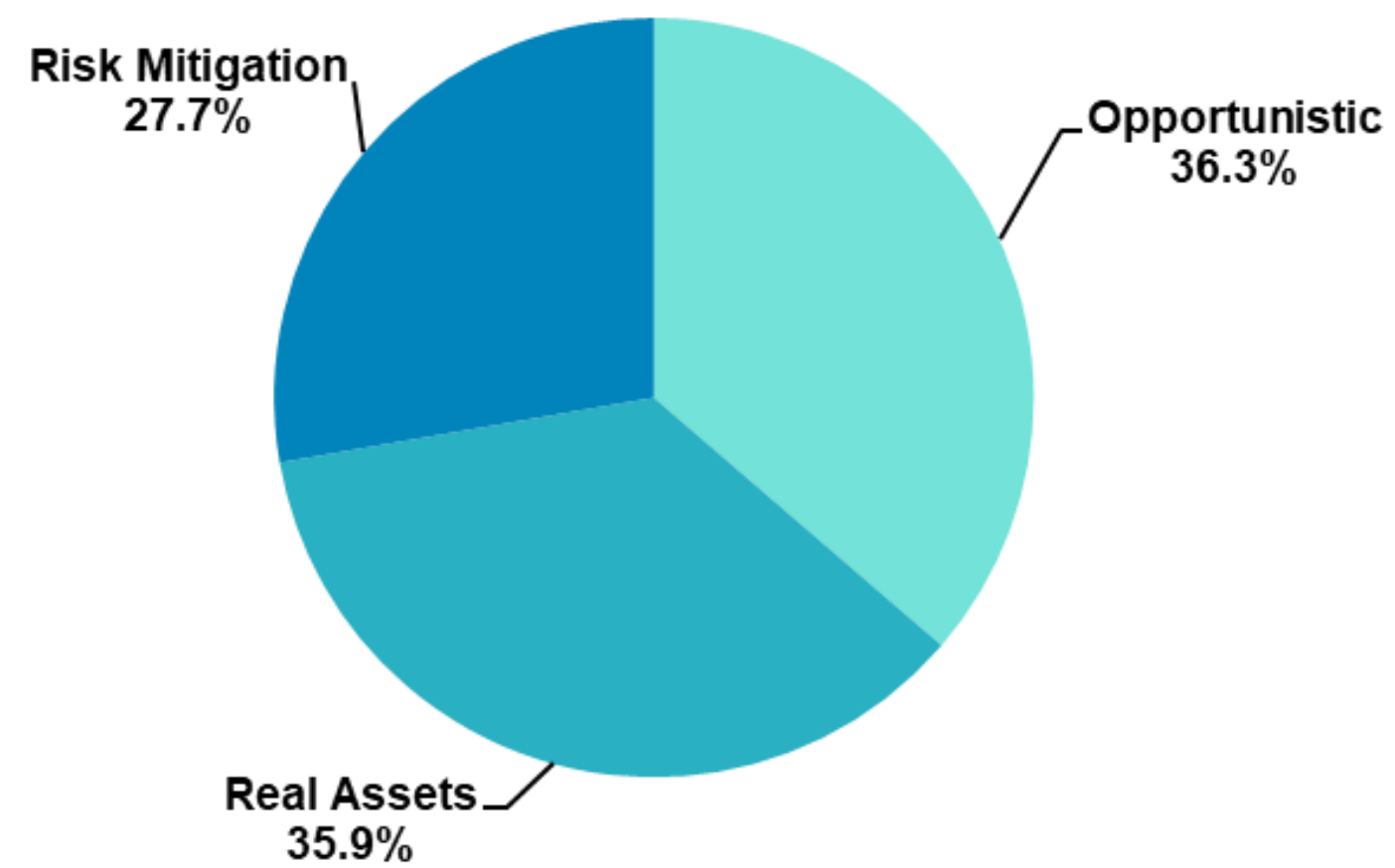


Alternatives Asset Allocation & Performance

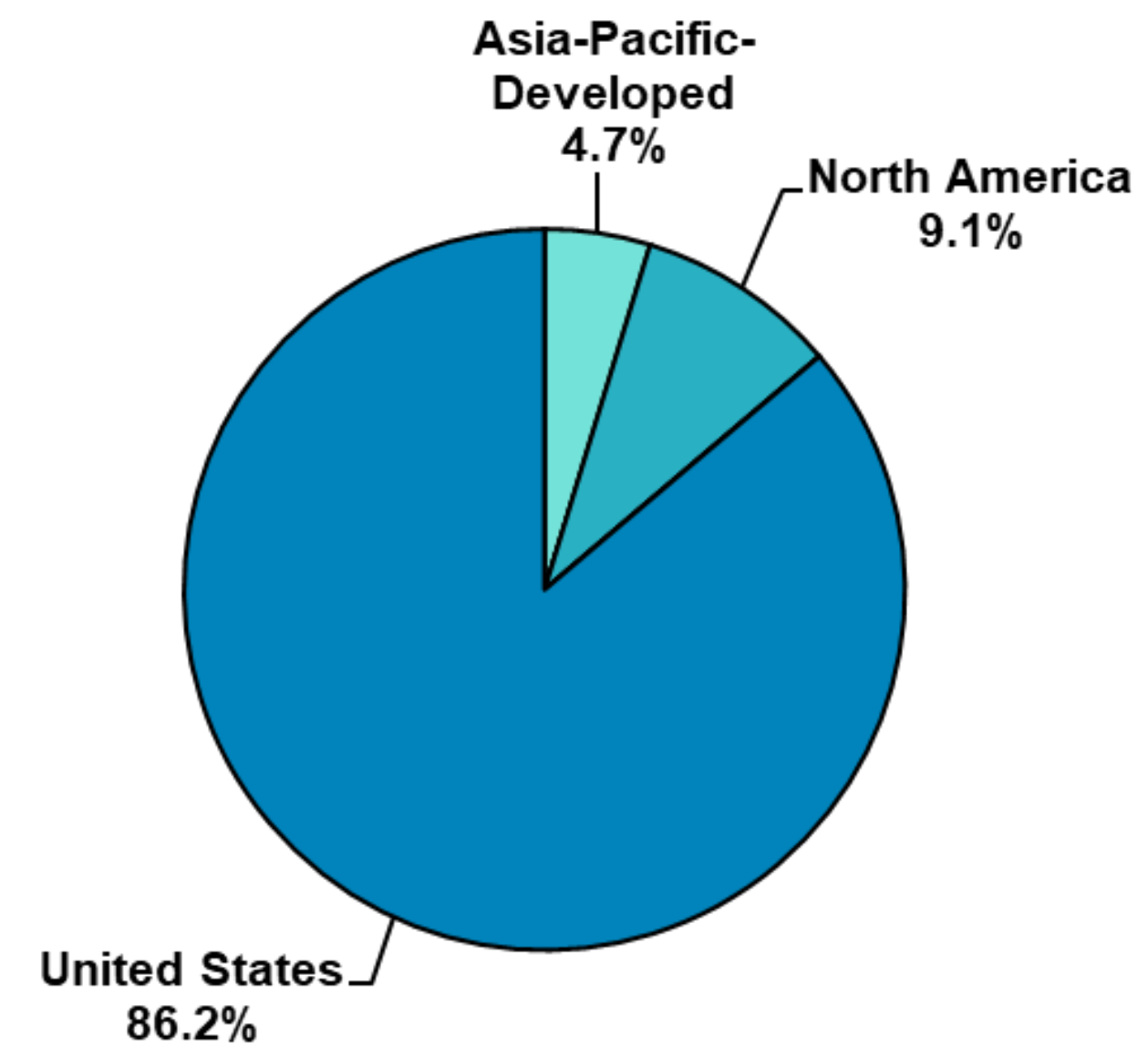
As of December 31, 2023

	Allocation		Performance (%)						
	Market Value (\$000)	%	1 Quarter	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Alternatives	4,232,152.3	6.9	3.3	7.8	8.2	7.8	6.2	4.9	01/01/08
Alternatives Custom Benchmark			4.1	9.4	6.2	7.9	5.9	4.3	
Total Fund ex- Alts Benchmark			8.8	14.7	3.8	9.0	7.0	6.3	

Alternatives Allocation



Regional Exposure



(This page is left blank intentionally)

Cash



Cash – Asset Allocation & Performance

As of December 31, 2023

	Allocation		Performance (%)						
	Market Value (\$000)	%	1 Quarter	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Cash	221,416.7	0.4	1.4	5.2	2.3	1.9	1.3	2.6	04/01/95
<i>ICE BofAML U.S. 3 Month T-Bill Index</i>			1.4	5.0	2.2	1.9	1.3	2.4	
Cash	145,014.7	0.2	1.4	5.2	2.3	1.9	1.3	2.6	04/01/95
<i>ICE BofAML U.S. 3 Month T-Bill Index</i>			1.4	5.0	2.2	1.9	1.3	2.4	
Cash Overlay*	76,402.1	0.1	-0.1	0.1	0.0	0.1		0.1	06/01/18

Appendix



Appendix I

Description of Performance Benchmark and Universe Rankings

The performance benchmarks and universes used in evaluating the performance of the Total Fund and the investment managers' portfolios are described below.

Total Fund

Policy Benchmark: Combines asset class indices at policy target weights. 54.0% Global Equity Custom Benchmark, 23.0% Fixed Income Custom Benchmark, 8.5% Private Equity Custom Benchmark, 6.0% Alternatives Custom Benchmark, and 8.5% Real Estate Custom Benchmark. Prior to January 2023, the policy target weights were 55.0% Global Equity Custom Benchmark, 23.5% Fixed Income Custom Benchmark, 8.5% Private Equity Custom Benchmark, 4.5% Alternatives Custom Benchmark, and 8.5% Real Estate Custom Benchmark. Prior to January 2022, the policy target weights were 56.0% Global Equity Custom Benchmark, 23.5% Fixed Income Custom Benchmark, 8.5% Private Equity Custom Benchmark, 3.5% Alternatives Custom Benchmark, and 8.5% Real Estate Custom Benchmark. Prior to January 2021, 56% Global Equity Custom Benchmark, 23.5% Fixed Income Custom Benchmark, 8.5% Private Equity Custom Benchmark, 3.5% Alternatives Custom Benchmark, and 8.5% Real Estate Custom Benchmark. Prior to January 2020, the policy target weights were 53.5% Global Equity Custom Benchmark, 23.5% Fixed Income Custom Benchmark, 8.5% Private Equity Custom Benchmark, 5% Alternatives Custom Benchmark, 8.5% Real Estate Custom Benchmark, and 1% ICE BofAML U.S. 3 Month T-Bill Index. Prior to July 2016, the policy target weights were 55% Global Equity Custom Benchmark, 24% Fixed Income Custom Benchmark, 7.5% Private Equity Custom Benchmark, 5% Alternatives Custom Benchmark, 7.5% Real Estate Custom Benchmark, and 1% ICE BofAML U.S. 3 Month T-Bill Index. Prior to July 2015, the policy target weights were 56% Global Equity Custom Benchmark, 25% Fixed Income Custom Benchmark, 7% Private Equity Custom Benchmark, 5% Alternatives Custom Benchmark, and 7% Real Estate Custom Benchmark. Prior to January 2011, the policy target weights were 58% Global Equity Custom Benchmark, 25% Fixed Income Custom Benchmark, 7% Private Equity Custom Benchmark, 3% Public Markets Benchmark, and 7% Real Estate Custom Benchmark.

Universe. The rankings are based on a universe of 108 public pension funds over \$1 billion with aggregate assets of \$2,393.5 billion compiled by BNY Mellon Performance & Risk Analytics in conjunction with Investment Metrics as of 12/31/2023.

Money-Weighted Rate of Return. The Government Accounting Standards Board (GASB) requires public pension plans to report the annual money-weighted rate of return on its plan investments. The money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense. The 2023 Total Fund money-weighted rate of return is 13.4%

Global Equity

Global Equity Custom Benchmark: MSCI ACWI IMI with USA Gross. Prior to July 2018, MSCI ACWI IMI. Prior to February 2013, a combination of the domestic equity and international equity indices based on Board approved weights; 52% DJ U.S. Total Stock Market Total Return and 48% MSCI ACWI ex US. Prior to October 2012, a combination of 58% DJ U.S. Total Stock Market Total Return and 42% MSCI ACWI ex US. Prior to April 2012, a combination of 64% DJ U.S. Total Stock Market Total Return and 36% MSCI ACWI ex US. Prior to October 2011, a combination of 69.0% of the DJ U.S. Total Stock Market Total Return and 31.0% of the MSCI ACWI ex US. Prior to April 2011, a combination of 74.1% of the DJ U.S. Total Stock Market Total Return and 25.9% of the MSCI ACWI ex US.

PERA U.S. Equity Index

Performance Benchmark. The MSCI USA Investable Markets Index (Gross). Prior to July 2018, The MSCI USA Investable Markets Index (Net). Prior to February 2013, the DJ U.S. Total Stock Market Index.

Appendix I

PERA Large Cap Core

Performance Benchmark. The MSCI USA Large Cap Index (Gross). Prior to January 2019, the S&P 500 Index.

PERA Mid Cap Core

Performance Benchmark. The MSCI USA Mid Cap Index (Gross). Prior to January 2019, the S&P 400 Growth Index.

PERA Small Cap Core

Performance Benchmark. The MSCI USA Small Cap Index (Gross). Prior to January 2019, the S&P 600 Index.

Schroder International

MSCI All Country World ex-U.S. Small Cap Index. The MSCI All Country World ex-U.S. Small Cap Index (Net). Prior to February 2013, the S&P Small Cap EPAC. Prior to October 2008, the Citi Extended Market Europacific Index. Prior to April 2004, a combination of 75% MSCI EAFE Index (Net) and 25% MSCI EAFE ex-Japan Index (Net).

Mondrian

MSCI All Country World ex-U.S. Index. The Morgan Stanley Capital International All Country World Ex-U.S. Index (Net). Prior to January 2005, the MSCI ACWI Ex-U.S. Index (Gross). Prior to April 2004, a combination of 75% of the MSCI EAFE Index (Net) and 25% of the MSCI EAFE Ex-Japan Index (Net).

PERA International Passive

Performance Benchmark. The Morgan Stanley Capital International EAFE + Canada Investable Markets Index (Net). Prior to February 2013, the MSCI Europe, Australasia, and Far East (EAFE) plus Canada Index (Net).

PERA International Small Cap Passive

Performance Benchmark. The Morgan Stanley Capital International EAFE + Canada Small Cap Index (Net).

Appendix I

William Blair

Performance Benchmark. The Morgan Stanley Capital International All Country World Ex-U.S. Investable Markets Index (Net). Prior to February 2013, the MSCI All Country World Ex-U.S. Index (Net).

Schroder Emerging Markets

Performance Benchmark. The Morgan Stanley Capital International Emerging Markets Index (Net).

Baillie Gifford Emerging Markets

Performance Benchmark. The Morgan Stanley Capital International Emerging Markets Index (Net).

BlackRock Emerging Markets Small Cap

Performance Benchmark. The Morgan Stanley Capital Emerging Markets Small Cap Index (Net).

PERA All Country

Performance Benchmark. The MSCI All Country World Index (Net) with USA Gross. Prior to July 2018, The MSCI All Country World Index (Net).

Acadian

Performance Benchmark. The MSCI All Country World Investable Markets Index (Net) with USA Gross. Prior to July 2018, The MSCI All Country World Investable Markets Index (Net). Prior to February 2013, the MSCI All Country World Index (Net).

Baillie Gifford All Country

Performance Benchmark. The MSCI All Country World Index (Net) with USA Gross. Prior to July 2018, The MSCI All Country World Index (Net).

PERA Global Focus

Performance Benchmark. The MSCI All Country World Index (Net) with USA Gross. Prior to July 2018, The MSCI All Country World Index (Net).

Global Tax Reclaims Account. Northern Trust reports a December 2023 Global Tax Reclaims account balance of \$1,184,971. This balance includes \$7,839 in Global Tax Reclaims and \$1,177,132 in dividends in foreign currency waiting to be exchanged into U.S. currency.

Appendix I

Total Fixed Income

Fixed Income Custom Benchmark: Bloomberg U.S. Aggregate. Prior to August 2018, Bloomberg U.S. Universal. Prior to July 2015, 98% Bloomberg U.S. Universal and 2% Bloomberg U.S. Long Government/Credit. Prior to July 2010, Bloomberg U.S. Universal.

PERA Fixed Income

Performance Benchmark. Beginning July 1, 2015, the Bloomberg U.S. Aggregate Bond Index. Prior to July 1, 2015, a combination of 97.5% of the Bloomberg U.S. Aggregate Bond Index and 2.5% of the Bloomberg U.S. Aggregate Long Government/Credit Index. Prior to July 1, 2014, a combination of 93.0% of the Bloomberg U.S. Aggregate Bond Index, 3.5% of the Bloomberg Emerging Markets B3/B- Index, and 3.5% of the Bloomberg U.S. Aggregate Long Government/Credit Index. Prior to January 1, 2009, a combination of 96.5% of the Bloomberg U.S. Aggregate Bond Index and 3.5% of the Bloomberg Emerging Markets B3/B Index. Prior to April 1, 2004, a combination of 90% of the Bloomberg U.S. Aggregate Bond Index, 10% of the Bloomberg Emerging Markets B3/B- Index. Prior to January 2003, a combination of 80% of the Bloomberg U.S. Aggregate Bond Index, 10% of the Bloomberg Emerging Markets B3/B- Index, 10% of the Bloomberg U.S. High-Yield B3/B- Index.

Total Real Estate

Real Estate Custom Benchmark: NFI-ODCE Net (NCREIF Fund Index - Open End Diversified Core Equity) plus 50 basis points. Prior to January 2012, NFI plus 100 basis points.

Total Private Equity

Private Equity Custom Benchmark: MSCI ACWI IMI with USA Gross plus 150 basis points. Prior to January 2019, Burgiss time weighted rate of return. Prior to January 2015, DJ U.S. Total Stock Market Total Return plus 250 basis points. Prior to January 2012, DJ U.S. Total Stock Market Total Return plus 300 basis points.

Private Equity Investment IRR Benchmark. An opportunity cost benchmark that shows the return that would have been achieved had the cash invested in a private equity portfolio been invested in the MSCI ACWI IMI (Net) with USA Gross plus 150 basis points annually. Under this methodology, hypothetical shares in a public market index are purchased on the same dates and in the same amounts as contributions made to the private equity fund, and hypothetical shares are sold on the same dates and in the same amounts as distributions received from the fund. The Benchmark IRR is calculated using the cash flows and residual value of the hypothetical public index shares.

Appendix I

Alternatives

Alternatives Custom Benchmark: Weighted average of beginning of year market values for each of the three objectives (Risk Mitigation: HFRI FOF Market Defensive Index, Real Assets: CPI plus 400 basis points, Opportunistic: PERA Public Markets plus 150 basis points). Prior to January 2019, market value weighted average of individual strategy benchmarks. Prior to January 2012, Public Markets Benchmark.

Total Fund ex-Alts Benchmark: A combination of 57.8% Global Equity Custom Benchmark, 24.5% Fixed Income Custom Benchmark, 8.9% Real Estate Custom Benchmark, and 8.9% Private Equity Custom Benchmark. Prior to January 2021, a combination of 58% Global Equity Custom Benchmark, 24.4% Fixed Income Custom Benchmark, 8.8% Real Estate Custom Benchmark, and 8.8% Private Equity Custom Benchmark. Prior to January 2020, a combination of 56.3% Global Equity Custom Benchmark, 24.7% Fixed Income Custom Benchmark, 8.9% Real Estate Custom Benchmark, 8.9% Private Equity Custom Benchmark, and 1.1% BofA ML 3 Month Treasury Bill Index. Prior to July 2016, a combination of 57.9% Global Equity Custom Benchmark, 25.3% Fixed Income Custom Benchmark, 7.9% Real Estate Custom Benchmark, 7.9% Private Equity Custom Benchmark, and 1.1% BofA ML 3 Month Treasury Bill Index. Prior to July 2015, a combination of 58.9% Global Equity Custom Benchmark, 26.3% Fixed Income Custom Benchmark, 7.4% of the Real Estate Custom Benchmark, and 7.4% of the Private Equity Custom Benchmark. Prior to January 2011, a combination of 59.8% Global Equity Custom Benchmark, 25.8% Fixed Income Custom Benchmark, 7.2% Private Equity Custom Benchmark, and 7.2% of the Real Estate Custom Benchmark.

Public Markets Benchmark: Combines the public markets asset class indices based on policy target weights. 70% Global Equity Custom Benchmark and 30% Fixed Income Custom Benchmark. Prior to January 2020, 69.5% Global Equity Custom Benchmark and 30.5% Fixed Income Custom Benchmark. Prior to July 2016, 69.6% Global Equity Custom Benchmark and 30.4% Fixed Income Custom Benchmark. Prior to July 2015, 69.1% Global Equity Custom Benchmark and 30.9% Fixed Income Custom Benchmark. Prior to January 2011, 51.8% DJ U.S. Total Stock Market Total Return, 18.1% MSCI ACWI ex US, and 30.1% Fixed Income Custom Benchmark.

Cash Fund. A collective short term investment fund (STIF) that operates similar to a money market fund.

Performance Benchmark. ICE BofAML U.S. 3 Month T-Bill Index.

Appendix II

DJ U.S. Total Stock Market Index. A stock index that is capitalization-weighted (and float adjusted effective April 2004) representing all U.S. common stocks traded regularly on the organized exchanges. The index is the broadest measure of the aggregate domestic stock market.

S&P 500 Stock Index. A capitalization-weighted index representing 500 publicly traded U.S. stocks.

S&P 600 Index. A market-capitalization-weighted index of stocks in all major industries in the small-range of the U.S. stock market.

Russell 2500 Growth Stock Index. A capitalization-weighted index representing those companies within the Russell 2500 Index with higher price-to-book ratios and higher I/B/E/S earnings growth forecasts.

MSCI All Country World Index. A float-adjusted capitalization-weighted index of global stocks representing 46 developed and emerging country stock markets including the U.S. market.

MSCI All Country World Investable Markets Index. A float-adjusted capitalization-weighted index of stocks across large, mid, and small cap size segments in approximately 46 developed and emerging countries, including the U.S. and Canadian markets.

MSCI All Country World ex-U.S. Index. A float-adjusted capitalization-weighted index of stocks across large and mid cap size segments in 22 developed and 23 emerging countries, but excluding the U.S.

MSCI All Country World ex-U.S. Investable Markets Index. A float-adjusted capitalization-weighted index of stocks across large, mid, and small cap size segments in 22 developed and 23 emerging countries, but excluding the U.S.

MSCI All Country World ex-U.S. Small Cap Index. A float-adjusted capitalization-weighted index of stocks across small cap size segments in 22 developed and 23 emerging countries, but excluding the U.S.

MSCI Europe, Australasia, Far East (EAFE) Foreign Stock Index. A float-adjusted capitalization-weighted index of 21 stock markets in Europe, Australia, Asia and the Far East.

MSCI Emerging Markets Index. A float-adjusted capitalization-weighted index of stocks representing 23 emerging country markets.

MSCI Emerging Markets Small Cap Index. A float-adjusted capitalization-weighted index of small cap stocks representing 23 emerging country markets.

MSCI Europe, Australasia, Far East (EAFE) Foreign Stock + Canada Investable Markets Index. A float-adjusted capitalization-weighted index of large and mid cap stocks representing 22 stock markets in Europe, Australia, Asia, the Far East and Canada.

MSCI Europe, Australasia, Far East (EAFE) Foreign Stock + Canada Small Cap Index. A float-adjusted capitalization-weighted index of small cap stocks representing 22 stock markets in Europe, Australia, Asia, the Far East and Canada.

Appendix II

MSCI USA Investable Markets Index. A float-adjusted capitalization-weighted index that captures the United States' broad equity market coverage across large, mid, and small capitalizations.

Bloomberg U.S. Aggregate Bond Index. A market value-weighted index consisting of the Bloomberg U.S. Corporate, Government and Securitized Indices. This index is the broadest available measure of the aggregate U.S. fixed income market.

Bloomberg U.S. Intermediate Government/Credit Bond Index. A market value-weighted index similar to the Bloomberg U.S. Aggregate Bond Index except it only includes maturities less than 10 years and excludes securitized securities.

Bloomberg U.S. Universal Bond Index. Combines the U.S. Aggregate Index, the U.S. High-Yield Corporate Index, the 144A Index, the Eurodollar Index, the Emerging Markets Index and the CMBS High-Yield Index.

Bloomberg U.S. Long Government Credit Index. Bloomberg U.S. Long Government/Credit Index is composed of all bonds that are of investment grade with at least ten years until maturity.

Bloomberg U.S. Corporate High Yield Index. Measures the market of USD-denominated, non-investment grade, fixed-rate, taxable corporate bonds with at least one year until maturity.

NCREIF Property Index. A capitalization-weighted index of privately owned investment grade income-producing properties representing approximately \$471.7 billion in assets.

NCREIF Timberland Index. A quarterly time series composite return measure of investment performance of a large pool or individual timber properties acquired in the private market for investment purposes only. All properties in the Timberland Index have been acquired, at least in part, on behalf or tax-exempt institutional investors - the great majority being pension funds. As such, all properties are held in a fiduciary environment.

NCREIF Open End Diversified Core Equity (ODCE) Net Index. An index of investment returns reporting on both a historical and current basis the results of 33 open-end commingled funds pursuing a core investment strategy, some of which have performance histories dating back to the 1970s. The NFI-ODCE Index is capitalization-weighted and is reported gross of fees. Measurement is time-weighted.

Bloomberg Commodity Index. A rolling index composed of futures contracts on physical commodities. The Index is composed of commodities traded on U.S. exchanges, with the exception of aluminum, nickel and zinc, which trade on the London Metal Exchange. The Index is calculated on both an excess return and total return basis.

Appendix III

Rank- A representation of the percentile position of the performance of a given portfolio, relative to a universe of similar funds. For example, a rank of 25 for a given manager indicates outperformance by that manager of 75% of other funds in that same universe.

Universe- A distribution of the returns achieved by a group of funds with similar investment objectives.

Ratio of Cumulative Wealth Graph- An illustration of a portfolio's cumulative, unannualized performance relative to that of its benchmark. An upward sloping line indicates superior fund performance. Conversely, a downward sloping line indicates underperformance by the fund. A flat line is indicative of benchmark-like performance.

Risk-Return Graph- The horizontal axis, annualized standard deviation, is a statistical measure of risk, or the volatility of returns. The vertical axis is the annualized rate of return. As most investors generally prefer less risk to more risk and always prefer greater returns, the upper left corner of the graph is the most attractive place to be. The line on this exhibit represents the risk and return tradeoffs associated with market portfolios or index funds.

Style Map- This illustration represents the manager's style compared to that of the broadest stock index (the Dow Jones U.S. Total Stock Market Index). Any manager falling above the axis is referred to as large-cap and any manager falling below the axis is considered to be medium- to small-cap.

Allocation Effect- Details the degree to which the Fund's asset allocation differed from that of its policy and what impact it had on performance.

Cash Flow Effect- Details what impact any movement in Fund assets had on performance.

Benchmark Effect- Details the degree to which the asset class benchmark is different from the weighted average of the managers' specific benchmarks. Benchmark effect can occur as long as at least one manager has a benchmark that is different from the asset class benchmark.

Buy Rating- Aon Hewitt Investment Consulting, Inc. (AHIC) recommends clients to invest with or maintain their existing allocation to our Buy rated high conviction products.

Qualified Rating- A number of criteria have been met and AHIC considers the investment manager to be qualified to manage client assets.

Sell Rating- AHIC recommends termination of client investments in this product.

Appendix III

Beta: Measures the risk level of the manager relative to the benchmark. Beta measures the systematic risk, or the return that is attributable to market movements. A beta equal to one indicates a risk level equivalent to the market. Higher betas are associated with higher risk levels, while lower betas are associated with lower risk levels.

Upside Deviation: Standard deviation of positive returns.

Downside Deviation: Standard deviation of negative returns.

Annualized Standard Deviation: A measure of the dispersion of a set of data from its mean. It is used by investors as a gauge for the amount of expected volatility.

Alpha-Jensen: The average return on a portfolio over and above that predicted by the capital asset pricing model (CAPM), given the portfolio's beta and the average market return. Developed by Michael C. Jensen, this measure of a portfolio's alpha value is the most widely used measure of the risk to return trade-off. Also known as the abnormal return or the risk-adjusted excess return.

Sharpe Ratio: A measure of the excess return per unit of risk in an investment asset or trading strategy.

Excess Return Over Market / Risk: Annualized excess return / annualized standard deviation.

Tracking Error: A measure used to monitor the performance of a portfolio, usually to analyze the extent to which its price movements conform or deviate from those of a benchmark. In an indexing strategy, it would be done by determining the standard deviation between the index and the portfolio designed to replicate it. There should be no deviation, so any significant dispersion would comprise tracking error.

Information Ratio: The information ratio is a measure of value added by the manager. It is the ratio of a portfolio's excess return (annualized) above the benchmark, often referred to as alpha, divided by the tracking error (annualized), which is the volatility of the manager's excess return.

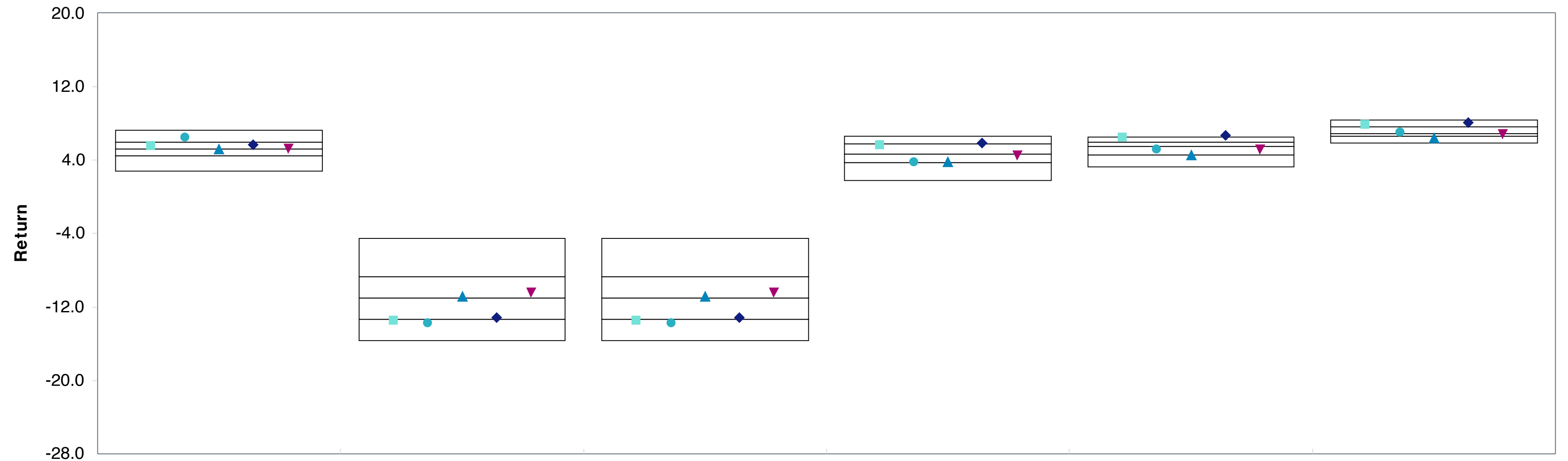
R-Squared: A statistic that measures a stock or portfolio's similarity to a given market. It is produced by regression analysis of investment returns. If you are searching for a manager with a particular style, for example a value manager, you would expect that manager to have an R-Squared that is high relative to a value index if the manager has a diversified portfolio. If the manager's return is explained perfectly, the R-Squared would equal 1.00, while an R-Squared of 0 would indicate that no linear relationship exists between the manager and the index. Higher R-Squared values indicate more reliable alpha and beta statistics and are useful in assessing a manager's investment style.

Correlation: A statistical measure of how two securities move in relation to each other. Numbers close to 1 represent positive correlation (and therefore no diversification benefit) whereas numbers close to -1 represent perfect negative correlation (perfect diversification).

Internal Rate of Return (IRR): The discount rate that equates the net present value (NPV) of an investment's cash inflows with its cash outflows.

Appendix V

As of December 31, 2022



	1 Quarter	Year to Date	1 Year	3 Years	5 Years	10 Years
Total Fund	5.7 (35)	-13.4 (77)	-13.4 (77)	5.7 (27)	6.5 (8)	8.0 (12)
● Policy Benchmark	6.6 (12)	-13.7 (80)	-13.7 (80)	3.8 (75)	5.3 (58)	7.1 (48)
▲ Public Fund Universe (Mean)	5.2 (52)	-10.9 (50)	-10.9 (50)	3.8 (75)	4.6 (75)	6.4 (82)
◆ Total Fund (GOF)	5.7 (31)	-13.1 (73)	-13.1 (73)	5.9 (20)	6.7 (4)	8.1 (10)
▼ Public Fund Universe (Mean) (GOF)	5.3 (42)	-10.4 (46)	-10.4 (46)	4.6 (53)	5.2 (58)	6.9 (51)
5th Percentile	7.3	-4.5	-4.5	6.7	6.6	8.4
1st Quartile	6.0	-8.6	-8.6	5.8	6.0	7.7
Median	5.2	-11.0	-11.0	4.7	5.5	6.9
3rd Quartile	4.5	-13.3	-13.3	3.8	4.6	6.6
95th Percentile	2.8	-15.7	-15.7	1.8	3.3	5.9
Population	79	75	75	71	66	59

Appendix IV

Universe Asset Allocation and Performance Attribution

The table below compares PERA's asset allocation to the asset allocation of the Public Fund Universe as of December 31, 2023.

Please note the following: Detailed asset allocation was provided by 70% of the 108 public fund participants; The asset allocation percentages for the Public Fund Universe are the *average* of the allocation percentages provided by the public fund participants for each of these asset classes; It is at the Public Fund Universe participant's discretion as to how to categorize investments across the five asset class buckets below, which may lead to misleading comparisons.

Based upon the limited information available, the Colorado PERA portfolio is overweight Global Equity, Real Estate, and Private Equity/Alternatives, with corresponding underweights to Fixed Income and Cash.

Fourth Quarter 2023					
	Global Equity	Fixed Income	Real Estate	Private Equity/Alternatives	Cash
Colorado PERA	55.0%	18.9%	10.1%	15.6%	0.4%
Billion \$ Public	50.4%	28.1%	4.5%	14.5%	2.5%
Difference	4.6%	-9.2%	5.6%	1.2%	-2.2%

The table below compares the fourth quarter 2023 performance of PERA's portfolio versus the Public Fund Universe.

Please note the following: Performance information at the asset class level was provided by the 108 public fund participants; Performance information is only provided for the following three asset classes: U.S. equities, non-U.S. equities and fixed income; The performance information reported for each of these asset classes is the average return across all participants; It is at the Public Fund Universe participant's discretion as to how to categorize investments across the three asset class buckets below, which may lead to misleading comparisons.

Based upon the limited information available, the Colorado PERA portfolio underperformed its peers for the fourth quarter.

Fourth Quarter 2023			
	Global Equity	Fixed Income	Total Fund Return
Colorado PERA	11.9%	7.0%	7.3%
Billion \$ Public	11.7%	5.9%	5.5%
Difference	0.1%	1.1%	1.8%

Given a lack of performance data at the asset class level, we are unable to provide a detailed performance attribution analysis of the Colorado PERA portfolio versus the Public Fund Universe.

Note: The universe shown above includes 108 public pension funds with over \$1 billion in assets and was compiled by BNY Mellon Performance & Risk Analytics and Investment Metrics as of most recent quarter end.

Index Definitions

Name	Description
Bloomberg U.S. Corporate High Yield Bond Index	An index that covers the USD-dominated, non-investment grade, fixed rate, taxable corporate bond market. Debt issues from emerging market countries are excluded. Securities are classified as high-yield if the middle rating is Ba1/BB+ or below.
Bloomberg Emerging Markets Index	An unmanaged index that tracks total returns for external-currency-denominated debt instruments of the emerging markets.
Bloomberg Global Aggregate	Provides a broad-based measure of the global investment-grade fixed income markets. The three major components of this index are the U.S. Aggregate, the Pan-European Aggregate, and the Asian-Pacific Aggregate Indices. The index also includes Eurodollar and Euro-Yen corporate bonds, Canadian government, agency and corporate securities, and USD investment grade 144A securities.
Bloomberg Global Treasury Ex-US	The Global Treasury ex US Index is a subset of the flagship Global Treasury Index that does not have any exposure to US debt. This multi-currency benchmark includes investment grade, fixed-rate bonds issued by governments in their native currencies.
Bloomberg Universal Index	A market value-weighted index which is the union of the U.S. Aggregate Index, U.S. High Yield Corporate Index, Eurodollar Index, U.S. Emerging Markets Index and the CMBS High Yield Index. The Index is appropriate for core plus fixed income mandates.
Bloomberg U.S. Government Index	A market value weighted index of U.S. government and government agency securities (other than mortgage securities) with maturities of one year or more.
Bloomberg U.S. Government/Credit Index	A subcomponent of the Capital Aggregate Index, this benchmark includes treasury securities, government related issues, and high-quality corporate bonds with an outstanding par value of \$250 million or greater and at least one year of maturity remaining.
Bloomberg U.S. High Yield Index	An index composed of non-investment grade corporate debt denominated in U.S. dollars. The issues have to have an outstanding par value of \$150 million or greater and at least one year of maturity remaining.
Bloomberg U.S. Inflation Index	Measures the performance of the U.S. Treasury Inflation Protected Securities ("TIPS") market.
Bloomberg U.S. Intermediate Aggregate Bond Index	A market value-weighted index consisting of U.S. Treasury securities, corporate bonds and mortgage-related and asset-backed securities with one to ten years to maturity and an outstanding par value of \$250 million or greater
Bloomberg U.S. Intermediate Government/Credit Index	A market-value weighted index consisting of government bonds and SEC-registered corporate bonds with one to ten years to maturity and an outstanding par value of \$150 million or greater.
Bloomberg U.S. Intermediate Government Bond Index	An unmanaged index considered representative of intermediate- term fixed-income obligations issued by the U.S. treasury, government agencies and quasi-federal corporations.

Index Definitions

Name	Description
Bloomberg U.S. Intermediate Treasury	An unmanaged index considered representative of intermediate-term fixed- income obligations issued by the U.S. treasury.
Bloomberg U.S. Aggregate Bond Index	A market value-weighted index consisting of government bonds, SEC-registered corporate bonds and mortgage-related and asset-backed securities with at least one year to maturity and an outstanding par value of \$250 million or greater. This index is a broad measure of the performance of the investment grade U.S. fixed income market.
Bloomberg U.S. Long Credit Bond Index	An unmanaged index considered representative of long-term fixed-income obligations issued by U.S. corporate, specified foreign debentures, and secured notes that meet the specified maturity, liquidity, and quality requirements. To qualify, bonds must be SEC-registered.
Bloomberg U.S. Long Government/Credit Index	The Capital U.S. Government/ Credit Bond Index measures performance of U.S. dollar denominated U.S. treasuries, government-related, and investment grade U.S. corporate securities that have a remaining maturity of greater than or equal to 1 year. In addition, the securities have \$250 million or more of outstanding face value, and must be fixed rate and non-convertible.
Bloomberg U.S. Long-Term Government Bond Index	An unmanaged index considered representative of long-term fixed- income obligations issued by the U.S. treasury, government agencies and quasi-federal corporations.
Bloomberg U.S. TIPS	A market value-weighted index consisting of U.S. Treasury Inflation Protected Securities with one or more years remaining until maturity with total outstanding issue size of \$500m or more.
Bloomberg U.S. Treasury 20-30 Year STRIPS Index	A subcomponent of the Aggregate Index, this benchmark includes long-term treasury STRIPS.
Bloomberg Commodity Index	Consists of 22 exchange-traded futures on physical commodities, which are weighted to account for economic significance and market liquidity. Performance is calculated on an excess return basis and reflects commodity future price movements.
BofA Merrill Lynch 3 Month Treasury Bill	An index that measures the average return of the last three-month U.S. Treasury Bill issues .
BofA Merrill Lynch High Yield Master	A market capitalization-weighted index that tracks the performance of U.S. dollar- denominated, below investment grade corporate debt publicly issued in the U.S. domestic market.

Index Definitions

Name	Description
Citigroup 90-Day T-Bill Index	An index that measures the average return of the last three-month U.S. Treasury Bill issues
CRSP US Large Growth Cap Index	An index comprised of nearly 330 US large cap growth companies and includes securities traded on NYSE, NYSEMarket, NASDAQ, or ARCA, representing nearly 45% of the U.S. investable equity market. The index is reconstituted quarterly after the market close on the third Fridays of March, June, September, and December. CRSP classifies growth securities using the following factors: future long-term growth in earnings per share (EPS), future short-term growth in EPS, 3-year historical growth in EPS, 3-year historical growth in sales per share, current investment-to-assets ratio, and return on assets.
CRSP US Total Market Index	An index comprised of nearly 4,000 constituents across mega, large, small, and micro capitalizations and includes securities traded on NYSE, NYSE Market, NASDAQ, or ARCA, representing nearly 100% of the U.S. investable equity market. The index is reconstituted quarterly after the market close on the third Fridays of March, June, September, and December.
Credit Suisse Leveraged Loan Index	Designed to mirror the investable universe of the U.S. dollar denominated leveraged loan market.
DJ U.S. Completion Total Stock Market Index	A capitalization-weighted index that consists of the stocks in the Dow Jones U.S. Total Stock Market Index less the stocks in the S&P 500 Stock Index.
DJ U.S. Total Stock Market Index	A capitalization-weighted stock index representing all domestic common stocks traded regularly on the organized exchanges. The index is the broadest measure of the aggregate domestic stock market and includes approximately 5,000 stocks.
FTSE 4Good U.S. Select Index	A socially responsible investment (SRI) index of US stocks that excludes companies with certain business activities such as weapons, tobacco, gambling, alcohol, nuclear power, and adult entertainment
FTSE All-World ex-U.S. Index	A capitalization-weighted stock index representing 46 developed market countries and emerging market countries excluding the U.S.
FTSE EPRA NAREIT Global ex-U.S. Index	Designed to represent general trends in eligible real estate equities worldwide. Relevant real estate activities are defined as the ownership, disposure and development of income-producing real estate.
FTSE Global All Cap ex US Index	A market-capitalization weighted index representing the performance of roughly 5350 large, mid and small cap companies in 46 Developed and Emerging markets worldwide, excluding the USA.
FTSE Global Core Infrastructure Index	Represents the performance of infrastructure and infrastructure-related securities companies in a set of industries that FTSE defines as being involved in infrastructure. The series is based on the FTSE Global Equity Index Series and both developed and emerging markets are included.

Index Definitions

Name	Description
FTSE NAREIT U.S. Equity REITS	Free float adjusted, market capitalization weighted index of US based equity real estate investment trusts (REITs).
Goldman Sachs Commodity Index	A composite index of commodity sector returns which represents a broadly diversified, unleveraged, long-only position in commodity futures.
HFR Fund-of-Fund Index.	This index is equity-weighted including 800 constituents. It includes both domestic and offshore accounts and is valued in U.S. dollars. Only fund-of-fund products are included in the index that have at least \$50 million under managements and have been actively trading for at least one year. All funds report net returns on a monthly basis.
HFRI Fund Weighted Composite Index	The HFRI Fund Weighted Composite Index is a global, equal-weighted index of over 2,000 single-manager funds that report to HFR Database. Constituent funds report monthly net of all fees performance in US Dollar and have a minimum of \$50 Million under management or a twelve (12) month track record of active performance. The HFRI Fund Weighted Composite Index does not include Funds of Hedge Funds.
Hueler Stable Value Index	The Hueler Analytics Stable Value Pooled Fund Comparative Universe represents investment strategies of \$96 billion in stable value assets, across 24 pooled funds, invested in contracts universe across a universe of 16 general account issuers and 14 synthetic wrap providers. The allocation of pooled fund assets is dominated by synthetic contracts issued by insurance companies and banks.
J.P. Morgan EMBI Global Diversified	Comprised of dollar-denominated Brady bonds, traded loans and Eurobonds issued by emerging market sovereign and quasi-sovereign entities. The Diversified version limits the weights of the index countries by only including a specified portion of those countries' eligible current face amounts of debt outstanding, providing for a more even distribution of weights within the countries in the index.
iMoneyNet All Taxable Money Funds Index	An index made up of the entire universe of money market mutual funds. The index currently represents over 1,300 funds, or approximately 99 percent of all money fund assets.
iMoneyNet Money Fund Average.	An index made up of the entire universe of money market mutual funds. The index currently represents over 1,300 funds, or approximately 99 percent of all money fund assets.
MSCI All Country World ex-U.S. Index	A capitalization-weighted index of stocks representing 44 stock markets in Europe, Australia, the Far East, the Middle East, Latin America and North America. Index consists of 23 developed and 21 emerging countries, but excludes the U.S.
MSCI All Country World ex-U.S. Index IMI-	A capitalization-weighted index of large, mid and small cap stocks representing 22 developed (excluding the United States) and 24 emerging market countries. The index is the broadest measure of the aggregate non-US stock market, covering approximately 99% of the global equity investment opportunity set outside of the United States.

Index Definitions

Name	Description
MSCI All Country World ex-U.S. Small Cap Index	Covers all investable small cap securities with a market capitalization below that of the companies in the MSCI Standard Indices (excluding U.S.), and target approximately 14% of each market's free-float adjusted market capitalization.
MSCI All Country World Index IMI	A capitalization-weighted index of large, mid and small cap stocks representing 23 developed and 24 emerging market countries. The index is the broadest measure of the aggregate global stock market, covering approximately 99% of the global equity investment opportunity set.
MSCI All Country World Index	A capitalization-weighted index of stocks representing 46 stock markets in Europe, Australia, the Far East, the Middle East, Latin America and North America.
MSCI EAFE Growth Index	A capitalization-weighted index of 21 stock markets in Europe, Australia, Asia and the Far East designed to capture the growth-oriented companies.
MSCI EAFE Small Cap Index	A capitalization-weighted index of small cap stocks representing 23 developed country markets in Europe, Australia, Asia, and the Far East.
MSCI EAFE Value Index	A capitalization-weighted index of 21 stock markets in Europe, Australia, Asia and the Far East designed to capture the value-oriented companies.
MSCI Emerging Markets Index	A capitalization-weighted index of stocks representing 22 emerging country markets.
MSCI U.S. Broad Market Index	A capitalization-weighted stock index that aggregates the MSCI U.S. Large Cap 300, Mid Cap 450, Small Cap 1,750 and Micro-Cap Indices. This index represents approximately 99.5% of the capitalization of the U.S. Equity market and includes approximately 3,562 companies.
MSCI U.S. REIT Index	A broad index that fairly represents the equity REIT opportunity set with proper invest ability screens to ensure that the index is investable and replicable. The index represents approximately 85% of the U.S. REIT universe
MSCI World Index	A free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets, representing 24 developed market country indices.
NCREIF Property Index	NCREIF Property Index - A capitalization-weighted index of privately owned investment grade income-producing properties representing approximately \$269 billion in assets.

Index Definitions

Name	Description
NFI ODCE Index	NFI ODCE Index - A capitalization weighted index comprised of open-end, Core funds investing in commercial real estate properties. The funds that constitute the index are subject to certain geographic and property type diversification requirements as well as leverage restrictions. The index reflects the impact of leverage on investment results. The returns shown in this report are net of management fees of the respective funds included in the index.
Rolling 3-year Constant Maturity Treasury Index	An index published by the Federal Reserve Board based on the monthly average yield of a range of Treasury securities, all adjusted to the equivalent of a three-year maturity.
Russell 1000 Growth Index	An index that measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher I/B/E/S growth forecasts.
Russell 1000 Index	A capitalization-weighted index of the 1,000 largest publicly traded U.S. stocks by capitalization.
Russell 1000 Value Index.	An index that measures the performance of those stocks included in the Russell 1000 Index with lower price-to-book ratios and lower I/B/E/S earnings growth forecasts.
Russell 2000 Growth Index	A capitalization-weighted index of those stocks in the Russell 2000 Index with higher price-to-book ratios and higher I/B/E/S earnings growth forecasts.
Russell 2000 Index	A capitalization-weighted index of the smallest 2,000 stocks in the Russell 3000 Index. The index excludes the largest- and smallest-capitalization issues in the domestic stock market.
Russell 2000 Value Index	An index that measures the performance of those stocks included in the Russell 2000 Index with lower price-to-book ratios and lower I/B/E/S earnings growth forecasts.
Russell 2500 Growth Index	A capitalization-weighted index representing those companies within the Russell 2500 Index with higher price-to-book ratios and higher I/B/E/S earnings growth forecasts.
Russell 2500 Index	The Index is constructed by first identifying the 3,000 largest-capitalization U.S. stocks and ranking them by market capitalizations, choosing the bottom 2,500 names on the list.
Russell 2500 Value Index.	an index that measures the performance of those stocks included in the Russell 2500 Index with lower price-to-book ratios and lower I/B/E/S earnings growth forecasts.

Index Definitions

Name	Description
Russell 3000 Growth Index	A capitalization-weighted index consisting of those Russell 3000 Index stocks that have higher price-to-book ratios and higher I/B/E/S earnings growth forecasts.
Russell 3000 Index	A capitalization-weighted index consisting of the 3,000 largest publicly traded U.S. stocks by capitalization. This index is a broad measure of the performance of the aggregate domestic equity market.
Russell 3000 Value Index	A capitalization-weighted index consisting of those Russell 3000 Index stocks that have lower price-to-book ratios and lower I/B/E/S earnings growth forecasts.
Russell Mid Cap Growth Index	A capitalization-weighted index representing those stocks in the Russell MidCap Index with higher price-to-book ratios and higher I/B/E/S earnings growth forecasts.
Russell Mid Cap Value Index	A capitalization-weighted index consisting of those Russell MidCap Index stocks that have lower price-to-book ratios and lower I/B/E/S earnings growth forecasts.
S&P 500 Index	A capitalization-weighted index representing stocks chosen by Standard & Poor's, Inc. for their size, liquidity, stability and industry group representation. The companies in the S&P 500 Index are generally among the largest in their industries.
S&P Completion Index	The S&P Completion Index is a sub-index of the S&P Total Market Index, including all stocks eligible for the S&P TMI and excluding all current constituents of the S&P 500. The index covers approximately 4,000 constituents, offering investors broad exposure to mid, small, and micro-cap companies.
S&P GSCI®	Both the first major investable commodity index and one of the most widely recognized benchmarks, the S&P GSCI® is broad-based, production weighted, and meant to be representative of the global commodity market beta.
S&P Leverage Loan Index	A daily total return index that uses LSTA/LPC Mark-to-Market Pricing to calculate market value change.
S&P Midcap 400 Index	A market-capitalization-weighted index of stocks in all major industries in the mid-range of the U.S. stock market.
Wilshire REIT	A measure of the types of U.S. real estate securities that represent the ownership and operation of commercial or residential real estate. To be included in the index, a company must have a market capitalization of \$200 million and have at least 75% of the total revenue derived from the ownership and operation of the real estate assets.

- Indices cannot be invested in directly. Unmanaged index returns assume reinvestment of any and all distributions and do not reflect our fees or expenses.
- Past performance is no guarantee of future results.

Thought Leadership Highlights

Public Funds

Topic	Article	Link
Annual Themes	2024 Key Investment Themes for Public Funds (video passcode 'aon!')	Article on Request Link to Video
Oversight	Outsourced Chief Investment Officer: The Key to Navigating Volatility	Link
Market View	Quarterly Market Review and Outlook Video (access code 'aon!')	Link to Article Link to Video
	Rate Cuts Ahead?	Link
P&I Conference	Video Public Funds in 2023: Challenges and Opportunities	Link to Video
Asset Allocation	How Public Pensions Should Assess Illiquidity from Alts: 3 Questions with Eric Friedman & John Sullivan	Link
	Client Video: U.S. vs non-U.S. Equity (access code 'aon!')	Link to Video
	The Strength of the U.S. Equity Market and its Impact on Equity Allocations	Link
	Expected Rates of Return: A Whipsaw Effect?	Link
	Managing Through Today's Environment for Illiquid Assets: 3 Questions with Eric Friedman	Link
Strategy Review	Everything Everywhere All at Once: 5 Insights on Climate Change within Investments	Link
	Impact Investing is Hard: Here's How to Do It Well	Link
	Aon's Environmental Social and Governance (ESG) Manager Ratings: 3 Questions With Daniel Ingram	Link
	Diverse Manager Initiatives: Three Questions for Institutional Investors	Link
	Why Securities Lending is Right, Now	Link
	Private Credit: 3 Questions with Galina Kalcheva	Link
	Private Credit 101 (access code 'aon!')	Link to Video

If you do not get Aon Investments' monthly email newsletter, but would like to, please ask your consultant.

Disclaimer

Past performance is not necessarily indicative of future results.

Unless otherwise noted, performance returns presented reflect the respective fund's performance as indicated. Returns may be presented on a before-fees basis (gross) or after-fees basis (net). After-fee performance is net of each respective sub-advisors' investment management fees and include the reinvestment of dividends and interest as indicated on the notes page within this report or on the asset allocation and performance summary pages. Actual returns may be reduced by Aon Investments' investment advisory fees or other trust payable expenses you may incur as a client. Aon Investments' advisory fees are described in Form ADV Part 2A. Portfolio performance, characteristics and volatility also may differ from the benchmark(s) shown.

The information contained herein is confidential and proprietary and provided for informational purposes only. It is not complete and does not contain certain material information about making investments in securities including important disclosures and risk factors. All securities transactions involve substantial risk of loss. Under no circumstances does the information in this report represent a recommendation to buy or sell stocks, limited partnership interests, or other investment instruments.

The data contained in these reports is compiled from statements provided by custodian(s), record-keeper(s), and/or other third-party data provider(s). This document is not intended to provide, and shall not be relied upon for, accounting and legal or tax advice. Aon Investments has not conducted additional audits and cannot warrant its accuracy or completeness. We urge you to carefully review all custodial statements and notify Aon Investments with any issues or questions you may have with respect to investment performance or any other matter set forth herein.

The mutual fund information found in this report is provided by Thomson Reuters Lipper and Aon Investments cannot warrant its accuracy or timeliness. Thomson Reuters Lipper Global Data Feed provides comprehensive coverage of mutual fund information directly to Investment Metrics, Aon Investments' performance reporting vendor, via the PARis performance reporting platform. Thomson Reuters Lipper is the data provider chosen by Investment Metrics, and as such, Aon Investments has no direct relationship with Thomson Reuters Lipper.

Refer to Hedge Fund Research, Inc. www.hedgefundresearch.com for information on HFR indices.

FTSE International Limited ("FTSE") © FTSE 2017. "FTSE®" and "FTSE4Good®" are trademarks of the London Stock Exchange Group companies and are used by FTSE International Limited under license. The FTSE indices are calculated by FTSE International Limited in conjunction with Indonesia Stock Exchange, Bursa Malaysia Berhad, The Philippine Stock Exchange, Inc., Singapore Exchange Securities Trading Limited and the Stock Exchange of Thailand (the "Exchanges"). All intellectual property rights in the FTSE/ASEAN Index vest in FTSE and the Exchanges. Neither FTSE nor its licensors accept any liability for any errors or omissions in the FTSE indices and / or FTSE ratings or underlying data. No further distribution of FTSE Data is permitted without FTSE's express written consent.

Aon Investments USA Inc. ("Aon Investments") is a federally registered investment advisor with the U.S. Securities and Exchange Commission ("SEC"). Aon Investments is also registered with the Commodity Futures Trade Commission as a commodity pool operator and a commodity trading advisor, and is a member of the National Futures Association. The Aon Investments ADV Form Part 2A disclosure statement is available upon written request to:

Aon Investments USA Inc.
200 East Randolph Street
Suite 700
Chicago, IL 60601
ATTN: Aon Investments Compliance Officer