
Erie County Employees Retirement Plan

Investment Performance Review
Period Ending March 31, 2024

MARINER

1st Quarter 2024 Market Environment

The Economy

- The US Federal Reserve (the Fed) held rates steady during the first quarter. However, domestic equities rallied on the prospect that the Fed could cut rates later in 2024. In its press release for the March meeting, the Fed stated 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.” In addition, the Fed will continue reducing its balance sheet as described in its previously announced plans.
- The Fed’s prolonged pause in its rate-hiking cycle and the insertion of the word “any” in its December press release gave the market hope that the Fed may be ready to pivot in its stance and begin reducing rates to a less restrictive level in 2024. The Fed’s published “Dot Plot” shared expectations of three quarter-point rate cuts during the year, which would be the first rate cut since the COVID pandemic in 2020.
- Growth in the US labor market continued in March, as nonfarm payrolls increased by 303,000 and unemployment held steady at 3.8%. Federal Reserve Chair Jerome Powell stated, “Strong hiring in and of itself would not be a reason to hold off on rate cuts,” adding that the job market is not a primary cause for concern around inflation. Powell added “an unexpected weakening in the labor market could also warrant a policy response.”

Equity (Domestic and International)

- US equities moved broadly higher during the first quarter based on expectations of a more favorable interest rate environment in the coming year. The S&P 500 Index rose 10.6% for the quarter.
- International stocks experienced robust growth to begin the year, albeit muted by a strengthening US Dollar (USD). USD performance lagged local currency (LCL) performance in most regions for the quarter, though both currency readings were positive.
- GDP growth across regions remains mixed as many regions are dealing with local headwinds and tailwinds as much of the world continues to navigate sticky inflation with varying degrees of success. Conflicts abroad have dragged on performance, but as we have seen with the Russia-Ukraine conflict, market conditions will typically normalize once the broader impact has been reasonably assessed.

Fixed Income

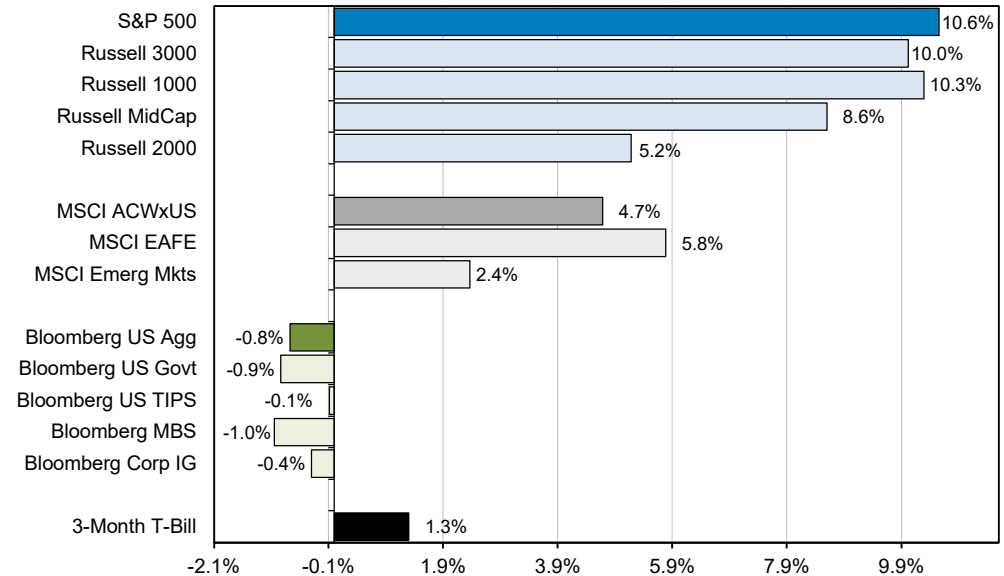
- While sticky inflation numbers and a robust job market likely prompted the Fed to keep the fed funds rate unchanged during the quarter, this lack of action also tempered expectations for potential rate cuts in 2024. Fixed-income markets fell in March (yield rose) on the belief that rates could be higher for longer.
- High-yield bonds outperformed investment-grade issues for the quarter, largely due to narrowing credit spreads and higher coupons. Although the high-yield bond benchmark’s duration is almost half of the US Aggregate Bond index’s duration, the high-yield index edged out the bellwether bond benchmark due to a relatively stable yield curve and the aforementioned narrowing credit spreads.
- Global bonds lagged the domestic bond market with the US Aggregate Index beating the Global Aggregate ex-US Index by 2.4%. This broke the two indexes’ tie in 2023 and left global bonds 2.4% behind the domestic bond market for the full year.

Market Themes

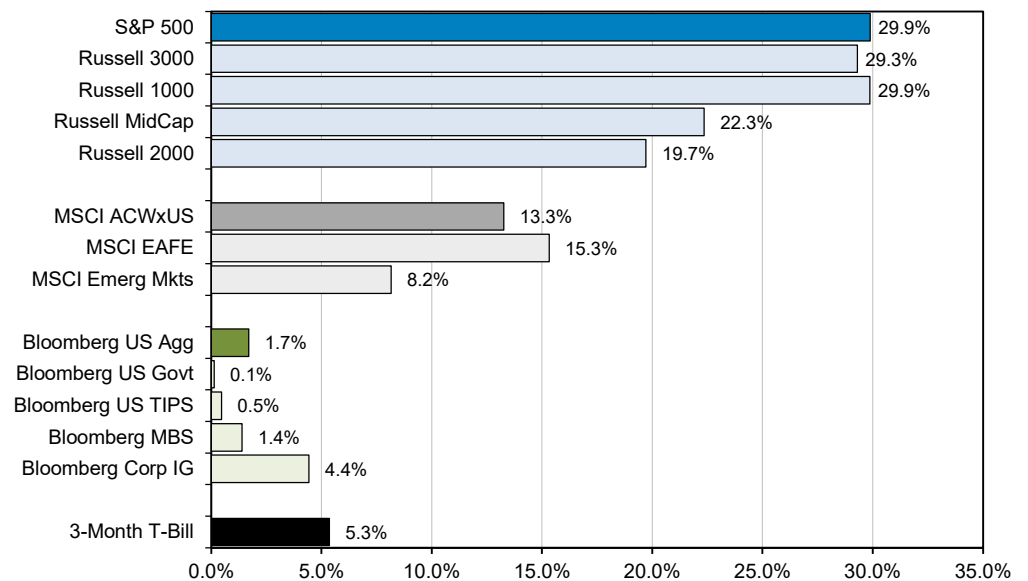
- 2024 opened with strong results in domestic and international equity markets, continuing what was a robust 2023. Growth sectors continued to outpace value sectors but by a narrower margin than 2023, showcasing increased breadth across many markets.
- Central banks remained vigilant in their stances 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.
- Policy rates remained relatively stable across most developed markets as central banks continued their tight policy stance. However, there are expectations of looser monetary policy to take hold as 2024 progresses.
- Ongoing military conflicts coupled with economic uncertainty around the globe continue to act as headwinds in international markets. While global disruptions from the Russia-Ukraine conflict seemed to subside, the proxy war in the Middle East has spread to other countries in the region and unsettled shipping channels globally.

- Domestic equity markets carried their momentum from late 2023 into the first quarter of 2024. Economic indicators continued to signal improving conditions for growth and softening inflation, resulting in an ongoing tailwind for risk assets. For the period, the S&P 500 large-cap benchmark returned 10.6% versus 8.6% for the Russell Mid Cap Index and 5.2% for the Russell 2000 small-cap index.
- International developed and emerging market equities also posted solid results. European markets continue to face geopolitical risks related to the conflict in Ukraine, the Middle East is grappling with a proxy war that has spread beyond Israel and Palestine, and Asia is feeling contagion effects from China's economic uncertainty. Despite the uncertainty, the developed market MSCI EAFE Index returned 5.8% for the quarter, while the MSCI Emerging Markets Index advanced 2.4%.
- Most broad fixed income indexes fell slightly during the first quarter of 2024. While market participants were generally optimistic about the possibility of a Fed rate cut during the first half of the year, sticky inflation pushed out these expectations and caused markets to re-think the timing of 2024's potential rate cuts. The Bloomberg (BB) US Aggregate Index returned -0.8% for the quarter while investment-grade corporate bonds were down less, returning -0.4%.
- US equity markets posted a stellar 29.9% during the trailing one-year period. The weakest relative performance for the year was the Russell 2000 Index, which nonetheless climbed 19.7% over the last 12 months.
- International markets also showcased a healthy rebound in 2023. Over the trailing one-year period, the MSCI EAFE Index was the best international performer, returning 15.3% while the MSCI Emerging Markets Index added a more modest 8.2%.
- Bond markets were relatively flat over the previous 12 months. Investment-grade corporate bonds were the best-performing sector, up by 4.4%. Meanwhile, Treasuries have lagged, returning just 0.1% over the previous 12 months. The bellwether fixed-income benchmark, the Bloomberg US Aggregate Index, returned a muted 1.7% for the year.

Quarter Performance

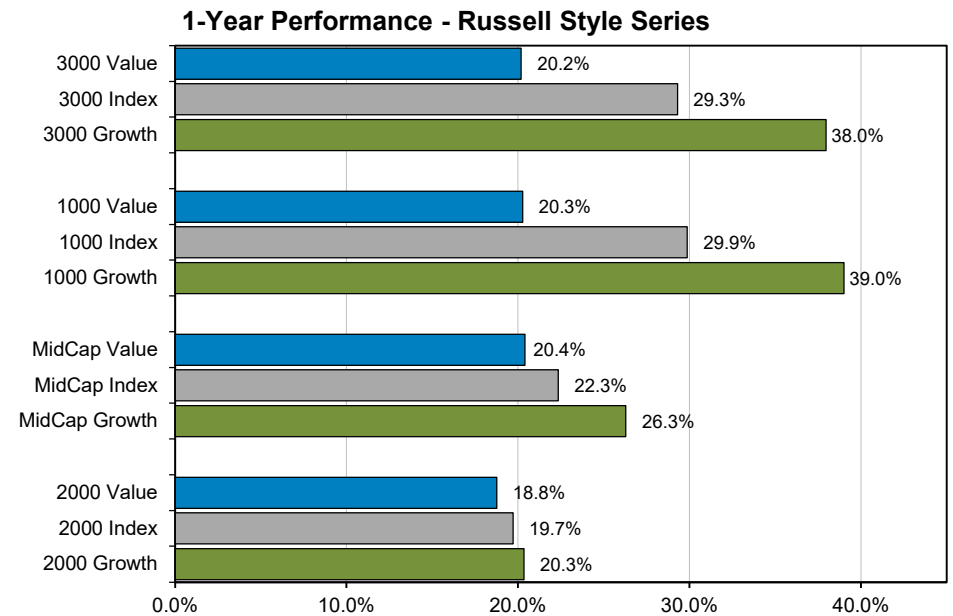
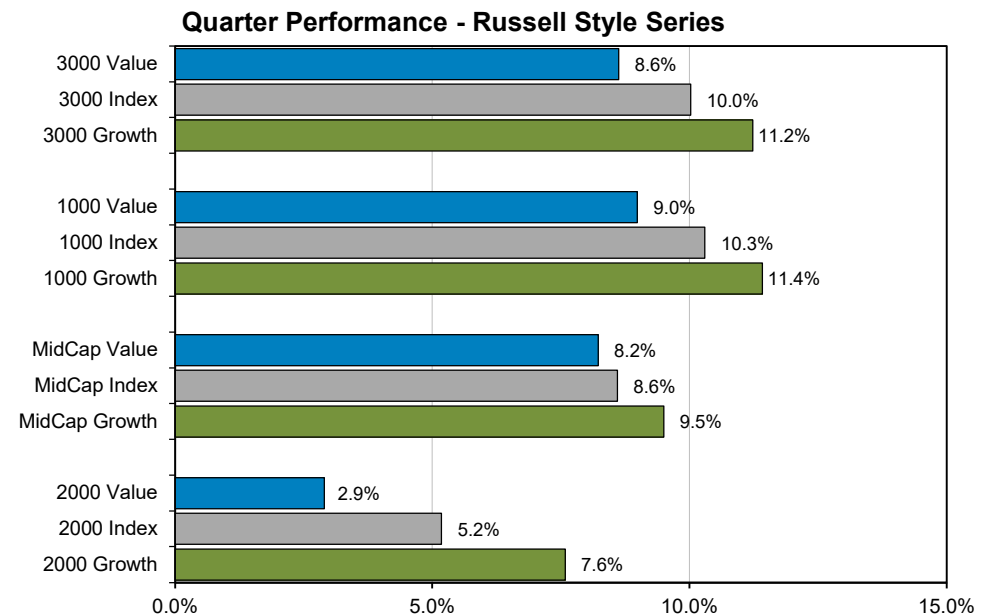


1-Year Performance



Source: Investment Metrics

- Domestic equity benchmarks were positive for the second consecutive quarter and growth style issues continued to outpace value. The best-performing area of the equity market was large-cap growth, with the Russell 1000 Growth index returning 11.4%. The worst performing area of the market was small-cap value, with the Russell 2000 Value index returning just 2.9% for the quarter. From a market capitalization perspective, large-cap stocks led their small-cap counterparts, with the Russell 1000 Index returning 10.3% and the Russell 2000 Index lagging with a lower, but still solid, 5.2%.
- The market continued its growth-led rally as growth stocks outpaced value stocks across the market-capitalization spectrum. While growth led the way during the quarter, value benchmarks largely kept pace, signaling that the rally seen in domestic equities may be broadening to other areas of the market.
- For the year, within large-cap stocks, the Russell 1000 Growth Index returned an impressive 39.0%, leading the way among style and market capitalization classifications. The weakest performing index for the year was the Russell 2000 Value, which still posted a double-digit return of 18.8%.
- The dominance of growth sectors is evident in the chart, with all growth benchmarks handily outpacing their core and value index counterparts. However, the strength of the outperformance differs meaningfully between the large cap and small cap segments of the market. The Russell 2000 Growth Index returned 20.3%, outpacing the Russell 2000 Value index return by a narrow margin of just 1.5%. However, this spread widens to 5.9% for the Russell Midcap Growth benchmarks and blows out to a span of 18.7% for the large cap benchmarks.



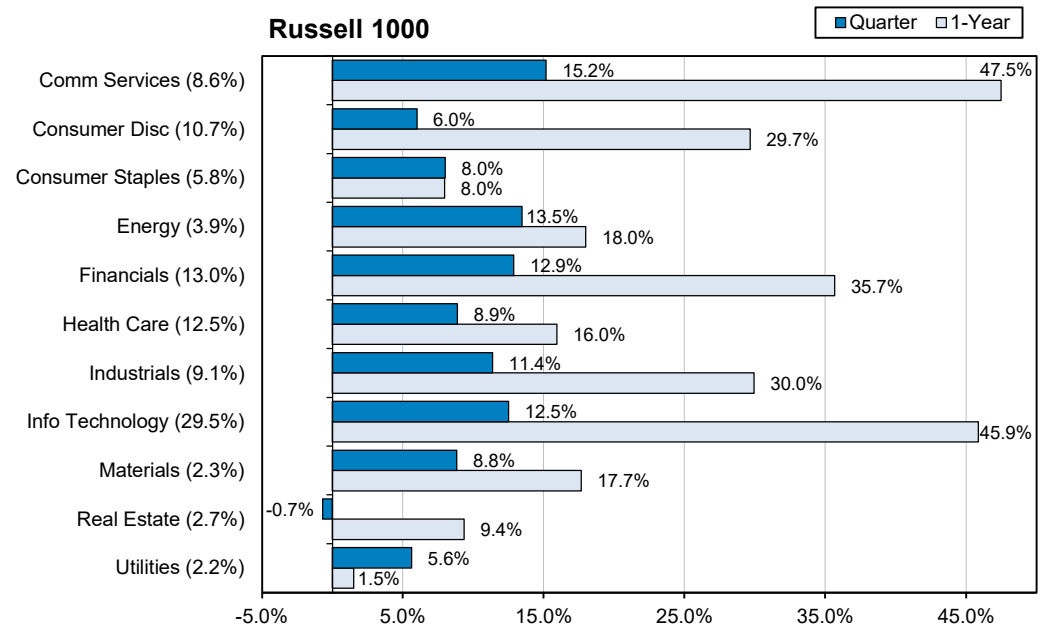
Source: Investment Metrics

- 2023's year-end rally continued into the first quarter of 2024 and expanded its breadth across styles and market capitalizations.
- Ten of the 11 GICS economic sectors in the large-cap Russell 1000 Index moved higher during the first quarter. Five of the 11 sectors outpaced the broad index return of 10.0%. Communication services led the way at 15.2% followed by energy (up 13.5%), financials (12.9%), information technology (12.5%), and industrials (11.4%).
- For the full year, all 11 economic sectors finished in positive territory with communication services leading the way at 47.5% and information technology following in lock step at 45.9%. Of the 11 sectors, four were up at least 30.0% the past year. Utilities (up 1.5%), consumer staples (8.0%), and real estate (9.4%) were the only three sectors that did not post double-digit results over the trailing year.

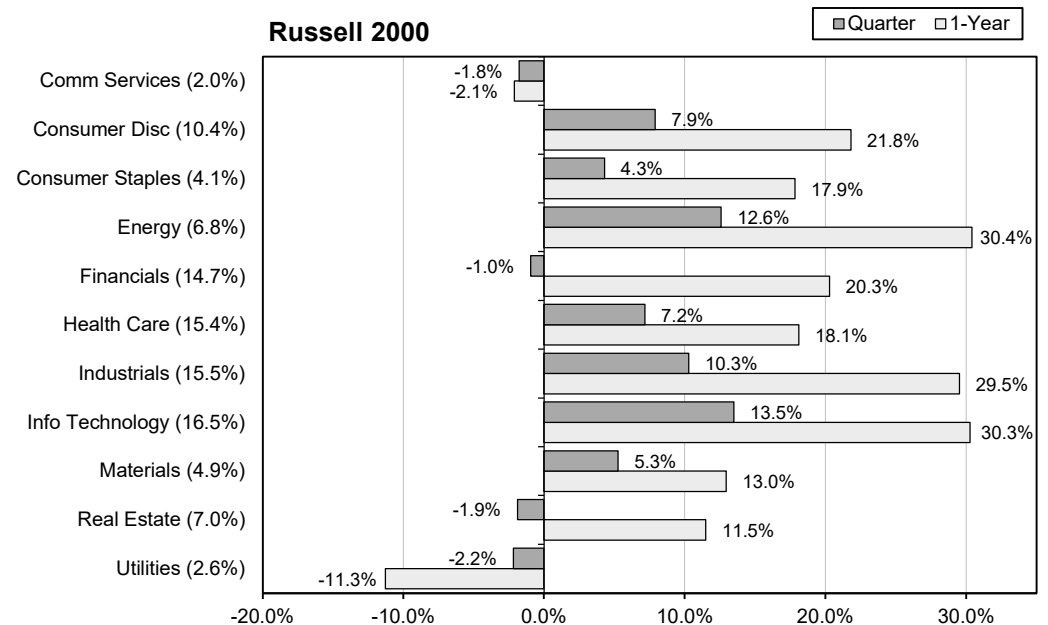
- Seven small-cap economic sectors posted positive results during the quarter with six of those sectors exceeding the 5.2% return of the Russell 2000 Index. The information technology (up 13.5%), energy (12.6%), and industrials (10.3%) sectors led the way as the only three sectors to showcase double-digit performance for the quarter. Utilities (-2.2%), real estate (-1.9%), communication services (-1.8%), and financials (-1.0%) sectors all lost ground during the quarter.

- Similar to large-cap sector performance, nine of the 11 small cap sectors were positive over the trailing year. Energy posted the strongest sector results (30.4%) with the information technology (30.3%) sector not far behind. Industrials (29.5%), consumer discretionary (21.8%) and financials (20.3%) each also returned more than 20.0% for the period. Six of the 11 economic sectors fell short of the core small-cap benchmark's return of 19.7% over the trailing year. The two negative sectors for the year were utilities with a return of -11.3% and communication services, which returned -2.1%.

Russell 1000



Russell 2000



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 March 31, 2024

| Top 10 Weighted Stocks | | | | |
|--------------------------------|--------|--------------|---------------|------------------------|
| Russell 1000 | Weight | 1-Qtr Return | 1-Year Return | Sector |
| Microsoft Corp | 6.5% | 12.1% | 47.1% | Information Technology |
| Apple Inc | 5.2% | -10.8% | 4.5% | Information Technology |
| NVIDIA Corp | 4.5% | 82.5% | 225.4% | Information Technology |
| Amazon.com Inc | 3.4% | 18.7% | 74.6% | Consumer Discretionary |
| Meta Platforms Inc Class A | 2.2% | 37.3% | 129.4% | Communication Services |
| Alphabet Inc Class A | 1.9% | 8.0% | 45.5% | Communication Services |
| Berkshire Hathaway Inc Class B | 1.6% | 17.9% | 36.2% | Financials |
| Alphabet Inc Class C | 1.6% | 8.0% | 46.4% | Communication Services |
| Eli Lilly and Co | 1.4% | 33.7% | 128.4% | Health Care |
| JPMorgan Chase & Co | 1.2% | 18.5% | 58.1% | Financials |

| Top 10 Performing Stocks (by Quarter) | | | | |
|---------------------------------------|--------|--------------|---------------|------------------------|
| Russell 1000 | Weight | 1-Qtr Return | 1-Year Return | Sector |
| NVIDIA Corp | 4.5% | 82.5% | 225.4% | Information Technology |
| Vistra Corp | 0.1% | 81.4% | 197.1% | Utilities |
| AppLovin Corp Ordinary Shares | 0.0% | 73.7% | 339.5% | Information Technology |
| Shockwave Medical Inc | 0.0% | 70.9% | 50.2% | Health Care |
| Vertiv Holdings Co Class A | 0.1% | 70.1% | 471.2% | Industrials |
| Cava Group Inc | 0.0% | 63.0% | N/A | Consumer Discretionary |
| EMCOR Group Inc | 0.0% | 62.7% | 116.2% | Industrials |
| Maplebear Inc | 0.0% | 58.9% | N/A | Consumer Staples |
| Constellation Energy Corp | 0.1% | 58.5% | 138.0% | Utilities |
| Williams-Sonoma Inc | 0.0% | 58.0% | 167.4% | Consumer Discretionary |

| Bottom 10 Performing Stocks (by Quarter) | | | | |
|--|--------|--------------|---------------|------------------------|
| Russell 1000 | Weight | 1-Qtr Return | 1-Year Return | Sector |
| New York Community Bancorp Inc | 0.0% | -68.2% | -62.3% | Financials |
| SSR Mining Inc | 0.0% | -58.7% | -70.1% | Materials |
| Rivian Automotive Inc Class A | 0.0% | -53.3% | -29.3% | Consumer Discretionary |
| Agilon Health Inc | 0.0% | -51.4% | -74.3% | Health Care |
| AMC Entertainment Holdings Inc | 0.0% | -39.2% | -91.6% | Communication Services |
| Iridium Communications Inc | 0.0% | -36.1% | -57.2% | Communication Services |
| Viasat Inc | 0.0% | -35.3% | -46.5% | Information Technology |
| QuidelOrtho Corp | 0.0% | -35.0% | -46.2% | Health Care |
| Unity Software Inc Ordinary Shares | 0.0% | -34.7% | -17.7% | Information Technology |
| 10x Genomics Inc Ordinary Shares | 0.0% | -32.9% | -32.7% | Health Care |

| Top 10 Weighted Stocks | | | | |
|------------------------------------|--------|--------------|---------------|------------------------|
| Russell 2000 | Weight | 1-Qtr Return | 1-Year Return | Sector |
| Super Micro Computer Inc | 1.9% | 255.3% | 847.9% | Information Technology |
| MicroStrategy Inc Class A | 0.9% | 169.9% | 483.1% | Information Technology |
| Comfort Systems USA Inc | 0.4% | 54.6% | 118.7% | Industrials |
| e.l.f. Beauty Inc | 0.4% | 35.8% | 138.0% | Consumer Staples |
| Light & Wonder Inc Ordinary Shares | 0.3% | 24.3% | 70.0% | Consumer Discretionary |
| Carvana Co Class A | 0.3% | 66.1% | 798.0% | Consumer Discretionary |
| Onto Innovation Inc | 0.3% | 18.4% | 106.1% | Information Technology |
| Simpson Manufacturing Co Inc | 0.3% | 3.8% | 88.6% | Industrials |
| Viking Therapeutics Inc | 0.3% | 340.6% | 392.5% | Health Care |
| Weatherford International PLC | 0.3% | 18.0% | 94.5% | Energy |

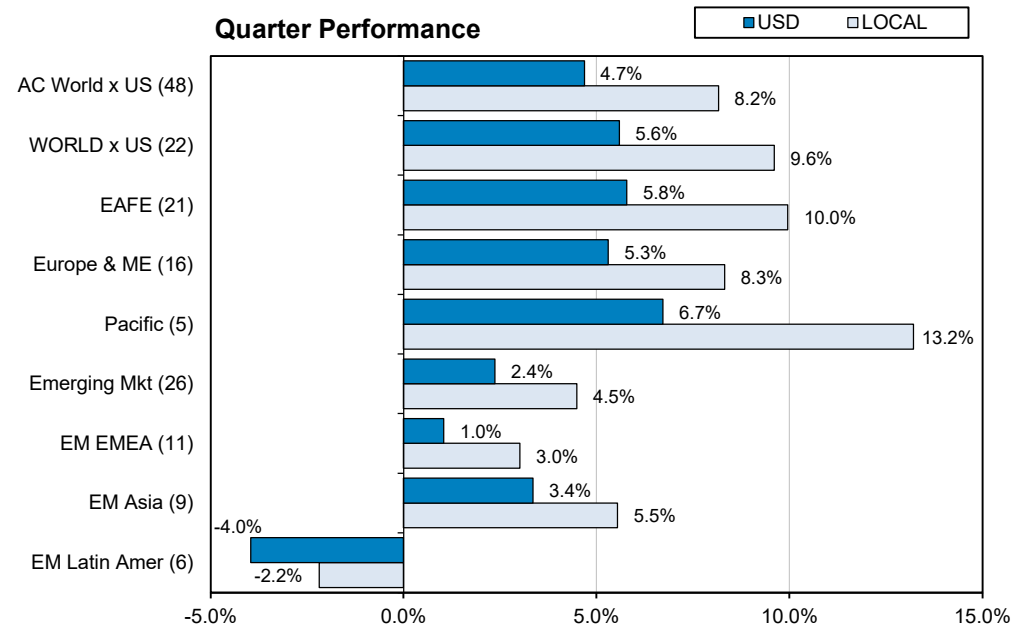
| Top 10 Performing Stocks (by Quarter) | | | | |
|---------------------------------------|--------|--------------|---------------|------------------------|
| Russell 2000 | Weight | 1-Qtr Return | 1-Year Return | Sector |
| Ocean Biomedical Inc | 0.0% | 473.5% | -43.0% | Health Care |
| Viking Therapeutics Inc | 0.3% | 340.6% | 392.5% | Health Care |
| Longboard Pharmaceuticals Inc | 0.0% | 258.2% | 438.7% | Health Care |
| Super Micro Computer Inc | 1.9% | 255.3% | 847.9% | Information Technology |
| Janux Therapeutics Inc | 0.0% | 250.9% | 211.2% | Health Care |
| Arcutis Biotherapeutics Inc | 0.0% | 206.8% | -9.9% | Health Care |
| Veritone Inc | 0.0% | 190.6% | -9.8% | Information Technology |
| Avidity Biosciences Inc | 0.1% | 182.0% | 66.3% | Health Care |
| Vera Therapeutics Inc Class A | 0.1% | 180.4% | 455.7% | Health Care |
| SoundHound AI Inc Ordinary Shares | 0.0% | 177.8% | 113.4% | Information Technology |

| Bottom 10 Performing Stocks (by Quarter) | | | | |
|--|--------|--------------|---------------|------------------------|
| Russell 2000 | Weight | 1-Qtr Return | 1-Year Return | Sector |
| Amylyx Pharmaceuticals Inc | 0.0% | -80.7% | -90.3% | Health Care |
| Bakkt Holdings Inc Ordinary Shares | 0.0% | -79.4% | -73.3% | Financials |
| WW International Inc | 0.0% | -78.9% | -55.1% | Consumer Discretionary |
| iRobot Corp | 0.0% | -77.4% | -79.9% | Consumer Discretionary |
| LivePerson Inc | 0.0% | -73.7% | -77.4% | Information Technology |
| Office Properties Income Trust | 0.0% | -72.1% | -81.1% | Real Estate |
| Spirit Airlines Inc | 0.0% | -69.6% | -69.3% | Industrials |
| 2U Inc | 0.0% | -68.3% | -94.3% | Consumer Discretionary |
| CareMax Inc Ordinary Shares | 0.0% | -67.8% | -94.0% | Health Care |
| Presto Automation Inc | 0.0% | -67.3% | -89.0% | Information Technology |

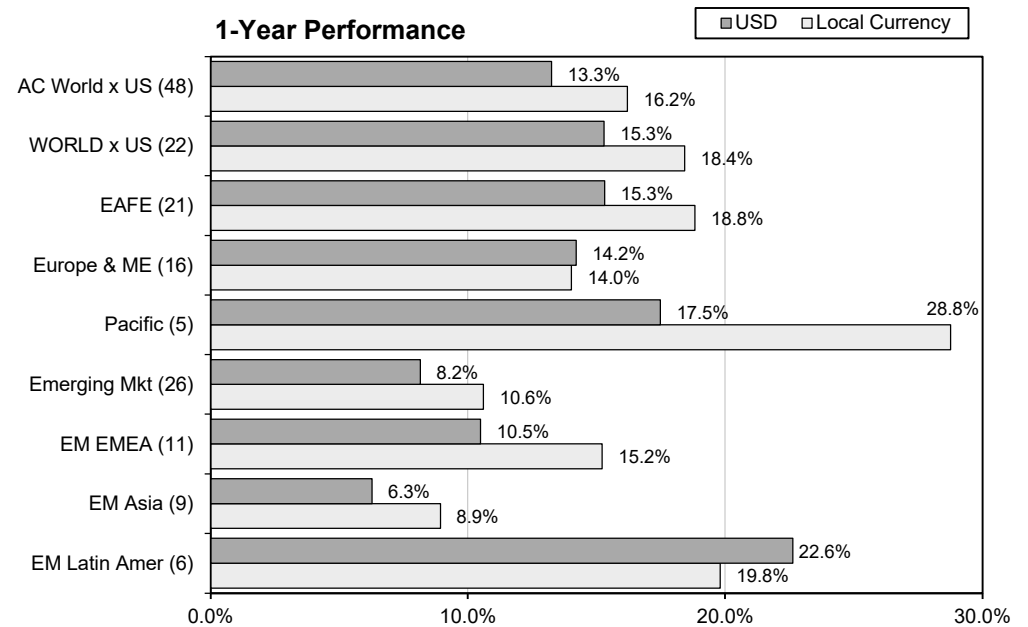
Source: Morningstar Direct

- Many of the international developed- and emerging-market benchmarks posted positive performance in both USD and LCL terms for the first quarter. A strengthening of the USD during the period was a drag on domestic non-US index performance across all regions. The developed-market MSCI EAFE Index still returned a solid 5.8% in USD and 10.0% in LCL terms for the period. The MSCI Emerging Markets Index rose by 2.4% in USD and 4.5% in LCL terms.
- Latin America was the only region to post negative performance for the quarter in both USD and LCL terms. The cyclical nature of demand for commodity exports in the region has resulted in greater volatility due to continued uncertainty over central bank policies and global demand.
- The heaviest weighted country in the emerging market index (China, 7.0%) continued its drag on broad index returns, returning -2.2% during the quarter. The Chinese economy grew at a rate of 5.2% in 2023, lower than its pre-pandemic rate of 6.0% which was a headwind for performance. Troubles in the commercial property and banking sectors have also created challenges for growth in the region.
- Much like domestic markets, trailing one-year results for international developed and emerging markets benchmarks were strong. Outside of EM Latin America, the USD showed strength over broad and regional benchmarks for the year, and as a result, LCL returns finished higher than USD performance.
- MSCI Pacific results led the way in LCL currency terms at 28.8% for the trailing year. USD returns for the region were still strong but returned a more muted 17.5% due to softening currency in the region. Due to demand for commodity exports and rising oil prices, EM Latin America was the only region where the USD weakened relative to LCL returns, resulting in higher USD returns (22.6% vs. 19.8%). The EM Asia regional benchmark was the weakest relative-performing region in the emerging market index, with the EM Asia index returning 6.3% in USD and 8.9% in LCL terms.

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 March 31, 2024

| MSCI - EAFE | Sector Weight | Quarter Return | 1-Year Return |
|------------------------|---------------|----------------|---------------|
| Communication Services | 4.0% | 4.1% | 6.6% |
| Consumer Discretionary | 12.5% | 11.1% | 15.5% |
| Consumer Staples | 8.6% | -3.1% | -5.9% |
| Energy | 4.1% | 2.2% | 14.6% |
| Financials | 19.3% | 8.6% | 25.8% |
| Health Care | 12.7% | 4.7% | 8.6% |
| Industrials | 16.8% | 7.9% | 23.1% |
| Information Technology | 9.4% | 14.3% | 31.1% |
| Materials | 7.2% | -1.1% | 10.2% |
| Real Estate | 2.3% | 1.5% | 13.0% |
| Utilities | 3.1% | -5.0% | 2.7% |
| Total | 100.0% | 5.8% | 15.3% |

| MSCI - ACWixUS | Sector Weight | Quarter Return | 1-Year Return |
|------------------------|---------------|----------------|---------------|
| Communication Services | 5.1% | 2.1% | -3.0% |
| Consumer Discretionary | 11.8% | 7.2% | 8.6% |
| Consumer Staples | 7.4% | -3.2% | -4.6% |
| Energy | 5.5% | 5.2% | 21.4% |
| Financials | 21.4% | 5.9% | 21.4% |
| Health Care | 9.2% | 3.7% | 7.5% |
| Industrials | 13.8% | 6.9% | 19.8% |
| Information Technology | 13.4% | 11.4% | 29.4% |
| Materials | 7.4% | -1.6% | 4.1% |
| Real Estate | 2.0% | -0.3% | 6.8% |
| Utilities | 3.0% | -3.0% | 5.2% |
| Total | 100.0% | 4.7% | 13.3% |

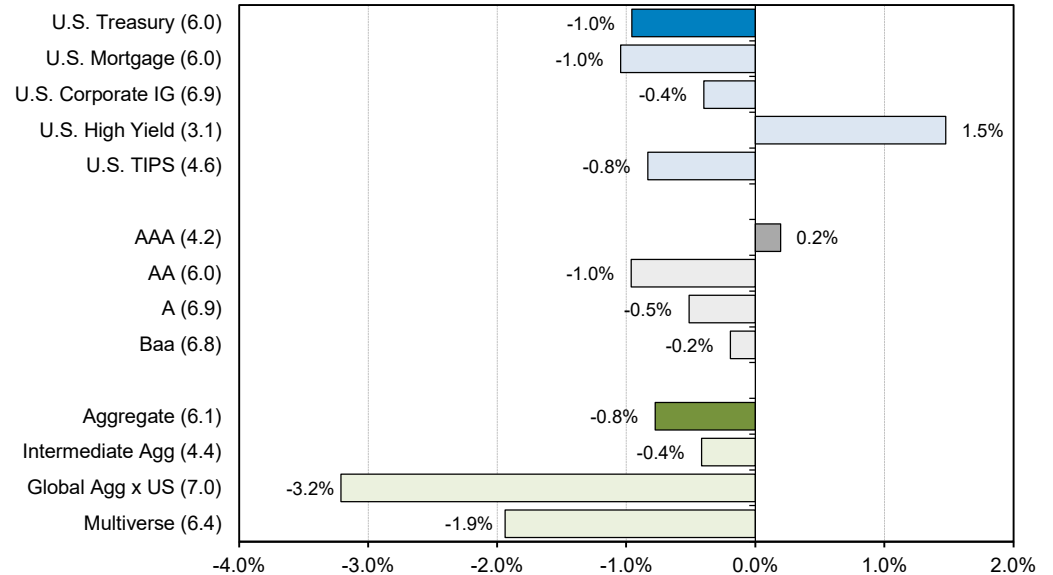
| MSCI - Emerging Mkt | Sector Weight | Quarter Return | 1-Year Return |
|------------------------|---------------|----------------|---------------|
| Communication Services | 8.6% | 0.8% | -11.5% |
| Consumer Discretionary | 12.4% | -0.5% | -5.3% |
| Consumer Staples | 5.6% | -4.3% | -2.6% |
| Energy | 5.3% | 6.9% | 36.0% |
| Financials | 22.4% | 2.3% | 15.0% |
| Health Care | 3.5% | -4.5% | -0.9% |
| Industrials | 7.0% | 1.4% | 4.6% |
| Information Technology | 23.7% | 9.9% | 26.7% |
| Materials | 7.2% | -4.6% | -5.4% |
| Real Estate | 1.5% | -6.0% | -11.3% |
| Utilities | 2.8% | 3.5% | 17.9% |
| Total | 100.0% | 2.4% | 8.2% |

| Country | MSCI-EAFE Weight | MSCI-ACWixUS Weight | Quarter Return | 1-Year Return |
|----------------------------------|------------------|---------------------|----------------|---------------|
| Japan | 23.3% | 15.0% | 10.2% | 23.5% |
| United Kingdom | 14.6% | 9.4% | 1.9% | 6.4% |
| France | 12.1% | 7.8% | 5.7% | 9.7% |
| Switzerland | 9.3% | 6.0% | -2.1% | 4.9% |
| Germany | 8.7% | 5.6% | 6.8% | 12.0% |
| Australia | 7.3% | 4.7% | -0.5% | 8.1% |
| Netherlands | 5.2% | 3.3% | 15.4% | 22.5% |
| Denmark | 3.6% | 2.3% | 14.4% | 33.0% |
| Sweden | 3.1% | 2.0% | 0.2% | 11.6% |
| Italy | 2.8% | 1.8% | 13.1% | 30.6% |
| Spain | 2.7% | 1.7% | 7.7% | 19.6% |
| Hong Kong | 1.8% | 1.2% | -12.2% | -25.8% |
| Singapore | 1.3% | 0.9% | -0.1% | -6.1% |
| Finland | 1.0% | 0.6% | -6.0% | -12.8% |
| Belgium | 0.9% | 0.6% | 1.7% | -0.2% |
| Israel | 0.7% | 0.5% | 12.2% | 22.1% |
| Norway | 0.6% | 0.4% | -7.9% | -0.2% |
| Ireland | 0.4% | 0.2% | 14.8% | 16.9% |
| Portugal | 0.2% | 0.1% | -17.9% | -16.6% |
| New Zealand | 0.2% | 0.1% | -4.9% | -8.2% |
| Austria | 0.2% | 0.1% | 0.5% | 10.5% |
| Total EAFE Countries | 100.0% | 64.5% | 5.8% | 15.3% |
| Canada | | 7.7% | 3.4% | 12.3% |
| Total Developed Countries | | 71.9% | 5.6% | 15.3% |
| China | | 7.0% | -2.2% | -17.1% |
| India | | 5.0% | 6.1% | 36.8% |
| Taiwan | | 4.9% | 12.4% | 27.8% |
| Korea | | 3.5% | 1.6% | 14.2% |
| Brazil | | 1.4% | -7.4% | 27.0% |
| Saudi Arabia | | 1.2% | 4.7% | 15.8% |
| South Africa | | 0.8% | -6.8% | -4.9% |
| Mexico | | 0.8% | 0.5% | 17.7% |
| Indonesia | | 0.5% | 2.1% | 3.4% |
| Thailand | | 0.4% | -8.2% | -16.4% |
| Malaysia | | 0.4% | 3.0% | 3.1% |
| United Arab Emirates | | 0.3% | 0.4% | 9.2% |
| Poland | | 0.3% | 3.5% | 55.3% |
| Qatar | | 0.2% | -3.6% | -1.4% |
| Kuwait | | 0.2% | 8.3% | 4.1% |
| Turkey | | 0.2% | 14.6% | 19.3% |
| Philippines | | 0.2% | 6.1% | 7.2% |
| Chile | | 0.1% | -4.5% | -5.9% |
| Greece | | 0.1% | 6.5% | 37.4% |
| Peru | | 0.1% | 15.8% | 46.2% |
| Hungary | | 0.1% | 0.5% | 47.4% |
| Czech Republic | | 0.0% | -7.7% | -7.6% |
| Colombia | | 0.0% | 14.2% | 48.3% |
| Egypt | | 0.0% | -29.7% | 3.2% |
| Total Emerging Countries | | 27.9% | 2.4% | 8.2% |
| Total ACWixUS Countries | | 100.0% | 4.7% | 13.3% |

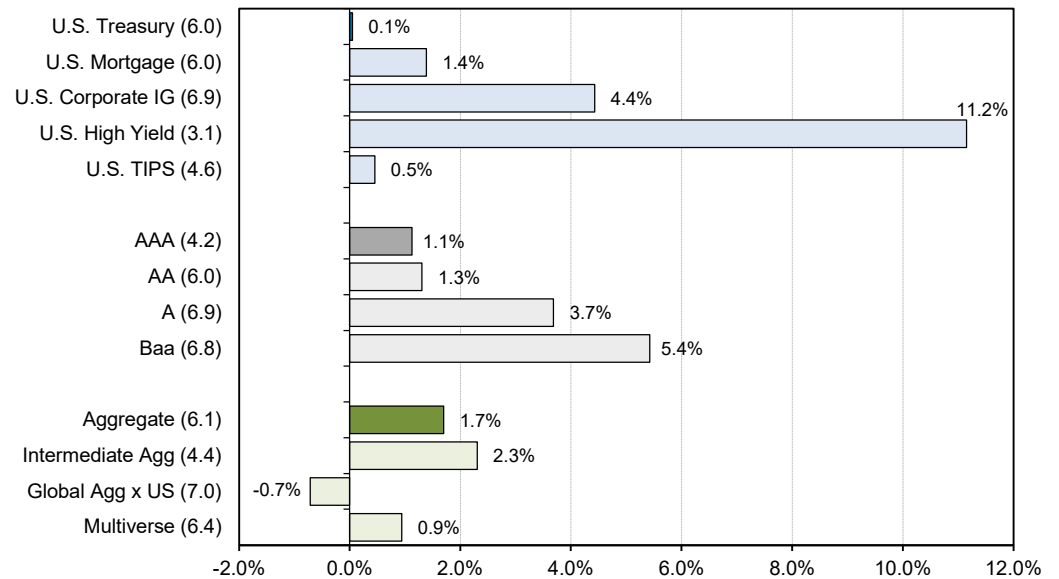
Source: Morningstar Direct, MSCI Global Index Monitor (Returns are Net in USD)
As a result of the GICS classification changes on 9/28/2018 and certain associated reporting limitations, sector performance represents backward looking performance for the prior year of each sector's current constituency,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

- Fixed-income markets pulled back slightly to start the year with many domestic and international bond indexes finishing modestly lower during the quarter. Yields remain elevated due to the Federal Reserve's decision to maintain rates at their current levels. While market expectations are that the Fed will eventually begin cutting rates in 2024, which will be a jolt to bond holder performance as yield fall, higher yields and coupon rates on bonds also are also offer an attractive stabilizing, lower-risk benefit for bond allocations in diversified portfolios.
- The Bloomberg US Aggregate Bond Index, the bellwether US investment grade benchmark, returned a mild negative result of -0.8% for the quarter. Performance across the investment grade index's segments finished the period with similar performance with the Bloomberg US Corporate Investment Grade Index returning -0.4% and the US Mortgage Index sliding by -1.0%.
- Outside of the Aggregate index's sub-components, high-yield bonds continued to rise with a return of 1.5% as credit spreads narrowed during the quarter. US TIPS fell -0.8% for the quarter. The Bloomberg Global Aggregate ex-US Index return of -3.2% for the quarter lagged all domestic fixed-income indexes as well as the multiverse benchmark's return of -1.9%.
- Over the trailing one-year period, the Bloomberg US Aggregate Bond Index climbed 1.7%. The benchmark's sub-components also posted positive performance over the trailing 12 months with the Bloomberg US Corporate Investment Grade Index rising 4.4% and the US Mortgage Index posting a more modest 1.4% return. US TIPS, which are excluded from the aggregate index, rose 0.5% for the year. High-yield corporate bonds, which have a much shorter duration, outpaced their investment grade counterparts with the Bloomberg US High Yield Index posting an equity-like return of 11.2% for the last year.
- Performance for non-US bonds were negative for the trailing year with the Bloomberg Global Aggregate ex-US Index falling by -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



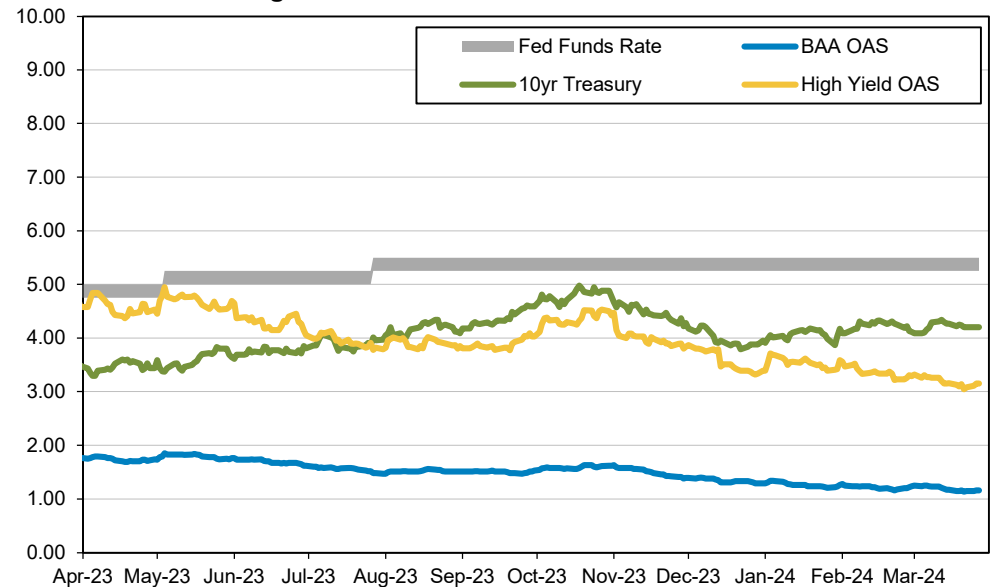
1-Year Performance



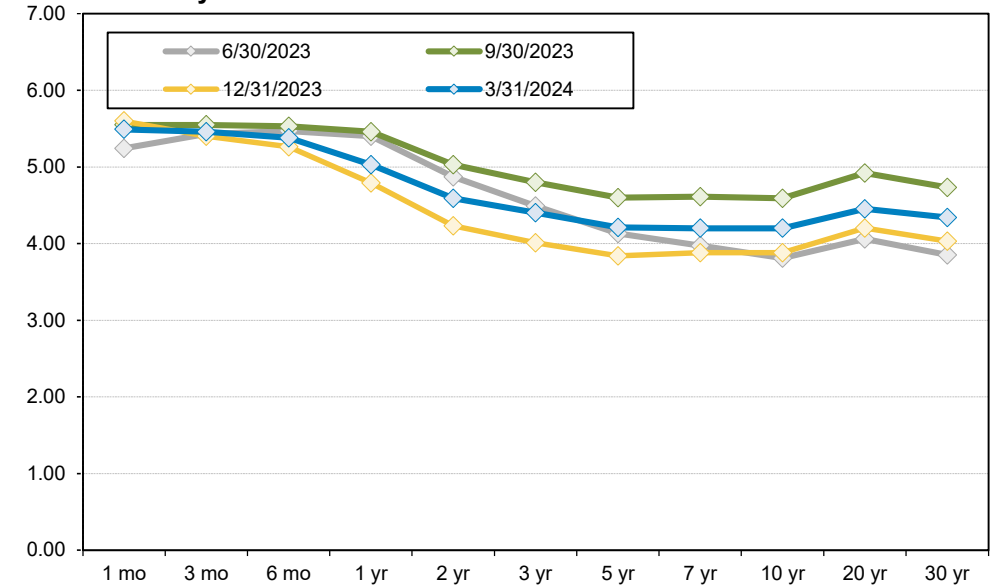
Source: Bloomberg

- The gray band across the graph illustrates the range of the current Fed Funds target rate. During the first quarter, the Federal Open Market Committee (FOMC) continued to hold the 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 and while their press releases have continued to push economic data-dependent outcomes, subtle press release rewordings since last July have increased the likelihood there will be no additional rate increase in this cycle. With early April's inflation surprise, the CME FedWatch tool, which forecasts rates based on Fed Fund futures pricing, is predicting two 0.25% rate cuts for 2024, with the first occurring in September. Fed officials and market participants have expressed concern about leaving rates at their current levels for an extended period could tip the US economy into a recession, but inflation remains stubbornly elevated and higher rates are the FOMC's primary inflation-fighting tool. Additionally, the FOMC continues to remove liquidity from the market by allowing bonds held on its balance sheet to mature without reinvesting maturity proceeds.
- The yield on the US 10-year Treasury (green line of the top chart) rose modestly, opening at the at 3.88% and finishing the quarter at 4.20%. The 0.32% increase was largely attributable to sticky inflation data released throughout the quarter. The benchmark's rate peaked in October 2023, cresting at just under 5.00% before pulling back in the remainder of the year.
- The blue line in the top chart illustrates changes in 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 spread narrowed from 1.29% to 1.17%, which is equivalent to falling rates for BAA bonds. The spread measure has continued to narrow 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 yellow line in the top chart) have also continued to narrow from 3.39% at the end of 2023 to 3.15% at the end of March 2024. This narrowing provided an additional boost to high yield performance.
- The lower graph provides a snapshot of the US Treasury yield curve at the end of each of the last four quarters. If the anticipated rate cuts materialize in 2024, the yield curve will steepen into a positively sloped yield curve, which is the normal shape of the yield. Historically, a persistent inversion of the yield curve, as measured by the spread between 2 and 10-year Treasuries, has been a precursor of an economic recession within six to 24 months. As of quarter-end, the current yield curve inversion has persisted for 21 months.

1-Year Trailing Market Rates



Treasury Yield Curve



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

[Fed Minutes Suggest Rate Hikes Are Over, but Offer No Timetable on Cuts - WSJ](#)

[Fed meeting today: Live updates on March Fed rate decision \(cnbc.com\)](#)

[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 \(stlouisfed.org\)](#)

[The quarter in review: what happened in the first three months of 2024? | J.P. Morgan Asset Management \(jpmorgan.com\)](#)

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

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

[The S&P 500 Clinches Best Start to Year Since 2019 - WSJ](#)

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

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

[Q1 2024 CIO Review and Outlook - Matthews Asia - Commentaries - Advisor Perspectives](#)

[Treasuries Selloff Deepens as Traders Push Back First Rate Cut - Articles - Advisor Perspectives](#)

[Federal Reserve issues FOMC statement](#)

- **The Fund's 1st quarter return was 4.07% and its trailing 12-month return was 12.84%. As of 3-31-2024, the total Fund had an annualized 7-year return of 7.33%.**
- **The Fund's total equity weighting at 3-31-2024 was 54.7% 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 70.3%.**
- **In January, the Vesper Large Cap Equity ETF was fully liquidated with proceeds transferred into the StoneRidge small cap growth equity strategy for an initial funding of \$4,000,000.**
- **In March, the Hamilton Lane Secondary Fund VI issued a capital call in the amount of \$497,570 with funding coming from the Vanguard Russell 1000 Growth Index fund. In February, this fund issued a distribution in the amount of \$7,090 representing an LP equalization payment.**

- **In March, the total Fund received two private equity distributions from the Portfolio Advisors Co-Investment Fund III (\$104,596) and the Ironsides Direct Investment Fund V (\$345,945.31) both received in the Cash Disbursement account.**

- **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.**

- **For calendar year 2023, the Emerald Small Cap Growth account generated \$14,790.35 in equity commissions over 1,045 trades with an average rate of 2.4 cents per share. The AllSpring Small Cap Value account generated 9,515.62 in commissions over 1,473 trades with an average rate of 2.7 cents per share. Both accounts utilized several independent broker/dealers.**

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)

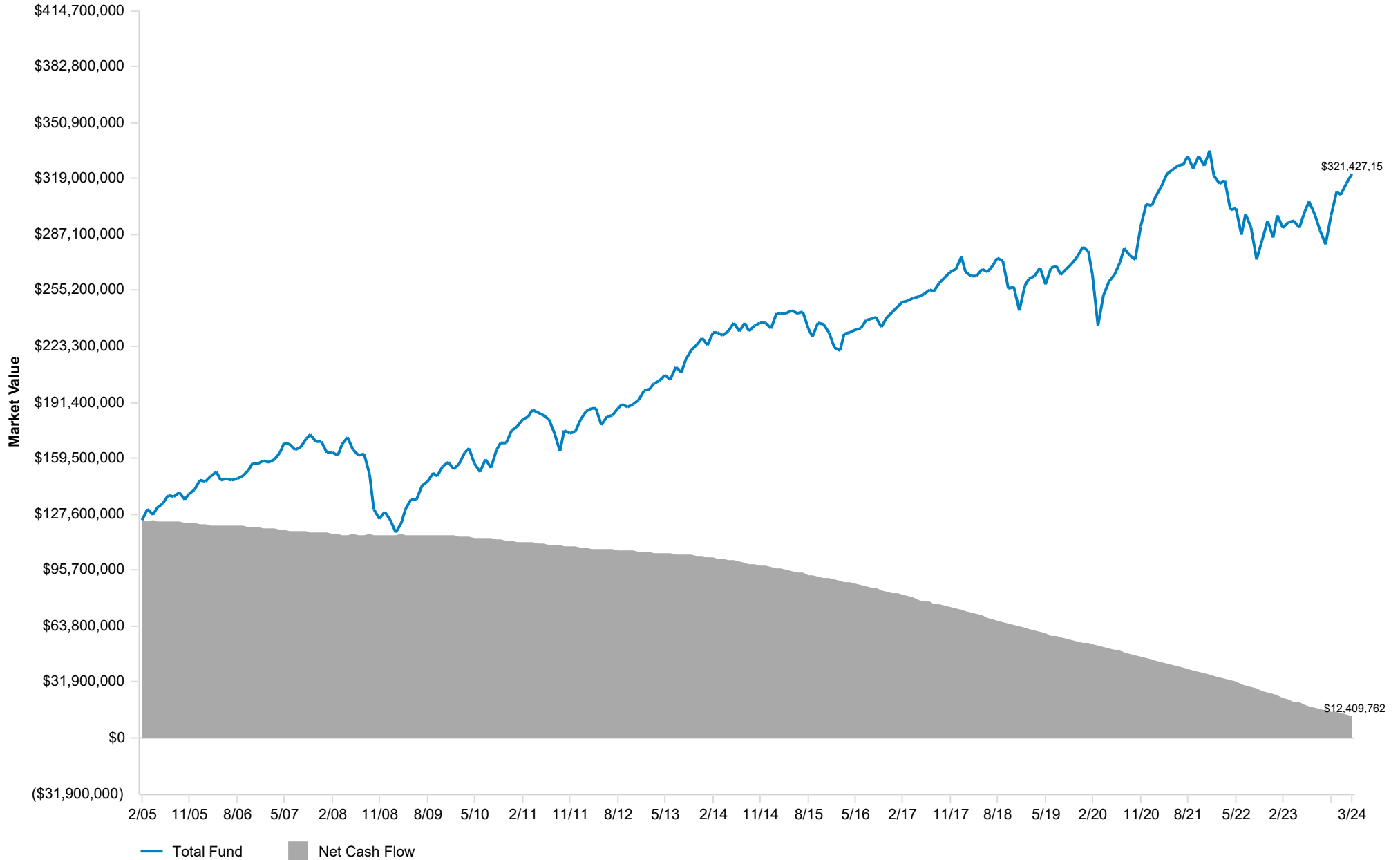
Wednesday, August 21, 2024 @ 12:00 pm

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

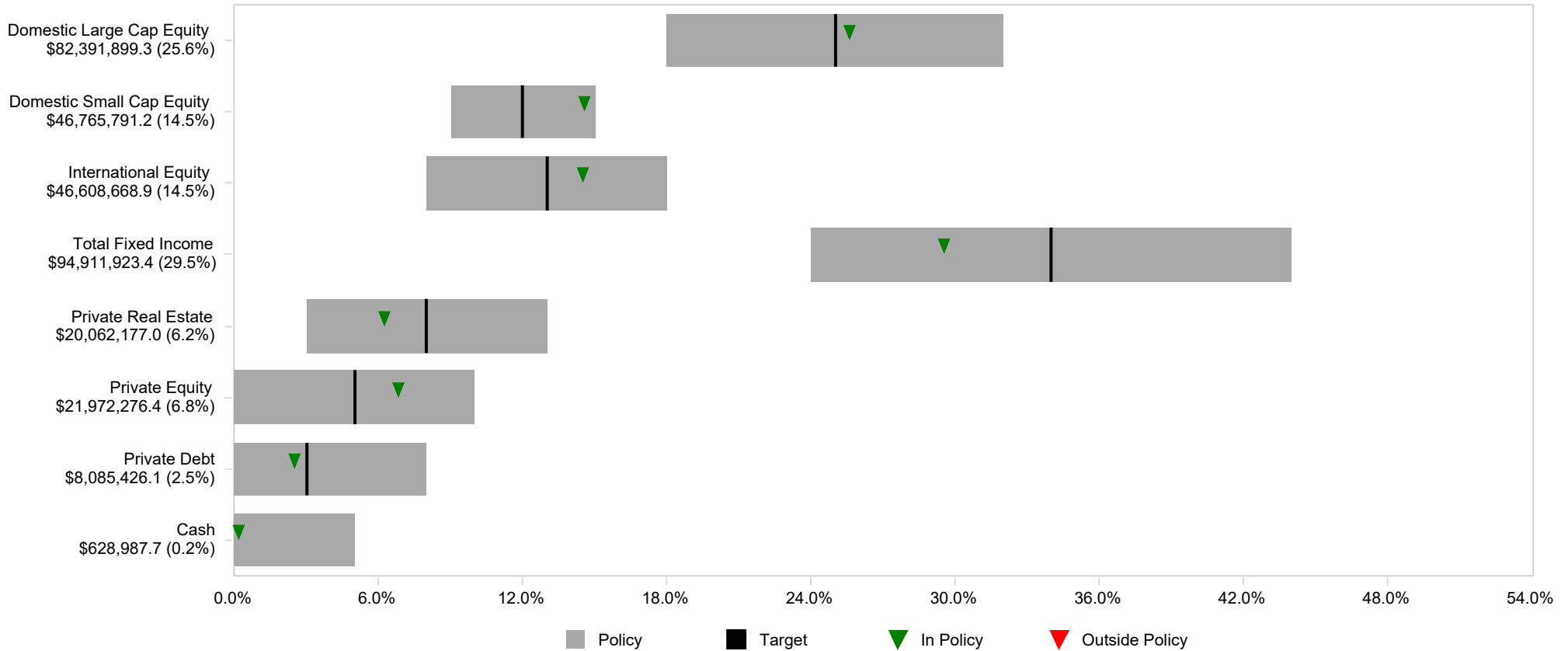
Wednesday, November 20, 2024 @ 12:00 pm

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 | 321,427,150 | 100.0 | N/A | N/A | 100.0 |
| Domestic Large Cap Equity | 82,391,899 | 25.6 | 18.0 | 32.0 | 25.0 |
| Domestic Small Cap Equity | 46,765,791 | 14.5 | 9.0 | 15.0 | 12.0 |
| International Equity | 46,608,669 | 14.5 | 8.0 | 18.0 | 13.0 |
| Total Fixed Income | 94,911,923 | 29.5 | 24.0 | 44.0 | 34.0 |
| Private Real Estate | 20,062,177 | 6.2 | 3.0 | 13.0 | 8.0 |
| Private Equity | 21,972,276 | 6.8 | 0.0 | 10.0 | 5.0 |
| Private Debt | 8,085,426 | 2.5 | 0.0 | 8.0 | 3.0 |
| Cash | 628,988 | 0.2 | 0.0 | 5.0 | 0.0 |

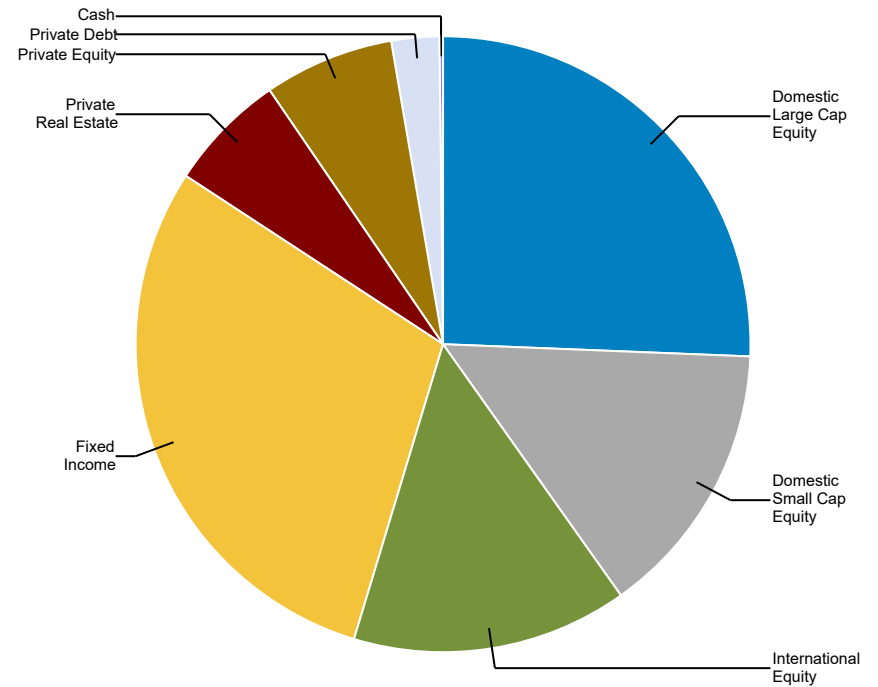
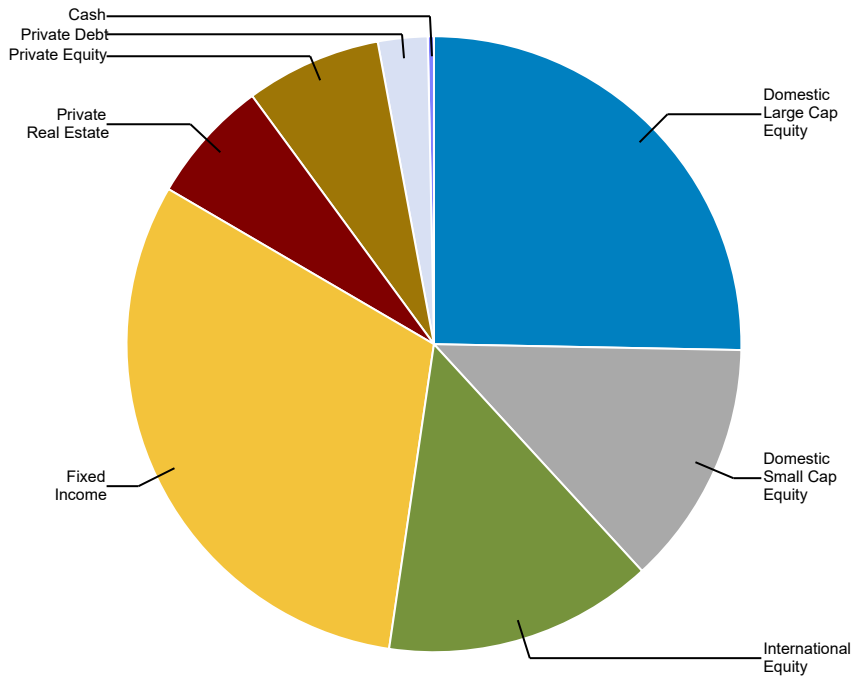
Asset Allocation By Asset Class

Total Fund

As of March 31, 2024

Dec-2023 : \$311,184,701

Mar-2024 : \$321,427,150



| Allocation | | | Allocation | | |
|---------------------------|--------------|------------|---------------------------|--------------|------------|
| | Market Value | Allocation | | Market Value | Allocation |
| Domestic Large Cap Equity | 78,737,059 | 25.3 | Domestic Large Cap Equity | 82,391,899 | 25.6 |
| Domestic Small Cap Equity | 40,034,711 | 12.9 | Domestic Small Cap Equity | 46,765,791 | 14.5 |
| International Equity | 44,095,951 | 14.2 | International Equity | 46,608,669 | 14.5 |
| Total Fixed Income | 96,677,135 | 31.1 | Total Fixed Income | 94,911,923 | 29.5 |
| Private Real Estate | 20,294,189 | 6.5 | Private Real Estate | 20,062,177 | 6.2 |
| Private Equity | 22,192,955 | 7.1 | Private Equity | 21,972,276 | 6.8 |
| Private Debt | 8,137,679 | 2.6 | Private Debt | 8,085,426 | 2.5 |
| Cash | 1,015,022 | 0.3 | Cash | 628,988 | 0.2 |

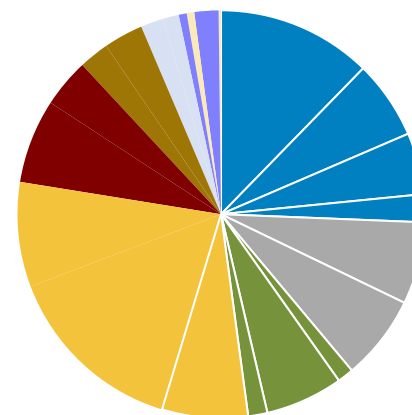
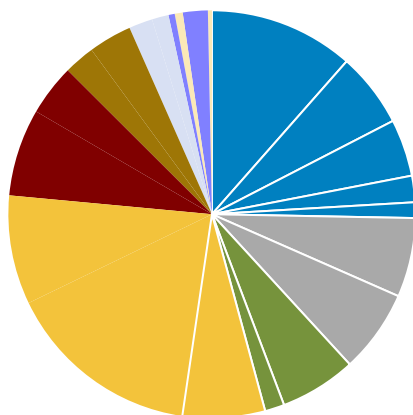
Asset Allocation by Asset Class

Total Fund

As of March 31, 2024

Dec-2023 : \$311,184,701

Mar-2024 : \$321,427,150



| Allocation | | | Allocation | | |
|--|--------------|------------|--|--------------|------------|
| | Market Value | Allocation | | Market Value | Allocation |
| ■ Vanguard S&P 500 Index Fund (VINIX) | 35,777,127 | 11.5 | ■ Vanguard S&P 500 Index Fund (VINIX) | 39,549,799 | 12.3 |
| ■ Vanguard Russell 1000 Growth Index (VRGWX) | 18,444,733 | 5.9 | ■ Vanguard Russell 1000 Growth Index (VRGWX) | 20,042,915 | 6.2 |
| ■ DFA Large Value Equity (DFLVX) | 14,122,557 | 4.5 | ■ DFA Large Value Equity (DFLVX) | 15,702,007 | 4.9 |
| ■ Vanguard Russell 1000 Value Index (VRVIX) | 6,512,656 | 2.1 | ■ Vanguard Russell 1000 Value Index (VRVIX) | 7,097,178 | 2.2 |
| ■ Vesper Capital Mgmt (UTRN) | 3,879,986 | 1.2 | ■ Vesper Capital Mgmt (UTRN) | - | 0.0 |
| ■ Allspring Global Small Value Eq. | 19,521,885 | 6.3 | ■ Allspring Global Small Value Eq. | 20,949,986 | 6.5 |
| ■ Emerald Small Growth Equity | 20,512,826 | 6.6 | ■ Emerald Small Growth Equity | 21,674,420 | 6.7 |
| ■ StoneRidge Small Growth Equity | - | 0.0 | ■ StoneRidge Small Growth Equity | 4,141,385 | 1.3 |
| ■ DFA International Equity (DFIEX) | 18,919,814 | 6.1 | ■ DFA International Equity (DFIEX) | 19,802,574 | 6.2 |
| ■ DFA Emerging Markets (DFCEX) | 4,811,621 | 1.5 | ■ DFA Emerging Markets (DFCEX) | 4,926,340 | 1.5 |
| ■ EuroPacific Growth Fund (RERGX) | 20,364,516 | 6.5 | ■ EuroPacific Growth Fund (RERGX) | 21,879,755 | 6.8 |
| ■ Boyd Watterson Fixed | 48,261,523 | 15.5 | ■ Boyd Watterson Fixed | 46,786,229 | 14.6 |
| ■ PNC Fixed | 26,853,814 | 8.6 | ■ PNC Fixed | 26,695,723 | 8.3 |
| ■ Vanguard Core Bond Fund (VCOBX) | 21,561,798 | 6.9 | ■ Vanguard Core Bond Fund (VCOBX) | 21,429,971 | 6.7 |
| ■ Boyd Watterson GSA Fund | 12,622,014 | 4.1 | ■ Boyd Watterson GSA Fund | 12,390,002 | 3.9 |
| ■ Bentall GreenOak US Core Plus RE | 7,672,175 | 2.5 | ■ Bentall GreenOak US Core Plus RE | 7,672,175 | 2.4 |
| ■ Ironsides Direct Investment Fund V | 10,667,449 | 3.4 | ■ Ironsides Direct Investment Fund V | 10,060,886 | 3.1 |
| ■ PA Co-Investment Fund III | 5,885,752 | 1.9 | ■ PA Co-Investment Fund III | 5,781,156 | 1.8 |
| ■ Adams Street Co-Investment Fund V | 4,108,837 | 1.3 | ■ Adams Street Co-Investment Fund V | 4,108,837 | 1.3 |
| ■ Hamilton Lane Secondary Fund VI | 1,530,917 | 0.5 | ■ Hamilton Lane Secondary Fund VI | 2,021,397 | 0.6 |
| ■ Ironsides Opportunities Fund | 1,989,880 | 0.6 | ■ Ironsides Opportunities Fund | 1,937,627 | 0.6 |
| ■ PA Credit Strategies Fund | 6,147,799 | 2.0 | ■ PA Credit Strategies Fund | 6,147,799 | 1.9 |
| ■ Cash Account | 1,015,022 | 0.3 | ■ Cash Account | 628,988 | 0.2 |

Financial Reconciliation
Total Fund
1 Quarter Ending March 31, 2024

| Financial Reconciliation | | | | | | | | |
|--|------------------------------------|--------------------------|----------------------|----------------------|----------------------------|---------------------------|---------------------------------|------------------------------------|
| | Market Value 01/01/2024 | Net Transfers | Contributions | Distributions | Management Fees | Other Expenses | Return On Investment | Market Value 03/31/2024 |
| Total Fund | 311,184,701 | - | 3,300,351 | -5,441,394 | -141,512 | -113,854 | 12,638,856 | 321,427,150 |
| Domestic Large Cap Equity | 78,737,059 | -4,367,902 | - | - | - | - | 8,022,742 | 82,391,899 |
| Vanguard S&P 500 Index Fund (VINIX) | 35,777,127 | - | - | - | - | - | 3,772,672 | 39,549,799 |
| Vanguard Russell 1000 Growth Index (VRGWX) | 18,444,733 | -497,570 | - | - | - | - | 2,095,752 | 20,042,915 |
| DFA Large Value Equity (DFLVX) | 14,122,557 | - | - | - | - | - | 1,579,450 | 15,702,007 |
| Vanguard Russell 1000 Value Index (VRVIX) | 6,512,656 | - | - | - | - | - | 584,523 | 7,097,178 |
| Vesper Capital Mgmt (UTRN) | 3,879,986 | -3,870,332 | - | - | - | - | -9,654 | - |
| Domestic Small Cap Equity | 40,034,711 | 4,000,000 | - | - | - | - | 2,731,080 | 46,765,791 |
| Allspring Global Small Value Eq. | 19,521,885 | - | - | - | - | - | 1,428,101 | 20,949,986 |
| Emerald Small Growth Equity | 20,512,826 | - | - | - | - | - | 1,161,593 | 21,674,420 |
| StoneRidge Small Growth Equity | - | 4,000,000 | - | - | - | - | 141,385 | 4,141,385 |
| International Equity | 44,095,951 | - | - | - | - | - | 2,512,718 | 46,608,669 |
| DFA International Equity (DFIEX) | 18,919,814 | - | - | - | - | - | 882,760 | 19,802,574 |
| DFA Emerging Markets (DFCEX) | 4,811,621 | - | - | - | - | - | 114,719 | 4,926,340 |
| EuroPacific Growth Fund (RERGX) | 20,364,516 | - | - | - | - | - | 1,515,239 | 21,879,755 |
| Total Fixed Income | 96,677,135 | -1,350,000 | - | - | - | - | -415,211 | 94,911,923 |
| Boyd Watterson Fixed | 48,261,523 | -1,350,000 | - | - | - | - | -125,294 | 46,786,229 |
| PNC Fixed | 26,853,814 | - | - | - | - | - | -158,090 | 26,695,723 |
| Vanguard Core Bond Fund (VCOBX) | 21,561,798 | - | - | - | - | - | -131,827 | 21,429,971 |
| Private Real Estate | 20,294,189 | - | - | - | - | - | -232,012 | 20,062,177 |
| Boyd Watterson GSA Fund | 12,622,014 | - | - | - | - | - | -232,012 | 12,390,002 |
| Bentall GreenOak US Core Plus RE | 7,672,175 | - | - | - | - | - | - | 7,672,175 |
| Private Equity | 22,192,955 | -139,926 | - | - | -30,000 | -50,753 | - | 21,972,276 |
| Ironsides Direct Investment Fund V | 10,667,449 | -525,810 | - | - | -30,000 | -50,753 | - | 10,060,886 |
| PA Co-Investment Fund III | 5,885,752 | -104,596 | - | - | - | - | - | 5,781,156 |
| Adams Street Co-Investment Fund V | 4,108,837 | - | - | - | - | - | - | 4,108,837 |
| Hamilton Lane Secondary Fund VI | 1,530,917 | 490,480 | - | - | - | - | - | 2,021,397 |
| Private Debt | 8,137,679 | -40,529 | - | - | -5,830 | -5,894 | - | 8,085,426 |
| Ironsides Opportunities Fund | 1,989,880 | -40,529 | - | - | -5,830 | -5,894 | - | 1,937,627 |
| PA Credit Strategies Fund | 6,147,799 | - | - | - | - | - | - | 6,147,799 |
| Cash | 1,015,022 | 1,898,358 | 3,300,351 | -5,441,394 | -105,682 | -57,207 | 19,539 | 628,988 |
| Cash Account | 1,015,022 | 1,898,358 | 3,300,351 | -5,441,394 | -105,682 | -57,207 | 19,539 | 628,988 |

Financial Reconciliation
Total Fund
Year To Date Ending March 31, 2024

| Financial Reconciliation | | | | | | | | |
|--|------------------------------------|--------------------------|----------------------|----------------------|----------------------------|---------------------------|---------------------------------|------------------------------------|
| | Market Value 01/01/2024 | Net Transfers | Contributions | Distributions | Management Fees | Other Expenses | Return On Investment | Market Value 03/31/2024 |
| Total Fund | 311,184,701 | - | 3,300,351 | -5,441,394 | -141,512 | -113,854 | 12,638,856 | 321,427,150 |
| Domestic Large Cap Equity | 78,737,059 | -4,367,902 | - | - | - | - | 8,022,742 | 82,391,899 |
| Vanguard S&P 500 Index Fund (VINIX) | 35,777,127 | - | - | - | - | - | 3,772,672 | 39,549,799 |
| Vanguard Russell 1000 Growth Index (VRGWX) | 18,444,733 | -497,570 | - | - | - | - | 2,095,752 | 20,042,915 |
| DFA Large Value Equity (DFLVX) | 14,122,557 | - | - | - | - | - | 1,579,450 | 15,702,007 |
| Vanguard Russell 1000 Value Index (VRVIX) | 6,512,656 | - | - | - | - | - | 584,523 | 7,097,178 |
| Vesper Capital Mgmt (UTRN) | 3,879,986 | -3,870,332 | - | - | - | - | -9,654 | - |
| Domestic Small Cap Equity | 40,034,711 | 4,000,000 | - | - | - | - | 2,731,080 | 46,765,791 |
| Allspring Global Small Value Eq. | 19,521,885 | - | - | - | - | - | 1,428,101 | 20,949,986 |
| Emerald Small Growth Equity | 20,512,826 | - | - | - | - | - | 1,161,593 | 21,674,420 |
| StoneRidge Small Growth Equity | - | 4,000,000 | - | - | - | - | 141,385 | 4,141,385 |
| International Equity | 44,095,951 | - | - | - | - | - | 2,512,718 | 46,608,669 |
| DFA International Equity (DFIEX) | 18,919,814 | - | - | - | - | - | 882,760 | 19,802,574 |
| DFA Emerging Markets (DFCEX) | 4,811,621 | - | - | - | - | - | 114,719 | 4,926,340 |
| EuroPacific Growth Fund (RERGX) | 20,364,516 | - | - | - | - | - | 1,515,239 | 21,879,755 |
| Total Fixed Income | 96,677,135 | -1,350,000 | - | - | - | - | -415,211 | 94,911,923 |
| Boyd Watterson Fixed | 48,261,523 | -1,350,000 | - | - | - | - | -125,294 | 46,786,229 |
| PNC Fixed | 26,853,814 | - | - | - | - | - | -158,090 | 26,695,723 |
| Vanguard Core Bond Fund (VCOBX) | 21,561,798 | - | - | - | - | - | -131,827 | 21,429,971 |
| Private Real Estate | 20,294,189 | - | - | - | - | - | -232,012 | 20,062,177 |
| Bentall GreenOak/MEPT Real Estate | - | - | - | - | - | - | - | - |
| Boyd Watterson GSA Fund | 12,622,014 | - | - | - | - | - | -232,012 | 12,390,002 |
| Bentall GreenOak US Core Plus RE | 7,672,175 | - | - | - | - | - | - | 7,672,175 |
| Private Equity | 22,192,955 | -139,926 | - | - | -30,000 | -50,753 | - | 21,972,276 |
| Ironsides Direct Investment Fund V | 10,667,449 | -525,810 | - | - | -30,000 | -50,753 | - | 10,060,886 |
| PA Co-Investment Fund III | 5,885,752 | -104,596 | - | - | - | - | - | 5,781,156 |
| Adams Street Co-Investment Fund V | 4,108,837 | - | - | - | - | - | - | 4,108,837 |
| Hamilton Lane Secondary Fund VI | 1,530,917 | 490,480 | - | - | - | - | - | 2,021,397 |
| Private Debt | 8,137,679 | -40,529 | - | - | -5,830 | -5,894 | - | 8,085,426 |
| Ironsides Opportunities Fund | 1,989,880 | -40,529 | - | - | -5,830 | -5,894 | - | 1,937,627 |
| PA Credit Strategies Fund | 6,147,799 | - | - | - | - | - | - | 6,147,799 |
| Cash | 1,015,022 | 1,898,358 | 3,300,351 | -5,441,394 | -105,682 | -57,207 | 19,539 | 628,988 |
| Cash Account | 1,015,022 | 1,898,358 | 3,300,351 | -5,441,394 | -105,682 | -57,207 | 19,539 | 628,988 |

| Asset Allocation & Performance | Allocation | | Performance(%) | | | | | | | | Inception Date |
|---|--------------------|--------------|------------------|------------------|-------------------|------------------|------------------|------------------|------------------|-----------------|----------------|
| | Market Value \$ | % | QTR | YTD | 1 YR | 3 YR | 5 YR | 7 YR | Inception | | |
| | | | | | | | | | | | |
| Total Fund (Gross) | 321,427,150 | 100.0 | 4.07 (78) | 4.07 (78) | 12.84 (70) | 4.20 (46) | 7.58 (59) | 7.33 (62) | 7.04 (18) | Jan-1998 | |
| Total Fund Policy Index | | | 3.86 | 3.86 | 12.80 | 3.28 | 6.96 | 6.60 | 6.33 | | |
| All Public DB Plans Median | | | 4.98 | 4.98 | 14.21 | 4.12 | 7.77 | 7.61 | 6.40 | | |
| Total Fund (Net) | 321,427,150 | 100.0 | 4.03 | 4.03 | 12.67 | 4.01 | 7.35 | 7.05 | - | Oct-2003 | |
| Total Fund Policy Index | | | 3.86 | 3.86 | 12.80 | 3.28 | 6.96 | 6.60 | 6.87 | | |
| Total Equity | 175,766,359 | 54.7 | 8.14 | 8.14 | 22.91 | - | - | - | 6.94 | Apr-2022 | |
| Domestic Large Cap Equity | 82,391,899 | 25.6 | 10.66 | 10.66 | 28.73 | - | - | - | 8.79 | Apr-2022 | |
| Vanguard S&P 500 Index Fund (VINIX) | 39,549,799 | 12.3 | 10.54 (9) | 10.54 (9) | 29.83 (17) | 11.45 (10) | 15.02 (9) | 14.06 (7) | 13.74 (3) | Jul-2013 | |
| S&P 500 Index | | | 10.56 | 10.56 | 29.88 | 11.49 | 15.05 | 14.09 | 13.78 | | |
| IM S&P 500 Index (MF) Median | | | 10.47 | 10.47 | 29.53 | 11.16 | 14.71 | 13.75 | 13.38 | | |
| Vanguard Russell 1000 Growth Index (VRGWX) | 20,042,915 | 6.2 | 11.39 (67) | 11.39 (67) | 38.97 (58) | 12.45 (9) | 18.45 (9) | 18.00 (11) | 16.75 (11) | Jul-2013 | |
| Russell 1000 Growth Index | | | 11.41 | 11.41 | 39.00 | 12.50 | 18.52 | 18.06 | 16.82 | | |
| IM U.S. Large Cap Growth Equity (MF) Median | | | 12.60 | 12.60 | 39.96 | 9.52 | 15.73 | 15.85 | 15.03 | | |
| DFA Large Value Equity (DFLVX) | 15,702,007 | 4.9 | 11.18 (24) | 11.18 (24) | 23.37 (44) | 9.24 (53) | 10.98 (60) | 9.56 (67) | 8.15 (40) | May-2006 | |
| Russell 1000 Value Index | | | 8.99 | 8.99 | 20.27 | 8.11 | 10.31 | 9.16 | 7.65 | | |
| IM U.S. Large Cap Value Equity (MF) Median | | | 9.15 | 9.15 | 22.21 | 9.36 | 11.39 | 10.22 | 7.77 | | |
| Vanguard Russell 1000 Value Index (VRVIX) | 7,097,178 | 2.2 | 8.98 (55) | 8.98 (55) | 20.22 (64) | 8.05 (77) | - | - | 9.83 (76) | Mar-2021 | |
| Russell 1000 Value Index | | | 8.99 | 8.99 | 20.27 | 8.11 | - | - | 9.90 | | |
| IM U.S. Large Cap Value Equity (MF) Median | | | 9.15 | 9.15 | 22.21 | 9.36 | - | - | 11.28 | | |
| Domestic Small Cap Equity | 46,765,791 | 14.5 | 5.97 | 5.97 | 22.13 | - | - | - | 5.42 | Apr-2022 | |
| Allspring Global Small Value Eq. | 20,949,986 | 6.5 | 7.32 (17) | 7.32 (17) | 24.60 (27) | 7.12 (43) | 11.36 (49) | 9.57 (34) | 9.77 (37) | Dec-2004 | |
| Russell 2000 Value Index | | | 2.90 | 2.90 | 18.75 | 2.22 | 8.17 | 6.55 | 7.13 | | |
| IM U.S. Small Cap Value Equity (SA+CF+MF) Median | | | 4.69 | 4.69 | 21.40 | 6.71 | 11.22 | 8.87 | 9.37 | | |
| Emerald Small Growth Equity | 21,674,420 | 6.7 | 5.66 (80) | 5.66 (80) | 20.92 (44) | -0.38 (55) | 8.87 (72) | 10.66 (61) | 10.97 (63) | Oct-1998 | |
| Russell 2000 Growth Index | | | 7.58 | 7.58 | 20.35 | -2.68 | 7.38 | 8.40 | 7.81 | | |
| IM U.S. Small Cap Growth Equity (SA+CF+MF) Median | | | 7.64 | 7.64 | 19.81 | 0.22 | 9.93 | 11.65 | 11.85 | | |
| StoneRidge Small Growth Equity | 4,141,385 | 1.3 | - | - | - | - | - | - | 5.75 (95) | Feb-2024 | |
| Russell 2000 Growth Index | | | - | - | - | - | - | - | 11.15 | | |
| IM U.S. Small Cap Growth Equity (SA+CF+MF) Median | | | - | - | - | - | - | - | 9.92 | | |

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 | 46,608,669 | 14.5 | 5.70 | 5.70 | 13.70 | - | - | - | 4.84 | Apr-2022 | |
| DFA International Equity (DFIEX) | 19,802,574 | 6.2 | 4.67 (64) | 4.67 (64) | 14.39 (45) | 4.53 (31) | 7.61 (20) | - | 4.74 (36) | Dec-2017 | |
| MSCI EAFE Value Index (Net) | | | 4.48 | 4.48 | 17.32 | 6.59 | 6.39 | - | 3.88 | | |
| IM International Multi-Cap Core Equity (MF) Median | | | 5.14 | 5.14 | 13.66 | 3.30 | 6.53 | - | 4.26 | | |
| DFA Emerging Markets (DFCEX) | 4,926,340 | 1.5 | 2.38 (56) | 2.38 (56) | 11.94 (33) | -0.23 (21) | 4.93 (23) | - | 3.12 (-) | Dec-2017 | |
| MSCI Emerging Markets (Net) Index | | | 2.37 | 2.37 | 8.15 | -5.05 | 2.22 | - | 1.31 | | |
| IM Emerging Markets Equity (SA+CF+MF) Median | | | 2.79 | 2.79 | 8.50 | -5.82 | 2.50 | - | - | | |
| EuroPacific Growth Fund (RERGX) | 21,879,755 | 6.8 | 7.44 (39) | 7.44 (39) | 13.49 (38) | -0.16 (68) | 6.91 (58) | 7.08 (48) | 6.78 (34) | Nov-2015 | |
| MSCI AC World ex USA Growth (Net) | | | 5.91 | 5.91 | 11.22 | -0.76 | 6.24 | 6.69 | 6.34 | | |
| IM International Large Cap Growth Equity (MF) Median | | | 6.85 | 6.85 | 12.49 | 1.82 | 7.25 | 6.99 | 6.28 | | |
| Total Fixed Income | 94,911,923 | 29.5 | -0.42 | -0.42 | 2.44 | - | - | - | 0.35 | Apr-2022 | |
| Boyd Watterson Fixed | 46,786,229 | 14.6 | -0.24 (46) | -0.24 (46) | 2.66 (51) | -0.96 (18) | 1.44 (36) | 1.88 (44) | 4.00 (82) | Oct-1998 | |
| Boyd Watterson Fixed Policy | | | -0.78 | -0.78 | 1.70 | -1.18 | 1.02 | 1.38 | - | | |
| IM U.S. Broad Market Fixed Income (SA+CF) Median | | | -0.30 | -0.30 | 2.68 | -1.88 | 1.16 | 1.76 | 4.38 | | |
| PNC Fixed | 26,695,723 | 8.3 | -0.59 (76) | -0.59 (76) | 2.14 (70) | -1.27 (23) | 1.20 (47) | 1.58 (67) | 2.83 (95) | Jul-2008 | |
| PNC Fixed Policy | | | -0.78 | -0.78 | 1.70 | -1.18 | 1.02 | 1.38 | 2.54 | | |
| IM U.S. Broad Market Fixed Income (SA+CF) Median | | | -0.30 | -0.30 | 2.68 | -1.88 | 1.16 | 1.76 | 3.72 | | |
| Vanguard Core Bond Fund (VCOBX) | 21,429,971 | 6.7 | -0.61 (75) | -0.61 (75) | 2.23 (68) | - | - | - | 1.73 (70) | Feb-2023 | |
| Blmbg. U.S. Aggregate Index | | | -0.78 | -0.78 | 1.70 | - | - | - | 1.36 | | |
| IM U.S. Broad Market Core Fixed Income (MF) Median | | | -0.38 | -0.38 | 2.70 | - | - | - | 2.17 | | |
| Total Alternatives | 50,119,879 | 15.6 | | | | | | | | | |
| Private Real Estate | 20,062,177 | 6.2 | -1.14 | -1.14 | -2.62 | - | - | - | -0.46 | Apr-2022 | |
| Boyd Watterson GSA Fund | 12,390,002 | 3.9 | -1.84 (50) | -1.84 (50) | -4.34 (18) | 1.40 (77) | 4.40 (23) | 5.62 (23) | 6.42 (-) | Feb-2016 | |
| NCREIF Property Index | | | -0.98 | -0.98 | -7.16 | 3.63 | 3.76 | 4.67 | 5.16 | | |
| IM U.S. Private Real Estate (SA+CF) Median | | | -1.85 | -1.85 | -8.89 | 3.58 | 3.88 | 5.34 | - | | |
| Bentall GreenOak US Core Plus RE | 7,672,175 | 2.4 | 0.00 (17) | 0.00 (17) | 0.84 (16) | - | - | - | - | Nov-2022 | |
| NCREIF Property Index | | | -0.98 | -0.98 | -7.16 | - | - | - | -8.65 | | |
| IM U.S. Private Real Estate (SA+CF) Median | | | -1.85 | -1.85 | -8.89 | - | - | - | - | | |

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 | 21,972,276 | 6.8 | | | | | | | | |
| Ironsides Direct Investment Fund V | 10,060,886 | 3.1 | | | | | | | | |
| PA Co-Investment Fund III | 5,781,156 | 1.8 | | | | | | | | |
| Adams Street Co-Investment Fund V | 4,108,837 | 1.3 | | | | | | | | |
| Hamilton Lane Secondary Fund VI | 2,021,397 | 0.6 | | | | | | | | |
| Private Debt | 8,085,426 | 2.5 | | | | | | | | |
| Ironsides Opportunities Fund | 1,937,627 | 0.6 | | | | | | | | |
| PA Credit Strategies Fund | 6,147,799 | 1.9 | | | | | | | | |
| Cash | 628,988 | 0.2 | | | | | | | | |
| Cash Account | 628,988 | 0.2 | | | | | | | | |

Page Intentionally Left Blank

Comparative Performance

Total Fund

As of March 31, 2024

| Comparative Performance | | | | | | | | | | | | | | | | | | | | |
|---|--------------|-------------|--------------|-------------|---------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|-------------|-------------|--------------|-------------|
| | 2024 | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | | | | | | | | | | |
| Total Fund (Gross) | 4.07 | (78) | 13.09 | (53) | -11.56 | (20) | 13.31 | (59) | 12.18 | (66) | 18.55 | (74) | -5.13 | (69) | 14.12 | (71) | 8.40 | (20) | 0.36 | (37) |
| Total Fund Policy Index | 3.86 | | 13.02 | | -12.15 | | 11.61 | | 12.26 | | 17.45 | | -3.89 | | 10.71 | | 8.86 | | 1.22 | |
| All Public DB Plans Median | 4.98 | | 13.23 | | -13.99 | | 13.87 | | 13.59 | | 20.08 | | -4.53 | | 15.23 | | 6.93 | | -0.16 | |
| Total Fund (Net) | 4.03 | | 12.91 | | -11.71 | | 13.09 | | 11.89 | | 18.18 | | -5.52 | | 13.72 | | 7.99 | | -0.03 | |
| Total Fund Policy Index | 3.86 | | 13.02 | | -12.15 | | 11.61 | | 12.26 | | 17.45 | | -3.89 | | 10.71 | | 8.86 | | 1.22 | |
| Total Equity | 8.14 | | 20.76 | | | | | | | | | | | | | | | | | |
| Domestic Large Cap Equity | 10.66 | | 23.91 | | | | | | | | | | | | | | | | | |
| Vanguard S&P 500 Index Fund (VINIX) | 10.54 | (9) | 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) |
| S&P 500 Index | 10.56 | | 26.29 | | -18.11 | | 28.71 | | 18.40 | | 31.49 | | -4.38 | | 21.83 | | 11.96 | | 1.38 | |
| IM S&P 500 Index (MF) Median | 10.47 | | 25.96 | | -18.36 | | 28.25 | | 18.05 | | 31.08 | | -4.66 | | 21.37 | | 11.55 | | 0.97 | |
| Vanguard Russell 1000 Growth Index (VRGWX) | 11.39 | (67) | 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) |
| Russell 1000 Growth Index | 11.41 | | 42.68 | | -29.14 | | 27.60 | | 38.49 | | 36.39 | | -1.51 | | 30.21 | | 7.08 | | 5.67 | |
| IM U.S. Large Cap Growth Equity (MF) Median | 12.60 | | 40.78 | | -31.30 | | 22.39 | | 35.62 | | 33.26 | | -1.22 | | 29.28 | | 2.21 | | 5.61 | |
| DFA Large Value Equity (DFLVX) | 11.18 | (24) | 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) |
| Russell 1000 Value Index | 8.99 | | 11.46 | | -7.54 | | 25.16 | | 2.80 | | 26.54 | | -8.27 | | 13.66 | | 17.34 | | -3.83 | |
| IM U.S. Large Cap Value Equity (MF) Median | 9.15 | | 12.63 | | -6.10 | | 25.96 | | 3.82 | | 26.50 | | -8.61 | | 16.95 | | 13.85 | | -3.00 | |
| Vanguard Russell 1000 Value Index (VRVIX) | 8.98 | (55) | 11.42 | (57) | -7.62 | (67) | | | | | | | | | | | | | | |
| Russell 1000 Value Index | 8.99 | | 11.46 | | -7.54 | | 25.16 | | 2.80 | | 26.54 | | -8.27 | | 13.66 | | 17.34 | | -3.83 | |
| IM U.S. Large Cap Value Equity (MF) Median | 9.15 | | 12.63 | | -6.10 | | 25.96 | | 3.82 | | 26.50 | | -8.61 | | 16.95 | | 13.85 | | -3.00 | |
| Vesper Capital Mgmt (UTRN) | | | 0.73 | (100) | -20.37 | (79) | 30.04 | (15) | | | | | | | | | | | | |
| S&P 500 Index | 10.56 | | 26.29 | | -18.11 | | 28.71 | | 18.40 | | 31.49 | | -4.38 | | 21.83 | | 11.96 | | 1.38 | |
| IM U.S. Large Cap Core Equity (SA+CF+MF) Median | 10.58 | | 24.60 | | -18.23 | | 26.91 | | 18.04 | | 30.13 | | -5.50 | | 21.50 | | 9.73 | | 0.70 | |
| Domestic Small Cap Equity | 5.97 | | 18.89 | | | | | | | | | | | | | | | | | |
| Allspring Global Small Value Eq. | 7.32 | (17) | 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) |
| Russell 2000 Value Index | 2.90 | | 14.65 | | -14.48 | | 28.27 | | 4.63 | | 22.39 | | -12.86 | | 7.84 | | 31.74 | | -7.47 | |
| IM U.S. Small Cap Value Equity (SA+CF+MF) Median | 4.69 | | 17.68 | | -10.34 | | 32.54 | | 4.80 | | 23.23 | | -14.65 | | 10.23 | | 27.74 | | -5.27 | |
| Emerald Small Growth Equity | 5.66 | (80) | 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) |
| Russell 2000 Growth Index | 7.58 | | 18.66 | | -26.36 | | 2.83 | | 34.63 | | 28.48 | | -9.31 | | 22.17 | | 11.32 | | -1.38 | |
| IM U.S. Small Cap Growth Equity (SA+CF+MF) Median | 7.64 | | 17.94 | | -26.82 | | 11.60 | | 38.95 | | 29.00 | | -4.27 | | 22.32 | | 11.21 | | -1.02 | |
| StoneRidge Small Growth Equity | | | | | | | | | | | | | | | | | | | | |
| Russell 2000 Growth Index | 7.58 | | 18.66 | | -26.36 | | 2.83 | | 34.63 | | 28.48 | | -9.31 | | 22.17 | | 11.32 | | -1.38 | |
| IM U.S. Small Cap Growth Equity (SA+CF+MF) Median | 7.64 | | 17.94 | | -26.82 | | 11.60 | | 38.95 | | 29.00 | | -4.27 | | 22.32 | | 11.21 | | -1.02 | |

See the disclosure page at the end of this report.

Comparative Performance

Total Fund

As of March 31, 2024

| | 2024 | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 |
|--|------------|------------|-------------|------------|------------|------------|-------------|------------|-----------|------------|
| International Equity | 5.70 | 16.57 | | | | | | | | |
| DFA International Equity (DFIEX) | 4.67 (64) | 17.49 (45) | -13.48 (21) | 13.87 (9) | 7.72 (55) | 21.66 (41) | -17.40 (83) | | | |
| MSCI EAFE Value Index (Net) | 4.48 | 18.95 | -5.58 | 10.89 | -2.63 | 16.09 | -14.78 | 21.44 | 5.02 | -5.68 |
| IM International Multi-Cap Core Equity (MF) Median | 5.14 | 17.14 | -15.12 | 10.46 | 7.96 | 21.25 | -15.14 | 25.23 | 1.25 | -0.89 |
| DFA Emerging Markets (DFCEX) | 2.38 (56) | 15.45 (25) | -16.40 (19) | 5.83 (18) | 13.86 (70) | 16.04 (77) | -15.25 (40) | | | |
| MSCI Emerging Markets (Net) Index | 2.37 | 9.83 | -20.09 | -2.54 | 18.31 | 18.42 | -14.57 | 37.28 | 11.19 | -14.92 |
| IM Emerging Markets Equity (SA+CF+MF) Median | 2.79 | 10.57 | -22.49 | -1.95 | 17.99 | 20.50 | -16.45 | 35.98 | 7.17 | -13.17 |
| EuroPacific Growth Fund (RERGX) | 7.44 (39) | 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) | 5.91 | 14.03 | -23.05 | 5.09 | 22.20 | 27.34 | -14.43 | 32.01 | 0.12 | -1.25 |
| IM International Large Cap Growth Equity (MF) Median | 6.85 | 15.54 | -20.24 | 8.88 | 20.00 | 27.50 | -14.67 | 28.61 | -1.94 | 0.25 |
| Total Fixed Income | -0.42 | 5.64 | | | | | | | | |
| Boyd Watterson Fixed | -0.24 (46) | 6.04 (66) | -9.17 (7) | -0.40 (39) | 6.86 (91) | 8.69 (84) | -0.03 (52) | 3.45 (91) | 2.22 (96) | 0.92 (30) |
| Boyd Watterson Fixed Policy | -0.78 | 5.53 | -8.24 | -1.44 | 6.43 | 6.80 | 0.88 | 2.14 | 2.08 | 1.07 |
| IM U.S. Broad Market Fixed Income (SA+CF) Median | -0.30 | 6.36 | -12.92 | -0.75 | 8.74 | 9.49 | -0.01 | 4.33 | 3.69 | 0.63 |
| PNC Fixed | -0.59 (76) | 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 (50) |
| PNC Fixed Policy | -0.78 | 5.53 | -8.24 | -1.44 | 6.43 | 6.80 | 0.88 | 2.14 | 2.08 | 1.07 |
| IM U.S. Broad Market Fixed Income (SA+CF) Median | -0.30 | 6.36 | -12.92 | -0.75 | 8.74 | 9.49 | -0.01 | 4.33 | 3.69 | 0.63 |
| Vanguard S-T Invnt 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) |
| Blmbg. 1-3 Year Gov/Credit | 0.42 | 4.61 | -3.69 | -0.47 | 3.33 | 4.03 | 1.60 | 0.84 | 1.28 | 0.65 |
| IM U.S. Short Term Investment Grade (MF) Median | 1.05 | 5.67 | -3.79 | 0.02 | 3.02 | 4.12 | 1.24 | 1.45 | 1.68 | 0.27 |
| Vanguard Core Bond Fund (VCOBX) | -0.61 (59) | | | | | | | | | |
| Blmbg. U.S. Aggregate Index | -0.78 | 5.53 | -13.01 | -1.55 | 7.51 | 8.72 | 0.01 | 3.54 | 2.65 | 0.55 |
| IM U.S. Broad Market Core Fixed Income (MF) Median | -0.53 | 5.77 | -13.66 | -1.33 | 8.16 | 8.76 | -0.62 | 3.60 | 2.90 | 0.04 |
| Private Real Estate | -1.14 | -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) |
| NCREIF Property Index | -0.98 | -7.94 | 5.52 | 17.70 | 1.60 | 6.42 | 6.72 | 6.96 | 7.97 | 13.33 |
| IM U.S. Private Real Estate (SA+CF) Median | -1.85 | -10.76 | 7.14 | 23.30 | 1.57 | 7.01 | 8.35 | 8.06 | 9.63 | 15.33 |
| Boyd Watterson GSA Fund | -1.84 (50) | -3.13 (10) | 4.58 (73) | 8.04 (97) | 6.97 (6) | 9.53 (18) | 9.60 (23) | 8.87 (35) | | |
| NCREIF Property Index | -0.98 | -7.94 | 5.52 | 17.70 | 1.60 | 6.42 | 6.72 | 6.96 | 7.97 | 13.33 |
| IM U.S. Private Real Estate (SA+CF) Median | -1.85 | -10.76 | 7.14 | 23.30 | 1.57 | 7.01 | 8.35 | 8.06 | 9.63 | 15.33 |
| Bentall GreenOak US Core Plus RE | 0.00 (17) | 1.91 (8) | | | | | | | | |
| NCREIF Property Index | -0.98 | -7.94 | 5.52 | 17.70 | 1.60 | 6.42 | 6.72 | 6.96 | 7.97 | 13.33 |
| IM U.S. Private Real Estate (SA+CF) Median | -1.85 | -10.76 | 7.14 | 23.30 | 1.57 | 7.01 | 8.35 | 8.06 | 9.63 | 15.33 |

See the disclosure page at the end of this report.

Private Equity Summary of Partnership

As of March 31, 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 | 03/31/2024 | 2018 | Buyouts | 6,000,000 | 7,553,164 | 10,060,886 | 2,982,264 | 15.5 | 1.7 |
| PA Co-Investment Fund III | 03/31/2024 | 2019 | Buyouts | 6,000,000 | 5,511,784 | 5,781,156 | 4,948,961 | 19.0 | 1.9 |
| Adams Street Co-Investment Fund V | 03/31/2024 | 2022 | Co-Investment | 10,000,000 | 3,262,945 | 4,108,837 | - | 27.1 | 1.3 |
| Hamilton Lane Secondary Fund VI | 03/31/2024 | 2022 | Secondaries | 10,000,000 | 1,488,015 | 2,021,397 | 9,717 | 61.4 | 1.3 |
| Private Debt Funds | | | | | | | | | |
| Ironsides Opportunities Fund | 03/31/2024 | 2018 | Buyout - Mid | 4,000,000 | 2,827,757 | 1,937,627 | 2,338,575 | 11.5 | 1.5 |
| PA Credit Strategies Fund | 03/31/2024 | 2015 | Credit | 4,000,000 | 4,000,000 | 6,147,799 | - | 8.3 | 1.5 |

Comparative Performance - IRR
Private Investments
As of March 31, 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 | -0.76 | -0.76 | 6.53 | 3.01 | 5.46 | 18.24 | 16.28 | 15.46 | 11/09/2018 |
| PA Co-Investment Fund III | 0.00 | 0.00 | 5.89 | 7.72 | 15.86 | 25.93 | 20.93 | 19.04 | 11/05/2018 |
| Adams Street Co-Investment Fund V | 0.00 | 0.00 | 23.23 | N/A | N/A | N/A | N/A | 27.08 | 10/28/2022 |
| Hamilton Lane Secondary Fund VI | 0.00 | 0.00 | 11.42 | N/A | N/A | N/A | N/A | 61.44 | 01/03/2023 |
| Private Debt | | | | | | | | | |
| Ironsides Opportunities Fund | -0.60 | -0.60 | 3.16 | 7.54 | 9.78 | 12.79 | 11.74 | 11.54 | 12/31/2018 |
| PA Credit Strategies Fund | 0.00 | 0.00 | 3.57 | 4.18 | 8.71 | 8.49 | 8.74 | 8.35 | 11/21/2018 |

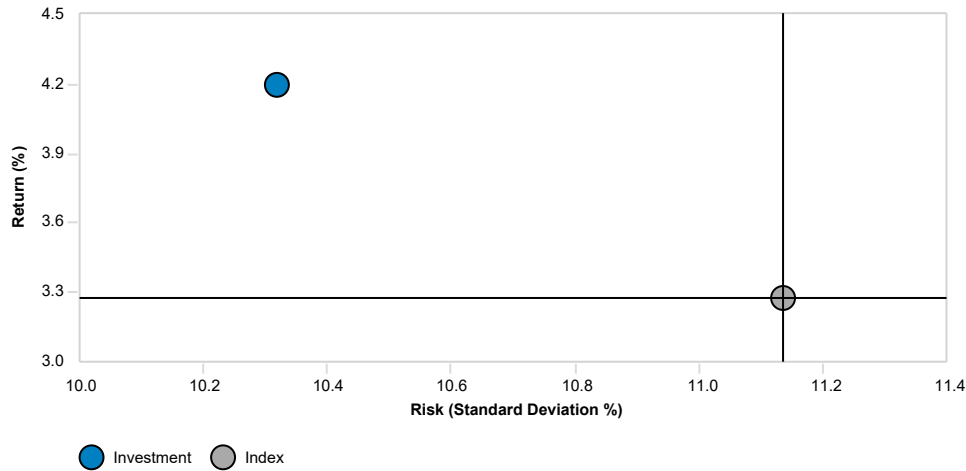
Historical Statistics 3 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | 4.20 | 10.32 | 0.21 | 98.32 | 8 | 92.12 | 4 |
| Index | 3.28 | 11.14 | 0.12 | 100.00 | 7 | 100.00 | 5 |

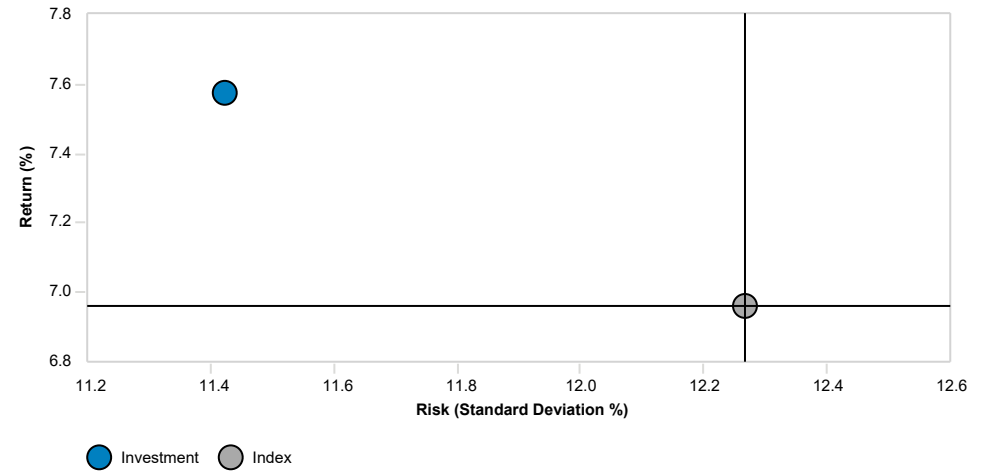
Historical Statistics 5 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | 7.58 | 11.42 | 0.52 | 98.18 | 15 | 93.47 | 5 |
| Index | 6.96 | 12.27 | 0.45 | 100.00 | 14 | 100.00 | 6 |

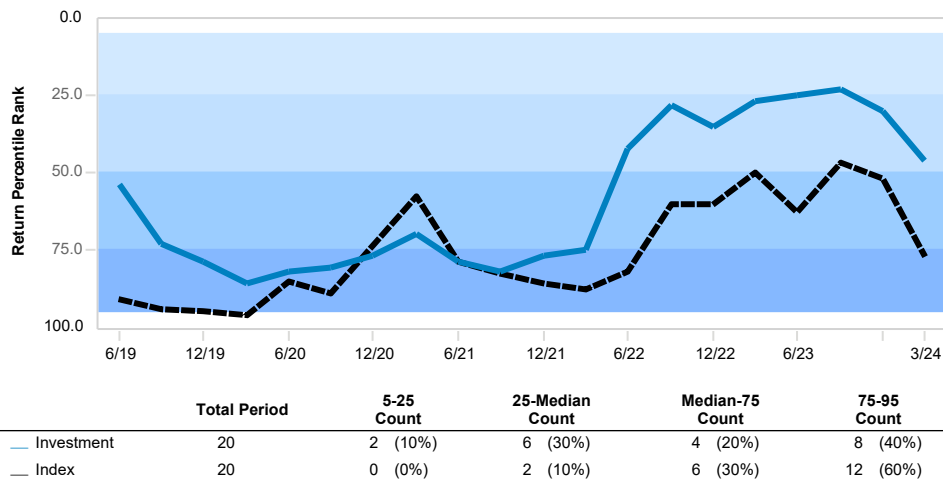
Risk and Return 3 Years



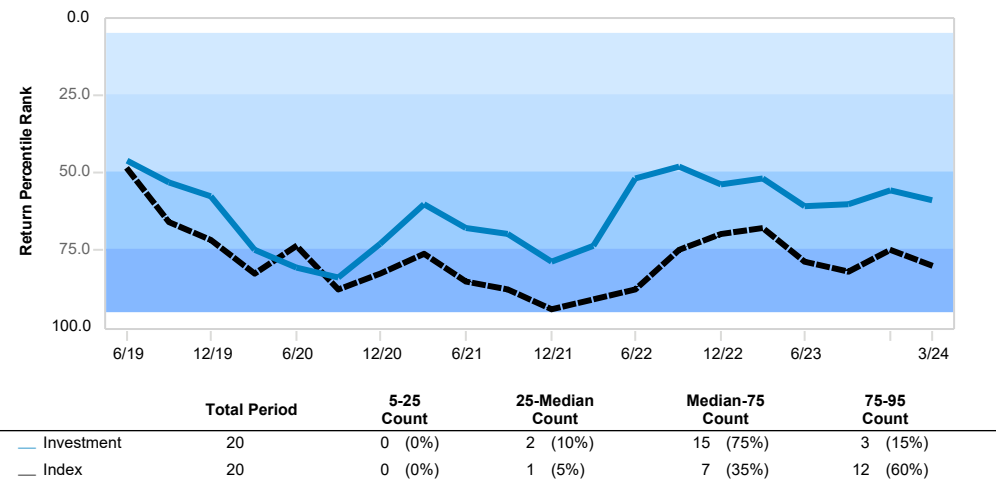
Risk and Return 5 Years



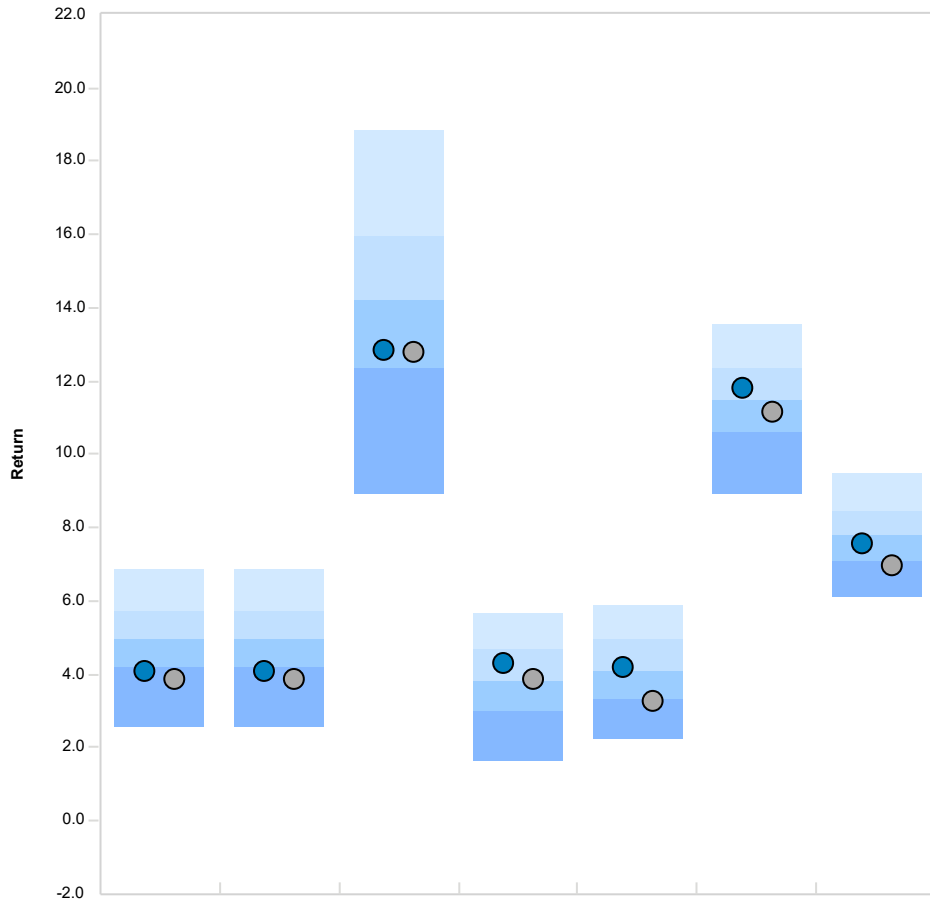
3 Year Rolling Percentile Rank All Public DB Plans



5 Year Rolling Percentile Rank All Public DB Plans

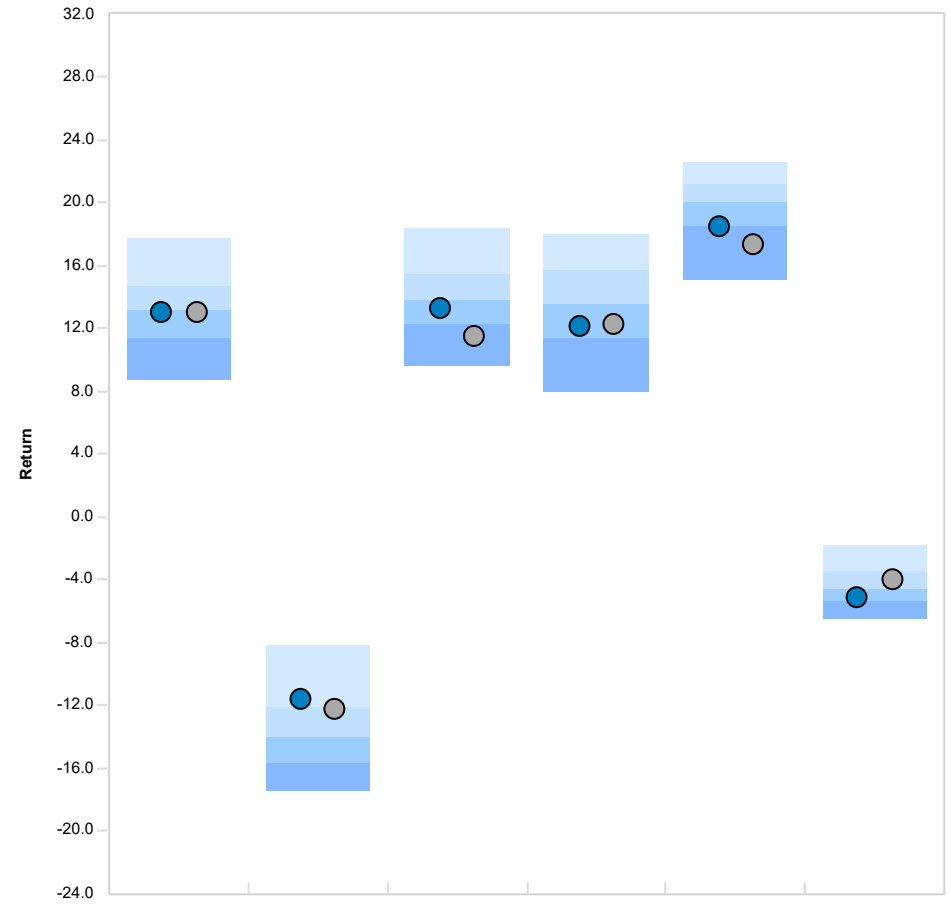


Plan Sponsor Peer Group Analysis vs. All Public DB Plans



| | QTR | FYTD | 1 YR | 2 YR | 3 YR | 4 YR | 5 YR |
|--------------|-----------|-----------|------------|-----------|-----------|------------|-----------|
| ● Investment | 4.07 (78) | 4.07 (78) | 12.84 (70) | 4.29 (39) | 4.20 (46) | 11.80 (41) | 7.58 (59) |
| ● Index | 3.86 (82) | 3.86 (82) | 12.80 (71) | 3.85 (49) | 3.28 (77) | 11.16 (62) | 6.96 (80) |
| Median | 4.98 | 4.98 | 14.21 | 3.83 | 4.12 | 11.50 | 7.77 |

Plan Sponsor Peer Group Analysis vs. All Public DB Plans



| | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 |
|--------------|------------|-------------|------------|------------|------------|------------|
| ● Investment | 13.09 (53) | -11.56 (20) | 13.31 (59) | 12.18 (66) | 18.55 (74) | -5.13 (69) |
| ● Index | 13.02 (53) | -12.15 (27) | 11.61 (85) | 12.26 (65) | 17.45 (86) | -3.89 (32) |
| Median | 13.23 | -13.99 | 13.87 | 13.59 | 20.08 | -4.53 |

Comparative Performance

| | 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 | 1 Qtr Ending Sep-2022 |
|-------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Investment | 8.12 (50) | -2.80 (43) | 3.17 (62) | 4.31 (52) | 5.31 (63) | -3.84 (28) |
| Index | 9.15 (24) | -3.42 (77) | 3.02 (68) | 4.07 (63) | 5.41 (61) | -3.34 (13) |
| Median | 8.10 | -2.95 | 3.38 | 4.34 | 5.70 | -4.31 |

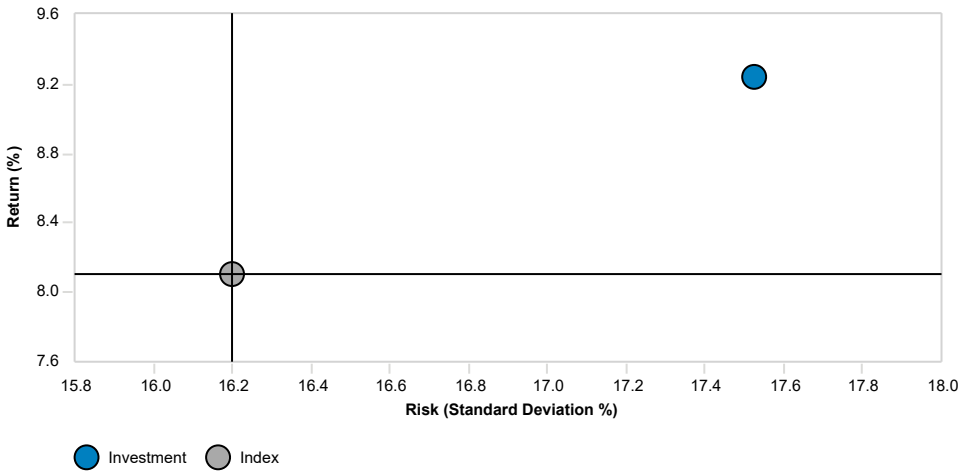
Historical Statistics 3 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | 9.24 | 17.52 | 0.45 | 107.51 | 7 | 104.59 | 5 |
| Index | 8.11 | 16.20 | 0.41 | 100.00 | 7 | 100.00 | 5 |

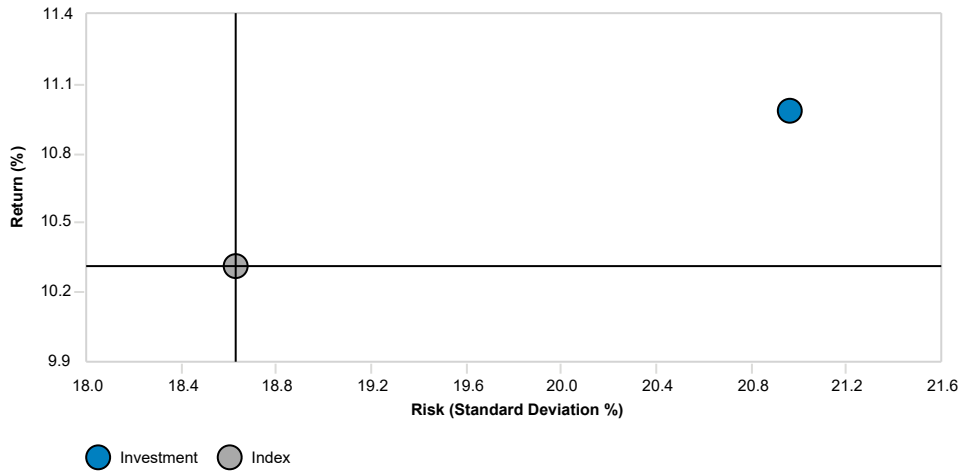
Historical Statistics 5 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | 10.98 | 20.96 | 0.51 | 109.52 | 14 | 109.62 | 6 |
| Index | 10.31 | 18.63 | 0.51 | 100.00 | 14 | 100.00 | 6 |

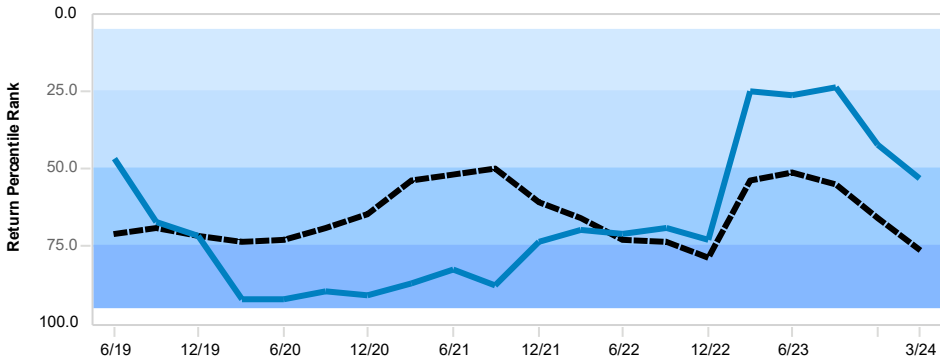
Risk and Return 3 Years



Risk and Return 5 Years

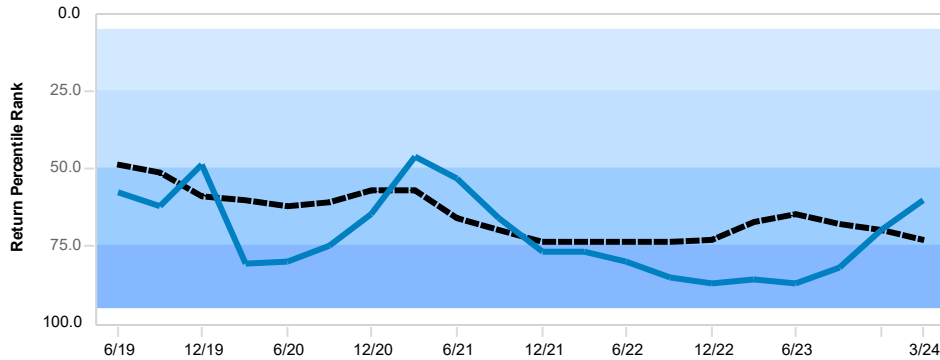


3 Year Rolling Percentile Rank IM U.S. Large Cap Value Equity (MF)



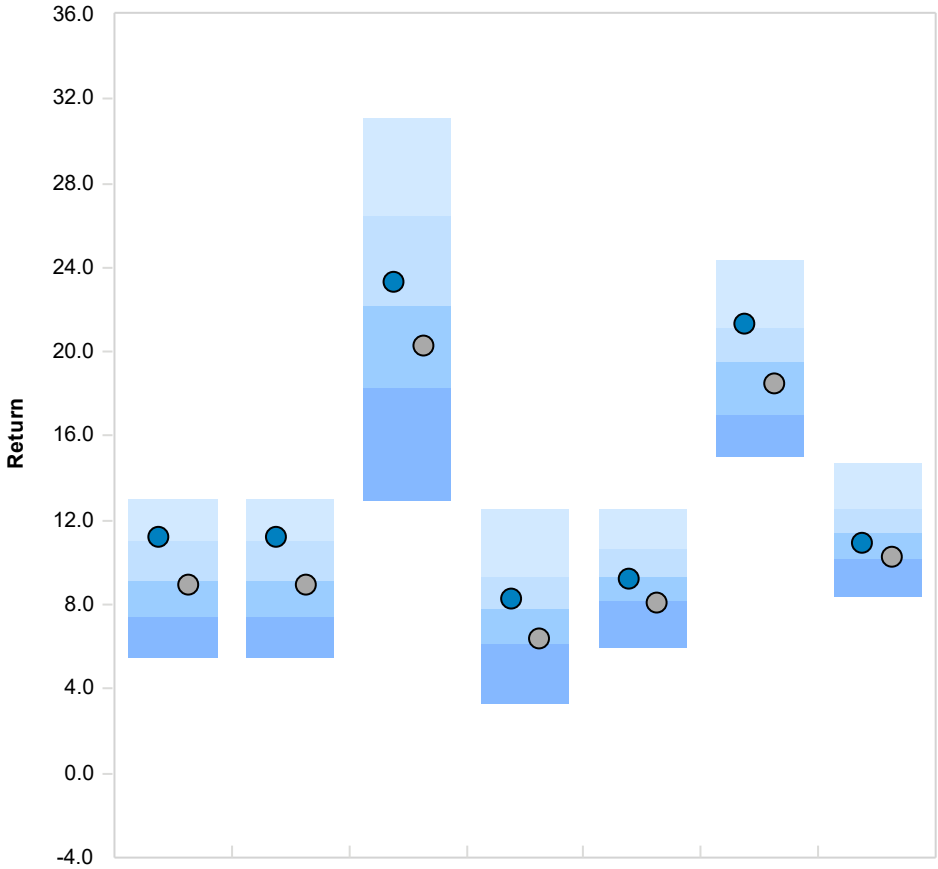
| | Total Period | 5-25 Count | 25-Median Count | Median-75 Count | 75-95 Count |
|------------|--------------|------------|-----------------|-----------------|-------------|
| Investment | 20 | 2 (10%) | 3 (15%) | 8 (40%) | 7 (35%) |
| Index | 20 | 0 (0%) | 1 (5%) | 17 (85%) | 2 (10%) |

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



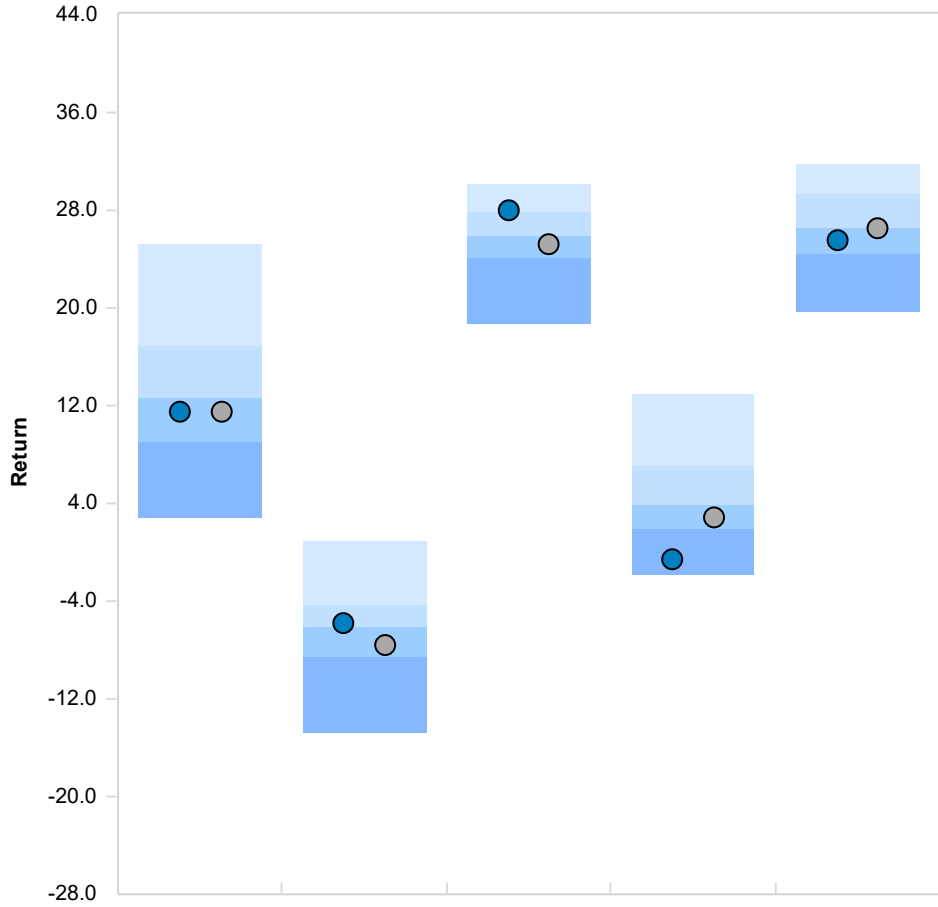
| | Total Period | 5-25 Count | 25-Median Count | Median-75 Count | 75-95 Count |
|------------|--------------|------------|-----------------|-----------------|-------------|
| Investment | 20 | 0 (0%) | 2 (10%) | 8 (40%) | 10 (50%) |
| Index | 20 | 0 (0%) | 1 (5%) | 19 (95%) | 0 (0%) |

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



| | QTR | FYTD | 1 YR | 2 YR | 3 YR | 4 YR | 5 YR |
|--------------|------------|------------|------------|-----------|-----------|------------|------------|
| ● Investment | 11.18 (24) | 11.18 (24) | 23.37 (44) | 8.25 (44) | 9.24 (53) | 21.38 (24) | 10.98 (60) |
| ● Index | 8.99 (54) | 8.99 (54) | 20.27 (64) | 6.37 (70) | 8.11 (76) | 18.51 (66) | 10.31 (73) |
| Median | 9.15 | 9.15 | 22.21 | 7.85 | 9.36 | 19.57 | 11.39 |

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 Dec-2023 | 1 Qtr Ending Sep-2023 | 1 Qtr Ending Jun-2023 | 1 Qtr Ending Mar-2023 | 1 Qtr Ending Dec-2022 | 1 Qtr Ending Sep-2022 |
|------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Investment | 9.06 (70) | -1.39 (19) | 3.18 (78) | 0.46 (45) | 14.05 (27) | -5.65 (53) |
| Index | 9.50 (55) | -3.16 (69) | 4.07 (56) | 1.01 (33) | 12.42 (59) | -5.62 (52) |
| Median | 9.61 | -2.36 | 4.40 | 0.15 | 12.88 | -5.57 |

Page Intentionally Left Blank

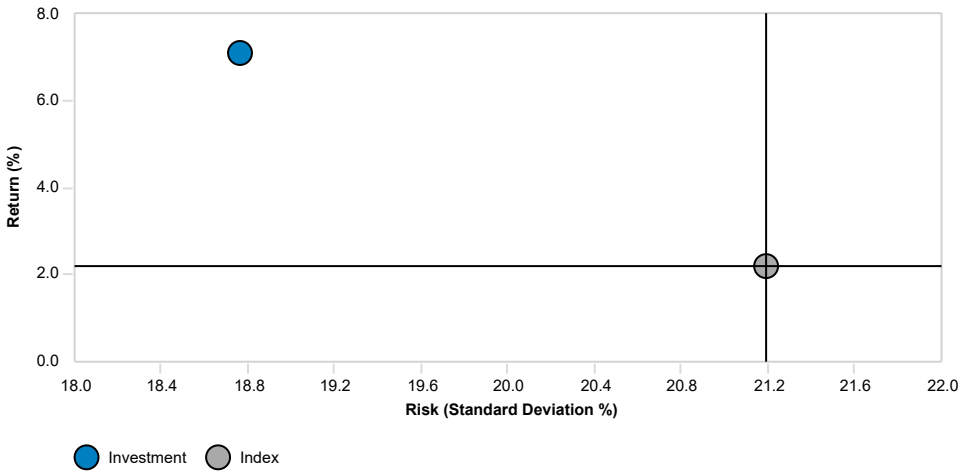
Historical Statistics 3 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | 7.12 | 18.77 | 0.33 | 94.90 | 7 | 79.62 | 5 |
| Index | 2.22 | 21.19 | 0.09 | 100.00 | 6 | 100.00 | 6 |

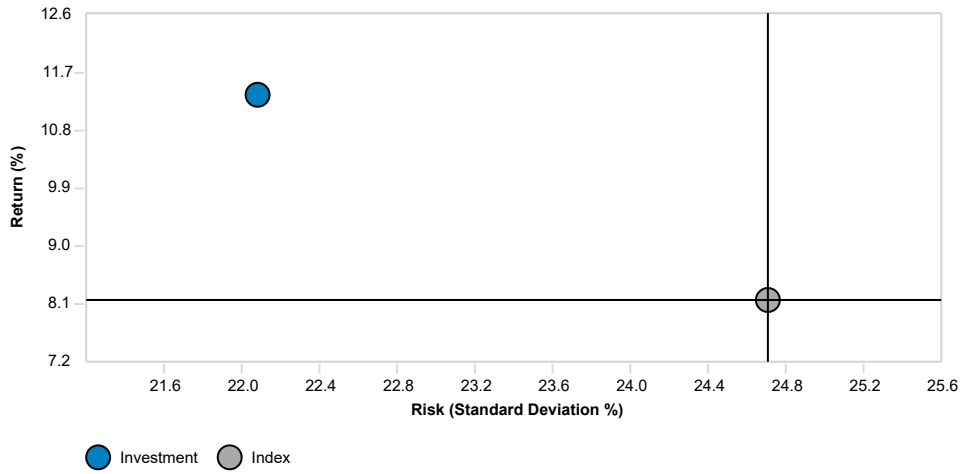
Historical Statistics 5 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | 11.36 | 22.08 | 0.51 | 93.52 | 14 | 83.17 | 6 |
| Index | 8.17 | 24.70 | 0.36 | 100.00 | 12 | 100.00 | 8 |

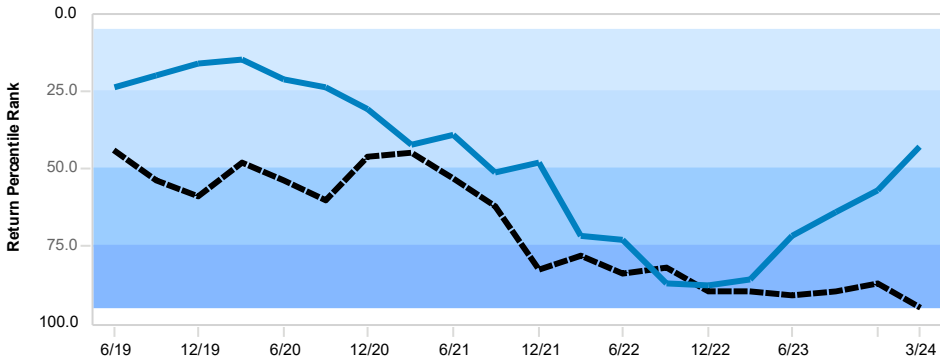
Risk and Return 3 Years



Risk and Return 5 Years

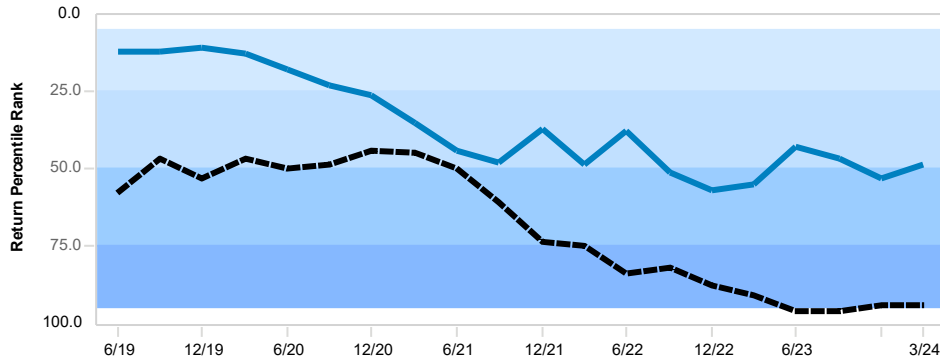


3 Year Rolling Percentile Rank IM U.S. Small Cap Value Equity (SA+CF+MF)



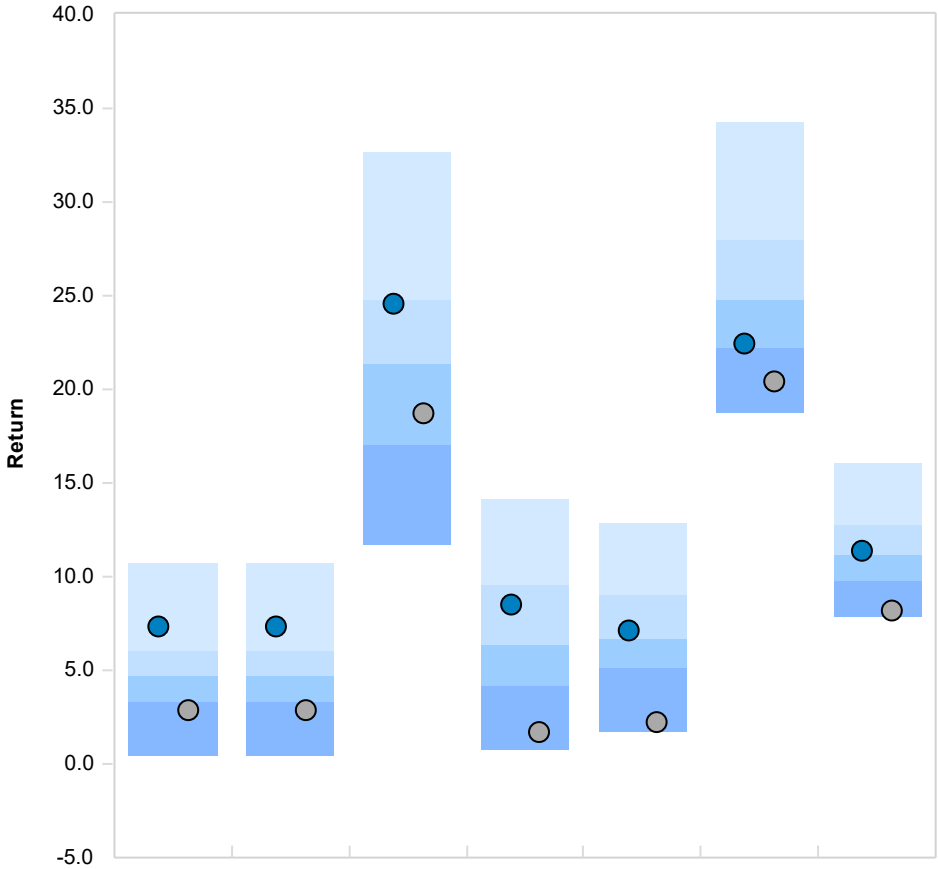
| | Total Period | 5-25 Count | 25-Median Count | Median-75 Count | 75-95 Count |
|------------|--------------|------------|-----------------|-----------------|-------------|
| Investment | 20 | 6 (30%) | 5 (25%) | 6 (30%) | 3 (15%) |
| Index | 20 | 0 (0%) | 4 (20%) | 6 (30%) | 10 (50%) |

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



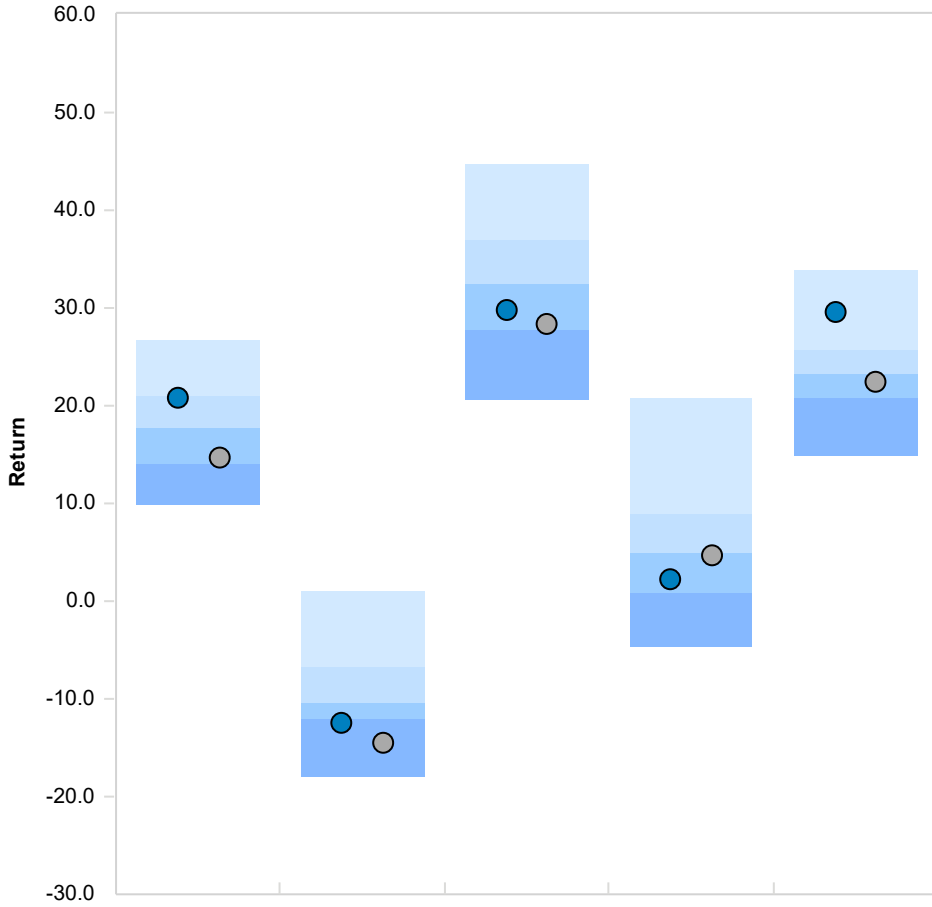
| | Total Period | 5-25 Count | 25-Median Count | Median-75 Count | 75-95 Count |
|------------|--------------|------------|-----------------|-----------------|-------------|
| Investment | 20 | 6 (30%) | 10 (50%) | 4 (20%) | 0 (0%) |
| Index | 20 | 0 (0%) | 7 (35%) | 5 (25%) | 8 (40%) |

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 | 7.32 (17) | 7.32 (17) | 24.60 (27) | 8.53 (29) | 7.12 (43) | 22.49 (73) | 11.36 (49) |
| ● Index | 2.90 (82) | 2.90 (82) | 18.75 (68) | 1.67 (94) | 2.22 (95) | 20.44 (90) | 8.17 (94) |
| Median | 4.69 | 4.69 | 21.40 | 6.33 | 6.71 | 24.76 | 11.22 |

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 | 4.80 | 23.23 |

Comparative Performance

| | 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 | 1 Qtr Ending Sep-2022 |
|------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Investment | 12.52 (60) | -2.17 (55) | 5.47 (26) | 4.04 (19) | 12.01 (45) | -8.24 (95) |
| Index | 15.26 (21) | -2.96 (62) | 3.18 (68) | -0.66 (86) | 8.42 (90) | -4.61 (47) |
| Median | 13.19 | -1.98 | 4.02 | 1.56 | 11.74 | -4.87 |

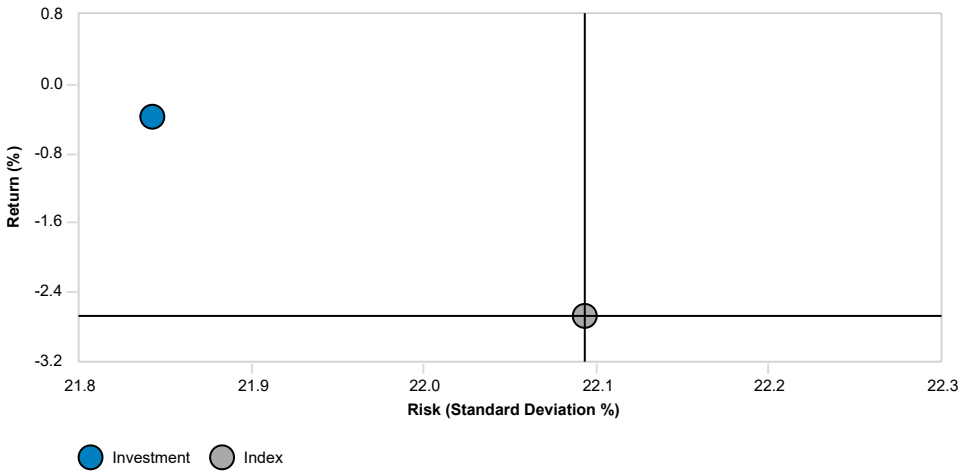
Historical Statistics 3 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | -0.38 | 21.84 | -0.03 | 104.32 | 8 | 96.93 | 4 |
| Index | -2.68 | 22.09 | -0.13 | 100.00 | 8 | 100.00 | 4 |

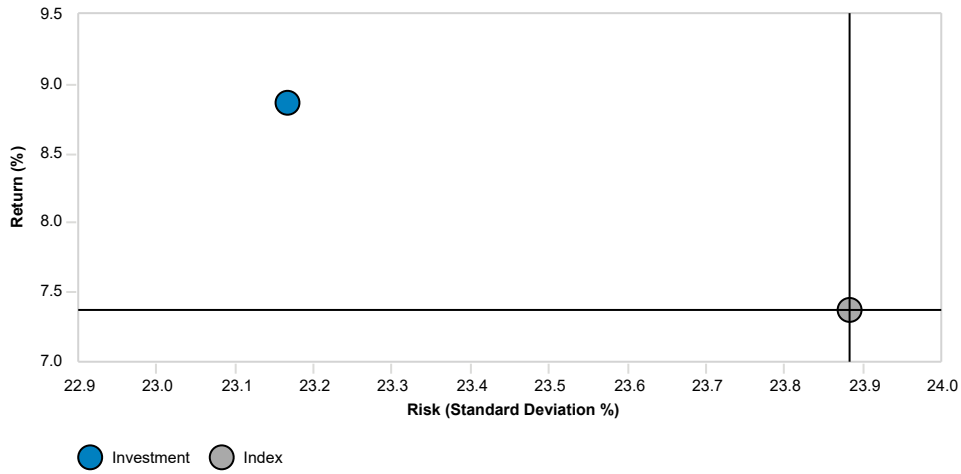
Historical Statistics 5 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | 8.87 | 23.17 | 0.40 | 101.24 | 14 | 97.24 | 6 |
| Index | 7.38 | 23.88 | 0.33 | 100.00 | 14 | 100.00 | 6 |

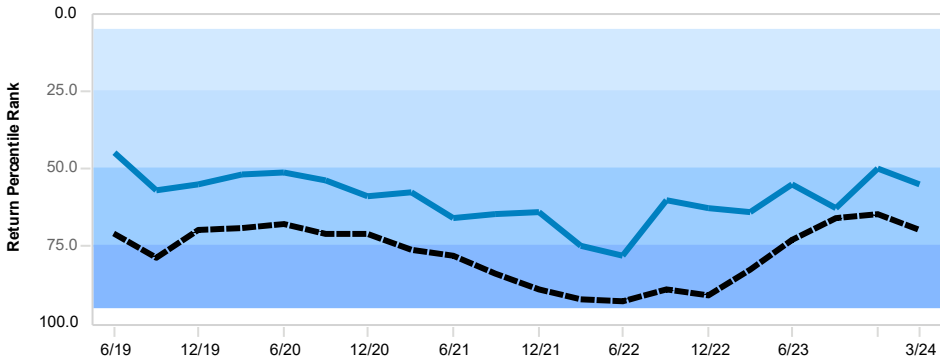
Risk and Return 3 Years



Risk and Return 5 Years

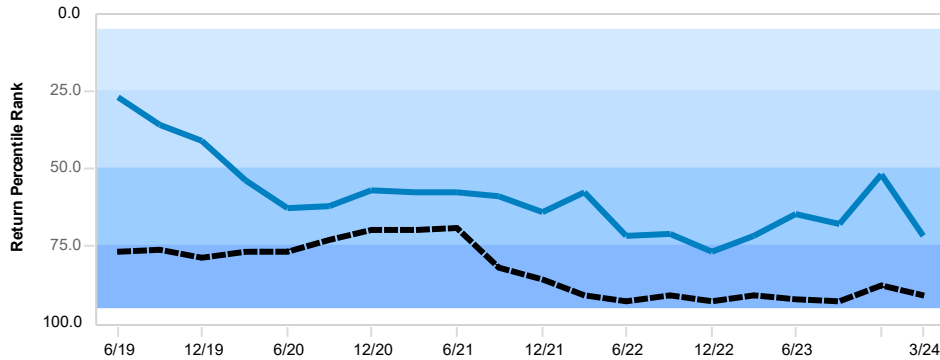


3 Year Rolling Percentile Rank IM U.S. Small Cap Growth Equity (SA+CF+MF)



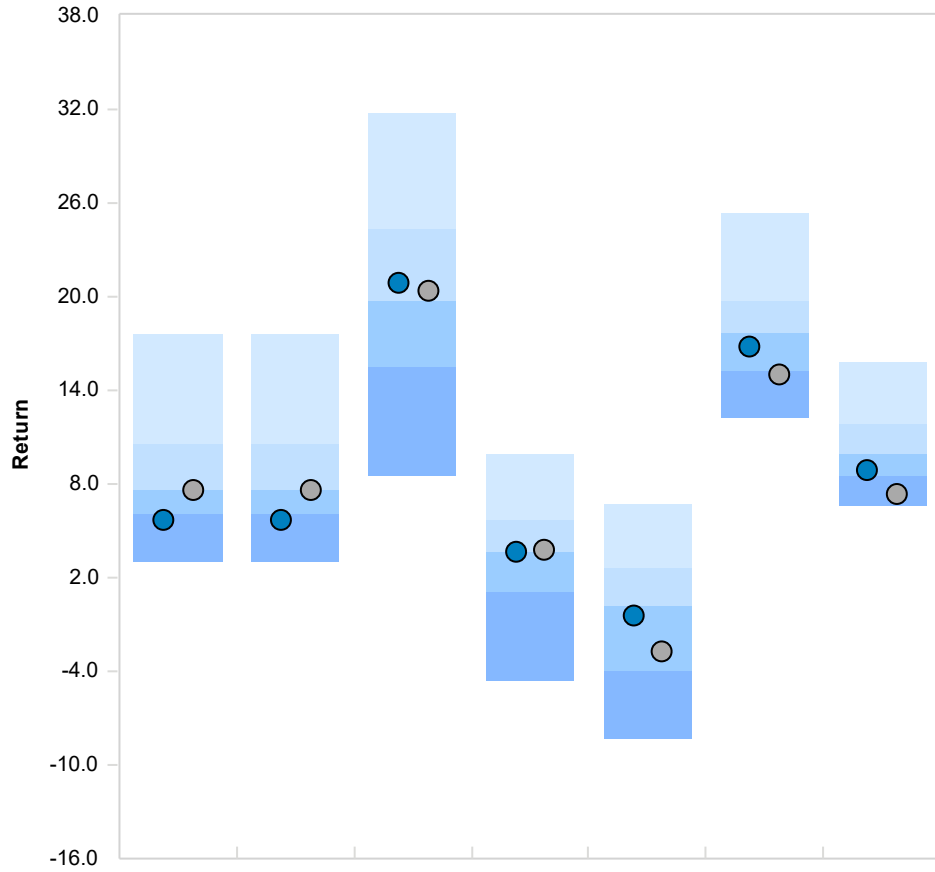
| | Total Period | 5-25 Count | 25-Median Count | Median-75 Count | 75-95 Count |
|------------|--------------|------------|-----------------|-----------------|-------------|
| Investment | 20 | 0 (0%) | 2 (10%) | 17 (85%) | 1 (5%) |
| Index | 20 | 0 (0%) | 0 (0%) | 10 (50%) | 10 (50%) |

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



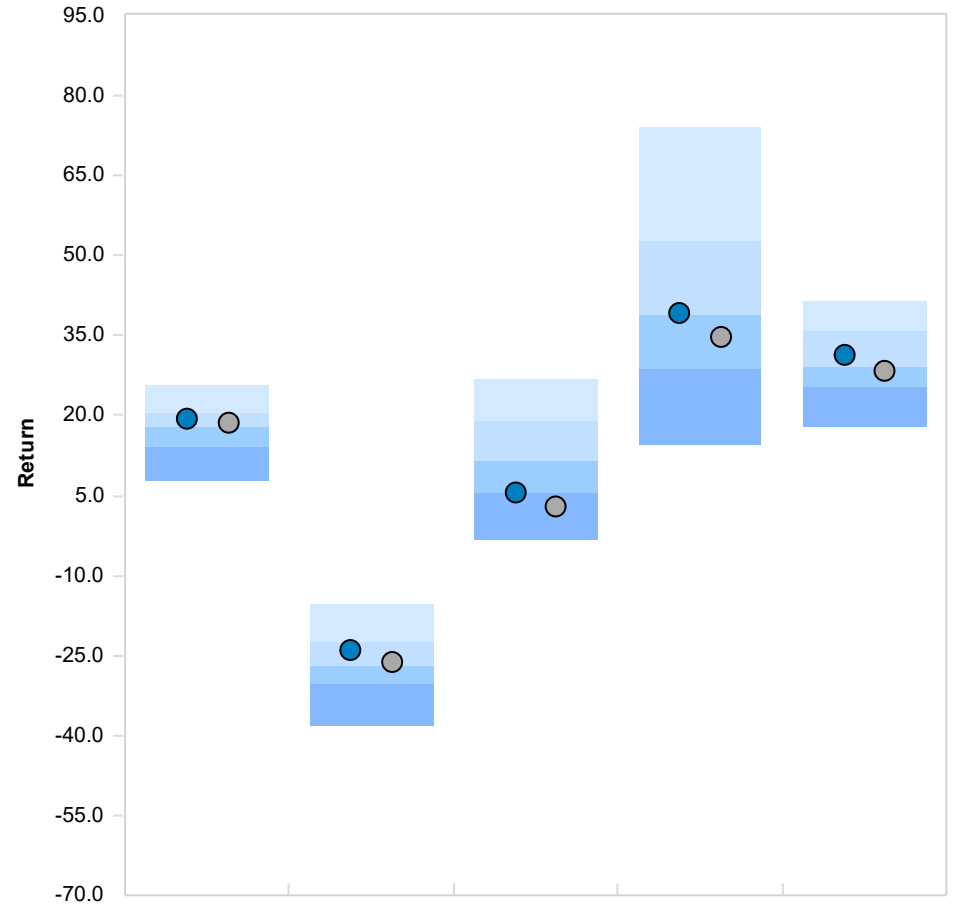
| | Total Period | 5-25 Count | 25-Median Count | Median-75 Count | 75-95 Count |
|------------|--------------|------------|-----------------|-----------------|-------------|
| Investment | 20 | 0 (0%) | 3 (15%) | 16 (80%) | 1 (5%) |
| Index | 20 | 0 (0%) | 0 (0%) | 4 (20%) | 16 (80%) |

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 | 5.66 (80) | 5.66 (80) | 20.92 (44) | 3.63 (51) | -0.38 (55) | 16.79 (62) | 8.87 (72) |
| ● Index | 7.58 (52) | 7.58 (52) | 20.35 (47) | 3.73 (49) | -2.68 (70) | 15.07 (79) | 7.38 (91) |
| Median | 7.64 | 7.64 | 19.81 | 3.63 | 0.22 | 17.76 | 9.93 |

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 | -26.82 | 11.60 | 38.95 | 29.00 |

Comparative Performance

| | 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 | 1 Qtr Ending Sep-2022 |
|------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Investment | 14.91 (8) | -8.50 (85) | 8.85 (7) | 4.28 (80) | 6.57 (30) | 0.01 (36) |
| Index | 12.75 (28) | -7.32 (72) | 7.05 (22) | 6.07 (61) | 4.13 (60) | 0.24 (32) |
| Median | 11.55 | -6.11 | 5.38 | 6.72 | 4.76 | -1.05 |

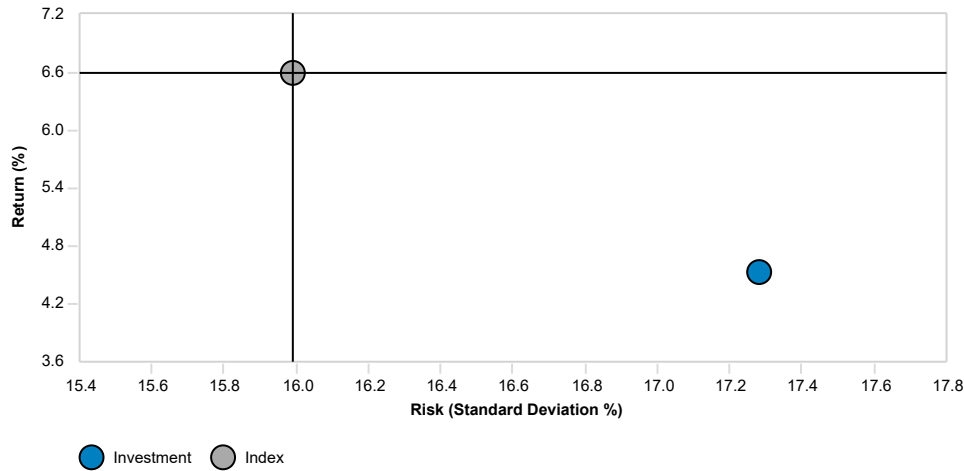
Historical Statistics 3 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | 4.53 | 17.28 | 0.20 | 99.10 | 7 | 108.41 | 5 |
| Index | 6.59 | 15.99 | 0.32 | 100.00 | 9 | 100.00 | 3 |

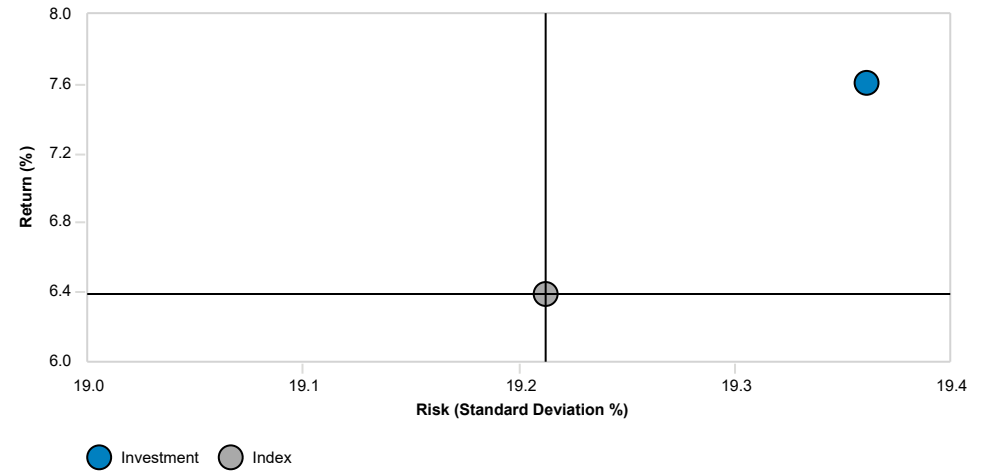
Historical Statistics 5 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | 7.61 | 19.36 | 0.37 | 103.73 | 13 | 99.58 | 7 |
| Index | 6.39 | 19.21 | 0.32 | 100.00 | 15 | 100.00 | 5 |

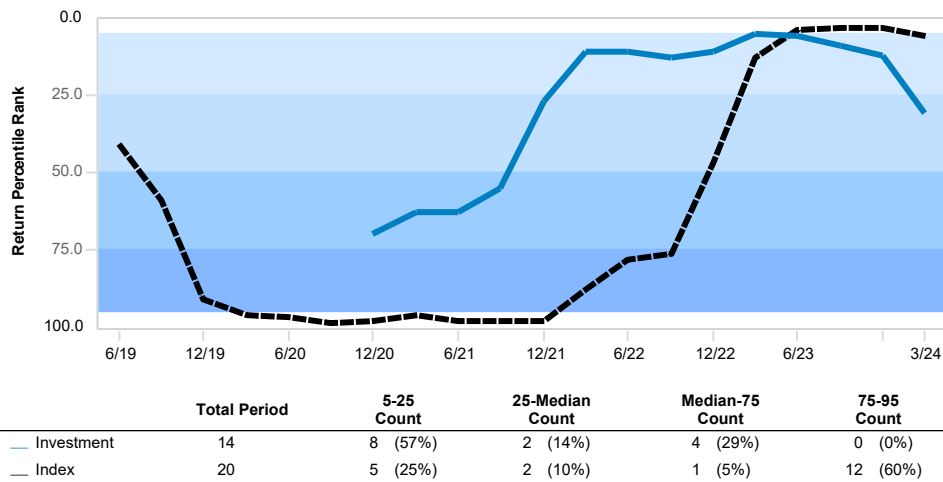
Risk and Return 3 Years



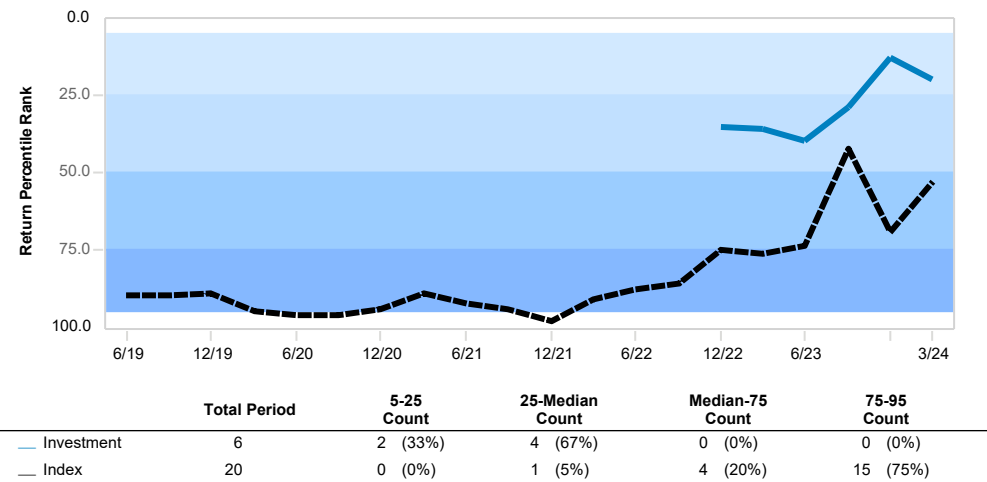
Risk and Return 5 Years



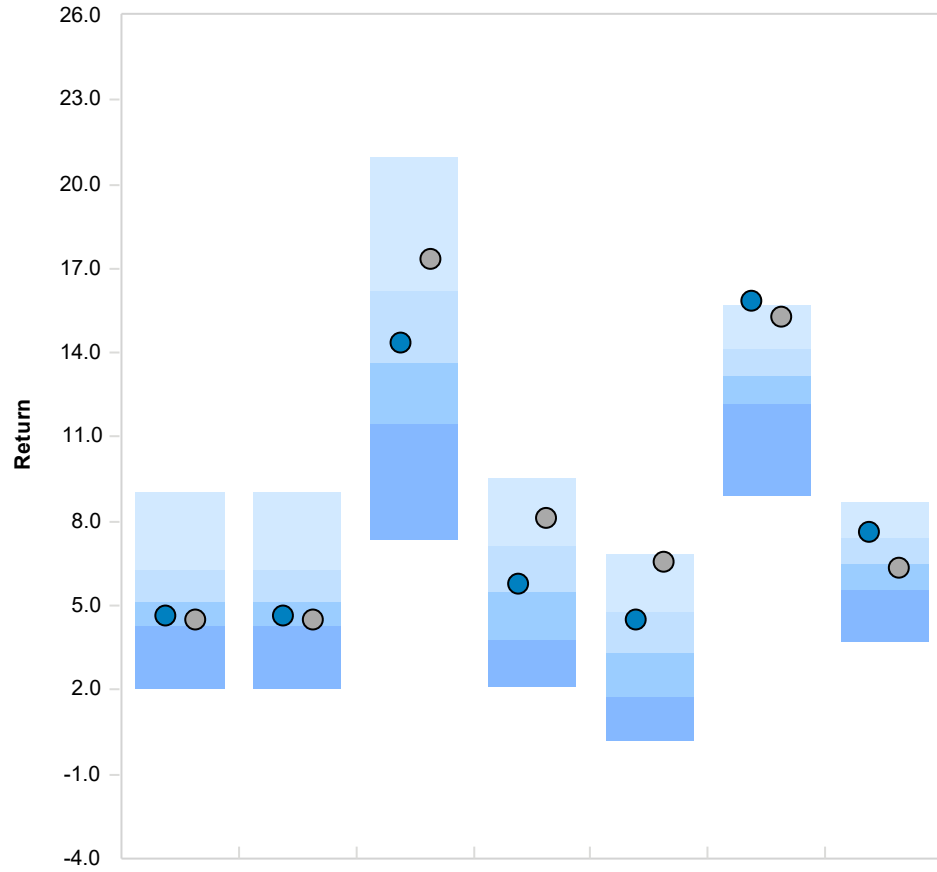
3 Year Rolling Percentile Rank IM International Multi-Cap Core Equity (MF)



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

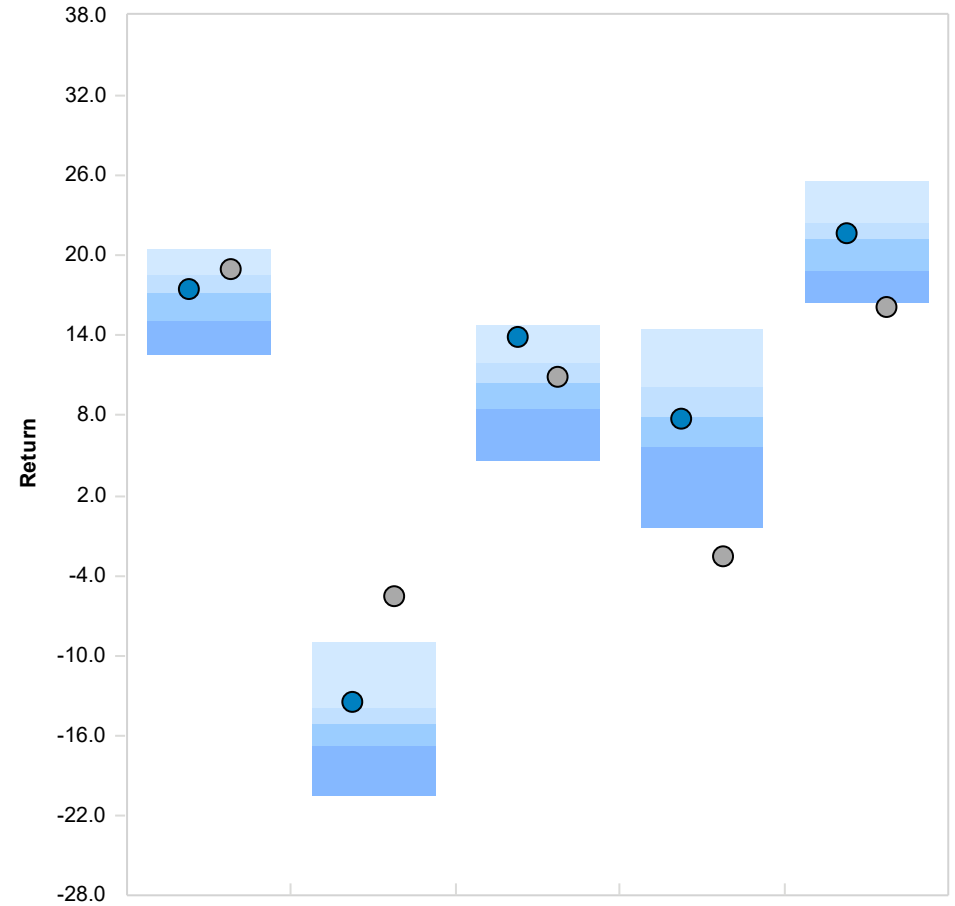


Peer Group Analysis - IM International Multi-Cap Core Equity (MF)



| | QTR | FYTD | 1 YR | 2 YR | 3 YR | 4 YR | 5 YR |
|--------------|-----------|-----------|------------|-----------|-----------|------------|-----------|
| ● Investment | 4.67 (64) | 4.67 (64) | 14.39 (45) | 5.80 (46) | 4.53 (31) | 15.88 (5) | 7.61 (20) |
| ● Index | 4.48 (72) | 4.48 (72) | 17.32 (20) | 8.14 (17) | 6.59 (6) | 15.26 (11) | 6.39 (53) |
| Median | 5.14 | 5.14 | 13.66 | 5.52 | 3.30 | 13.17 | 6.53 |

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 Dec-2023 | 1 Qtr Ending Sep-2023 | 1 Qtr Ending Jun-2023 | 1 Qtr Ending Mar-2023 | 1 Qtr Ending Dec-2022 | 1 Qtr Ending Sep-2022 |
|------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Investment | 10.31 (42) | -2.94 (21) | 2.07 (84) | 7.51 (63) | 17.63 (29) | -10.45 (53) |
| Index | 8.22 (86) | 0.59 (1) | 3.15 (38) | 5.93 (93) | 19.64 (5) | -10.20 (39) |
| Median | 9.98 | -4.13 | 2.95 | 7.84 | 16.91 | -10.43 |

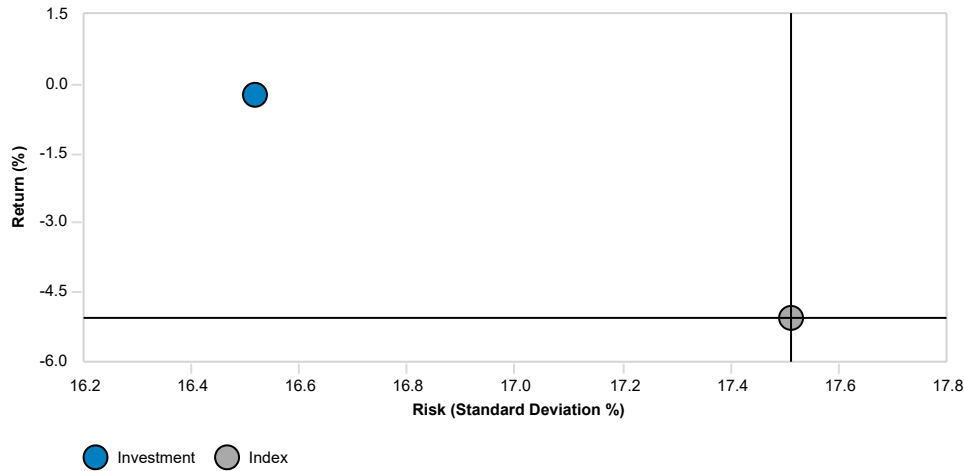
Historical Statistics 3 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | -0.23 | 16.52 | -0.09 | 100.22 | 7 | 81.65 | 5 |
| Index | -5.05 | 17.51 | -0.36 | 100.00 | 6 | 100.00 | 6 |

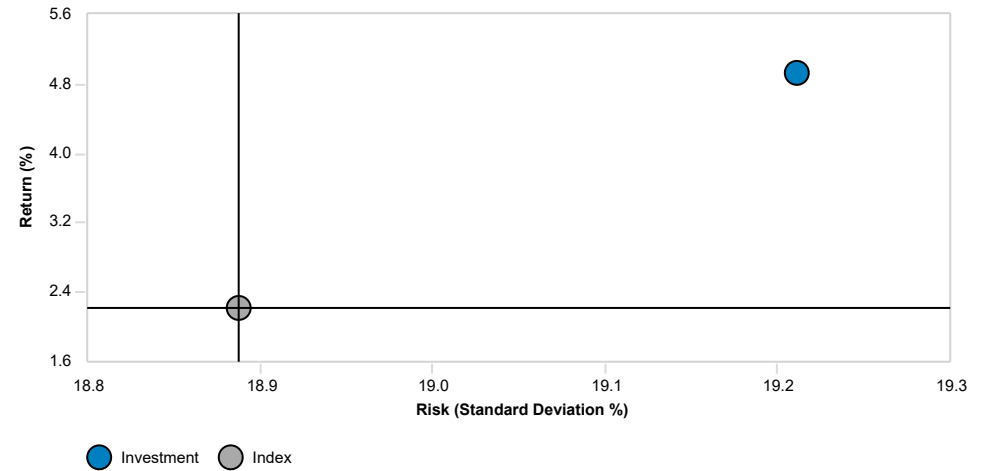
Historical Statistics 5 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | 4.93 | 19.21 | 0.24 | 101.08 | 13 | 89.87 | 7 |
| Index | 2.22 | 18.89 | 0.11 | 100.00 | 12 | 100.00 | 8 |

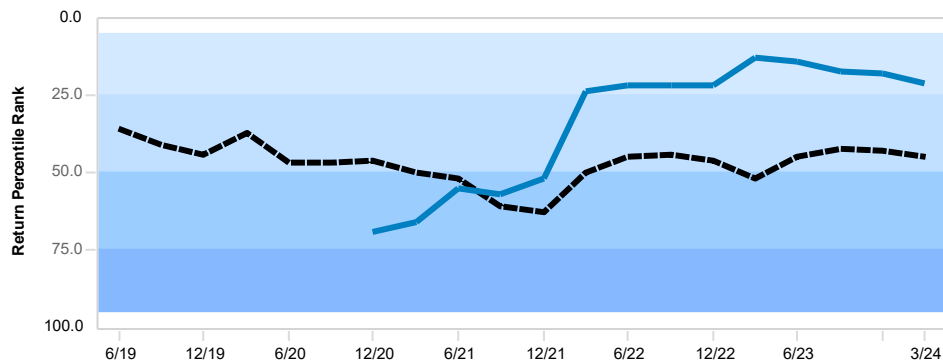
Risk and Return 3 Years



Risk and Return 5 Years

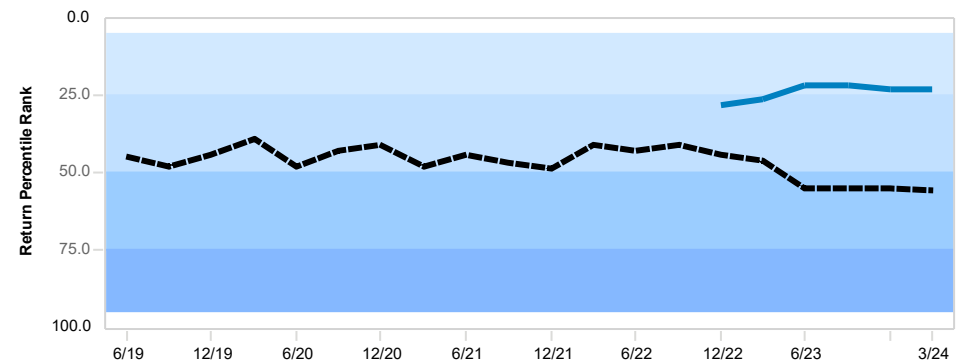


3 Year Rolling Percentile Rank IM Emerging Markets Equity (SA+CF+MF)



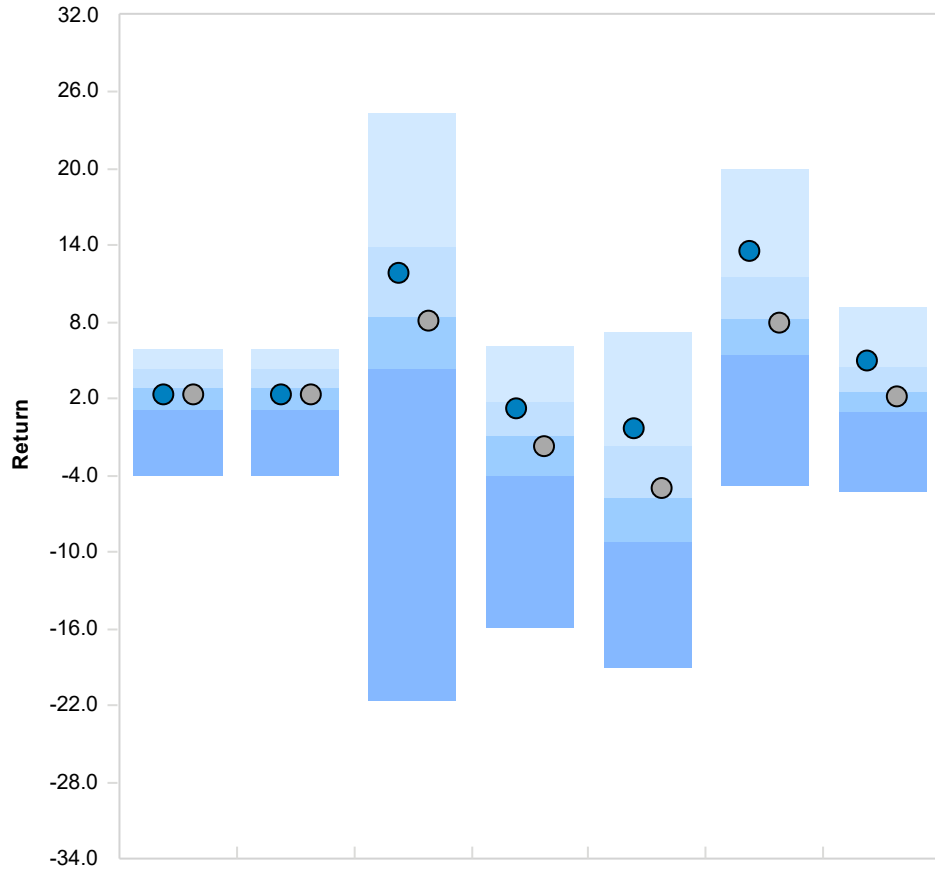
| | Total Period | 5-25 Count | 25-Median Count | Median-75 Count | 75-95 Count |
|------------|--------------|------------|-----------------|-----------------|-------------|
| Investment | 14 | 9 (64%) | 0 (0%) | 5 (36%) | 0 (0%) |
| Index | 20 | 0 (0%) | 16 (80%) | 4 (20%) | 0 (0%) |

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



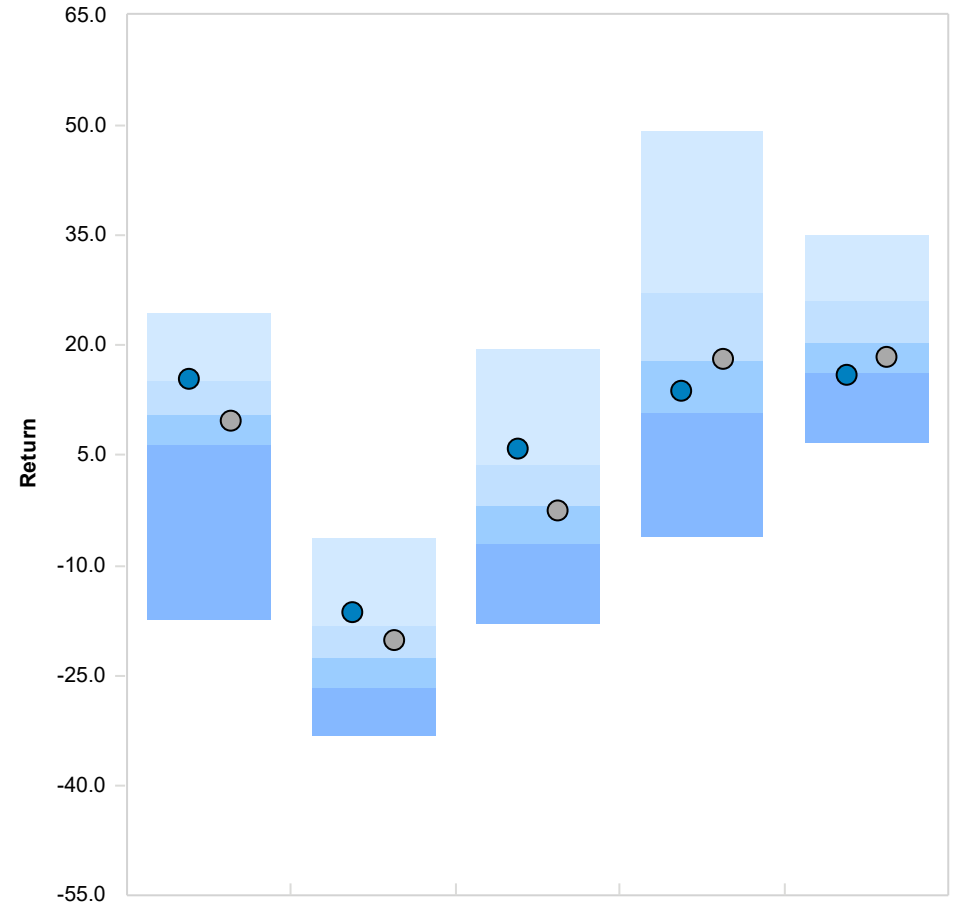
| | Total Period | 5-25 Count | 25-Median Count | Median-75 Count | 75-95 Count |
|------------|--------------|------------|-----------------|-----------------|-------------|
| Investment | 6 | 4 (67%) | 2 (33%) | 0 (0%) | 0 (0%) |
| Index | 20 | 0 (0%) | 16 (80%) | 4 (20%) | 0 (0%) |

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



| | QTR | FYTD | 1 YR | 2 YR | 3 YR | 4 YR | 5 YR |
|--------------|-----------|-----------|------------|------------|------------|------------|-----------|
| ● Investment | 2.38 (56) | 2.38 (56) | 11.94 (33) | 1.34 (30) | -0.23 (21) | 13.53 (16) | 4.93 (23) |
| ● Index | 2.37 (56) | 2.37 (56) | 8.15 (52) | -1.73 (59) | -5.05 (45) | 7.91 (52) | 2.22 (56) |
| Median | 2.79 | 2.79 | 8.50 | -0.94 | -5.82 | 8.26 | 2.50 |

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 Dec-2023 | 1 Qtr Ending Sep-2023 | 1 Qtr Ending Jun-2023 | 1 Qtr Ending Mar-2023 | 1 Qtr Ending Dec-2022 | 1 Qtr Ending Sep-2022 |
|------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Investment | 7.86 (45) | -1.52 (19) | 2.93 (31) | 5.59 (32) | 10.54 (40) | -10.90 (46) |
| Index | 7.86 (45) | -2.93 (33) | 0.90 (65) | 3.96 (66) | 9.70 (54) | -11.57 (56) |
| Median | 7.61 | -3.85 | 1.61 | 4.84 | 9.92 | -11.20 |

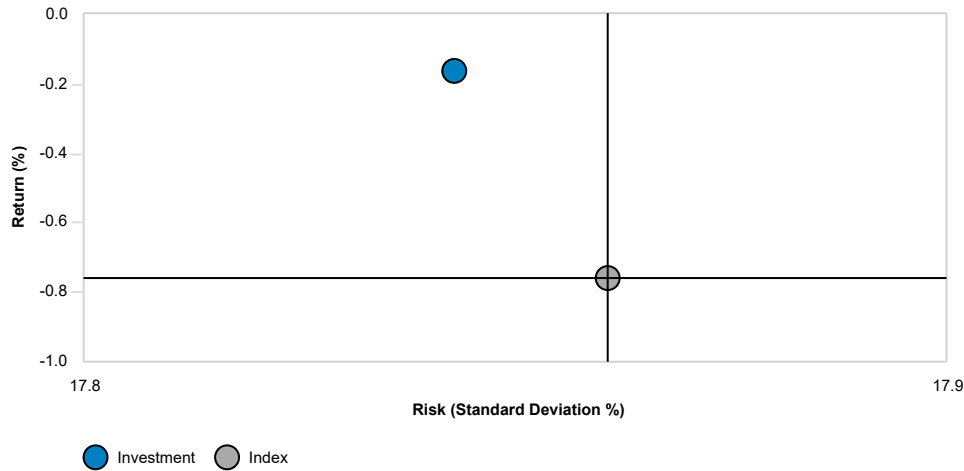
Historical Statistics 3 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | -0.16 | 17.84 | -0.06 | 102.77 | 6 | 100.46 | 6 |
| Index | -0.76 | 17.86 | -0.10 | 100.00 | 7 | 100.00 | 5 |

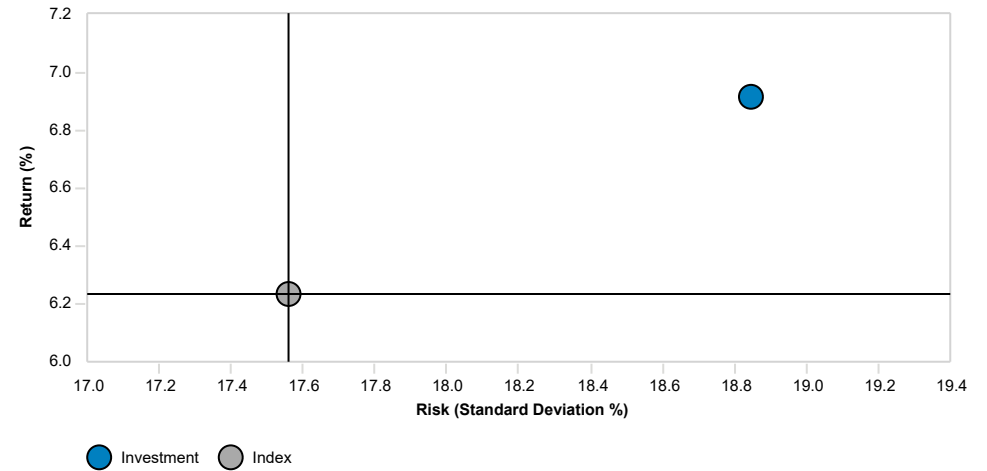
Historical Statistics 5 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | 6.91 | 18.85 | 0.34 | 106.54 | 11 | 104.71 | 9 |
| Index | 6.24 | 17.56 | 0.32 | 100.00 | 12 | 100.00 | 8 |

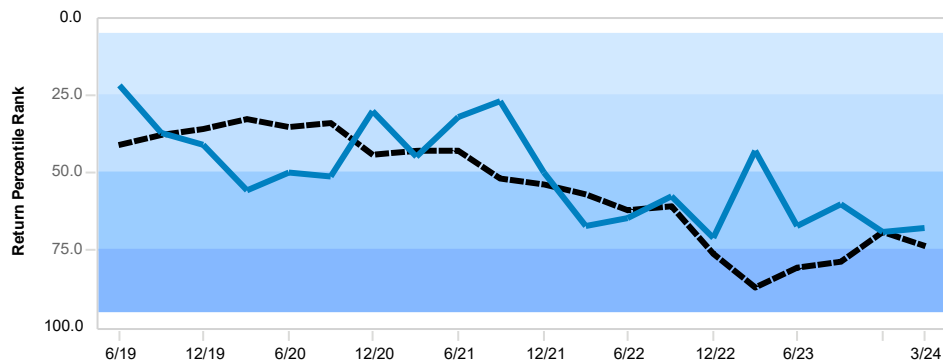
Risk and Return 3 Years



Risk and Return 5 Years

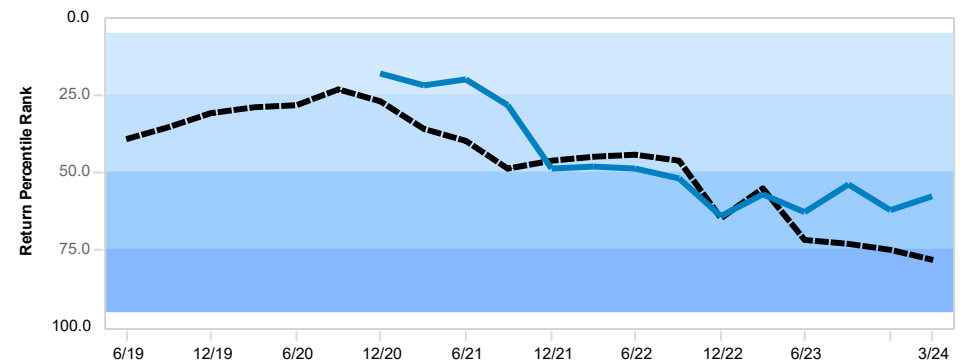


3 Year Rolling Percentile Rank IM International Large Cap Growth Equity (MF)



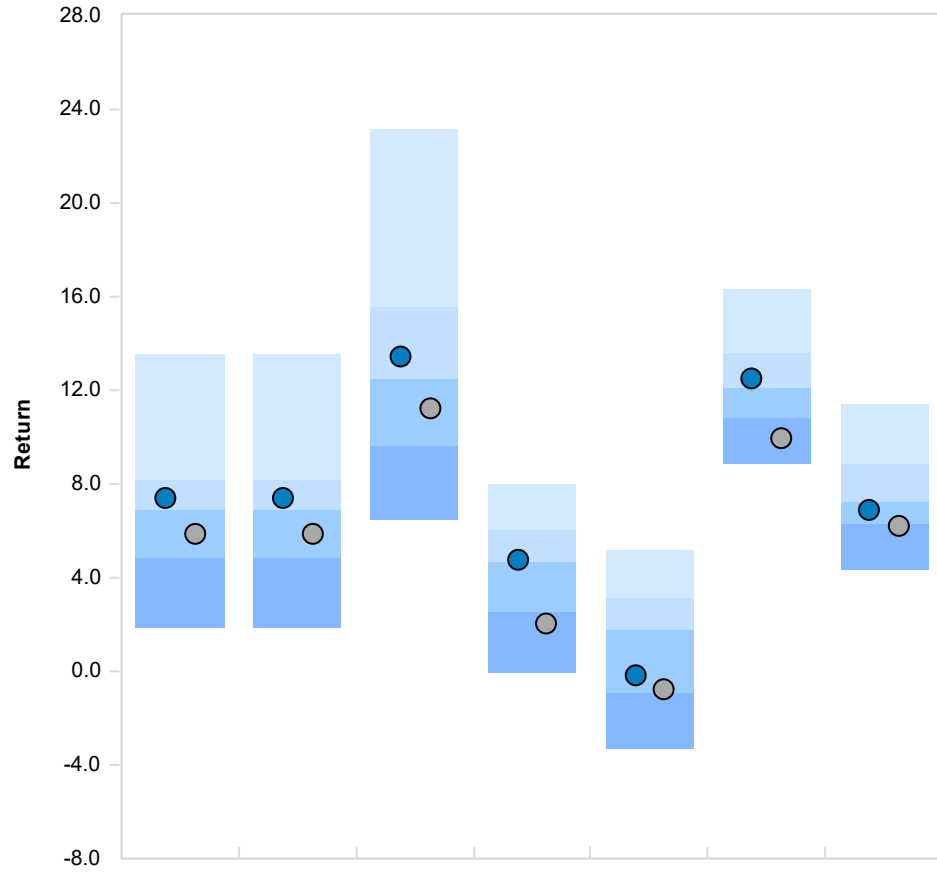
| | Total Period | 5-25 Count | 25-Median Count | Median-75 Count | 75-95 Count |
|------------|--------------|------------|-----------------|-----------------|-------------|
| Investment | 20 | 1 (5%) | 9 (45%) | 10 (50%) | 0 (0%) |
| Index | 20 | 0 (0%) | 9 (45%) | 7 (35%) | 4 (20%) |

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



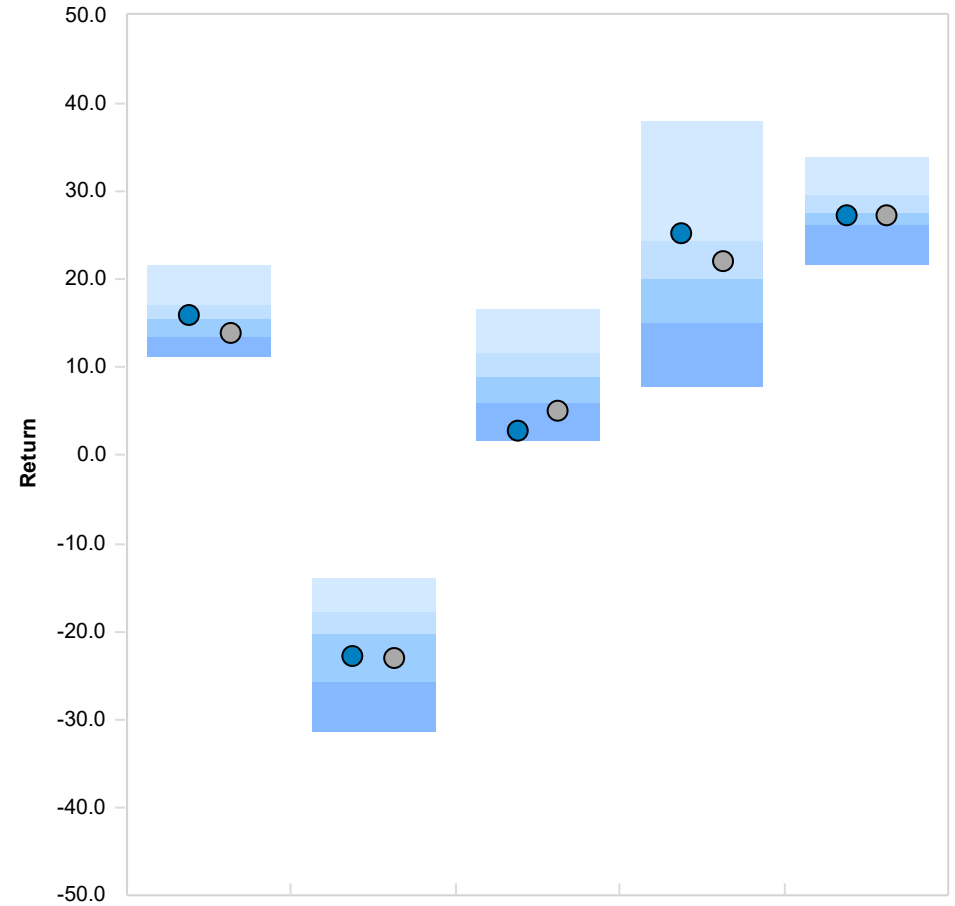
| | Total Period | 5-25 Count | 25-Median Count | Median-75 Count | 75-95 Count |
|------------|--------------|------------|-----------------|-----------------|-------------|
| Investment | 14 | 3 (21%) | 4 (29%) | 7 (50%) | 0 (0%) |
| Index | 20 | 1 (5%) | 13 (65%) | 5 (25%) | 1 (5%) |

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



| | QTR | FYTD | 1 YR | 2 YR | 3 YR | 4 YR | 5 YR |
|--------------|-----------|-----------|------------|-----------|------------|------------|-----------|
| ● Investment | 7.44 (39) | 7.44 (39) | 13.49 (38) | 4.78 (48) | -0.16 (68) | 12.47 (42) | 6.91 (58) |
| ● Index | 5.91 (55) | 5.91 (55) | 11.22 (62) | 2.05 (82) | -0.76 (74) | 9.92 (89) | 6.24 (78) |
| Median | 6.85 | 6.85 | 12.49 | 4.67 | 1.82 | 12.08 | 7.25 |

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 Dec-2023 | 1 Qtr Ending Sep-2023 | 1 Qtr Ending Jun-2023 | 1 Qtr Ending Mar-2023 | 1 Qtr Ending Dec-2022 | 1 Qtr Ending Sep-2022 |
|------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Investment | 10.37 (59) | -6.33 (33) | 2.16 (63) | 9.87 (42) | 13.78 (65) | -9.33 (39) |
| Index | 11.12 (42) | -7.31 (55) | 1.94 (74) | 8.59 (64) | 12.89 (80) | -9.37 (41) |
| Median | 10.83 | -7.10 | 2.45 | 9.63 | 14.64 | -9.57 |

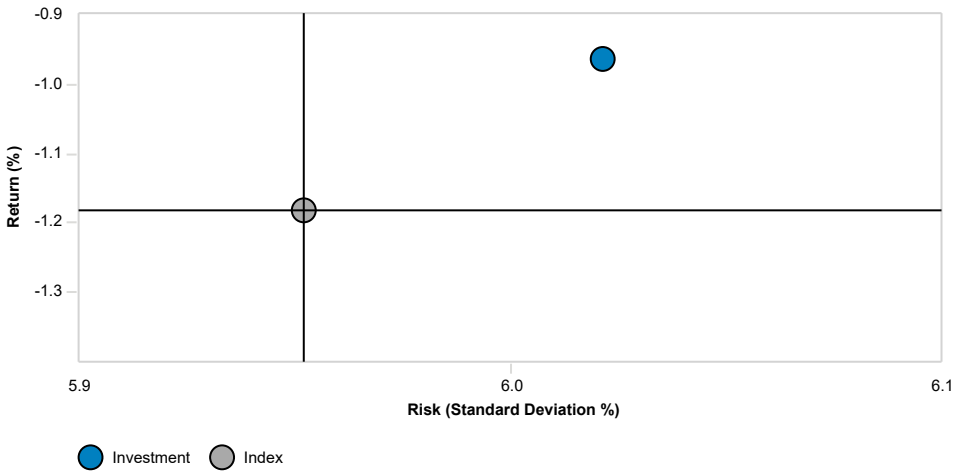
Historical Statistics 3 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | -0.96 | 6.02 | -0.56 | 100.12 | 5 | 97.42 | 7 |
| Index | -1.18 | 5.95 | -0.61 | 100.00 | 5 | 100.00 | 7 |

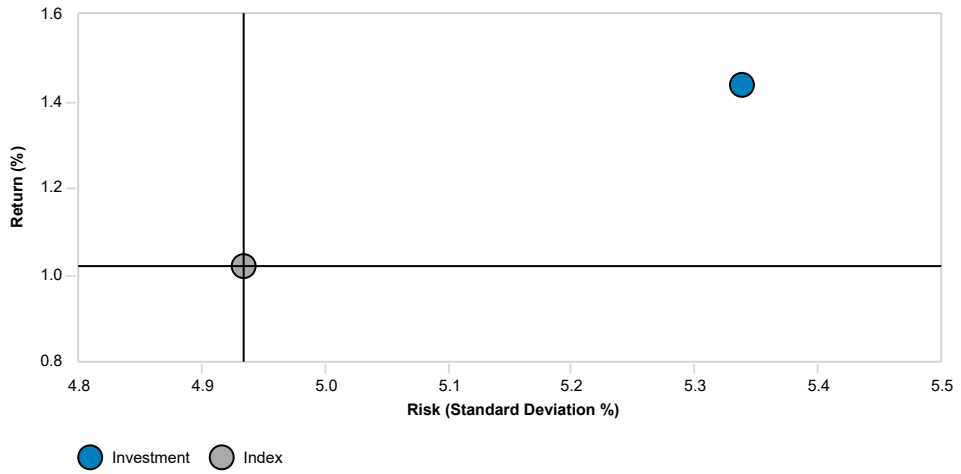
Historical Statistics 5 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | 1.44 | 5.34 | -0.08 | 109.93 | 11 | 104.20 | 9 |
| Index | 1.02 | 4.93 | -0.18 | 100.00 | 12 | 100.00 | 8 |

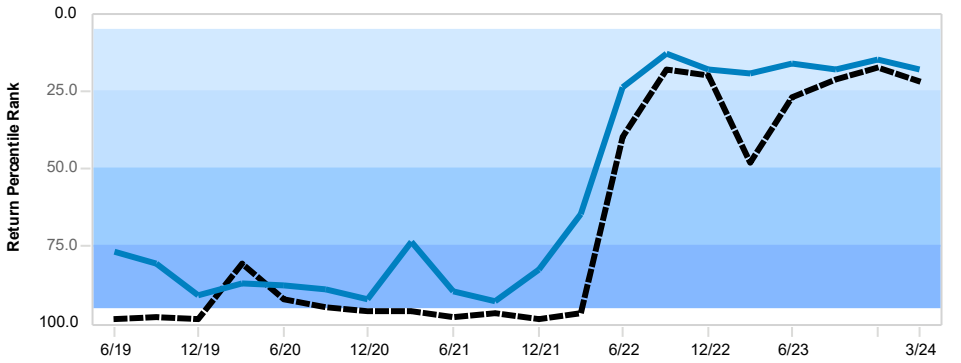
Risk and Return 3 Years



Risk and Return 5 Years

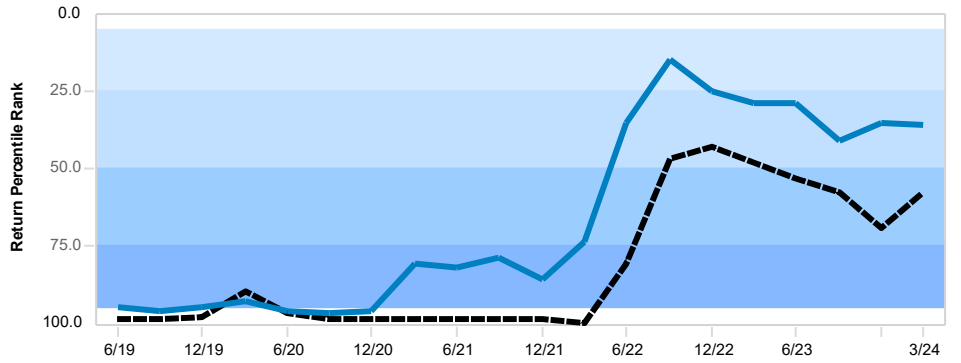


3 Year Rolling Percentile Rank IM U.S. Broad Market Fixed Income (SA+CF)



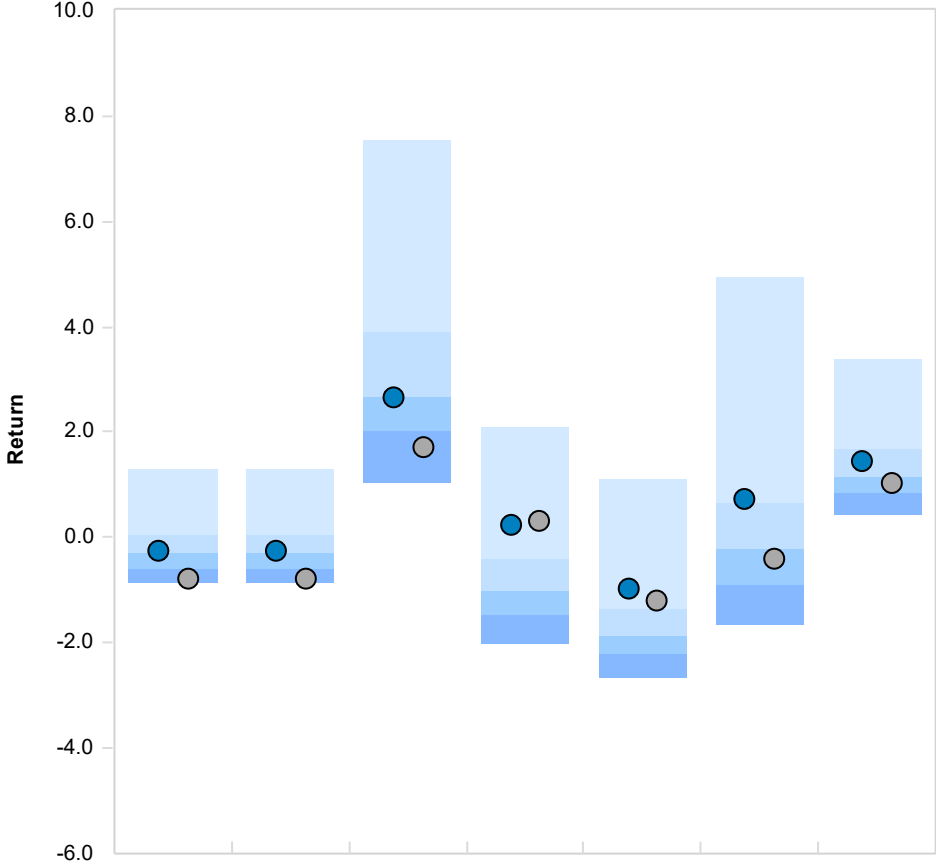
| | Total Period | 5-25 Count | 25-Median Count | Median-75 Count | 75-95 Count |
|------------|--------------|------------|-----------------|-----------------|-------------|
| Investment | 20 | 8 (40%) | 0 (0%) | 2 (10%) | 10 (50%) |
| Index | 20 | 5 (25%) | 3 (15%) | 0 (0%) | 12 (60%) |

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



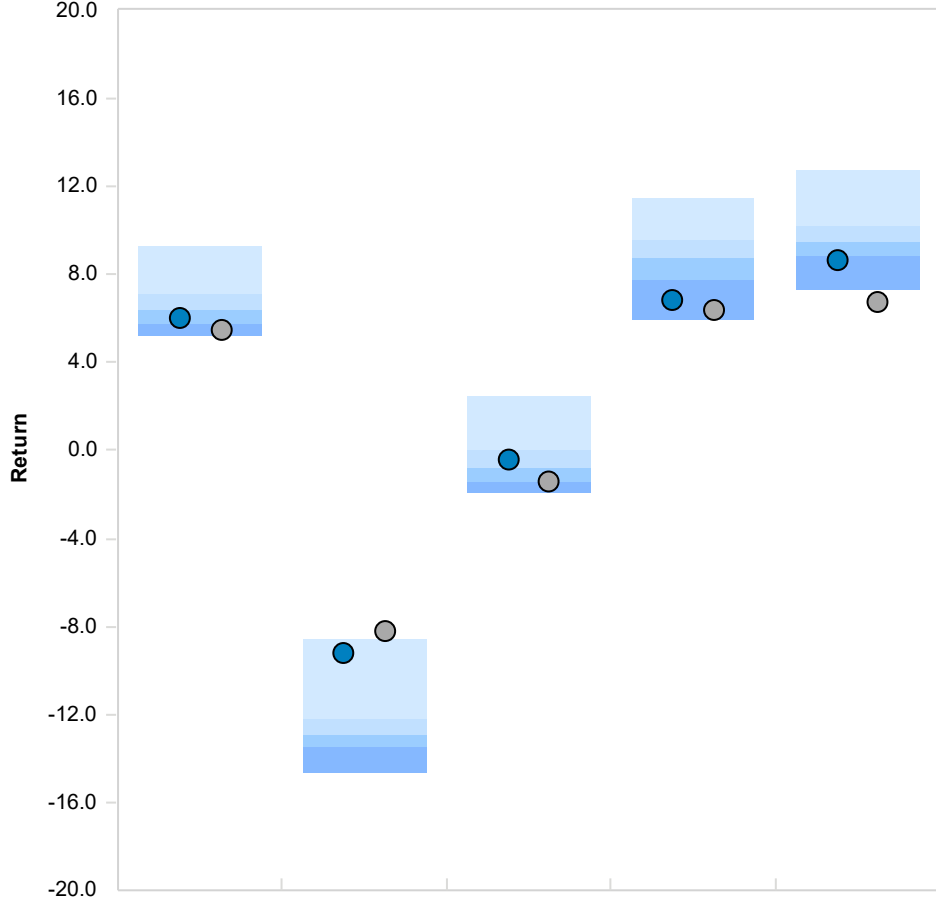
| | Total Period | 5-25 Count | 25-Median Count | Median-75 Count | 75-95 Count |
|------------|--------------|------------|-----------------|-----------------|-------------|
| Investment | 20 | 2 (10%) | 6 (30%) | 1 (5%) | 11 (55%) |
| Index | 20 | 0 (0%) | 3 (15%) | 4 (20%) | 13 (65%) |

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 | -0.24 (46) | -0.24 (46) | 2.66 (51) | 0.26 (16) | -0.96 (18) | 0.72 (25) | 1.44 (36) |
| ● Index | -0.78 (92) | -0.78 (92) | 1.70 (87) | 0.31 (16) | -1.18 (22) | -0.39 (58) | 1.02 (58) |
| Median | -0.30 | -0.30 | 2.68 | -1.02 | -1.88 | -0.19 | 1.16 |

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 (39) | 6.86 (91) | 8.69 (84) |
| ● Index | 5.53 (88) | -8.24 (5) | -1.44 (76) | 6.43 (93) | 6.80 (98) |
| Median | 6.36 | -12.92 | -0.75 | 8.74 | 9.49 |

Comparative Performance

| | 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 | 1 Qtr Ending Sep-2022 |
|------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Investment | 6.69 (75) | -3.40 (86) | -0.15 (19) | 3.05 (67) | 0.46 (100) | -2.27 (6) |
| Index | 6.82 (60) | -3.23 (77) | -0.84 (83) | 2.96 (76) | 1.54 (85) | -3.06 (9) |
| Median | 6.92 | -3.01 | -0.58 | 3.17 | 1.92 | -4.46 |

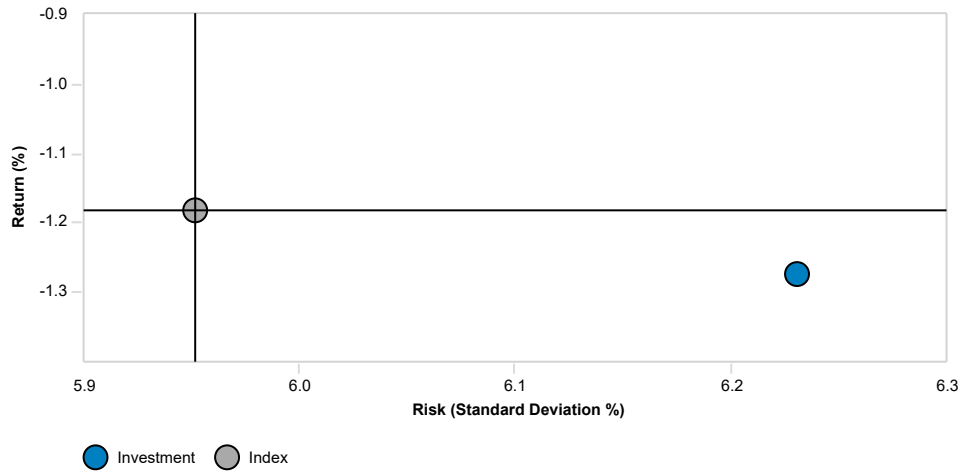
Historical Statistics 3 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | -1.27 | 6.23 | -0.59 | 104.92 | 4 | 105.27 | 8 |
| Index | -1.18 | 5.95 | -0.61 | 100.00 | 5 | 100.00 | 7 |

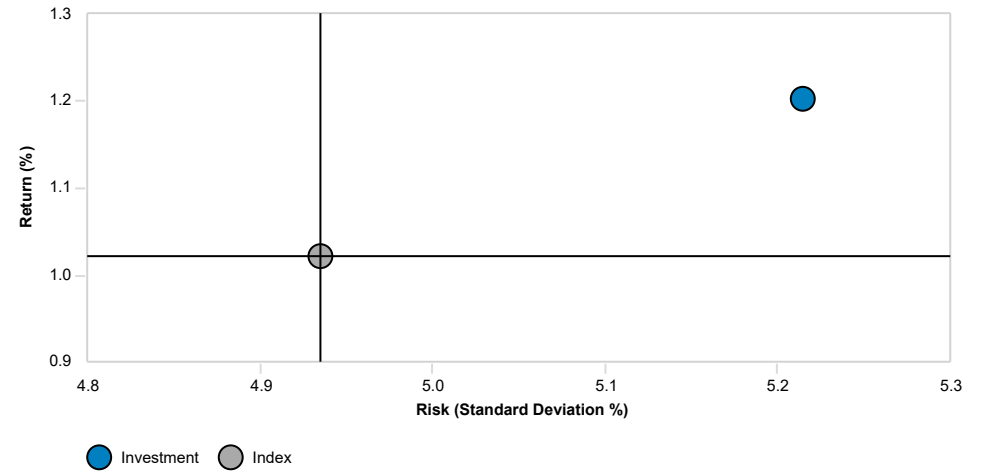
Historical Statistics 5 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | 1.20 | 5.21 | -0.13 | 107.56 | 11 | 105.62 | 9 |
| Index | 1.02 | 4.93 | -0.18 | 100.00 | 12 | 100.00 | 8 |

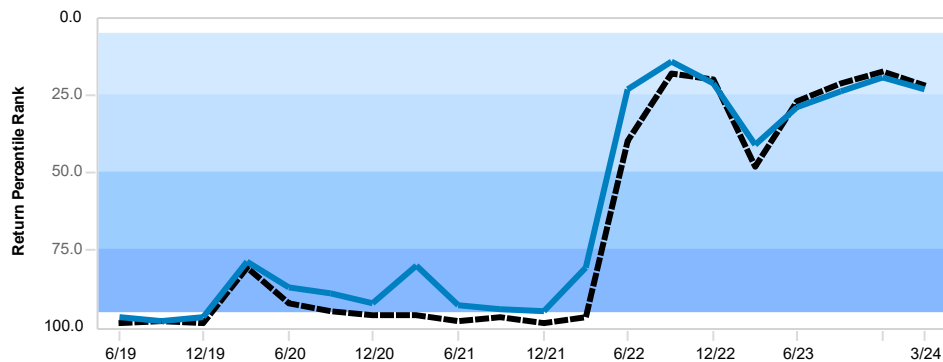
Risk and Return 3 Years



Risk and Return 5 Years

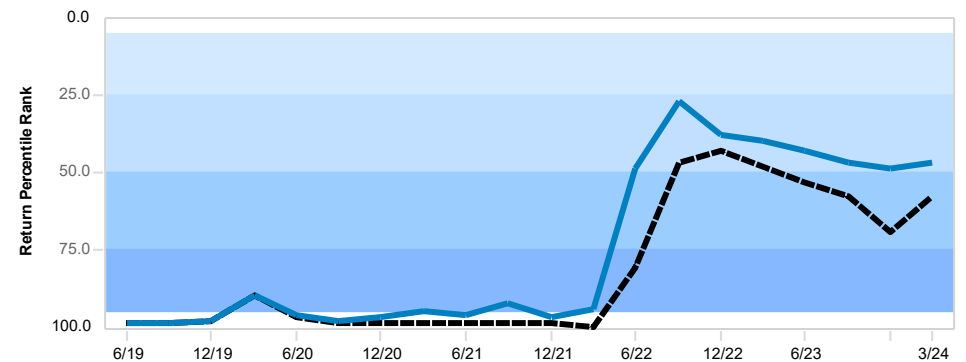


3 Year Rolling Percentile Rank IM U.S. Broad Market Fixed Income (SA+CF)



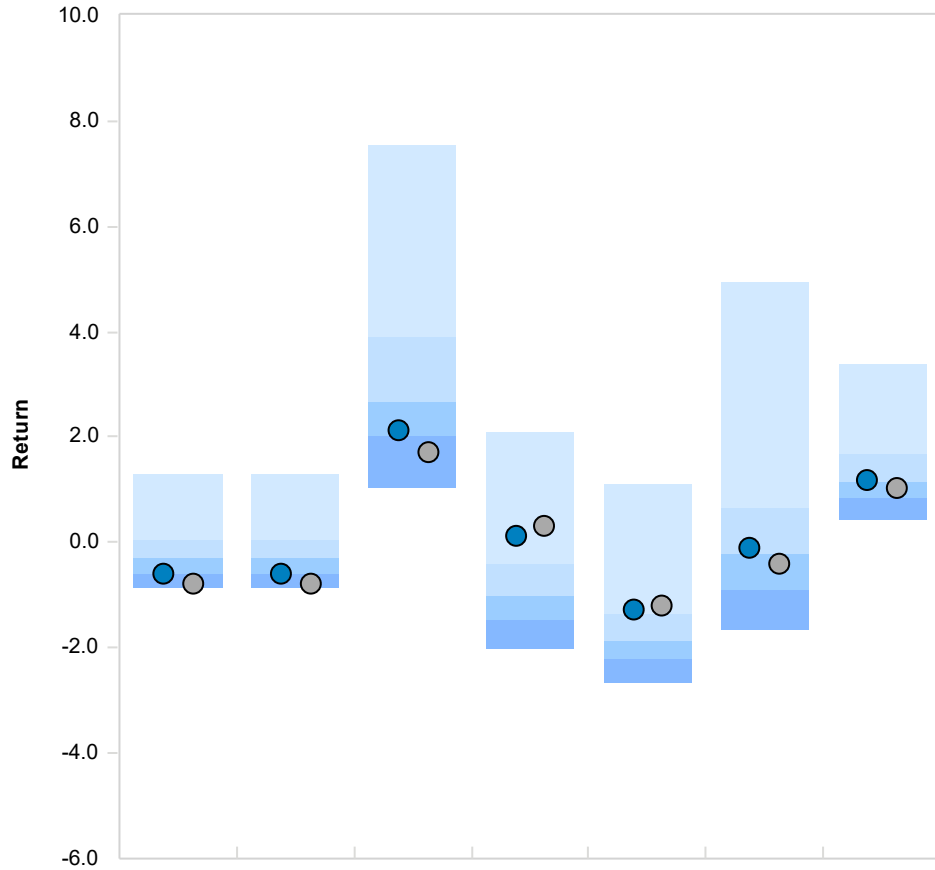
| | Total Period | 5-25 Count | 25-Median Count | Median-75 Count | 75-95 Count |
|------------|--------------|------------|-----------------|-----------------|-------------|
| Investment | 20 | 6 (30%) | 2 (10%) | 0 (0%) | 12 (60%) |
| Index | 20 | 5 (25%) | 3 (15%) | 0 (0%) | 12 (60%) |

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



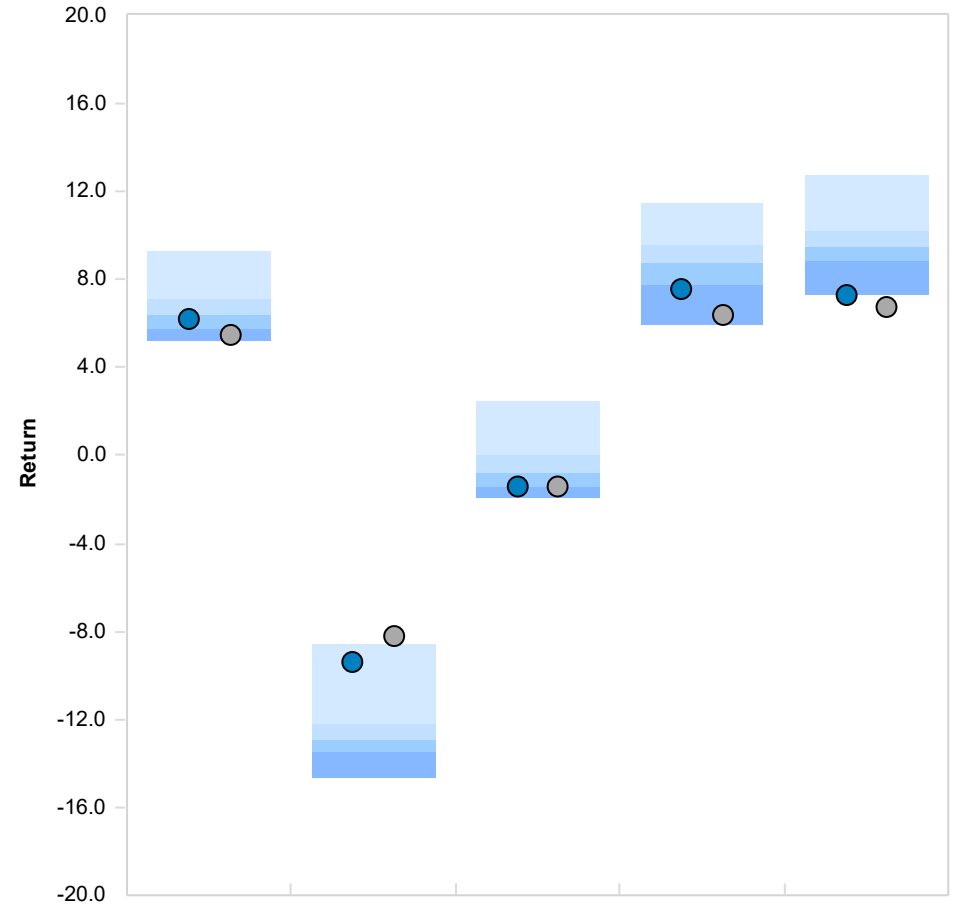
| | Total Period | 5-25 Count | 25-Median Count | Median-75 Count | 75-95 Count |
|------------|--------------|------------|-----------------|-----------------|-------------|
| Investment | 20 | 0 (0%) | 8 (40%) | 0 (0%) | 12 (60%) |
| Index | 20 | 0 (0%) | 3 (15%) | 4 (20%) | 13 (65%) |

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 | -0.59 (76) | -0.59 (76) | 2.14 (70) | 0.12 (16) | -1.27 (23) | -0.11 (49) | 1.20 (47) |
| ● Index | -0.78 (92) | -0.78 (92) | 1.70 (87) | 0.31 (16) | -1.18 (22) | -0.39 (58) | 1.02 (58) |
| Median | -0.30 | -0.30 | 2.68 | -1.02 | -1.88 | -0.19 | 1.16 |

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



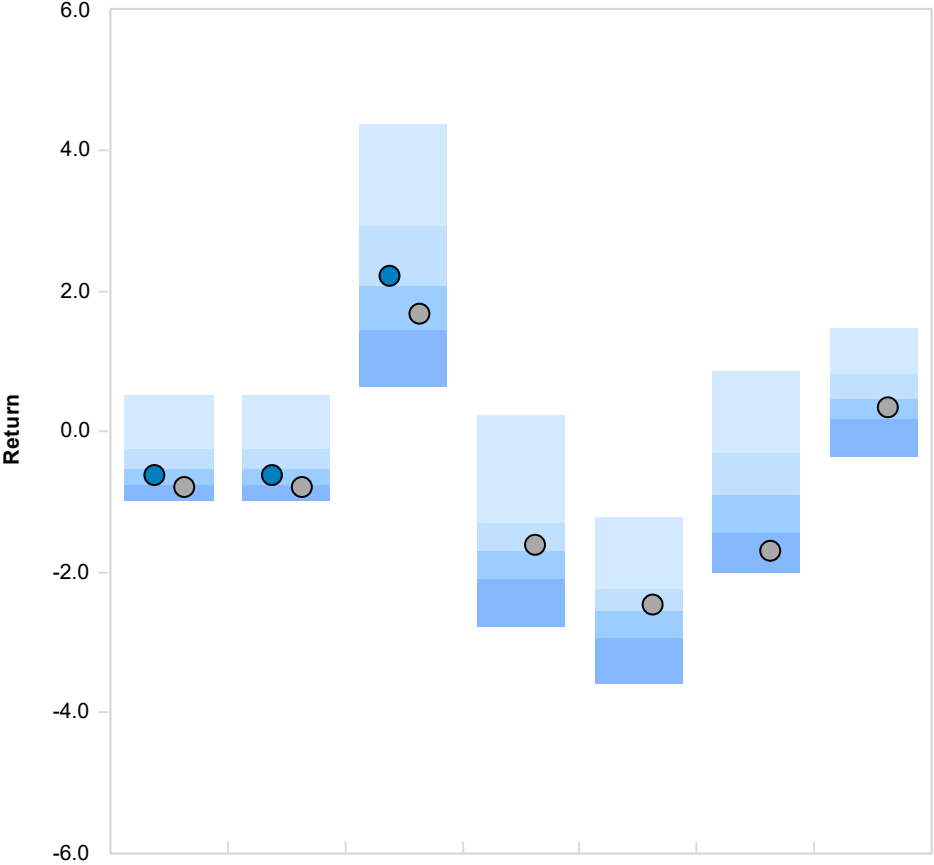
| | 2023 | 2022 | 2021 | 2020 | 2019 |
|--------------|-----------|-----------|------------|-----------|-----------|
| ● Investment | 6.23 (57) | -9.36 (8) | -1.38 (75) | 7.53 (84) | 7.29 (95) |
| ● Index | 5.53 (88) | -8.24 (5) | -1.44 (76) | 6.43 (93) | 6.80 (98) |
| Median | 6.36 | -12.92 | -0.75 | 8.74 | 9.49 |

Comparative Performance

| | 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 | 1 Qtr Ending Sep-2022 |
|------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Investment | 6.85 (56) | -3.20 (70) | -0.67 (59) | 3.40 (26) | 0.24 (100) | -2.95 (9) |
| Index | 6.82 (60) | -3.23 (77) | -0.84 (83) | 2.96 (76) | 1.54 (85) | -3.06 (9) |
| Median | 6.92 | -3.01 | -0.58 | 3.17 | 1.92 | -4.46 |

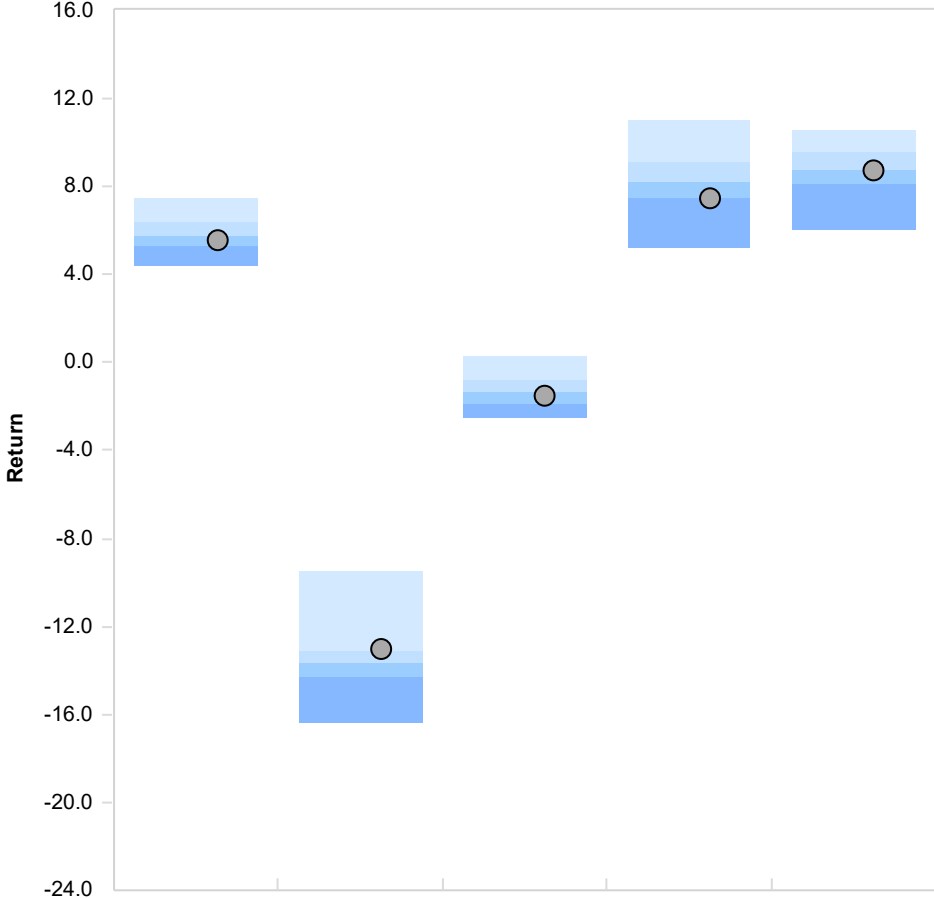
Page Intentionally Left Blank

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 | -0.61 (59) | -0.61 (59) | 2.23 (45) | N/A | N/A | N/A | N/A |
| ● Index | -0.78 (80) | -0.78 (80) | 1.70 (64) | -1.60 (40) | -2.46 (42) | -1.67 (84) | 0.36 (58) |
| Median | -0.53 | -0.53 | 2.08 | -1.69 | -2.54 | -0.89 | 0.47 |

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 Dec-2023 | 1 Qtr Ending Sep-2023 | 1 Qtr Ending Jun-2023 | 1 Qtr Ending Mar-2023 | 1 Qtr Ending Dec-2022 | 1 Qtr Ending Sep-2022 |
|------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Investment | 6.85 (43) | -2.93 (30) | -0.84 (53) | N/A | N/A | N/A |
| Index | 6.82 (46) | -3.23 (70) | -0.84 (55) | 2.96 (69) | 1.87 (35) | -4.75 (60) |
| Median | 6.77 | -3.08 | -0.81 | 3.14 | 1.71 | -4.67 |

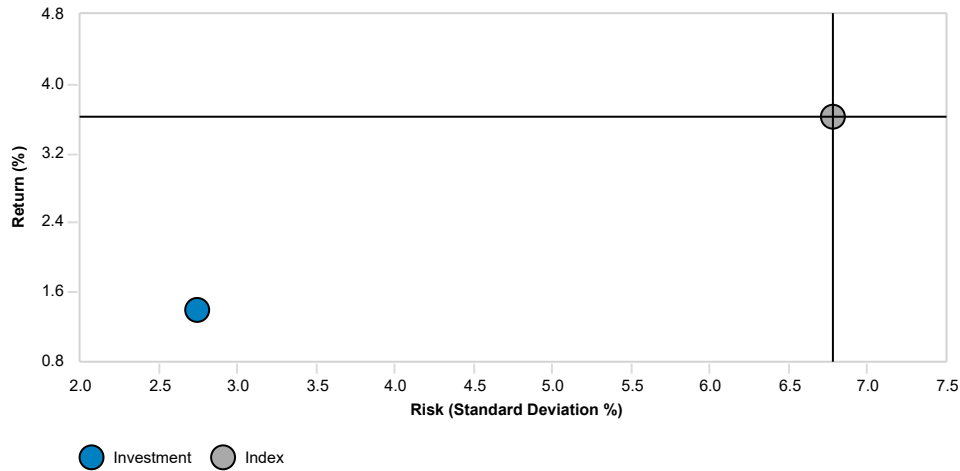
Historical Statistics 3 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | 1.40 | 2.75 | -0.30 | 37.84 | 8 | 38.17 | 4 |
| Index | 3.63 | 6.78 | 0.16 | 100.00 | 6 | 100.00 | 6 |

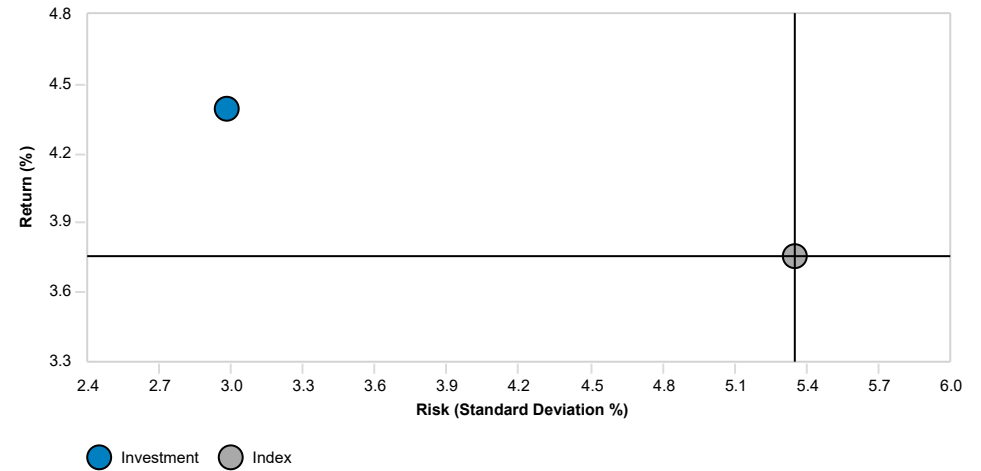
Historical Statistics 5 Years

| | Return | Standard Deviation | Sharpe Ratio | Up Market Capture | Up Quarters | Down Market Capture | Down Quarters |
|------------|--------|--------------------|--------------|-------------------|-------------|---------------------|---------------|
| Investment | 4.40 | 2.98 | 0.62 | 74.53 | 16 | 19.47 | 4 |
| Index | 3.76 | 5.35 | 0.30 | 100.00 | 13 | 100.00 | 7 |

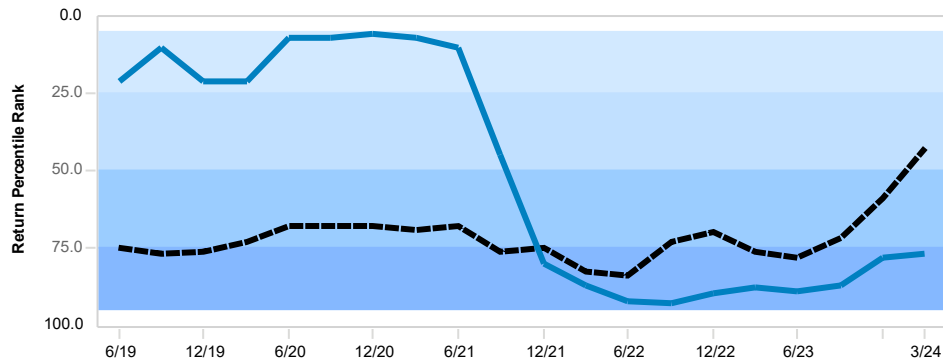
Risk and Return 3 Years



Risk and Return 5 Years

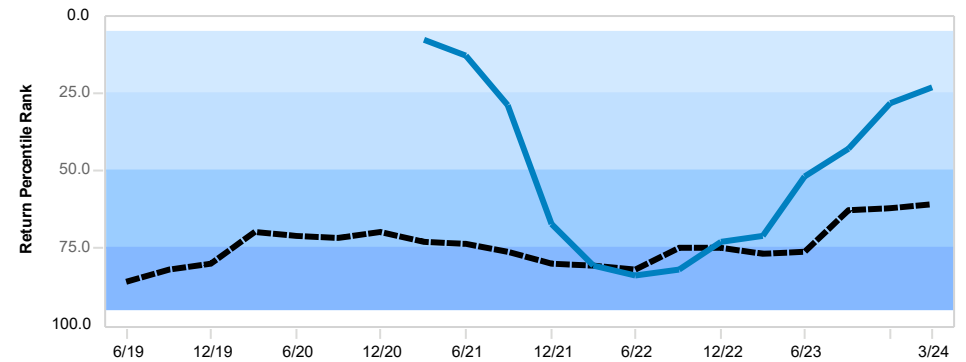


3 Year Rolling Percentile Rank IM U.S. Private Real Estate (SA+CF)



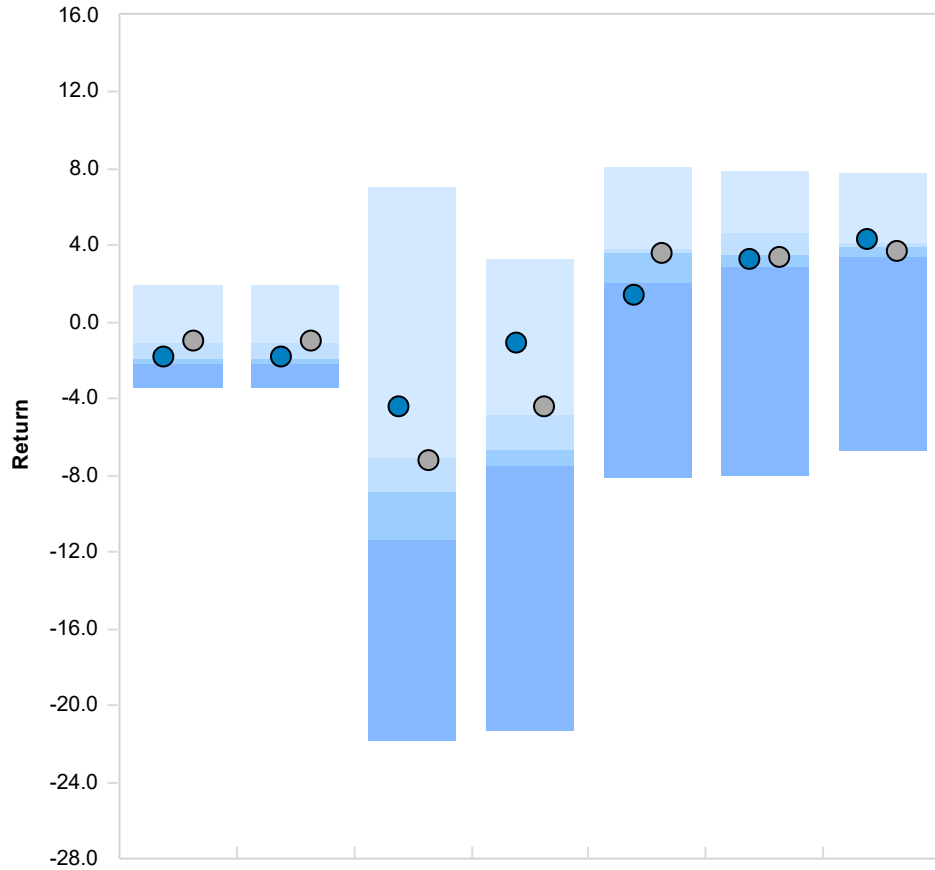
| | Total Period | 5-25 Count | 25-Median Count | Median-75 Count | 75-95 Count |
|------------|--------------|------------|-----------------|-----------------|-------------|
| Investment | 20 | 9 (45%) | 1 (5%) | 0 (0%) | 10 (50%) |
| Index | 20 | 0 (0%) | 1 (5%) | 12 (60%) | 7 (35%) |

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



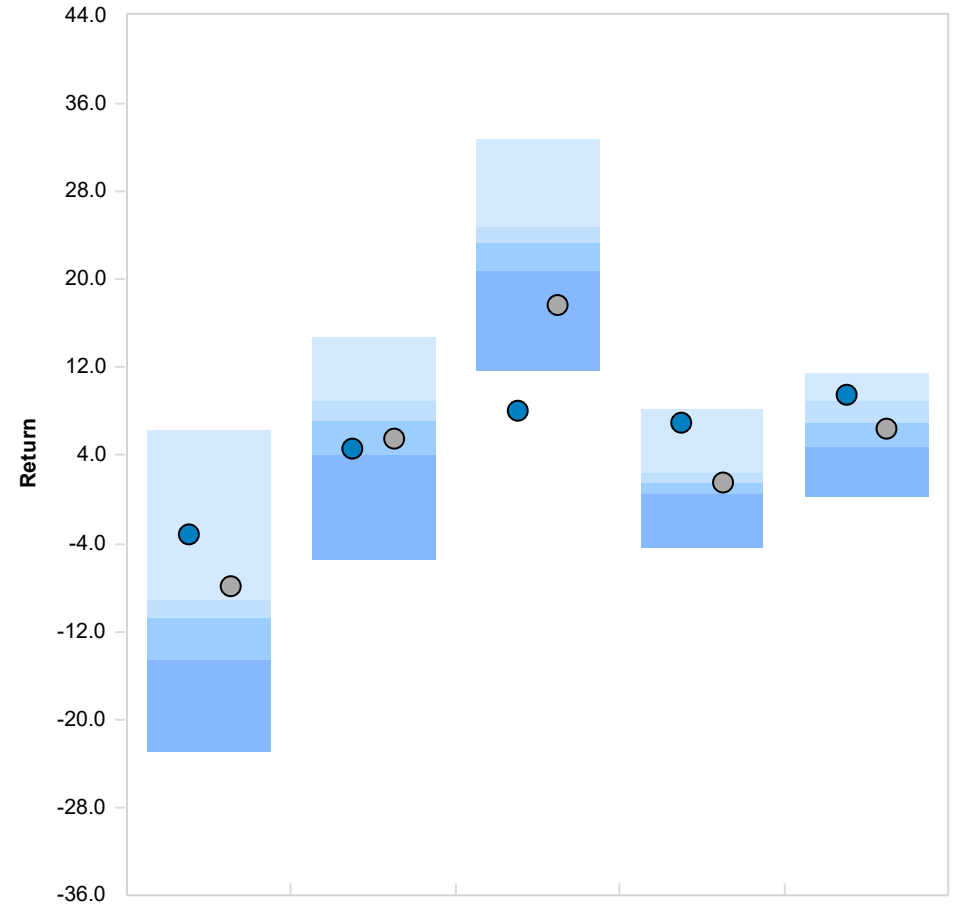
| | Total Period | 5-25 Count | 25-Median Count | Median-75 Count | 75-95 Count |
|------------|--------------|------------|-----------------|-----------------|-------------|
| Investment | 13 | 3 (23%) | 3 (23%) | 4 (31%) | 3 (23%) |
| Index | 20 | 0 (0%) | 0 (0%) | 11 (55%) | 9 (45%) |

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



| | QTR | FYTD | 1 YR | 2 YR | 3 YR | 4 YR | 5 YR |
|--------------|------------|------------|------------|------------|-----------|-----------|-----------|
| ● Investment | -1.84 (50) | -1.84 (50) | -4.34 (18) | -1.09 (12) | 1.40 (77) | 3.33 (55) | 4.40 (23) |
| ● Index | -0.98 (22) | -0.98 (22) | -7.16 (26) | -4.43 (24) | 3.63 (43) | 3.38 (54) | 3.76 (61) |
| Median | -1.85 | -1.85 | -8.89 | -6.71 | 3.58 | 3.56 | 3.88 |

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



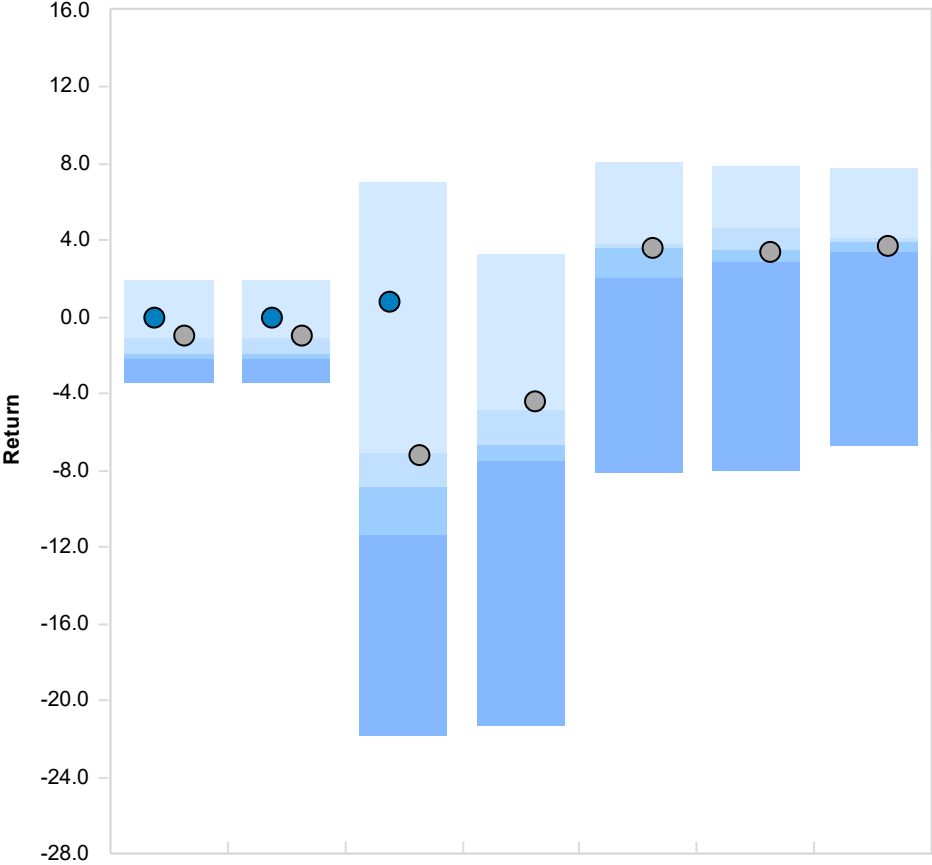
| | 2023 | 2022 | 2021 | 2020 | 2019 |
|--------------|------------|-----------|------------|-----------|-----------|
| ● Investment | -3.13 (10) | 4.58 (73) | 8.04 (97) | 6.97 (6) | 9.53 (18) |
| ● Index | -7.94 (24) | 5.52 (61) | 17.70 (85) | 1.60 (47) | 6.42 (64) |
| Median | -10.76 | 7.14 | 23.30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

Comparative Performance

| | 1 Qtr Ending Dec-2023 | 1 Qtr Ending Sep-2023 | 1 Qtr Ending Jun-2023 | 1 Qtr Ending Mar-2023 | 1 Qtr Ending Dec-2022 | 1 Qtr Ending Sep-2022 |
|------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Investment | -2.20 (36) | -0.85 (14) | 0.50 (8) | -0.60 (12) | 0.16 (8) | 1.38 (32) |
| Index | -3.02 (43) | -1.37 (19) | -1.98 (50) | -1.81 (25) | -3.50 (25) | 0.57 (54) |
| Median | -4.10 | -2.66 | -1.98 | -2.91 | -4.97 | 0.60 |

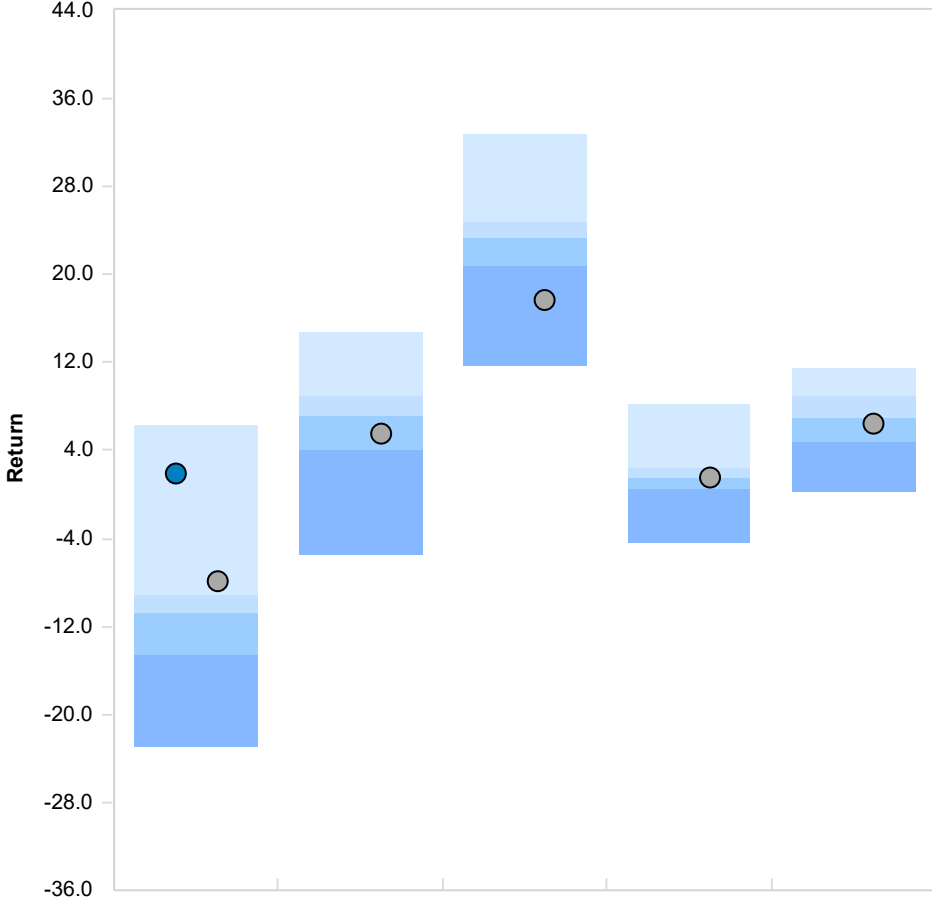
Page Intentionally Left Blank

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 (17) | 0.00 (17) | 0.84 (16) | N/A | N/A | N/A | N/A |
| ● Index | -0.98 (22) | -0.98 (22) | -7.16 (26) | -4.43 (24) | 3.63 (43) | 3.38 (54) | 3.76 (61) |
| Median | -1.85 | -1.85 | -8.89 | -6.71 | 3.58 | 3.56 | 3.88 |

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 Dec-2023 | 1 Qtr Ending Sep-2023 | 1 Qtr Ending Jun-2023 | 1 Qtr Ending Mar-2023 | 1 Qtr Ending Dec-2022 | 1 Qtr Ending Sep-2022 |
|------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Investment | -1.21 (13) | 0.53 (8) | 1.54 (7) | 1.06 (6) | N/A | N/A |
| Index | -3.02 (43) | -1.37 (19) | -1.98 (50) | -1.81 (25) | -3.50 (25) | 0.57 (54) |
| Median | -4.10 | -2.66 | -1.98 | -2.91 | -4.97 | 0.60 |

Erie County Employees Retirement Plan

Fee Analysis

As of March 31, 2024

| | Estimated Annual Fee (%) | Market Value (\$) | Estimated Annual Fee (\$) | Fee Schedule |
|--|--------------------------|--------------------|---------------------------|--|
| Total Fund | 0.38 | 321,427,150 | 1,228,532 | |
| Domestic Large Cap Equity | 0.08 | 82,391,899 | 67,385 | |
| Vanguard S&P 500 Index Fund (VINIX) | 0.04 | 39,549,799 | 13,842 | 0.04 % of Assets |
| Vanguard Russell 1000 Growth Index (VRGWX) | 0.07 | 20,042,915 | 14,030 | 0.07 % of Assets |
| DFA Large Value Equity (DFLVX) | 0.22 | 15,702,007 | 34,544 | 0.22 % of Assets |
| Vanguard Russell 1000 Value Index (VRVIX) | 0.07 | 7,097,178 | 4,968 | 0.07 % of Assets |
| Domestic Small Cap Equity | 0.56 | 46,765,791 | 262,645 | |
| Allspring Global Small Value Eq. | 0.50 | 20,949,986 | 104,750 | 0.50 % of Assets |
| Emerald Small Growth Equity | 0.61 | 21,674,420 | 133,047 | 0.75 % of First \$2 M 0.60 % Thereafter |
| StoneRidge Small Growth Equity | 0.60 | 4,141,385 | 24,848 | 0.60 % of Assets |
| International Equity | 0.36 | 46,608,669 | 167,386 | |
| DFA International Equity (DFIEX) | 0.24 | 19,802,574 | 47,526 | 0.24 % of Assets |
| DFA Emerging Markets (DFCEX) | 0.39 | 4,926,340 | 19,213 | 0.39 % of Assets |
| EuroPacific Growth Fund (RERGX) | 0.46 | 21,879,755 | 100,647 | 0.46 % of Assets |
| Total Fixed Income | 0.21 | 94,911,923 | 203,786 | |
| Boyd Watterson Fixed | 0.23 | 46,786,229 | 107,608 | 0.23 % of Assets |
| PNC Fixed | 0.28 | 26,695,723 | 74,748 | 0.28 % of Assets |
| Vanguard Core Bond Fund (VCOBX) | 0.10 | 21,429,971 | 21,430 | 0.10 % of Assets |
| Private Real Estate | 1.15 | 20,062,177 | 231,597 | |
| Boyd Watterson GSA Fund | 1.25 | 12,390,002 | 154,875 | 1.25 % of Assets |
| Bentall GreenOak US Core Plus RE | 1.00 | 7,672,175 | 76,722 | 1.00 % of Assets |
| Private Equity | 1.00 | 21,972,276 | 219,723 | |
| Ironsides Direct Investment Fund V | 1.00 | 10,060,886 | 100,609 | 1.00 % of Assets |
| PA Co-Investment Fund III | 1.00 | 5,781,156 | 57,812 | 1.00 % of Assets |
| Adams Street Co-Investment Fund V | 1.00 | 4,108,837 | 41,088 | 1.00 % of Assets |
| Hamilton Lane Secondary Fund VI | 1.00 | 2,021,397 | 20,214 | 1.00 % of Assets |
| Private Debt | 0.94 | 8,085,426 | 76,010 | |
| Ironsides Opportunities Fund | 0.75 | 1,937,627 | 14,532 | 0.75 % of Assets |
| PA Credit Strategies Fund | 1.00 | 6,147,799 | 61,478 | 1.00 % of Assets |
| Cash | | 628,988 | - | |
| Cash Account | | 628,988 | - | |

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 March 31, 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. |

Mariner Institutional compiled this report for the sole use of the client for which it was prepared. Mariner Institutional is responsible for evaluating the performance results of the Total Fund along with the investment advisors by comparing their performance with indices and other related peer universe data that is deemed appropriate. Mariner Institutional uses the results from this evaluation to make observations and recommendations to the client.

Mariner Institutional uses time-weighted calculations which are founded on standards recommended by the CFA Institute. The calculations and values shown are based on information that is received from custodians. Mariner Institutional analyzes transactions as indicated on the custodian statements and reviews the custodial market values of the portfolio. As a result, this provides Mariner Institutional with a reasonable basis that the investment information presented is free from material misstatement. This methodology of evaluating and measuring performance provides Mariner Institutional with a practical foundation for our observations and recommendations. Nothing came to our attention that would cause Mariner Institutional to believe that the information presented is significantly misstated.

This performance report is based on data obtained by the client's custodian(s), investment fund administrator, or other sources believed to be reliable. While these sources are believed to be reliable, the data providers are responsible for the accuracy and completeness of their statements. Clients are encouraged to compare the records of their custodian(s) to ensure this report fairly and accurately reflects their various asset positions.

The strategies listed may not be suitable for all investors. We believe the information provided here is reliable, but do not warrant its accuracy or completeness. Past performance is not an indication of future performance. Any information contained in this report is for informational purposes only and should not be construed to be an offer to buy or sell any securities, investment consulting, or investment management services.

Additional information included in this document may contain data provided by index databases, public economic sources, and the managers themselves.

This document may contain data provided by Bloomberg.

This document may contain data provided by Standard and Poor's. Nothing contained within any document, advertisement or presentation from S&P Indices constitutes an offer of services in jurisdictions where S&P Indices does not have the necessary licenses. All information provided by S&P Indices is impersonal and is not tailored to the needs of any person, entity or group of persons. Any returns or performance provided within any document is provided for illustrative purposes only and does not demonstrate actual performance. Past performance is not a guarantee of future investment results.

This document may contain data provided by MSCI, Inc. Copyright MSCI, 2017. Unpublished. All Rights Reserved. This information may only be used for your internal use, may not be reproduced or disseminated in any form and may not be used to create any financial instruments or products or any indices. This information is provided on an "as is" basis and the user of this information assumes the entire risk of any use it may make or permit to be made of this information. Neither MSCI, any of its affiliates or any other person involved in or related to compiling, computing or creating this information makes any express or implied warranties or representations with respect to such information or the results to be obtained by the use thereof, and MSCI, its affiliates and each such other person hereby expressly disclaim all warranties (including, without limitation, all warranties of originality, accuracy, completeness, timeliness, non-infringement, merchantability and fitness for a particular purpose) with respect to this information. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any other person involved in or related to compiling, computing or creating this information have any liability for any direct, indirect, special, incidental, punitive, consequential or any other damages (including, without limitation, lost profits) even if notified of, or if it might otherwise have anticipated, the possibility of such damages.

This document may contain data provided by Russell Investment Group. Russell Investment Group is the source owner of the data contained or reflected in this material and all trademarks and copyrights related thereto. The material may contain confidential information and unauthorized use, disclosure, copying, dissemination or redistribution is strictly prohibited. This is a user presentation of the data. Russell Investment Group is not responsible for the formatting or configuration of this material or for any inaccuracy in presentation thereof.

This document may contain data provided by Morningstar. All rights reserved. Use of this content requires expert knowledge. It is to be used by specialist institutions only. The information contained herein: (1) is proprietary to Morningstar and/or its content providers; (2) may not be copied, adapted or distributed; and (3) is not warranted to be accurate, complete or timely. Neither Morningstar nor its content providers are responsible for any damages or losses arising from any use of this information, except where such damages or losses cannot be limited or excluded by law in your jurisdiction. Past financial performance is not guarantee of future results.

***IMPORTANT DISCLOSURE INFORMATION RE GREENWICH QUALITY LEADER AWARD**

These ratings are not indicative of Mariner Institutional's future performance. These awards or any other rankings and/or recognition by unaffiliated rating services and/or publications should not be construed as a guarantee that a client will experience a certain level of results or satisfaction if they invest with Mariner Institutional, nor should it be construed as a current or past endorsement by any of our clients. Mariner Institutional did not pay a fee to participate in this award survey.

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.

MARINER

Access to a wealth of knowledge and solutions.