
Erie County Employees Retirement Plan

Investment Performance Review
Period Ending June 30, 2024

MARINER

2nd Quarter 2024 Market Environment

The Economy

- The US Federal Reserve (the Fed) continued on its stable trajectory, holding rates steady during the second quarter. Capital markets have struggled to accurately predict the pace and timing of future Fed actions, resulting in an up and down quarter. In its press release for the June meeting, the Fed continued to assert that “In considering any adjustments to the target range for the federal funds rate, the Committee will carefully assess incoming data, the evolving outlook, and the balance of risks.”
- The Fed’s prolonged pause in its rate-hiking cycle and the insertion of the word “any” in its December press release provided capital markets hope that the Fed may pivot in its stance and begin reducing rates to a less restrictive level in 2024. The Fed’s published June “Dot Plot” revised expectations from three quarter-point rate cuts during the year to just one quarter-point rate cut. If this projection were to materialize, it would result in the first rate cut since the COVID pandemic in 2020.
- Growth in the US labor market continued in June, as nonfarm payrolls increased by 206,000 while unemployment rose slightly from 3.8% at the end of the first quarter to 4.1% at the end of the second quarter. Federal Reserve Chair Jerome Powell has maintained that “an unexpected weakening in the labor market could also warrant a policy response,” later defining unexpected weakening as something that would occur outside of their general forecasts.

Equity (Domestic and International)

- US equity results were mixed for the quarter, with large-capitalization (cap) stocks strongly outpacing small-cap stocks. As market participants continue to revise projections of future Fed actions, they sought safety among large-cap stocks due to these companies lessened dependence on external financing. The S&P 500 Index rose a solid 4.3% for the quarter, but ended a two-quarter streak of double-digit gains.
- Large-cap equity benchmarks continue to experience top-heavy concentration among a limited number of stocks. The top 10 stocks in the S&P 500 Index make up nearly 36% of the index’s weight as of June 2024. Year-to-date, these 10 stocks have contributed to more than 60% of the benchmark’s total return.
- International stocks also continued to experience growth during the second quarter, but results were muted by a strengthening US Dollar (USD). USD performance of international stocks lagged local currency (LCL) returns in most regions for the quarter, albeit to varying degrees.

Fixed Income

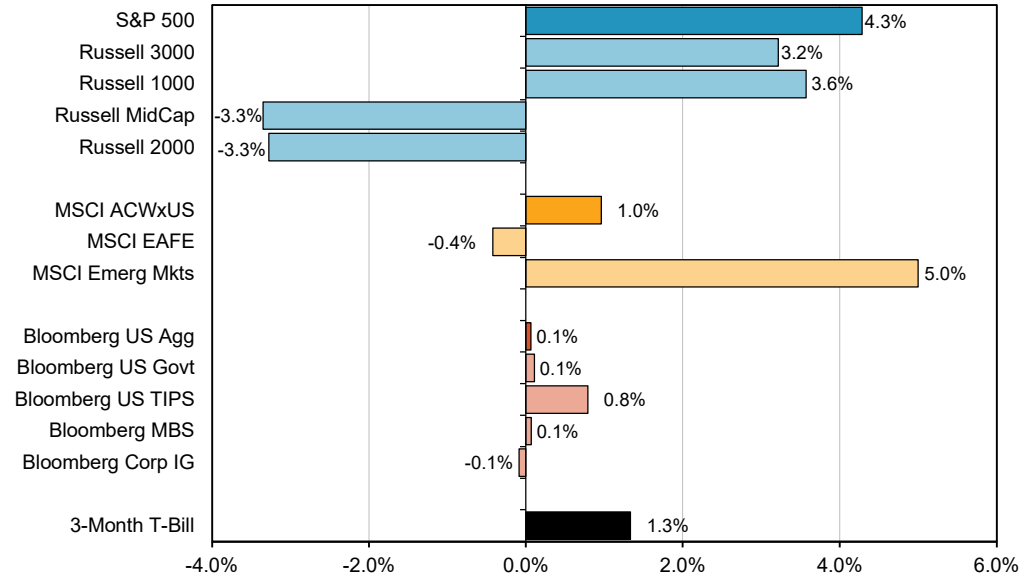
- Fixed-income markets remained largely steady during the quarter. While sticky inflation numbers and a robust job market prompted the Fed to keep the fed funds rate unchanged during the quarter, this lack of action also tempered expectations for the number of potential rate cuts in 2024.
- High-yield bonds outperformed investment-grade issues for the quarter, largely due to higher coupons. The high-yield index edged out the Bloomberg US Aggregate Bond Index, the bellwether bond benchmark, due to relative stability in both the yield curve and economic conditions.
- Global bonds continue to lag the domestic bond market, with the Bloomberg US Aggregate Bond Index outpacing the Global Aggregate ex-US Index by 2.2% for the quarter. The return gap between the two benchmarks continues to widen as the domestic index has outperformed the global index by 3.3% year-to-date.

Market Themes

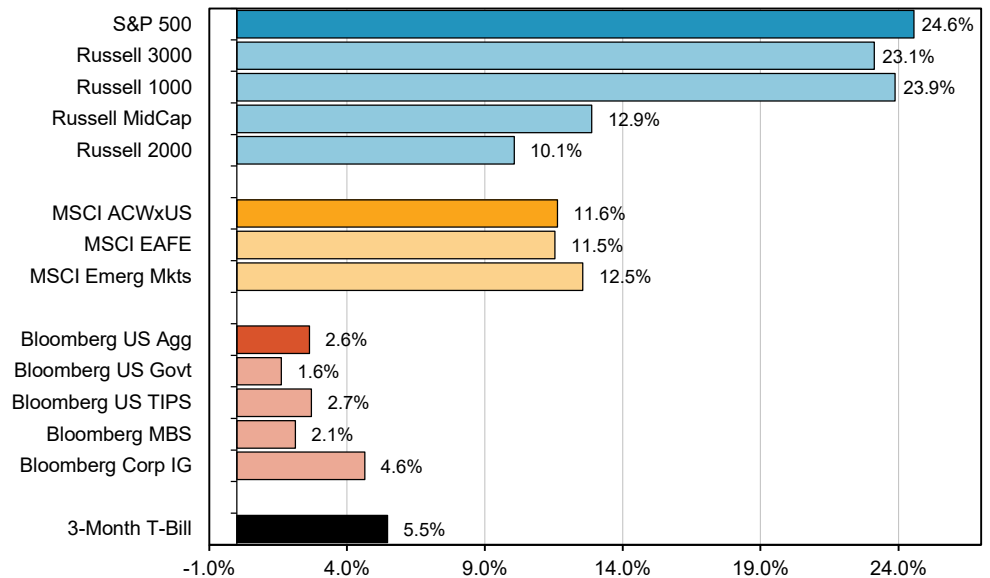
- Domestic and international equity markets posted strong results in the second quarter. Continuing their robust 2023 run, large-cap growth sectors continued to outpace their value counterparts in 2024, and by a wider margin than the prior year. The brief increased breadth markets experienced during of the first quarter did not continue during the second quarter, and so once again, large-cap growth stocks were the best-performing US asset category.
- Central banks remained vigilant in their stances to bring inflation under control. While inflation readings remain stubbornly elevated, signs of stable-to-cooling price pressures have shown up in most regions around the world. Domestically, job growth has slowed from a pace of 300,000+ month-over-month growth to just over 200,000 net new jobs.
- Policy rates were stable across most developed markets as central banks continued their tight monetary stances. Expectations of looser monetary policy have been frustrated by mixed economic data and central banks’ inaction so far this year.
- Ongoing military conflicts coupled with global economic uncertainty continue to act as headwinds to international market results. While global disruptions from the Russia-Ukraine conflict seemed to subside during the quarter, the proxy war in the Middle East has spread to other countries in the region and unsettled shipping channels globally.

- Performance in the domestic equity markets was disparate during the second quarter. After a more encouraging showing last quarter, where markets broadened out in terms of strength, large-cap stocks once again surged ahead while smaller-cap stocks weakened slightly. For the period, the large-cap S&P 500 and Russell 1000 indexes posted returns of 4.3% and 3.6%, respectively. The broad-cap Russell 3000 index lagged slightly, returning a more modest 3.2%. Outside of large-cap issues, the Russell Mid Cap and Russell 2000 indexes both experienced equivalent pullbacks during the quarter, with each benchmark returning -3.3%.
- International developed market equities were muted during the quarter. The MSCI ACWI ex US Index posted a modest 1.0% gain for the quarter, while the MSCI EAFE Index fell slightly, posting a return of -0.4% in USD terms. International emerging market (EM) equities posting a 5.0% return for the quarter, outpacing the performance of their developed market counterparts. Much of the solid performance in the EM region was attributed to a bounce back in China, Taiwan, and Singapore, each posting strong USD results during the quarter.
- Most broad fixed-income indexes rose slightly during the second quarter of 2024. The Bloomberg US Aggregate Index returned 0.1% for the quarter, while investment-grade corporate bonds slid -0.1%. The TIPS market was the best-performing sector during the quarter, outpacing the rest of the domestic fixed-income categories with a return of 0.8%.
- Large-cap US equity indexes have been a performance juggernaut over the trailing 12 months. The S&P 500 Index has gained 24.6% while the Russell 1000 Index was nearly as strong with a return of 23.9%. The weakest performing class of domestic equities for the year was the small-cap Russell 2000 Index, which still posted a double-digit return of 10.1% over the last 12 months.
- International markets also showcased healthy performance for the one-year trailing period. The MSCI EM Index was the best international performer, returning 12.5%, while the MSCI EAFE and MSCI ACWI ex US indexes posted returns of 11.5% and 11.6%, respectively.
- Bond markets posted positive but muted results for the trailing one-year period which substantially lagged equity benchmark results. Investment-grade corporate bonds led the way, up by 4.6% for the year. Meanwhile, Treasuries lagged, returning just 1.6% over the period. The bellwether fixed-income benchmark, the Bloomberg US Aggregate Bond Index, returned a mild 2.6% for the year.

Quarter Performance

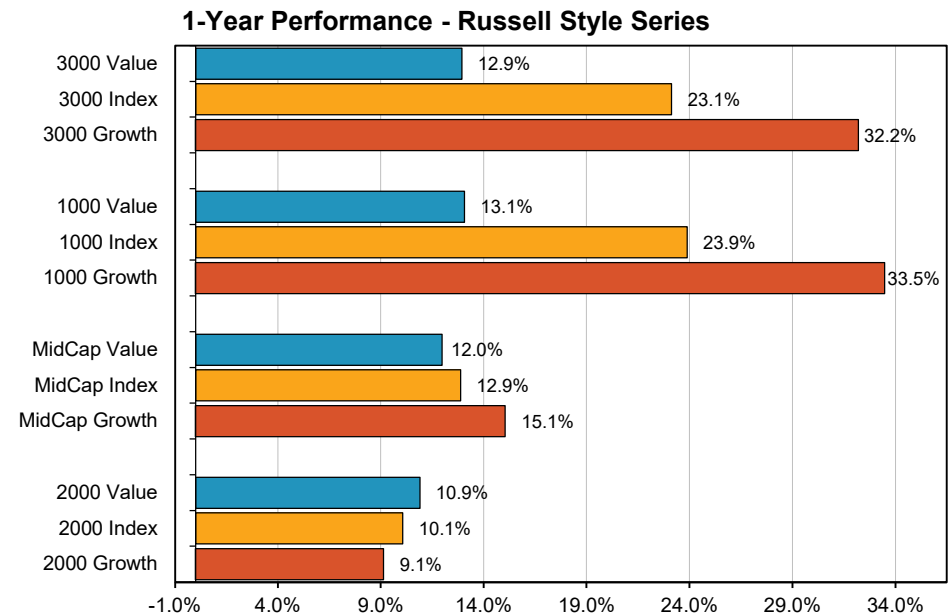
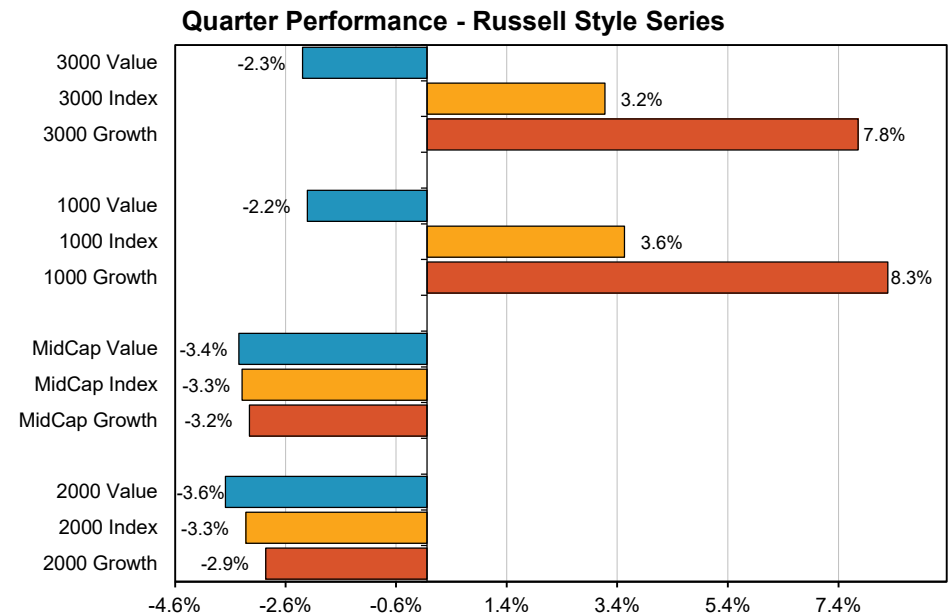


1-Year Performance



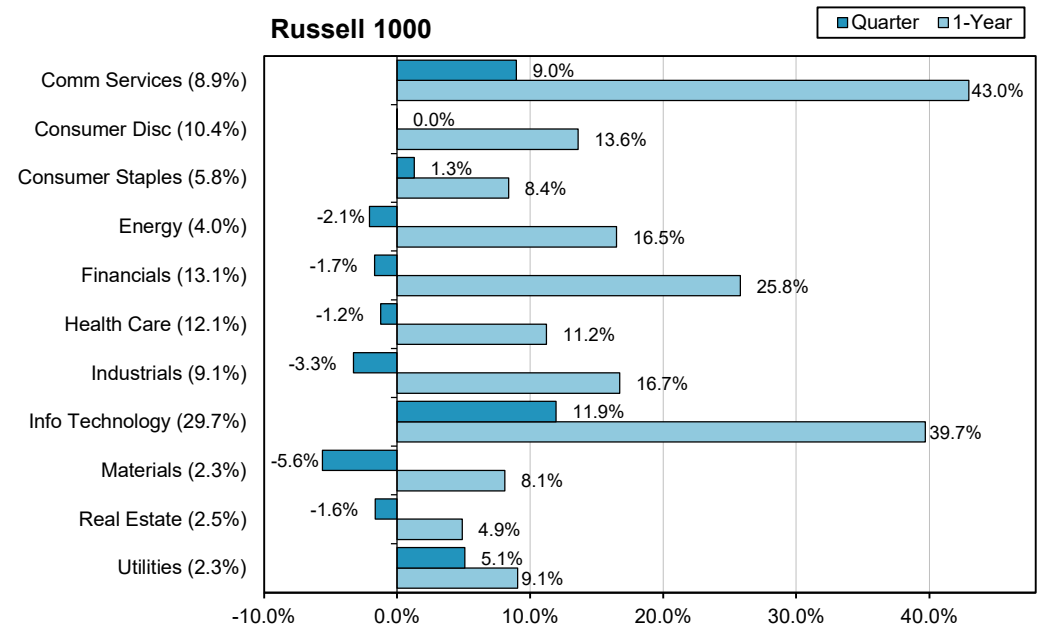
Source: Investment Metrics

- Domestic equity benchmarks posted mixed absolute results for the second quarter, but growth stocks outpaced their value counterparts at each capitalization level. The best-performing area of the equity market continues to be large-cap growth with the Russell 1000 Growth Index returning 8.3% for the quarter. The worst-performing segment of the domestic equity market for the second consecutive quarter was small-cap value with the Russell 2000 Value index falling -3.6% for the quarter. From a capitalization perspective, large-cap stocks once again led their small-cap counterparts, with the Russell 1000 Index returning 3.2% and the Russell 2000 Index falling by -3.3%.
- The market's growth-led rally continued during the quarter, and this disparity was most visible in large-cap style performance, with the Russell 1000 Growth Index outpacing the Russell 1000 Value Index by double digits (10.1%). While mid-cap and small-cap growth fell in absolute terms for the quarter, the mid- and small-cap growth indexes held up slightly better than their value counterparts. This quarter's results followed the theme of large-cap growth stocks being the best-performing segment of the domestic equity market over the past several years.
- For the year the Russell 1000 Growth Index returned an impressive 33.5%, leading the way among style and market capitalization classifications. Much of this strong performance has been attributable to the emergence of the "Magnificent 7" stocks, which have dominated the large-cap indexes over the past several years. The seven biggest stocks in the Russell 1000 Index contributed more than 70% of the index's total performance in the trailing 12-month period.
- The weakest performing index for the year was the Russell 2000 Growth, which still posted a solid return of 9.1%.
- The dominance of growth sectors is evident in the chart with the broad-cap, large-cap, and mid-cap benchmarks handily outperforming the core and value indexes for the trailing one-year period. The performance gap between the Russell 1000 Growth Index and the Russell 1000 Value Index was a staggering 20.4% for the year while the mid-cap growth index edged past the mid-cap value index by just 3.1%. Small-cap stocks bucked the growth-dominance trend with the Russell 2000 Value Index posting a return of 10.9% versus a return of 9.1% for the Russell 2000 Growth Index.

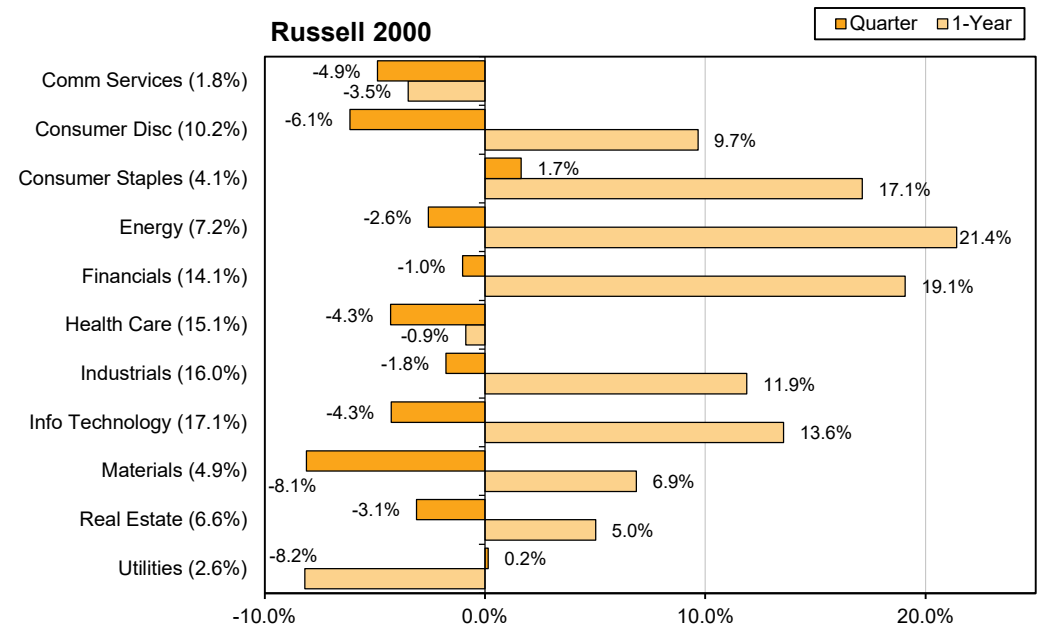


Source: Investment Metrics

- Economic sector performance was choppy during the second quarter. This quarter broke the preceding trend of broader participation in the equity market's rally. Only five of the 11 economic sectors posted positive absolute returns for the quarter, with information technology (11.9%), communication services (9.0%), and utilities (5.1%) leading the way.
- In contrast, full-year results were more consistent as all 11 economic sectors finished the year in positive territory. Of the 11 sectors, three (communication services, up 43.0%; information technology, up 39.7%; and financials, up 25.8%) were up by more than 25.0% for the past year. With their more than 40% combined weight in the benchmark, these three sectors were also the only ones to outpace the Russell 1000 Index's return of 23.9%. Despite solid positive performance, utilities (up 9.1%), consumer staples (8.4%), materials (8.1%), consumer staples (8.4%), and real estate (4.9%) were all relative detractors for the year with their single-digit returns.



- Nine of the 11 small-cap economic sectors lost value during the quarter. Consumer staples (up 1.7%), and utilities (0.2%) were the only two sectors to post gains for the quarter. Materials was the worst-performing sector posting a loss of -8.1% for the quarter. While not always the case, small-cap stocks generally have greater dependence on liquidity and access to capital which can lead to lagging performance relative to large-cap stocks during periods of restrictive monetary policy.
- Similar to large-cap sector performance, eight of the 11 small-cap sectors were positive over the trailing one-year period. Energy posted the strongest sector performance with a return of 21.4%, followed closely by the financials sector return of 19.1%. Consumer staples (up 17.1%), information technology (13.6%), and industrials (11.9%) each produced double-digit results for the period. Three sectors (communication services, health care, and utilities) posted negative results during the period.



Source: Morningstar Direct
 As a result of the GICS classification changes on 9/28/2018 and certain associated reporting limitations, sector performance represents backward looking performance for the prior year of each sector's current constituency, post creation of the Communication Services sector.

The Market Environment
Top 10 Index Weights & Quarterly Performance for the Russell 1000 & 2000
As of June 30, 2024

Top 10 Weighted Stocks				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Microsoft Corp	6.7%	6.4%	32.3%	Information Technology
Apple Inc	6.2%	23.0%	9.2%	Information Technology
NVIDIA Corp	5.9%	36.7%	192.1%	Information Technology
Amazon.com Inc	3.5%	7.1%	48.2%	Consumer Discretionary
Meta Platforms Inc Class A	2.2%	3.9%	76.1%	Communication Services
Alphabet Inc Class A	2.2%	20.8%	52.3%	Communication Services
Alphabet Inc Class C	1.9%	20.6%	51.8%	Communication Services
Eli Lilly and Co	1.5%	16.6%	94.5%	Health Care
Berkshire Hathaway Inc Class B	1.5%	21.5%	88.4%	Financials
Broadcom Inc	1.4%	-3.3%	19.3%	Information Technology

Top 10 Weighted Stocks				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Super Micro Computer Inc	1.6%	-18.9%	228.7%	Information Technology
MicroStrategy Inc Class A	0.8%	-19.2%	302.3%	Information Technology
Carvana Co Class A	0.5%	46.4%	396.6%	Consumer Discretionary
e.l.f. Beauty Inc	0.4%	7.5%	84.5%	Consumer Staples
Comfort Systems USA Inc	0.4%	-4.2%	86.0%	Industrials
Onto Innovation Inc	0.4%	21.3%	88.5%	Information Technology
FTAI Aviation Ltd	0.4%	54.0%	234.2%	Industrials
Light & Wonder Inc Ordinary Shares	0.4%	2.7%	52.5%	Consumer Discretionary
Insmed Inc	0.4%	147.0%	217.5%	Health Care
Fabrinet	0.4%	29.5%	88.5%	Information Technology

Top 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
GameStop Corp Class A	0.0%	97.2%	1.8%	Consumer Discretionary
Petco Health and Wellness Co	0.0%	65.8%	-57.5%	Consumer Discretionary
Alnylam Pharmaceuticals Inc	0.1%	62.6%	27.9%	Health Care
United Therapeutics Corp	0.0%	38.7%	44.3%	Health Care
Cirrus Logic Inc	0.0%	37.9%	57.6%	Information Technology
NCR Atleos Corp	0.0%	36.8%	N/A	Financials
NVIDIA Corp	5.9%	36.7%	192.1%	Information Technology
AMC Entertainment	0.0%	33.9%	-87.2%	Communication Services
First Solar Inc	0.0%	33.6%	18.6%	Information Technology
Cava Group Inc	0.0%	32.4%	126.5%	Consumer Discretionary

Top 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
AST SpaceMobile Inc Ordinary Shares	0.1%	300.3%	147.0%	Communication Services
Emergent BioSolutions Inc	0.0%	169.6%	-7.2%	Health Care
Novavax Inc	0.1%	164.9%	70.4%	Health Care
Rent the Runway Inc Class A	0.0%	154.3%	-55.6%	Consumer Discretionary
Insmed Inc	0.4%	147.0%	217.5%	Health Care
Innodata Inc	0.0%	124.7%	30.9%	Industrials
NuScale Power Corp Class A	0.0%	120.2%	71.9%	Industrials
TransMedics Group Inc	0.2%	103.7%	79.4%	Health Care
Vital Farms Inc Ordinary Shares	0.1%	101.2%	290.1%	Consumer Staples
Matterport Inc Ordinary Shares	0.0%	97.8%	41.9%	Information Technology

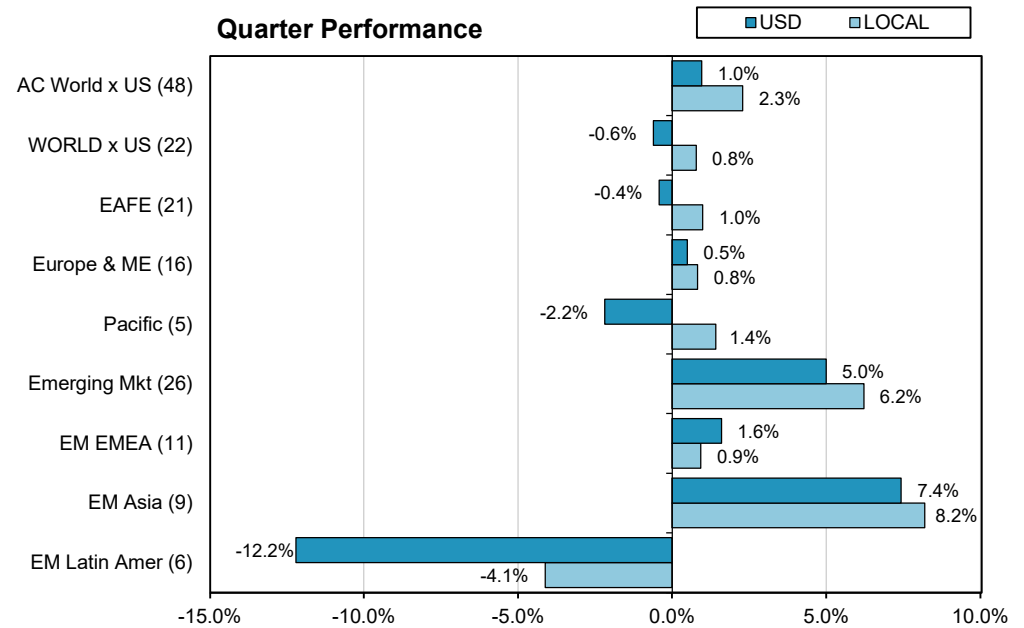
Bottom 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Ginkgo Bioworks Holdings Inc	0.0%	-71.2%	-82.0%	Materials
Hertz Global Holdings Inc	0.0%	-54.9%	-80.8%	Industrials
10x Genomics Inc	0.0%	-48.2%	-65.2%	Health Care
DoubleVerify Holdings Inc	0.0%	-44.6%	-50.0%	Information Technology
UiPath Inc Class A	0.0%	-44.1%	-23.5%	Information Technology
Walgreens Boots Alliance Inc	0.0%	-43.5%	-54.6%	Consumer Staples
Fortrea Holdings Inc	0.0%	-41.9%	-31.4%	Health Care
Five Below Inc	0.0%	-39.9%	-44.6%	Consumer Discretionary
Leggett & Platt Inc	0.0%	-39.9%	-58.8%	Consumer Discretionary
Unity Software Inc Ordinary Shares	0.0%	-39.1%	-62.6%	Information Technology

Bottom 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Aerovate Therapeutics Inc	0.0%	-94.4%	-90.3%	Health Care
Marinus Pharmaceuticals Inc	0.0%	-87.1%	-89.2%	Health Care
Cerence Inc Ordinary Shares	0.0%	-82.0%	-90.3%	Information Technology
Velo3D Inc	0.0%	-79.2%	-95.6%	Industrials
Akoustis Technologies Inc	0.0%	-77.7%	-95.9%	Information Technology
Gritstone Bio Inc	0.0%	-76.0%	-68.3%	Health Care
Ovid Therapeutics Inc	0.0%	-74.8%	-76.5%	Health Care
Maxon Solar Technologies Ltd	0.0%	-74.4%	-97.0%	Information Technology
Zentalis Pharmaceuticals Inc	0.0%	-74.0%	-85.5%	Health Care
Nikola Corp	0.0%	-73.8%	-80.2%	Industrials

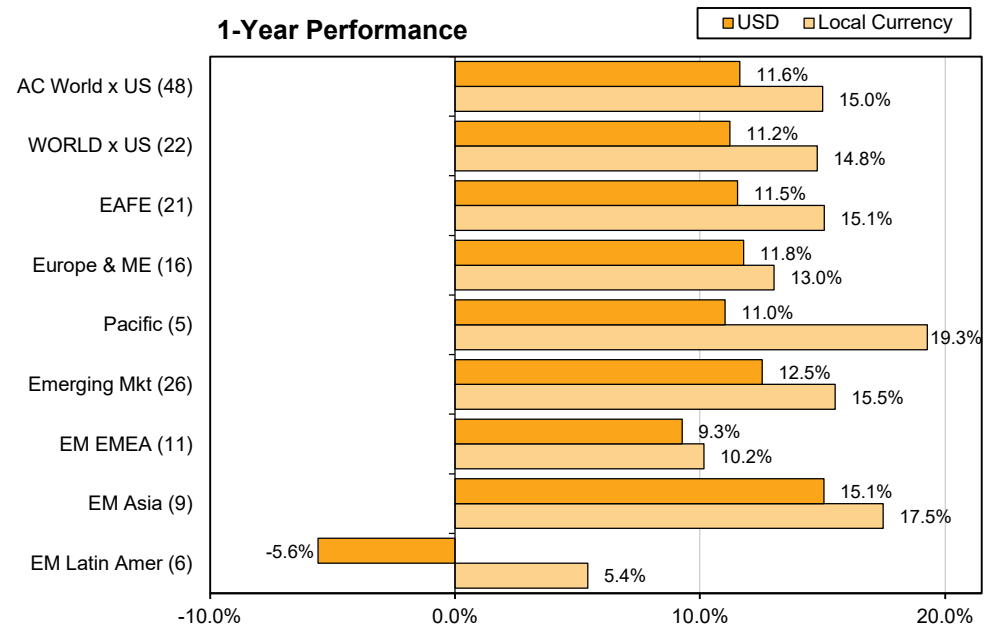
Source: Morningstar Direct

- Results among the broad international equity indexes were mixed during the quarter, echoing the performance of major domestic indexes. The strengthening USD relative to many major currencies during the quarter was a detractor to the USD performance of regional benchmark returns across most regions. The developed-market MSCI EAFE Index returned a muted 1.0% in LCL terms but fell -0.4% in USD terms. The MSCI Emerging Markets Index was the best-performing broad index and rose by 5.0% in USD and 6.2% in LCL terms for the quarter.
- Latin America continued to struggle during the quarter in both USD and LCL terms. The cyclical demand for commodity exports in the region has resulted in greater volatility due to ongoing uncertainty over central bank policies and future global demand.
- The heaviest-weighted country in the emerging market index (China) rebounded 7.1% during the quarter. The Chinese economy grew at a rate of 5.2% in 2023, lower than its pre-pandemic rate of 6.0% and has been a headwind for performance. Troubles in the commercial property and banking sectors have also created challenges for growth in the region. Despite the additive performance in the region, the Chinese banking sector underwent heavy consolidation during the second quarter amid regional bank failures across the country.
- Much like domestic markets, trailing one-year results for international developed and emerging markets benchmarks were strong. Higher LCL versus USD returns for most international benchmarks demonstrate the USD's strength over the trailing one-year period.
- Most broad and regional indexes were positive for the trailing 12 months in both USD and LCL terms. The sole exception was EM Latin America, where USD strength turned the region's positive LCL performance negative in USD terms. In LCL terms, the MSCI Pacific Index led the way with a return of 19.3% for the trailing year. USD returns for the region were still strong but returned a more muted 11.0%. The EM Asia regional index posted the strongest relative USD performance, returning 15.1% over the trailing 12 months.

Quarter Performance



1-Year Performance



Source: MSCI Global Index Monitor (Returns are Net)

The Market Environment
US Dollar International Index Attribution & Country Detail
As of June 30, 2024

MSCI - EAFE	Sector Weight	Quarter Return	1-Year Return
Communication Services	4.1%	0.5%	10.1%
Consumer Discretionary	11.5%	-9.0%	0.1%
Consumer Staples	8.5%	-1.6%	-6.8%
Energy	4.1%	1.3%	15.9%
Financials	20.0%	3.3%	24.2%
Health Care	13.5%	4.7%	11.5%
Industrials	16.9%	-0.8%	15.0%
Information Technology	9.5%	0.2%	24.1%
Materials	6.7%	-3.2%	8.5%
Real Estate	2.0%	-6.7%	7.6%
Utilities	3.1%	0.8%	-0.6%
Total	100.0%	-0.4%	11.5%

MSCI - ACWixUS	Sector Weight	Quarter Return	1-Year Return
Communication Services	5.3%	4.0%	5.7%
Consumer Discretionary	11.1%	-4.8%	1.9%
Consumer Staples	7.2%	-1.7%	-5.9%
Energy	5.5%	1.3%	18.9%
Financials	21.7%	2.6%	18.7%
Health Care	9.5%	3.8%	10.0%
Industrials	13.7%	-0.5%	13.1%
Information Technology	14.0%	5.2%	28.3%
Materials	7.1%	-1.9%	5.1%
Real Estate	1.8%	-4.7%	4.5%
Utilities	3.1%	2.2%	3.7%
Total	100.0%	1.0%	11.6%

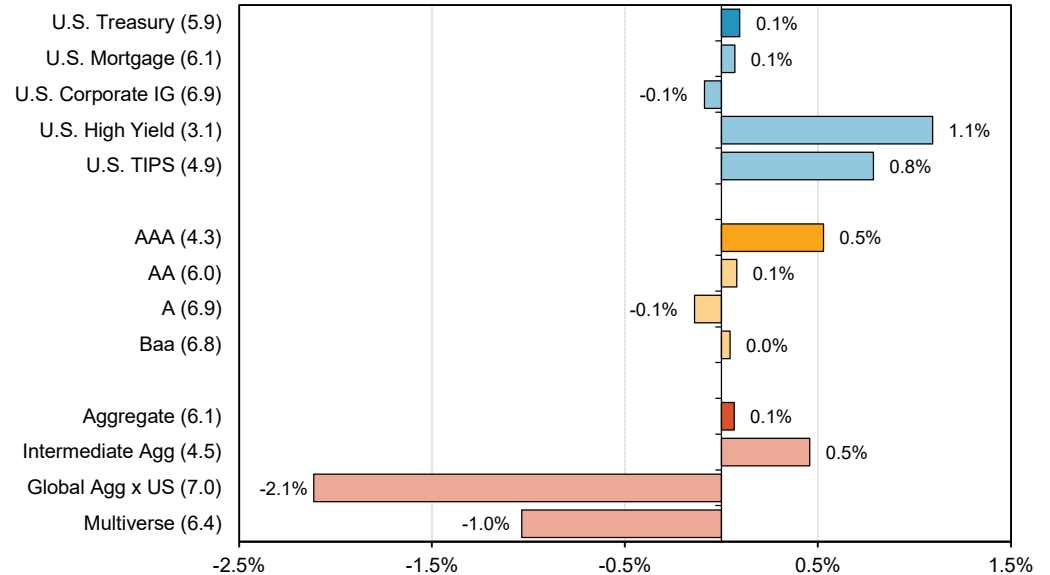
MSCI - Emerging Mkt	Sector Weight	Quarter Return	1-Year Return
Communication Services	8.9%	8.2%	2.7%
Consumer Discretionary	12.3%	5.1%	6.3%
Consumer Staples	5.2%	-3.0%	-5.7%
Energy	5.2%	3.3%	25.2%
Financials	21.9%	3.5%	12.6%
Health Care	3.2%	-4.3%	-2.8%
Industrials	6.9%	4.0%	6.9%
Information Technology	25.1%	11.3%	34.2%
Materials	6.9%	-1.8%	-3.1%
Real Estate	1.5%	2.8%	-4.1%
Utilities	3.0%	6.2%	20.3%
Total	100.0%	5.0%	12.5%

Country	MSCI-EAFE Weight	MSCI-ACWixUS Weight	Quarter Return	1-Year Return
Japan	22.7%	14.4%	-4.3%	13.2%
United Kingdom	14.9%	9.5%	3.7%	12.5%
France	11.2%	7.1%	-7.5%	0.5%
Switzerland	9.7%	6.2%	3.1%	6.1%
Germany	8.7%	5.5%	-1.4%	10.1%
Australia	7.5%	4.8%	1.6%	14.1%
Netherlands	5.4%	3.4%	5.0%	25.6%
Denmark	4.0%	2.5%	7.5%	42.1%
Sweden	3.2%	2.1%	2.2%	18.2%
Italy	2.7%	1.7%	-3.4%	21.3%
Spain	2.7%	1.7%	-1.6%	15.0%
Hong Kong	1.8%	1.1%	1.0%	-18.0%
Singapore	1.4%	0.9%	8.9%	13.5%
Finland	1.0%	0.6%	3.0%	1.7%
Belgium	1.0%	0.6%	0.9%	9.0%
Israel	0.7%	0.5%	-4.2%	23.6%
Norway	0.6%	0.4%	6.6%	14.2%
Ireland	0.3%	0.2%	-0.8%	12.5%
Portugal	0.2%	0.1%	8.5%	-6.4%
Austria	0.2%	0.1%	7.1%	17.9%
New Zealand	0.2%	0.1%	3.2%	3.7%
Total EAFE Countries	100.0%	63.6%	-0.4%	11.5%
Canada		7.4%	-2.1%	8.6%
Total Developed Countries		71.0%	-0.6%	11.2%
China		7.3%	7.1%	-1.6%
Taiwan		5.6%	15.1%	40.7%
India		5.6%	10.2%	34.4%
Korea		3.5%	-1.2%	8.1%
Brazil		1.2%	-12.2%	-7.7%
Saudi Arabia		1.1%	-7.4%	0.9%
South Africa		0.9%	12.3%	12.3%
Mexico		0.6%	-16.1%	-6.5%
Indonesia		0.5%	-12.4%	-11.8%
Malaysia		0.4%	4.4%	17.5%
Thailand		0.4%	-4.8%	-13.3%
United Arab Emirates		0.3%	-2.3%	0.8%
Poland		0.3%	6.1%	32.4%
Turkey		0.2%	21.4%	62.1%
Qatar		0.2%	-0.3%	0.7%
Kuwait		0.2%	-2.8%	2.2%
Philippines		0.1%	-10.7%	-3.1%
Greece		0.1%	-1.2%	9.6%
Chile		0.1%	-1.3%	-9.3%
Peru		0.1%	2.0%	40.0%
Hungary		0.1%	9.2%	29.0%
Czech Republic		0.0%	6.3%	3.5%
Colombia		0.0%	-4.6%	26.7%
Egypt		0.0%	-4.2%	-4.8%
Total Emerging Countries		29.0%	5.0%	12.5%
Total ACWixUS Countries		100.0%	1.0%	11.6%

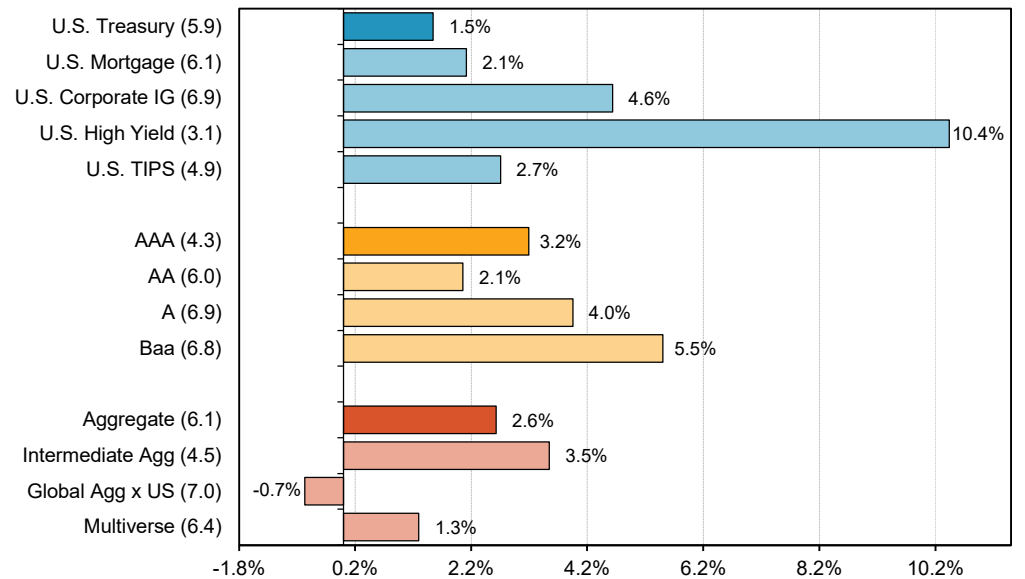
Source: Morningstar Direct, MSCI Global Index Monitor (Returns are Net in USD)
As a result of the GICS classification changes on 9/28/2018 and certain associated reporting limitations, sector performance represents backward looking performance for the prior year of each sector's current constituency, post creation of the Communication Services sector.

- Fixed-income markets fell in a relatively tight range for the quarter with many domestic sectors returning less than 0.5%. Yields remained at elevated levels as the Federal Reserve maintained its restrictive policy stance. If market expectations hold and the Fed begins to cut rates in 2024, to the extent any cuts lower yields across the curve, it will provide a jolt to bondholder performance since bond prices move in the opposite direction of yields.
- The Bloomberg US Aggregate Bond Index had a mixed quarter of performance made up of a large drawdown in April followed by smaller recoveries in May and June that combined for an index return of 0.1%. Performance across the investment-grade index's segments for the quarter was similarly muted with the Bloomberg US Corporate Investment Grade Index returning -0.1% and the US Mortgage Index gaining 0.1%.
- Outside of the Aggregate index's sub-components, high-yield bonds continued to rise, posting a return of 1.1%, boosted by the higher coupon income, and US TIPS climbed 0.8% for the quarter. The Bloomberg Global Aggregate ex-US Index returned -2.1% for the quarter with USD strength exerting downward pressure on performance. This global performance lagged domestic fixed-income indexes as well as the multiverse benchmark's return of -1.0%.
- Over the trailing one-year period, the Bloomberg US Aggregate Bond Index managed a 2.6% return. The benchmark's sub-components also posted positive performance over the trailing 12 months with the Bloomberg US Corporate Investment Grade Index rising 4.6% and the US Mortgage Index posting a more modest 2.1% return. US TIPS and high-yield corporate bonds, which are excluded from the aggregate index, each posted gains in the trailing year with returns of 2.7% and 10.4%, respectively. In addition to their higher coupons, high-yield bonds benefited from generally shorter duration than investment-grade corporate debt. This lower duration acted as a tailwind for high-yield bonds as interest rates rose during the trailing year.
- Among credit qualities, lower-quality bonds (both investment grade and non-investment grade) have outperformed higher-quality bonds due to both their higher yields, which contribute to higher interest payments, and narrowing credit spreads over the last year.
- Performance for non-US bonds was negative for the trailing year with the Bloomberg Global Aggregate ex-US Index falling -0.7%. With foreign central banks largely tracking the Fed's tight monetary stance, the negative performance of global bonds is largely attributable to USD strength over the last year.

Quarter Performance



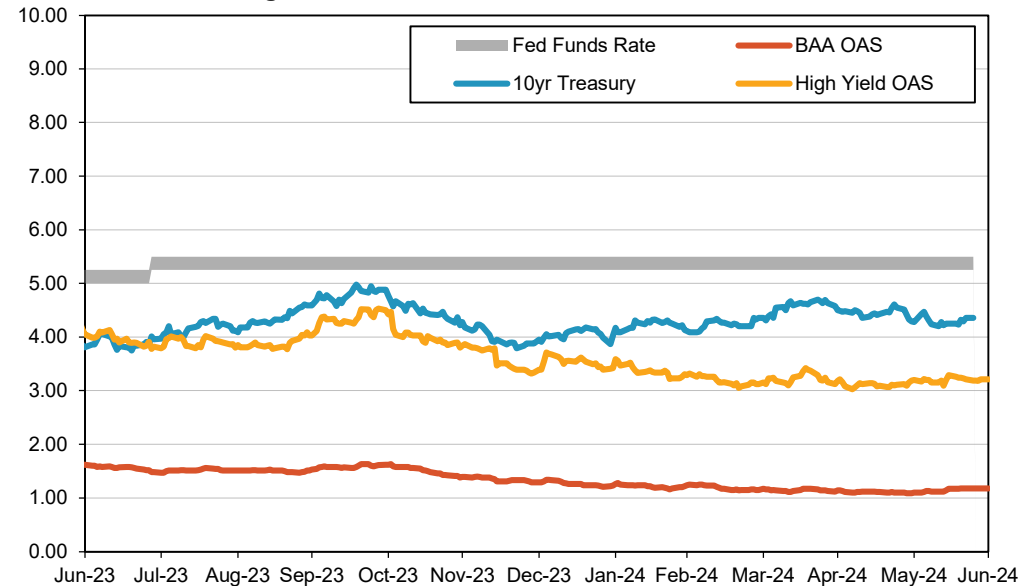
1-Year Performance



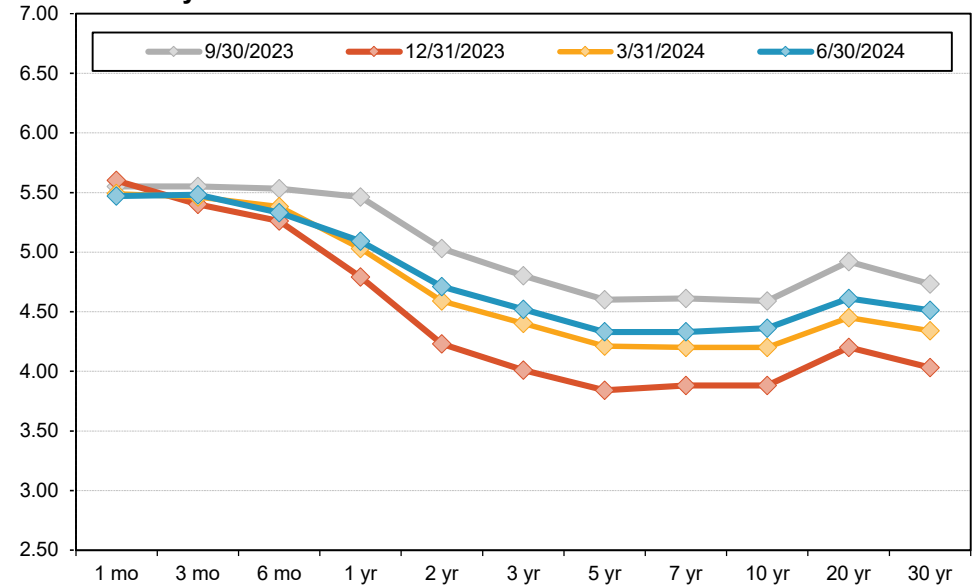
Source: Bloomberg

- The gray band across the graph illustrates the current fed funds target rate range over the last 12 months. During the second quarter, the Federal Open Market Committee (FOMC) continued to hold fed funds rates steady in the 5.25%-5.50% target range. The last rate increase in the current cycle occurred at the FOMC's July 2023 meeting. While the FOMC's press releases have continued to push economic data-dependent outcomes, the language used to describe economic conditions in these releases has also softened, resulting in market expectations that the next rate action by the FOMC will likely be a cut. The CME FedWatch tool, which forecasts rates based on Fed Fund futures pricing, currently shows a greater than 90% probability of a 0.25% rate decrease at the FOMC September meeting. Fed officials and market participants continue to express concern that leaving rates at their current levels for an extended period could tip the US economy into a recession. However, inflation remains above the FOMC's long-term 2.0% target level. Additionally, the FOMC continues to remove liquidity from the market by allowing bonds held on its balance sheet to mature without reinvesting principal payments.
- The yield on the US 10-year Treasury (blue line of the top chart) remained stable, opening the quarter at 4.33% and finishing June at a yield of 4.36%. The stability of the benchmark rate reflects the stability of the Federal Reserve's policy stance and the persistently high level of inflation throughout the economy. The 10-year Treasury benchmark's rate peaked in October 2023, cresting at a yield of just under 5.00% before pulling back in the remainder of the year.
- The red line in the top chart shows the Option Adjusted Spread (OAS) for BAA-rated corporate bonds. This measure quantifies the additional yield premium that investors require to purchase and hold non-US Treasury issues with the lowest investment grade rating. During the quarter, the yield spread was relatively unchanged, beginning the quarter at 1.18% and finishing June at 1.17%. The spread measure narrowed over the trailing 12-month period after concerns about the regional banking sector during March 2023 caused credit spreads to spike. High-yield OAS spreads (represented by the orange line in the top chart) have also remained relatively unchanged, rising by just 0.07%. The spread measures' stability results from steady economic growth, stable monetary policy, and falling inflation readings.
- The lower graph provides a snapshot of the US Treasury yield curve at the end of each of the last four quarters. The yield curve has been inverted for each of the last four quarter-end readings on the graph and for most of last two years. Historically, a persistent yield curve inversion has been a precursor of an economic recession within six to 24 months.

1-Year Trailing Market Rates



Treasury Yield Curve



Source: US Department of Treasury, FRED (Federal Reserve of St. Louis)

[CME FedWatch Tool - CME Group](#)

[Effective Federal Funds Rate - FEDERAL RESERVE BANK of NEW YORK \(newyorkfed.org\)](#)

[ICE BofA US High Yield Index Option-Adjusted Spread \(BAMLH0A0HYM2\) | FRED | St. Louis Fed \(stlouisfed.org\)](#)

[When will the Federal Reserve start cutting interest rates? | J.P. Morgan Asset Management \(jpmorgan.com\)](#)

[Resource Center | U.S. Department of the Treasury](#)

[China's Economy Limpes Into 2024 – WSJ](#)

[Support Site - Global Index Lens: Index Returns – MSCI](#)

[Federal Reserve issues FOMC statement](#)

[Transcript of Chair Powell's Press Conference -- June 12, 2024 \(federalreserve.gov\)](#)

[U.S. Treasurys: investors look to inflation data due in week ahead \(cnbc.com\)](#)

[Yen drops to 38-year low, U.S. dollar slumps after weak data \(cnbc.com\)](#)

[Jobs report June 2024: \(cnbc.com\)](#)

[The Fed - June 12, 2024: FOMC Projections materials, accessible version \(federalreserve.gov\)](#)

[The Federal Reserve's latest dot plot, explained – and what it says about interest rates | Bankrate](#)

[Top 25 Stocks in the S&P 500 By Index Weight for July 2024 \(investopedia.com\)](#)

[Will Small-Cap Stocks Ever Catch Up? | Morningstar](#)

[Why Chinese banks are now vanishing \(economist.com\)](#)

- **The Fund's 2nd quarter return was 0.67% and its year-to-date return was 4.96%. As of 6-30-2024, the total Fund had an annualized 7-year return of 7.08%.**

- **The Fund's total equity weighting at 6-30-2024 was 53.7% versus its target equity weighting of 50%. Risk assets including public equities, private equity/debt, and private real estate as a percentage of the total Fund was 70.8%.**

- **In April, Bentall GreenOak US Core Plus Real Estate called \$4,222,221 with funding coming from the Vanguard S&P 500 Index fund (\$2,222,221) and the DFA Large Cap Value Fund (\$2,000,000). With this latest capital call, the County's \$12M capital commitment is fully funded.**

- **In April, the Adams Street Co-Investment Fund V issued a capital call in the amount of \$750,000 with funding coming from the Vanguard Russell 1000 Growth Index fund.**

- **During the 2nd quarter, the total Fund received five private equity distributions from the Portfolio Advisors Co-Investment Fund III (\$118,926), the Ironsides Direct Investment Fund V (\$269,145.95 & 89,111.37), the Ironsides Opportunities Fund (\$28,101.98), and the Hamilton Lane Secondary Fund VI (\$9,225). All five distributions totaling \$514,510.30 were received in the Cash Disbursement account.**

Wednesday, February 21, 2024 @ 12:00 pm

Hamilton Lane Private Equity

Adams Street Partners Private Equity

DFA Large Cap and International Equity

Review of Investment Policy Statement (Every February)

Wednesday, May 15, 2024 @ 12:00 pm

Stoneridge Investment Partners

Boyd Watterson Fixed Income

Boyd Watterson GSA Real Estate

Allspring Global Small Cap Value Equity

Review of Brokerage (Every May)

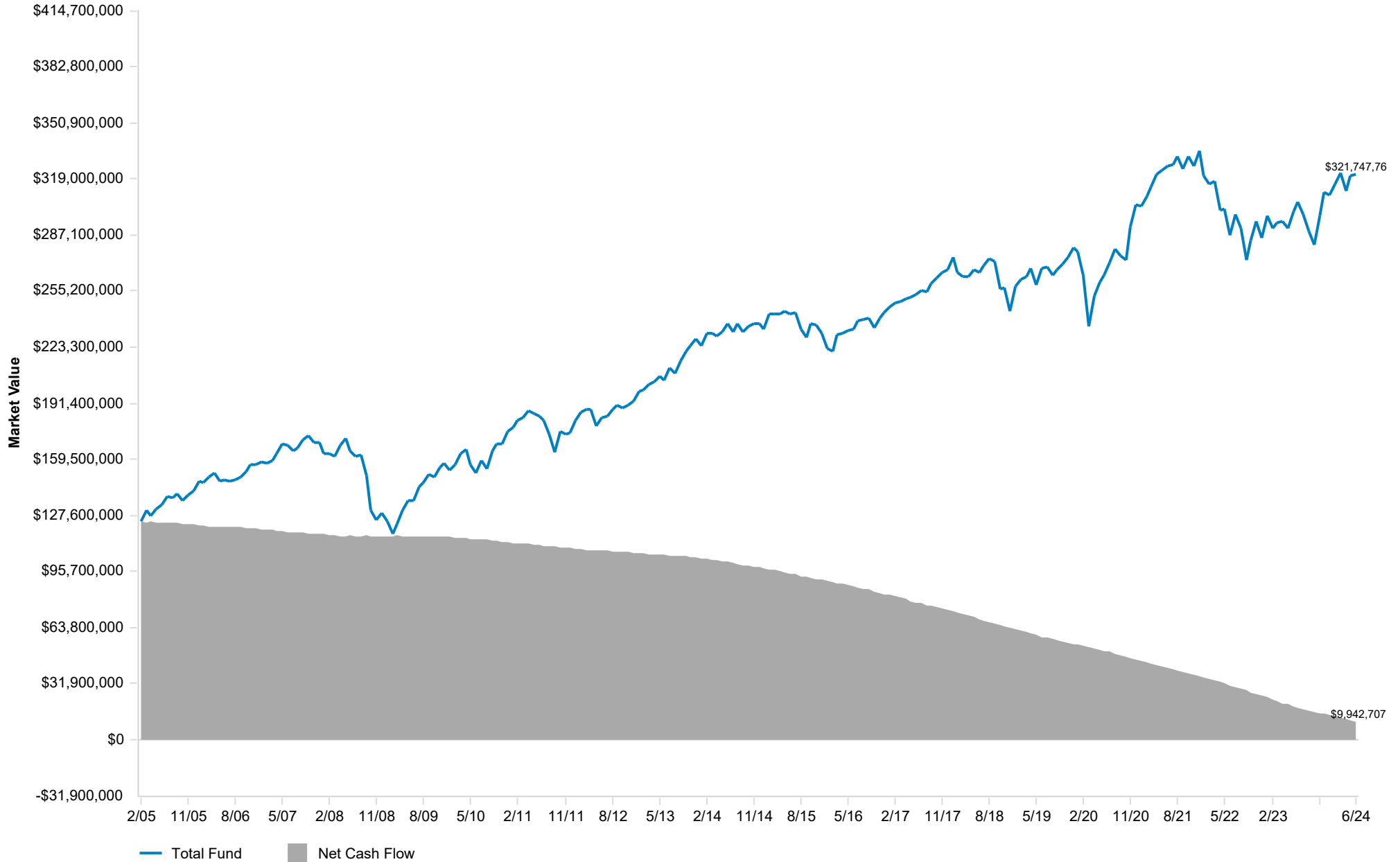
Wednesday, August 21, 2024 @ 12:00 pm

Vanguard Large Cap and Fixed Income
American Funds Europacific Growth Fund
Constitution Capital Partners Private Equity

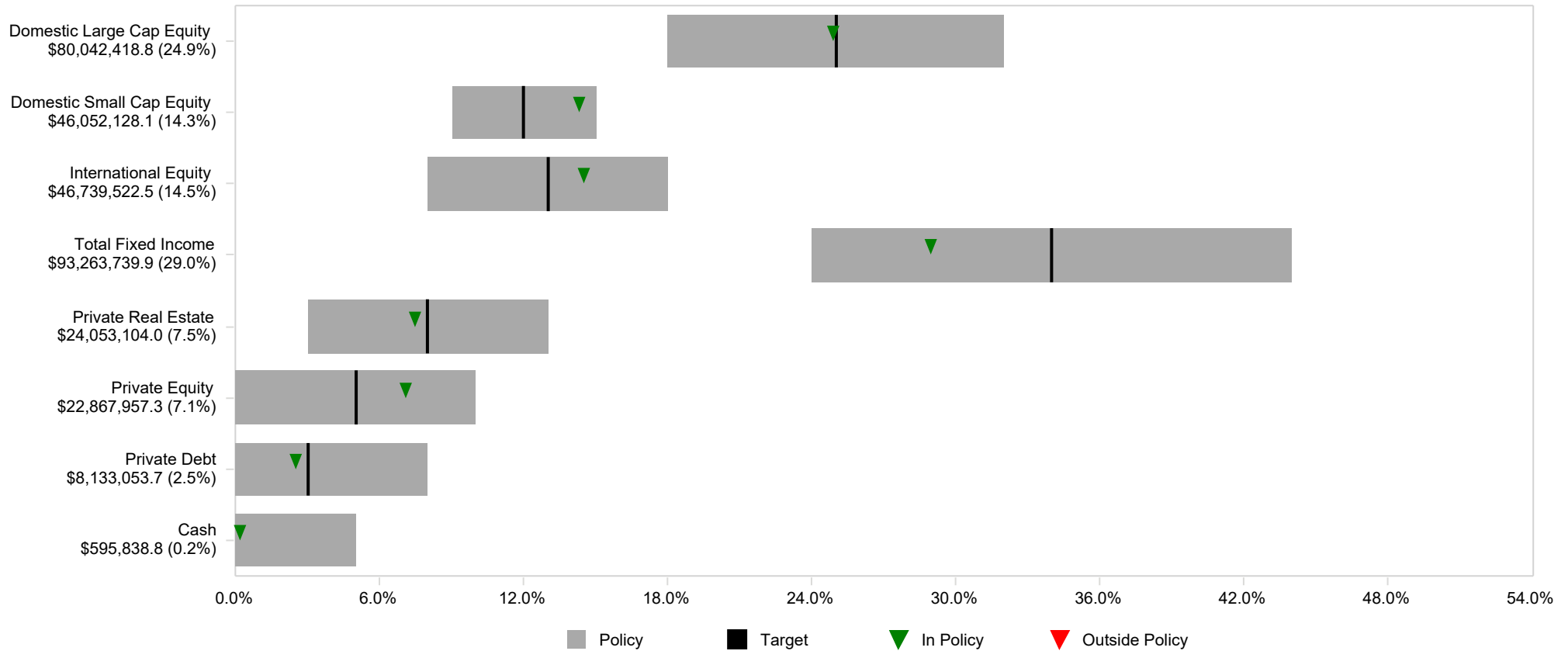
Wednesday, November 20, 2024 @ 12:00 pm

PNC Fixed Income and Custody
Emerald Advisors Small Cap Growth Equity
Portfolio Advisors Private Equity

Schedule of Investable Assets



Executive Summary



Asset Allocation Compliance

	Asset Allocation \$	Current Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Allocation (%)
Total Fund	321,747,763	100.0	N/A	N/A	100.0
Domestic Large Cap Equity	80,042,419	24.9	18.0	32.0	25.0
Domestic Small Cap Equity	46,052,128	14.3	9.0	15.0	12.0
International Equity	46,739,522	14.5	8.0	18.0	13.0
Total Fixed Income	93,263,740	29.0	24.0	44.0	34.0
Private Real Estate	24,053,104	7.5	3.0	13.0	8.0
Private Equity	22,867,957	7.1	0.0	10.0	5.0
Private Debt	8,133,054	2.5	0.0	8.0	3.0
Cash	595,839	0.2	0.0	5.0	0.0

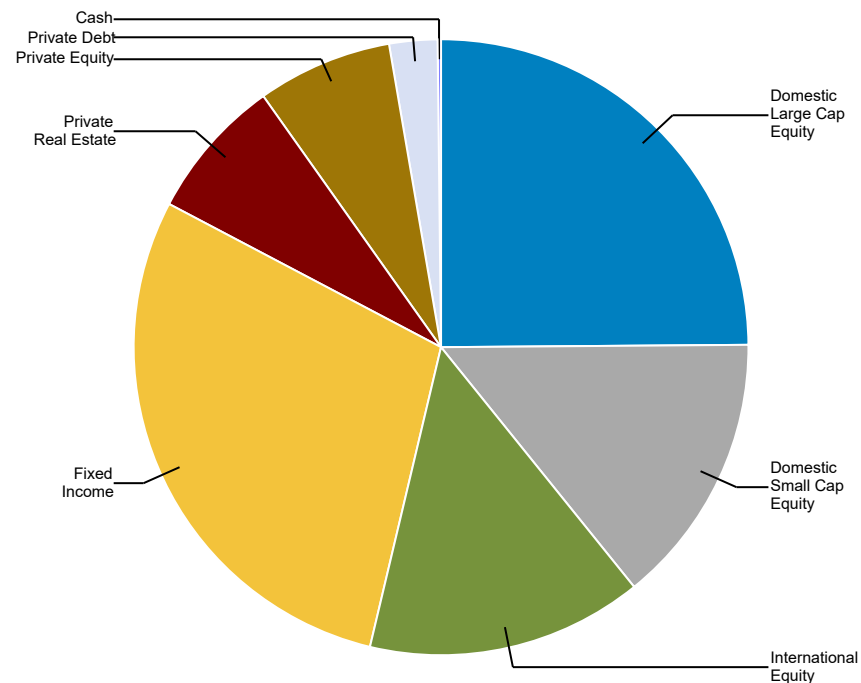
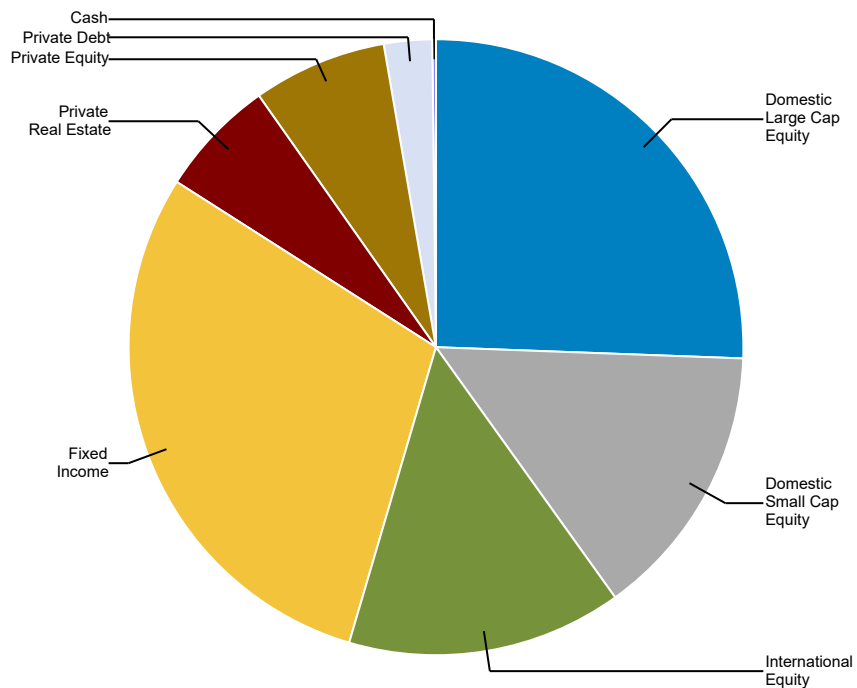
Asset Allocation By Asset Class

Total Fund

As of June 30, 2024

Mar-2024 : \$322,141,325

Jun-2024 : \$321,747,763



Allocation

	Market Value	Allocation
■ Domestic Large Cap Equity	82,391,899	25.6
■ Domestic Small Cap Equity	46,765,791	14.5
■ International Equity	46,608,669	14.5
■ Total Fixed Income	94,911,923	29.5
■ Private Real Estate	19,955,421	6.2
■ Private Equity	22,717,478	7.1
■ Private Debt	8,161,156	2.5
■ Cash	628,988	0.2

Allocation

	Market Value	Allocation
■ Domestic Large Cap Equity	80,042,419	24.9
■ Domestic Small Cap Equity	46,052,128	14.3
■ International Equity	46,739,522	14.5
■ Total Fixed Income	93,263,740	29.0
■ Private Real Estate	24,053,104	7.5
■ Private Equity	22,867,957	7.1
■ Private Debt	8,133,054	2.5
■ Cash	595,839	0.2

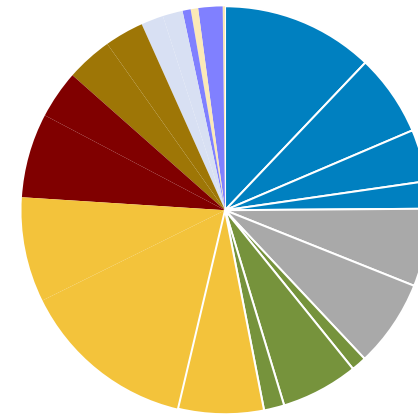
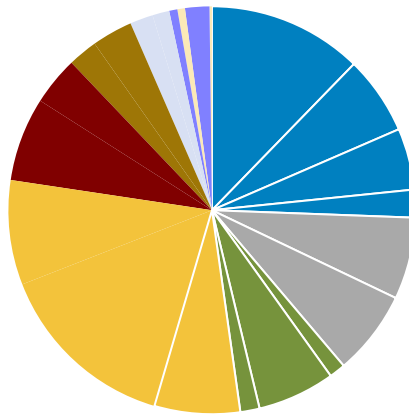
Asset Allocation by Asset Class

Total Fund

As of June 30, 2024

Mar-2024 : \$322,141,325

Jun-2024 : \$321,747,763



Allocation			Allocation		
	Market Value	Allocation		Market Value	Allocation
■ Vanguard S&P 500 Index Fund (VINIX)	39,549,799	12.3	■ Vanguard S&P 500 Index Fund (VINIX)	38,918,790	12.1
■ Vanguard Russell 1000 Growth Index (VRGWX)	20,042,915	6.2	■ Vanguard Russell 1000 Growth Index (VRGWX)	20,890,000	6.5
■ DFA Large Value Equity (DFLVX)	15,702,007	4.9	■ DFA Large Value Equity (DFLVX)	13,290,672	4.1
■ Vanguard Russell 1000 Value Index (VRVIX)	7,097,178	2.2	■ Vanguard Russell 1000 Value Index (VRVIX)	6,942,957	2.2
■ Vesper Capital Mgmt (UTRN)	-	0.0	■ Vesper Capital Mgmt (UTRN)	-	0.0
■ Allspring Global Small Value Eq.	20,949,986	6.5	■ Allspring Global Small Value Eq.	19,823,855	6.2
■ Emerald Small Growth Equity	21,674,420	6.7	■ Emerald Small Growth Equity	22,354,069	6.9
■ StoneRidge Small Growth Equity	4,141,385	1.3	■ StoneRidge Small Growth Equity	3,874,204	1.2
■ DFA International Equity (DFIEX)	19,802,574	6.1	■ DFA International Equity (DFIEX)	19,710,343	6.1
■ DFA Emerging Markets (DFCEX)	4,926,340	1.5	■ DFA Emerging Markets (DFCEX)	5,200,803	1.6
■ EuroPacific Growth Fund (RERGX)	21,879,755	6.8	■ EuroPacific Growth Fund (RERGX)	21,828,376	6.8
■ Boyd Watterson Fixed	46,786,229	14.5	■ Boyd Watterson Fixed	45,012,020	14.0
■ PNC Fixed	26,695,723	8.3	■ PNC Fixed	26,754,458	8.3
■ Vanguard Core Bond Fund (VCOBX)	21,429,971	6.7	■ Vanguard Core Bond Fund (VCOBX)	21,497,261	6.7
■ Boyd Watterson GSA Fund	12,390,002	3.8	■ Boyd Watterson GSA Fund	12,265,464	3.8
■ Bentall GreenOak US Core Plus RE	7,565,419	2.3	■ Bentall GreenOak US Core Plus RE	11,787,640	3.7
■ Ironsides Direct Investment Fund V	10,370,056	3.2	■ Ironsides Direct Investment Fund V	9,984,110	3.1
■ PA Co-Investment Fund III	5,938,418	1.8	■ PA Co-Investment Fund III	5,734,068	1.8
■ Adams Street Co-Investment Fund V	4,327,391	1.3	■ Adams Street Co-Investment Fund V	5,077,391	1.6
■ Hamilton Lane Secondary Fund VI	2,081,613	0.6	■ Hamilton Lane Secondary Fund VI	2,072,388	0.6
■ Ironsides Opportunities Fund	1,950,770	0.6	■ Ironsides Opportunities Fund	1,922,668	0.6
■ PA Credit Strategies Fund	6,210,386	1.9	■ PA Credit Strategies Fund	6,210,386	1.9
■ Cash Account	628,988	0.2	■ Cash Account	595,839	0.2

Financial Reconciliation
Total Fund
1 Quarter Ending June 30, 2024

Financial Reconciliation								
	Market Value 04/01/2024	Net Transfers	Contributions	Distributions	Management Fees	Other Expenses	Return On Investment	Market Value 06/30/2024
Total Fund	322,141,325	-	3,462,547	-5,723,937	-92,945	-93,811	2,054,584	321,747,763
Domestic Large Cap Equity	82,391,899	-4,972,221	-	-	-	-	2,622,740	80,042,419
Vanguard S&P 500 Index Fund (VINIX)	39,549,799	-2,222,221	-	-	-	-	1,591,212	38,918,790
Vanguard Russell 1000 Growth Index (VRGWX)	20,042,915	-750,000	-	-	-	-	1,597,085	20,890,000
DFA Large Value Equity (DFLVX)	15,702,007	-2,000,000	-	-	-	-	-411,335	13,290,672
Vanguard Russell 1000 Value Index (VRVIX)	7,097,178	-	-	-	-	-	-154,221	6,942,957
Domestic Small Cap Equity	46,765,791	-	-	-	-	-	-713,663	46,052,128
Allspring Global Small Value Eq.	20,949,986	-	-	-	-	-	-1,126,131	19,823,855
Emerald Small Growth Equity	21,674,420	-	-	-	-	-	679,649	22,354,069
StoneRidge Small Growth Equity	4,141,385	-	-	-	-	-	-267,181	3,874,204
International Equity	46,608,669	-	-	-	-	-	130,854	46,739,522
DFA International Equity (DFIEX)	19,802,574	-	-	-	-	-	-92,231	19,710,343
DFA Emerging Markets (DFCEX)	4,926,340	-	-	-	-	-	274,463	5,200,803
EuroPacific Growth Fund (RERGX)	21,879,755	-	-	-	-	-	-51,379	21,828,376
Total Fixed Income	94,911,923	-1,850,000	-	-	-	-	201,817	93,263,740
Boyd Watterson Fixed	46,786,229	-1,850,000	-	-	-	-	75,792	45,012,020
PNC Fixed	26,695,723	-	-	-	-	-	58,735	26,754,458
Vanguard Core Bond Fund (VCOBX)	21,429,971	-	-	-	-	-	67,290	21,497,261
Private Real Estate	19,955,421	4,222,221	-	-	-	-	-124,538	24,053,104
Boyd Watterson GSA Fund	12,390,002	-	-	-	-	-	-124,538	12,265,464
Bentall GreenOak US Core Plus RE	7,565,419	4,222,221	-	-	-	-	-	11,787,640
Private Equity	22,717,478	263,592	-	-	-15,000	-12,688	-85,424	22,867,957
Ironsides Direct Investment Fund V	10,370,056	-358,257	-	-	-15,000	-12,688	-	9,984,110
PA Co-Investment Fund III	5,938,418	-118,926	-	-	-	-	-85,424	5,734,068
Adams Street Co-Investment Fund V	4,327,391	750,000	-	-	-	-	-	5,077,391
Hamilton Lane Secondary Fund VI	2,081,613	-9,225	-	-	-	-	-	2,072,388
Private Debt	8,161,156	-28,102	-	-	-	-	-	8,133,054
Ironsides Opportunities Fund	1,950,770	-28,102	-	-	-	-	-	1,922,668
PA Credit Strategies Fund	6,210,386	-	-	-	-	-	-	6,210,386
Cash	628,988	2,364,510	3,462,547	-5,723,937	-77,945	-81,122	22,798	595,839
Cash Account	628,988	2,364,510	3,462,547	-5,723,937	-77,945	-81,122	22,798	595,839

Financial Reconciliation
Total Fund
Year To Date Ending June 30, 2024

Financial Reconciliation								
	Market Value 01/01/2024	Net Transfers	Contributions	Distributions	Management Fees	Other Expenses	Return On Investment	Market Value 06/30/2024
Total Fund	311,340,529	-	6,762,898	-11,165,330	-253,366	-207,664	15,270,696	321,747,763
Domestic Large Cap Equity	78,737,059	-9,340,123	-	-	-	-	10,645,483	80,042,419
Vanguard S&P 500 Index Fund (VINIX)	35,777,127	-2,222,221	-	-	-	-	5,363,884	38,918,790
Vanguard Russell 1000 Growth Index (VRGWX)	18,444,733	-1,247,570	-	-	-	-	3,692,837	20,890,000
DFA Large Value Equity (DFLVX)	14,122,557	-2,000,000	-	-	-	-	1,168,114	13,290,672
Vanguard Russell 1000 Value Index (VRVIX)	6,512,656	-	-	-	-	-	430,301	6,942,957
Vesper Capital Mgmt (UTRN)	3,879,986	-3,870,332	-	-	-	-	-9,654	-
Domestic Small Cap Equity	40,034,711	4,000,000	-	-	-	-	2,017,417	46,052,128
Allspring Global Small Value Eq.	19,521,885	-	-	-	-	-	301,970	19,823,855
Emerald Small Growth Equity	20,512,826	-	-	-	-	-	1,841,243	22,354,069
StoneRidge Small Growth Equity	-	4,000,000	-	-	-	-	-125,796	3,874,204
International Equity	44,095,951	-	-	-	-	-	2,643,572	46,739,522
DFA International Equity (DFIEX)	18,919,814	-	-	-	-	-	790,529	19,710,343
DFA Emerging Markets (DFCEX)	4,811,621	-	-	-	-	-	389,182	5,200,803
EuroPacific Growth Fund (RERGX)	20,364,516	-	-	-	-	-	1,463,860	21,828,376
Total Fixed Income	96,677,135	-3,200,000	-	-	-	-	-213,395	93,263,740
Boyd Watterson Fixed	48,261,523	-3,200,000	-	-	-	-	-49,502	45,012,020
PNC Fixed	26,853,814	-	-	-	-	-	-99,355	26,754,458
Vanguard Core Bond Fund (VCOBX)	21,561,798	-	-	-	-	-	-64,537	21,497,261
Private Real Estate	20,294,189	4,222,221	-	-	-18,909	-	-444,397	24,053,104
Boyd Watterson GSA Fund	12,622,014	-	-	-	-	-	-356,550	12,265,464
Bentall GreenOak US Core Plus RE	7,672,175	4,222,221	-	-	-18,909	-	-87,847	11,787,640
Private Equity	22,284,046	123,665	-	-	-45,000	-63,441	568,686	22,867,957
Ironsides Direct Investment Fund V	10,667,449	-884,068	-	-	-45,000	-63,441	309,169	9,984,110
PA Co-Investment Fund III	5,885,752	-223,522	-	-	-	-	71,838	5,734,068
Adams Street Co-Investment Fund V	4,108,837	750,000	-	-	-	-	218,554	5,077,391
Hamilton Lane Secondary Fund VI	1,622,008	481,255	-	-	-	-	-30,875	2,072,388
Private Debt	8,202,416	-68,631	-	-	-5,830	-5,894	10,993	8,133,054
Ironsides Opportunities Fund	1,989,880	-68,631	-	-	-5,830	-5,894	13,143	1,922,668
PA Credit Strategies Fund	6,212,536	-	-	-	-	-	-2,150	6,210,386
Cash	1,015,022	4,262,868	6,762,898	-11,165,330	-183,627	-138,329	42,338	595,839
Cash Account	1,015,022	4,262,868	6,762,898	-11,165,330	-183,627	-138,329	42,338	595,839

Asset Allocation & Performance	Allocation		Performance(%)								
	Market Value \$	%	QTR	YTD	1 YR	3 YR	5 YR	7 YR	Inception	Inception Date	
Total Fund (Gross)	321,747,763	100.0	0.64 (71)	4.93 (77)	10.33 (69)	2.95 (46)	7.14 (59)	7.07 (63)	7.00 (21)	Jan-1998	
Total Fund Policy Index			0.10	3.88	9.51	1.92	6.35	6.32	6.27		
All Public DB Plans Median			1.03	6.04	11.47	2.80	7.34	7.35	6.42		
Total Fund (Net)	321,747,763	100.0	0.62	4.85	10.16	2.77	6.92	6.80	-	Oct-2003	
Total Fund Policy Index			0.10	3.88	9.51	1.92	6.35	6.32	6.79		
Total Equity	172,834,069	53.7	1.20	9.45	17.21	-	-	-	6.71	Apr-2022	
Domestic Large Cap Equity	80,042,419	24.9	3.41	14.43	23.49	-	-	-	9.39	Apr-2022	
Vanguard S&P 500 Index Fund (VINIX)	38,918,790	12.1	4.28 (10)	15.27 (8)	24.51 (15)	9.97 (10)	15.01 (9)	14.25 (6)	13.84 (3)	Jul-2013	
S&P 500 Index			4.28	15.29	24.56	10.01	15.05	14.28	13.88		
IM S&P 500 Index (MF) Median			4.20	15.11	24.22	9.69	14.71	13.94	13.48		
Vanguard Russell 1000 Growth Index (VRGWX)	20,890,000	6.5	8.31 (21)	20.65 (44)	33.45 (43)	11.23 (8)	19.27 (9)	18.58 (9)	17.18 (10)	Jul-2013	
Russell 1000 Growth Index			8.33	20.70	33.48	11.28	19.34	18.64	17.25		
IM U.S. Large Cap Growth Equity (MF) Median			6.74	20.13	32.48	7.85	16.11	16.13	15.40		
DFA Large Value Equity (DFLVX)	13,290,672	4.1	-2.96 (89)	7.89 (52)	16.03 (49)	6.34 (65)	9.64 (66)	8.75 (72)	7.86 (45)	May-2006	
Russell 1000 Value Index			-2.17	6.62	13.06	5.52	9.01	8.61	7.41		
IM U.S. Large Cap Value Equity (MF) Median			-1.19	7.98	15.85	7.01	10.19	9.63	7.57		
Vanguard Russell 1000 Value Index (VRVIX)	6,942,957	2.2	-2.17 (74)	6.61 (70)	13.02 (71)	5.46 (79)	-	-	8.35 (79)	Mar-2021	
Russell 1000 Value Index			-2.17	6.62	13.06	5.52	-	-	8.41		
IM U.S. Large Cap Value Equity (MF) Median			-1.19	7.98	15.85	7.01	-	-	10.05		
Domestic Small Cap Equity	46,052,128	14.3	-1.53	4.35	12.17	-	-	-	4.09	Apr-2022	
Allspring Global Small Value Eq.	19,823,855	6.2	-5.38 (87)	1.55 (48)	11.78 (57)	4.00 (50)	9.35 (69)	8.47 (44)	9.33 (41)	Dec-2004	
Russell 2000 Value Index			-3.64	-0.85	10.90	-0.53	7.07	5.89	6.83		
IM U.S. Small Cap Value Equity (SA+CF+MF) Median			-3.53	1.20	12.75	3.89	10.07	8.21	9.12		
Emerald Small Growth Equity	22,354,069	6.9	3.14 (4)	8.98 (22)	14.58 (24)	-0.65 (36)	8.72 (41)	10.14 (55)	10.99 (62)	Oct-1998	
Russell 2000 Growth Index			-2.92	4.44	9.14	-4.86	6.17	7.28	7.61		
IM U.S. Small Cap Growth Equity (SA+CF+MF) Median			-2.29	5.68	10.60	-2.43	8.06	10.48	11.54		
StoneRidge Small Growth Equity	3,874,204	1.2	-6.45 (95)	-	-	-	-	-	-1.08 (94)	Feb-2024	
Russell 2000 Growth Index			-2.92	-	-	-	-	-	7.90		
IM U.S. Small Cap Growth Equity (SA+CF+MF) Median			-2.29	-	-	-	-	-	7.52		

See the disclosure page at the end of the report.

	Allocation		Performance(%)								Inception Date
	Market Value \$	%	QTR	YTD	1 YR	3 YR	5 YR	7 YR	Inception		
International Equity	46,739,522	14.5	0.28	6.00	11.56	-	-	-	4.42	Apr-2022	
DFA International Equity (DFIEX)	19,710,343	6.1	-0.47 (73)	4.18 (74)	11.54 (40)	2.56 (37)	6.99 (19)	-	4.48 (40)	Dec-2017	
MSCI EAFE Value Index (Net)			0.01	4.49	13.75	5.55	6.07	-	3.73		
IM International Multi-Cap Core Equity (MF) Median			-0.01	5.33	11.15	1.66	6.00	-	4.25		
DFA Emerging Markets (DFCEX)	5,200,803	1.6	5.57 (27)	8.09 (40)	14.82 (26)	-0.46 (16)	5.90 (21)	-	3.85 (-)	Dec-2017	
MSCI Emerging Markets (Net) Index			5.00	7.49	12.55	-5.07	3.10	-	2.01		
IM Emerging Markets Equity (SA+CF+MF) Median			4.18	6.92	10.88	-6.07	2.93	-	-		
EuroPacific Growth Fund (RERGX)	21,828,376	6.8	-0.23 (55)	7.19 (40)	10.82 (40)	-2.46 (70)	6.05 (57)	5.92 (51)	6.55 (37)	Nov-2015	
MSCI AC World ex USA Growth (Net)			0.72	6.68	9.88	-2.62	5.49	5.69	6.24		
IM International Large Cap Growth Equity (MF) Median			-0.11	6.62	10.16	0.20	6.24	5.95	6.14		
Total Fixed Income	93,263,740	29.0	0.24	-0.19	3.11	-	-	-	0.42	Apr-2022	
Boyd Watterson Fixed	45,012,020	14.0	0.21 (71)	-0.03 (52)	3.03 (77)	-1.32 (17)	0.93 (31)	1.75 (39)	3.97 (81)	Oct-1998	
Boyd Watterson Fixed Policy			0.07	-0.71	2.63	-1.48	0.52	1.25	-		
IM U.S. Broad Market Fixed Income (SA+CF) Median			0.32	0.00	3.69	-2.50	0.58	1.58	4.34		
PNC Fixed	26,754,458	8.3	0.22 (69)	-0.37 (74)	3.05 (75)	-1.58 (19)	0.73 (43)	1.45 (61)	2.80 (94)	Jul-2008	
PNC Fixed Policy			0.07	-0.71	2.63	-1.48	0.52	1.25	2.51		
IM U.S. Broad Market Fixed Income (SA+CF) Median			0.32	0.00	3.69	-2.50	0.58	1.58	3.63		
Vanguard Core Bond Fund (VCOBX)	21,497,261	6.7	0.31 (57)	-0.30 (71)	3.41 (64)	-	-	-	1.65 (68)	Feb-2023	
Blmbg. U.S. Aggregate Index			0.07	-0.71	2.63	-	-	-	1.16		
IM U.S. Broad Market Core Fixed Income (MF) Median			0.37	-0.04	3.75	-	-	-	2.03		
Total Alternatives	55,054,115	17.1									
Private Real Estate	24,053,104	7.5	-0.52	-2.08	-4.26	-	-	-	-0.83	Apr-2022	
Boyd Watterson GSA Fund	12,265,464	3.8	-1.01 (72)	-2.82 (53)	-5.77 (22)	0.30 (83)	3.53 (38)	5.21 (26)	6.09 (-)	Feb-2016	
NCREIF Property Index			-0.26	-1.24	-5.53	2.33	3.39	4.37	4.97		
IM U.S. Private Real Estate (SA+CF) Median			-0.72	-2.55	-8.39	1.47	3.21	4.70	-		
Bentall GreenOak US Core Plus RE	11,787,640	3.7	0.00 (24)	-1.15 (25)	-1.82 (12)	-	-	-	-0.90 (-)	Nov-2022	
NCREIF Property Index			-0.26	-1.24	-5.53	-	-	-	-7.55		
IM U.S. Private Real Estate (SA+CF) Median			-0.72	-2.55	-8.39	-	-	-	-		

See the disclosure page at the end of the report.

	Allocation		Performance(%)							
	Market Value \$	%	QTR	YTD	1 YR	3 YR	5 YR	7 YR	Inception	Inception Date
Private Equity	22,867,957	7.1								
Ironsides Direct Investment Fund V	9,984,110	3.1								
PA Co-Investment Fund III	5,734,068	1.8								
Adams Street Co-Investment Fund V	5,077,391	1.6								
Hamilton Lane Secondary Fund VI	2,072,388	0.6								
Private Debt	8,133,054	2.5								
Ironsides Opportunities Fund	1,922,668	0.6								
PA Credit Strategies Fund	6,210,386	1.9								
Cash	595,839	0.2								
Cash Account	595,839	0.2								

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Comparative Performance

Total Fund

As of June 30, 2024

Comparative Performance																				
	2023		2022		2021		2020		2019		2018		2017		2016		2015		2014	
Total Fund (Gross)	13.15	(53)	-11.59	(23)	13.31	(61)	12.18	(60)	18.55	(66)	-5.13	(69)	14.12	(71)	8.40	(21)	0.36	(34)	6.45	(45)
Total Fund Policy Index	13.02		-12.15		11.61		12.26		17.45		-3.89		10.71		8.86		1.22		7.13	
All Public DB Plans Median	13.28		-13.87		13.91		13.00		19.66		-4.42		15.14		7.14		-0.22		6.26	
Total Fund (Net)	12.97		-11.73		13.09		11.89		18.18		-5.52		13.72		7.99		-0.03		6.02	
Total Fund Policy Index	13.02		-12.15		11.61		12.26		17.45		-3.89		10.71		8.86		1.22		7.13	
Total Equity	20.76																			
Domestic Large Cap Equity	23.91																			
Vanguard S&P 500 Index Fund (VINIX)	26.24	(17)	-18.14	(12)	28.67	(7)	18.39	(13)	31.47	(4)	-4.42	(15)	21.80	(4)	11.93	(6)	1.34	(11)	13.65	(2)
S&P 500 Index	26.29		-18.11		28.71		18.40		31.49		-4.38		21.83		11.96		1.38		13.69	
IM S&P 500 Index (MF) Median	25.96		-18.36		28.25		18.05		31.08		-4.66		21.37		11.55		0.97		13.18	
Vanguard Russell 1000 Growth Index (VRGWX)	42.65	(37)	-29.17	(28)	27.52	(18)	38.38	(35)	36.30	(21)	-1.56	(55)	30.13	(40)	7.03	(10)	5.56	(51)	12.98	(25)
Russell 1000 Growth Index	42.68		-29.14		27.60		38.49		36.39		-1.51		30.21		7.08		5.67		13.05	
IM U.S. Large Cap Growth Equity (MF) Median	40.78		-31.30		22.39		35.62		33.26		-1.22		29.28		2.21		5.61		10.49	
DFA Large Value Equity (DFLVX)	11.47	(57)	-5.78	(48)	28.07	(22)	-0.60	(91)	25.49	(65)	-11.61	(87)	18.97	(25)	18.89	(9)	-3.49	(62)	10.05	(67)
Russell 1000 Value Index	11.46		-7.54		25.16		2.80		26.54		-8.27		13.66		17.34		-3.83		13.45	
IM U.S. Large Cap Value Equity (MF) Median	12.63		-6.10		25.96		3.82		26.50		-8.61		16.95		13.85		-3.00		10.82	
Vanguard Russell 1000 Value Index (VRVIX)	11.42	(57)	-7.62	(67)																
Russell 1000 Value Index	11.46		-7.54		25.16		2.80		26.54		-8.27		13.66		17.34		-3.83		13.45	
IM U.S. Large Cap Value Equity (MF) Median	12.63		-6.10		25.96		3.82		26.50		-8.61		16.95		13.85		-3.00		10.82	
Vesper Capital Mgmt (UTRN)	0.73	(100)	-20.37	(79)	30.04	(15)														
S&P 500 Index	26.29		-18.11		28.71		18.40		31.49		-4.38		21.83		11.96		1.38		13.69	
IM U.S. Large Cap Core Equity (SA+CF+MF) Median	24.58		-18.18		26.90		18.03		30.13		-5.50		21.50		9.74		0.69		11.77	
Domestic Small Cap Equity	18.89																			
Allspring Global Small Value Eq.	20.80	(27)	-12.53	(80)	29.83	(62)	2.24	(69)	29.50	(11)	-12.84	(34)	12.21	(36)	30.62	(32)	-3.36	(34)	8.76	(13)
Russell 2000 Value Index	14.65		-14.48		28.27		4.63		22.39		-12.86		7.84		31.74		-7.47		4.22	
IM U.S. Small Cap Value Equity (SA+CF+MF) Median	17.68		-10.34		32.54		4.76		23.23		-14.65		10.23		27.74		-5.27		5.12	
Emerald Small Growth Equity	19.35	(36)	-23.91	(33)	5.74	(74)	39.16	(50)	31.23	(41)	-10.67	(83)	28.70	(20)	10.07	(58)	4.58	(9)	7.55	(18)
Russell 2000 Growth Index	18.66		-26.36		2.83		34.63		28.48		-9.31		22.17		11.32		-1.38		5.60	
IM U.S. Small Cap Growth Equity (SA+CF+MF) Median	17.94		-26.81		11.61		38.99		29.01		-4.27		22.32		11.21		-1.02		4.24	
StoneRidge Small Growth Equity																				
Russell 2000 Growth Index	18.66		-26.36		2.83		34.63		28.48		-9.31		22.17		11.32		-1.38		5.60	
IM U.S. Small Cap Growth Equity (SA+CF+MF) Median	17.94		-26.81		11.61		38.99		29.01		-4.27		22.32		11.21		-1.02		4.24	

See the disclosure page at the end of this report.

Comparative Performance

Total Fund

As of June 30, 2024

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
International Equity	16.57									
DFA International Equity (DFIEX)	17.49 (45)	-13.48 (21)	13.87 (9)	7.72 (55)	21.66 (41)	-17.40 (83)				
MSCI EAFE Value Index (Net)	18.95	-5.58	10.89	-2.63	16.09	-14.78	21.44	5.02	-5.68	-5.39
IM International Multi-Cap Core Equity (MF) Median	17.14	-15.12	10.46	7.96	21.25	-15.14	25.23	1.25	-0.89	-4.98
DFA Emerging Markets (DFCEX)	15.45 (25)	-16.40 (19)	5.83 (18)	13.86 (70)	16.04 (77)	-15.25 (40)				
MSCI Emerging Markets (Net) Index	9.83	-20.09	-2.54	18.31	18.42	-14.57	37.28	11.19	-14.92	-2.19
IM Emerging Markets Equity (SA+CF+MF) Median	10.57	-22.49	-1.95	17.99	20.50	-16.45	35.98	7.17	-13.17	-2.65
EuroPacific Growth Fund (RERGX)	16.05 (37)	-22.72 (60)	2.84 (86)	25.27 (17)	27.38 (55)	-14.87 (53)	31.14 (29)	1.06 (21)		
MSCI AC World ex USA Growth (Net)	14.03	-23.05	5.09	22.20	27.34	-14.43	32.01	0.12	-1.25	-2.65
IM International Large Cap Growth Equity (MF) Median	15.54	-20.24	8.88	20.00	27.50	-14.67	28.61	-1.94	0.25	-4.47
Total Fixed Income	5.64									
Boyd Watterson Fixed	6.04 (66)	-9.17 (7)	-0.40 (38)	6.86 (91)	8.69 (84)	-0.03 (52)	3.45 (91)	2.22 (96)	0.92 (30)	3.47 (97)
Boyd Watterson Fixed Policy	5.53	-8.24	-1.44	6.43	6.80	0.88	2.14	2.08	1.07	3.13
IM U.S. Broad Market Fixed Income (SA+CF) Median	6.37	-12.92	-0.74	8.74	9.50	-0.01	4.33	3.70	0.63	6.14
PNC Fixed	6.23 (57)	-9.36 (8)	-1.38 (75)	7.53 (84)	7.29 (95)	0.78 (10)	2.41 (99)	2.11 (97)	0.66 (49)	2.99 (98)
PNC Fixed Policy	5.53	-8.24	-1.44	6.43	6.80	0.88	2.14	2.08	1.07	3.13
IM U.S. Broad Market Fixed Income (SA+CF) Median	6.37	-12.92	-0.74	8.74	9.50	-0.01	4.33	3.70	0.63	6.14
Vanguard S-T Inv't Grade Bond Fund (VFSIX)		-5.72 (94)	-0.30 (75)	5.28 (5)	5.87 (6)	1.02 (65)	2.16 (20)	2.85 (17)	1.18 (4)	1.89 (4)
Blmbg. 1-3 Year Gov/Credit	4.61	-3.69	-0.47	3.33	4.03	1.60	0.84	1.28	0.65	0.77
IM U.S. Short Term Investment Grade (MF) Median	5.67	-3.79	0.02	3.02	4.12	1.24	1.45	1.68	0.27	0.67
Vanguard Core Bond Fund (VCOBX)										
Blmbg. U.S. Aggregate Index	5.53	-13.01	-1.55	7.51	8.72	0.01	3.54	2.65	0.55	5.97
IM U.S. Broad Market Core Fixed Income (MF) Median	5.77	-13.66	-1.33	8.16	8.76	-0.62	3.60	2.90	0.04	5.55
Private Real Estate	-2.51									
Bentall GreenOak/MEPT Real Estate		8.74 (28)	20.81 (72)	1.37 (59)	4.55 (78)	8.18 (55)	6.48 (80)	8.97 (70)	13.01 (77)	13.22 (60)
NCREIF Property Index	-7.94	5.52	17.70	1.60	6.42	6.72	6.96	7.97	13.33	11.82
IM U.S. Private Real Estate (SA+CF) Median	-10.76	7.14	23.30	1.57	7.01	8.35	8.06	9.63	15.33	13.66
Boyd Watterson GSA Fund	-3.13 (10)	4.58 (73)	8.04 (97)	6.97 (6)	9.53 (18)	9.60 (23)	8.87 (35)			
NCREIF Property Index	-7.94	5.52	17.70	1.60	6.42	6.72	6.96	7.97	13.33	11.82
IM U.S. Private Real Estate (SA+CF) Median	-10.76	7.14	23.30	1.57	7.01	8.35	8.06	9.63	15.33	13.66
Bentall GreenOak US Core Plus RE	1.91 (8)									
NCREIF Property Index	-7.94	5.52	17.70	1.60	6.42	6.72	6.96	7.97	13.33	11.82
IM U.S. Private Real Estate (SA+CF) Median	-10.76	7.14	23.30	1.57	7.01	8.35	8.06	9.63	15.33	13.66

See the disclosure page at the end of this report.

As of June 30, 2024

Private Equity Summary of Partnership

Partnerships	Valuation Date	Vintage Year	Investment Strategy	Capital Commitment \$	Drawn Down \$	Market Value \$	Distributed \$	IRR (%)	TVPI Multiple
Private Equity Funds									
Ironsides Direct Investment Fund V	06/30/2024	2018	Buyouts	6,000,000	7,662,947	9,984,110	3,450,304	15.3	1.8
PA Co-Investment Fund III	06/30/2024	2019	Buyouts	6,000,000	5,511,784	5,734,068	5,067,887	18.6	2.0
Adams Street Co-Investment Fund V	06/30/2024	2022	Co-Investment	10,000,000	4,012,945	5,077,391	-	25.4	1.3
Hamilton Lane Secondary Fund VI	06/30/2024	2022	Secondaries	10,000,000	1,488,015	2,072,388	18,942	46.9	1.4
Private Debt Funds									
Ironsides Opportunities Fund	06/30/2024	2018	Buyout - Mid	4,000,000	2,827,757	1,922,668	2,366,677	11.3	1.5
PA Credit Strategies Fund	06/30/2024	2015	Credit	4,000,000	4,000,000	6,210,386	-	8.2	1.6

Comparative Performance - IRR
Private Investments
As of June 30, 2024

Comparative Performance - IRR									
	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR	Inception	Inception Date
Private Equity									
Ironsides Direct Investment Fund V	-0.27	1.96	9.19	4.53	3.62	13.70	15.72	15.31	11/09/2018
PA Co-Investment Fund III	-1.46	1.24	3.94	6.85	15.11	26.16	21.23	18.61	11/05/2018
Adams Street Co-Investment Fund V	0.00	4.93	22.56	N/A	N/A	N/A	N/A	25.35	10/28/2022
Hamilton Lane Secondary Fund VI	0.00	-1.64	17.72	N/A	N/A	N/A	N/A	46.90	01/03/2023
Private Debt									
Ironsides Opportunities Fund	0.00	0.07	1.37	7.08	8.98	11.70	11.24	11.30	12/31/2018
PA Credit Strategies Fund	0.00	-0.03	2.91	2.75	7.96	11.28	8.37	8.16	11/21/2018

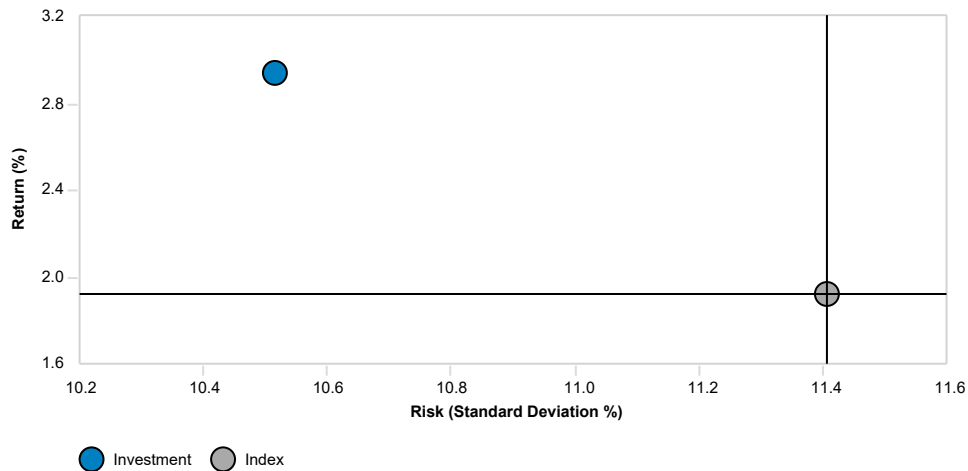
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	2.95	10.52	0.04	97.63	8	91.29	4
Index	1.92	11.41	-0.04	100.00	7	100.00	5

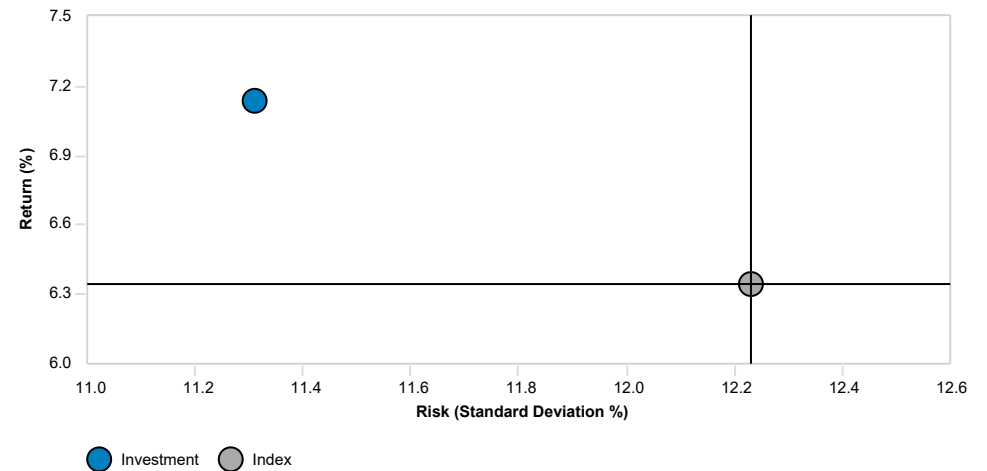
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	7.14	11.31	0.48	98.01	15	92.08	5
Index	6.35	12.23	0.39	100.00	14	100.00	6

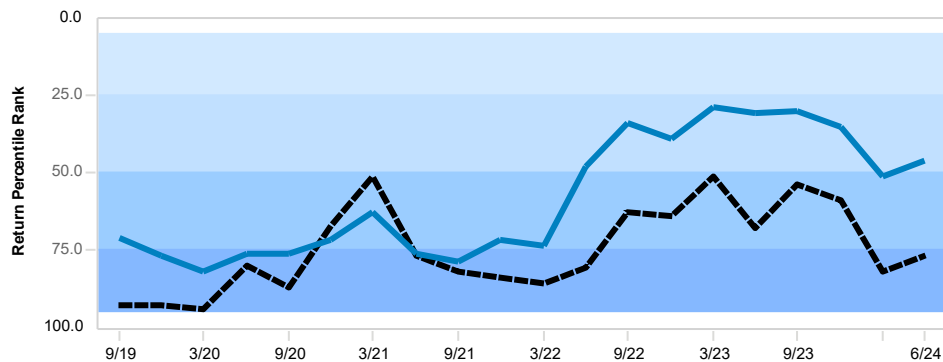
Risk and Return 3 Years



Risk and Return 5 Years

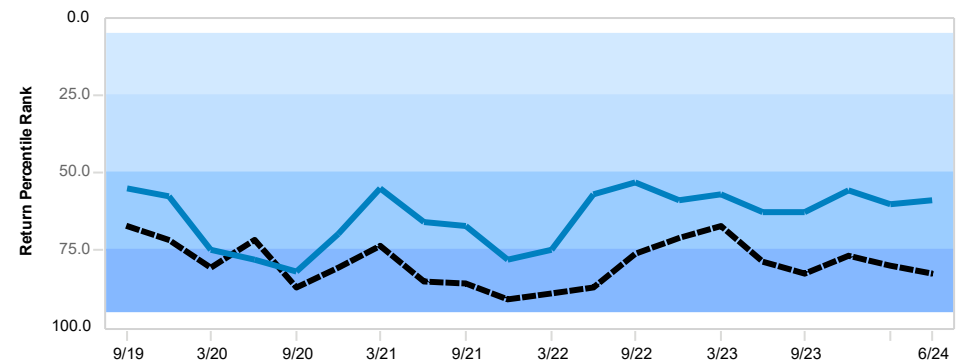


3 Year Rolling Percentile Rank All Public DB Plans



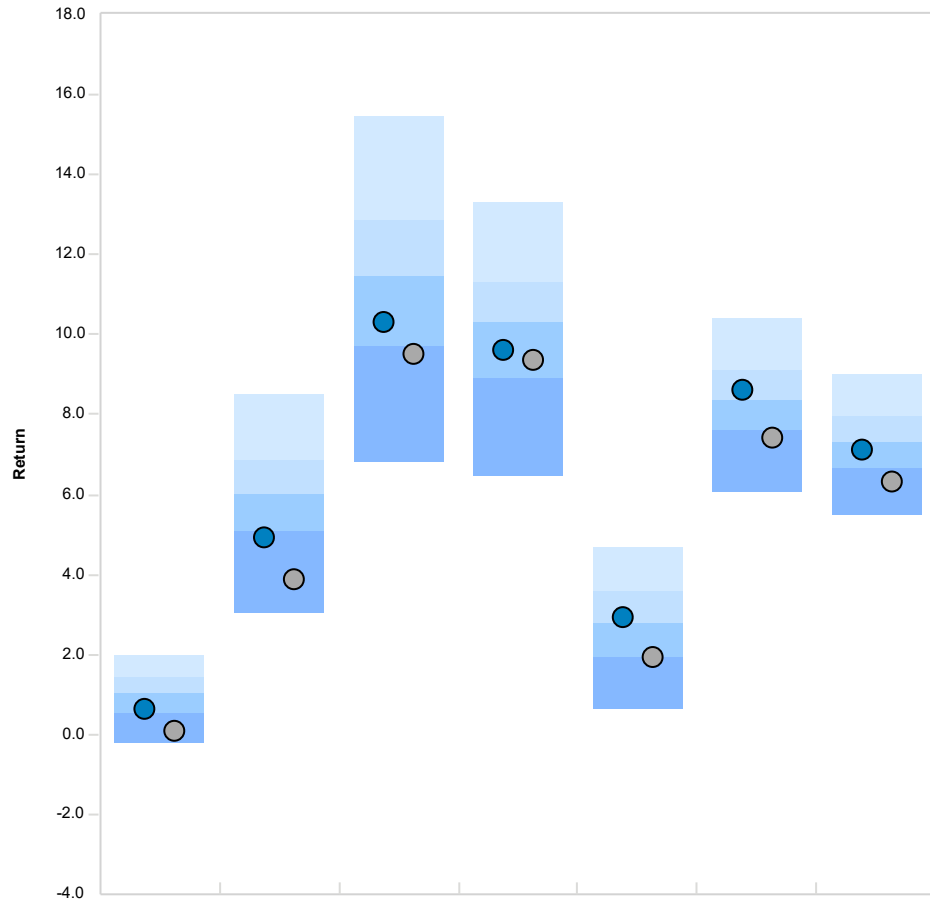
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	0 (0%)	8 (40%)	6 (30%)	6 (30%)
Index	20	0 (0%)	0 (0%)	8 (40%)	12 (60%)

5 Year Rolling Percentile Rank All Public DB Plans



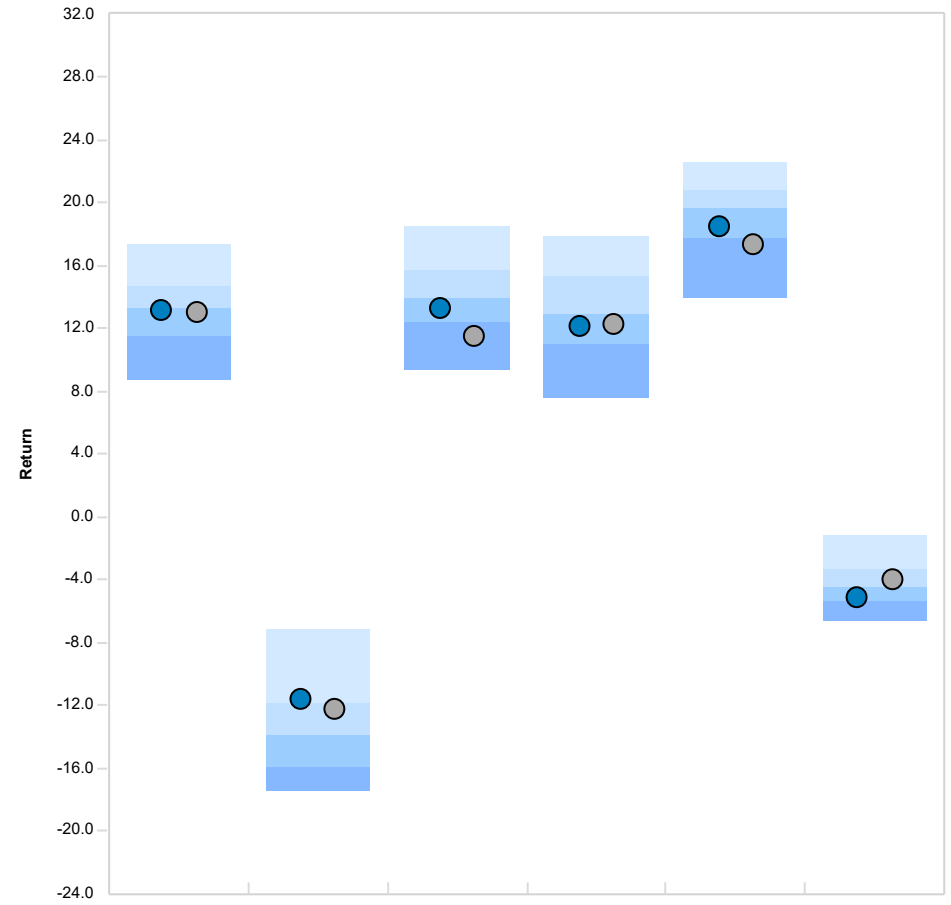
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	0 (0%)	0 (0%)	17 (85%)	3 (15%)
Index	20	0 (0%)	0 (0%)	6 (30%)	14 (70%)

Plan Sponsor Peer Group Analysis vs. All Public DB Plans



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	0.64 (71)	4.93 (77)	10.33 (69)	9.63 (66)	2.95 (46)	8.62 (41)	7.14 (59)
● Index	0.10 (90)	3.88 (91)	9.51 (77)	9.37 (69)	1.92 (77)	7.44 (79)	6.35 (83)
Median	1.03	6.04	11.47	10.34	2.80	8.39	7.34

Plan Sponsor Peer Group Analysis vs. All Public DB Plans



	2023	2022	2021	2020	2019	2018
● Investment	13.15 (53)	-11.59 (23)	13.31 (61)	12.18 (60)	18.55 (66)	-5.13 (69)
● Index	13.02 (54)	-12.15 (30)	11.61 (85)	12.26 (59)	17.45 (78)	-3.89 (35)
Median	13.28	-13.87	13.91	13.00	19.66	-4.42

Comparative Performance

	1 Qtr Ending Mar-2024	1 Qtr Ending Dec-2023	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022
Investment	4.26 (73)	8.17 (51)	-2.80 (43)	3.17 (58)	4.31 (53)	5.28 (67)
Index	3.78 (85)	9.15 (29)	-3.42 (79)	3.02 (65)	4.07 (63)	5.41 (64)
Median	4.90	8.19	-2.99	3.30	4.37	5.79

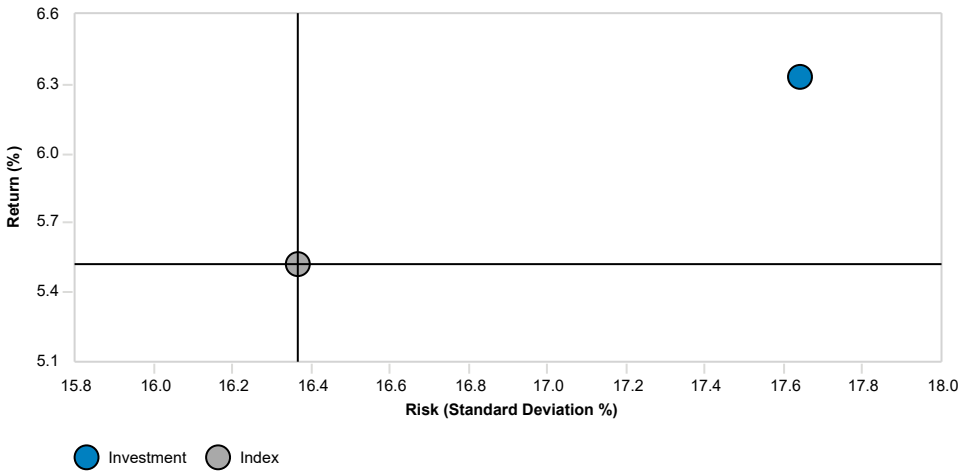
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	6.34	17.64	0.27	106.42	6	103.82	6
Index	5.52	16.36	0.23	100.00	6	100.00	6

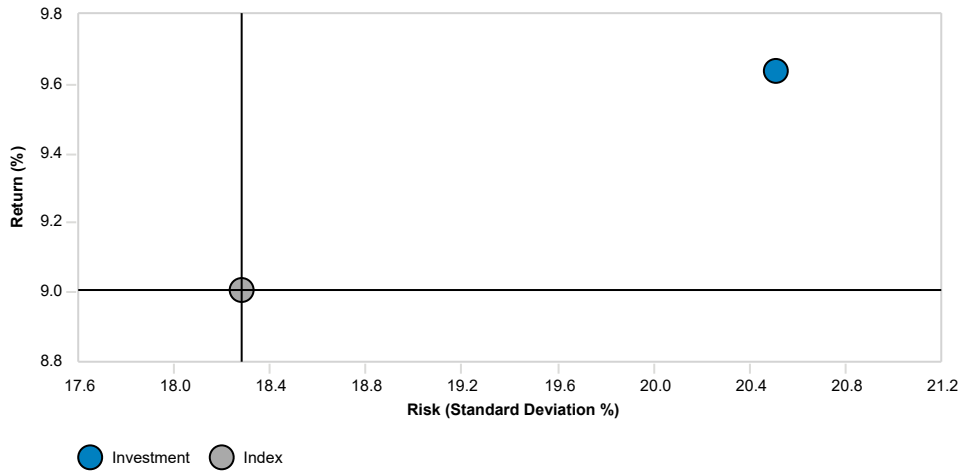
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	9.64	20.51	0.45	109.26	13	108.92	7
Index	9.01	18.28	0.45	100.00	13	100.00	7

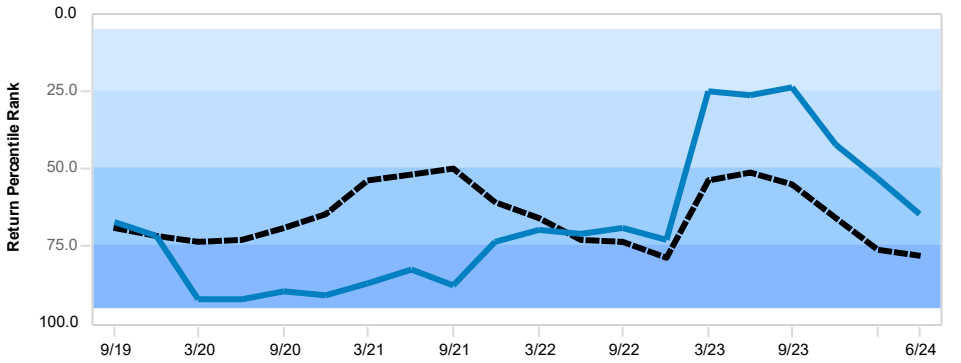
Risk and Return 3 Years



Risk and Return 5 Years

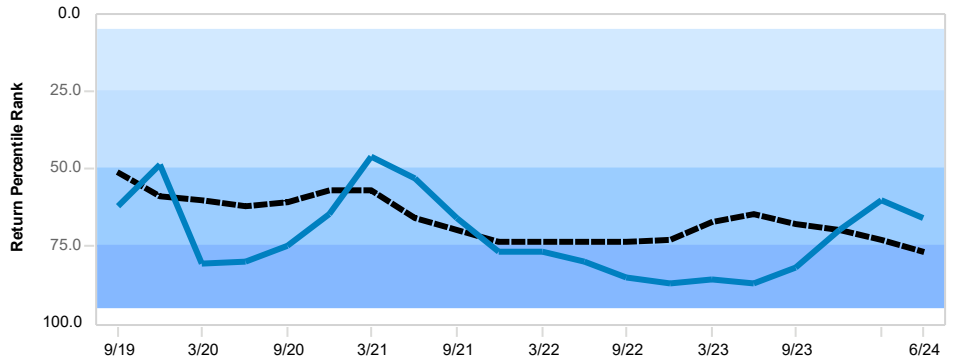


3 Year Rolling Percentile Rank IM U.S. Large Cap Value Equity (MF)



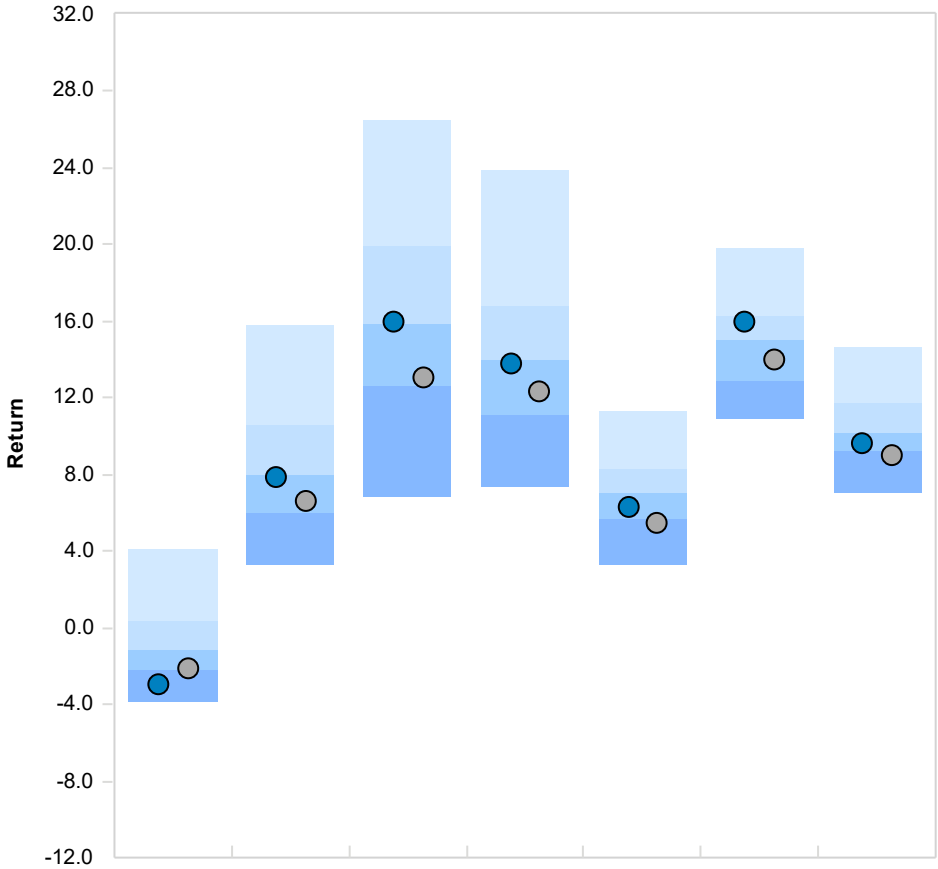
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	2 (10%)	2 (10%)	9 (45%)	7 (35%)
Index	20	0 (0%)	1 (5%)	16 (80%)	3 (15%)

5 Year Rolling Percentile Rank IM U.S. Large Cap Value Equity (MF)



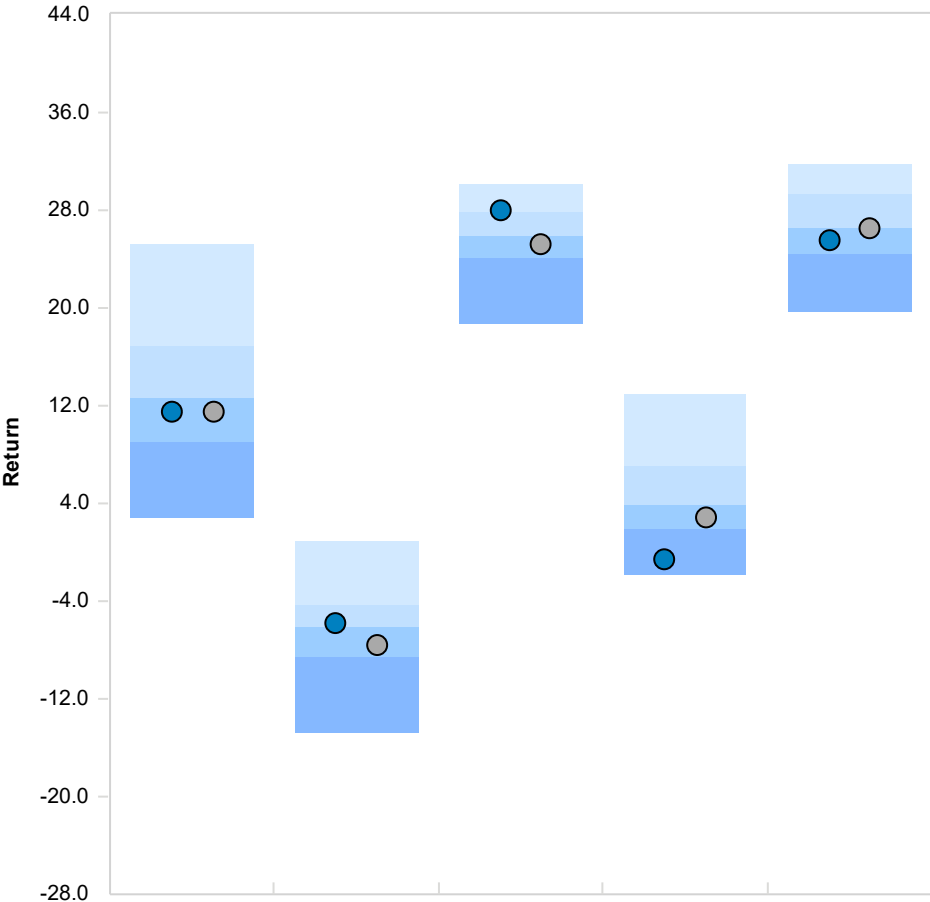
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	0 (0%)	2 (10%)	8 (40%)	10 (50%)
Index	20	0 (0%)	0 (0%)	19 (95%)	1 (5%)

Peer Group Analysis - IM U.S. Large Cap Value Equity (MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-2.96 (89)	7.89 (52)	16.03 (49)	13.76 (52)	6.34 (65)	15.98 (33)	9.64 (66)
● Index	-2.17 (74)	6.62 (70)	13.06 (71)	12.30 (67)	5.52 (78)	13.99 (64)	9.01 (77)
Median	-1.19	7.98	15.85	14.04	7.01	15.01	10.19

Peer Group Analysis - IM U.S. Large Cap Value Equity (MF)



	2023	2022	2021	2020	2019
● Investment	11.47 (57)	-5.78 (48)	28.07 (22)	-0.60 (91)	25.49 (65)
● Index	11.46 (57)	-7.54 (66)	25.16 (63)	2.80 (61)	26.54 (50)
Median	12.63	-6.10	25.96	3.82	26.50

Comparative Performance

	1 Qtr Ending Mar-2024	1 Qtr Ending Dec-2023	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022
Investment	11.18 (24)	9.06 (70)	-1.39 (19)	3.18 (78)	0.46 (45)	14.05 (27)
Index	8.99 (54)	9.50 (55)	-3.16 (69)	4.07 (56)	1.01 (33)	12.42 (59)
Median	9.15	9.61	-2.36	4.40	0.15	12.88

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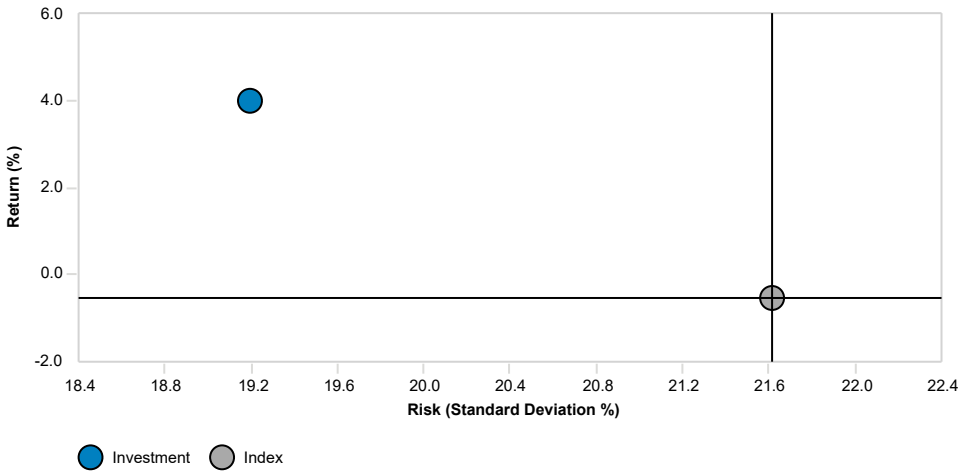
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	4.00	19.20	0.14	93.82	6	80.91	6
Index	-0.53	21.62	-0.06	100.00	5	100.00	7

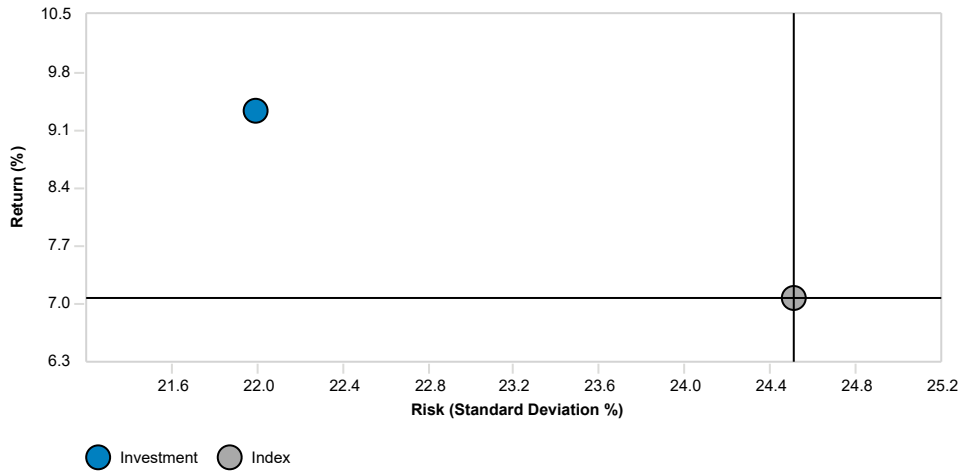
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	9.35	21.99	0.42	92.79	13	85.13	7
Index	7.07	24.51	0.32	100.00	11	100.00	9

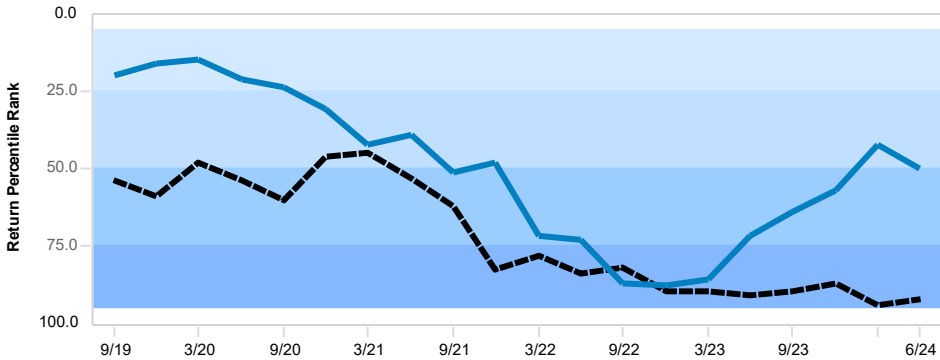
Risk and Return 3 Years



Risk and Return 5 Years

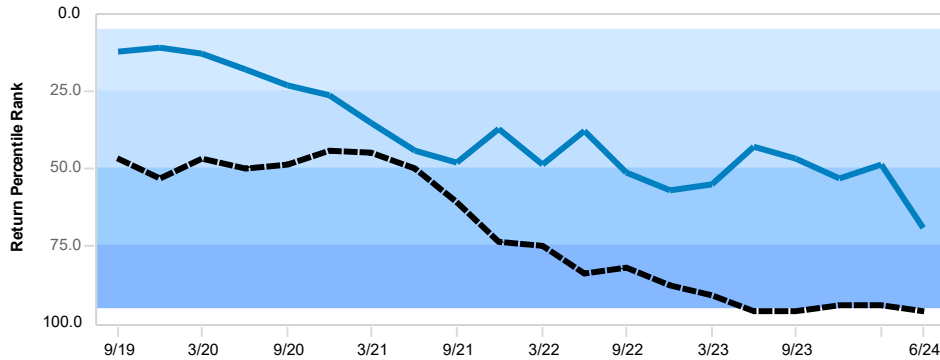


3 Year Rolling Percentile Rank IM U.S. Small Cap Value Equity (SA+CF+MF)



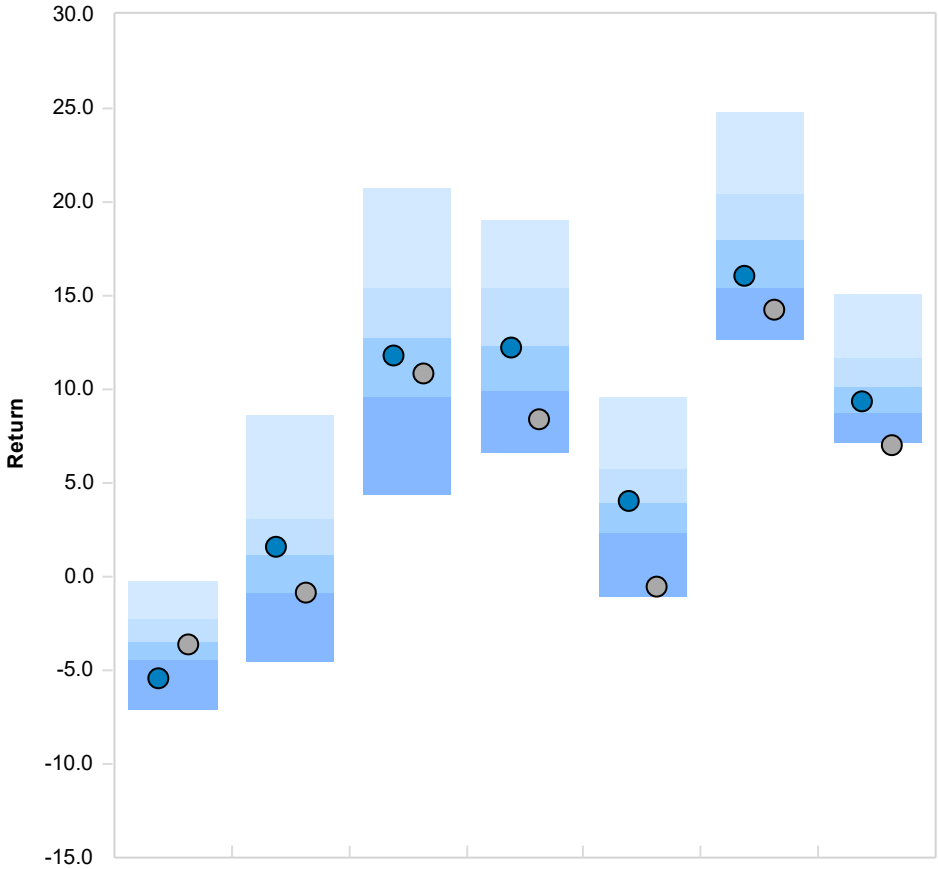
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	5 (25%)	6 (30%)	6 (30%)	3 (15%)
Index	20	0 (0%)	3 (15%)	6 (30%)	11 (55%)

5 Year Rolling Percentile Rank IM U.S. Small Cap Value Equity (SA+CF+MF)



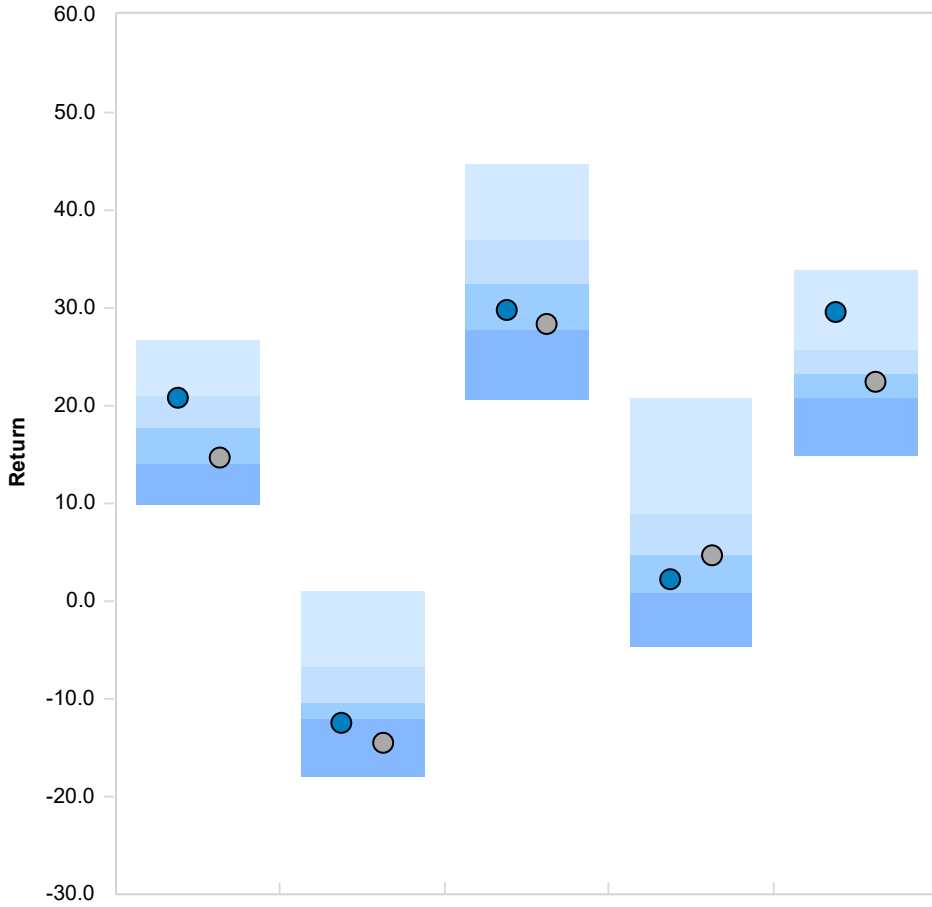
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	5 (25%)	10 (50%)	5 (25%)	0 (0%)
Index	20	0 (0%)	7 (35%)	4 (20%)	9 (45%)

Peer Group Analysis - IM U.S. Small Cap Value Equity (SA+CF+MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-5.38 (87)	1.55 (48)	11.78 (57)	12.28 (51)	4.00 (50)	16.10 (66)	9.35 (69)
● Index	-3.64 (55)	-0.85 (76)	10.90 (62)	8.42 (88)	-0.53 (92)	14.28 (89)	7.07 (96)
Median	-3.53	1.20	12.75	12.38	3.89	18.00	10.07

Peer Group Analysis - IM U.S. Small Cap Value Equity (SA+CF+MF)



	2023	2022	2021	2020	2019
● Investment	20.80 (27)	-12.53 (80)	29.83 (62)	2.24 (69)	29.50 (11)
● Index	14.65 (73)	-14.48 (90)	28.27 (72)	4.63 (52)	22.39 (62)
Median	17.68	-10.34	32.54	4.76	23.23

Comparative Performance

	1 Qtr Ending Mar-2024	1 Qtr Ending Dec-2023	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022
Investment	7.32 (18)	12.52 (60)	-2.17 (55)	5.47 (26)	4.04 (19)	12.01 (45)
Index	2.90 (83)	15.26 (21)	-2.96 (62)	3.18 (68)	-0.66 (85)	8.42 (90)
Median	4.70	13.19	-1.98	4.02	1.52	11.75

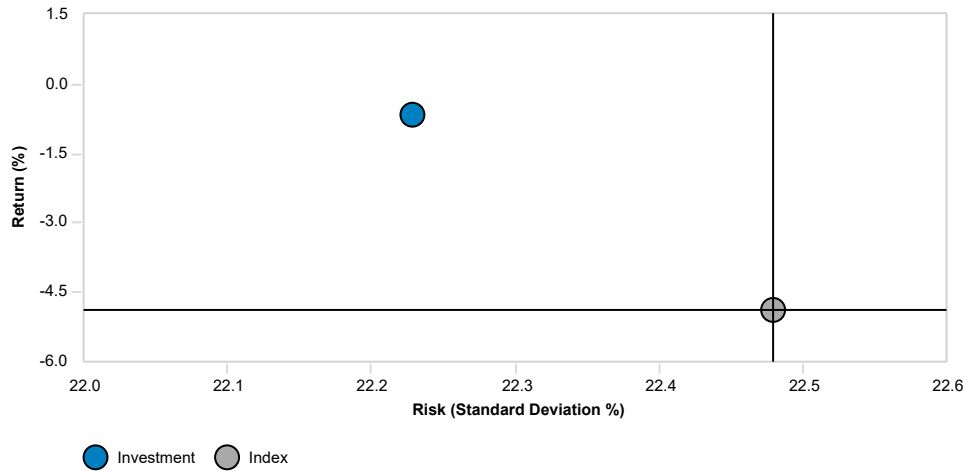
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-0.65	22.23	-0.05	107.07	8	93.45	4
Index	-4.86	22.48	-0.24	100.00	7	100.00	5

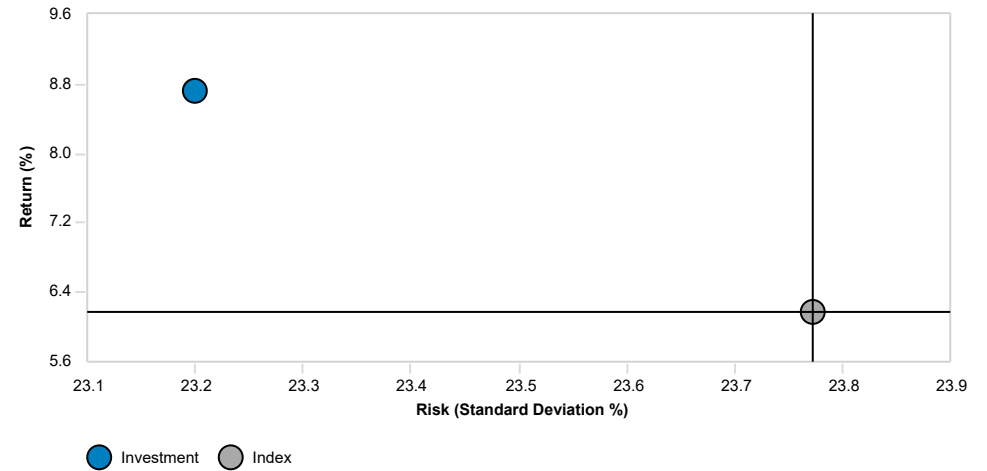
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	8.72	23.20	0.39	103.02	14	95.81	6
Index	6.17	23.77	0.28	100.00	13	100.00	7

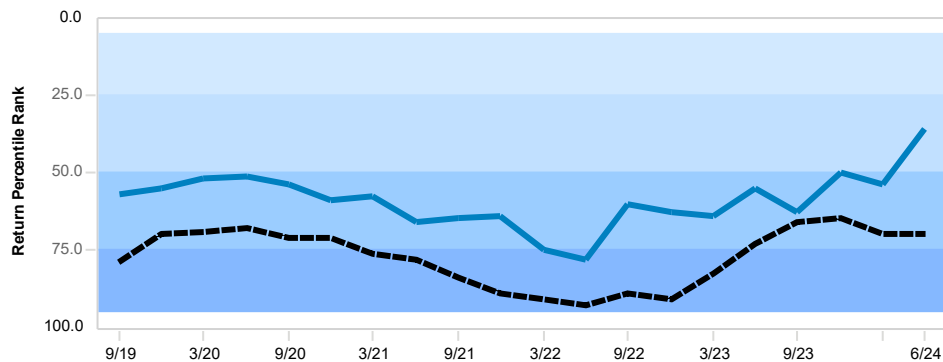
Risk and Return 3 Years



Risk and Return 5 Years

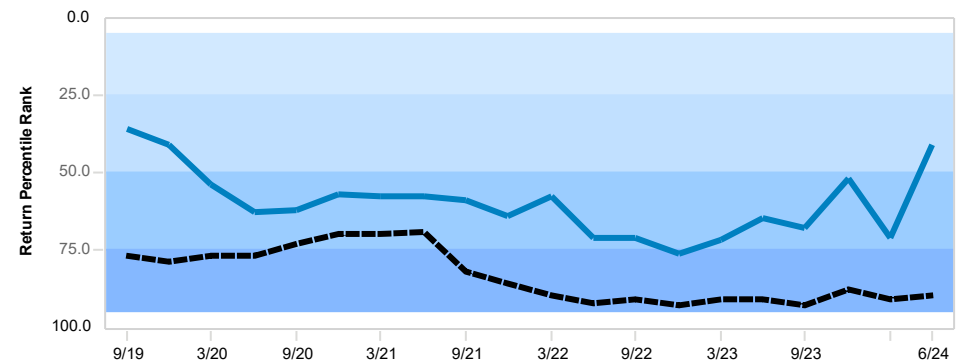


3 Year Rolling Percentile Rank IM U.S. Small Cap Growth Equity (SA+CF+MF)



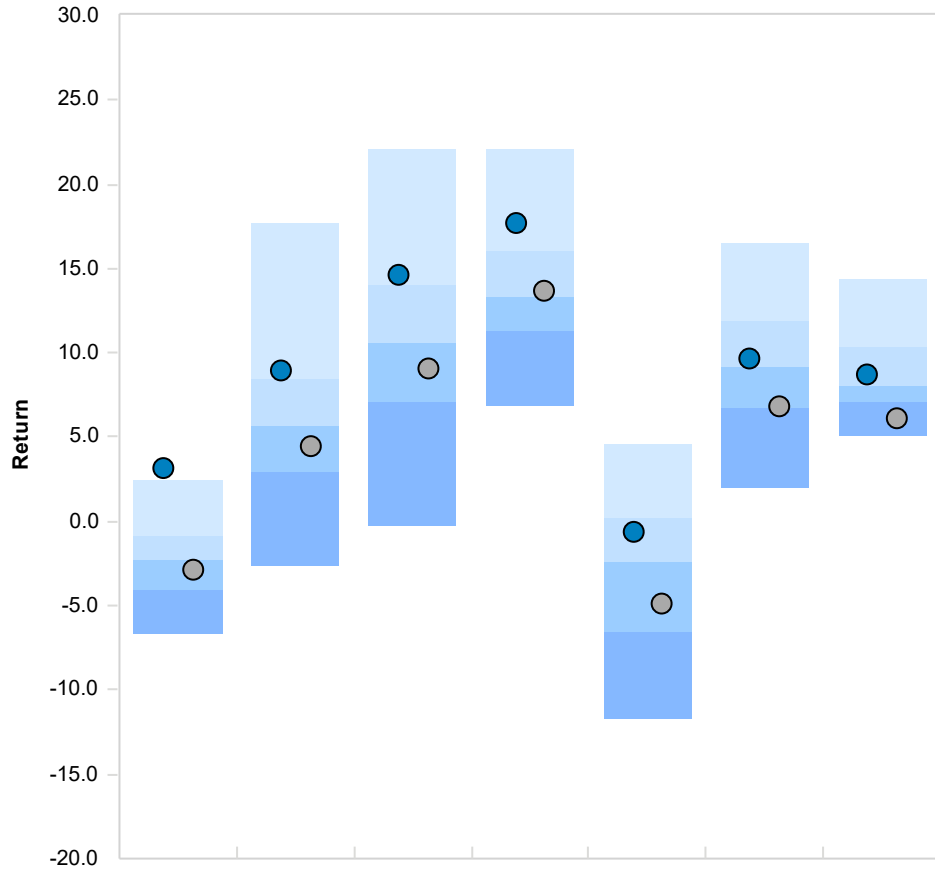
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	0 (0%)	2 (10%)	17 (85%)	1 (5%)
Index	20	0 (0%)	0 (0%)	10 (50%)	10 (50%)

5 Year Rolling Percentile Rank IM U.S. Small Cap Growth Equity (SA+CF+MF)



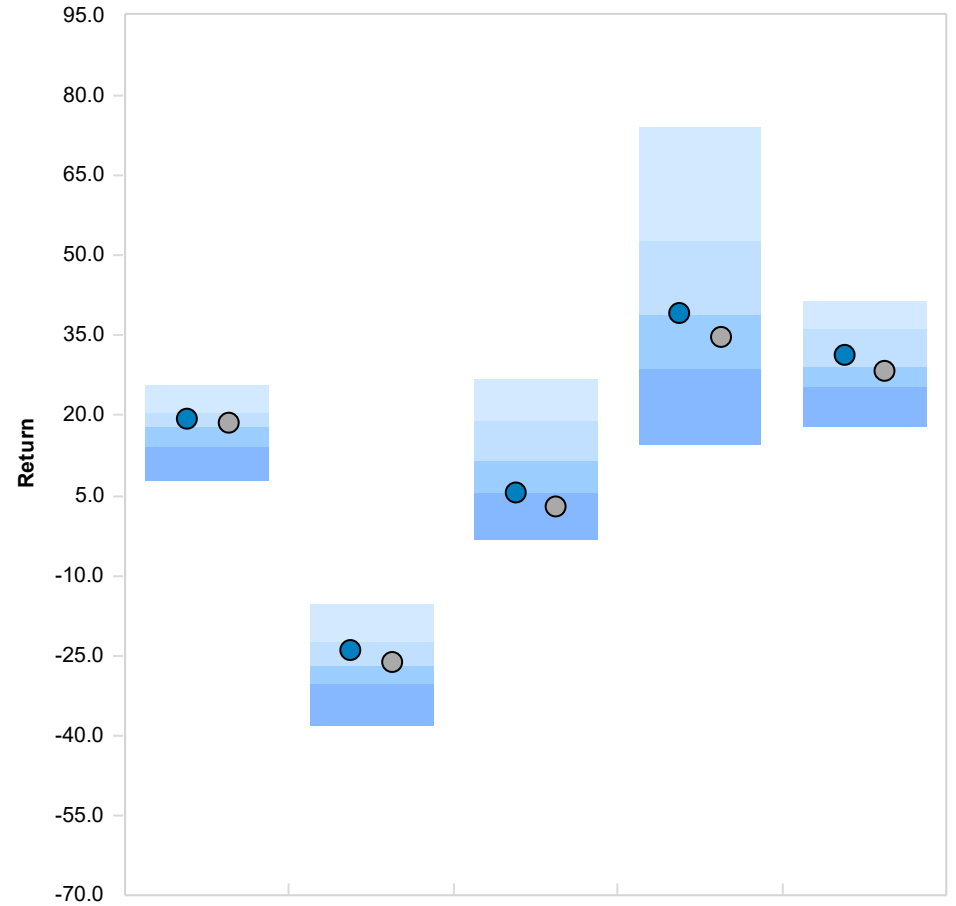
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	0 (0%)	3 (15%)	16 (80%)	1 (5%)
Index	20	0 (0%)	0 (0%)	4 (20%)	16 (80%)

Peer Group Analysis - IM U.S. Small Cap Growth Equity (SA+CF+MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	3.14 (4)	8.98 (22)	14.58 (24)	17.73 (19)	-0.65 (36)	9.69 (48)	8.72 (41)
● Index	-2.92 (61)	4.44 (61)	9.14 (62)	13.74 (43)	-4.86 (70)	6.85 (74)	6.17 (90)
Median	-2.29	5.68	10.60	13.33	-2.43	9.19	8.06

Peer Group Analysis - IM U.S. Small Cap Growth Equity (SA+CF+MF)



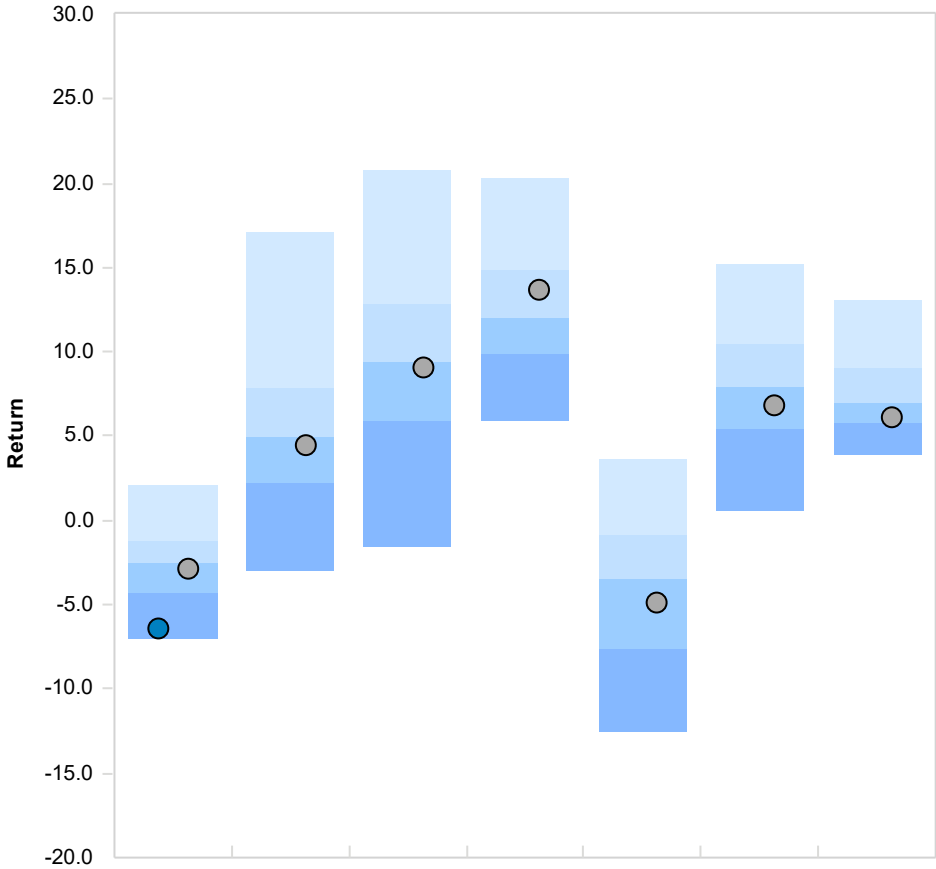
	2023	2022	2021	2020	2019
● Investment	19.35 (36)	-23.91 (33)	5.74 (74)	39.16 (50)	31.23 (41)
● Index	18.66 (45)	-26.36 (47)	2.83 (84)	34.63 (59)	28.48 (53)
Median	17.94	-26.81	11.61	38.99	29.01

Comparative Performance

	1 Qtr Ending Mar-2024	1 Qtr Ending Dec-2023	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022
Investment	5.66 (80)	14.91 (8)	-8.50 (85)	8.85 (7)	4.28 (80)	6.57 (29)
Index	7.58 (52)	12.75 (28)	-7.32 (72)	7.05 (22)	6.07 (61)	4.13 (60)
Median	7.65	11.55	-6.11	5.38	6.73	4.78

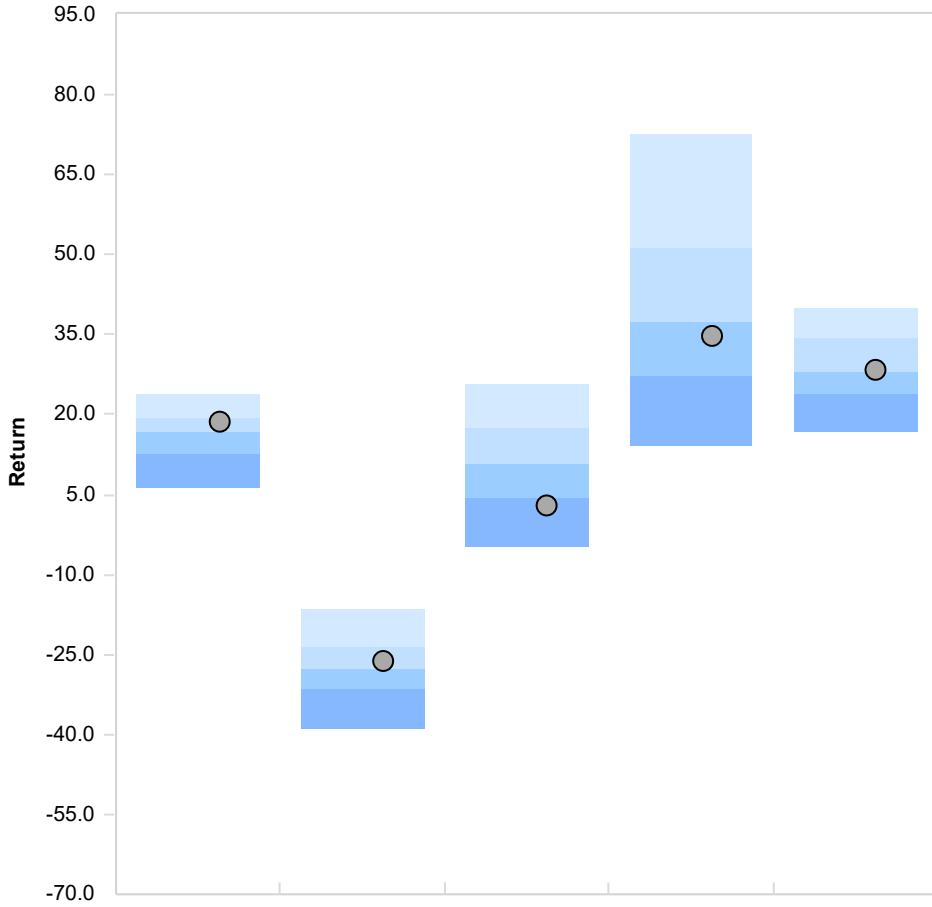
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Peer Group Analysis - IM U.S. Small Cap Growth Equity (SA+CF+MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-6.45 (94)	N/A	N/A	N/A	N/A	N/A	N/A
● Index	-2.92 (58)	4.44 (55)	9.14 (53)	13.74 (33)	-4.86 (62)	6.85 (61)	6.17 (69)
Median	-2.54	4.96	9.46	12.04	-3.42	7.92	6.98

Peer Group Analysis - IM U.S. Small Cap Growth Equity (SA+CF+MF)



	2023	2022	2021	2020	2019
● Investment	N/A	N/A	N/A	N/A	N/A
● Index	18.66 (32)	-26.36 (42)	2.83 (82)	34.63 (58)	28.48 (47)
Median	16.68	-27.77	10.68	37.51	27.87

Comparative Performance

	1 Qtr Ending Mar-2024	1 Qtr Ending Dec-2023	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022
Investment	N/A	N/A	N/A	N/A	N/A	N/A
Index	7.58 (48)	12.75 (21)	-7.32 (69)	7.05 (19)	6.07 (57)	4.13 (56)
Median	7.38	11.23	-6.36	5.12	6.35	4.45

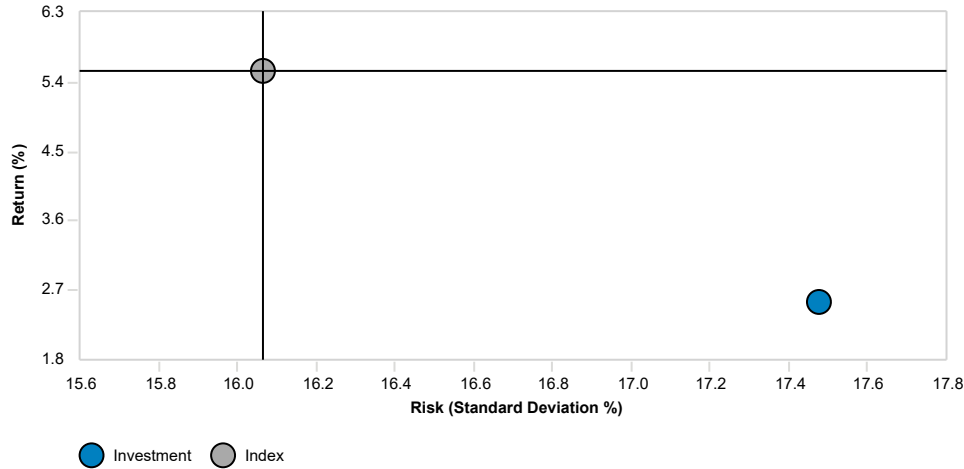
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	2.56	17.48	0.06	98.68	6	112.43	6
Index	5.55	16.06	0.23	100.00	9	100.00	3

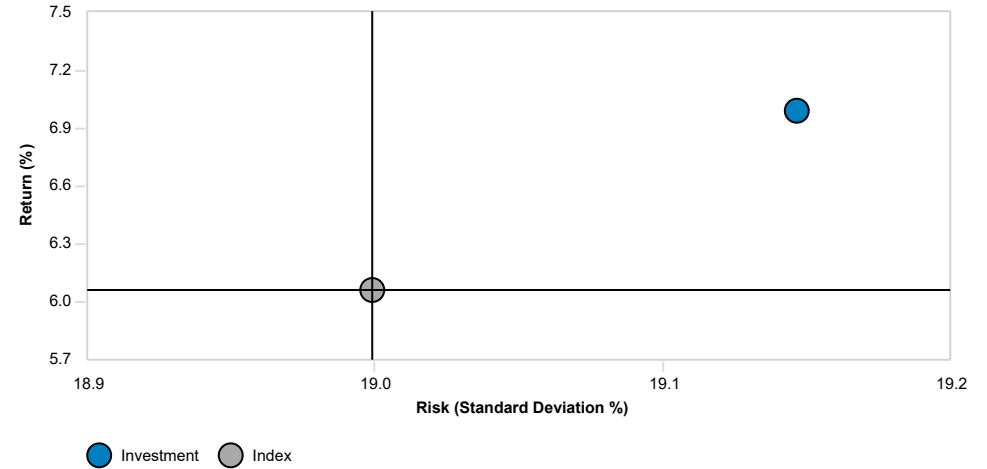
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	6.99	19.15	0.34	103.59	12	100.55	8
Index	6.07	19.00	0.29	100.00	15	100.00	5

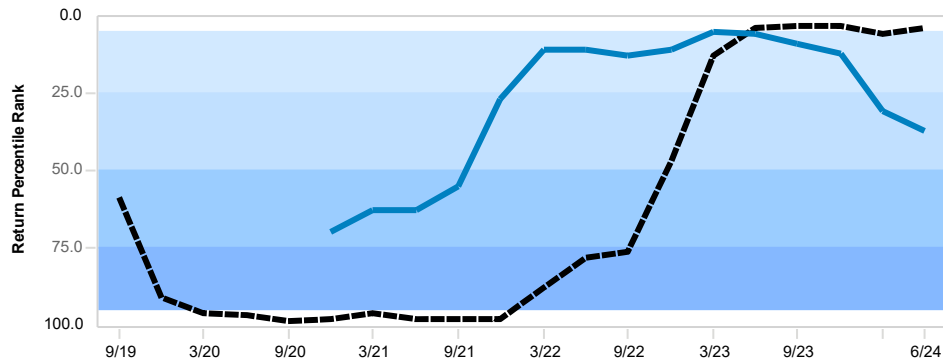
Risk and Return 3 Years



Risk and Return 5 Years

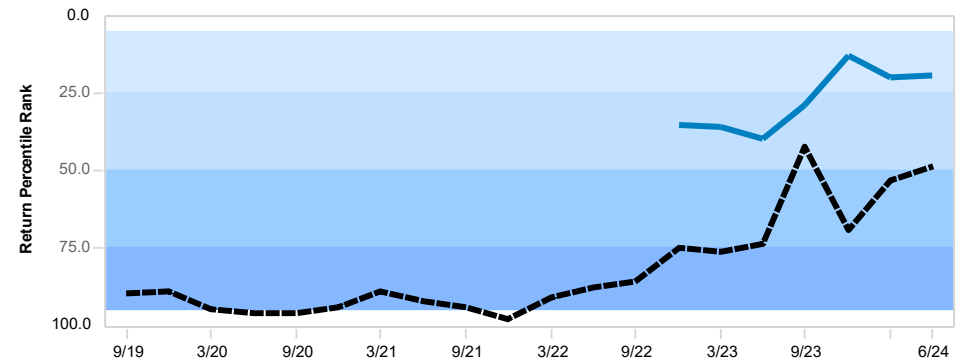


3 Year Rolling Percentile Rank IM International Multi-Cap Core Equity (MF)



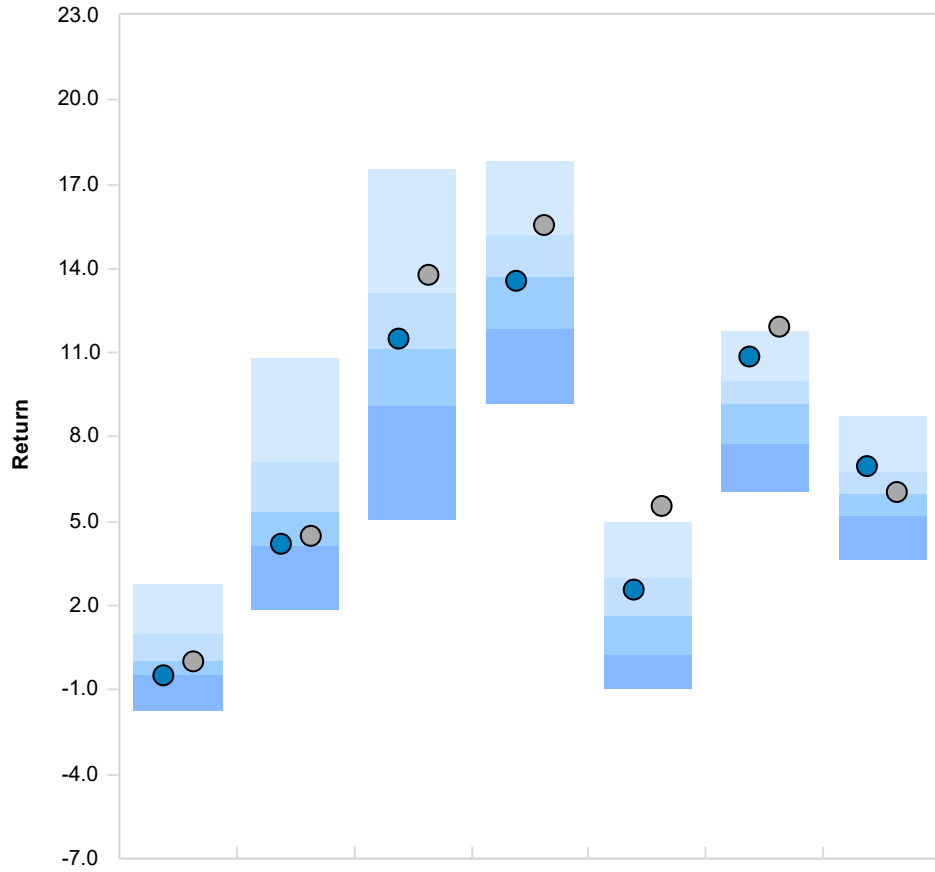
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	15	8 (53%)	3 (20%)	4 (27%)	0 (0%)
Index	20	6 (30%)	1 (5%)	1 (5%)	12 (60%)

5 Year Rolling Percentile Rank IM International Multi-Cap Core Equity (MF)



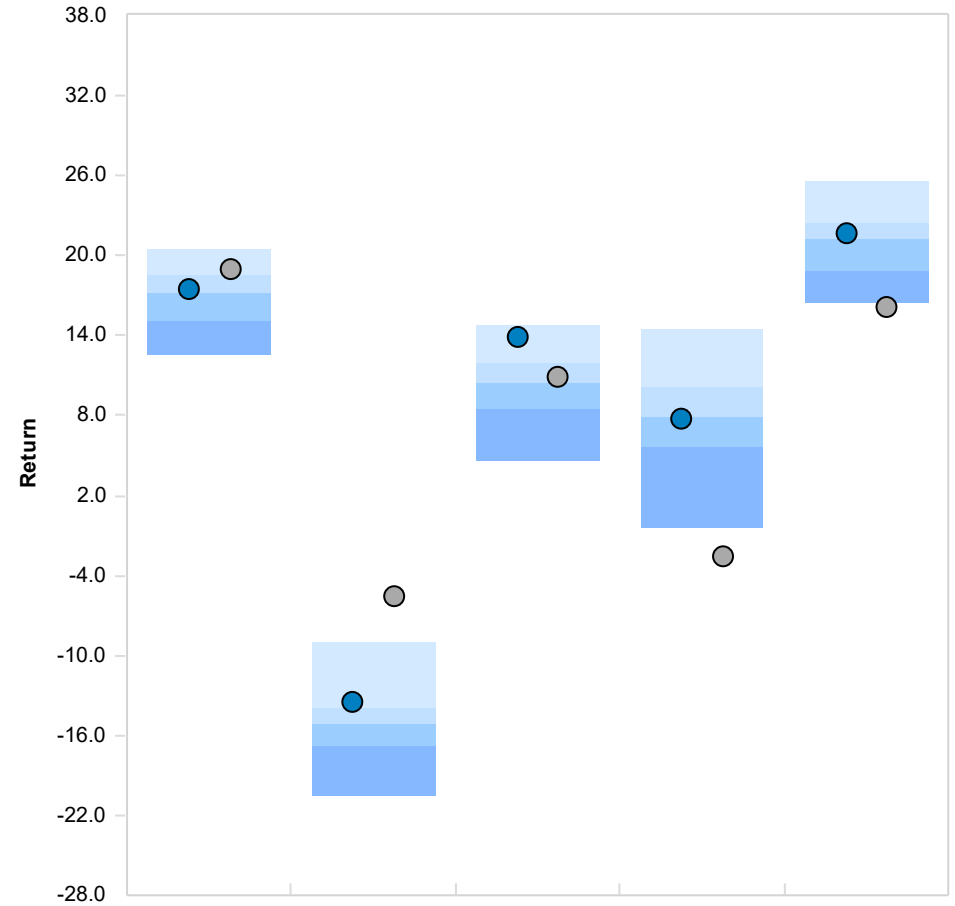
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	7	3 (43%)	4 (57%)	0 (0%)	0 (0%)
Index	20	0 (0%)	2 (10%)	4 (20%)	14 (70%)

Peer Group Analysis - IM International Multi-Cap Core Equity (MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-0.47 (73)	4.18 (74)	11.54 (40)	13.55 (54)	2.56 (37)	10.89 (13)	6.99 (19)
● Index	0.01 (50)	4.49 (67)	13.75 (23)	15.56 (23)	5.55 (4)	11.93 (5)	6.07 (49)
Median	-0.01	5.33	11.15	13.74	1.66	9.16	6.00

Peer Group Analysis - IM International Multi-Cap Core Equity (MF)



	2023	2022	2021	2020	2019
● Investment	17.49 (45)	-13.48 (21)	13.87 (9)	7.72 (55)	21.66 (41)
● Index	18.95 (22)	-5.58 (2)	10.89 (45)	-2.63 (99)	16.09 (96)
Median	17.14	-15.12	10.46	7.96	21.25

Comparative Performance

	1 Qtr Ending Mar-2024	1 Qtr Ending Dec-2023	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022
Investment	4.67 (64)	10.31 (42)	-2.94 (21)	2.07 (84)	7.51 (63)	17.63 (29)
Index	4.48 (72)	8.22 (86)	0.59 (1)	3.15 (38)	5.93 (93)	19.64 (5)
Median	5.14	9.98	-4.13	2.95	7.84	16.91

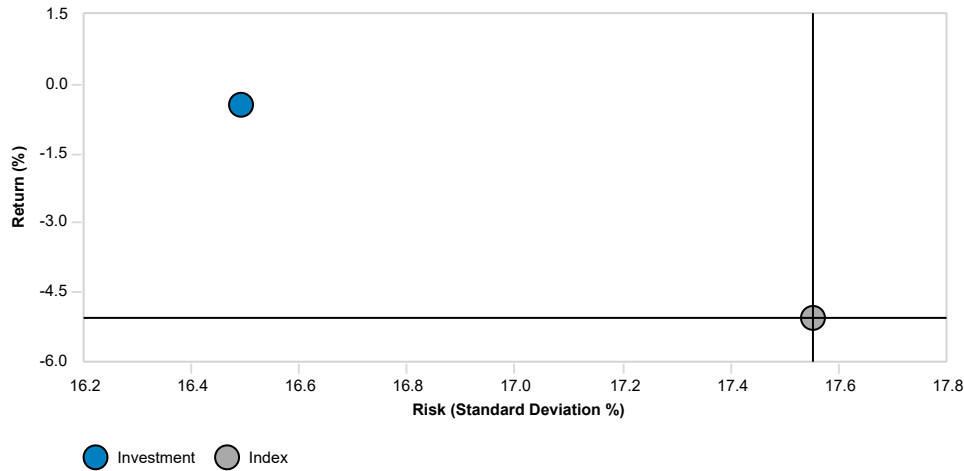
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-0.46	16.49	-0.13	99.20	7	81.65	5
Index	-5.07	17.55	-0.38	100.00	6	100.00	6

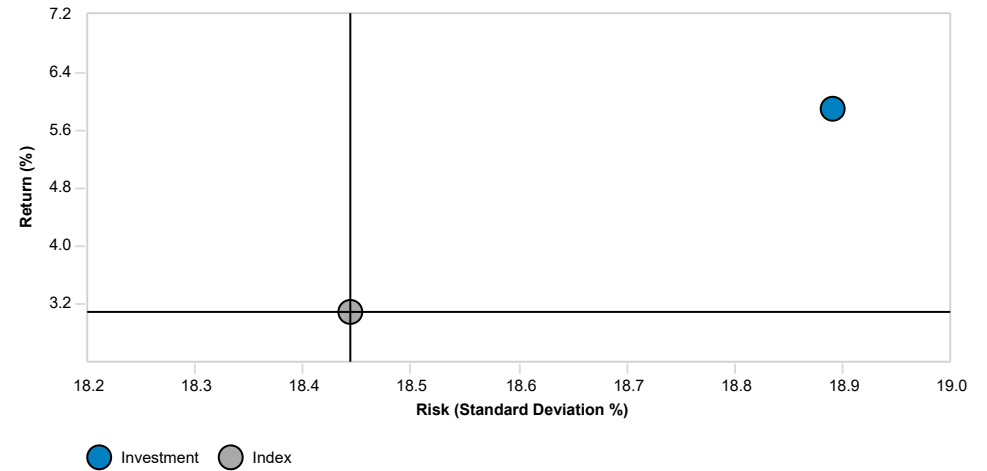
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	5.90	18.89	0.29	102.52	13	90.55	7
Index	3.10	18.44	0.14	100.00	12	100.00	8

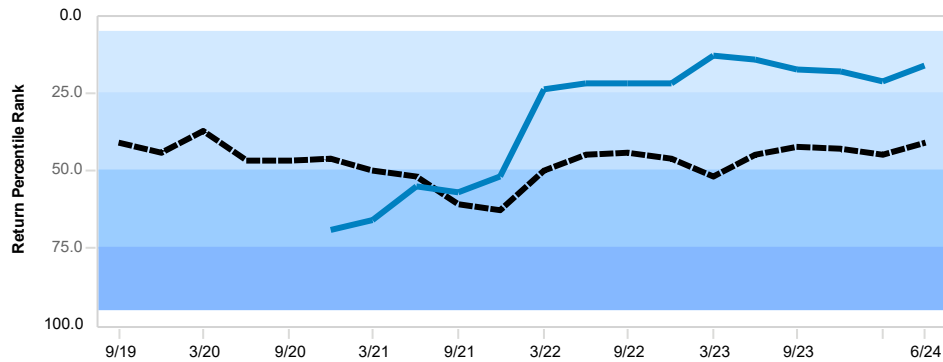
Risk and Return 3 Years



Risk and Return 5 Years

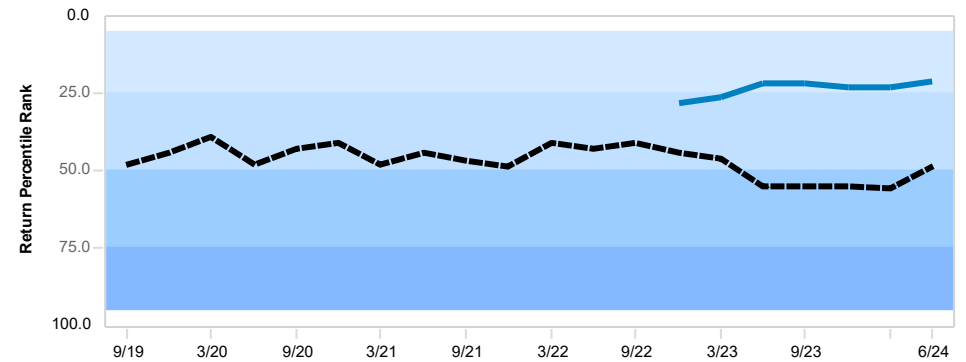


3 Year Rolling Percentile Rank IM Emerging Markets Equity (SA+CF+MF)



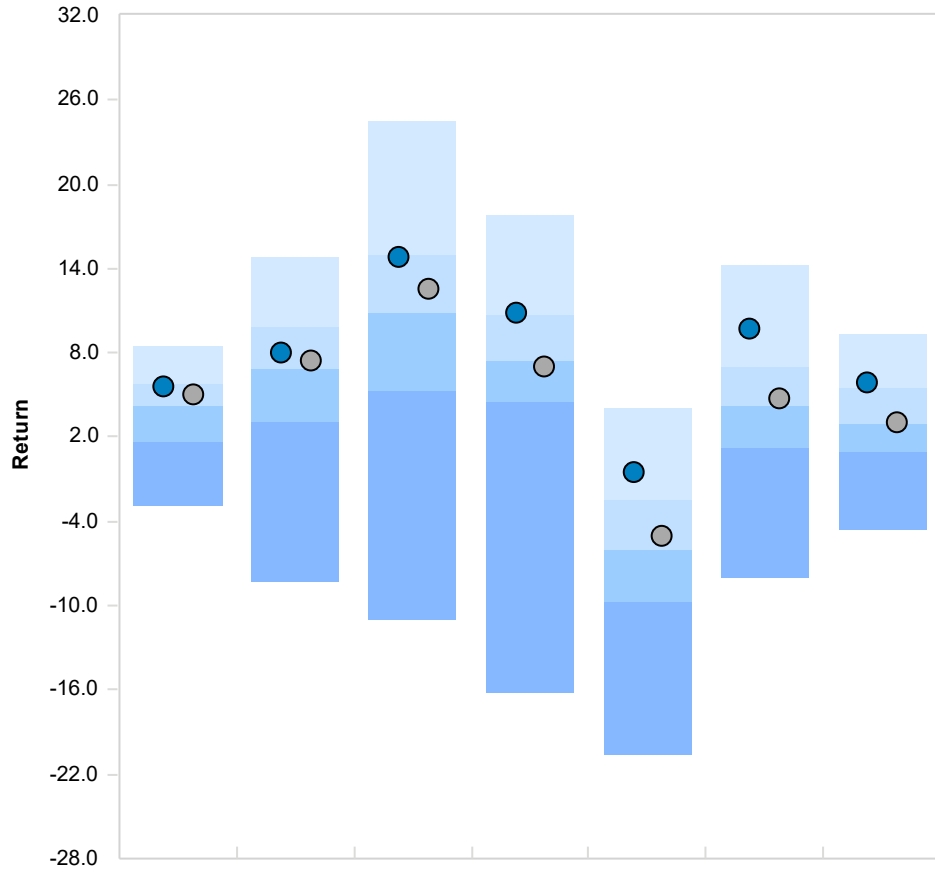
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	15	10 (67%)	0 (0%)	5 (33%)	0 (0%)
Index	20	0 (0%)	16 (80%)	4 (20%)	0 (0%)

5 Year Rolling Percentile Rank IM Emerging Markets Equity (SA+CF+MF)



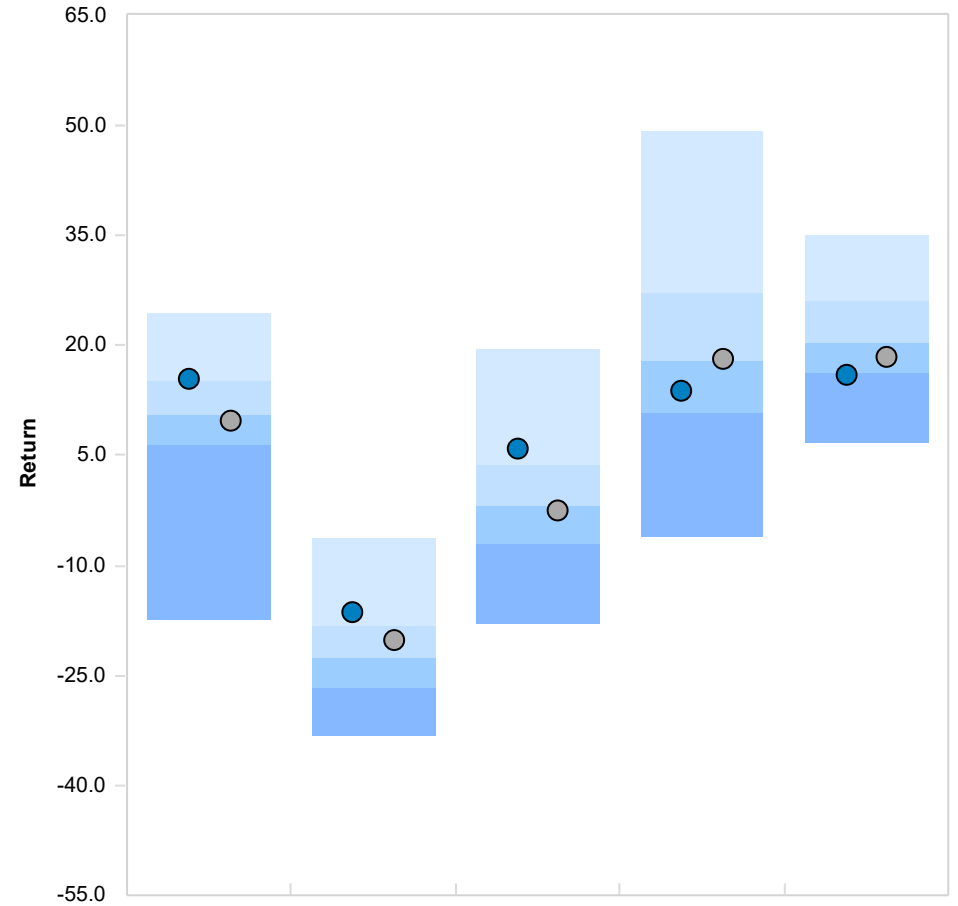
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	7	5 (71%)	2 (29%)	0 (0%)	0 (0%)
Index	20	0 (0%)	16 (80%)	4 (20%)	0 (0%)

Peer Group Analysis - IM Emerging Markets Equity (SA+CF+MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	5.57 (27)	8.09 (40)	14.82 (26)	10.86 (25)	-0.46 (16)	9.78 (15)	5.90 (21)
● Index	5.00 (37)	7.49 (45)	12.55 (40)	7.01 (55)	-5.07 (41)	4.79 (45)	3.10 (49)
Median	4.18	6.92	10.88	7.45	-6.07	4.22	2.93

Peer Group Analysis - IM Emerging Markets Equity (SA+CF+MF)



	2023	2022	2021	2020	2019
● Investment	15.45 (25)	-16.40 (19)	5.83 (18)	13.86 (70)	16.04 (77)
● Index	9.83 (55)	-20.09 (33)	-2.54 (54)	18.31 (49)	18.42 (63)
Median	10.57	-22.49	-1.95	17.99	20.50

Comparative Performance

	1 Qtr Ending Mar-2024	1 Qtr Ending Dec-2023	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022
Investment	2.38 (56)	7.86 (45)	-1.52 (19)	2.93 (31)	5.59 (32)	10.54 (40)
Index	2.37 (56)	7.86 (45)	-2.93 (33)	0.90 (65)	3.96 (66)	9.70 (54)
Median	2.80	7.61	-3.85	1.61	4.84	9.92

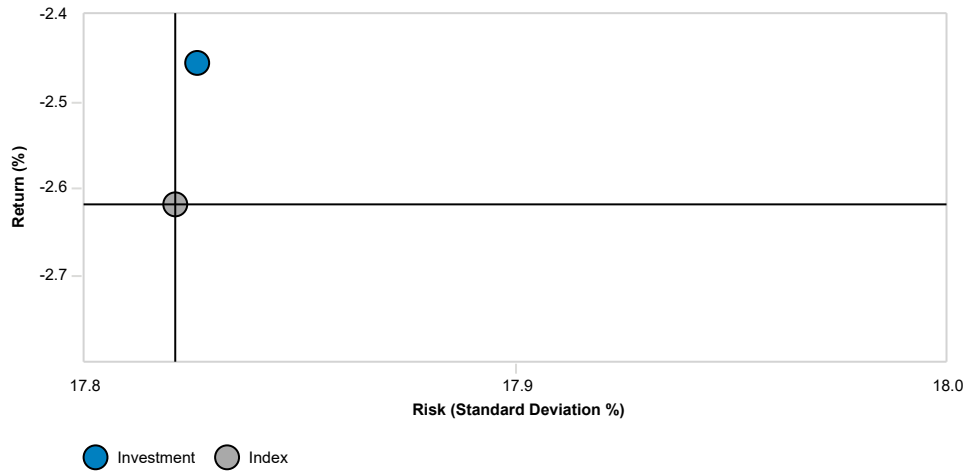
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-2.46	17.83	-0.22	101.04	5	100.34	7
Index	-2.62	17.82	-0.23	100.00	7	100.00	5

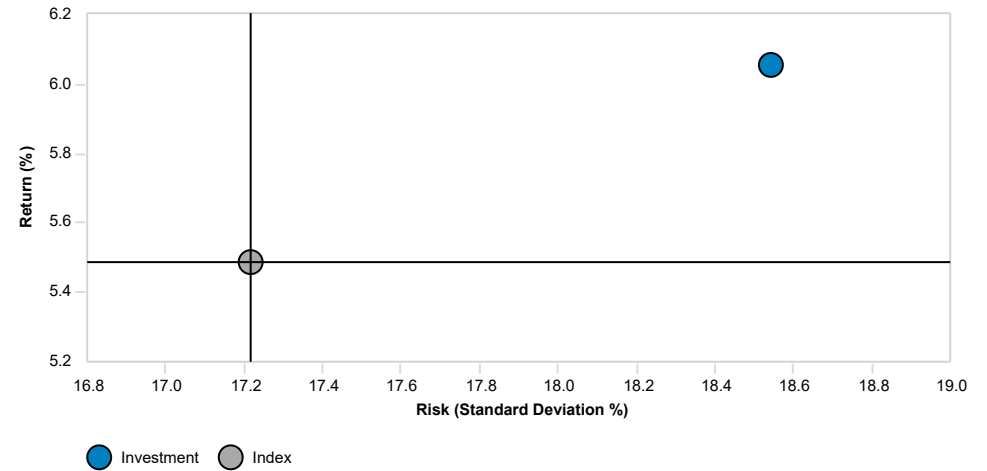
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	6.05	18.54	0.30	106.20	10	104.45	10
Index	5.49	17.22	0.27	100.00	12	100.00	8

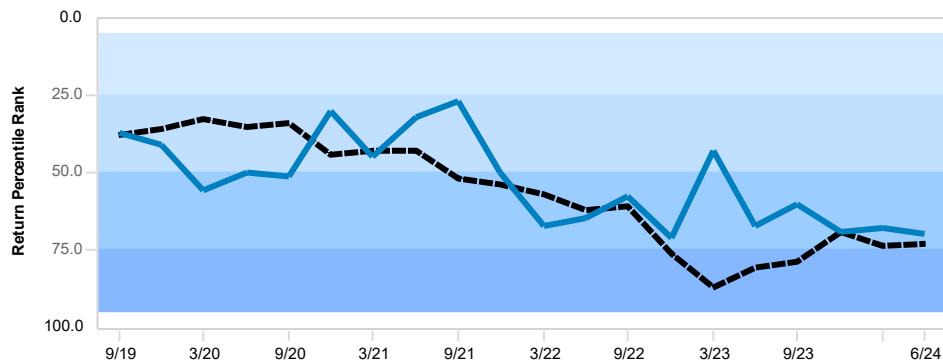
Risk and Return 3 Years



Risk and Return 5 Years

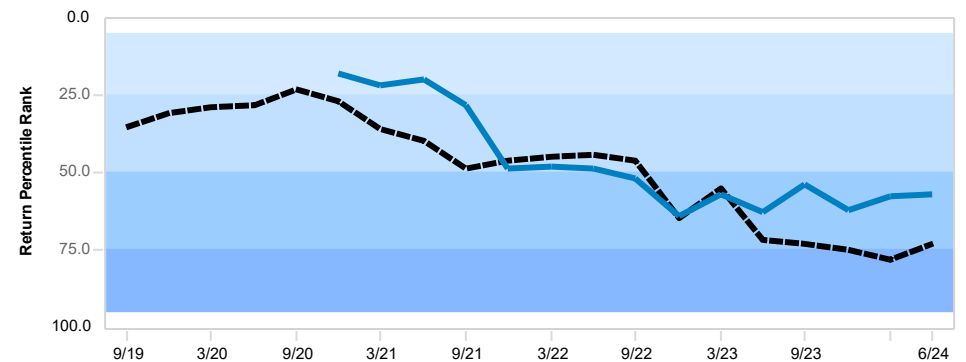


3 Year Rolling Percentile Rank IM International Large Cap Growth Equity (MF)



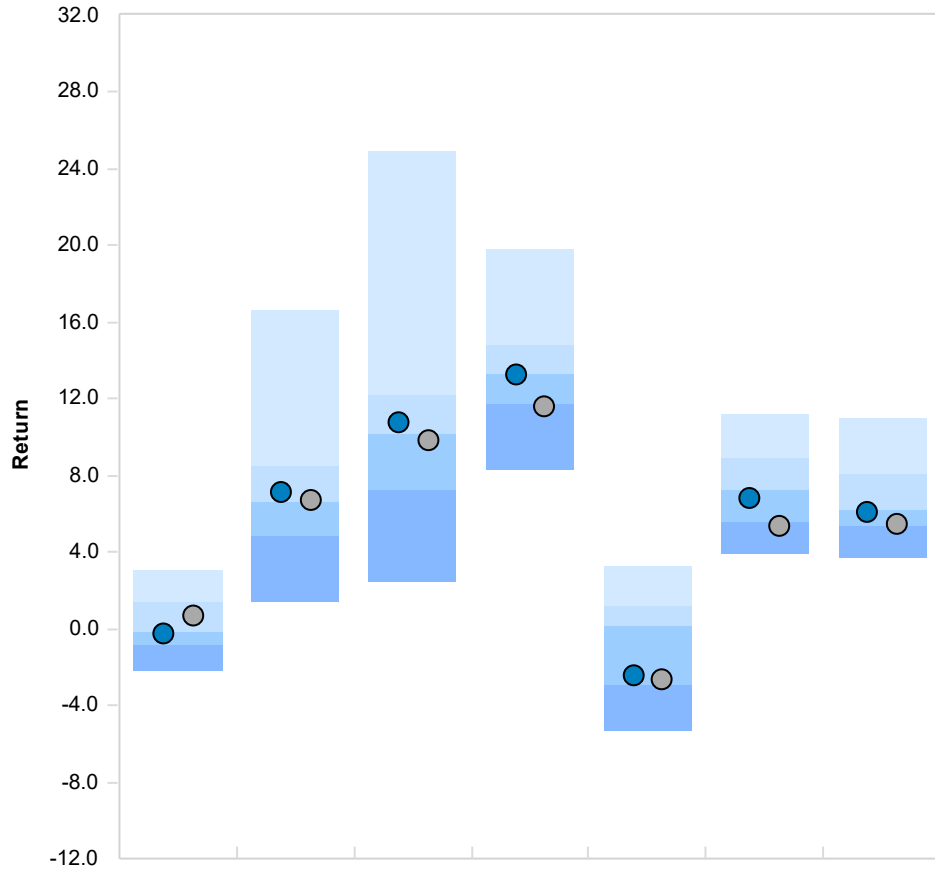
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	0 (0%)	9 (45%)	11 (55%)	0 (0%)
Index	20	0 (0%)	8 (40%)	8 (40%)	4 (20%)

5 Year Rolling Percentile Rank IM International Large Cap Growth Equity (MF)



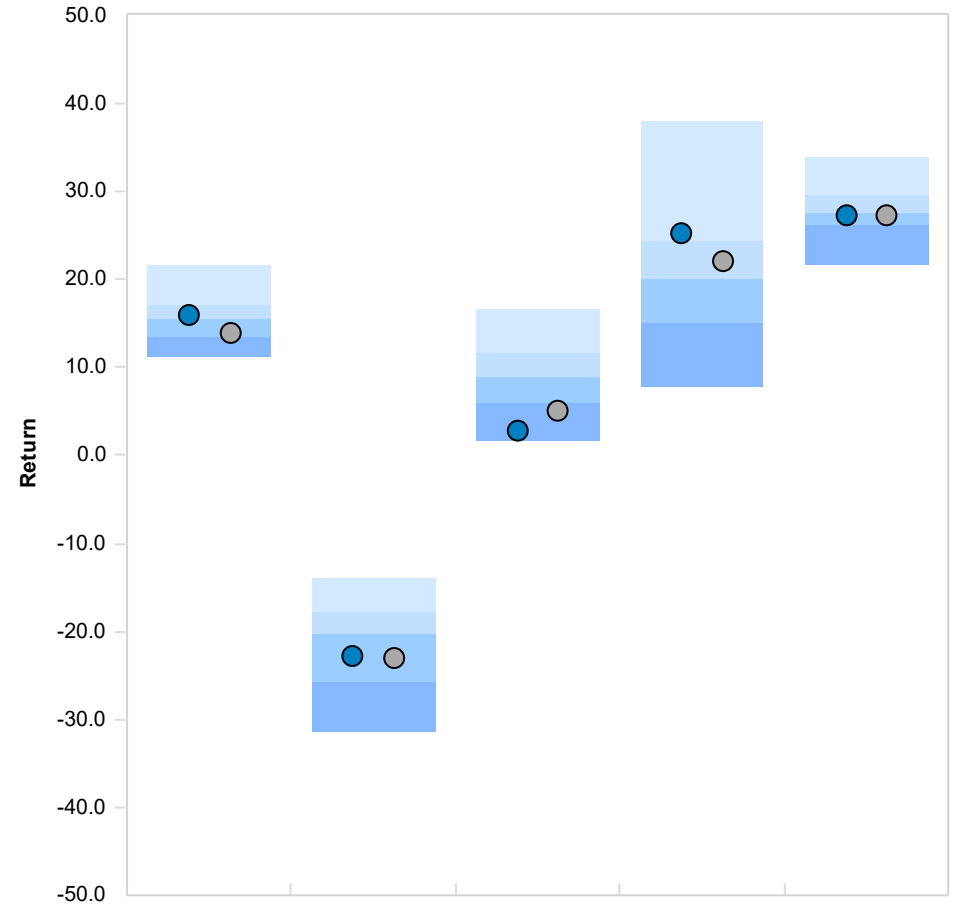
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	15	3 (20%)	4 (27%)	8 (53%)	0 (0%)
Index	20	1 (5%)	12 (60%)	6 (30%)	1 (5%)

Peer Group Analysis - IM International Large Cap Growth Equity (MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-0.23 (55)	7.19 (40)	10.82 (40)	13.28 (49)	-2.46 (70)	6.79 (56)	6.05 (57)
● Index	0.72 (38)	6.68 (49)	9.88 (54)	11.56 (77)	-2.62 (73)	5.41 (80)	5.49 (73)
Median	-0.11	6.62	10.16	13.26	0.20	7.25	6.24

Peer Group Analysis - IM International Large Cap Growth Equity (MF)



	2023	2022	2021	2020	2019
● Investment	16.05 (37)	-22.72 (60)	2.84 (86)	25.27 (17)	27.38 (55)
● Index	14.03 (73)	-23.05 (65)	5.09 (79)	22.20 (41)	27.34 (56)
Median	15.54	-20.24	8.88	20.00	27.50

Comparative Performance

	1 Qtr Ending Mar-2024	1 Qtr Ending Dec-2023	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022
Investment	7.44 (39)	10.37 (59)	-6.33 (33)	2.16 (63)	9.87 (42)	13.78 (65)
Index	5.91 (55)	11.12 (42)	-7.31 (55)	1.94 (74)	8.59 (64)	12.89 (80)
Median	6.85	10.83	-7.10	2.45	9.63	14.64

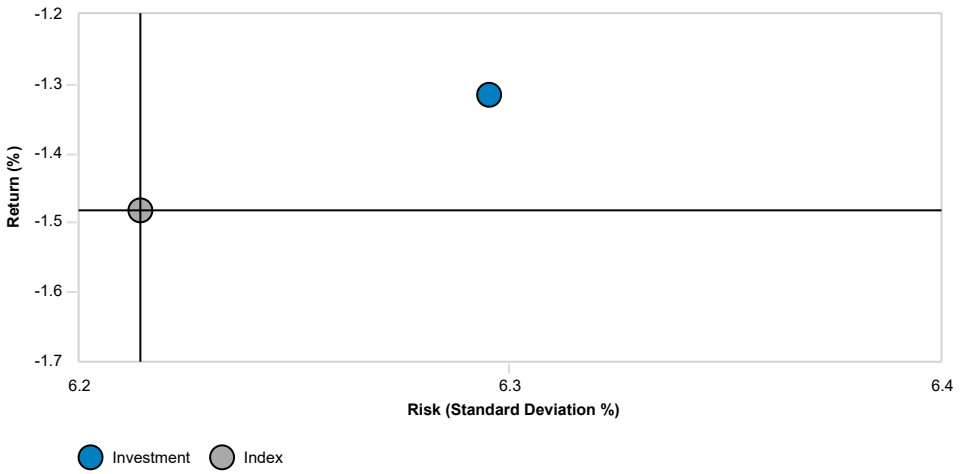
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-1.32	6.29	-0.67	99.63	5	97.81	7
Index	-1.48	6.21	-0.70	100.00	5	100.00	7

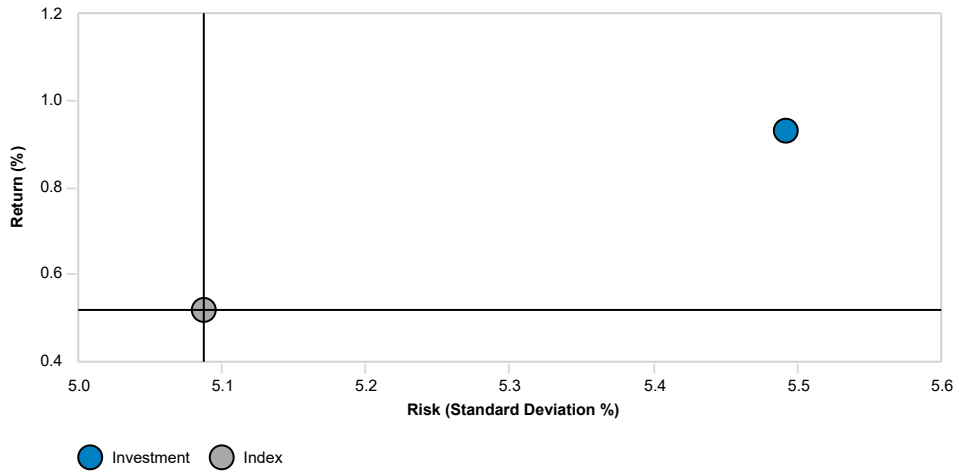
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	0.93	5.49	-0.19	109.99	11	103.99	9
Index	0.52	5.09	-0.30	100.00	12	100.00	8

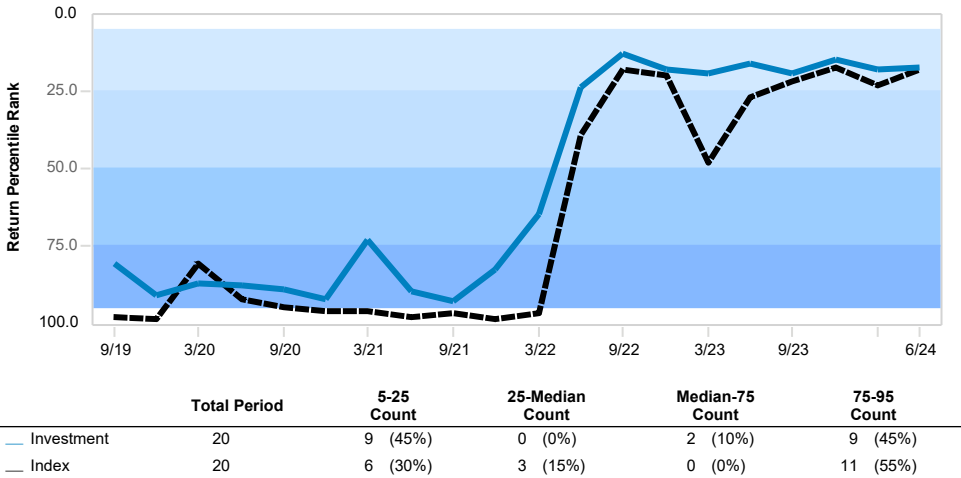
Risk and Return 3 Years



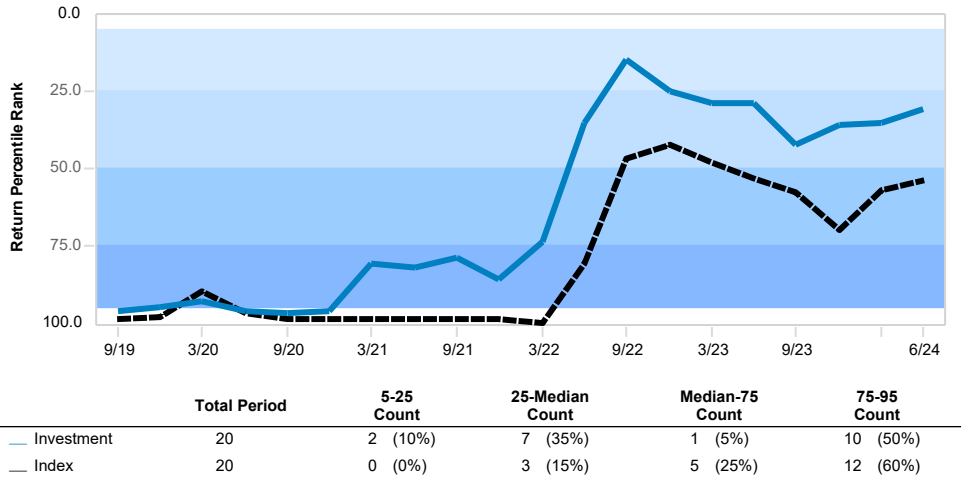
Risk and Return 5 Years



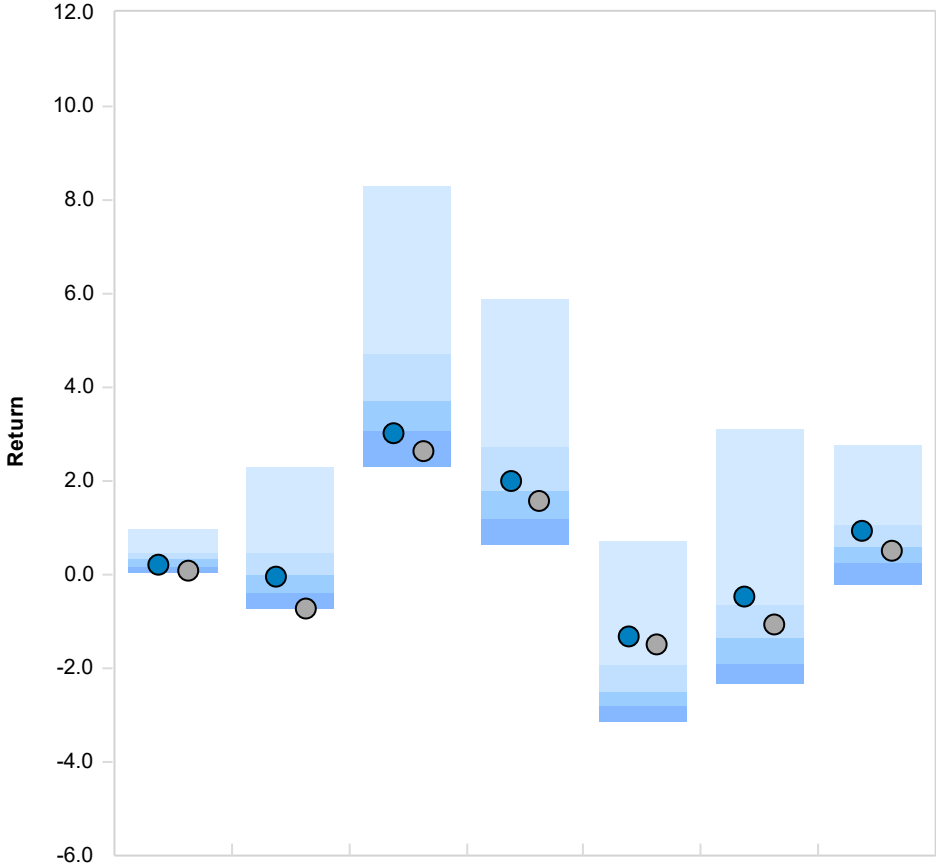
3 Year Rolling Percentile Rank IM U.S. Broad Market Fixed Income (SA+CF)



5 Year Rolling Percentile Rank IM U.S. Broad Market Fixed Income (SA+CF)

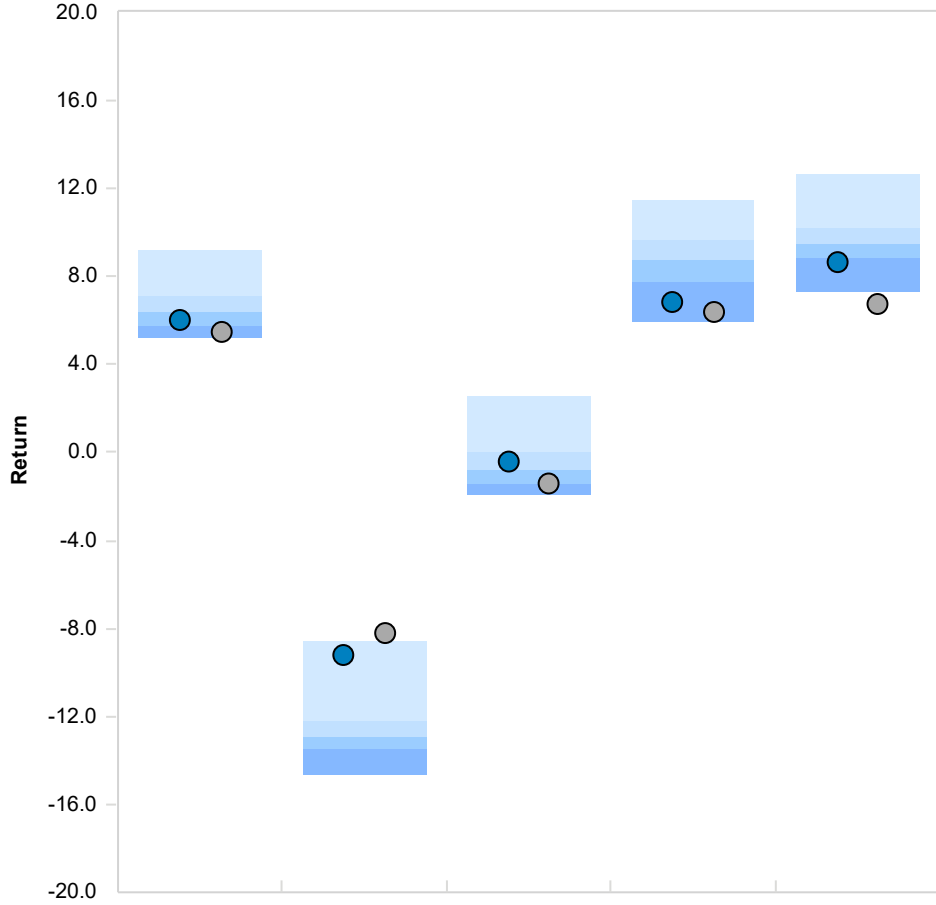


Peer Group Analysis - IM U.S. Broad Market Fixed Income (SA+CF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	0.21 (71)	-0.03 (52)	3.03 (77)	2.02 (44)	-1.32 (17)	-0.46 (21)	0.93 (31)
● Index	0.07 (94)	-0.71 (95)	2.63 (92)	1.55 (59)	-1.48 (18)	-1.07 (43)	0.52 (54)
Median	0.32	0.00	3.69	1.77	-2.50	-1.35	0.58

Peer Group Analysis - IM U.S. Broad Market Fixed Income (SA+CF)



	2023	2022	2021	2020	2019
● Investment	6.04 (66)	-9.17 (7)	-0.40 (38)	6.86 (91)	8.69 (84)
● Index	5.53 (88)	-8.24 (5)	-1.44 (76)	6.43 (93)	6.80 (98)
Median	6.37	-12.92	-0.74	8.74	9.50

Comparative Performance

	1 Qtr Ending Mar-2024	1 Qtr Ending Dec-2023	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022
Investment	-0.24 (45)	6.69 (74)	-3.40 (86)	-0.15 (20)	3.05 (67)	0.46 (100)
Index	-0.78 (93)	6.82 (60)	-3.23 (77)	-0.84 (83)	2.96 (75)	1.54 (85)
Median	-0.31	6.92	-3.01	-0.58	3.17	1.94

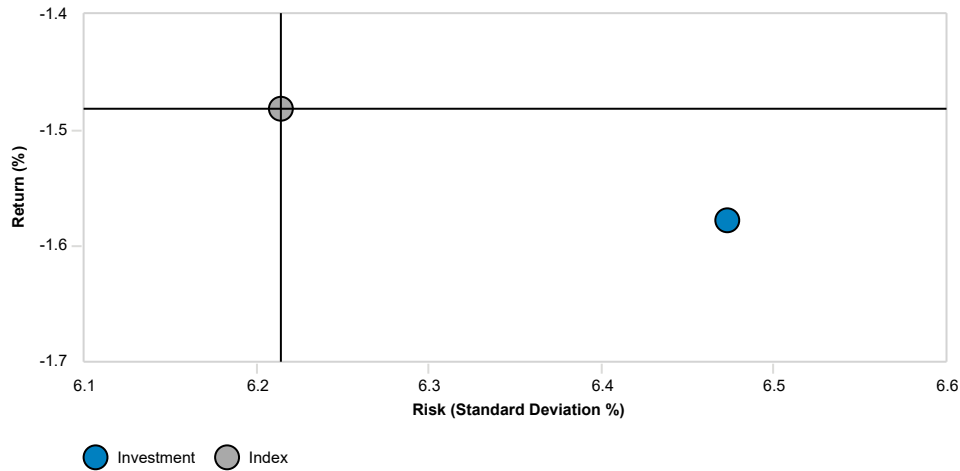
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-1.58	6.47	-0.69	104.19	4	104.48	8
Index	-1.48	6.21	-0.70	100.00	5	100.00	7

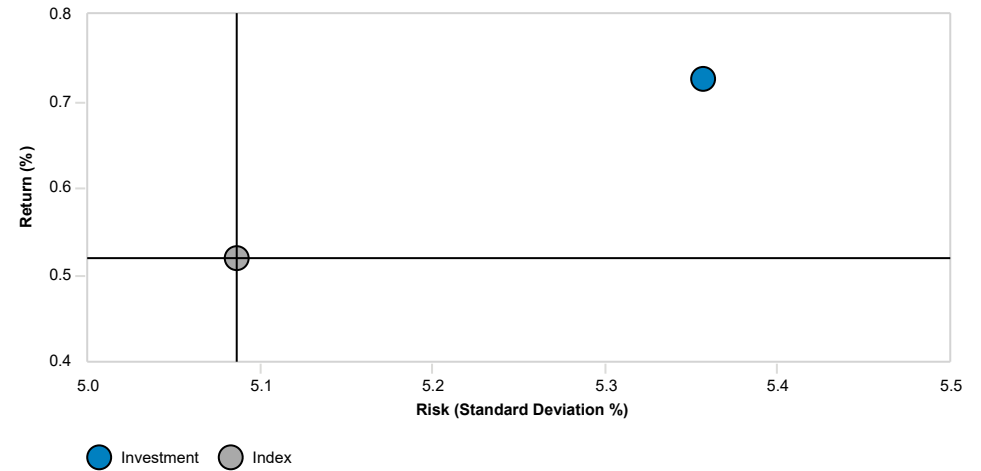
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	0.73	5.36	-0.24	107.66	11	104.89	9
Index	0.52	5.09	-0.30	100.00	12	100.00	8

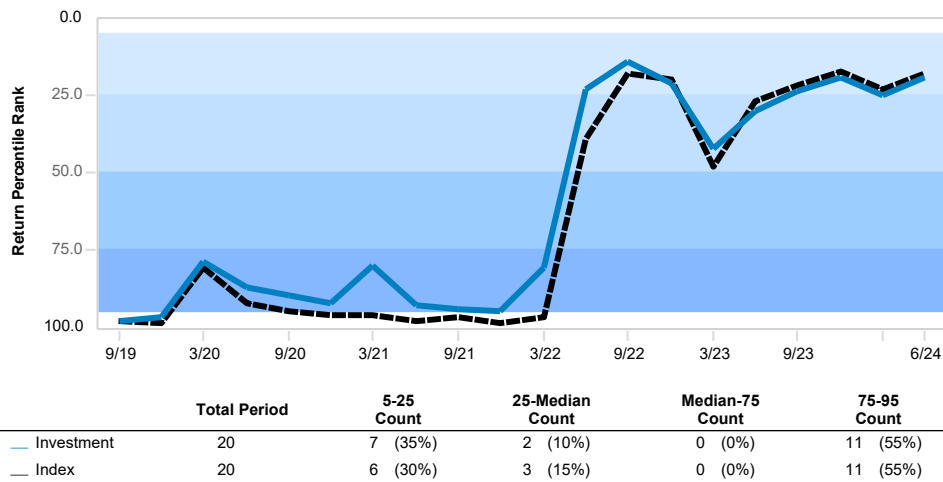
Risk and Return 3 Years



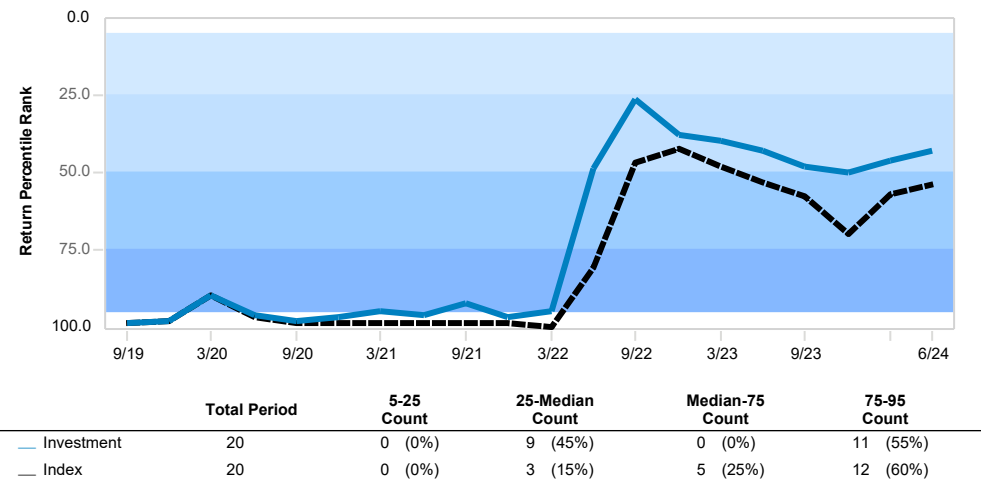
Risk and Return 5 Years



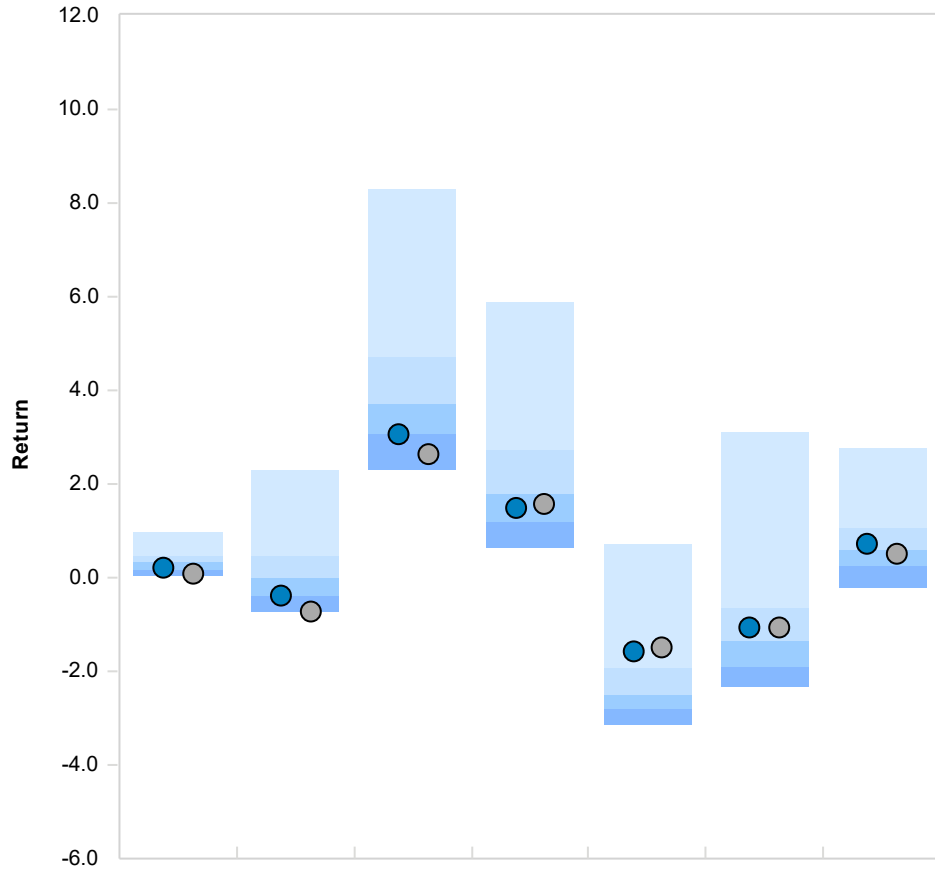
3 Year Rolling Percentile Rank IM U.S. Broad Market Fixed Income (SA+CF)



5 Year Rolling Percentile Rank IM U.S. Broad Market Fixed Income (SA+CF)

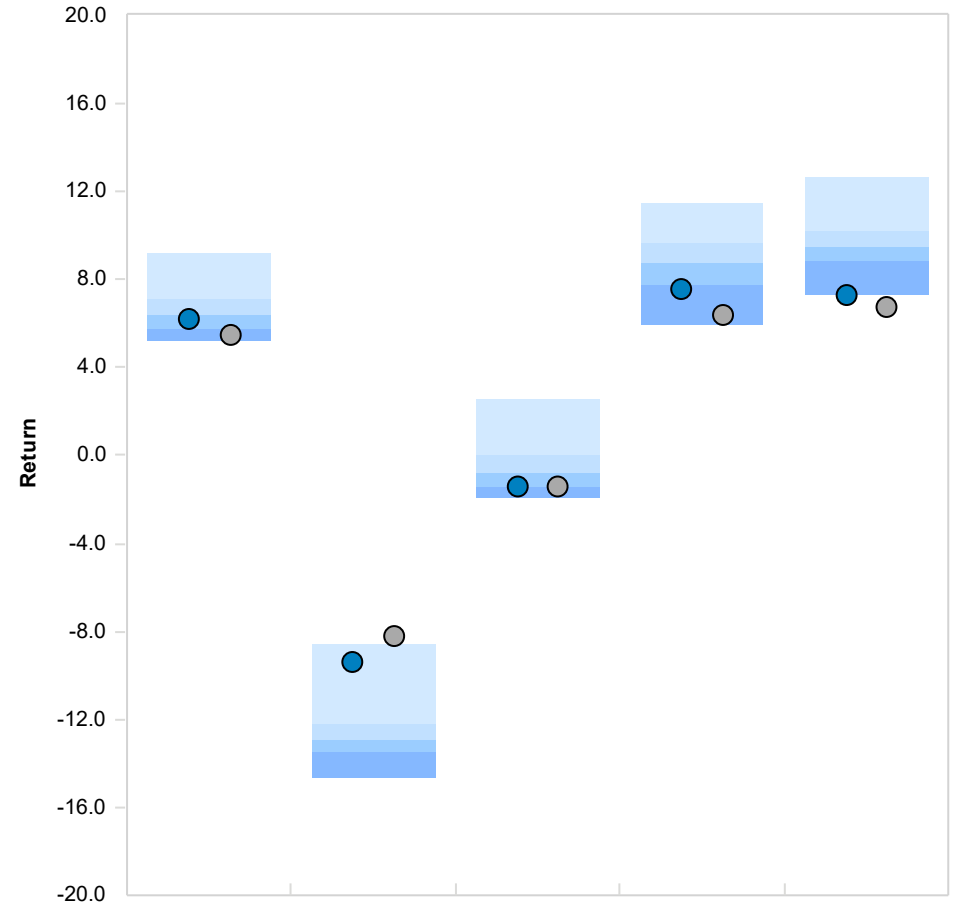


Peer Group Analysis - IM U.S. Broad Market Fixed Income (SA+CF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	0.22 (69)	-0.37 (74)	3.05 (75)	1.47 (64)	-1.58 (19)	-1.04 (42)	0.73 (43)
● Index	0.07 (94)	-0.71 (95)	2.63 (92)	1.55 (59)	-1.48 (18)	-1.07 (43)	0.52 (54)
Median	0.32	0.00	3.69	1.77	-2.50	-1.35	0.58

Peer Group Analysis - IM U.S. Broad Market Fixed Income (SA+CF)



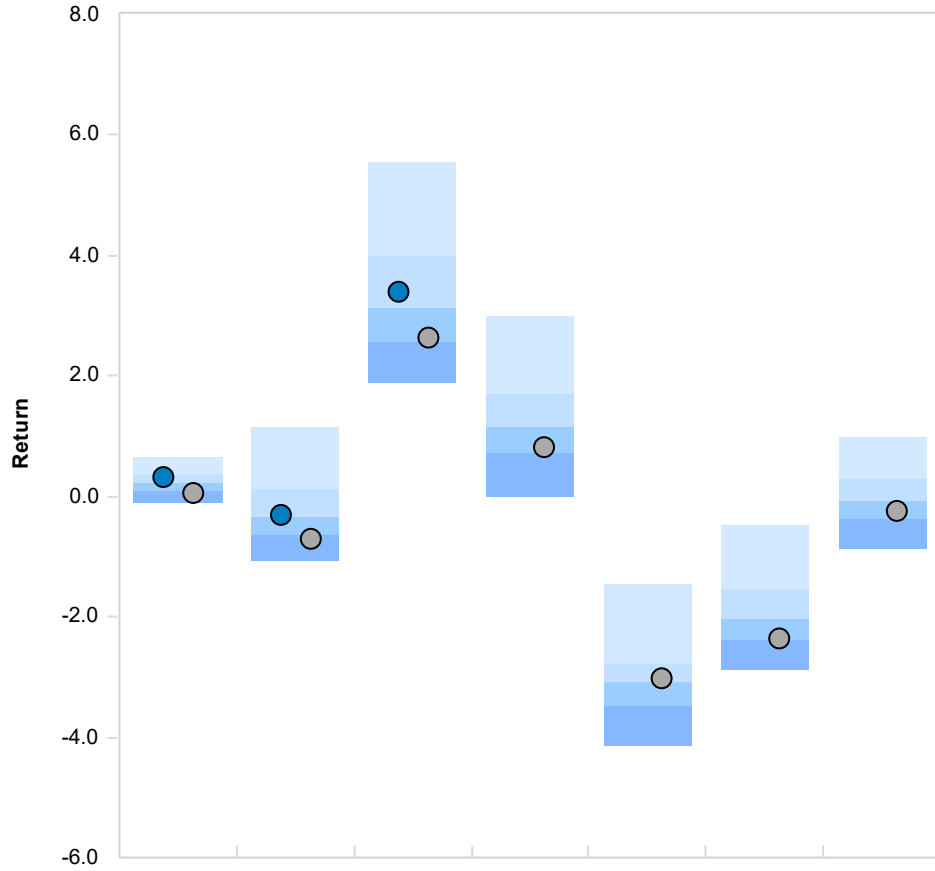
	2023	2022	2021	2020	2019
● Investment	6.23 (57)	-9.36 (8)	-1.38 (75)	7.53 (84)	7.29 (95)
● Index	5.53 (88)	-8.24 (5)	-1.44 (76)	6.43 (93)	6.80 (98)
Median	6.37	-12.92	-0.74	8.74	9.50

Comparative Performance

	1 Qtr Ending Mar-2024	1 Qtr Ending Dec-2023	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022
Investment	-0.59 (75)	6.85 (55)	-3.20 (71)	-0.67 (59)	3.40 (25)	0.24 (100)
Index	-0.78 (93)	6.82 (60)	-3.23 (77)	-0.84 (83)	2.96 (75)	1.54 (85)
Median	-0.31	6.92	-3.01	-0.58	3.17	1.94

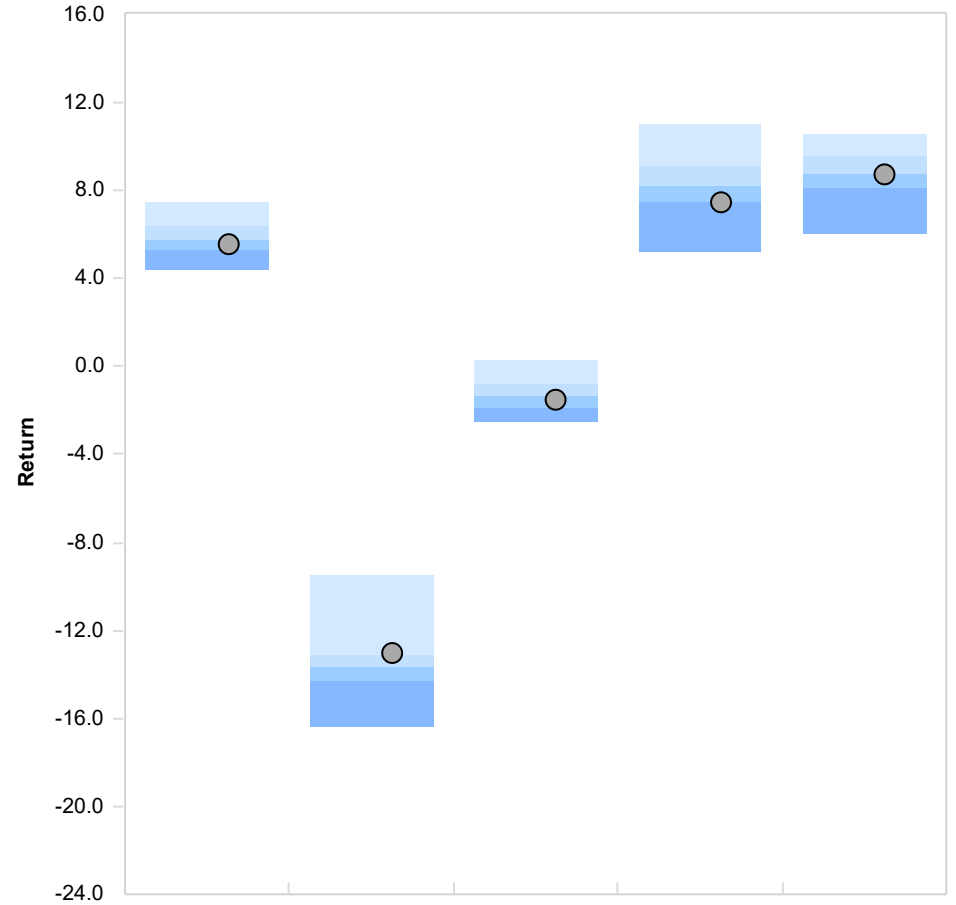
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Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	0.31 (30)	-0.30 (48)	3.41 (41)	N/A	N/A	N/A	N/A
● Index	0.07 (80)	-0.71 (82)	2.63 (73)	0.83 (69)	-3.02 (42)	-2.36 (71)	-0.23 (63)
Median	0.21	-0.34	3.13	1.15	-3.10	-2.04	-0.08

Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (MF)



	2023	2022	2021	2020	2019
● Investment	N/A	N/A	N/A	N/A	N/A
● Index	5.53 (65)	-13.01 (22)	-1.55 (60)	7.51 (73)	8.72 (53)
Median	5.77	-13.66	-1.33	8.16	8.76

Comparative Performance

	1 Qtr Ending Mar-2024	1 Qtr Ending Dec-2023	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022
Investment	-0.61 (59)	6.85 (43)	-2.93 (30)	-0.84 (53)	N/A	N/A
Index	-0.78 (80)	6.82 (46)	-3.23 (70)	-0.84 (55)	2.96 (69)	1.87 (35)
Median	-0.53	6.77	-3.08	-0.81	3.14	1.71

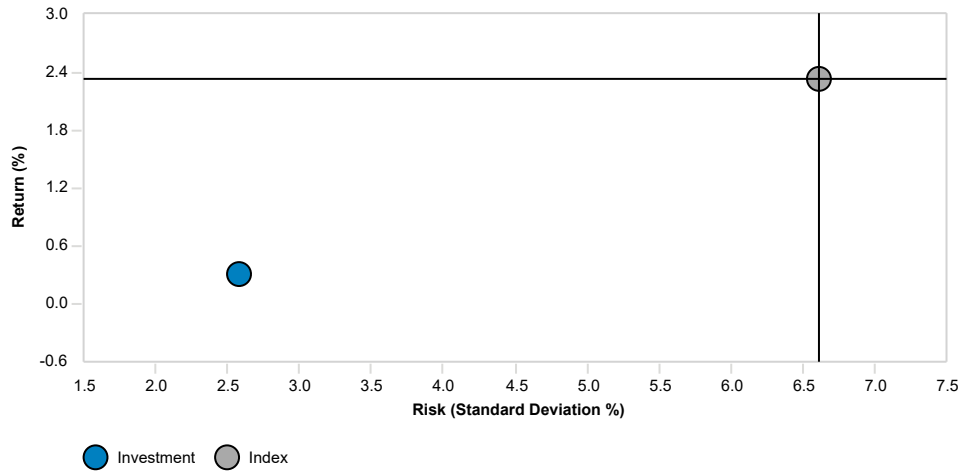
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	0.30	2.58	-0.74	33.41	7	45.19	5
Index	2.33	6.61	-0.06	100.00	5	100.00	7

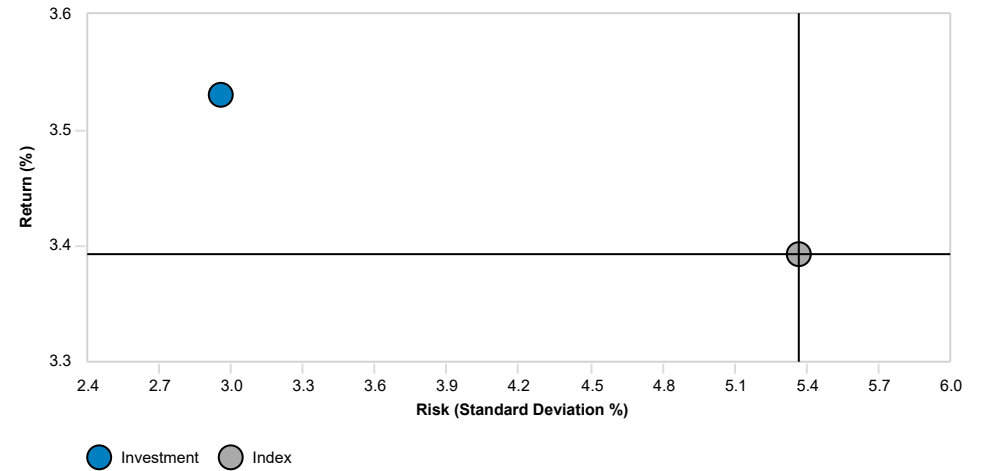
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	3.53	2.95	0.36	67.91	15	26.33	5
Index	3.39	5.37	0.22	100.00	12	100.00	8

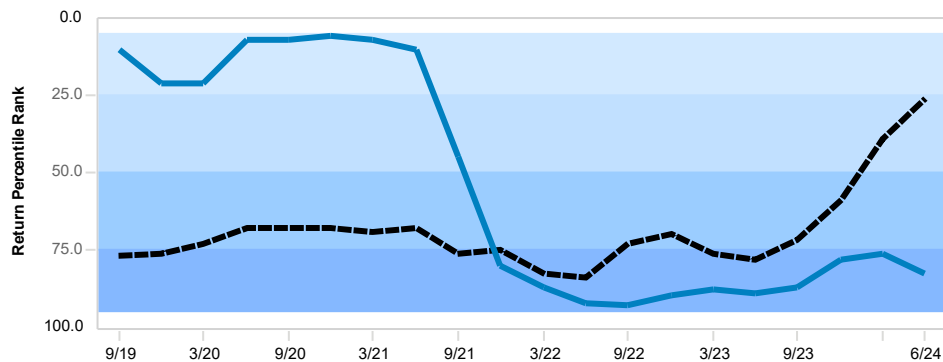
Risk and Return 3 Years



Risk and Return 5 Years

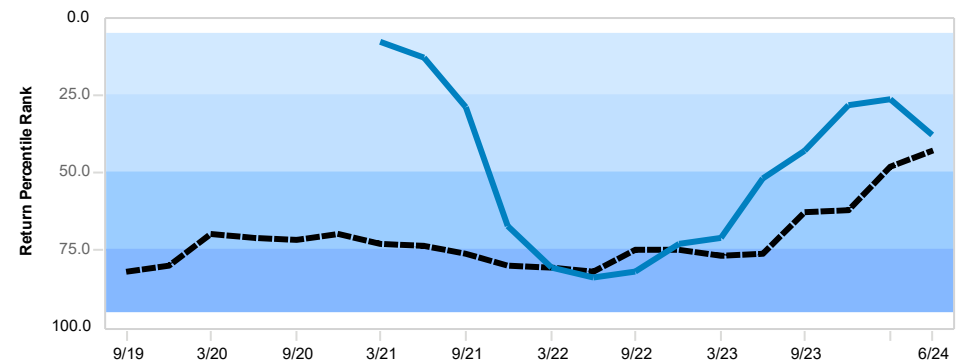


3 Year Rolling Percentile Rank IM U.S. Private Real Estate (SA+CF)



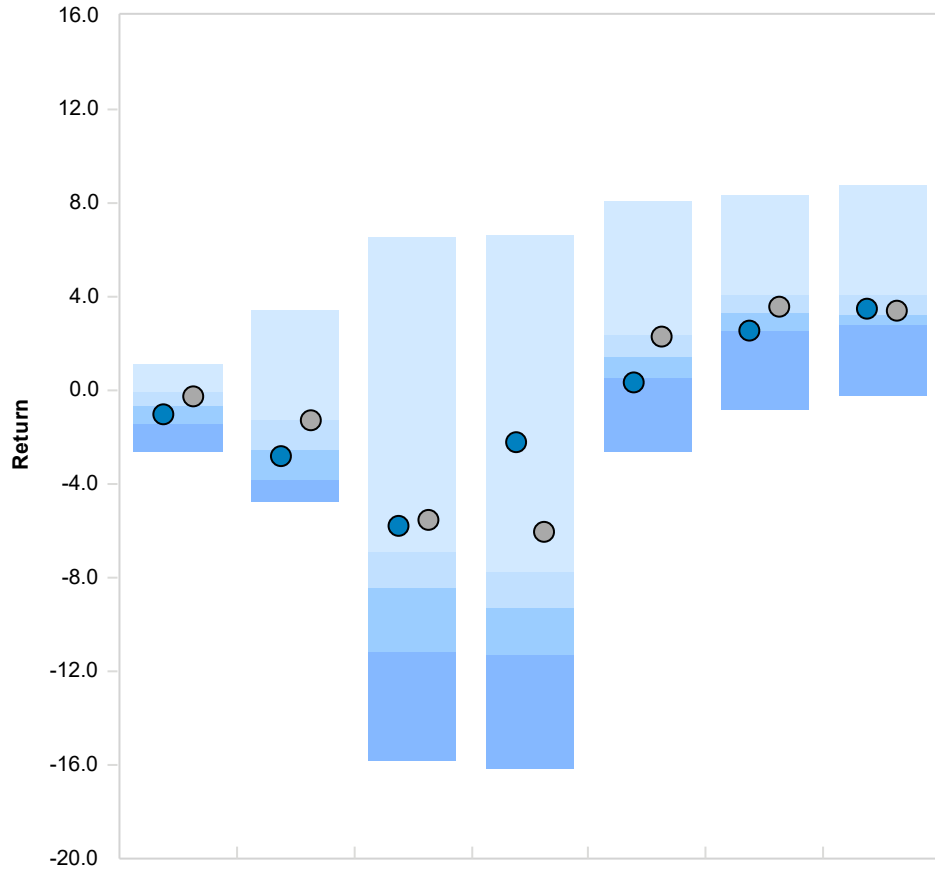
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	8 (40%)	1 (5%)	0 (0%)	11 (55%)
Index	20	0 (0%)	2 (10%)	11 (55%)	7 (35%)

5 Year Rolling Percentile Rank IM U.S. Private Real Estate (SA+CF)



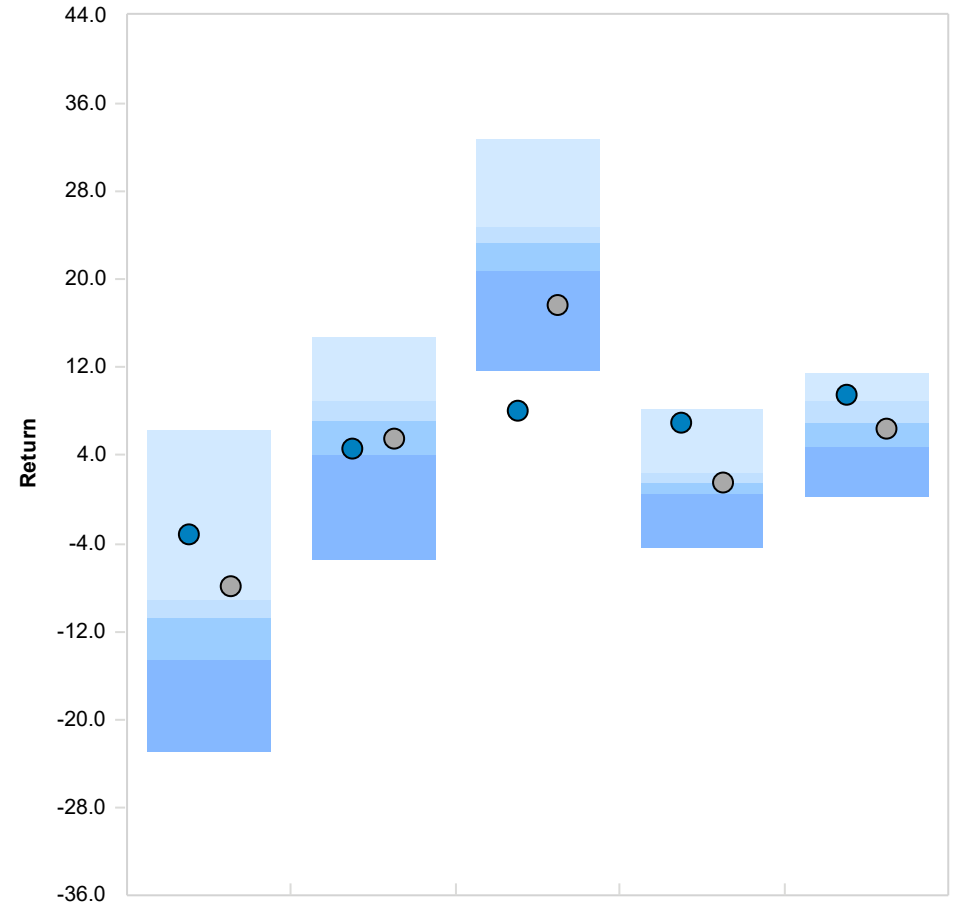
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	14	2 (14%)	5 (36%)	4 (29%)	3 (21%)
Index	20	0 (0%)	2 (10%)	10 (50%)	8 (40%)

Peer Group Analysis - IM U.S. Private Real Estate (SA+CF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-1.01 (72)	-2.82 (53)	-5.77 (22)	-2.24 (14)	0.30 (83)	2.52 (76)	3.53 (38)
● Index	-0.26 (31)	-1.24 (25)	-5.53 (21)	-6.06 (23)	2.33 (26)	3.57 (47)	3.39 (43)
Median	-0.72	-2.55	-8.39	-9.25	1.47	3.34	3.21

Peer Group Analysis - IM U.S. Private Real Estate (SA+CF)



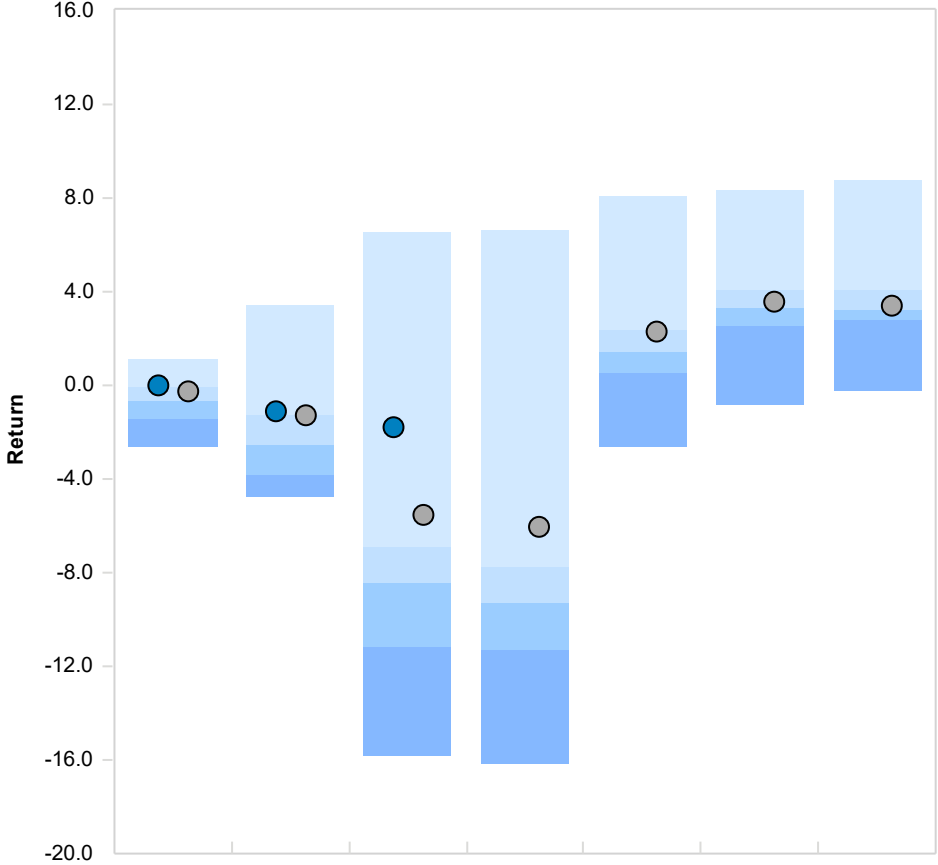
	2023	2022	2021	2020	2019
● Investment	-3.13 (10)	4.58 (73)	8.04 (97)	6.97 (6)	9.53 (18)
● Index	-7.94 (24)	5.52 (61)	17.70 (85)	1.60 (47)	6.42 (64)
Median	-10.76	7.14	23.30	1.57	7.01

Comparative Performance

	1 Qtr Ending Mar-2024	1 Qtr Ending Dec-2023	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022
Investment	-1.84 (39)	-2.20 (36)	-0.85 (14)	0.50 (8)	-0.60 (12)	0.16 (8)
Index	-0.98 (23)	-3.02 (43)	-1.37 (19)	-1.98 (50)	-1.81 (25)	-3.50 (25)
Median	-2.11	-4.10	-2.66	-1.98	-2.91	-4.97

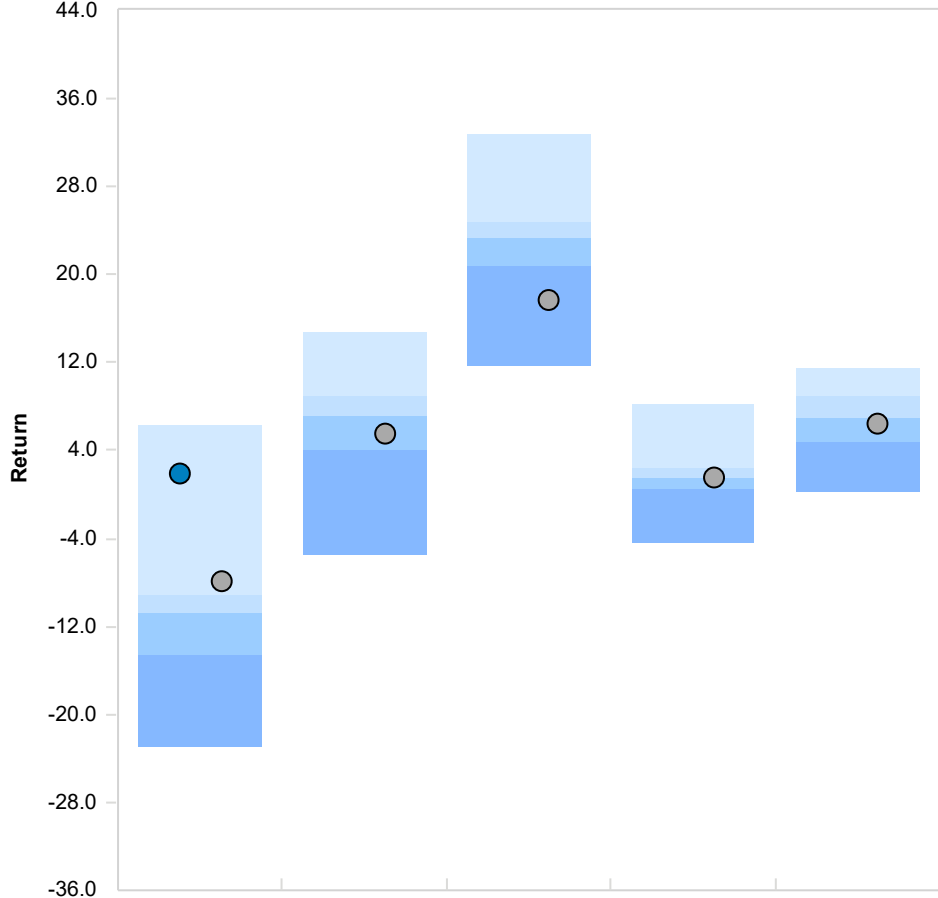
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Peer Group Analysis - IM U.S. Open End Private Real Estate (SA+CF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	0.00 (24)	-1.15 (25)	-1.82 (12)	N/A	N/A	N/A	N/A
● Index	-0.26 (31)	-1.24 (25)	-5.53 (21)	-6.06 (23)	2.33 (26)	3.57 (47)	3.39 (43)
Median	-0.72	-2.55	-8.39	-9.25	1.47	3.34	3.21

Peer Group Analysis - IM U.S. Open End Private Real Estate (SA+CF)



	2023	2022	2021	2020	2019
● Investment	1.91 (8)	N/A	N/A	N/A	N/A
● Index	-7.94 (24)	5.52 (61)	17.70 (85)	1.60 (47)	6.42 (64)
Median	-10.76	7.14	23.30	1.57	7.01

Comparative Performance

	1 Qtr Ending Mar-2024	1 Qtr Ending Dec-2023	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022
Investment	-1.15 (26)	-1.21 (13)	0.53 (8)	1.54 (7)	1.06 (6)	N/A
Index	-0.98 (23)	-3.02 (43)	-1.37 (19)	-1.98 (50)	-1.81 (25)	-3.50 (25)
Median	-2.11	-4.10	-2.66	-1.98	-2.91	-4.97

Erie County Employees Retirement Plan
Fee Analysis
As of June 30, 2024

	Estimated Annual Fee (%)	Market Value (\$)	Estimated Annual Fee (\$)	Fee Schedule
Total Fund	0.39	321,747,763	1,266,167	
Domestic Large Cap Equity	0.08	80,042,419	62,344	
Vanguard S&P 500 Index Fund (VINIX)	0.04	38,918,790	13,622	0.04 % of Assets
Vanguard Russell 1000 Growth Index (VRGWX)	0.07	20,890,000	14,623	0.07 % of Assets
DFA Large Value Equity (DFLVX)	0.22	13,290,672	29,239	0.22 % of Assets
Vanguard Russell 1000 Value Index (VRVIX)	0.07	6,942,957	4,860	0.07 % of Assets
Domestic Small Cap Equity	0.56	46,052,128	259,489	
Allspring Global Small Value Eq.	0.50	19,823,855	99,119	0.50 % of Assets
Emerald Small Growth Equity	0.61	22,354,069	137,124	0.75 % of First \$2 M 0.60 % Thereafter
StoneRidge Small Growth Equity	0.60	3,874,204	23,245	0.60 % of Assets
International Equity	0.36	46,739,522	167,998	
DFA International Equity (DFIEX)	0.24	19,710,343	47,305	0.24 % of Assets
DFA Emerging Markets (DFCEX)	0.39	5,200,803	20,283	0.39 % of Assets
EuroPacific Growth Fund (RERGX)	0.46	21,828,376	100,411	0.46 % of Assets
Total Fixed Income	0.21	93,263,740	199,937	
Boyd Watterson Fixed	0.23	45,012,020	103,528	0.23 % of Assets
PNC Fixed	0.28	26,754,458	74,912	0.28 % of Assets
Vanguard Core Bond Fund (VCOBX)	0.10	21,497,261	21,497	0.10 % of Assets
Private Real Estate	1.13	24,053,104	271,195	
Boyd Watterson GSA Fund	1.25	12,265,464	153,318	1.25 % of Assets
Bentall GreenOak US Core Plus RE	1.00	11,787,640	117,876	1.00 % of Assets
Private Equity	1.00	22,867,957	228,680	
Ironsides Direct Investment Fund V	1.00	9,984,110	99,841	1.00 % of Assets
PA Co-Investment Fund III	1.00	5,734,068	57,341	1.00 % of Assets
Adams Street Co-Investment Fund V	1.00	5,077,391	50,774	1.00 % of Assets
Hamilton Lane Secondary Fund VI	1.00	2,072,388	20,724	1.00 % of Assets
Private Debt	0.94	8,133,054	76,524	
Ironsides Opportunities Fund	0.75	1,922,668	14,420	0.75 % of Assets
PA Credit Strategies Fund	1.00	6,210,386	62,104	1.00 % of Assets
Cash		595,839	-	
Cash Account		595,839	-	

See the disclosure page at the end of this report.
Fee information on this page is an illustrative estimate of management fees based on current reported portfolio values. Fee estimates do not reflect actual calculation methodologies or applicable carried interest.

Historical Hybrid Composition
Total Fund Policy Index
As of June 30, 2024

Historical Hybrid Composition			
Allocation Mandate	Weight (%)	Allocation Mandate	Weight (%)
Dec-1997		Mar-2019	
Bloomberg Intermediate US Govt/Credit Idx	40.00	MSCI EAFE (Net) Index	13.00
MSCI EAFE (Net) Index	10.00	Bloomberg Intermediate US Govt/Credit Idx	29.00
Russell 3000 Index	50.00	NCREIF Property Index	6.00
Mar-1998		Russell 2000 Index	12.00
Russell 3000 Index	50.00	Russell 1000 Index	25.00
MSCI EAFE (Net) Index	10.00	Alerian MLP Index	4.00
Bloomberg Intermediate US Govt/Credit Idx	40.00	Credit Suisse Leveraged Loan Index	2.00
Mar-2005		Russell Microcap + 3%	4.00
Russell 3000 Index	50.00	Bloomberg 1-5 Year Gov/Credit Idx	5.00
MSCI EAFE (Net) Index	10.00	Mar-2021	
Bloomberg Intermediate US Govt/Credit Idx	37.00	MSCI EAFE (Net) Index	13.00
Blmbg. U.S. Corp High Yield	3.00	Bloomberg Intermediate US Govt/Credit Idx	29.00
Mar-2007		NCREIF Property Index	8.00
Russell 3000 Index	50.00	Russell 2000 Index	15.00
MSCI EAFE (Net) Index	10.00	Russell 1000 Index	22.00
Bloomberg Intermediate US Govt/Credit Idx	30.00	Credit Suisse Leveraged Loan Index	3.00
Blmbg. U.S. Gov't/Credit	10.00	Russell Microcap + 3%	5.00
Dec-2010		Bloomberg 1-5 Year Gov/Credit Idx	5.00
Russell 3000 Index	45.00	Jan-2023	
MSCI EAFE (Net) Index	10.00	MSCI EAFE (Net) Index	13.00
Bloomberg Intermediate US Govt/Credit Idx	38.00	Blmbg. U.S. Aggregate Index	34.00
NCREIF Property Index	7.00	NCREIF Property Index	8.00
Dec-2015		Russell 2000 Index	15.00
MSCI EAFE (Net) Index	10.00	Russell 1000 Index	22.00
Bloomberg Intermediate US Govt/Credit Idx	37.00	Credit Suisse Leveraged Loan Index	3.00
NCREIF Property Index	7.00	Russell Microcap + 3%	5.00
Russell 2000 Index	15.00		
Russell 1000 Index	12.00		
S&P 500 Index	13.00		
Alerian MLP Index	6.00		

Returns prior to 1/1/2023 are from the prior consultant.

Returns for periods greater than one year are annualized.

Manager fees associated with money market or cash accounts are not tracked.

Active Return	- Arithmetic difference between the manager's performance and the designated benchmark return over a specified time period.
Alpha	- A measure of the difference between a portfolio's actual performance and its expected return based on its level of risk as determined by beta. It determines the portfolio's non-systemic return, or its historical performance not explained by movements of the market.
Beta	- A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of the portfolio's systematic risk.
Consistency	- The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. Higher consistency indicates the manager has contributed more to the product's performance.
Distributed to Paid In (DPI)	- The ratio of money distributed to Limited Partners by the fund, relative to contributions. It is calculated by dividing cumulative distributions by paid in capital. This multiple shows the investor how much money they got back. It is a good measure for evaluating a fund later in its life because there are more distributions to measure against.
Down Market Capture	- The ratio of average portfolio performance over the designated benchmark during periods of negative returns. A lower value indicates better product performance
Downside Risk	- A measure similar to standard deviation that utilizes only the negative movements of the return series. It is calculated by taking the standard deviation of the negative quarterly set of returns. A higher factor is indicative of a riskier product.
Excess Return	- Arithmetic difference between the manager's performance and the risk-free return over a specified time period.
Excess Risk	- A measure of the standard deviation of a portfolio's performance relative to the risk free return.
Information Ratio	- This calculates the value-added contribution of the manager and is derived by dividing the active rate of return of the portfolio by the tracking error. The higher the Information Ratio, the more the manager has added value to the portfolio.
Public Market Equivalent (PME)	- Designs a set of analyses used in the Private Equity Industry to evaluate the performance of a Private Equity Fund against a public benchmark or index.
R-Squared	- The percentage of a portfolio's performance that can be explained by the behavior of the appropriate benchmark. A high R-Squared means the portfolio's performance has historically moved in the same direction as the appropriate benchmark.
Return	- Compounded rate of return for the period.
Sharpe Ratio	- Represents the excess rate of return over the risk free return divided by the standard deviation of the excess return. The result is an absolute rate of return per unit of risk. A higher value demonstrates better historical risk-adjusted performance.
Standard Deviation	- A statistical measure of the range of a portfolio's performance. It represents the variability of returns around the average return over a specified time period.
Total Value to Paid In (TVPI)	- The ratio of the current value of remaining investments within a fund, plus the total value of all distributions to date, relative to the total amount of capital paid into the fund to date. It is a good measure of performance before the end of a fund's life
Tracking Error	- This is a measure of the standard deviation of a portfolio's returns in relation to the performance of its designated market benchmark.
Treynor Ratio	- Similar to Sharpe ratio but utilizes beta rather than excess risk as determined by standard deviation. It is calculated by taking the excess rate of return above the risk free rate divided by beta to derive the absolute rate of return per unit of risk. A higher value indicates a product has achieved better historical risk-adjusted performance.
Up Market Capture	- The ratio of average portfolio performance over the designated benchmark during periods of positive returns. A higher value indicates better product performance.

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Methodology for this Award: For the 2022 Greenwich Quality Award for Overall U.S. Investment Consulting – Midsize Consultants – Between February and November 2022, Coalition Greenwich conducted interviews with 727 individuals from 590 of the largest tax-exempt funds in the United States. These U.S.-based institutional investors are corporate and union funds, public funds, and endowment and foundation funds, with either pension or investment pool assets greater than \$150 million. Study participants were asked to provide quantitative and qualitative evaluations of their asset management and investment consulting providers, including qualitative assessments of those firms soliciting their business and detailed information on important market trends.

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