

Investment Performance Review
Period Ending September 30, 2023

Retirement Board of Allegheny County



3rd Quarter 2023 Market Environment



The Economy

- The US Federal Reserve Bank (the Fed) continued to increase interest rates during the quarter with an additional 0.25% increase in the Fed Funds rate in late July, followed by a pause at the September Federal Open Market Committee (FOMC) meeting. The Fed continues to prioritize fighting high inflation with the press release from the July meeting detailing the FOMC's commitment to returning inflation to its 2% target rate. In addition, the committee members have agreed to continue reducing the Fed's balance sheet by reducing holdings in Treasuries, agency debt and agency mortgage-backed securities.
- The US labor market continues to show signs of weakening. Private payroll growth for the month of September showed growth well below estimates, coming in at just 89,000 new jobs for the month.
- Capital market yields have risen to their highest levels in over a decade as market participants are demanding a greater premium on long-term Treasury securities. The 30-year Treasury yield jumped 0.88% during the quarter signaling that market participants are anticipating higher levels of both inflation and policy interest rates.
- The Atlanta Fed's GDPNow model's projected third-quarter GDP growth has been revised upward from the original estimates of 3.5% in July to 4.9% at the end of September. The main drivers of the upward revisions came in August upon the release of personal consumption and private domestic investment data from the US Bureau of Labor and Statistics.

Equity (Domestic and International)

- US equities moved broadly lower during the third quarter. The selloff was agnostic to size and style as all major domestic equity benchmarks finished the quarter with losses in the mid to high single-digit territory. After its encouraging performance in the second quarter, the large-cap S&P 500 benchmark fell by -3.3% for the third quarter. Small-cap stocks faced a deeper drawdown over the period with the Russell 2000 returning -5.1%. Contributing factors to this quarter's performance were, unsurprisingly, related to interest rates and the overall level of inflation in the economy.
- International stocks also came under pressure during the third quarter, reversing their positive results from last quarter. China continues to show signs of weakness as the cost of debt increases globally. Given China's large weight in the MSCI Emerging Market Index and its economic influence in the region, future prospects of growth for southeast Asia will be largely dependent on the strength of future growth for the country.

Fixed Income

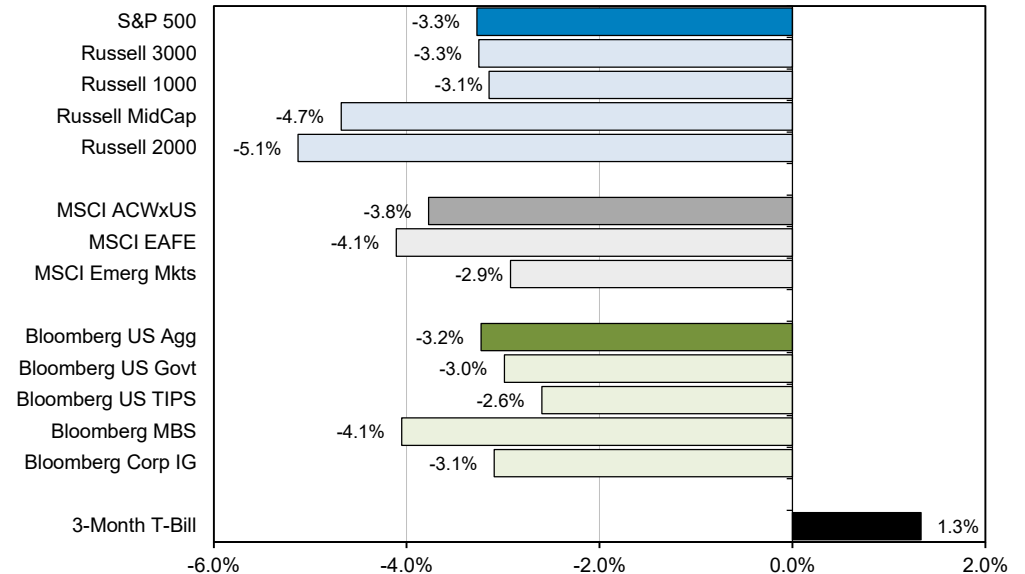
- While the US economy continues to see signs of disinflation, many of the Fed's preferred gauges continue to show inflation above their long-term target. During the quarter, the Fed maintained its inflation-fighting policy stance, increasing interest rates by 0.25% in July but opting to pause in September. The additional rate hike in July along with the possibility that additional rate hikes could occur later in the year, drove capital market yields sharply higher during the quarter.
- The mortgage-backed sector was the worst-performing sector during the quarter as the 10-year Treasury yield hit its highest level in 16 years. US Government securities were the worst-performing sector during the previous 12 months. US Treasuries have lagged corporate and securitized sectors as yields at longer maturities rose significantly and credit availability has tightened since last year.
- High-yield corporate bonds have held up better than higher-quality issues, aided by narrowing credit spreads, higher coupons, and generally shorter maturities. High-yield bonds were the best-performing segment of the domestic bond market during the quarter and on a trailing 12-month basis.

Market Themes

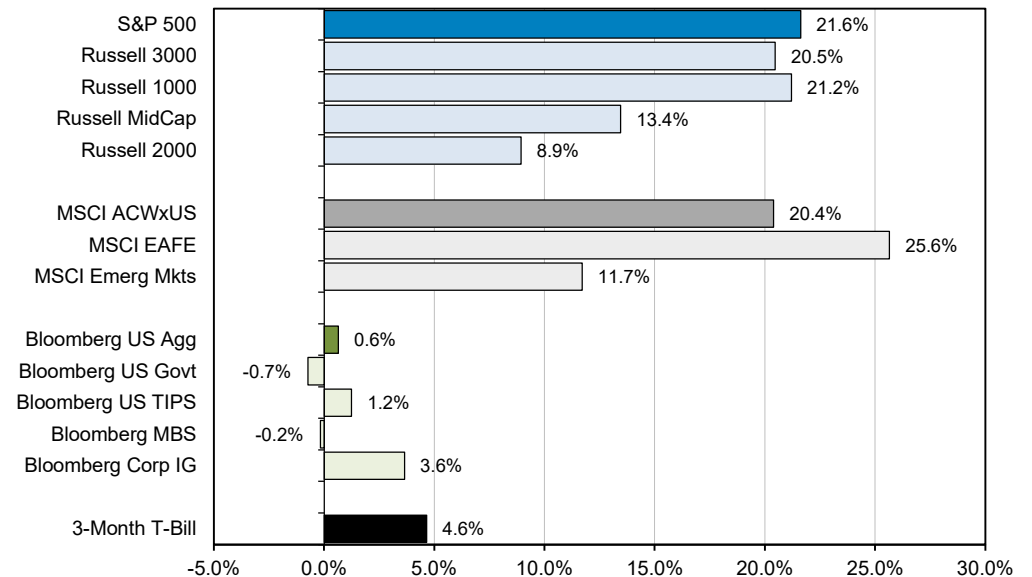
- Economies around the globe continue to struggle with taming inflation. Markets are beginning to experience pressures brought on by higher costs of debt and pricing in expectations of higher interest rates for longer than originally anticipated. US Treasury yields on the long end of the par curve have risen sharply which threatens to undercut the economy by markedly raising borrowing costs.
- While energy costs have subsided from the initial shock of the Russian invasion in 2022, oil prices have been driven higher in recent months due to cuts in global production. This was soon followed by consumer-led demand destruction and expectations are that prices could soon subside.
- Despite concerns about slowing economic growth, lower-quality corporate bonds continue to outperform the government sector.
- US and international equity markets have struggled to maintain their recovery after last year's disappointment. Expectations that inflation would continue to moderate and central banks would slow the pace of their monetary tightening cycles have not taken shape as quickly as originally anticipated, leaving the consumer disadvantaged by higher price levels, higher interest rates, and weak availability of credit.

- Domestic equity markets struggled in the third quarter, reverting from the performance posted in the first half of 2023. Strong performance from domestic equities markets earlier in the year was enough to overshadow the third quarter's negative returns, leading to positive results for most domestic equity benchmarks on a trailing one-year basis. Macroeconomic challenges faced by the US economy for the past several quarters finally weighed on market participants, leading to dismal market returns. For the period, the Russell 1000 large-cap benchmark returned -3.1% versus -4.7% for the Russell Mid Cap Index and -5.1% for the Russell 2000 small-cap index.
- International developed and emerging market equities also delivered disappointing results, in line with their domestic counterparts. Europe continues to face geopolitical risks related to the conflict in Ukraine and rising interest rates. However, inflation has eased somewhat due to higher rates and more manageable energy prices. The developed-market MSCI EAFE Index returned -4.1% for the quarter and the MSCI Emerging Markets Index fell by -2.9%.
- The domestic bond market continued its decline during the quarter due to the Fed's decision to hike policy rates an additional 0.25% and a re-shaping of the Treasury yield curve. The Bloomberg US Aggregate Index returned -3.2% for the quarter and investment-grade corporate bonds returned a similar -3.1%.
- Over the one-year trailing period, US equity markets were positive as the disappointing performance from much of 2022 rolled off. The S&P 500 Index climbed 21.6% for the trailing 12 months. The weakest relative performance for the year was the Russell 2000 Index, which still rose 8.9% over the last 12 months.
- International markets also shook off their poor 2022 performance. Over the trailing one-year period, the MSCI EAFE Index was the best-performing equity benchmark, returning 25.6% while the MSCI Emerging Markets Index posted a more modest 11.7%.
- Bond markets were generally flat over the previous 12 months. Investment-grade corporate bonds were the best-performing sector, posting a return of 3.6%. Meanwhile, Treasuries were negative, returning -0.7% over the previous 12 months. The bellwether fixed-income benchmark, the Bloomberg US Aggregate Index, returned a small, positive 0.6%.

Quarter Performance



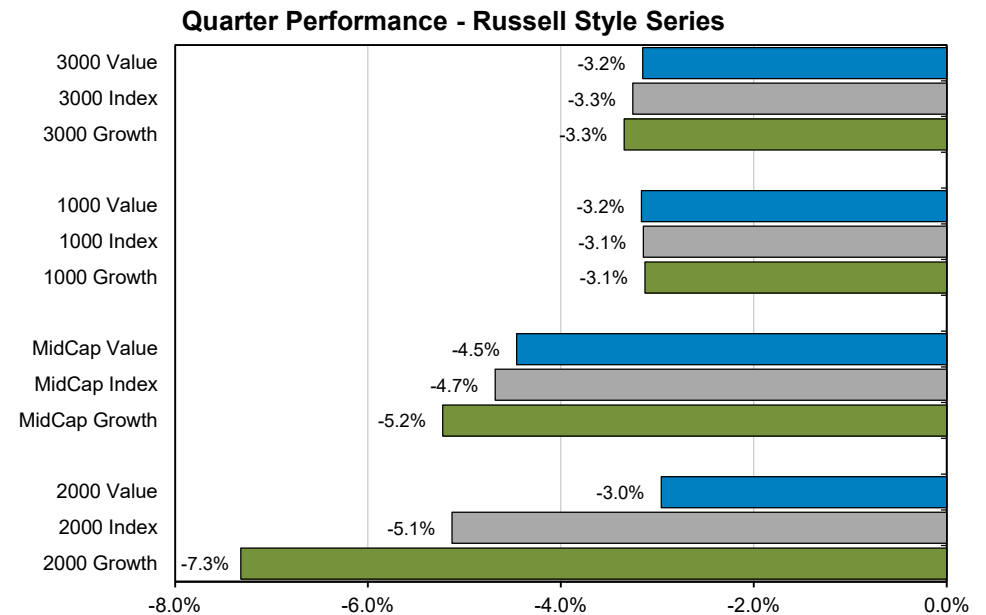
1-Year Performance



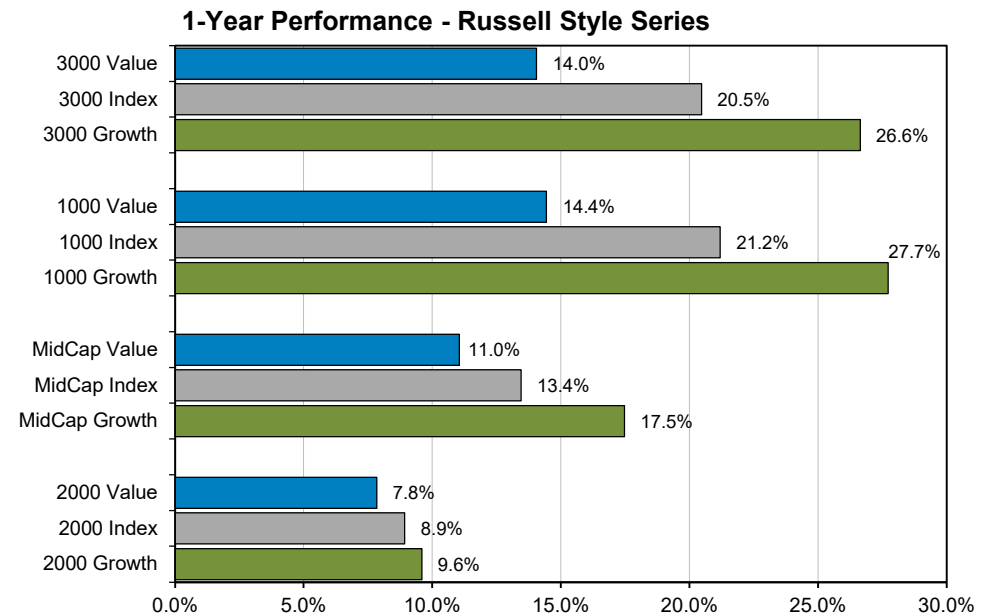
Source: Investment Metrics



- During the third quarter, core domestic equity benchmarks reversed course from their encouraging first-half 2023 performance. The selloff was agnostic to style as growth and value were down -3.3% and -3.2% respectively for the Russell 3000 Index, the broad market benchmark.
- Large-cap stocks once again led results for the capitalization-based benchmarks, besting both the mid-cap and small-cap indices for the quarter. Russell 1000 Index fell by -3.1% while the Russell 2000 Index fell by -5.1%.
- Among large-cap stocks, performance was relatively uniform across the style spectrum as growth fell by -3.1% and value fell by -3.2%. However, among small-cap stocks, performance across the style spectrum was disparate as growth fell by -7.3% and value fell by just -3.0%.



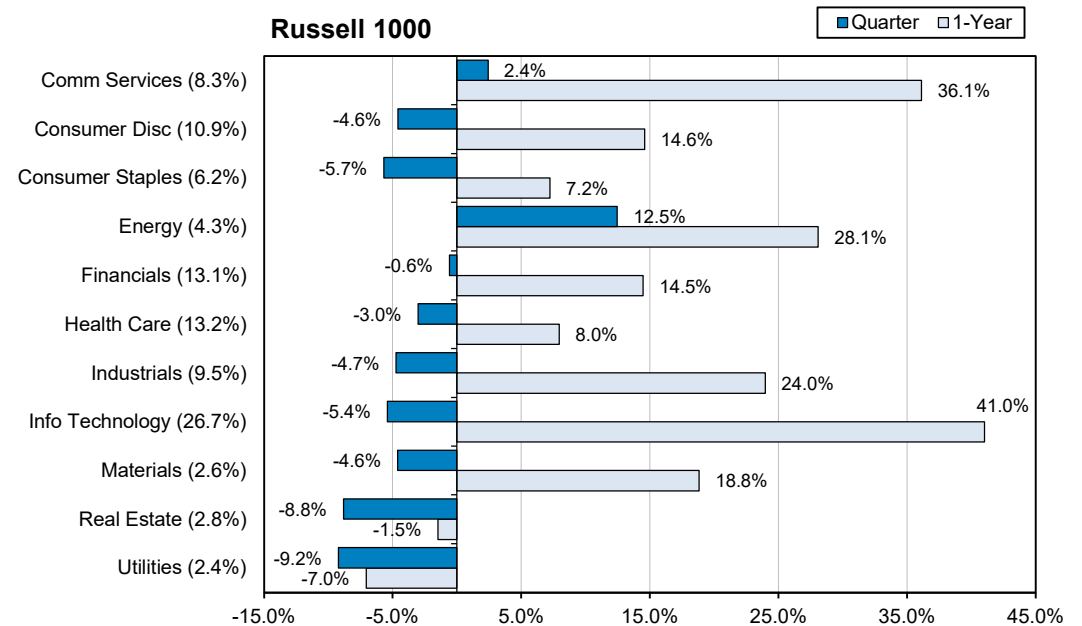
- The third quarter's reversal for domestic equity markets did not eclipse the rebound seen in the asset class during the first half of 2023 as each of the Russell indices were positive on a trailing 12-month basis. Within large-cap stocks, the Russell 1000 Growth Index maintains sizable dominance, returning 27.7% and leading the way among style-and-market-capitalization classifications. The worst-performing sub-index was the Russell 2000 Value, which posted a modest 7.8% return for the trailing 12 months.
- Growth rebounded from disappointing results in early 2022 and continues to lead value-based benchmarks in all market capitalization ranges over the trailing year. The Russell 2000 Growth Index returned 9.6%, outpacing the Russell 2000 Value Index return of 7.8%. The Russell 1000 Growth and Russell Midcap Growth benchmarks gained 27.7% and 17.5%, respectively, while their corresponding value index counterparts returned solid, but lagging, performance of 14.4% and 11.0%, respectively.



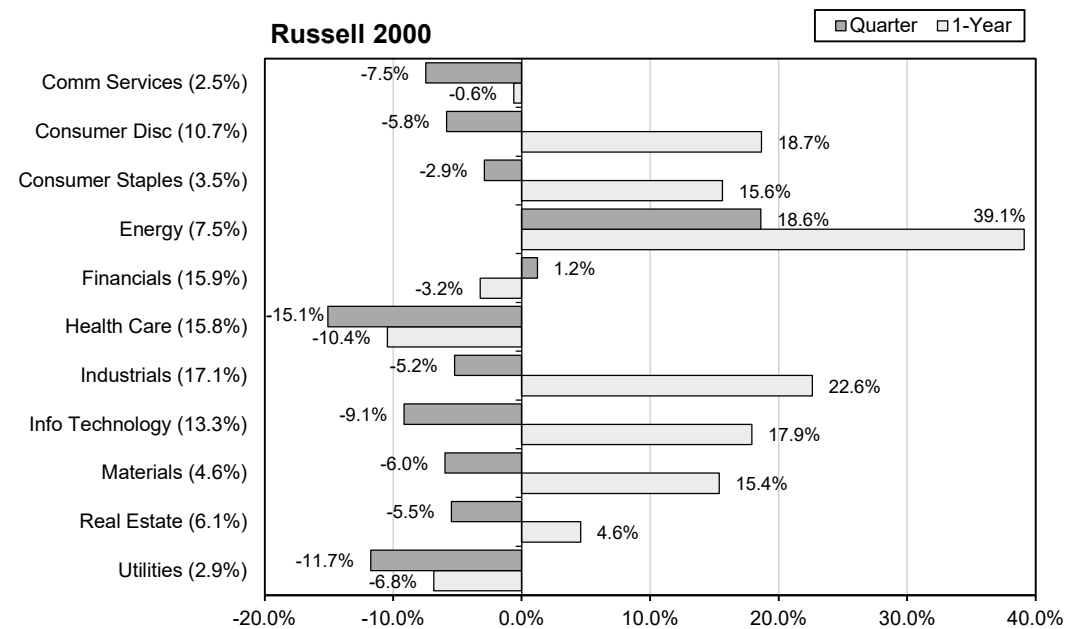
Source: Investment Metrics



- Performance of the large-cap Russell 1000 Index was affected by negative performance in nine of 11 economic sectors during the quarter. However, four of the 11 sectors managed to outpace the core large-cap index.
- While domestic equities experienced challenges during the quarter, the energy sector managed a solid return of 12.5%. The other three sectors that outpaced the headline large-cap index's -3.1% return for the quarter were communication services (2.4%), financials (-0.6%) and health care (-3.0%). The worst-performing sectors during the quarter were utilities (-9.2%), and real estate (-8.8%).
- For the full year, four economic sectors exceeded the return of the broad large-cap index, and nine of the 11 sectors posted positive performance. The weakest economic sectors in the Russell 1000 for the year were utilities, and real estate which declined by -7.0% and -1.5%, respectively. Both sectors have been heavily impacted by rising energy costs and a market rotation away from defensive names.



- Nine of 11 economic sectors in the small-cap benchmark posted negative results during the quarter while just three exceeded the -5.1% return of the Russell 2000 Index. The health care (-15.1%) and utilities (-11.7%) sectors detracted the most from small-cap performance, lagging the broad benchmark for the quarter. The two economic sectors that were positive for the quarter were energy (18.6%), and financials (1.2%).
- Similar to their large-cap peers, seven small-cap sectors were positive for the trailing 12 months. Energy posted the strongest sector result (39.1%) while the industrials sector also posting a return of more than 20% for the last 12 months. Just four of the 11 economic sectors fell short of the core small-cap benchmark's return of 8.9% over the trailing year. The worst-performing sector for the year was health care with a return of -10.4%. The utilities (-6.8%), financials (-3.2%), and communication services (-0.6%) sectors also posted negative results for the year.



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 September 30, 2023

Top 10 Weighted Stocks				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Apple Inc	6.4%	-11.6%	24.6%	Information Technology
Microsoft Corp	5.9%	-7.1%	36.9%	Information Technology
Amazon.com Inc	2.9%	-2.5%	12.5%	Consumer Discretionary
NVIDIA Corp	2.6%	2.8%	258.6%	Information Technology
Alphabet Inc Class A	2.0%	9.3%	36.8%	Communication Services
Tesla Inc	1.7%	-4.4%	-5.7%	Consumer Discretionary
Alphabet Inc Class C	1.7%	9.0%	37.1%	Communication Services
Meta Platforms Inc Class A	1.7%	4.6%	121.3%	Communication Services
Berkshire Hathaway Inc Class B	1.6%	2.7%	31.2%	Financials
Exxon Mobil Corp	1.2%	10.6%	39.1%	Energy

Top 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
AppLovin Corp Ordinary Shares	0.0%	55.3%	105.0%	Information Technology
Vertiv Holdings Co Class A	0.0%	50.2%	283.0%	Industrials
Capri Holdings Ltd	0.0%	46.6%	36.9%	Consumer Discretionary
Rivian Automotive Inc Class A	0.0%	45.7%	-26.2%	Consumer Discretionary
Texas Pacific Land Corp	0.0%	38.8%	3.3%	Energy
Affirm Holdings Inc Ordinary Shares	0.0%	38.7%	13.4%	Financials
Splunk Inc	0.1%	37.9%	94.5%	Information Technology
H&R Block Inc	0.0%	36.2%	4.5%	Consumer Discretionary
Ollie's Bargain Outlet Holdings Inc	0.0%	33.2%	49.6%	Consumer Discretionary
Zions Bancorp NA	0.0%	31.4%	-28.4%	Financials

Bottom 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
AMC Entertainment Holdings Inc	0.0%	-79.4%	-87.0%	Communication Services
Hawaiian Electric Industries Inc	0.0%	-65.0%	-62.4%	Utilities
NovoCure Ltd	0.0%	-61.1%	-78.7%	Health Care
Apellis Pharmaceuticals Inc	0.0%	-58.2%	-44.3%	Health Care
Viasat Inc	0.0%	-55.3%	-38.9%	Information Technology
Petco Health and Wellness Co Inc	0.0%	-54.0%	-63.4%	Consumer Discretionary
Driven Brands Holdings Inc	0.0%	-53.5%	-55.0%	Industrials
Olaplex Holdings Inc	0.0%	-47.6%	-79.6%	Consumer Staples
Masimo Corp	0.0%	-46.7%	-37.9%	Health Care
Spirit AeroSystems Holdings Inc	0.0%	-44.7%	-26.4%	Industrials

Top 10 Weighted Stocks				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Super Micro Computer Inc	0.6%	10.0%	397.9%	Information Technology
Chart Industries Inc	0.3%	5.8%	-8.3%	Industrials
ChampionX Corp	0.3%	15.1%	84.2%	Energy
Chord Energy Corp Ordinary Shares	0.3%	6.3%	29.3%	Energy
Murphy Oil Corp	0.3%	19.1%	32.3%	Energy
Matador Resources Co	0.3%	14.0%	22.8%	Energy
Light & Wonder Inc Ordinary Shares	0.3%	3.7%	66.3%	Consumer Discretionary
Weatherford International PLC	0.3%	36.0%	179.7%	Energy
Simpson Manufacturing Co Inc	0.3%	8.4%	93.1%	Industrials
SPS Commerce Inc	0.3%	-11.2%	37.3%	Information Technology

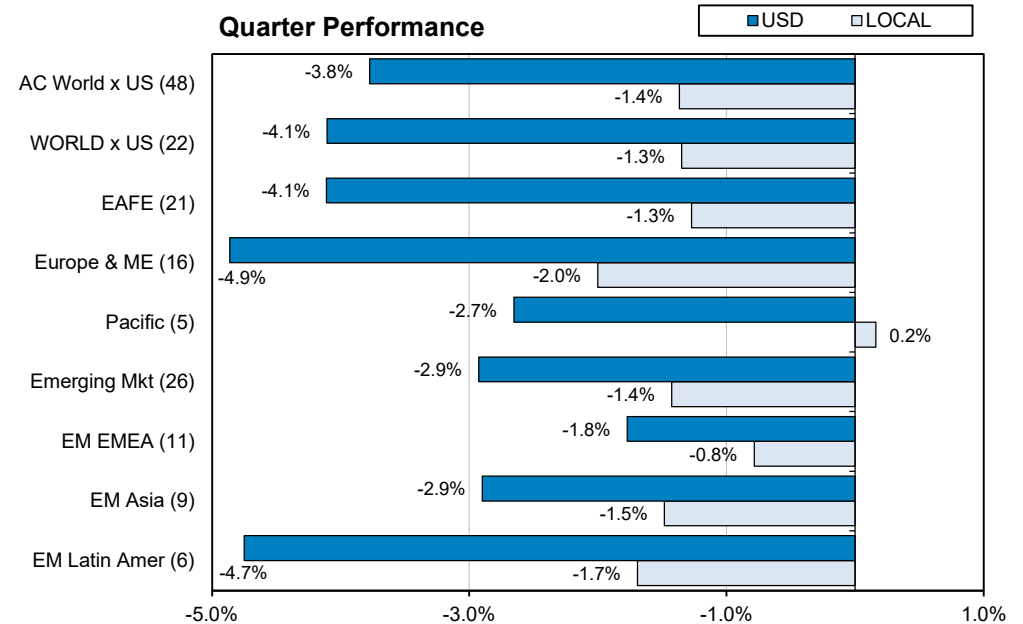
Top 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Tango Therapeutics Inc	0.0%	239.2%	211.0%	Health Care
PolyMet Mining Corp	0.0%	166.3%	-22.3%	Materials
Cardlytics Inc	0.0%	161.1%	75.5%	Communication Services
Telephone and Data Systems Inc	0.1%	124.8%	41.3%	Communication Services
Thorne HealthTech Inc	0.0%	116.8%	115.4%	Consumer Staples
Immunovant Inc	0.1%	102.4%	588.0%	Health Care
Tetra Technologies Inc	0.0%	88.8%	77.7%	Energy
NextNav Inc	0.0%	74.8%	91.1%	Information Technology
Centrus Energy Corp Class A	0.0%	74.3%	38.5%	Energy
Hallador Energy Co	0.0%	68.3%	156.6%	Energy

Bottom 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Outlook Therapeutics Inc	0.0%	-87.3%	-81.9%	Health Care
CXApp Inc Ordinary Shares	0.0%	-83.4%	-81.9%	Information Technology
Cano Health Inc Ordinary Shares	0.0%	-81.8%	-97.1%	Health Care
Loop Media Inc	0.0%	-79.2%	-88.9%	Communication Services
Akoustis Technologies Inc	0.0%	-76.3%	-74.6%	Information Technology
Benson Hill Inc	0.0%	-74.5%	-87.9%	Consumer Staples
TPI Composites Inc	0.0%	-74.4%	-76.5%	Industrials
Kodiak Sciences Inc	0.0%	-73.9%	-76.7%	Health Care
System1 Inc	0.0%	-73.1%	-80.8%	Communication Services
Presto Automation Inc	0.0%	-72.6%	-30.2%	Information Technology

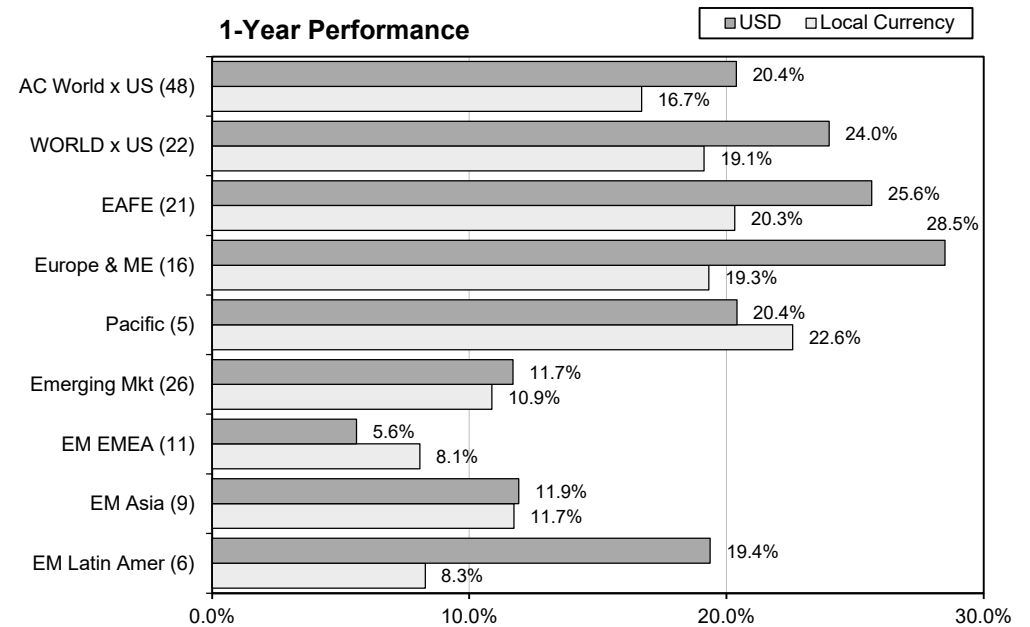
Source: Morningstar Direct



- International developed and emerging market benchmarks struggled in both US Dollar (USD) and local currency (LCL) terms. The strengthening USD contributed to weaker USD performance for non-US indices during the quarter. The developed-market MSCI EAFE Index struggled with a -4.1% return in USD and -1.3% in LCL terms for the period. The MSCI Emerging Markets Index fell by less than most developed market indices, returning -2.9% in USD and -1.4% in LCL terms.
- The EMEA index had the smallest drawdown for the quarter in USD terms, falling -1.8%. In local currency terms, the Pacific regional index exhibited a slight 0.2% gain during the quarter, the only positive return among its peers.



- Trailing one-year results were more appealing compared to the quarter's results. Much like domestic markets, trailing one-year performance for international developed and emerging markets rolled off their poor performance from 2022 resulting in strong returns for the trailing year. Additionally, LCL returns have outpaced USD returns for many developed markets due to the softening USD relative to many of the world's developed-market currencies over the year.
- Annual returns across emerging markets were broadly higher given their strong performance early in the year. Latin American results led the way with returns of 19.4% in USD and 8.3% in LCL terms. Performance in the EMEA regional benchmark detracted from emerging market index with the EMEA Index posting returns of 5.6% in USD and 8.1% in LCL terms. As a result, the broad MSCI Emerging Markets Index returned 11.7% in USD and 10.9% in LCL terms for the year.



Source: MSCI Global Index Monitor (Returns are Net)



The Market Environment
US Dollar International Index Attribution & Country Detail
As of September 30, 2023

MSCI - EAFE	Sector Weight	Quarter Return	1-Year Return
Communication Services	4.1%	-3.4%	14.4%
Consumer Discretionary	12.0%	-8.3%	32.8%
Consumer Staples	9.8%	-7.1%	9.9%
Energy	4.8%	11.6%	34.3%
Financials	19.1%	0.8%	33.9%
Health Care	13.4%	-3.1%	19.0%
Industrials	15.9%	-6.0%	32.9%
Information Technology	7.7%	-10.7%	29.2%
Materials	7.5%	-3.2%	23.7%
Real Estate	2.3%	-1.1%	5.4%
Utilities	3.4%	-8.8%	22.5%
Total	100.0%	-4.1%	25.6%

MSCI - ACWixUS	Sector Weight	Quarter Return	1-Year Return
Communication Services	5.5%	-4.9%	13.0%
Consumer Discretionary	11.9%	-5.6%	22.3%
Consumer Staples	8.4%	-6.4%	9.0%
Energy	6.0%	9.0%	27.3%
Financials	21.2%	-0.7%	22.0%
Health Care	9.7%	-2.8%	17.2%
Industrials	13.1%	-5.8%	28.2%
Information Technology	11.3%	-8.7%	29.0%
Materials	7.9%	-3.3%	16.2%
Real Estate	2.0%	-1.1%	4.7%
Utilities	3.1%	-7.9%	11.4%
Total	100.0%	-3.8%	20.4%

MSCI - Emerging Mkt	Sector Weight	Quarter Return	1-Year Return
Communication Services	9.6%	-5.9%	12.5%
Consumer Discretionary	13.7%	0.8%	5.1%
Consumer Staples	6.2%	-4.4%	4.6%
Energy	5.3%	6.3%	23.8%
Financials	22.3%	-1.7%	10.2%
Health Care	3.8%	-0.8%	4.1%
Industrials	6.7%	-4.6%	11.5%
Information Technology	20.2%	-6.8%	25.8%
Materials	8.0%	-3.1%	6.5%
Real Estate	1.7%	-0.6%	1.5%
Utilities	2.6%	-3.0%	-5.5%
Total	100.0%	-2.9%	11.7%

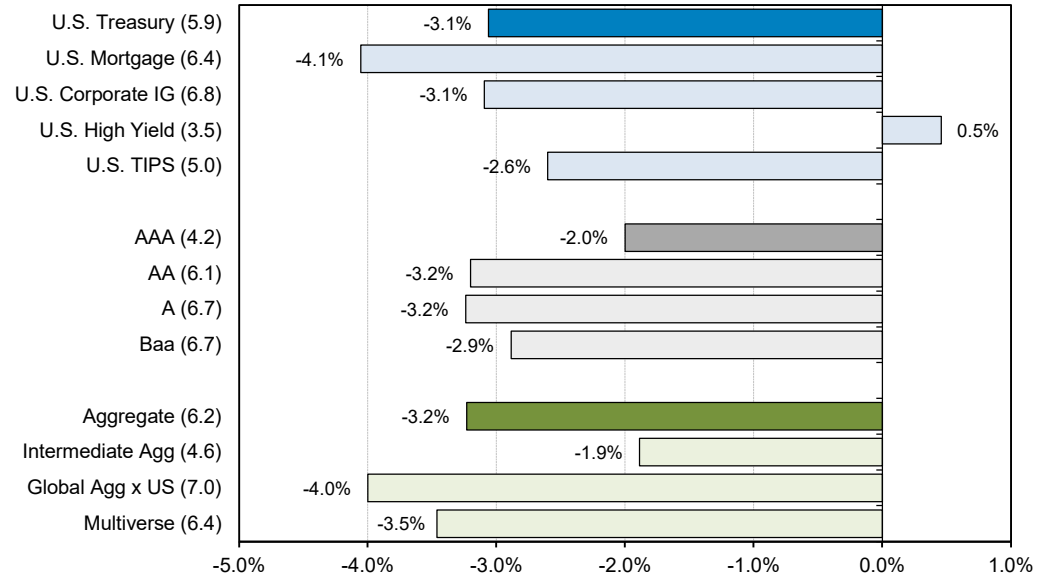
Country	MSCI-EAFE Weight	MSCI-ACWixUS Weight	Quarter Return	1-Year Return
Japan	22.9%	14.7%	-2.4%	23.3%
United Kingdom	15.3%	9.8%	-2.8%	20.0%
France	12.1%	7.7%	-7.1%	31.4%
Switzerland	9.9%	6.4%	-5.5%	13.7%
Germany	8.3%	5.3%	-7.7%	32.3%
Australia	7.4%	4.7%	-4.7%	10.4%
Netherlands	4.3%	2.7%	-14.1%	24.8%
Denmark	3.3%	2.1%	2.0%	52.0%
Sweden	3.1%	2.0%	-5.7%	17.9%
Spain	2.6%	1.7%	-4.1%	40.4%
Italy	2.6%	1.7%	-2.4%	47.8%
Hong Kong	2.3%	1.5%	-12.1%	-6.1%
Singapore	1.5%	0.9%	-2.1%	6.2%
Belgium	1.0%	0.6%	-0.2%	20.0%
Finland	0.9%	0.6%	-6.0%	-1.9%
Norway	0.7%	0.5%	10.7%	12.9%
Israel	0.7%	0.4%	4.5%	0.1%
Ireland	0.5%	0.4%	-7.7%	40.6%
Portugal	0.2%	0.1%	-8.9%	7.1%
New Zealand	0.2%	0.1%	-10.0%	12.2%
Austria	0.2%	0.1%	-0.6%	34.9%
Total EAFE Countries	100.0%	64.1%	-4.1%	25.6%
Canada		7.6%	-4.7%	8.7%
Total Developed Countries		71.7%	-4.1%	24.0%
China		8.5%	-1.9%	5.2%
India		4.5%	2.7%	10.1%
Taiwan		4.2%	-7.4%	21.8%
Korea		3.5%	-6.6%	26.2%
Brazil		1.5%	-3.6%	15.3%
Saudi Arabia		1.2%	-4.4%	-5.9%
South Africa		0.9%	-4.6%	6.7%
Mexico		0.7%	-6.5%	33.7%
Indonesia		0.6%	-3.4%	1.5%
Thailand		0.5%	-4.5%	0.1%
United Arab Emirates		0.4%	6.1%	2.2%
Malaysia		0.4%	4.5%	5.2%
Qatar		0.3%	0.1%	-17.8%
Kuwait		0.2%	-2.7%	-1.9%
Poland		0.2%	-12.7%	59.1%
Turkey		0.2%	32.7%	74.9%
Philippines		0.2%	-3.8%	17.7%
Chile		0.1%	-9.8%	3.3%
Greece		0.1%	-7.8%	70.6%
Peru		0.1%	-4.0%	29.9%
Hungary		0.1%	0.5%	75.9%
Czech Republic		0.0%	1.0%	35.7%
Colombia		0.0%	0.1%	15.9%
Egypt		0.0%	15.3%	48.4%
Total Emerging Countries		28.3%	-2.9%	11.7%
Total ACWixUS Countries		100.0%	-3.8%	20.4%

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.

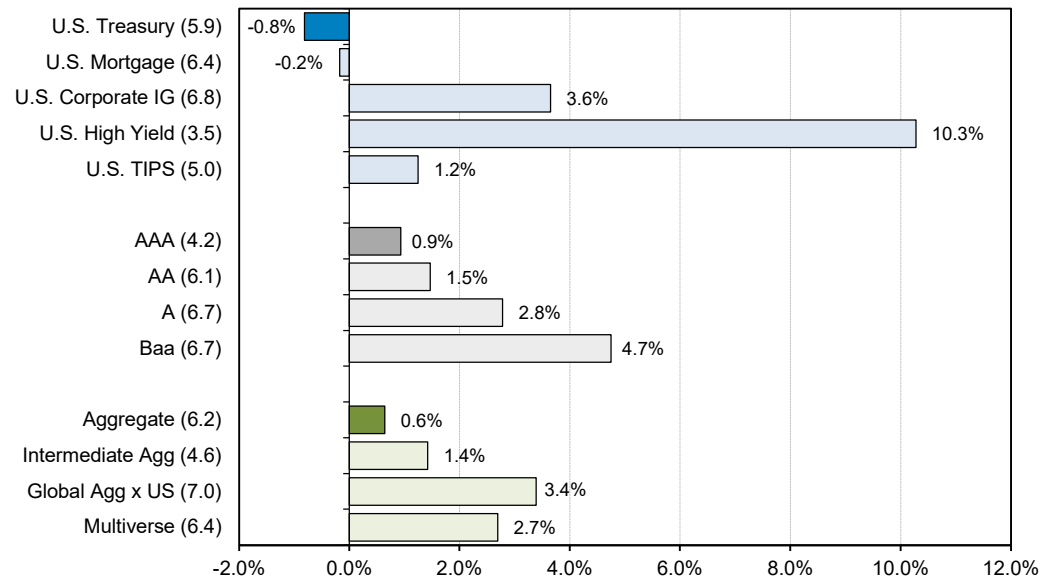


- Fixed income markets continued the decline that began in the second quarter. Yields remain elevated on the back of FOMC actions to hike policy rates throughout the year. After a challenging 2022 in fixed-income markets brought on by the largest and most rapid increase in interest rates since the early 1980s, higher yields and an expected slower pace of rate increases led investors to expect better outcomes in 2023. That expectation was challenged during the second and third quarters, as the additional 0.25% rate hike in July, and guidance toward potential future rate hikes weighed on the asset class and many of the major domestic fixed-income indices posted discouraging returns.
- The Bloomberg US Aggregate Bond Index, the bellwether US investment grade benchmark, declined -3.2% for the quarter. Beneath the headline benchmark, the Bloomberg US Corporate Investment Grade Index returned -3.1% and the US Mortgage Index posted a weaker -4.1%.
- Outside of the aggregate index's sub-components, high-yield bonds continued their rise with a return of 0.5% as credit spreads narrowed during the quarter. Additionally, US TIPS fell -2.6% for the quarter. The Bloomberg Global Aggregate ex-US Index lagged most domestic fixed-income indexes and the multiverse benchmark, posting a loss of -4.0% for the quarter.
- Over the trailing one-year period, the Bloomberg US Aggregate Bond Index gained just 0.6%. The benchmark's sub-components were highly dispersed with Treasuries falling -0.8% while corporate investment grade issues were up 3.6% over the previous 12 months. US TIPS, which are excluded from the aggregate index, increased by 1.2% for the year. High-yield corporate bonds, which have a much shorter duration, nearly tripled the returns of their investment grade counterparts with the Bloomberg US High Yield Index returning an impressive 10.3% for the trailing year.
- Performance for non-US bonds overcame the disappointing performance in 2022 with the Bloomberg Global Aggregate ex-US Index gaining 3.4%.

Quarter Performance



1-Year Performance

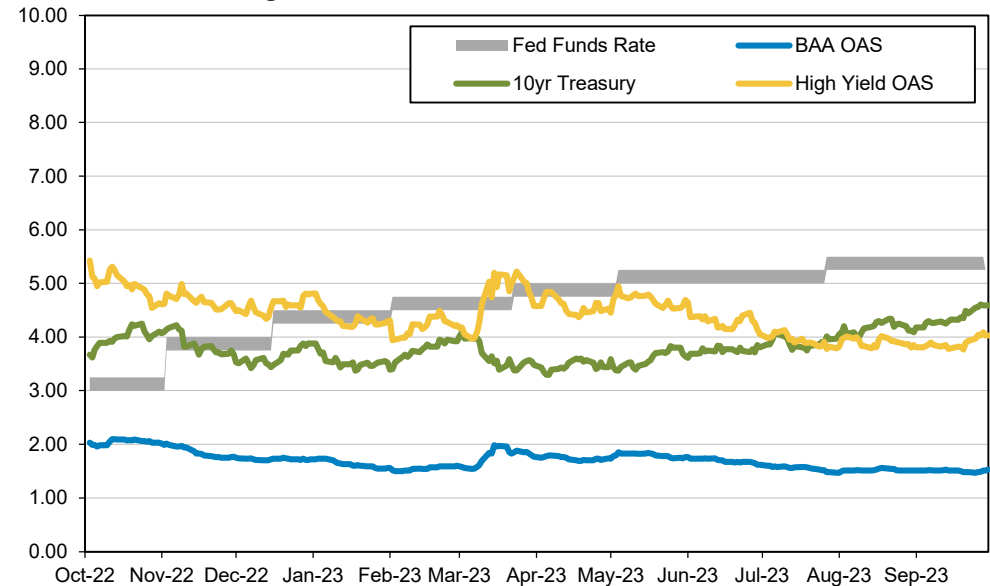


Source: Bloomberg

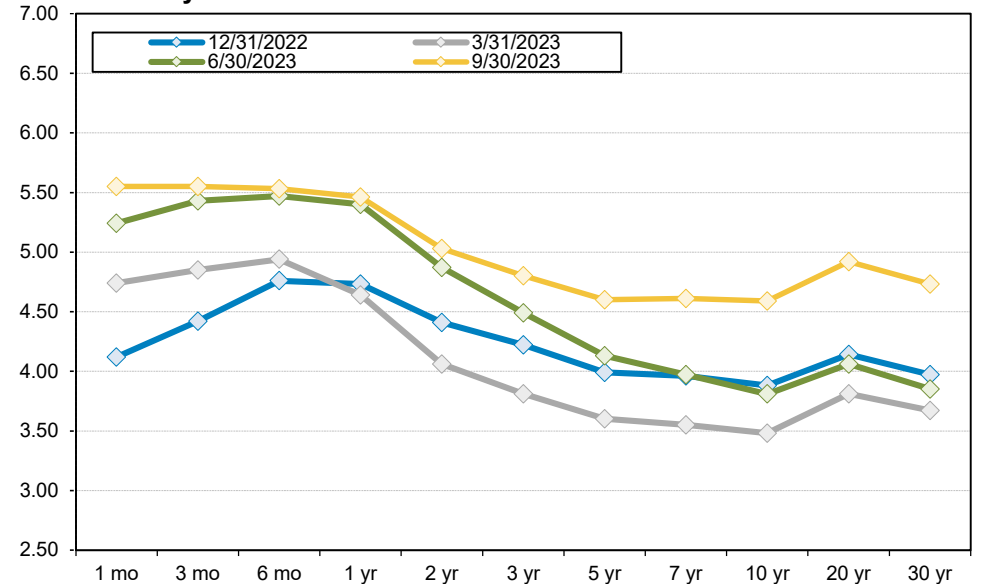


- The gray band across the graph illustrates the range of the current Fed Funds target rate. During the third quarter, the FOMC raised the lower end of its target rate range from 5.00% to 5.25% at their July meeting. While the FOMC paused further rate increases at their September meeting, several speeches and public comments since that meeting have made it clear that additional rate hikes should not be ruled out. While the overwhelming consensus has been that the Fed is moving towards the end of its rate hiking cycle, several statements and key macroeconomic statistics have shed doubt on timing of these expectations.
- The yield on the US 10-Year Treasury (green line) rose 0.78% largely due to increases in the policy rate and the potential for expected future inflationary pressure. The closing yield on the 10-Year Treasury was 4.59% as of September 29, 2023, and is up 71 basis points from its 3.88% yield at 2022 year-end. Capital market rates have now reached their highest levels in 16 years.
- The blue line illustrates changes in the BAA (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 investment grade issues with the lowest investment grade rating. For the full year, the spread narrowed from 2.05% to 1.53%, signaling a lower premium for credit risk than was the case a year prior. High-yield OAS spreads have narrowed from 5.92% in July 2022 to 4.03% as of the end of the quarter. Spikes in both the BAA OAS and High Yield spread measures were visible in the first quarter of 2023 following a short-lived crisis of confidence in the banking sector, which has since been addressed. Both spread measures traded lower on the news of the government's intervention, and as fears of possible contagion waned, credit spreads returned to their levels prior to February.
- The lower graph provides a snapshot of the US Treasury yield curve at the end of each of the last four quarters. Short-term rates continued to rise during the third quarter as the FOMC increased policy interest rates to continue combatting inflation. The Treasury yield curve has quickly exhibited a re-steepening with longer-term yields increasing at a faster pace than shorter-term yields. During the quarter, the 30-year yield jumped from 3.85% to 4.73% (an increase of 0.88%). Historically, a persistent inversion of the yield curve has been a precursor of an economic recession within six to 24 months.

1-Year Trailing Market Rates



Treasury Yield Curve



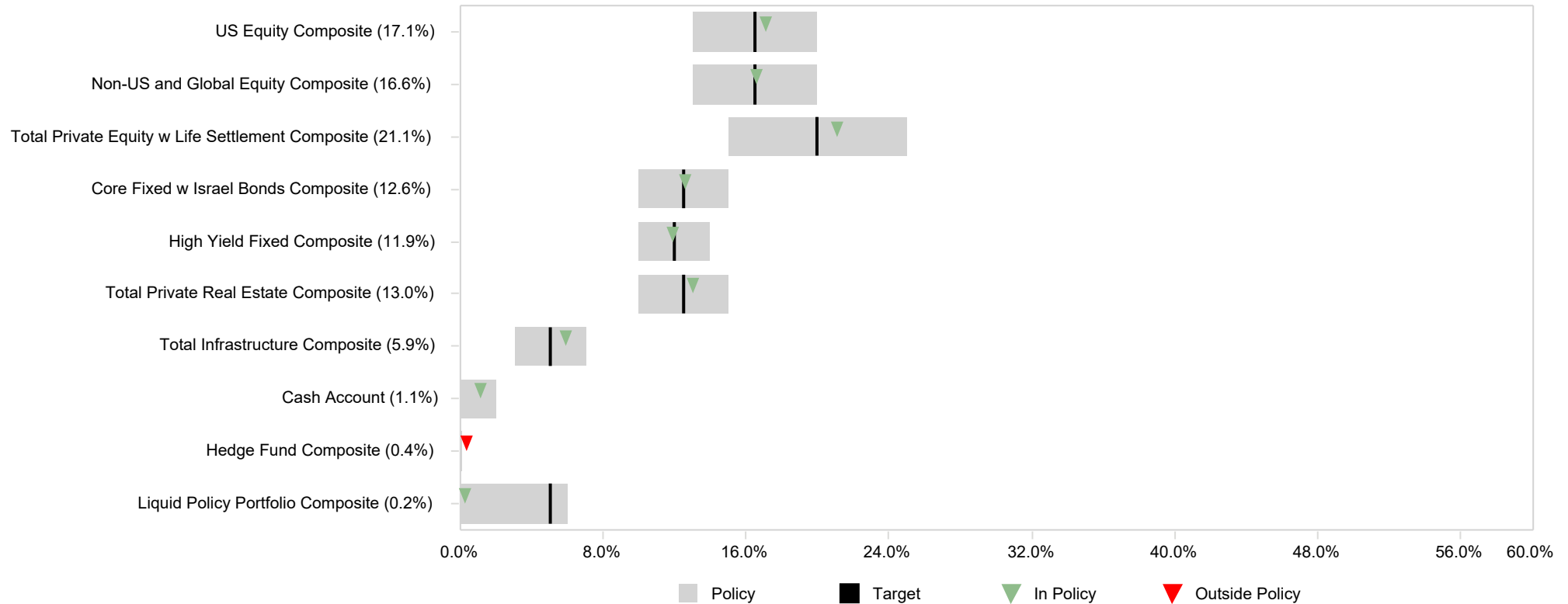
Source: US Department of Treasury, FRED (Federal Reserve of St. Louis)



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Executive Summary



Asset Allocation Compliance

	Asset Allocation \$	Current Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Allocation (%)
Total Fund	908,629,808	100.0	N/A	N/A	100.0
US Equity Composite	155,716,195	17.1	13.0	20.0	16.5
Non-US and Global Equity Composite	150,941,350	16.6	13.0	20.0	16.5
Total Private Equity w Life Settlement Composite	192,084,858	21.1	15.0	25.0	20.0
Core Fixed w Israel Bonds Composite	114,558,101	12.6	10.0	15.0	12.5
High Yield Fixed Composite	108,209,636	11.9	10.0	14.0	12.0
Total Private Real Estate Composite	117,951,877	13.0	10.0	15.0	12.5
Total Infrastructure Composite	53,443,315	5.9	3.0	7.0	5.0
Cash Account	10,398,665	1.1	0.0	2.0	0.0
Hedge Fund Composite	3,289,479	0.4	0.0	0.0	0.0
Liquid Policy Portfolio Composite	2,036,334	0.2	0.0	6.0	5.0

Asset Allocation includes assets of the Emerging, Minority, and Women owned Investment Manager Program. The Investment Policy Statement for the Retirement Board of Allegheny County allows for the Pension's asset allocation to temporarily fall outside of the stated policy ranges due to market fluctuations and the Pension's short-term cash flow needs. Recommendations are provided by the Pension's investment consultant regarding rebalancing of the Pension's asset allocation.



**Historical Asset Allocation
Total Fund**

As of September 30, 2023

Asset Allocation Attributes	Sep-2023		Jun-2023		Mar-2023		Dec-2022	
	(\$)	%	(\$)	%	(\$)	%	(\$)	%
	Total Fund	908,629,808	100.00	937,773,054	100.00	938,039,407	100.00	930,807,019
US Equity Composite	155,716,195	17.14	166,105,782	17.71	157,495,414	16.79	147,543,825	15.85
SSgA S&P 500 Index	72,278,179	7.95	76,668,718	8.18	72,461,658	7.72	67,423,331	7.24
Fragasso Large Core (EMWO)	6,264,782	0.69	6,514,854	0.69	6,174,508	0.66	5,871,405	0.63
Twin Capital Enhanced Equity	36,160,056	3.98	39,172,552	4.18	37,894,009	4.04	35,361,960	3.80
Vesper U.S. Large Cap Short-Term Reversal Strategy ETF (UTRN) (EMWO)	945,545	0.10	1,011,859	0.11	1,004,742	0.11	1,321,390	0.14
Earnest Small Value	13,779,559	1.52	14,402,333	1.54	13,994,072	1.49	13,246,310	1.42
Emerald Advisors Small Cap	12,635,738	1.39	13,808,919	1.47	12,680,868	1.35	12,167,091	1.31
Emerald Advisors All Cap (EMWO)	5,912,191	0.65	6,159,383	0.66	5,368,321	0.57	4,632,778	0.50
Ethos (EMWO)	1,672,854	0.18	1,779,982	0.19	1,743,916	0.19	1,650,527	0.18
CIM Small Cap (EMWO)	4,798,315	0.53	5,226,265	0.56	4,926,729	0.53	4,647,267	0.50
Cookson Peirce (EMWO)	1,268,976	0.14	1,360,917	0.15	1,246,591	0.13	1,221,766	0.13
Non US Equity Composite	150,941,350	16.61	159,471,630	17.01	156,358,968	16.67	143,544,302	15.42
SSgA ACWI ex US	35,115,435	3.86	36,485,530	3.89	35,576,881	3.79	33,256,835	3.57
Baillie Gifford Intl Equity	51,776,833	5.70	57,818,555	6.17	56,814,777	6.06	50,257,224	5.40
FIAM Select International Equity	29,387,526	3.23	30,847,483	3.29	29,921,274	3.19	27,817,679	2.99
Segall, Bryant & Hamill	34,661,556	3.81	34,320,062	3.66	34,046,036	3.63	32,212,563	3.46
Global Equity Composite	-	0.00	-	0.00	-	0.00	63	0.00
Columbus Macro (EMWO)	-	0.00	-	0.00	-	0.00	63	0.00
Core Fixed w Israel Bonds Composite	114,558,101	12.61	117,164,123	12.49	117,220,055	12.50	114,877,809	12.34
C S McKee	33,328,533	3.67	34,368,823	3.66	34,435,623	3.67	33,587,514	3.61
Federated Core Broad	26,352,669	2.90	27,170,913	2.90	27,289,985	2.91	26,563,367	2.85
CIM Investment Mgmt	26,862,216	2.96	27,053,613	2.88	27,157,783	2.90	26,629,153	2.86
Emstone Partners (EMWO)	5,076,803	0.56	5,118,349	0.55	5,152,204	0.55	5,043,347	0.54
Gridiron Capital Fixed Income	12,886,293	1.42	13,281,285	1.42	13,190,618	1.41	12,982,933	1.39
FNB (EMWO)	2,625,960	0.29	2,651,005	0.28	2,674,748	0.29	2,612,198	0.28
Israel Bonds	7,425,626	0.82	7,520,136	0.80	7,319,095	0.78	7,459,297	0.80
High Yield Fixed Composite	108,209,636	11.91	111,131,924	11.85	115,344,781	12.30	111,801,527	12.01
Oaktree High Yield	55,363,141	6.09	55,836,105	5.95	60,848,305	6.49	59,143,921	6.35
Federated High Yield	52,111,441	5.74	51,775,709	5.52	51,012,900	5.44	49,248,902	5.29
Sound Point	735,054	0.08	3,520,110	0.38	3,483,576	0.37	3,408,704	0.37



**Historical Asset Allocation
Total Fund**

As of September 30, 2023

	Sep-2023		Jun-2023		Mar-2023		Dec-2022	
	(\$)	%	(\$)	%	(\$)	%	(\$)	%
Real Estate Composite	107,532,588	11.83	108,850,126	11.61	113,827,663	12.13	122,648,191	13.18
Morgan Stanley Prime Property Fund	79,531,068	8.75	81,949,355	8.74	86,388,725	9.21	94,836,523	10.19
Oaktree Real Estate	4,630,582	0.51	4,887,273	0.52	5,352,160	0.57	5,941,114	0.64
Washington Alliance (EMWO)	14,515,764	1.60	13,369,061	1.43	13,455,267	1.43	13,336,153	1.43
Washington Alliance II (EMWO)	2,214,415	0.24	2,156,935	0.23	2,184,727	0.23	2,131,883	0.23
Siguler Guff Distressed RE	6,016,536	0.66	6,017,251	0.64	6,272,072	0.67	6,273,307	0.67
Artemis Real Estate Partners Fund IV	624,222	0.07	470,251	0.05	174,712	0.02	129,211	0.01
ERECT Composite	10,419,289	1.15	10,537,135	1.12	11,599,821	1.24	11,645,104	1.25
ERECT Fund II	10,419,289	1.15	10,537,135	1.12	11,599,821	1.24	11,645,104	1.25
Infrastructure Composite	53,443,315	5.88	53,210,793	5.67	52,036,702	5.55	26,465,271	2.84
JP Morgan Infrastructure Fund (IIF Hedged)	27,158,635	2.99	26,920,603	2.87	26,394,147	2.81	26,465,271	2.84
IFM Global Infrastructure LP	26,284,679	2.89	26,290,190	2.80	25,642,555	2.73	-	0.00
Private Equity Composite	182,320,224	20.07	185,254,885	19.75	190,359,388	20.29	198,539,318	21.33
Life Settlement Composite	9,764,633	1.07	9,749,729	1.04	10,310,047	1.10	10,321,948	1.11
Hedge Fund Composite	3,289,479	0.36	3,361,656	0.36	3,245,107	0.35	3,109,271	0.33
Gridiron Capital Multi-Asset (EMWO)	3,289,478	0.36	3,361,656	0.36	3,245,106	0.35	3,109,100	0.33
Liquid Policy Portfolio Composite	2,036,334	0.22	2,112,549	0.23	2,039,539	0.22	6,866,138	0.74
BlackRock Liquidity iShares Public Pension Fund	2,036,334	0.22	2,112,549	0.23	2,039,539	0.22	6,866,138	0.74
Cash Account	10,398,665	1.14	10,822,720	1.15	8,201,914	0.87	33,444,243	3.59



Financial Reconciliation	Market Value 07/01/2023	Net Flows	Return On Investment	Market Value 09/30/2023
Total Fund	937,773,054	-13,950,040	-14,635,954	908,629,808
SSgA S&P 500 Index	76,668,718	-1,996,637	-2,390,539	72,278,179
Fragasso Large Core (EMWO)	6,514,854	9,157	-250,073	6,264,782
Twin Capital Enhanced Equity	39,172,552	-1,967,227	-1,012,496	36,160,056
Vesper U.S. Large Cap Short-Term Reversal Strategy ETF (UTRN) (EMWO)	1,011,859	-	-66,314	945,545
Earnest Small Value	14,402,333	33,344	-622,774	13,779,559
Emerald Advisors Small Cap	13,808,919	25,013	-1,174,240	12,635,738
Emerald Advisors All Cap (EMWO)	6,159,383	9,357	-247,191	5,912,191
Ethos (EMWO)	1,779,982	-5,014	-102,113	1,672,854
CIM Small Cap (EMWO)	5,226,265	11,934	-430,351	4,798,315
Cookson Peirce (EMWO)	1,360,917	1,666	-91,941	1,268,976
US Equity Composite	166,105,782	-3,878,406	-6,388,033	155,716,195
SSgA ACWI ex US	36,485,530	6,287	-1,370,094	35,115,435
Baillie Gifford Intl Equity	57,818,555	-	-6,041,723	51,776,833
FIAM Select International Equity	30,847,483	24,777	-1,459,957	29,387,526
Segall, Bryant & Hamill	34,320,062	55,958	341,494	34,661,556
Non US Equity Composite	159,471,630	87,022	-8,530,281	150,941,350
C S McKee	34,368,823	19,164	-1,040,290	33,328,533
Federated Core Broad	27,170,913	18,841	-818,244	26,352,669
CIM Investment Mgmt	27,053,613	16,789	-191,396	26,862,216
Emstone Partners (EMWO)	5,118,349	2,452	-41,546	5,076,803
Gridiron Capital Fixed Income	13,281,285	21,383	-394,991	12,886,293
FNB (EMWO)	2,651,005	2,313	-25,045	2,625,960
Israel Bonds	7,520,136	3,716	-94,510	7,425,626
Core Fixed w Israel Bonds Composite	117,164,123	84,656	-2,606,022	114,558,101
Oaktree High Yield	55,836,105	-927,922	531,300	55,363,141
Federated High Yield	51,775,709	-	335,732	52,111,441
Sound Point	3,520,110	-2,820,063	35,007	735,054
High Yield Fixed Composite	111,131,924	-3,747,985	902,039	108,209,636



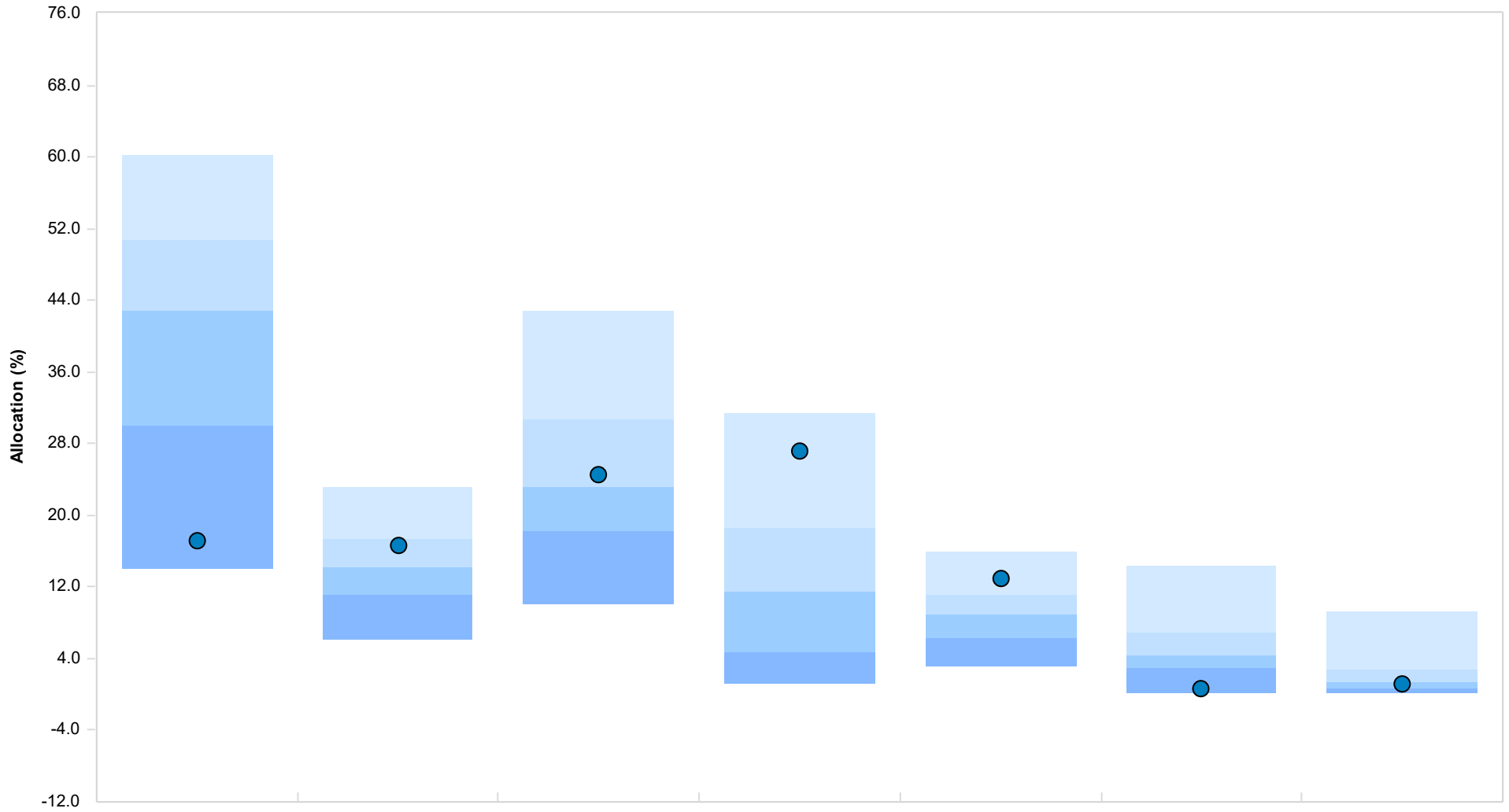
	Market Value 07/01/2023	Net Flows	Return On Investment	Market Value 09/30/2023
Morgan Stanley Prime Property Fund	81,949,355	-2,239,294	-178,992	79,531,068
Oaktree Real Estate	4,887,273	-300,000	43,309	4,630,582
Washington Alliance (EMWO)	13,369,061	-	1,146,703	14,515,764
Washington Alliance II (EMWO)	2,156,935	-	57,480	2,214,415
Siguler Guff Distressed RE	6,017,251	-715	-	6,016,536
Artemis Real Estate Partners Fund IV	470,251	282,444	-	624,222
Real Estate Composite	108,850,126	-2,257,565	1,068,500	107,532,588
ERECT Composite	10,537,135	-	-117,846	10,419,289
Infrastructure Composite	53,210,793	-643,322	926,423	53,443,315
JP Morgan Infrastructure Fund (IIF Hedged)	26,920,603	-413,256	651,288	27,158,635
IFM Global Infrastructure LP	26,290,190	-230,066	275,136	26,284,679
Private Equity Composite	185,254,885	-3,013,228	78,567	182,320,224
Life Settlement Composite	9,749,729	-	14,904	9,764,633
Gridiron Capital Multi-Asset (EMWO)	3,361,656	6,326	-72,178	3,289,478
Maplewood (EMWO)	1	-	-	1
Hedge Fund Composite	3,361,656	6,326	-72,178	3,289,479
BlackRock Liquidity iShares Public Pension Fund	2,112,549	-	-76,215	2,036,334
Liquid Policy Portfolio Composite	2,112,549	-	-76,215	2,036,334
Cash Account	10,822,720	-587,537	164,188	10,398,665

Financial Reconciliation	Market Value 01/01/2023	Net Flows	Income	Return On Investment	Market Value 09/30/2023
Total Fund	930,807,019	-40,621,114	-222,129	19,926,622	908,629,808
SSgA S&P 500 Index	67,423,331	-3,989,820	-	8,854,849	72,278,179
Fragasso Large Core (EMWO)	5,871,405	26,944	-195	393,376	6,264,782
Twin Capital Enhanced Equity	35,361,960	-3,901,101	-7,093	4,798,069	36,160,056
Vesper U.S. Large Cap Short-Term Reversal Strategy ETF (UTRN) (EMWO)	1,321,390	-323,012	-	-52,834	945,545
Earnest Small Value	13,246,310	99,958	-1,264	533,248	13,779,559
Emerald Advisors Small Cap	12,167,091	80,800	1,245	460,764	12,635,738
Emerald Advisors All Cap (EMWO)	4,632,778	25,492	-534	1,279,167	5,912,191
Ethos (EMWO)	1,650,527	-14,373	-	36,701	1,672,854
CIM Small Cap (EMWO)	4,647,267	31,602	901	147,902	4,798,315
Cookson Peirce (EMWO)	1,221,766	4,835	10	47,210	1,268,976
US Equity Composite	147,543,825	-7,958,675	-6,928	16,498,452	155,716,195
SSgA ACWI ex US	33,256,835	18,576	-	1,858,600	35,115,435
Baillie Gifford Intl Equity	50,257,224	-	-	1,519,609	51,776,833
FIAM Select International Equity	27,817,679	71,935	-	1,569,846	29,387,526
Segall, Bryant & Hamill	32,212,563	164,596	-	2,448,992	34,661,556
Non US Equity Composite	143,544,302	255,107	-	7,397,048	150,941,350
Columbus Macro (EMWO)	63	-63	-	-	-
Global Equity Composite	63	-63	-	-	-
C S McKee	33,587,514	58,726	1,200	-258,981	33,328,533
Federated Core Broad	26,563,367	57,543	8,321	-210,697	26,352,669
CIM Investment Mgmt	26,629,153	50,671	96,790	233,063	26,862,216
Emstone Partners (EMWO)	5,043,347	7,584	13,061	33,456	5,076,803
Gridiron Capital Fixed Income	12,982,933	64,378	-265,235	-96,640	12,886,293
FNB (EMWO)	2,612,198	6,961	12	13,762	2,625,960
Israel Bonds	7,459,297	11,141	-66,011	-33,670	7,425,626
Core Fixed w Israel Bonds Composite	114,877,809	257,005	-211,861	-319,708	114,558,101
Oaktree High Yield	59,143,921	-6,927,922	-	3,396,960	55,363,141
Federated High Yield	49,248,902	-	-	2,862,539	52,111,441
Sound Point	3,408,704	-2,820,063	-	146,413	735,054
High Yield Fixed Composite	111,801,527	-9,747,985	-	6,405,912	108,209,636



	Market Value 01/01/2023	Net Flows	Income	Return On Investment	Market Value 09/30/2023
Morgan Stanley Prime Property Fund	94,836,523	-8,448,110	-	-6,857,345	79,531,068
Oaktree Real Estate	5,941,114	-720,000	-	-590,532	4,630,582
Washington Alliance (EMWO)	13,336,153	-243,902	-	1,423,513	14,515,764
Washington Alliance II (EMWO)	2,131,883	-90,362	-	172,894	2,214,415
Siguler Guff Distressed RE	6,273,307	-181,882	-	-74,888	6,016,536
Artemis Real Estate Partners Fund IV	129,211	658,767	-	-24,699	624,222
Real Estate Composite	122,648,191	-9,025,490	-	-5,951,056	107,532,588
ERECT Composite	11,645,104	-	-	-1,225,815	10,419,289
Infrastructure Composite	26,465,271	23,732,520	-	3,394,062	53,443,315
JP Morgan Infrastructure Fund (IIF Hedged)	26,465,271	-1,037,414	-	1,730,778	27,158,635
IFM Global Infrastructure LP	-	24,769,934	-	1,663,284	26,284,679
Private Equity Composite	198,539,318	-9,122,697	-	-7,051,475	182,320,224
Life Settlement Composite	10,321,948	-616,568	-	59,253	9,764,633
Gridiron Capital Multi-Asset (EMWO)	3,109,100	18,570	-1,430	180,379	3,289,478
Maplewood (EMWO)	171	-170	-	-	1
Hedge Fund Composite	3,109,271	18,399	-1,430	180,379	3,289,479
BlackRock Liquidity iShares Public Pension Fund	6,866,138	-5,001,126	-	171,322	2,036,334
Liquid Policy Portfolio Composite	6,866,138	-5,001,126	-	171,322	2,036,334
MLP Composite	8	-8	-	-	-
Cash Account	33,444,243	-23,411,533	-1,909	368,248	10,398,665

Plan Sponsor TF Asset Allocation vs. All Public DB Plans



	US Equity	Global ex-US Equity	US Fixed	Alternatives	Total Real Estate	Global TAA	Cash & Equivalents
● Total Fund	17.14 (94)	16.61 (29)	24.52 (45)	27.09 (9)	12.91 (16)	0.59 (89)	1.14 (56)
5th Percentile	60.16	23.06	42.85	31.35	15.99	14.29	9.18
1st Quartile	50.66	17.26	30.60	18.52	11.16	6.98	2.76
Median	42.83	14.15	23.17	11.46	8.85	4.42	1.33
3rd Quartile	30.05	11.21	18.28	4.71	6.25	2.91	0.56
95th Percentile	13.95	6.17	10.17	1.20	3.04	0.08	0.05



Asset Allocation & Performance	Allocation		Performance(%)							
	Market Value \$	%	MTH	QTR	YTD	1 YR	3 YR	5 YR	Inception	Inception Date
Total Fund	908,629,808	100.0	-1.71	-1.64	1.95	5.54	4.48	4.38	6.98	12/1993
Total Fund Policy Index			-2.13	-1.78	2.32	6.01	5.63	5.24	7.17	
US Equity Composite	155,716,195	17.1	-5.07	-4.09	10.84	18.54	8.61	8.13	8.91	11/1993
FT Wilshire 5000 Total Market TR Index			-4.78	-3.28	12.52	20.51	9.73	9.38	9.68	
Non US Equity Composite	150,941,350	16.6	-4.01	-5.40	4.98	20.98	0.68	1.91	4.46	01/2001
Non US Equity Policy Index			-3.16	-3.77	5.34	20.39	3.86	2.62	3.84	
Core Fixed w Israel Bonds Composite*	114,558,101	12.6	-2.02	-2.30	-0.50	1.49	-3.55	1.02	6.22	01/1983
Bmbg. U.S. Aggregate Index			-2.54	-3.23	-1.21	0.64	-5.21	0.10	6.15	
High Yield Fixed Composite	108,209,636	11.9	-1.13	0.74	5.63	10.53	2.08	2.77	5.74	04/2008
FTSE High Yield Market Capped Index			-1.07	0.67	6.27	10.55	1.95	2.72	6.02	
Real Estate Composite	107,532,588	11.8	0.98	0.86	-4.97	-6.70	6.73	5.55	8.24	04/2003
NCREIF Fund Index-ODCE (VW) (Net)			-2.16	-2.16	-8.19	-12.93	6.17	4.71	6.68	
ERECT Composite	10,419,289	1.1	-1.12	-1.12	-10.53	-9.12	1.88	4.68	5.70	09/2010
CPI - All Urban Consumers (SA)			0.40	1.20	2.84	3.69	5.75	4.04	2.67	
Total Infrastructure Composite	53,443,315	5.9	1.99	1.65	6.41	12.33	N/A	N/A	10.00	07/2022
CPI + 3%			0.64	1.95	5.14	6.80	8.92	7.17	6.55	
Total Private Equity w Life Settlement Composite*	192,084,858	21.1	0.23	0.05	-3.42	-5.66	9.22	8.65	7.10	04/2003
Total Private Equity Policy Index			0.23	0.05	-3.40	-5.64	10.00	9.11	7.21	
Hedge Fund Composite	3,289,479	0.4	-3.05	-2.33	5.21	10.12	4.44	2.46	2.11	04/2003
90 Day T-Bill Index + 3%			0.70	2.06	5.91	7.59	4.75	4.76	4.40	
Liquid Policy Portfolio Composite	2,036,334	0.2	-4.02	-3.61	5.18	13.29	N/A	N/A	-0.02	03/2021
Liquid Policy Benchmark			-3.90	-3.49	5.08	13.25	N/A	N/A	-0.11	
Cash Account	10,398,665	1.1	0.45	1.29	3.89	5.33	2.29	2.07	1.15	01/2012
90 Day U.S. Treasury Bill			0.46	1.31	3.60	4.47	1.70	1.72	0.95	

* All returns prior to March 2021 are from the original Core Fixed Composite and the Private Equity Composite, respectively. All returns from March 2021 and forward are from the composites inclusive of the Israel Bonds and Life Settlement funds, respectively



Asset Allocation & Performance	Allocation		Performance(%)						
	Market Value \$	%	QTR	YTD	1 YR	3 YR	5 YR	Inception	Inception Date
Total Fund	908,629,808	100.0	-1.64	1.95	5.54	4.48	4.38	6.98	12/1993
Total Fund Policy Index			-1.78	2.32	6.01	5.63	5.24	7.17	
US Equity Composite	155,716,195	17.1	-4.09	10.84	18.54	8.61	8.13	8.91	11/1993
FT Wilshire 5000 Total Market TR Index			-3.28	12.52	20.51	9.73	9.38	9.68	
SSgA S&P 500 Index	72,278,179	8.0	-3.27	13.04	21.58	10.15	9.93	8.81	11/2007
S&P 500 Index			-3.27	13.07	21.62	10.15	9.92	8.78	
Fragasso Large Core (EMWO)	6,264,782	0.7	-3.98	6.25	12.25	4.70	6.46	9.96	09/2012
S&P 500 Index			-3.27	13.07	21.62	10.15	9.92	12.73	
Twin Capital Enhanced Equity	36,160,056	4.0	-2.96	13.17	20.16	9.59	8.96	9.07	01/2006
S&P 500 Index			-3.27	13.07	21.62	10.15	9.92	9.36	
Vesper U.S. Large Cap Short-Term Reversal Strategy ETF (UTRN) (EMWO)	945,545	0.1	-6.55	-5.38	0.41	N/A	N/A	-12.46	01/2022
S&P 500 Index			-3.27	13.07	21.62	10.15	9.92	-4.30	
Earnest Small Value	13,779,559	1.5	-4.56	3.30	14.63	11.55	5.29	11.74	06/2009
Russell 2000 Value Index			-2.96	-0.53	7.84	13.32	2.59	10.06	
Emerald Advisors Small Cap	12,635,738	1.4	-8.68	3.21	9.97	1.02	2.50	9.32	11/2004
Russell 2000 Growth Index			-7.32	5.24	9.59	1.09	1.55	7.98	
Emerald Advisors All Cap (EMWO)	5,912,191	0.7	-4.17	27.06	25.60	7.83	11.69	14.03	10/2015
Russell 3000 Growth Index			-3.34	23.77	26.63	7.54	11.70	14.87	
Ethos (EMWO)	1,672,854	0.2	-5.74	2.20	9.77	5.04	6.74	9.90	08/2016
S&P 500 Index			-3.27	13.07	21.62	10.15	9.92	11.96	
CIM Small Cap (EMWO)	4,798,315	0.5	-8.41	2.60	9.08	3.54	-0.57	3.67	01/2014
Russell 2000 Index			-5.13	2.54	8.93	7.16	2.40	5.91	
Cookson Peirce (EMWO)	1,268,976	0.1	-6.88	3.48	11.34	6.95	N/A	10.42	12/2018
Russell 3000 Index			-3.25	12.39	20.46	9.38	9.14	10.76	
Non US Equity Composite	150,941,350	16.6	-5.40	4.98	20.98	0.68	1.91	4.46	01/2001
Non US Equity Policy Index			-3.77	5.34	20.39	3.86	2.62	3.84	
SSgA ACWI ex US	35,115,435	3.9	-3.77	5.53	20.57	4.01	2.81	3.20	05/2015
MSCI AC World ex USA (Net)			-3.77	5.34	20.39	3.74	2.58	2.87	



	Allocation		Performance(%)						
	Market Value \$	%	QTR	YTD	1 YR	3 YR	5 YR	Inception	Inception Date
Baillie Gifford Intl Equity MSCI AC World ex USA (Net)	51,776,833	5.7	-10.45 -3.77	3.02 5.34	18.76 20.39	-5.69 3.74	0.97 2.58	6.30 4.78	08/2009
FIAM Select International Equity FIAM Policy Index	29,387,526	3.2	-4.81 -3.77	5.39 5.34	20.15 20.39	3.23 3.74	3.35 2.58	4.20 3.77	01/2001
Segall, Bryant & Hamill MSCI EAFE Small Cap (net) Index	34,661,556	3.8	0.83 -3.51	7.09 1.82	25.66 17.90	7.24 1.10	-0.03 0.76	3.03 3.82	05/2015
Core Fixed w Israel Bonds Composite* Blmbg. U.S. Aggregate Index	114,558,101	12.6	-2.30 -3.23	-0.50 -1.21	1.49 0.64	-3.55 -5.21	1.02 0.10	6.22 6.15	01/1983
C S McKee Blmbg. U.S. Aggregate Index	33,328,533	3.7	-3.08 -3.23	-0.94 -1.21	1.27 0.64	-4.93 -5.21	0.40 0.10	6.50 6.15	01/1983
Federated Core Broad Blmbg. U.S. Aggregate Index	26,352,669	2.9	-3.08 -3.23	-1.01 -1.21	0.77 0.64	-4.01 -5.21	1.27 0.10	3.59 2.79	09/2006
CIM Investment Mgmt Bloomberg Intermediate US Govt/Credit Idx	26,862,216	3.0	-0.77 -0.83	0.69 0.65	2.23 2.20	-2.78 -2.93	0.94 1.02	2.48 2.78	11/2005
Emstone Partners (EMWO) Emstone Policy Index	5,076,803	0.6	-0.86 -0.87	0.51 0.89	1.92 2.82	-3.06 -2.80	0.24 1.18	0.73 1.26	08/2015
Gridiron Capital Fixed Income Blmbg. U.S. Aggregate Index	12,886,293	1.4	-3.13 -3.23	-1.23 -1.21	4.94 0.64	1.05 -5.21	2.67 0.10	2.07 0.33	02/2017
FNB (EMWO) Bloomberg Intermed Aggregate Index	2,625,960	0.3	-1.03 -1.89	0.26 -0.30	1.52 1.42	-2.71 -3.66	0.88 0.42	0.60 0.30	07/2017
Israel Bonds	7,425,626	0.8	-1.31	-0.60	0.47	-0.61	1.23	2.14	01/2012
High Yield Fixed Composite FTSE High Yield Market Capped Index	108,209,636	11.9	0.74 0.67	5.63 6.27	10.53 10.55	2.08 1.95	2.77 2.72	5.74 6.02	04/2008
Oaktree High Yield FTSE High Yield Market Capped Index	55,363,141	6.1	0.81 0.67	5.56 6.27	11.03 10.55	2.44 1.95	2.46 2.72	5.49 6.02	04/2008
Federated High Yield Blmbg. U.S. High Yield - 2% Issuer Cap	52,111,441	5.7	0.65 0.46	5.81 5.87	10.30 10.28	1.57 1.75	3.25 2.95	3.29 3.17	07/2017
Sound Point Credit Suisse Leveraged Loan Index	735,054	0.1	2.02 3.37	5.36 9.91	6.58 12.47	3.29 5.91	2.06 4.31	3.63 4.30	08/2013

* All returns prior to March 2021 are from the original Core Fixed Composite. All returns March 2021 and forward are from the composite inclusive of the Israel Bonds.



	Allocation		Performance(%)						
	Market Value \$	%	QTR	YTD	1 YR	3 YR	5 YR	Inception	Inception Date
Real Estate Composite	107,532,588	11.8	0.86	-4.97	-6.70	6.73	5.55	8.24	04/2003
NCREIF Fund Index-ODCE (VW) (Net)			-2.16	-8.19	-12.93	6.17	4.71	6.68	
Morgan Stanley Prime Property Fund	79,531,068	8.8	-0.22	-7.33	-7.33	7.98	6.34	8.32	04/2003
NCREIF Fund Index-ODCE (VW) (Net)			-2.16	-8.19	-12.93	6.17	4.71	6.68	
Oaktree Real Estate	4,630,582	0.5	0.89	-9.87	-13.24	-7.33	-5.25	2.04	08/2013
Washington Alliance (EMWO)	14,515,764	1.6	8.58	10.83	-1.54	9.52	8.33	12.15	08/2013
Washington Alliance II (EMWO)	2,214,415	0.2	2.66	8.22	8.16	15.86	N/A	13.12	03/2020
Siguler Guff Distressed RE	6,016,536	0.7	0.00	-1.23	-4.75	0.13	0.85	4.71	03/2014
Artemis Real Estate Partners Fund IV	624,222	0.1	-19.69	-42.84	N/A	N/A	N/A	-42.84	01/2023
ERECT Composite	10,419,289	1.1	-1.12	-10.53	-9.12	1.88	4.68	5.70	09/2010
CPI - All Urban Consumers (SA)			1.20	2.84	3.69	5.75	4.04	2.67	
Total Infrastructure Composite	53,443,315	5.9	1.65	6.41	12.33	N/A	N/A	10.00	07/2022
CPI + 3%			1.95	5.14	6.80	8.92	7.17	6.55	
JP Morgan Infrastructure Fund (IIF Hedged)	27,158,635	3.0	2.42	6.70	12.64	N/A	N/A	10.24	07/2022
CPI + 3%			1.95	5.14	6.80	8.92	7.17	6.55	
IFM Global Infrastructure LP	26,284,679	2.9	1.06	N/A	N/A	N/A	N/A	N/A	01/2023
CPI + 3%			1.95	5.14	6.80	8.92	7.17	5.14	
Private Equity Composite	182,320,224	20.1	0.05	-3.63	-5.94	9.78	8.98	7.18	04/2003
Private Equity Policy Index			0.05	-3.63	-5.94	9.78	8.98	7.18	
Life Settlement Composite	9,764,633	1.1	0.15	0.62	-0.16	-3.45	-2.87	4.67	09/2009
Hedge Fund Composite	3,289,479	0.4	-2.33	5.21	10.12	4.44	2.46	2.11	04/2003
90 Day T-Bill Index + 3%			2.06	5.91	7.59	4.75	4.76	4.40	
Gridiron Capital Multi-Asset (EMWO)	3,289,478	0.4	-2.33	5.21	10.12	4.44	N/A	4.66	02/2019
HFRI FoF Composite Lagged			0.52	2.82	4.60	3.77	3.38	4.19	
Liquid Policy Portfolio Composite	2,036,334	0.2	-3.61	5.18	13.29	N/A	N/A	-0.02	03/2021
Liquid Policy Benchmark			-3.49	5.08	13.25	N/A	N/A	-0.11	
BlackRock Liquidity iShares Public Pension Fund	2,036,334	0.2	-3.61	5.18	13.29	N/A	N/A	-0.83	04/2021
Liquid Policy Benchmark			-3.49	5.08	13.25	N/A	N/A	-0.89	
Cash Account	10,398,665	1.1	1.29	3.89	5.33	2.29	2.07	1.15	01/2012

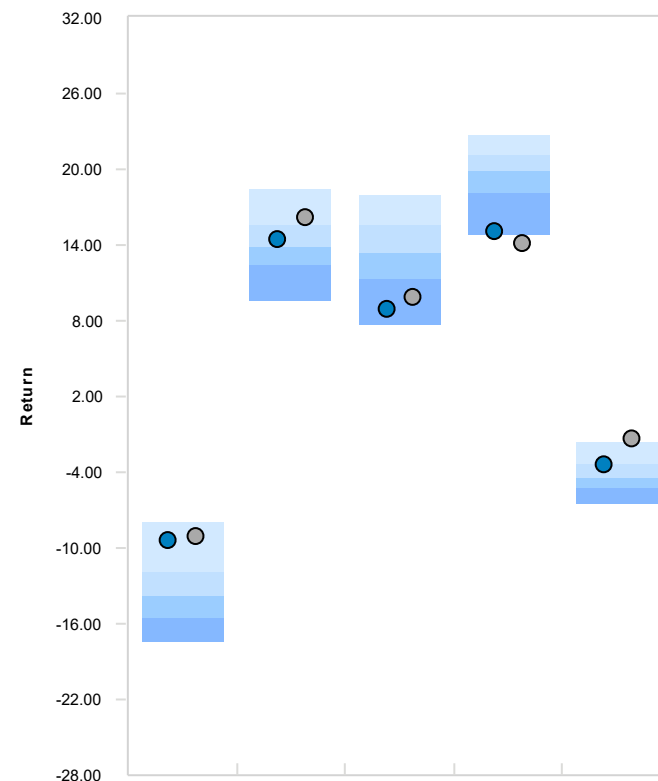
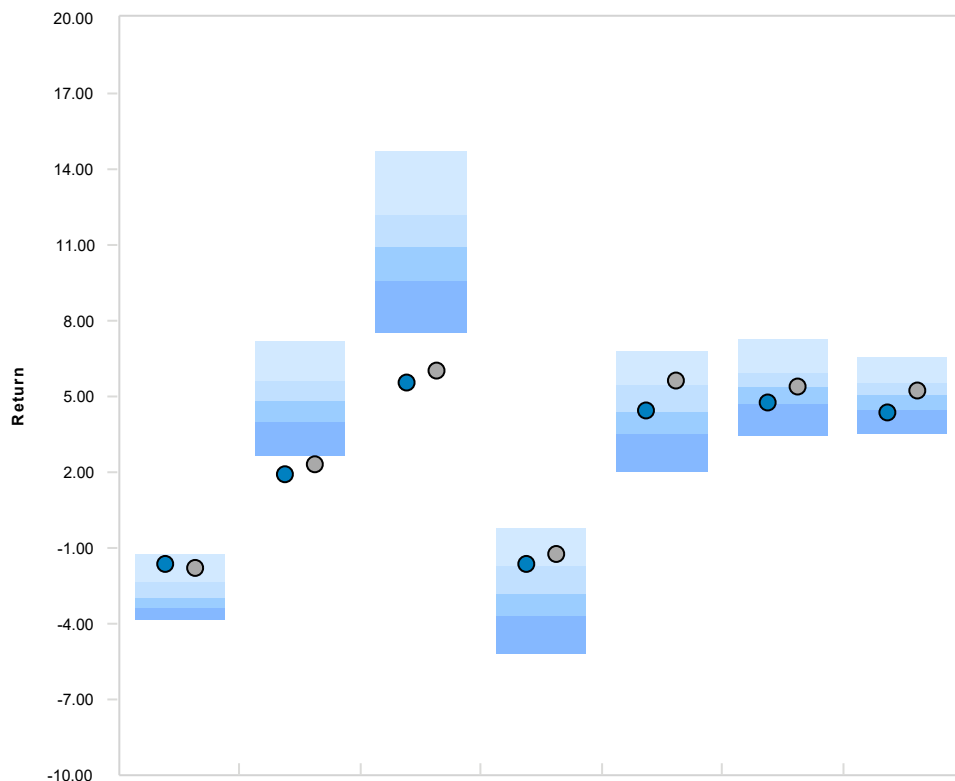


Comparative Performance - IRR
Private Real Estate Accounts
As of September 30, 2023

Comparative Performance - IRR							
	1 YR	3 YR	5 YR	7 YR	Inception	Inception Date	
Oaktree Real Estate NEW	-14.96	-7.85	-5.29	-0.85	4.73	09/18/2013	
Siguler Guff Distressed RE	-4.75	1.40	1.63	7.67	6.75	06/30/2014	
Washington Alliance (EMWO)	-1.91	9.69	8.39	14.55	13.63	03/31/2014	
Washington Alliance II (EMWO)	8.05	15.14	N/A	N/A	13.28	03/13/2020	
Artemis Real Estate Partners Fund IV	N/A	N/A	N/A	N/A	-37.60	12/31/2022	



Plan Sponsor Peer Group Analysis - All Public DB Plans



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Total Fund	-1.64 (9)	1.95 (98)	5.54 (99)	-1.65 (25)	4.48 (47)	4.73 (73)	4.38 (78)
● Total Fund Policy Index	-1.78 (12)	2.32 (97)	6.01 (98)	-1.20 (17)	5.63 (21)	5.41 (51)	5.24 (43)
Median	-2.94	4.86	10.93	-2.84	4.36	5.42	5.09

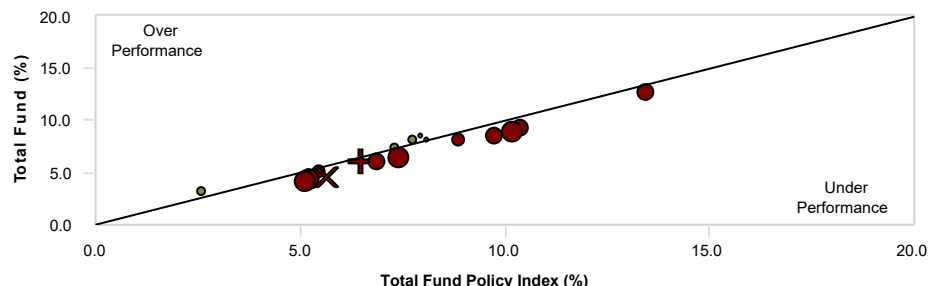
	2022	2021	2020	2019	2018
● Total Fund	-9.32 (10)	14.48 (39)	8.93 (92)	15.16 (94)	-3.36 (25)
● Total Fund Policy Index	-9.00 (8)	16.27 (18)	9.82 (88)	14.24 (97)	-1.27 (4)
Median	-13.83	13.82	13.34	19.90	-4.50

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Total Fund	1.43	2.19	3.52	-3.69	-6.80	-2.40
Total Fund Policy Index	1.55	2.60	3.60	-3.83	-6.95	-1.85

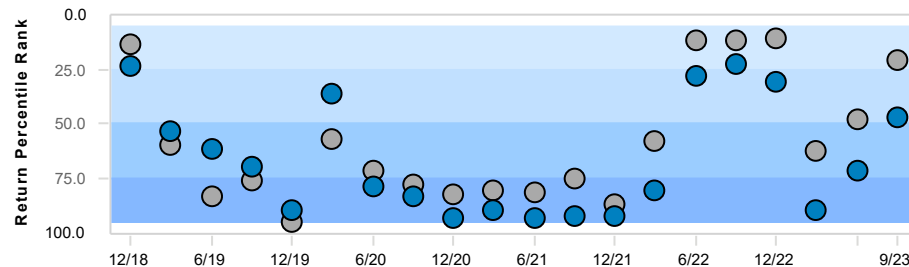


3 Yr Rolling Under/Over Performance - 5 Years



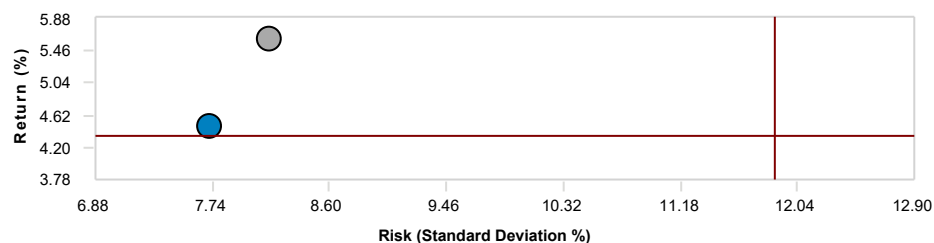
- Over Performance
- Under Performance
- + Earliest Date
- X Latest Date

3 Yr Rolling Percentile Ranking - 5 Years



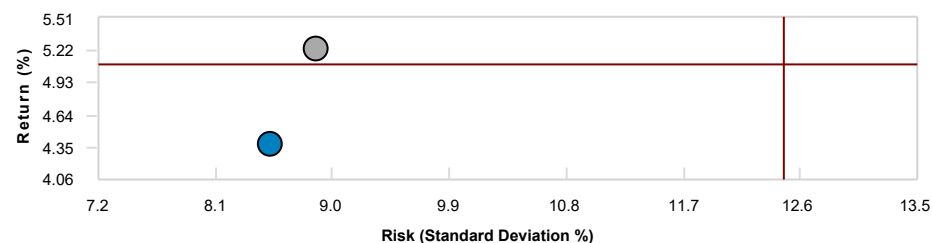
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
● Total Fund	20	2 (10%)	4 (20%)	4 (20%)	10 (50%)
● Total Fund Policy Index	20	5 (25%)	1 (5%)	6 (30%)	8 (40%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
● Total Fund	4.48	7.72
● Total Fund Policy Index	5.63	8.16
— Median	4.36	11.88

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
● Total Fund	4.38	8.51
● Total Fund Policy Index	5.24	8.87
— Median	5.09	12.47

Historical Statistics - 3 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Fund	0.92	93.01	101.05	-0.79	-1.24	0.38	0.94	4.94
Total Fund Policy Index	0.00	100.00	100.00	0.00	N/A	0.50	1.00	5.02

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Fund	1.31	95.85	102.35	-0.57	-0.65	0.34	0.95	5.88
Total Fund Policy Index	0.00	100.00	100.00	0.00	N/A	0.42	1.00	5.90



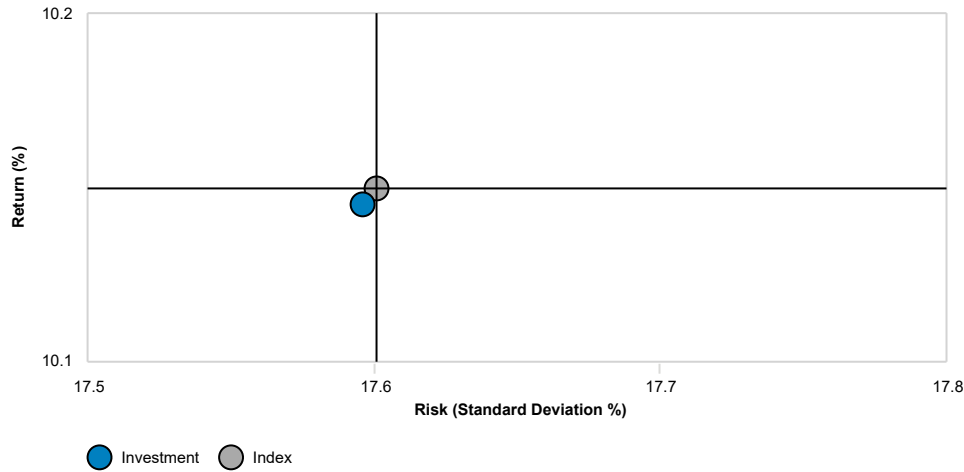
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	10.15	17.60	0.54	99.93	8	99.91	4
Index	10.15	17.60	0.54	100.00	8	100.00	4

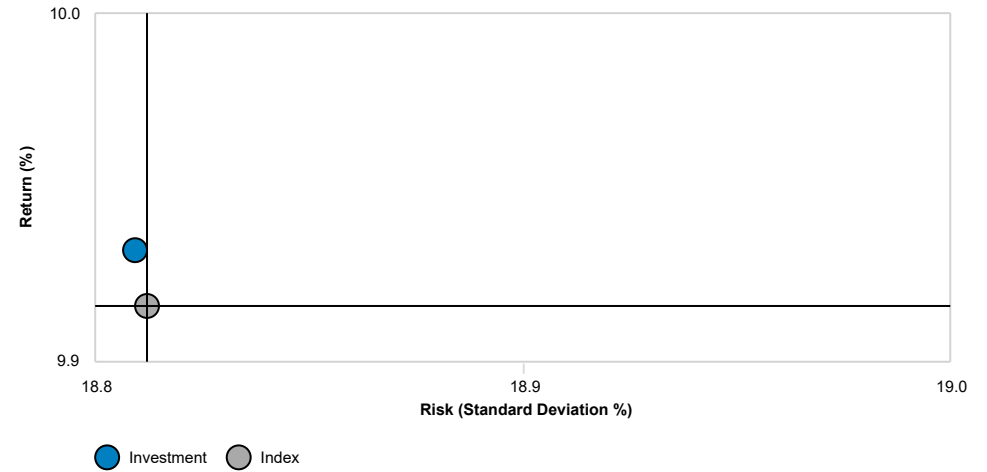
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	9.93	18.81	0.51	100.01	14	99.95	6
Index	9.92	18.81	0.51	100.00	14	100.00	6

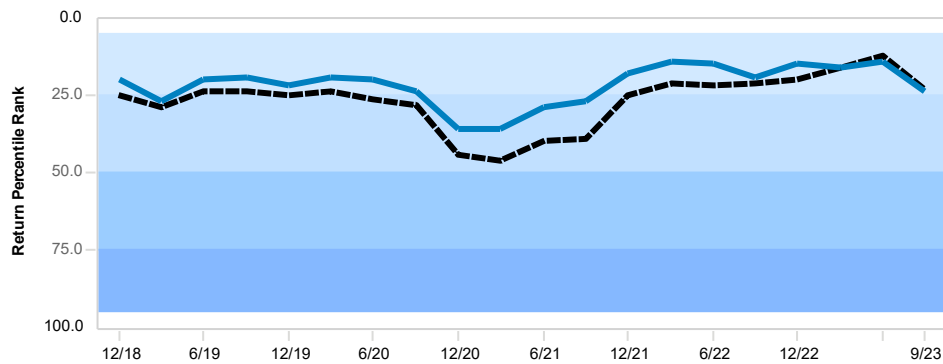
Risk and Return 3 Years



Risk and Return 5 Years

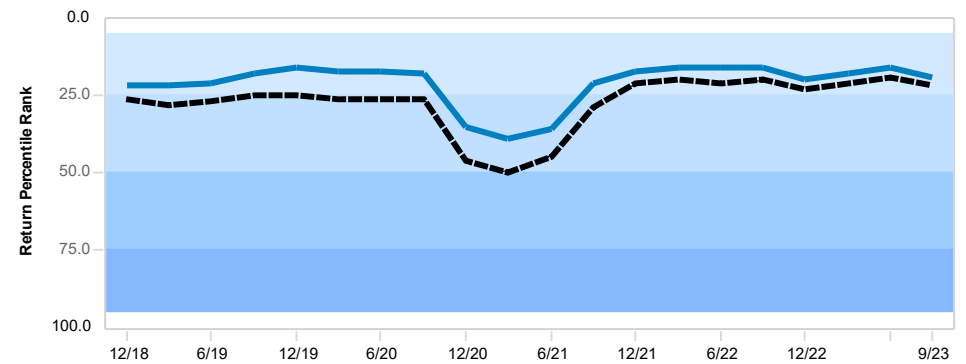


3 Year Rolling Percentile Rank IM U.S. Large Cap Index Equity (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	15 (75%)	5 (25%)	0 (0%)	0 (0%)
Index	20	13 (65%)	7 (35%)	0 (0%)	0 (0%)

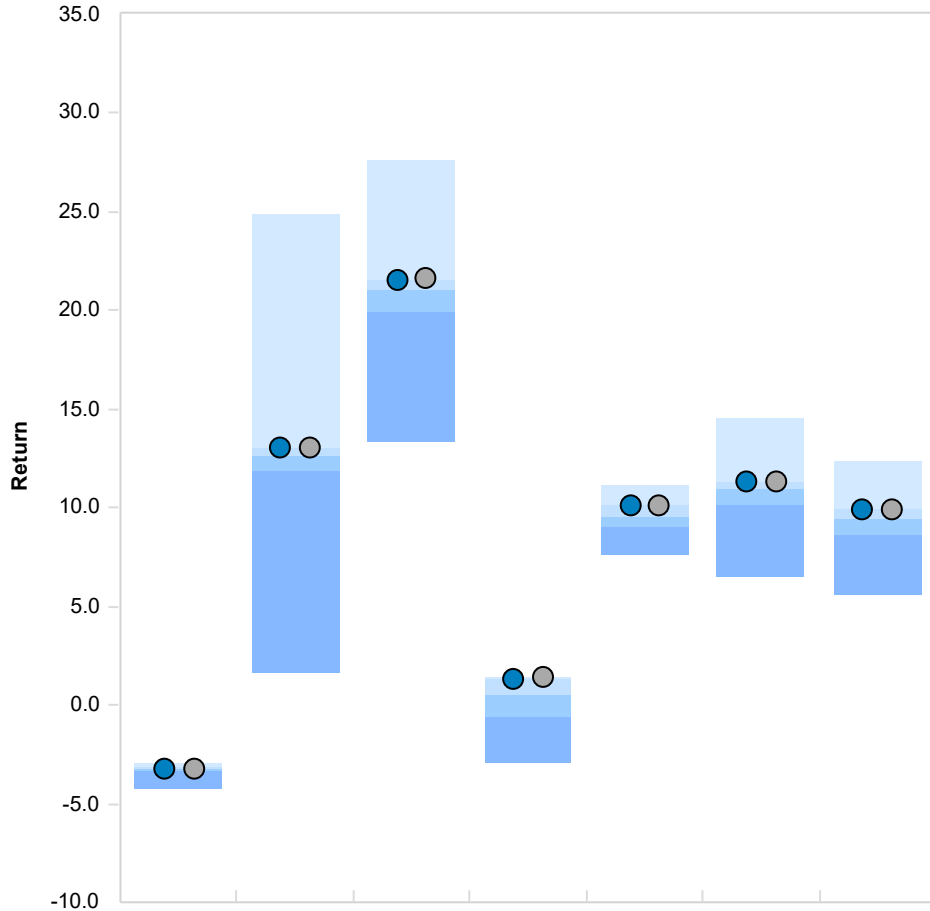
5 Year Rolling Percentile Rank IM U.S. Large Cap Index Equity (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	17 (85%)	3 (15%)	0 (0%)	0 (0%)
Index	20	10 (50%)	10 (50%)	0 (0%)	0 (0%)

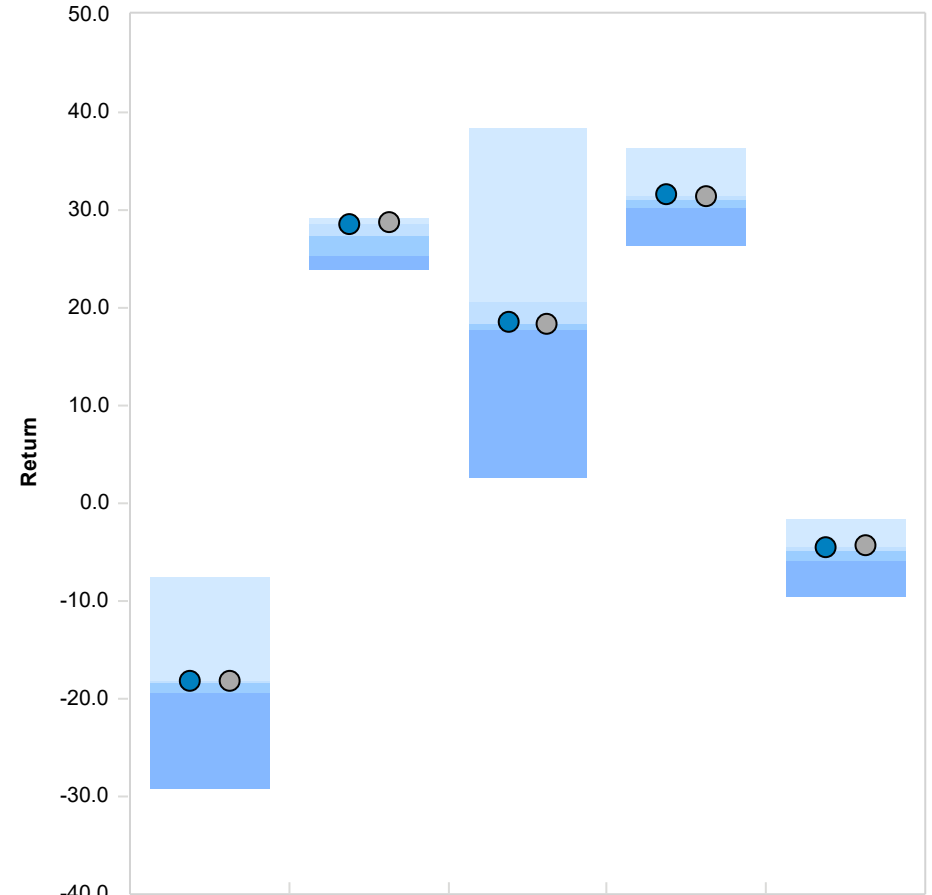


Peer Group Analysis - IM U.S. Large Cap Index Equity (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-3.27 (42)	13.04 (25)	21.58 (23)	1.36 (17)	10.15 (24)	11.38 (17)	9.93 (19)
● Index	-3.27 (53)	13.07 (16)	21.62 (14)	1.39 (7)	10.15 (23)	11.38 (18)	9.92 (22)
Median	-3.27	12.61	21.01	0.53	9.57	10.96	9.41

Peer Group Analysis - IM U.S. Large Cap Index Equity (SA+CF)



	2022	2021	2020	2019	2018
● Investment	-18.12 (34)	28.65 (19)	18.53 (47)	31.54 (17)	-4.40 (24)
● Index	-18.11 (27)	28.71 (10)	18.40 (54)	31.49 (26)	-4.38 (22)
Median	-18.35	27.44	18.45	31.07	-4.84

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	8.74 (24)	7.47 (36)	7.56 (26)	-4.89 (58)	-16.11 (38)	-4.60 (29)
Index	8.74 (15)	7.50 (17)	7.56 (25)	-4.88 (51)	-16.10 (32)	-4.60 (27)
Median	8.54	7.41	7.40	-4.88	-16.19	-4.68



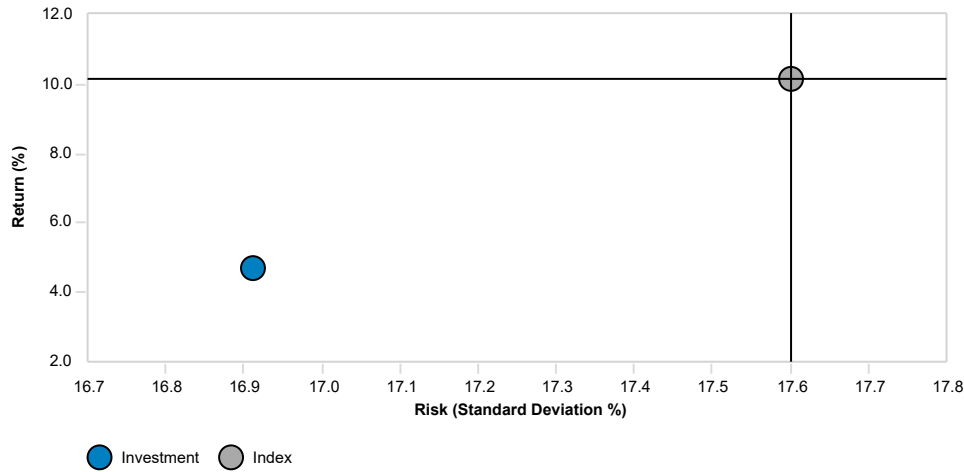
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	4.70	16.91	0.26	86.23	8	104.02	4
Index	10.15	17.60	0.54	100.00	8	100.00	4

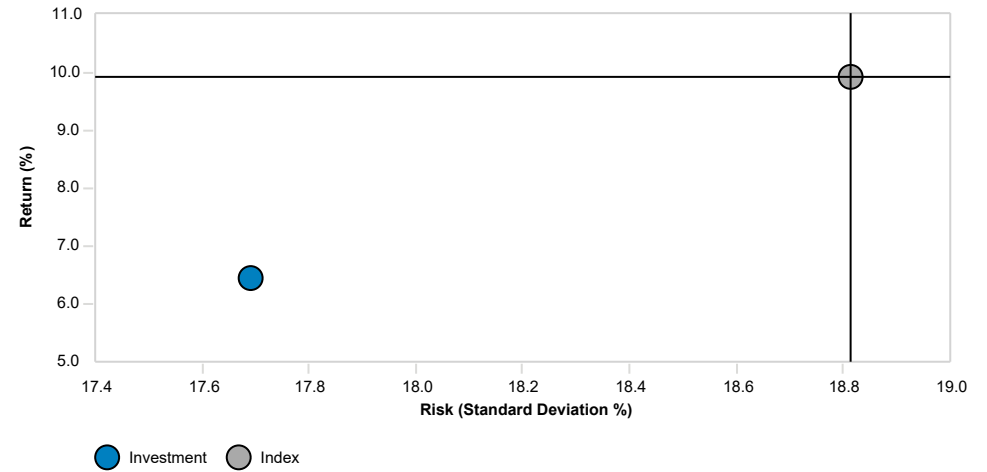
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	6.46	17.69	0.35	88.22	14	97.71	6
Index	9.92	18.81	0.51	100.00	14	100.00	6

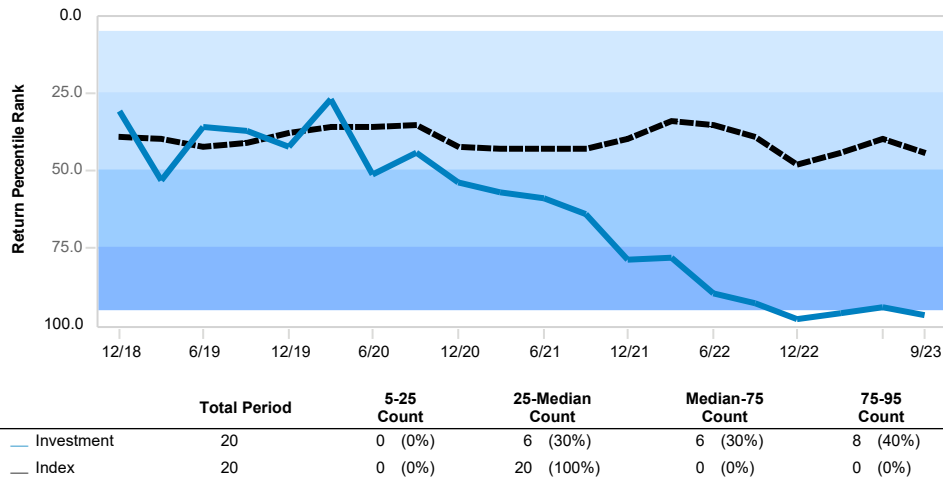
Risk and Return 3 Years



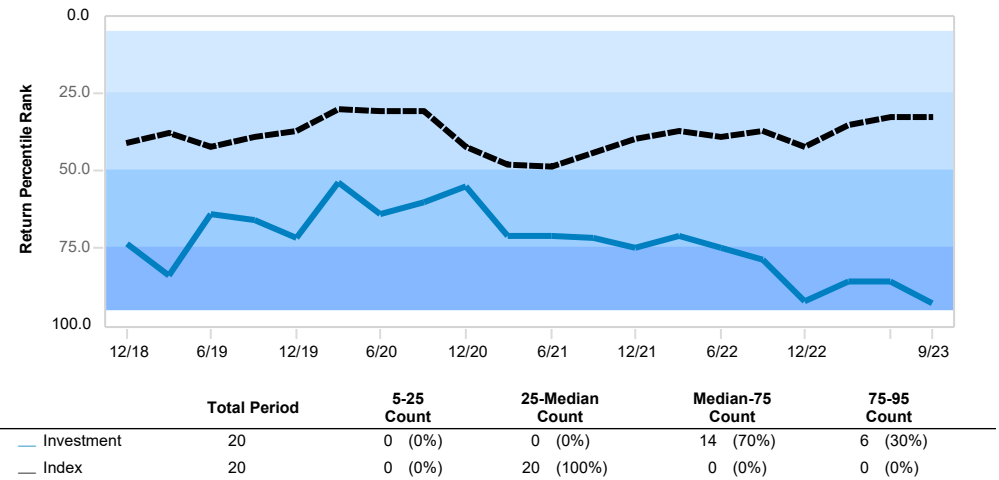
Risk and Return 5 Years



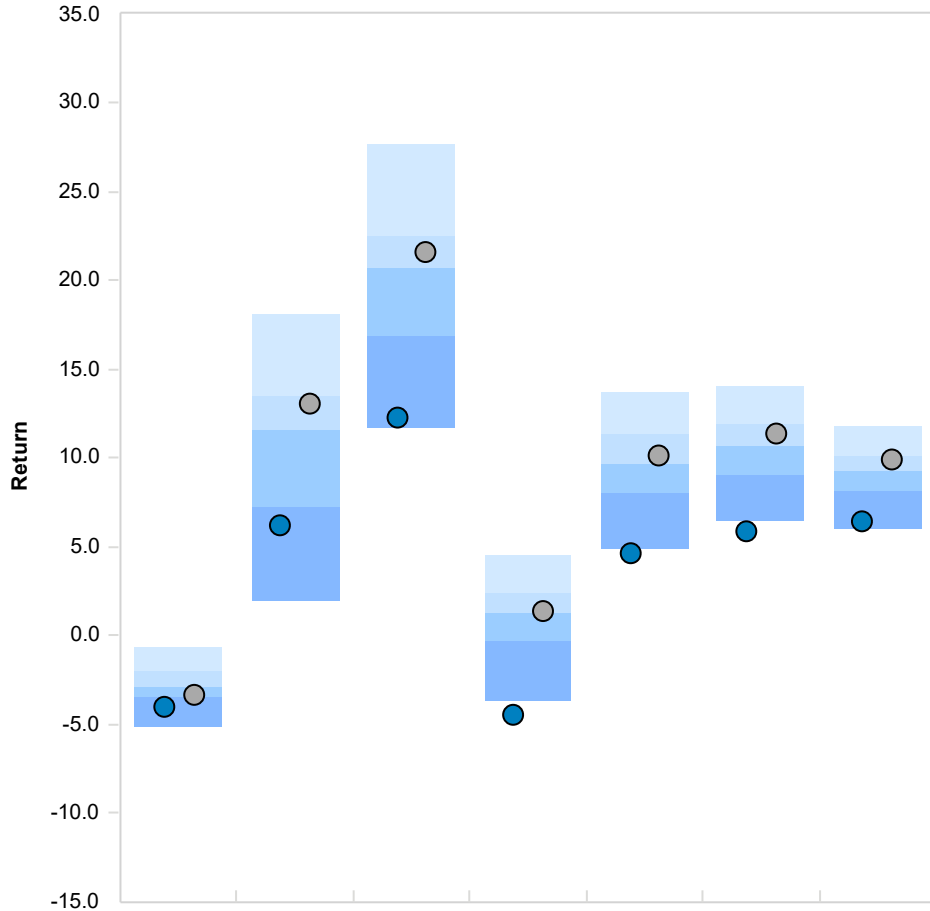
3 Year Rolling Percentile Rank IM U.S. Large Cap Core Equity (SA+CF)



5 Year Rolling Percentile Rank IM U.S. Large Cap Core Equity (SA+CF)

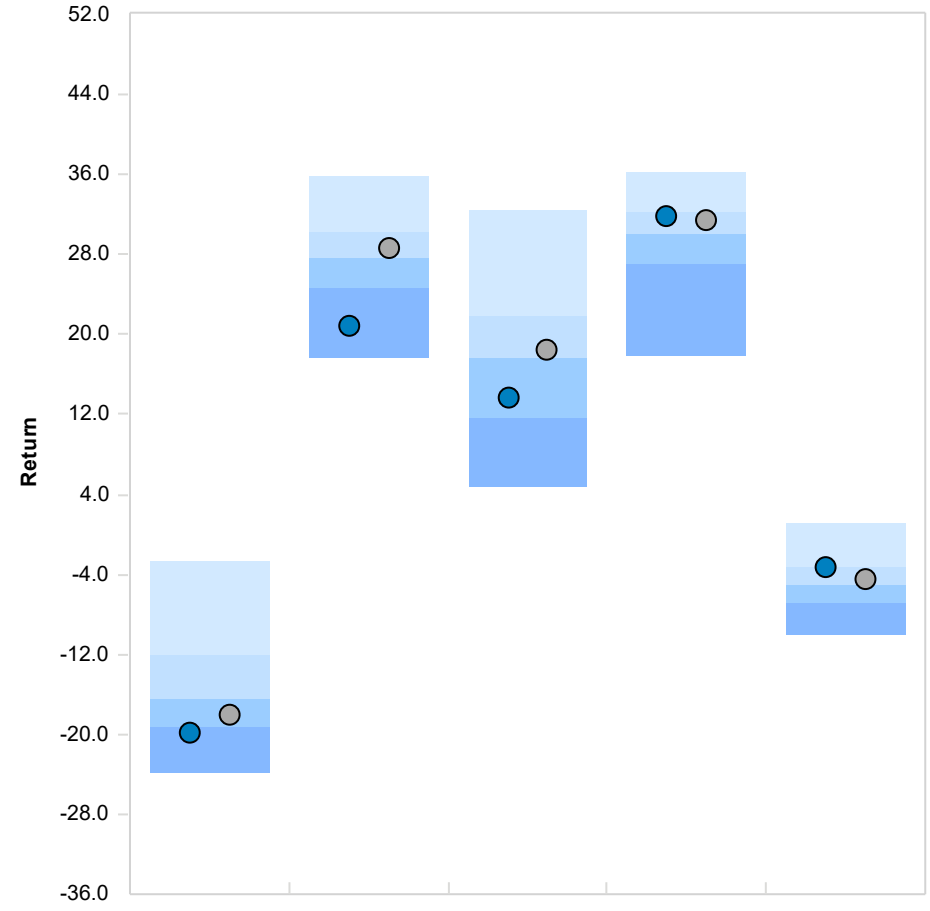


Peer Group Analysis - IM U.S. Large Cap Core Equity (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-3.98 (84)	6.25 (80)	12.25 (94)	-4.41 (97)	4.70 (97)	5.92 (96)	6.46 (93)
● Index	-3.27 (72)	13.07 (32)	21.62 (35)	1.39 (47)	10.15 (44)	11.38 (33)	9.92 (33)
Median	-2.89	11.68	20.76	1.31	9.77	10.74	9.22

Peer Group Analysis - IM U.S. Large Cap Core Equity (SA+CF)



	2022	2021	2020	2019	2018
● Investment	-19.85 (84)	20.79 (89)	13.61 (69)	31.87 (29)	-3.35 (26)
● Index	-18.11 (66)	28.71 (37)	18.40 (46)	31.49 (34)	-4.38 (40)
Median	-16.49	27.75	17.65	30.06	-5.05

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	5.37 (81)	5.01 (68)	5.66 (89)	-6.45 (93)	-15.38 (55)	-4.17 (39)
Index	8.74 (29)	7.50 (26)	7.56 (62)	-4.88 (55)	-16.10 (68)	-4.60 (50)
Median	7.81	6.39	7.97	-4.80	-15.08	-4.60



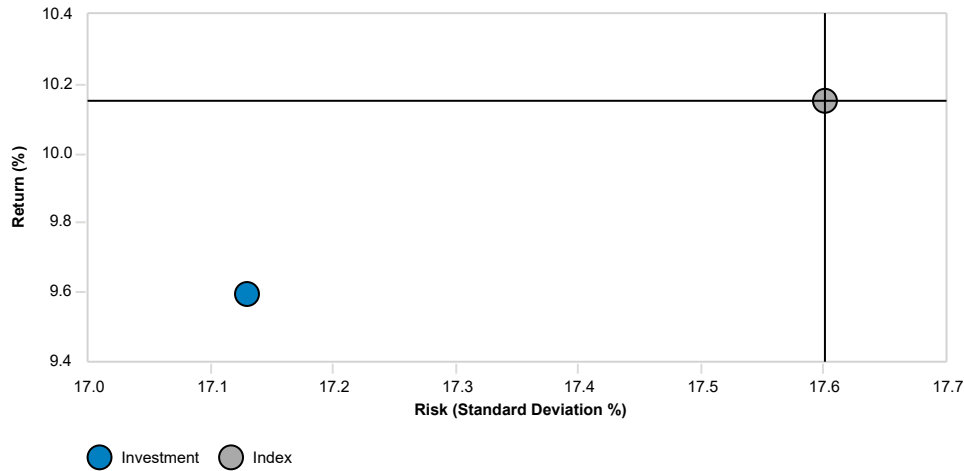
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	9.59	17.13	0.52	96.24	8	97.05	4
Index	10.15	17.60	0.54	100.00	8	100.00	4

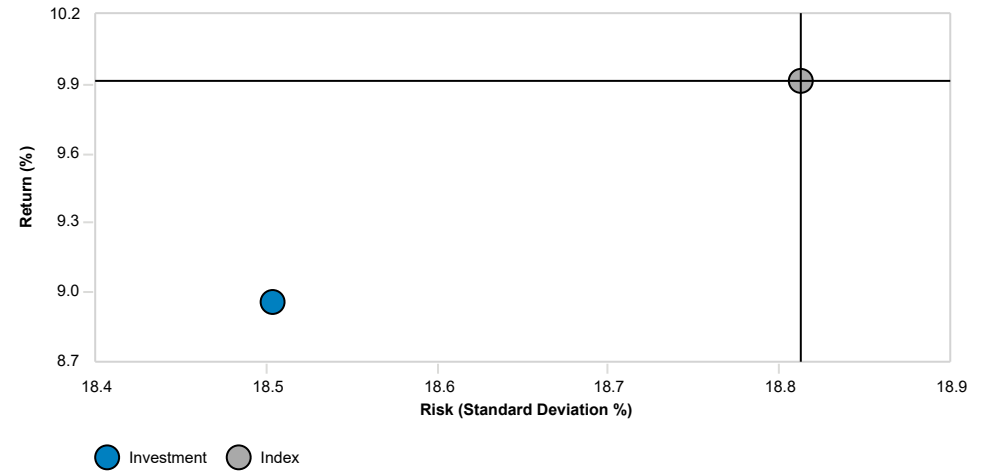
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	8.96	18.50	0.46	96.58	14	99.09	6
Index	9.92	18.81	0.51	100.00	14	100.00	6

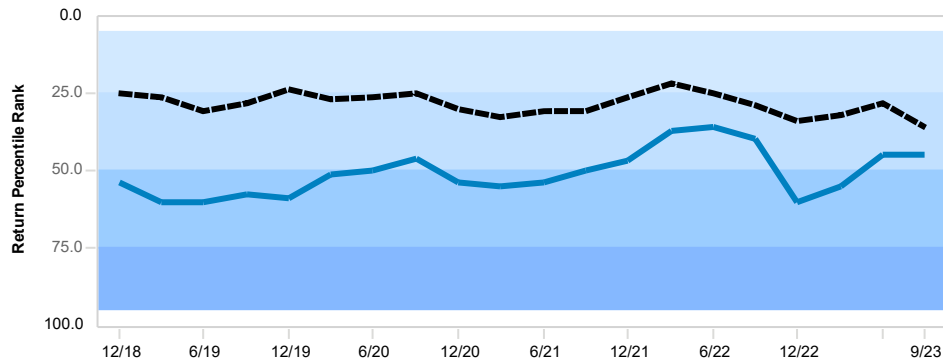
Risk and Return 3 Years



Risk and Return 5 Years

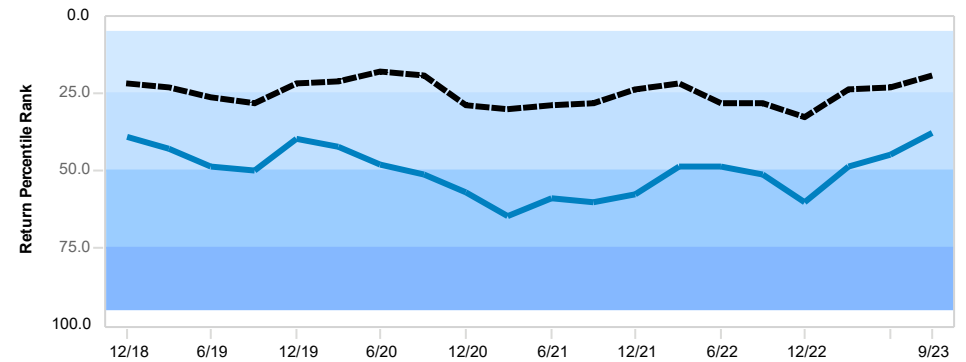


3 Year Rolling Percentile Rank IM U.S. Large Cap Core Equity (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	0 (0%)	9 (45%)	11 (55%)	0 (0%)
Index	20	5 (25%)	15 (75%)	0 (0%)	0 (0%)

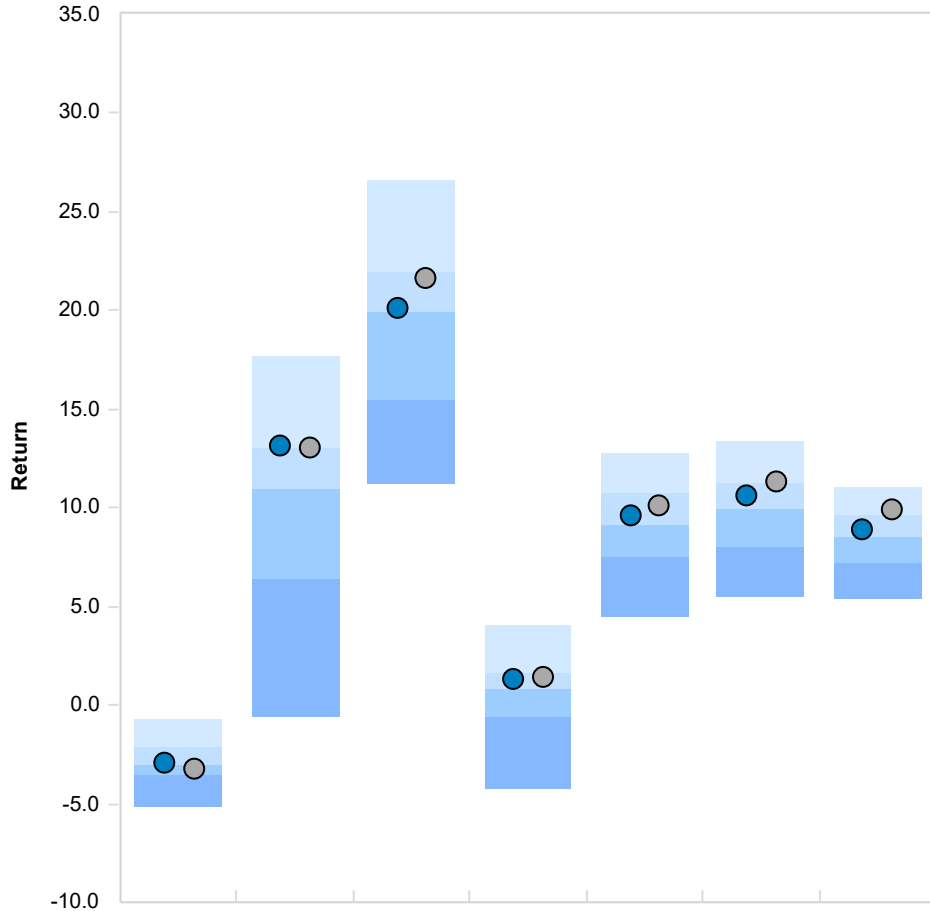
5 Year Rolling Percentile Rank IM U.S. Large Cap Core Equity (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	0 (0%)	12 (60%)	8 (40%)	0 (0%)
Index	20	11 (55%)	9 (45%)	0 (0%)	0 (0%)

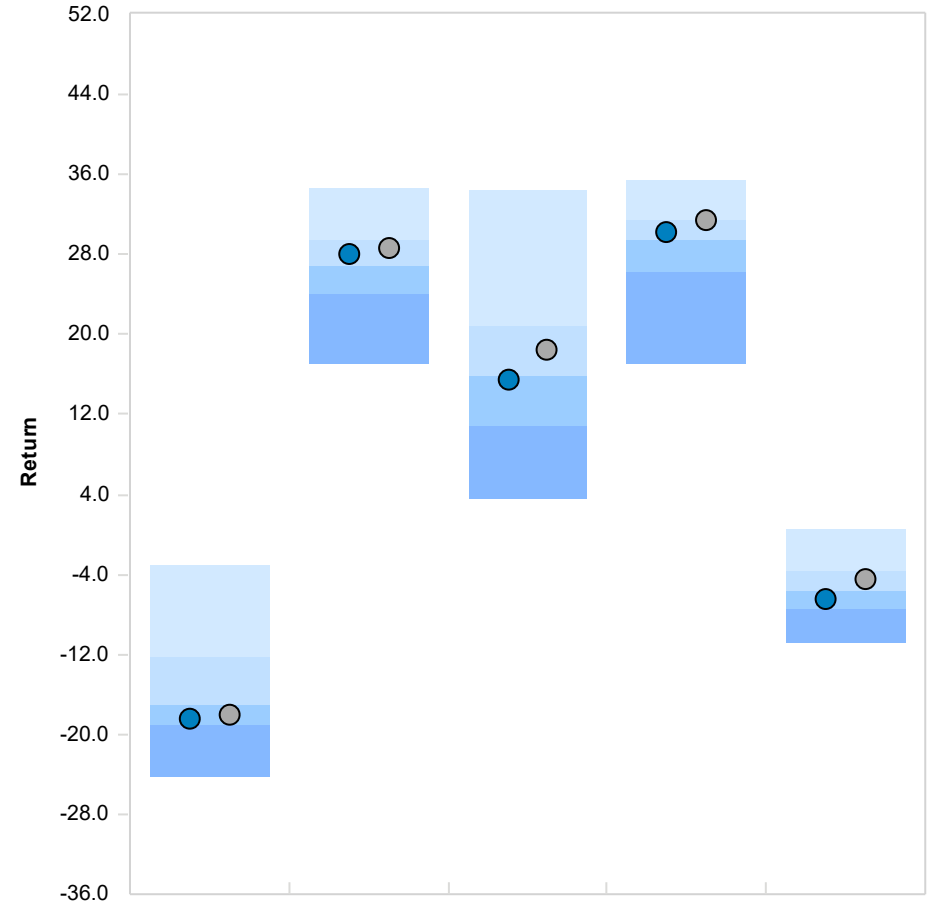


Peer Group Analysis - IM U.S. Large Cap Core Equity (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-2.96 (48)	13.17 (24)	20.16 (50)	1.33 (36)	9.59 (45)	10.58 (37)	8.96 (38)
● Index	-3.27 (64)	13.07 (25)	21.62 (29)	1.39 (33)	10.15 (36)	11.38 (24)	9.92 (19)
Median	-3.02	10.88	19.95	0.82	9.08	9.94	8.53

Peer Group Analysis - IM U.S. Large Cap Core Equity (SA+CF)



	2022	2021	2020	2019	2018
● Investment	-18.40 (65)	28.13 (38)	15.56 (53)	30.24 (38)	-6.43 (62)
● Index	-18.11 (61)	28.71 (30)	18.40 (41)	31.49 (26)	-4.38 (32)
Median	-16.96	26.89	15.80	29.43	-5.65

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	8.92 (21)	7.07 (35)	6.18 (84)	-4.97 (53)	-15.58 (57)	-4.21 (39)
Index	8.74 (23)	7.50 (22)	7.56 (57)	-4.88 (48)	-16.10 (71)	-4.60 (46)
Median	7.48	6.22	7.88	-4.94	-15.20	-4.68



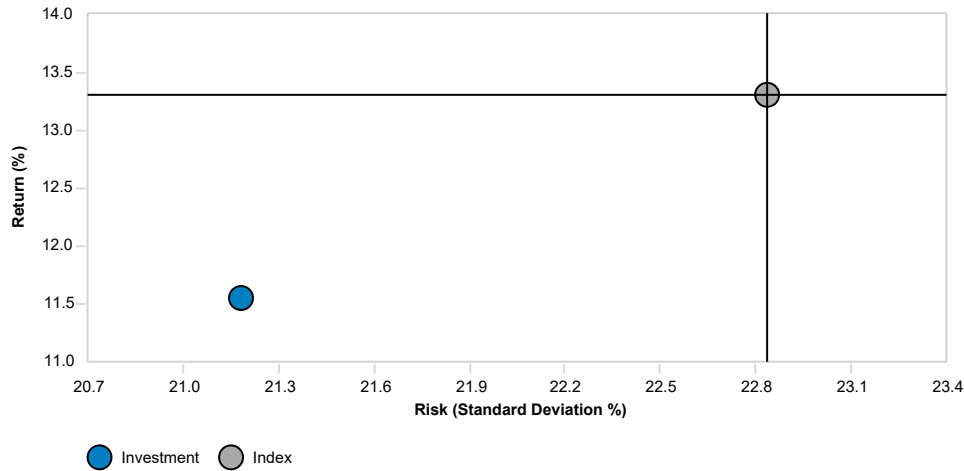
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	11.55	21.18	0.54	88.17	6	88.81	6
Index	13.32	22.83	0.58	100.00	6	100.00	6

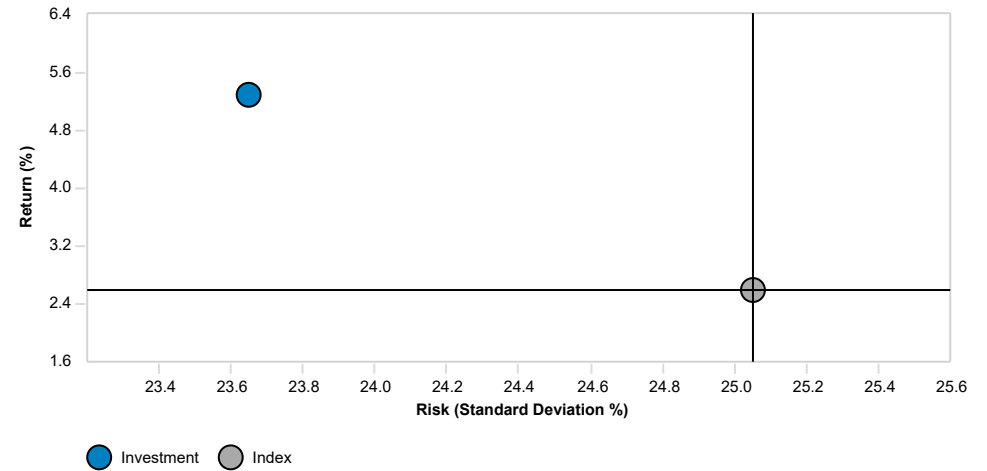
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	5.29	23.65	0.26	97.30	12	89.91	8
Index	2.59	25.05	0.16	100.00	11	100.00	9

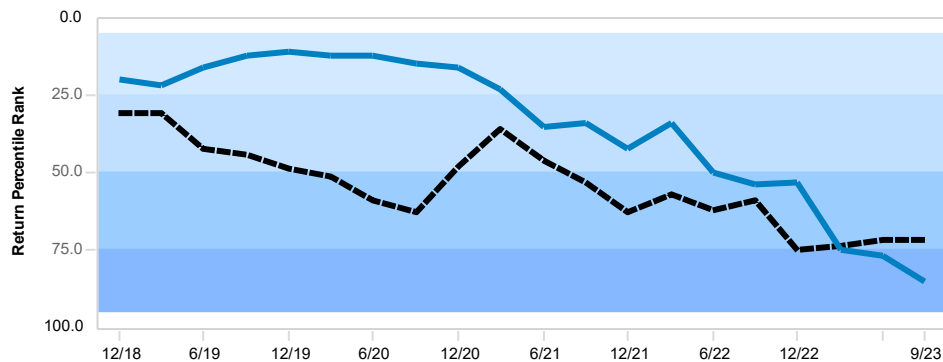
Risk and Return 3 Years



Risk and Return 5 Years

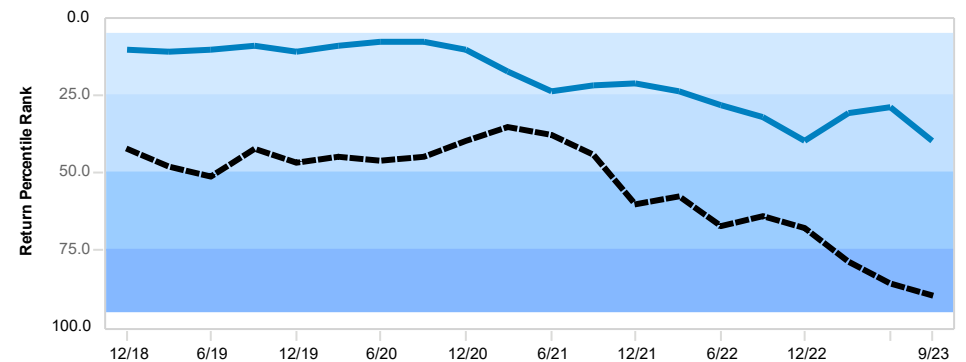


3 Year Rolling Percentile Rank IM U.S. Small Cap Value Equity (SA+CF)



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

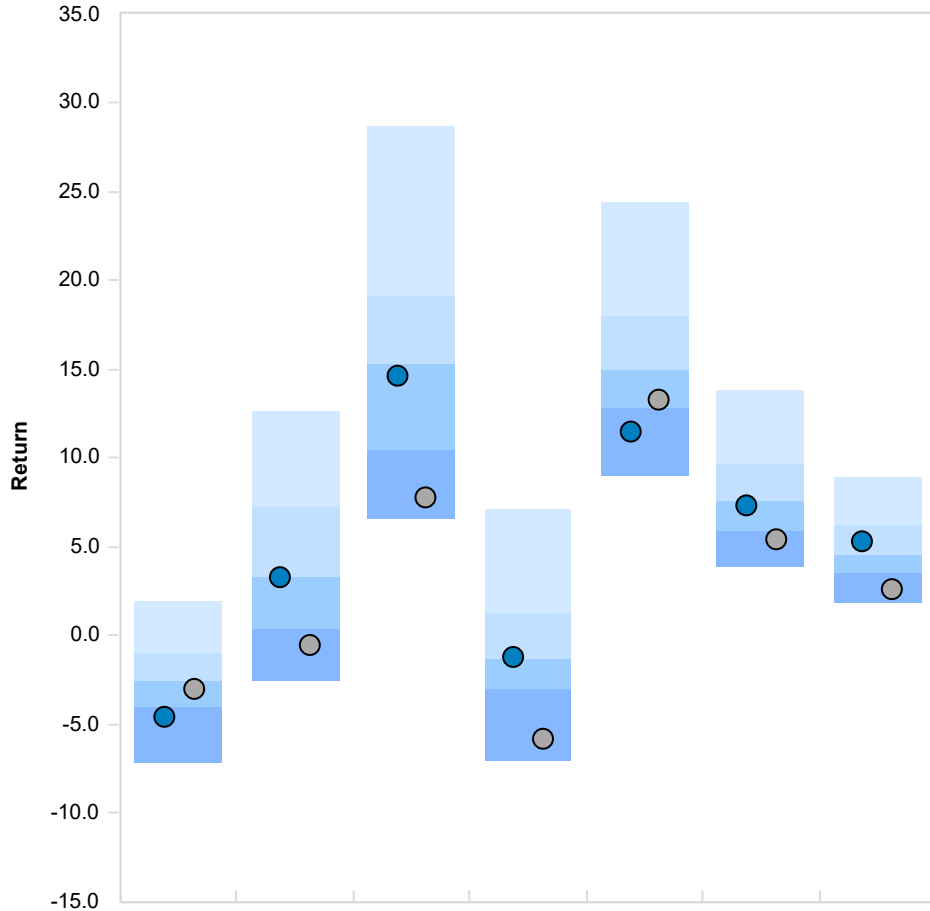
5 Year Rolling Percentile Rank IM U.S. Small Cap Value Equity (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	14 (70%)	6 (30%)	0 (0%)	0 (0%)
Index	20	0 (0%)	11 (55%)	6 (30%)	3 (15%)

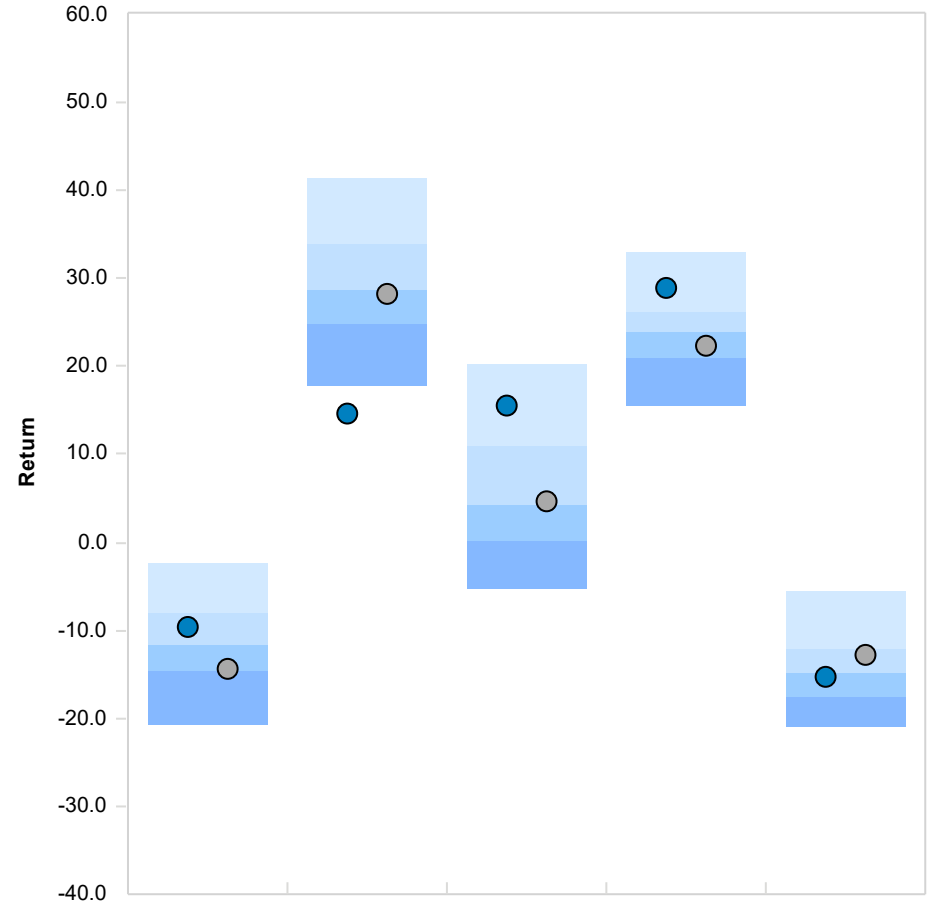


Peer Group Analysis - IM U.S. Small Cap Value Equity (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-4.56 (83)	3.30 (51)	14.63 (52)	-1.17 (49)	11.55 (85)	7.37 (55)	5.29 (40)
● Index	-2.96 (57)	-0.53 (83)	7.84 (89)	-5.78 (92)	13.32 (72)	5.50 (80)	2.59 (90)
Median	-2.47	3.34	15.36	-1.33	15.04	7.60	4.57

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



	2022	2021	2020	2019	2018
● Investment	-9.57 (32)	14.64 (98)	15.50 (14)	28.89 (12)	-15.35 (57)
● Index	-14.48 (75)	28.27 (53)	4.63 (49)	22.39 (65)	-12.86 (33)
Median	-11.63	28.62	4.29	23.95	-14.78

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	2.69 (75)	5.40 (18)	10.97 (49)	-4.26 (43)	-13.55 (52)	-1.54 (29)
Index	3.18 (67)	-0.66 (88)	8.42 (82)	-4.61 (49)	-15.28 (77)	-2.40 (39)
Median	3.86	2.03	10.87	-4.86	-13.48	-3.09



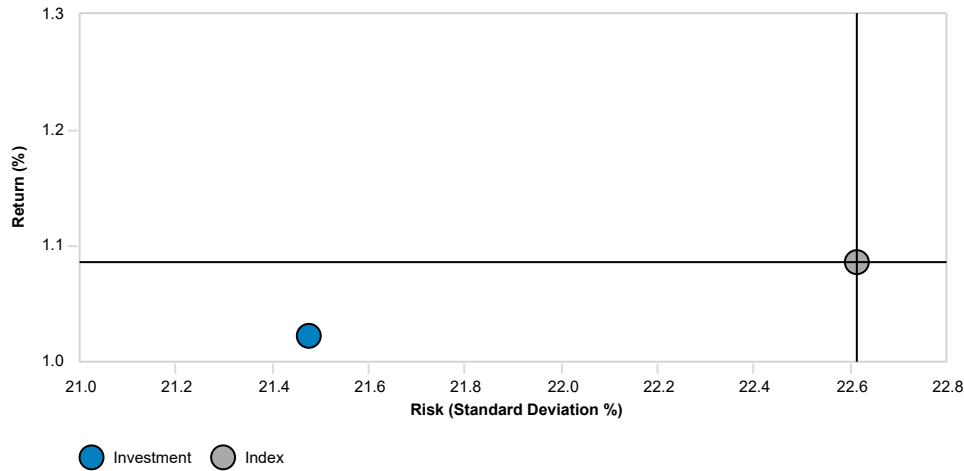
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	1.02	21.48	0.08	98.99	7	99.86	5
Index	1.09	22.61	0.08	100.00	8	100.00	4

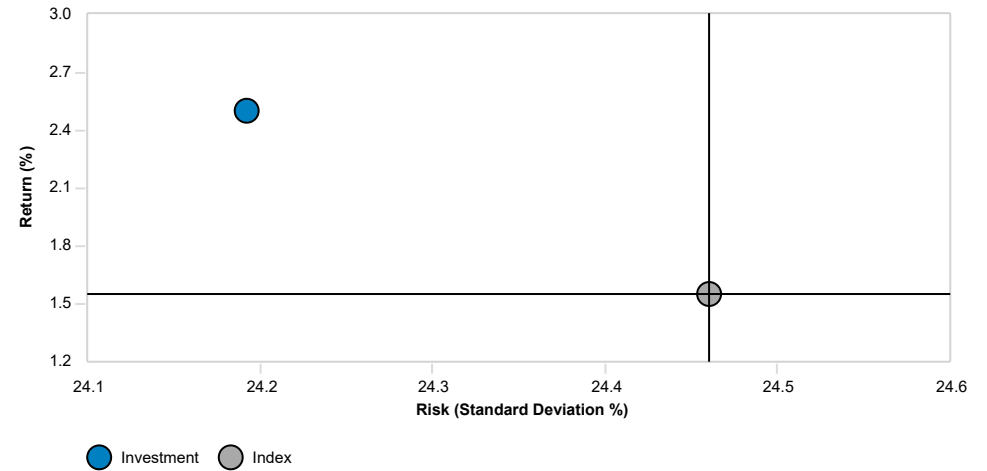
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	2.50	24.19	0.15	101.74	12	99.15	8
Index	1.55	24.46	0.12	100.00	13	100.00	7

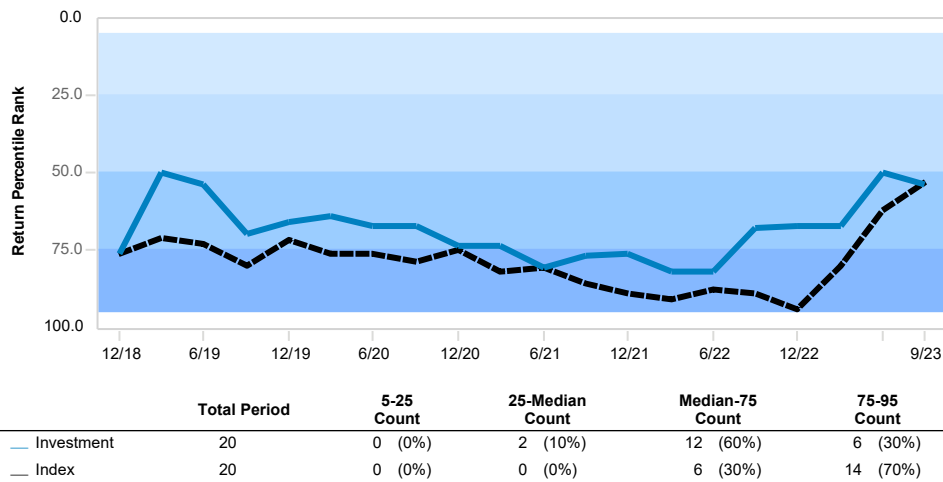
Risk and Return 3 Years



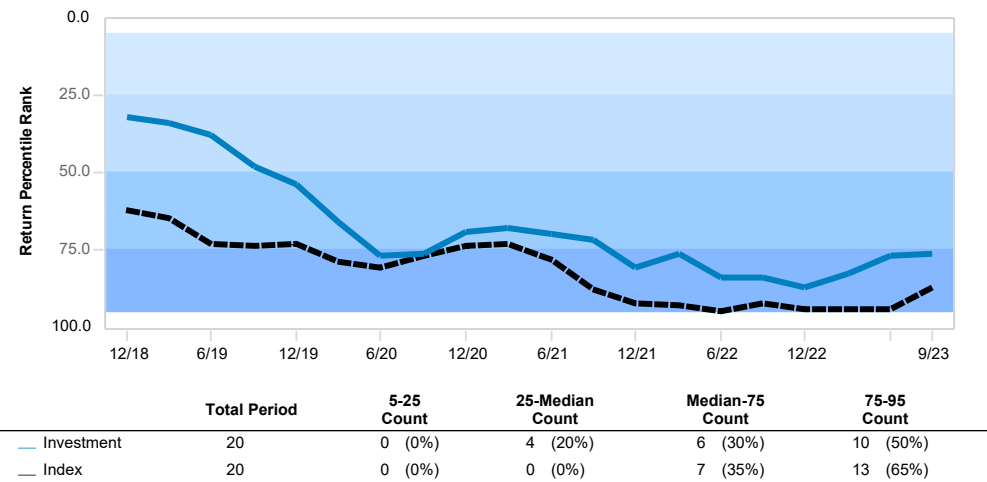
Risk and Return 5 Years



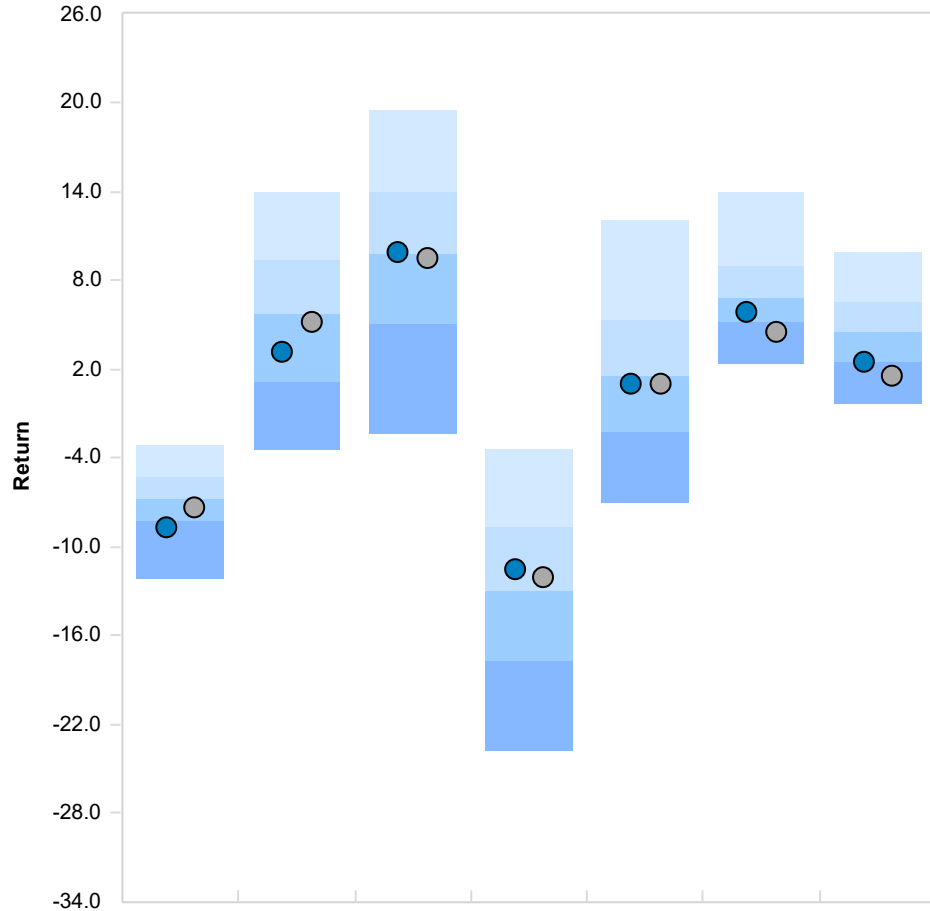
3 Year Rolling Percentile Rank IM U.S. Small Cap Growth Equity (SA+CF)



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

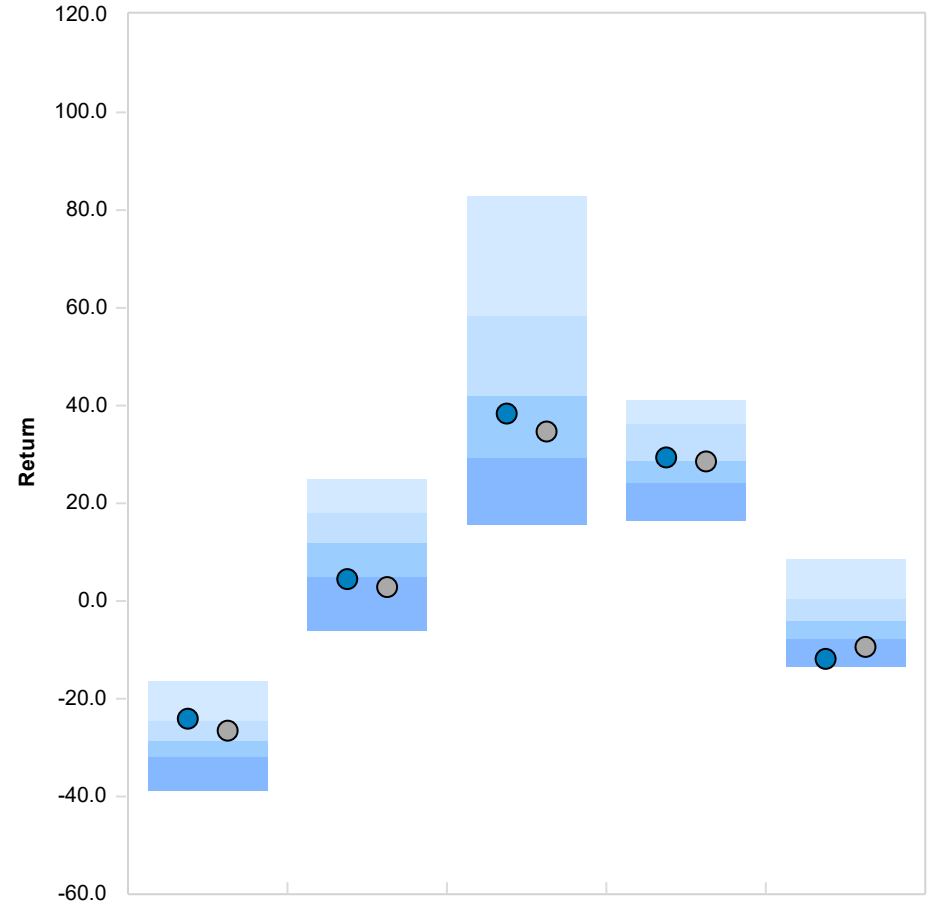


Peer Group Analysis - IM U.S. Small Cap Growth Equity (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-8.68 (78)	3.21 (65)	9.97 (50)	-11.53 (43)	1.02 (54)	5.90 (66)	2.50 (76)
● Index	-7.32 (64)	5.24 (54)	9.59 (55)	-11.96 (46)	1.09 (53)	4.56 (84)	1.55 (87)
Median	-6.81	5.73	9.89	-13.03	1.60	6.84	4.54

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



	2022	2021	2020	2019	2018
● Investment	-24.18 (23)	4.32 (79)	38.53 (59)	29.23 (49)	-11.94 (92)
● Index	-26.36 (35)	2.83 (83)	34.63 (66)	28.48 (51)	-9.31 (81)
Median	-28.57	11.67	41.94	28.66	-4.05

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	8.68 (12)	3.99 (83)	6.55 (22)	-0.19 (38)	-20.13 (47)	-10.74 (19)
Index	7.05 (26)	6.07 (66)	4.13 (52)	0.24 (30)	-19.25 (44)	-12.63 (41)
Median	5.62	7.07	4.27	-1.15	-20.27	-13.49



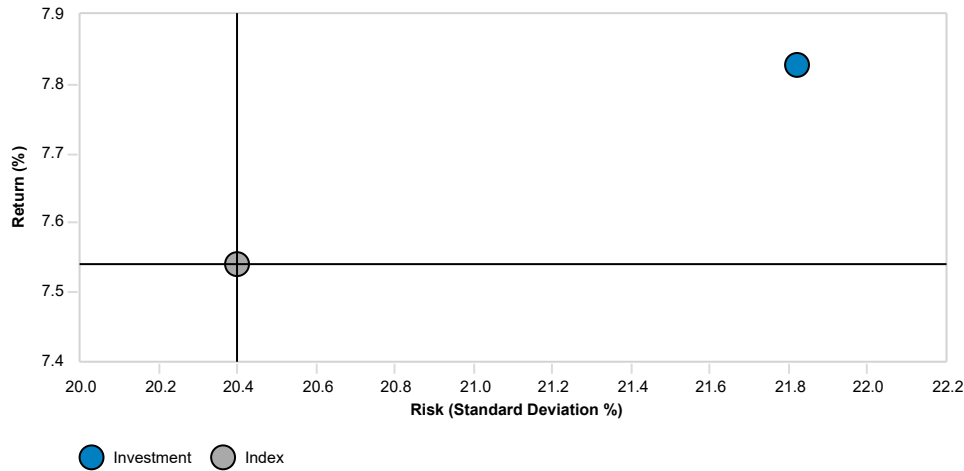
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	7.83	21.82	0.38	97.07	6	93.68	6
Index	7.54	20.40	0.38	100.00	8	100.00	4

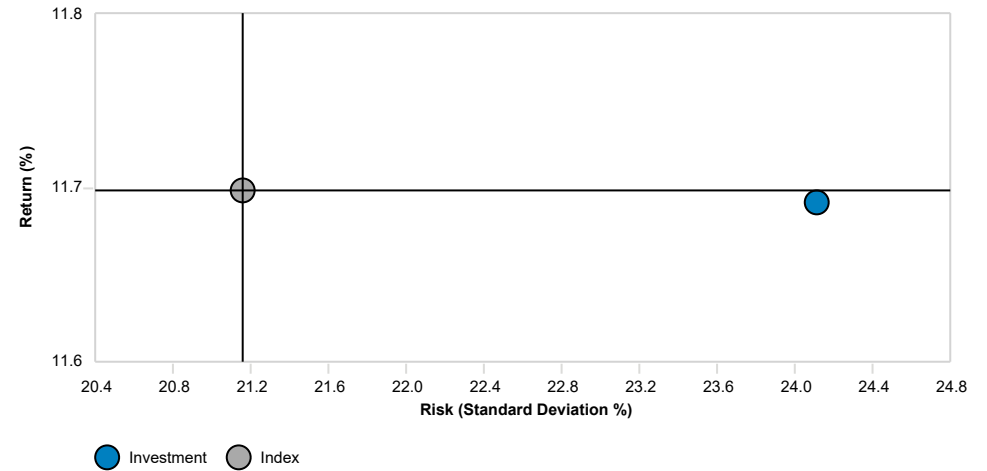
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	11.69	24.12	0.51	105.03	11	105.08	9
Index	11.70	21.16	0.55	100.00	14	100.00	6

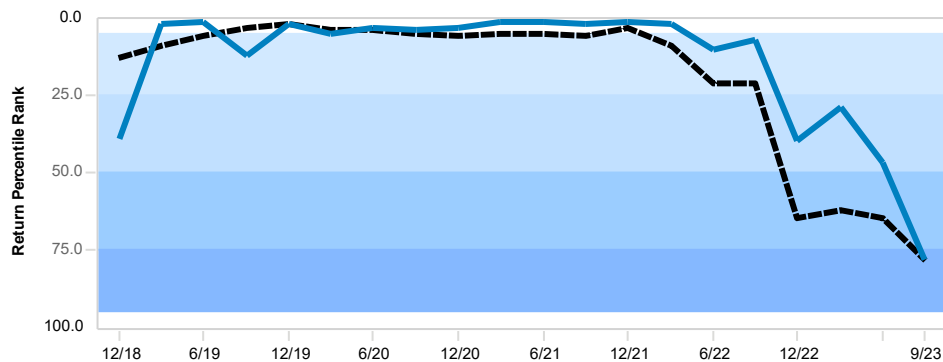
Risk and Return 3 Years



Risk and Return 5 Years

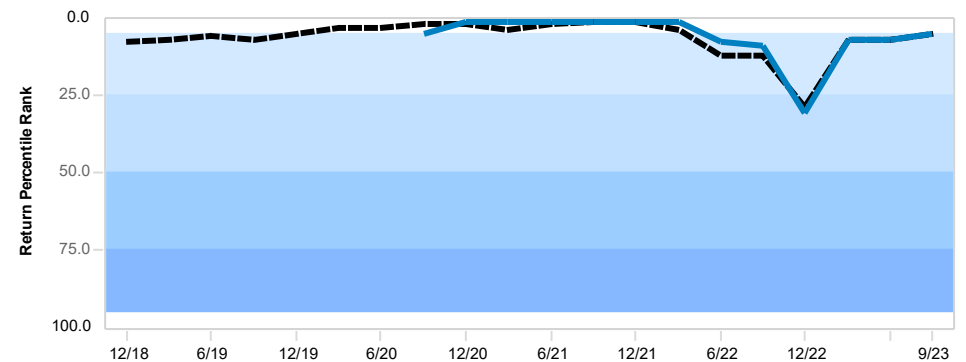


3 Year Rolling Percentile Rank IM U.S. All Cap Core Equity (SA+CF)



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

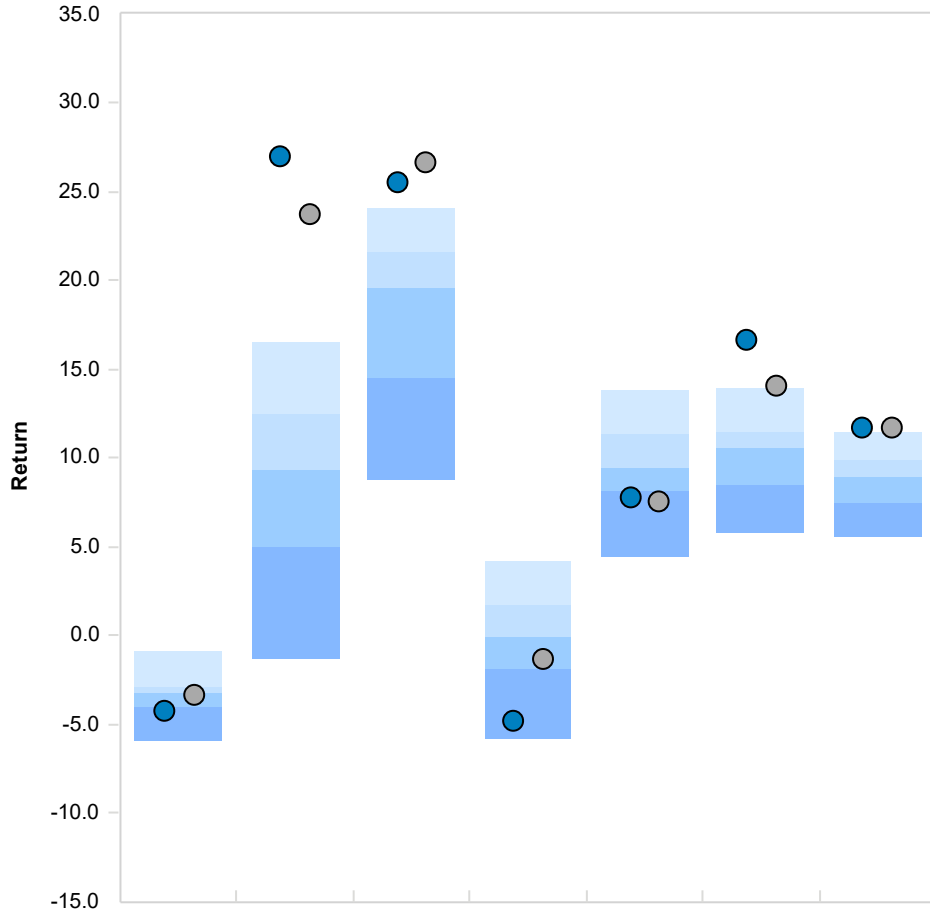
5 Year Rolling Percentile Rank IM U.S. All Cap Core Equity (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	13	12 (92%)	1 (8%)	0 (0%)	0 (0%)
Index	20	19 (95%)	1 (5%)	0 (0%)	0 (0%)

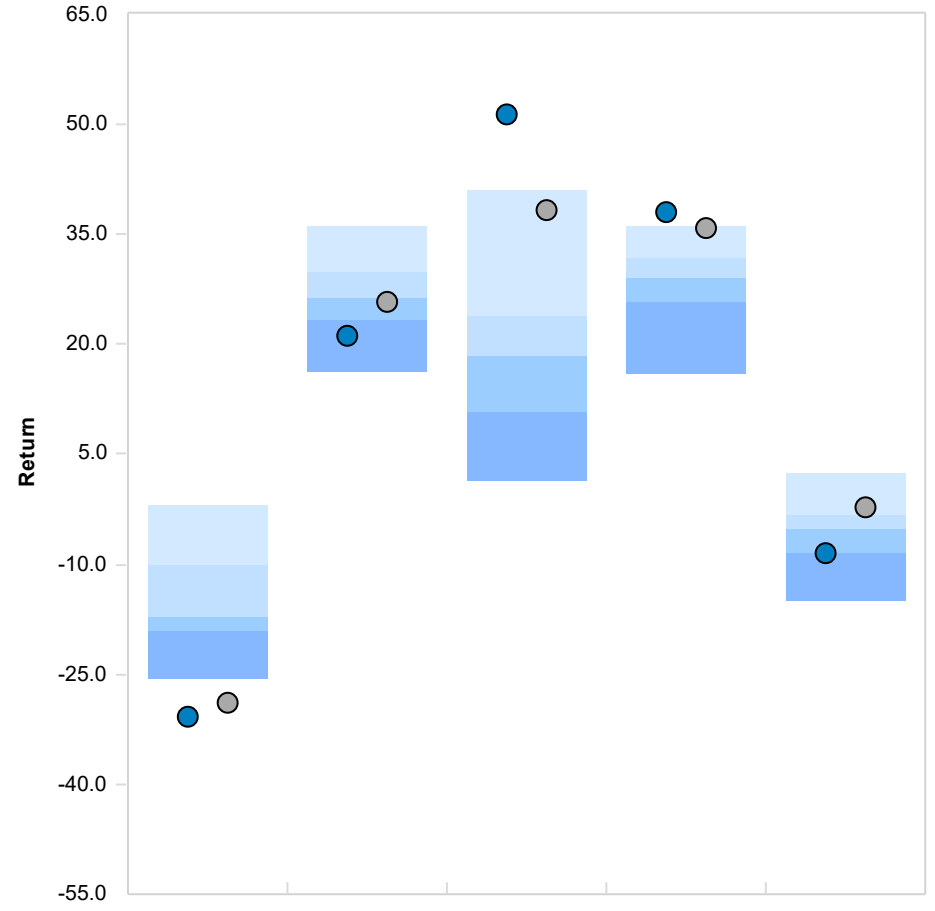


Peer Group Analysis - IM U.S. All Cap Core Equity (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-4.17 (80)	27.06 (1)	25.60 (4)	-4.73 (93)	7.83 (78)	16.64 (1)	11.69 (5)
● Index	-3.34 (59)	23.77 (1)	26.63 (4)	-1.26 (72)	7.54 (78)	14.07 (5)	11.70 (5)
Median	-3.24	9.38	19.60	-0.05	9.45	10.65	8.94

Peer Group Analysis - IM U.S. All Cap Core Equity (SA+CF)



	2022	2021	2020	2019	2018
● Investment	-30.72 (100)	21.32 (83)	51.29 (2)	38.03 (2)	-8.39 (74)
● Index	-28.97 (99)	25.85 (56)	38.26 (9)	35.85 (6)	-2.12 (19)
Median	-17.17	26.31	18.60	29.00	-5.10

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	14.58 (1)	15.71 (1)	-1.15 (100)	-3.84 (23)	-23.88 (98)	-4.26 (32)
Index	12.47 (1)	13.85 (2)	2.31 (100)	-3.37 (18)	-20.83 (96)	-9.25 (92)
Median	6.76	5.80	8.73	-4.53	-14.97	-5.02



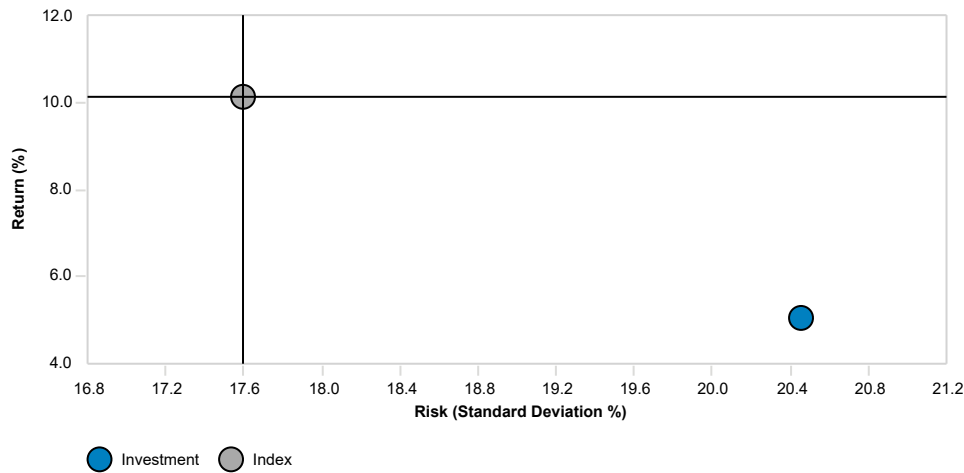
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	5.04	20.45	0.26	92.97	7	109.68	5
Index	10.15	17.60	0.54	100.00	8	100.00	4

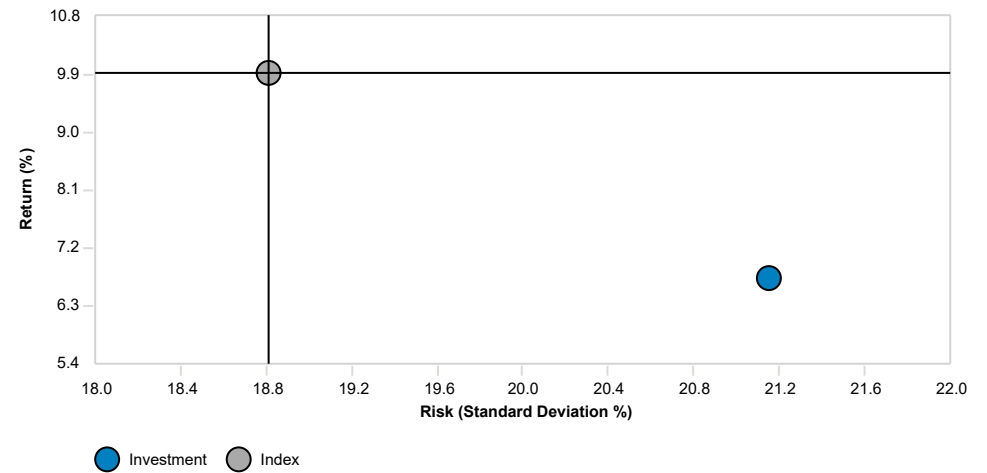
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	6.74	21.15	0.33	98.02	13	108.28	7
Index	9.92	18.81	0.51	100.00	14	100.00	6

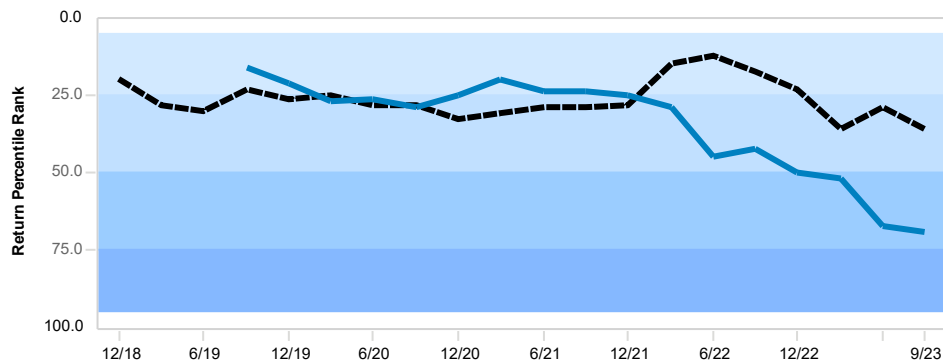
Risk and Return 3 Years



Risk and Return 5 Years

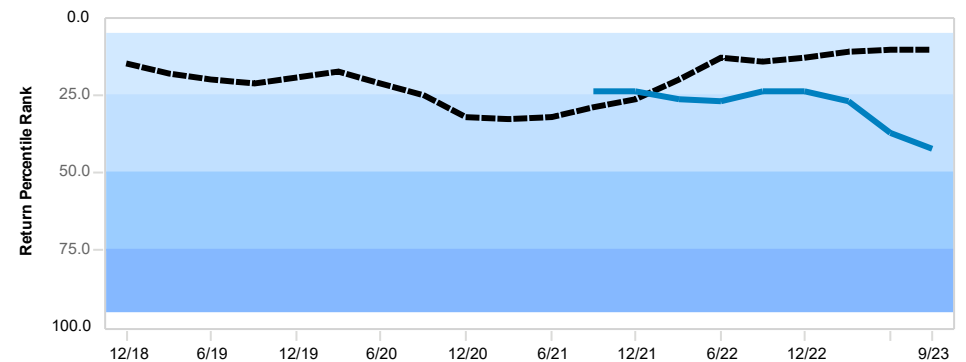


3 Year Rolling Percentile Rank IM U.S. Equity (MF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	17	7 (41%)	7 (41%)	3 (18%)	0 (0%)
Index	20	7 (35%)	13 (65%)	0 (0%)	0 (0%)

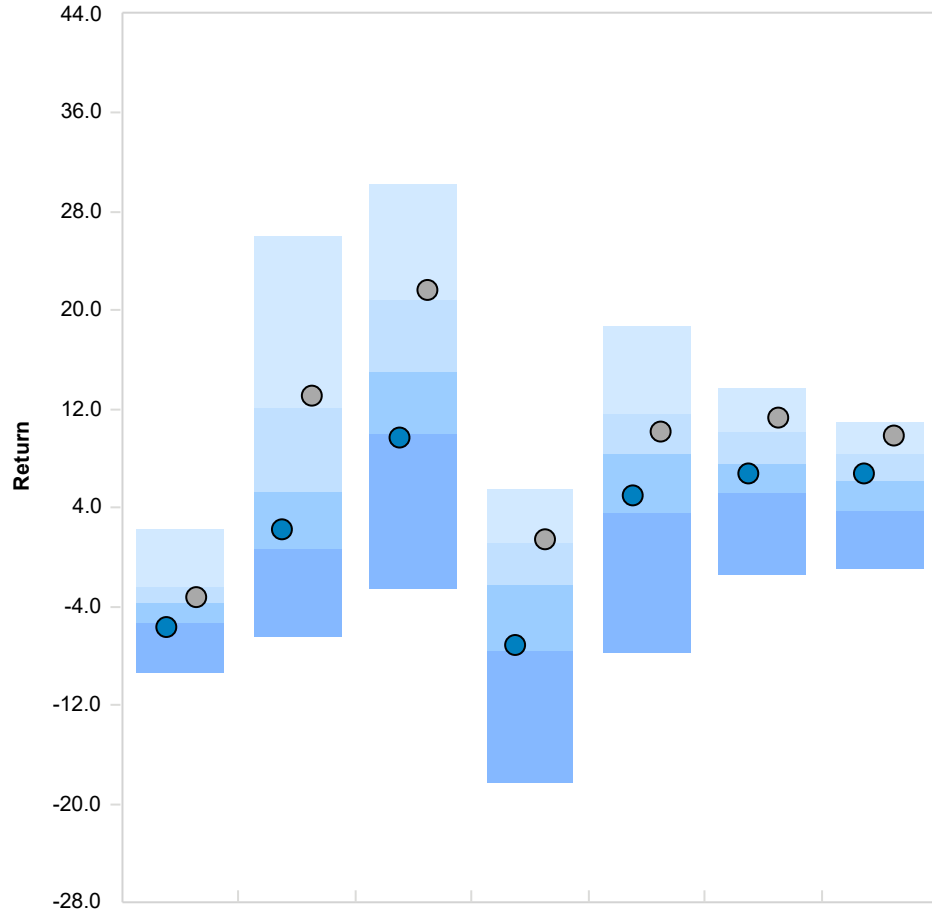
5 Year Rolling Percentile Rank IM U.S. Equity (MF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	9	4 (44%)	5 (56%)	0 (0%)	0 (0%)
Index	20	15 (75%)	5 (25%)	0 (0%)	0 (0%)

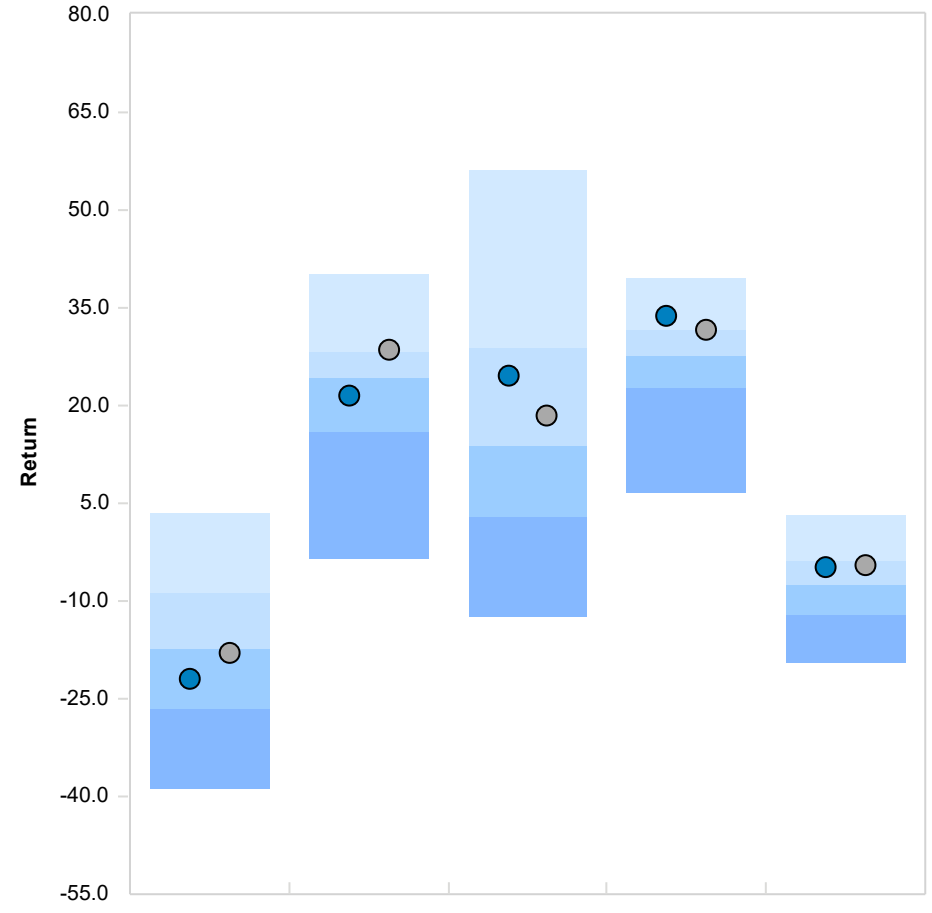


Peer Group Analysis - IM U.S. Equity (MF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-5.74 (79)	2.20 (68)	9.77 (77)	-7.09 (74)	5.04 (69)	6.86 (59)	6.74 (42)
● Index	-3.27 (42)	13.07 (22)	21.62 (22)	1.39 (23)	10.15 (36)	11.38 (15)	9.92 (10)
Median	-3.67	5.25	15.07	-2.22	8.34	7.62	6.08

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



	2022	2021	2020	2019	2018
● Investment	-22.02 (66)	21.48 (62)	24.65 (30)	33.89 (17)	-4.89 (33)
● Index	-18.11 (53)	28.71 (24)	18.40 (41)	31.49 (27)	-4.38 (29)
Median	-17.25	24.22	14.01	27.51	-7.49

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	2.42 (82)	5.86 (41)	7.41 (58)	-2.69 (24)	-18.17 (71)	-8.83 (69)
Index	8.74 (20)	7.50 (27)	7.56 (56)	-4.88 (56)	-16.10 (57)	-4.60 (42)
Median	5.16	4.30	8.34	-4.64	-15.44	-5.53



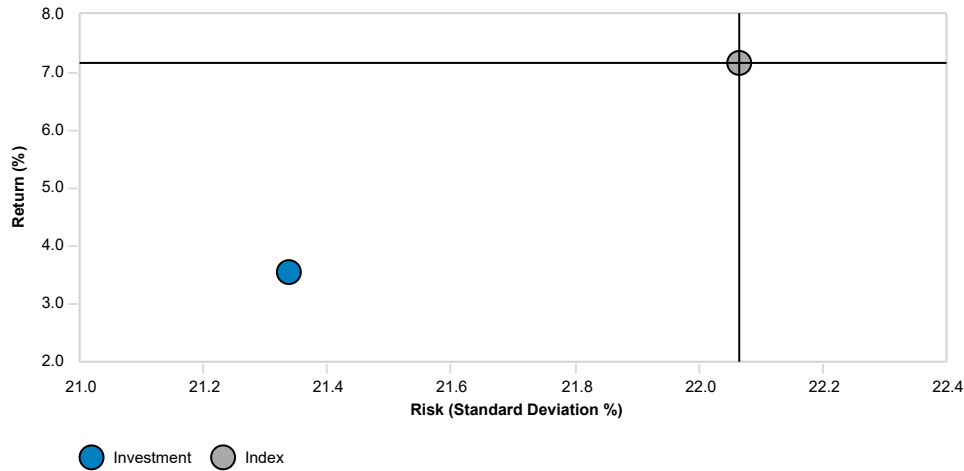
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	3.54	21.34	0.19	90.21	7	100.72	5
Index	7.16	22.07	0.34	100.00	7	100.00	5

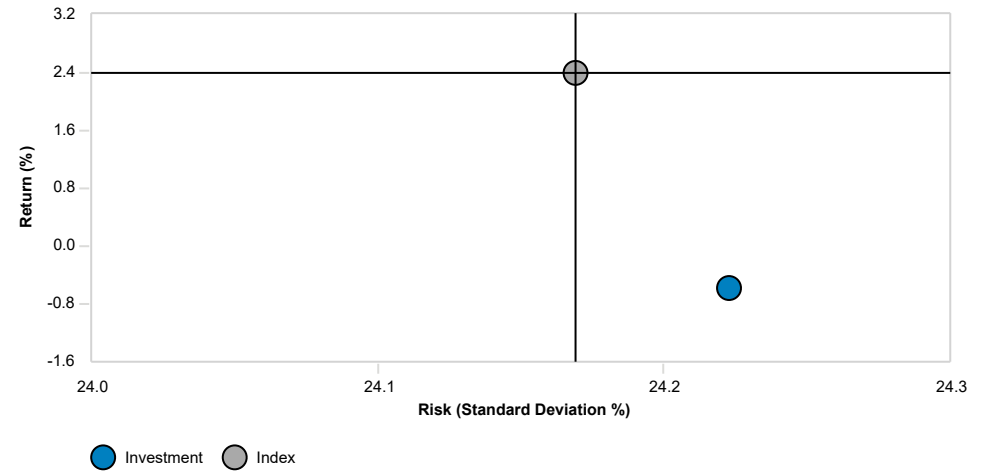
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-0.57	24.22	0.03	94.29	13	102.93	7
Index	2.40	24.17	0.15	100.00	12	100.00	8

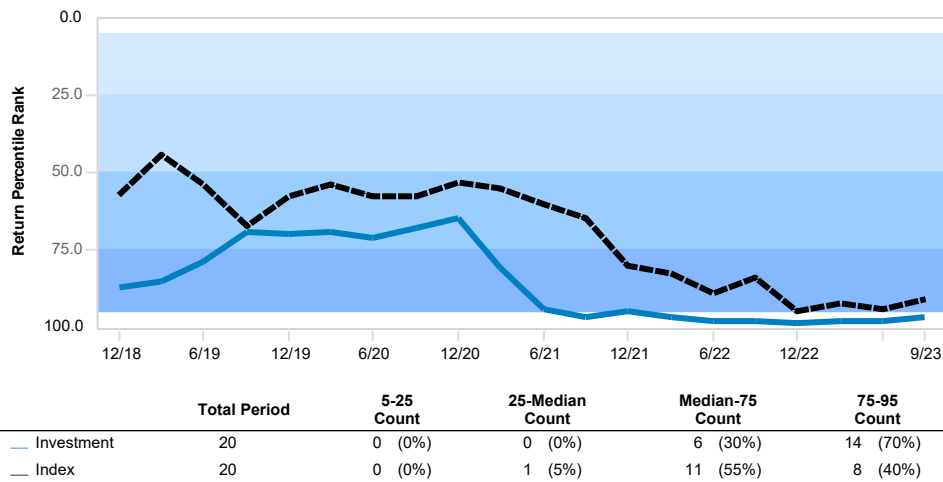
Risk and Return 3 Years



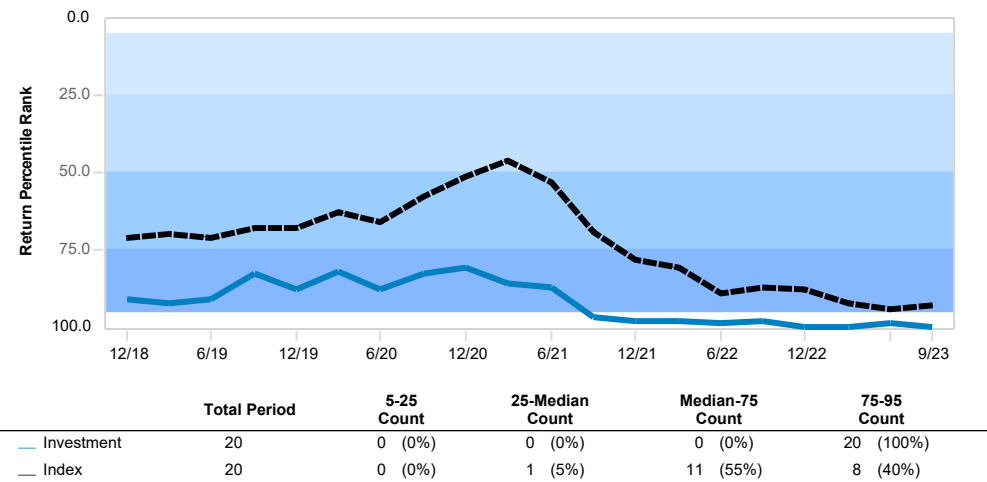
Risk and Return 5 Years



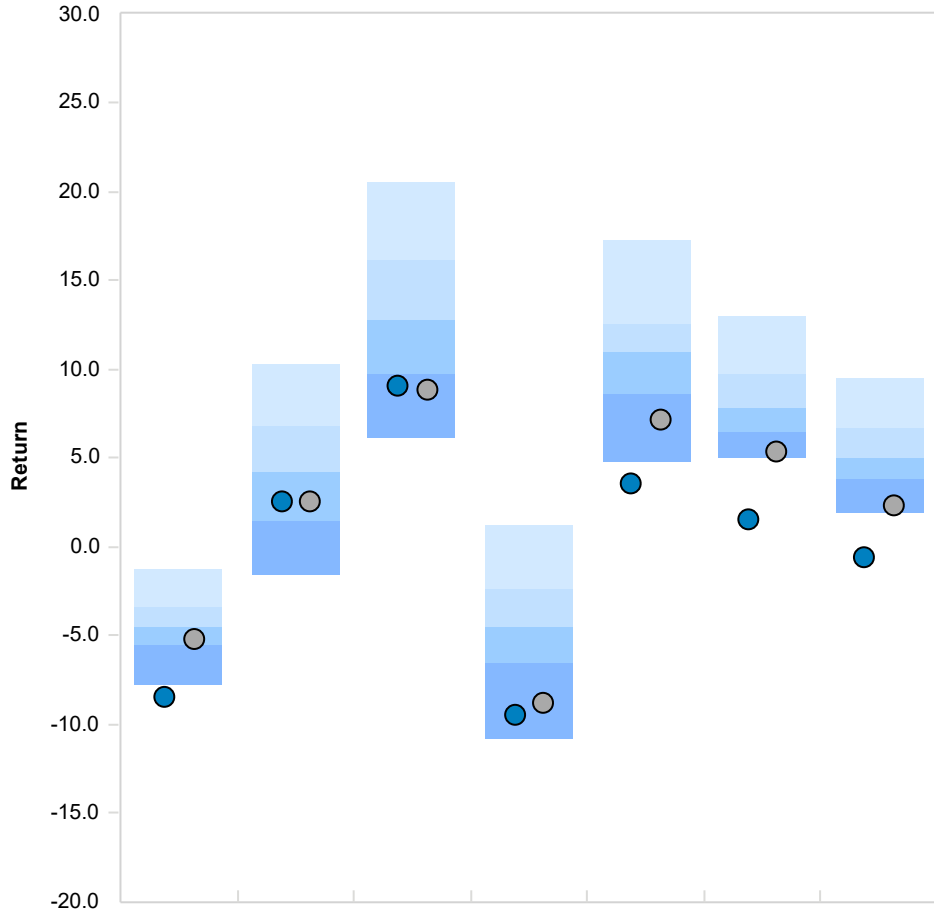
3 Year Rolling Percentile Rank IM U.S. Small Cap Core Equity (SA+CF)



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

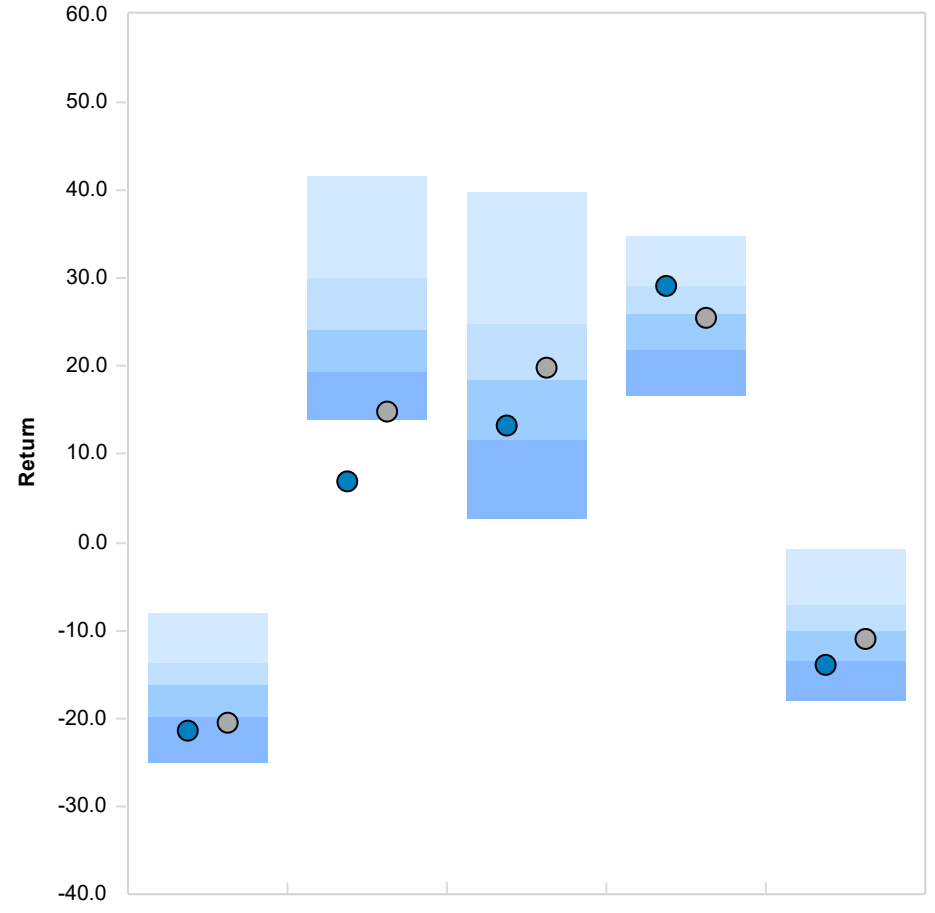


Peer Group Analysis - IM U.S. Small Cap Core Equity (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-8.41 (97)	2.60 (65)	9.08 (79)	-9.42 (92)	3.54 (97)	1.54 (100)	-0.57 (100)
● Index	-5.13 (69)	2.54 (65)	8.93 (79)	-8.71 (88)	7.16 (91)	5.43 (92)	2.40 (93)
Median	-4.47	4.32	12.85	-4.50	11.03	7.91	5.06

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



	2022	2021	2020	2019	2018
● Investment	-21.44 (83)	6.97 (99)	13.19 (69)	29.19 (25)	-13.87 (78)
● Index	-20.44 (81)	14.82 (93)	19.96 (40)	25.53 (52)	-11.01 (59)
Median	-16.18	24.17	18.54	25.88	-10.11

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	5.89 (23)	5.79 (25)	6.32 (88)	-4.80 (81)	-16.63 (67)	-6.89 (53)
Index	5.21 (37)	2.74 (71)	6.23 (88)	-2.19 (31)	-17.20 (80)	-7.53 (66)
Median	4.65	3.84	8.97	-3.33	-15.39	-6.79



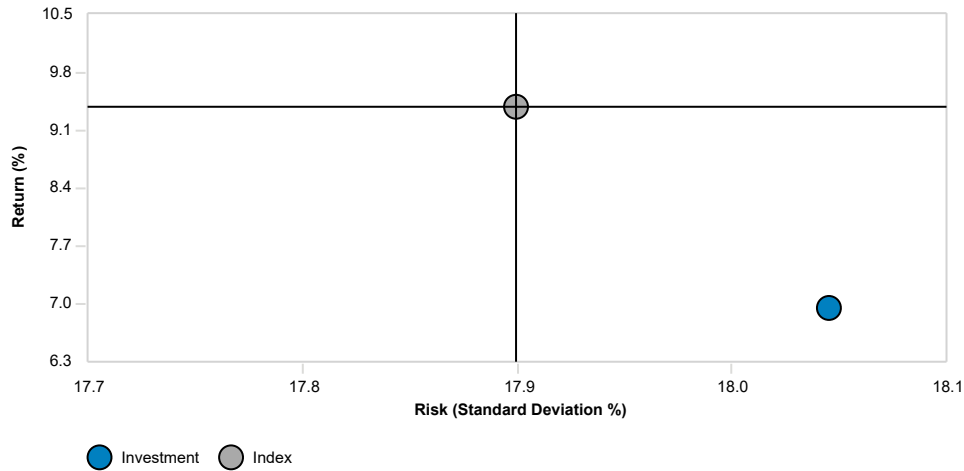
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	6.95	18.05	0.37	85.15	8	88.39	4
Index	9.38	17.90	0.50	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	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Index	9.14	19.40	0.46	100.00	13	100.00	7

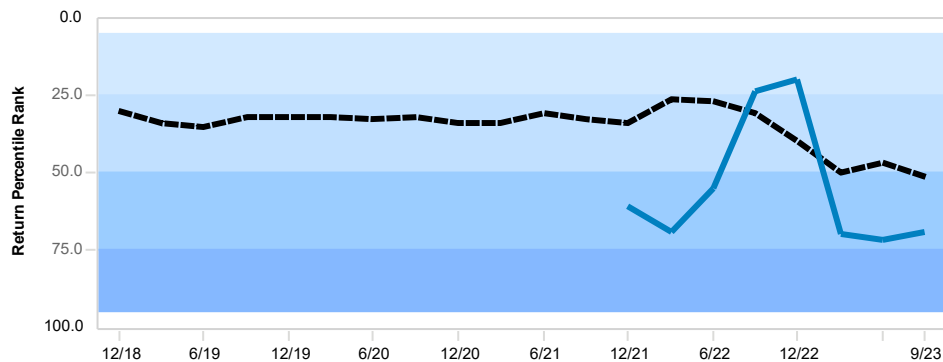
Risk and Return 3 Years



Risk and Return 5 Years

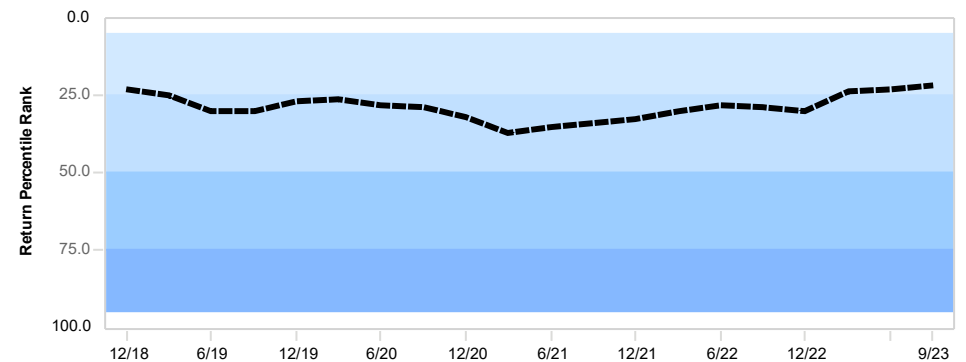


3 Year Rolling Percentile Rank IM U.S. Equity (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	8	2 (25%)	0 (0%)	6 (75%)	0 (0%)
Index	20	0 (0%)	19 (95%)	1 (5%)	0 (0%)

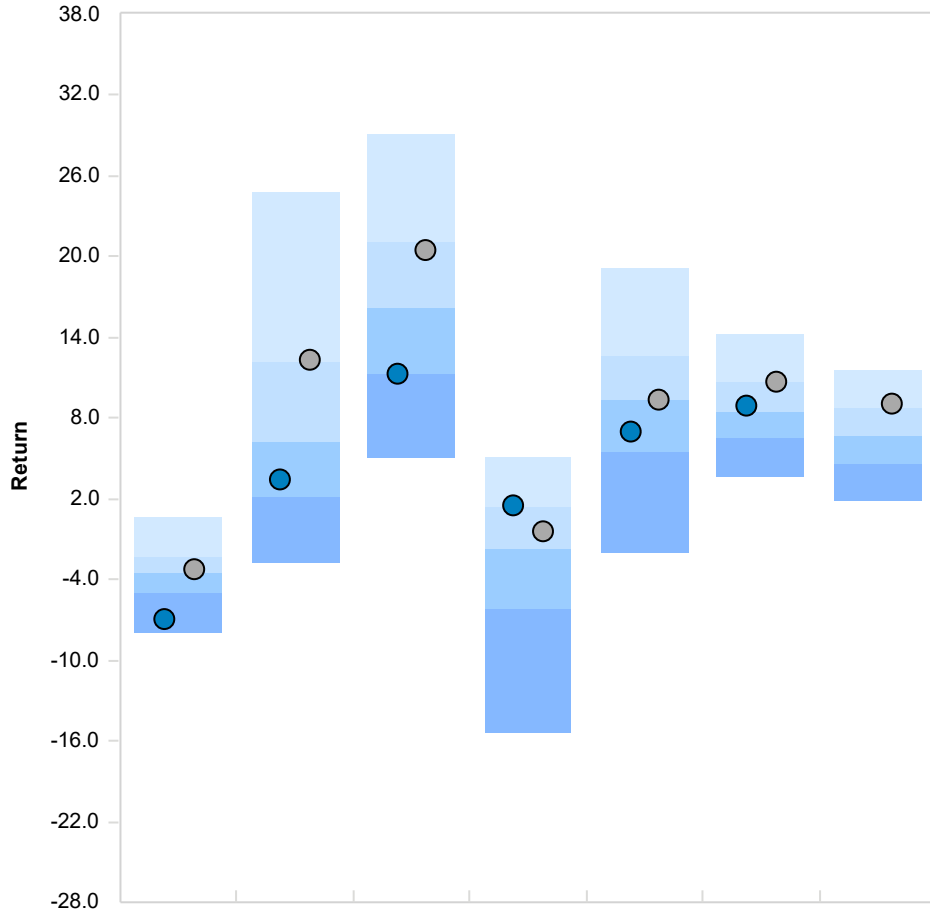
5 Year Rolling Percentile Rank IM U.S. Equity (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	0	0	0	0	0
Index	20	5 (25%)	15 (75%)	0 (0%)	0 (0%)

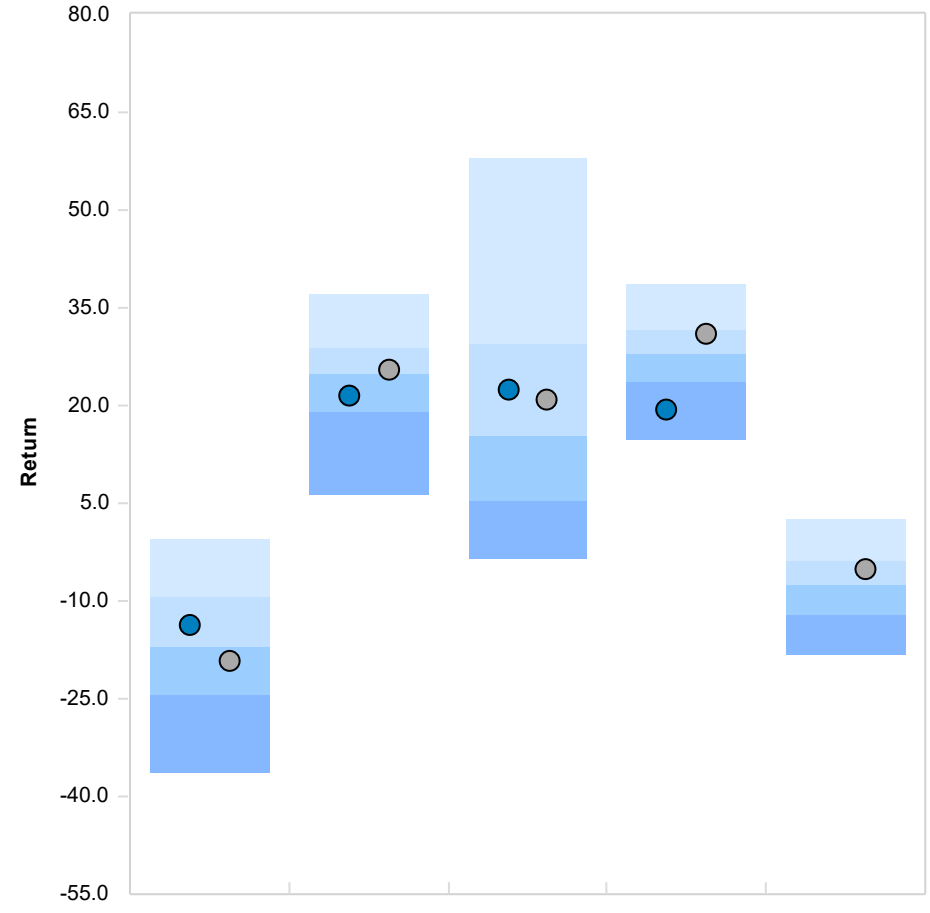


Peer Group Analysis - IM U.S. Equity (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-6.88 (91)	3.48 (67)	11.34 (76)	1.59 (23)	6.95 (69)	8.96 (45)	N/A
● Index	-3.25 (44)	12.39 (25)	20.46 (29)	-0.39 (42)	9.38 (51)	10.76 (26)	9.14 (22)
Median	-3.46	6.32	16.19	-1.69	9.43	8.51	6.77

Peer Group Analysis - IM U.S. Equity (SA+CF)



	2022	2021	2020	2019	2018
● Investment	-13.59 (39)	21.59 (68)	22.31 (35)	19.24 (90)	N/A
● Index	-19.21 (62)	25.66 (46)	20.89 (37)	31.02 (31)	-5.24 (35)
Median	-17.01	25.01	15.52	28.07	-7.65

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	9.04 (19)	1.90 (74)	7.60 (59)	-1.55 (16)	-13.46 (35)	-5.74 (53)
Index	8.39 (25)	7.18 (32)	7.18 (65)	-4.46 (52)	-16.70 (65)	-5.28 (49)
Median	5.49	4.82	8.49	-4.41	-15.32	-5.40



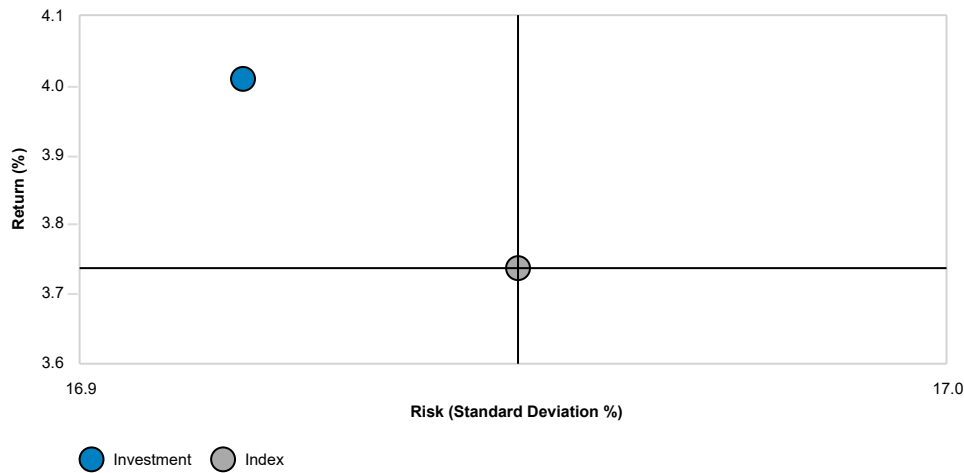
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	4.01	16.92	0.22	100.66	7	99.56	5
Index	3.74	16.95	0.20	100.00	7	100.00	5

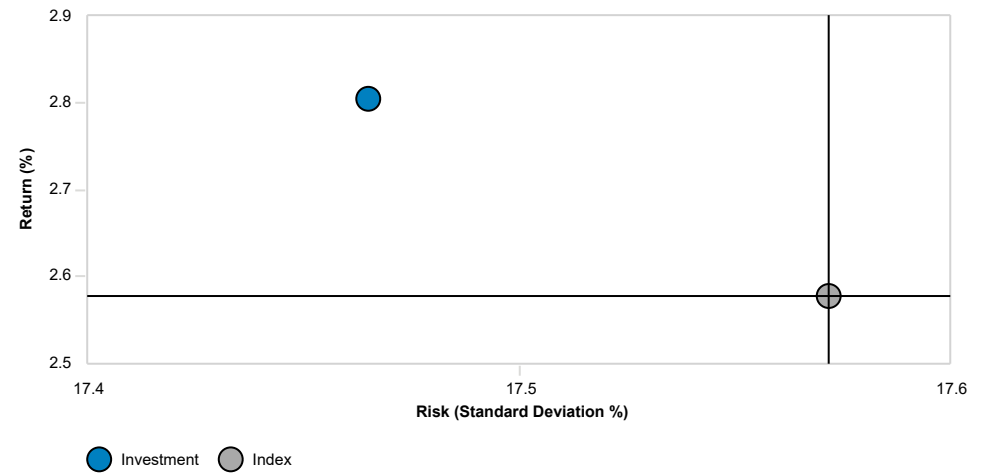
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	2.81	17.47	0.15	99.73	12	98.77	8
Index	2.58	17.57	0.14	100.00	12	100.00	8

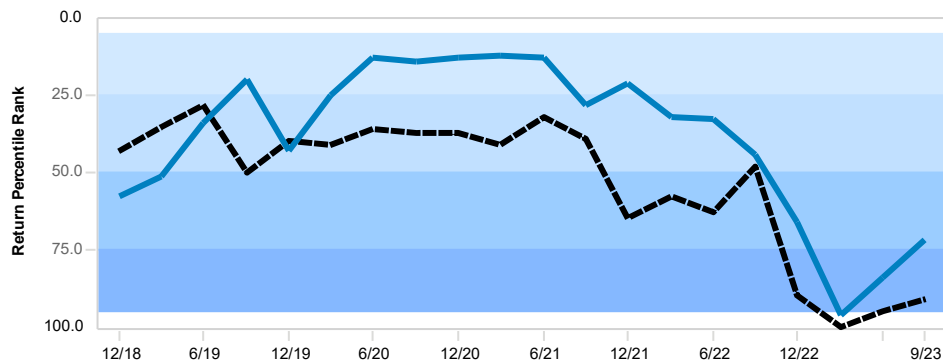
Risk and Return 3 Years



Risk and Return 5 Years

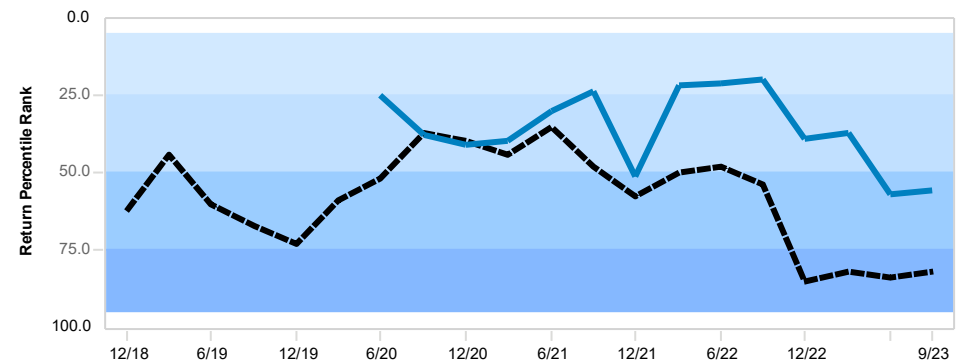


3 Year Rolling Percentile Rank IM Enhanced and Indexed International Equity (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	8 (40%)	6 (30%)	4 (20%)	2 (10%)
Index	20	0 (0%)	13 (65%)	3 (15%)	4 (20%)

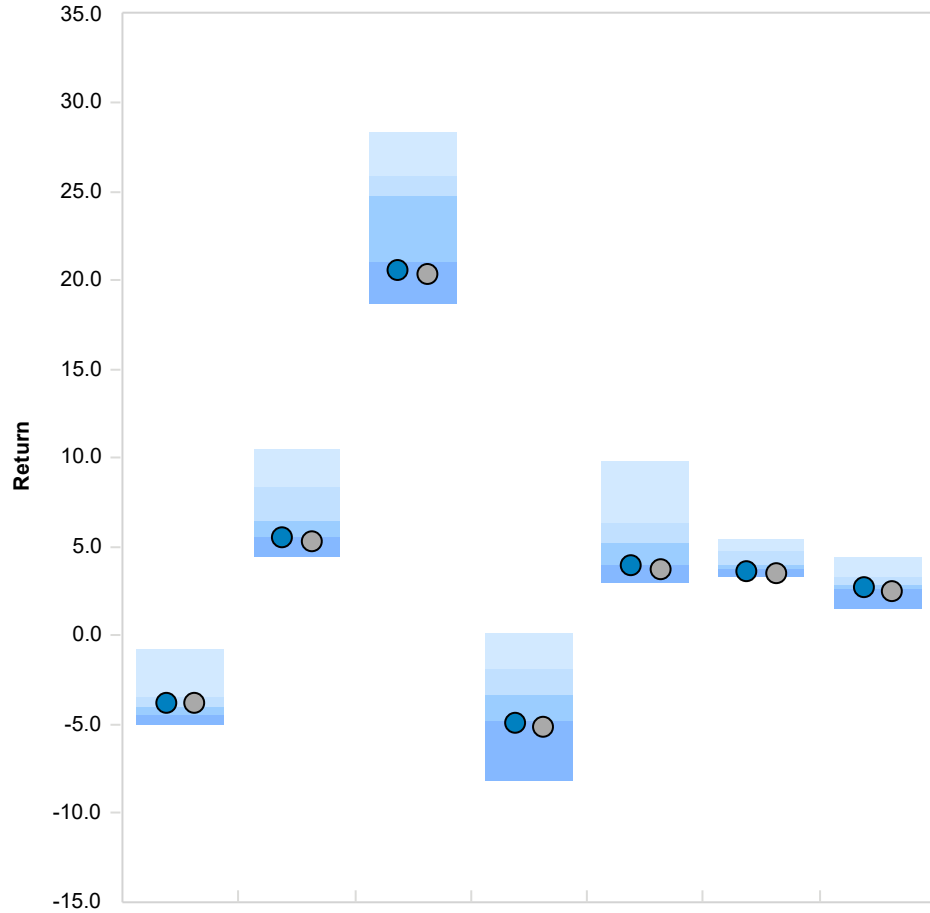
5 Year Rolling Percentile Rank IM Enhanced and Indexed International Equity (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	14	5 (36%)	6 (43%)	3 (21%)	0 (0%)
Index	20	0 (0%)	8 (40%)	8 (40%)	4 (20%)

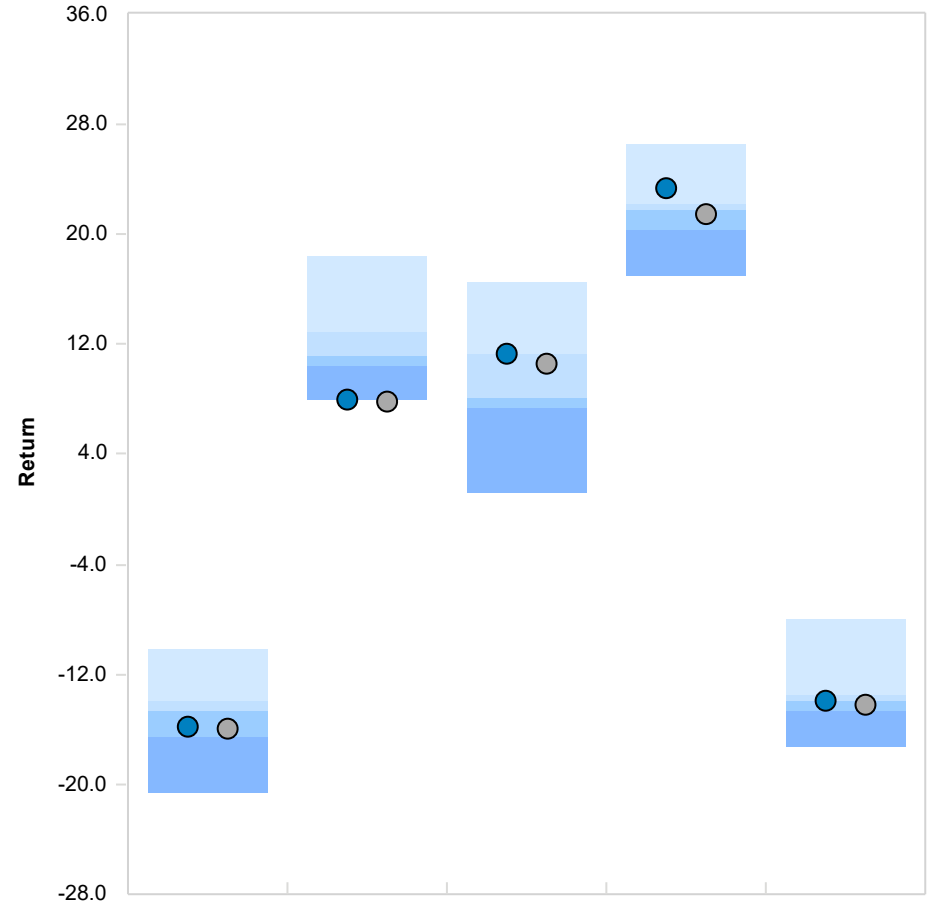


Peer Group Analysis - IM Enhanced and Indexed International Equity (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-3.77 (44)	5.53 (83)	20.57 (92)	-4.88 (79)	4.01 (72)	3.69 (79)	2.81 (56)
● Index	-3.77 (44)	5.34 (85)	20.39 (92)	-5.08 (87)	3.74 (91)	3.55 (88)	2.58 (82)
Median	-4.00	6.49	24.76	-3.32	5.20	3.93	2.85

Peer Group Analysis - IM Enhanced and Indexed International Equity (SA+CF)



	2022	2021	2020	2019	2018
● Investment	-15.81 (67)	7.96 (99)	11.27 (26)	23.42 (17)	-13.88 (44)
● Index	-16.00 (69)	7.82 (100)	10.65 (41)	21.51 (61)	-14.20 (67)
Median	-14.67	11.22	8.08	21.74	-13.97

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	2.54 (93)	6.96 (71)	14.24 (79)	-9.92 (39)	-13.52 (54)	-5.40 (38)
Index	2.44 (93)	6.87 (74)	14.28 (78)	-9.91 (38)	-13.73 (59)	-5.44 (38)
Median	3.12	7.62	16.23	-10.17	-13.49	-5.92



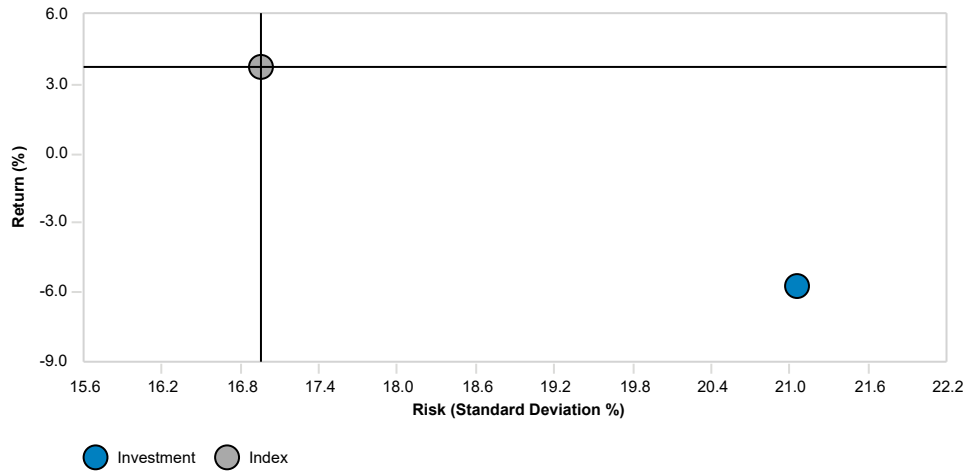
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-5.69	21.05	-0.25	99.56	6	142.14	6
Index	3.74	16.95	0.20	100.00	7	100.00	5

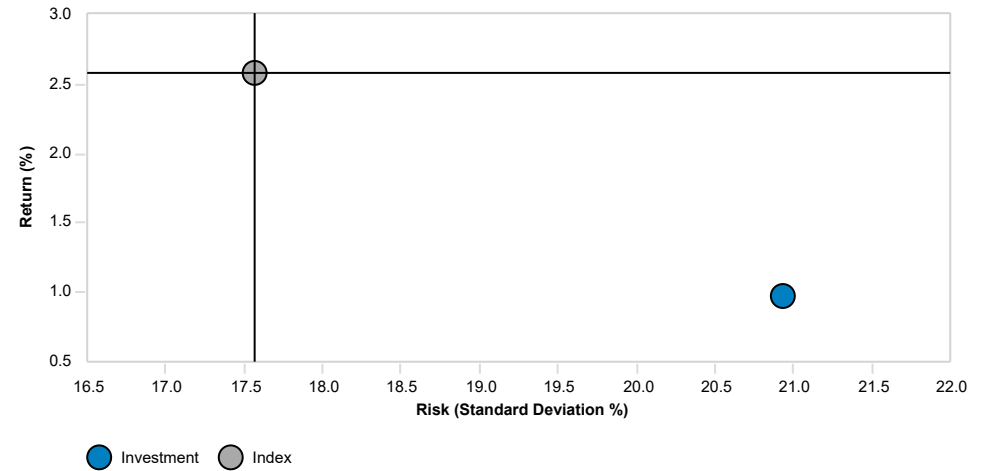
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	0.97	20.94	0.07	113.89	11	120.69	9
Index	2.58	17.57	0.14	100.00	12	100.00	8

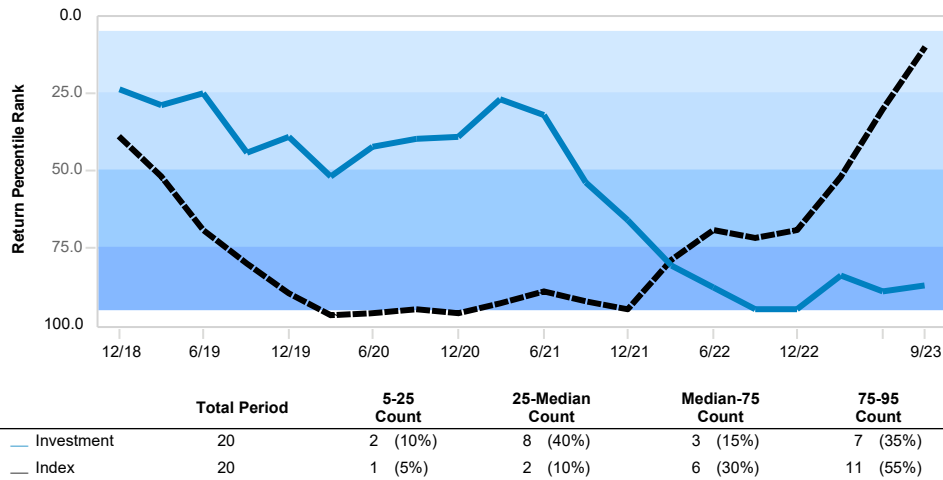
Risk and Return 3 Years



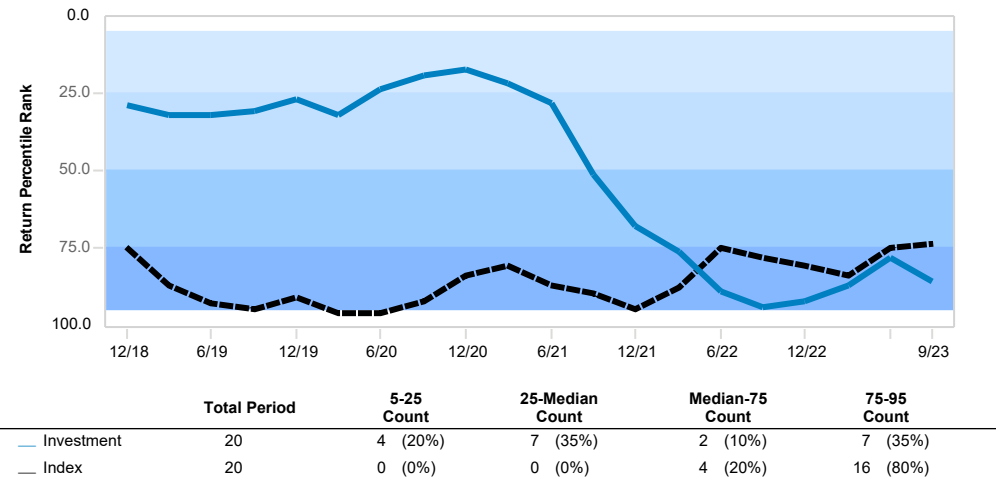
Risk and Return 5 Years



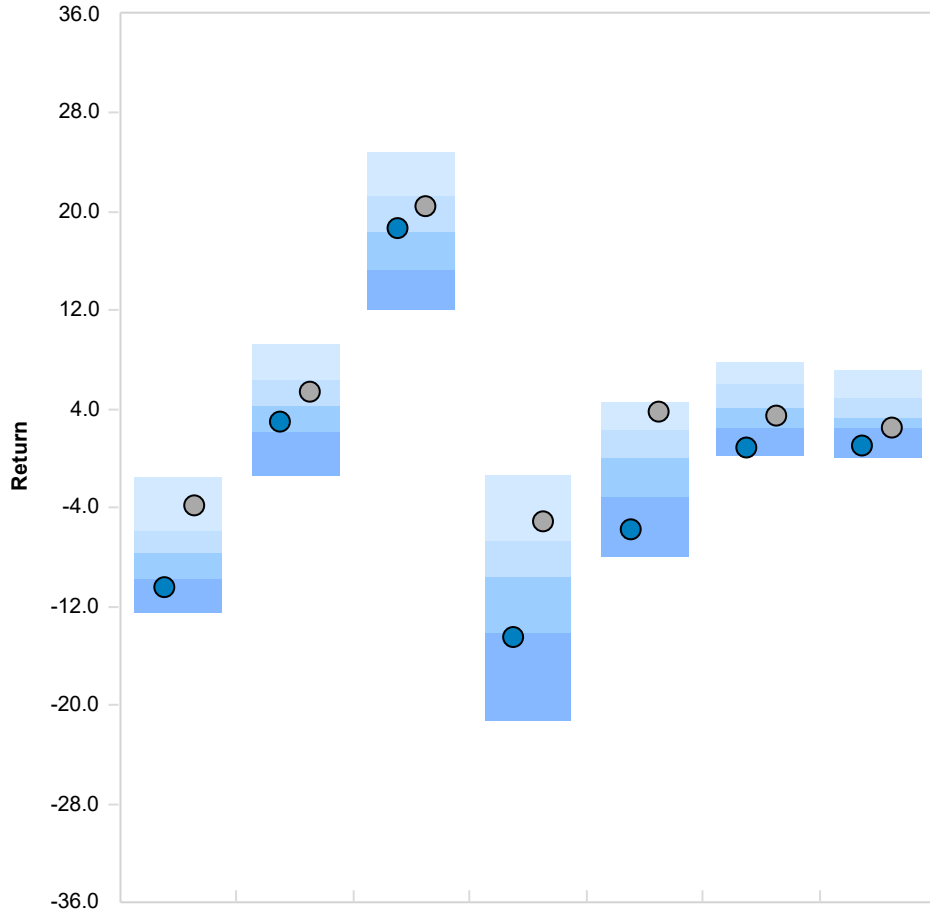
3 Year Rolling Percentile Rank IM International Large Cap Growth Equity (SA+CF)



5 Year Rolling Percentile Rank IM International Large Cap Growth Equity (SA+CF)

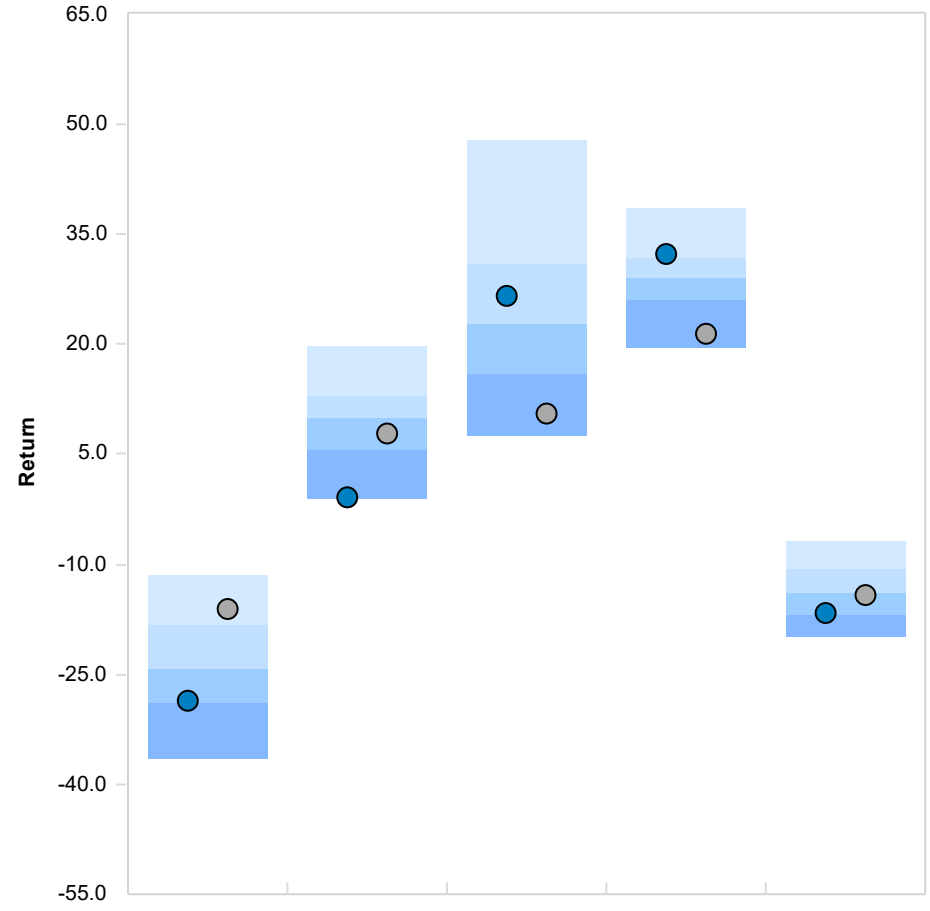


Peer Group Analysis - IM International Large Cap Growth Equity (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-10.45 (84)	3.02 (66)	18.76 (45)	-14.52 (79)	-5.69 (87)	0.90 (91)	0.97 (86)
● Index	-3.77 (10)	5.34 (34)	20.39 (33)	-5.08 (16)	3.74 (10)	3.55 (60)	2.58 (74)
Median	-7.64	4.30	18.36	-9.65	0.01	4.07	3.38

Peer Group Analysis - IM International Large Cap Growth Equity (SA+CF)



	2022	2021	2020	2019	2018
● Investment	-28.64 (73)	-0.72 (95)	26.60 (40)	32.23 (22)	-16.57 (69)
● Index	-16.00 (15)	7.82 (66)	10.65 (90)	21.51 (93)	-14.20 (54)
Median	-24.23	10.00	22.94	29.02	-13.86

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	1.77 (72)	13.05 (9)	15.28 (25)	-11.61 (94)	-17.09 (58)	-15.53 (79)
Index	2.44 (61)	6.87 (92)	14.28 (43)	-9.91 (74)	-13.73 (22)	-5.44 (8)
Median	2.81	9.49	13.81	-8.83	-16.65	-12.32



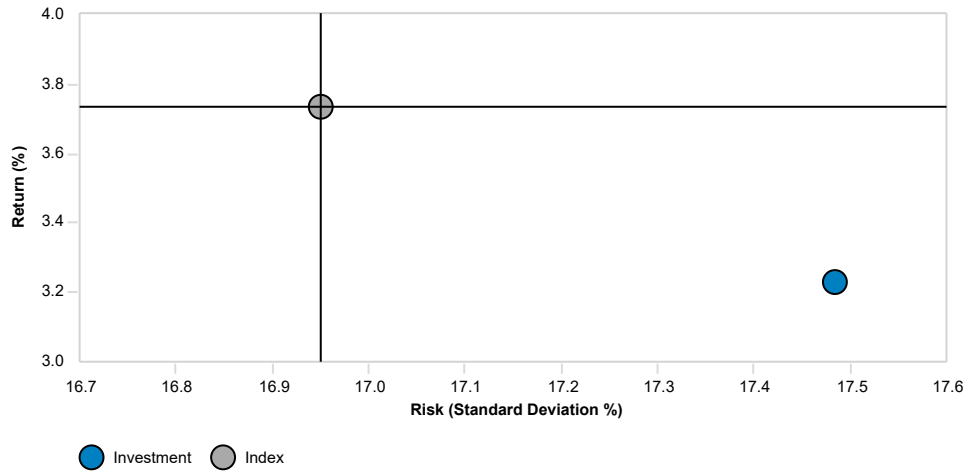
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	3.23	17.48	0.17	102.76	7	105.42	5
Index	3.74	16.95	0.20	100.00	7	100.00	5

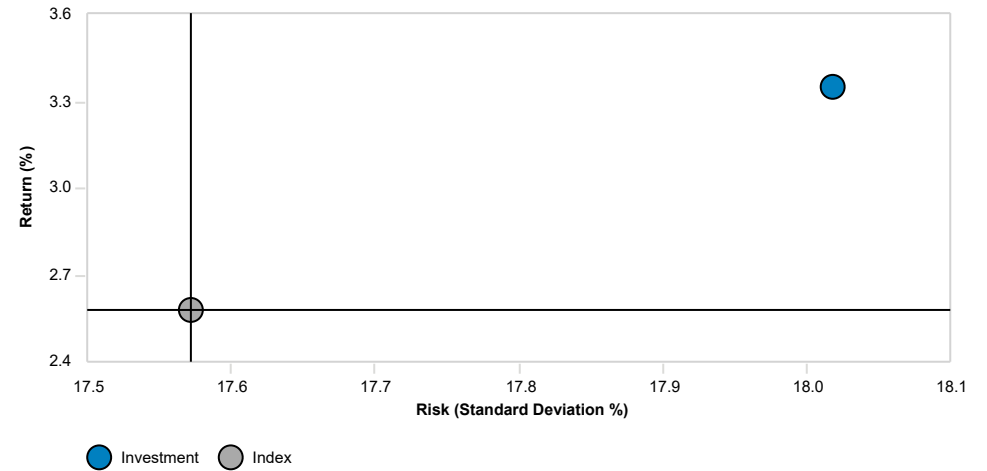
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	3.35	18.02	0.18	104.09	12	101.13	8
Index	2.58	17.57	0.14	100.00	12	100.00	8

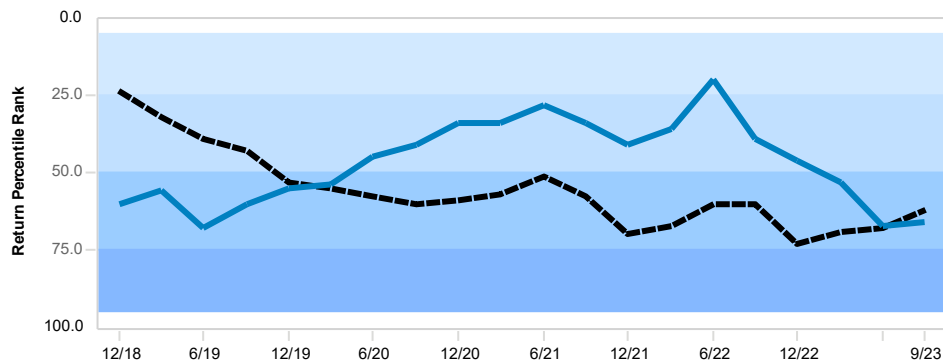
Risk and Return 3 Years



Risk and Return 5 Years

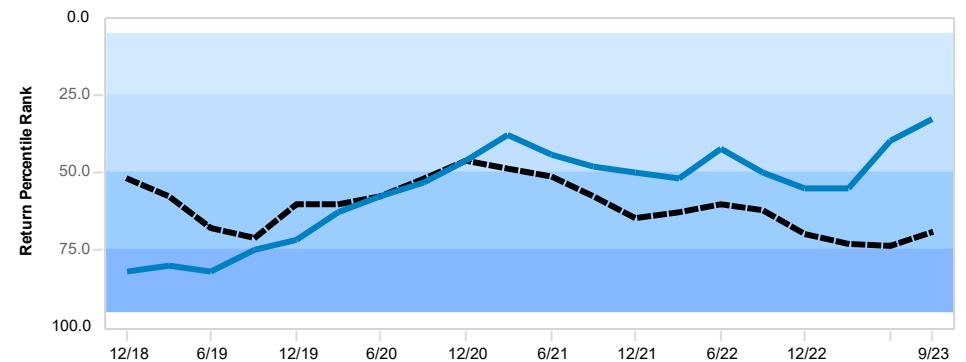


3 Year Rolling Percentile Rank IM International Large Cap Core Equity (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	1 (5%)	10 (50%)	9 (45%)	0 (0%)
Index	20	1 (5%)	3 (15%)	16 (80%)	0 (0%)

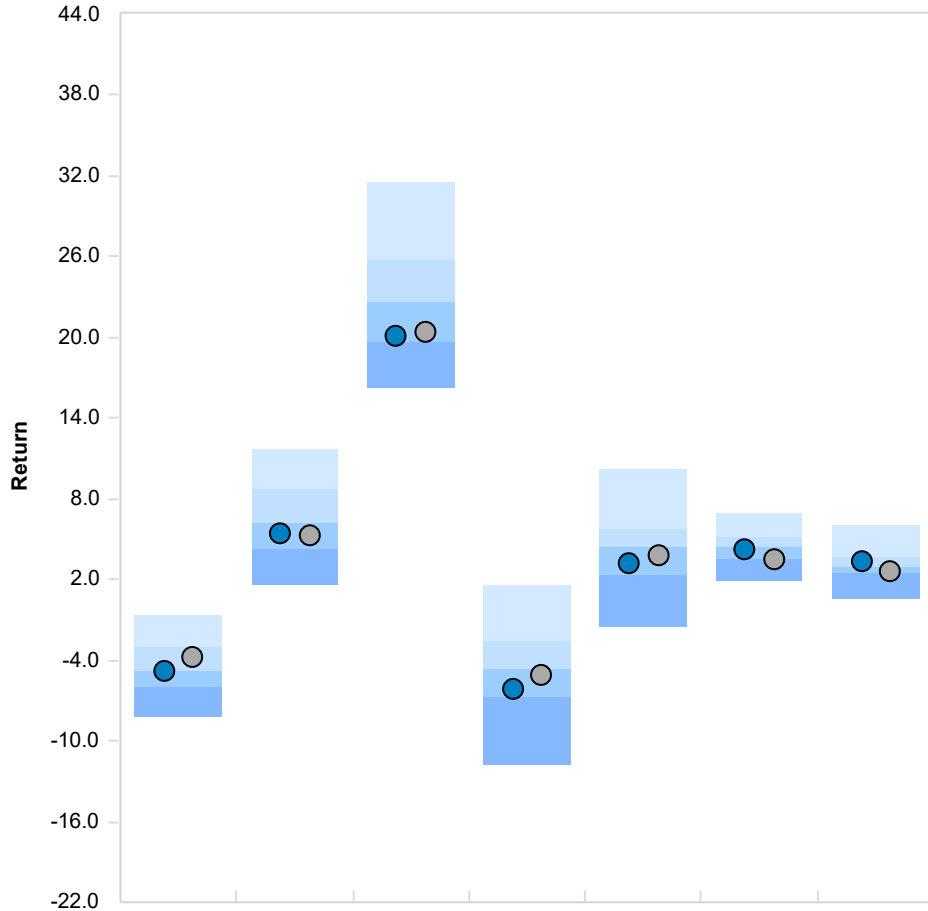
5 Year Rolling Percentile Rank IM International Large Cap Core Equity (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	0 (0%)	9 (45%)	8 (40%)	3 (15%)
Index	20	0 (0%)	2 (10%)	18 (90%)	0 (0%)

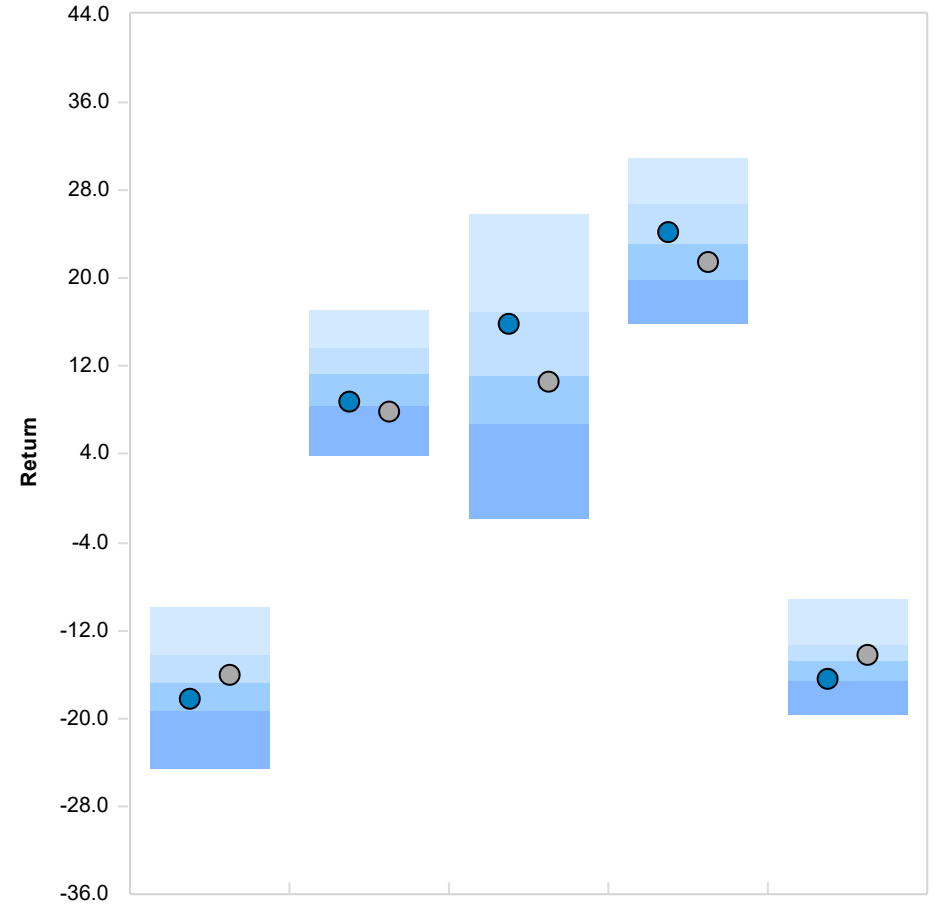


Peer Group Analysis - IM International Large Cap Core Equity (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-4.81 (51)	5.39 (61)	20.15 (71)	-6.08 (74)	3.23 (66)	4.32 (52)	3.35 (33)
● Index	-3.77 (38)	5.34 (62)	20.39 (67)	-5.08 (61)	3.74 (62)	3.55 (74)	2.58 (69)
Median	-4.80	6.19	22.59	-4.59	4.44	4.38	2.95

Peer Group Analysis - IM International Large Cap Core Equity (SA+CF)



	2022	2021	2020	2019	2018
● Investment	-18.13 (66)	8.78 (73)	15.83 (30)	24.24 (40)	-16.33 (71)
● Index	-16.00 (43)	7.82 (80)	10.65 (55)	21.51 (64)	-14.20 (44)
Median	-16.76	11.31	11.10	23.08	-14.85

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	3.01 (58)	7.48 (66)	14.00 (79)	-10.41 (79)	-13.35 (36)	-7.49 (58)
Index	2.44 (77)	6.87 (76)	14.28 (75)	-9.91 (62)	-13.73 (40)	-5.44 (29)
Median	3.16	8.09	15.39	-9.46	-14.50	-6.77



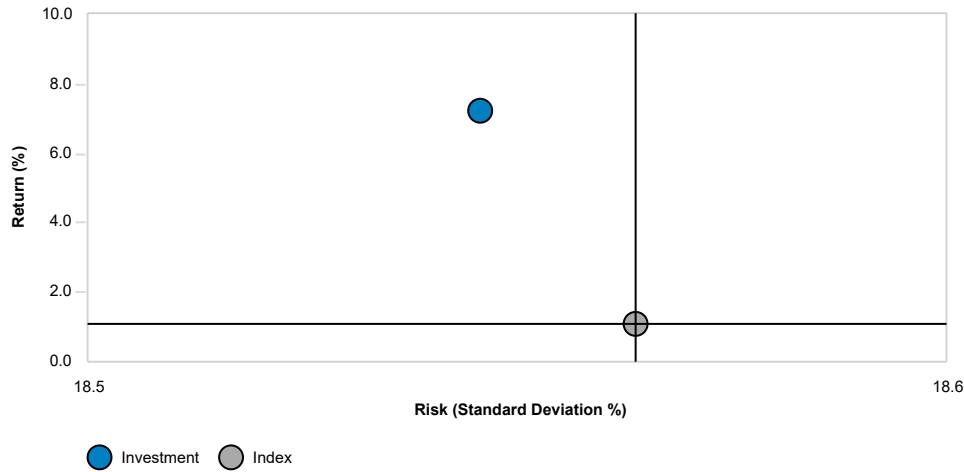
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	7.24	18.55	0.38	108.55	8	84.95	4
Index	1.10	18.56	0.06	100.00	8	100.00	4

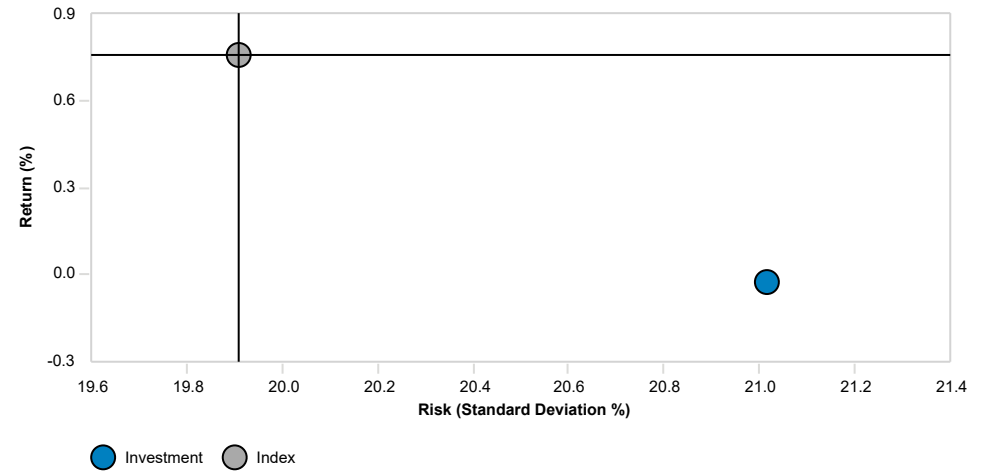
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-0.03	21.02	0.03	99.73	12	101.69	8
Index	0.76	19.91	0.05	100.00	13	100.00	7

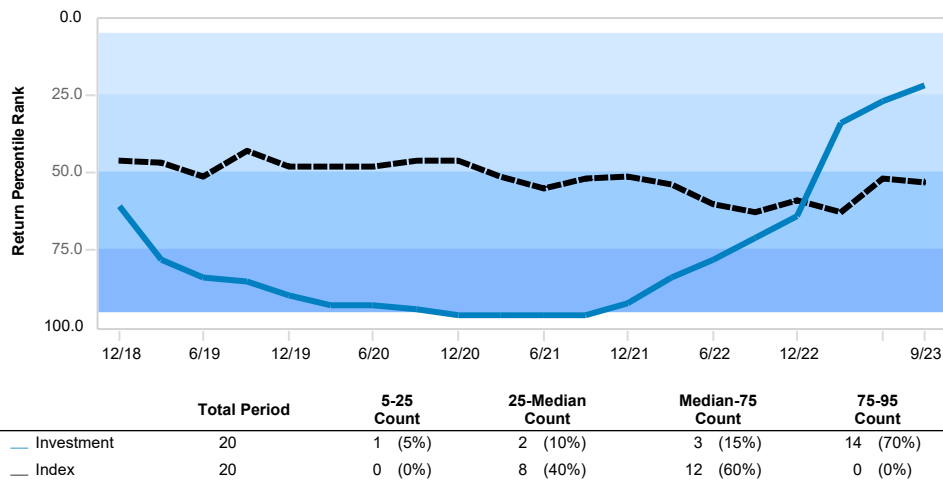
Risk and Return 3 Years



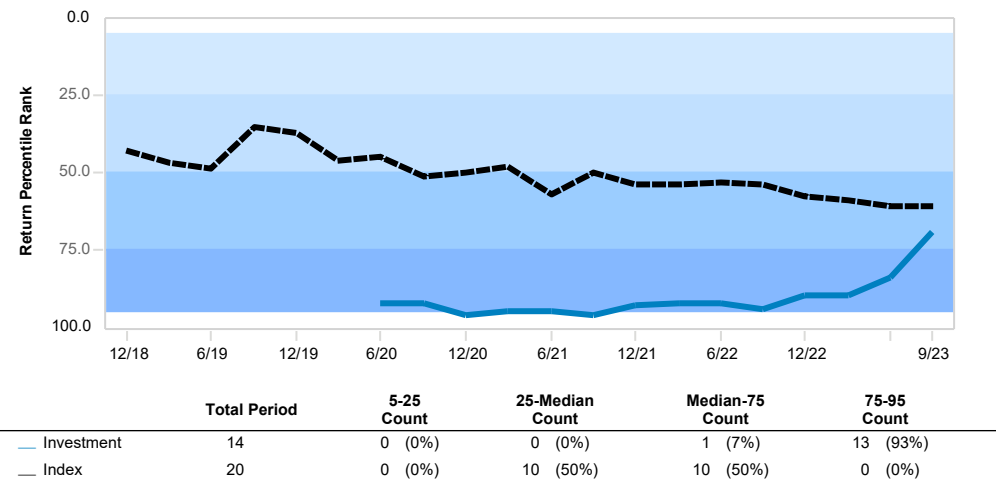
Risk and Return 5 Years



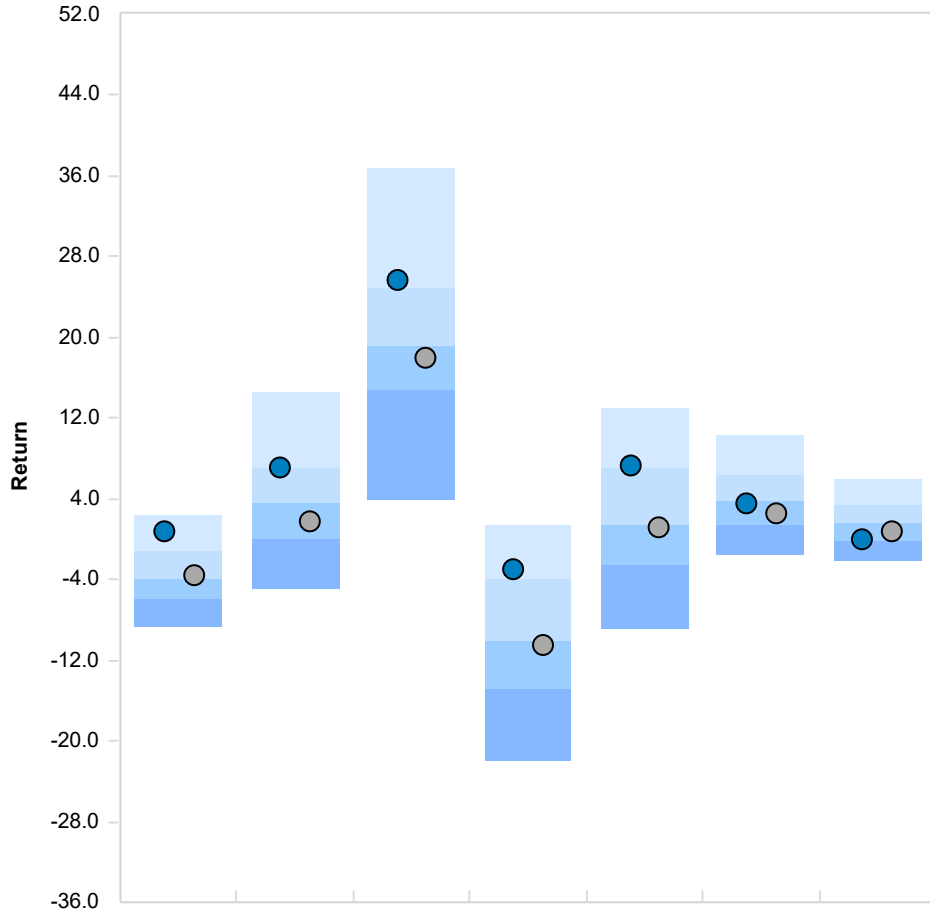
3 Year Rolling Percentile Rank IM International Small Cap Equity (SA+CF)



5 Year Rolling Percentile Rank IM International Small Cap Equity (SA+CF)

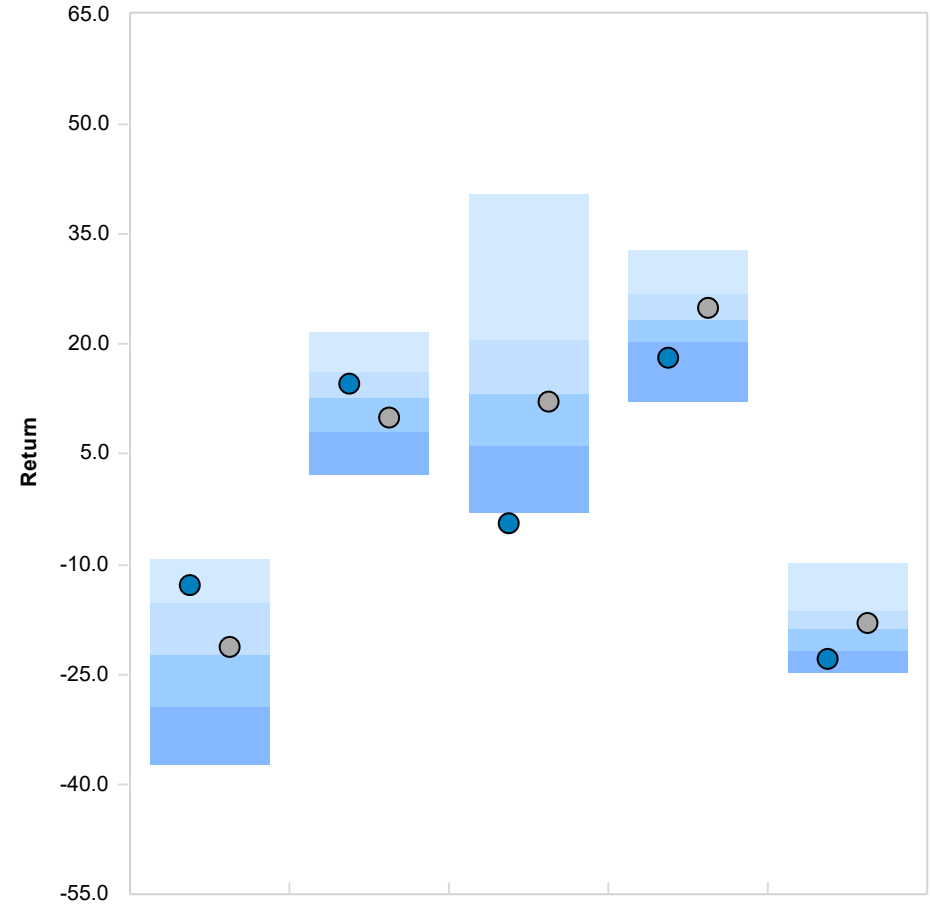


Peer Group Analysis - IM International Small Cap Equity (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	0.83 (10)	7.09 (25)	25.66 (23)	-2.92 (19)	7.24 (22)	3.46 (52)	-0.03 (69)
● Index	-3.51 (44)	1.82 (63)	17.90 (56)	-10.50 (52)	1.10 (53)	2.51 (63)	0.76 (61)
Median	-3.94	3.62	19.15	-10.09	1.44	3.67	1.65

Peer Group Analysis - IM International Small Cap Equity (SA+CF)



	2022	2021	2020	2019	2018
● Investment	-12.84 (17)	14.56 (33)	-4.29 (96)	18.21 (81)	-22.85 (83)
● Index	-21.39 (47)	10.10 (67)	12.34 (52)	24.96 (34)	-17.89 (39)
Median	-22.23	12.86	13.23	23.30	-18.93

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	0.65 (55)	5.52 (64)	17.35 (31)	-9.09 (38)	-16.31 (44)	-2.37 (9)
Index	0.58 (56)	4.92 (73)	15.79 (48)	-9.83 (54)	-17.69 (69)	-8.53 (43)
Median	0.79	6.14	15.74	-9.66	-16.76	-10.42



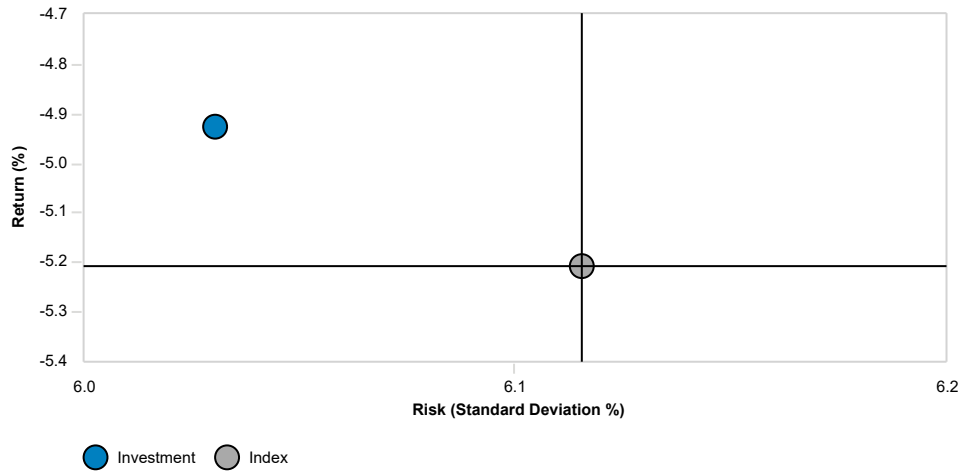
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-4.93	6.03	-1.09	95.17	4	94.80	8
Index	-5.21	6.12	-1.12	100.00	6	100.00	6

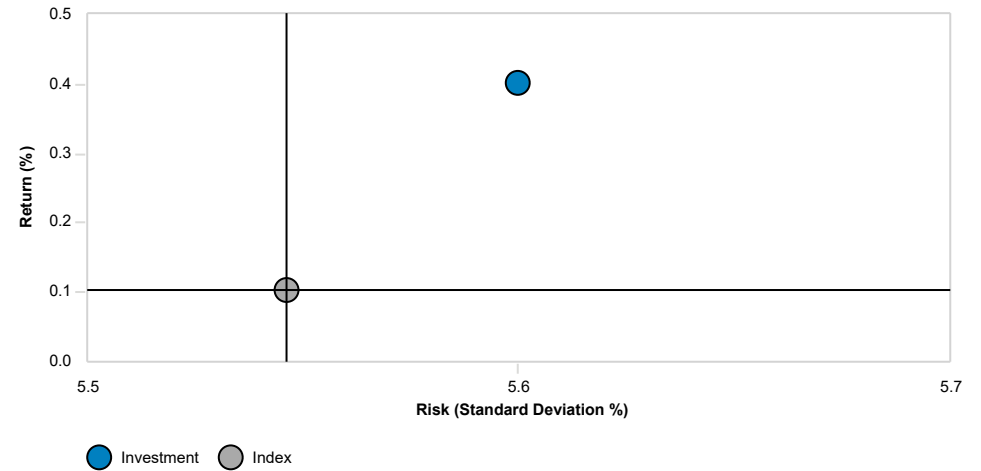
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	0.40	5.60	-0.20	102.08	12	97.91	8
Index	0.10	5.55	-0.26	100.00	14	100.00	6

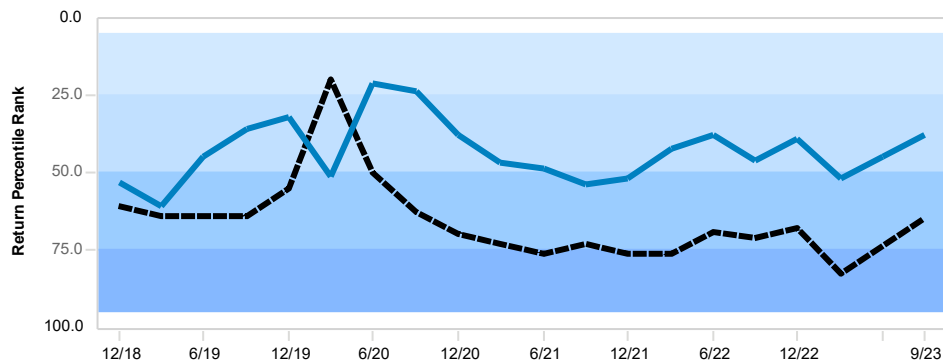
Risk and Return 3 Years



Risk and Return 5 Years

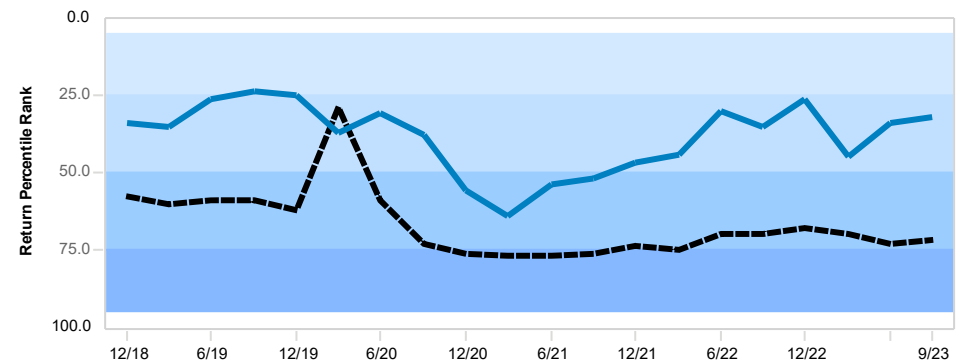


3 Year Rolling Percentile Rank IM U.S. Broad Market Core Fixed Income (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	2 (10%)	12 (60%)	6 (30%)	0 (0%)
Index	20	1 (5%)	1 (5%)	14 (70%)	4 (20%)

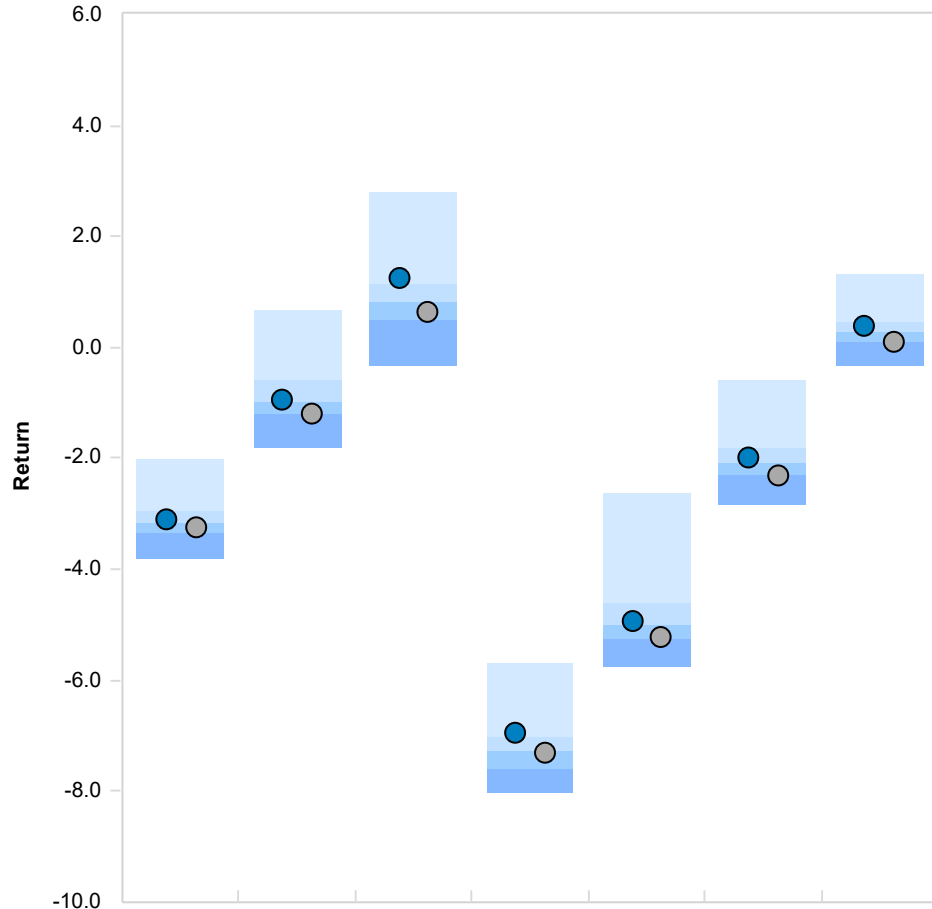
5 Year Rolling Percentile Rank IM U.S. Broad Market Core Fixed Income (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	2 (10%)	14 (70%)	4 (20%)	0 (0%)
Index	20	0 (0%)	1 (5%)	15 (75%)	4 (20%)

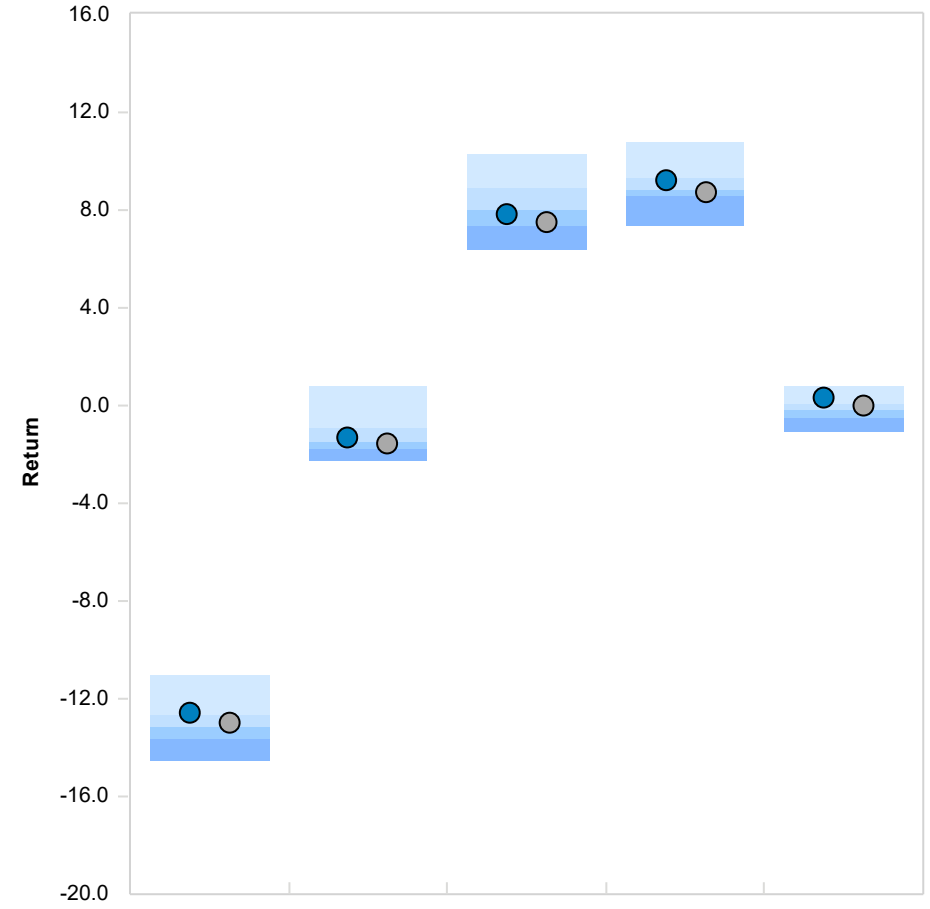


Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-3.08 (38)	-0.94 (47)	1.27 (23)	-6.96 (21)	-4.93 (38)	-1.97 (38)	0.40 (32)
● Index	-3.23 (59)	-1.21 (75)	0.64 (63)	-7.29 (54)	-5.21 (65)	-2.30 (76)	0.10 (72)
Median	-3.17	-0.98	0.82	-7.27	-5.02	-2.09	0.29

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



	2022	2021	2020	2019	2018
● Investment	-12.60 (23)	-1.29 (44)	7.87 (53)	9.18 (34)	0.29 (14)
● Index	-13.01 (35)	-1.55 (55)	7.51 (69)	8.72 (66)	0.01 (34)
Median	-13.14	-1.47	8.04	8.83	-0.14

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	-0.25 (7)	2.47 (97)	2.23 (7)	-4.78 (69)	-4.65 (22)	-5.83 (43)
Index	-0.84 (65)	2.96 (71)	1.87 (34)	-4.75 (65)	-4.69 (29)	-5.93 (59)
Median	-0.77	3.12	1.72	-4.65	-4.90	-5.88



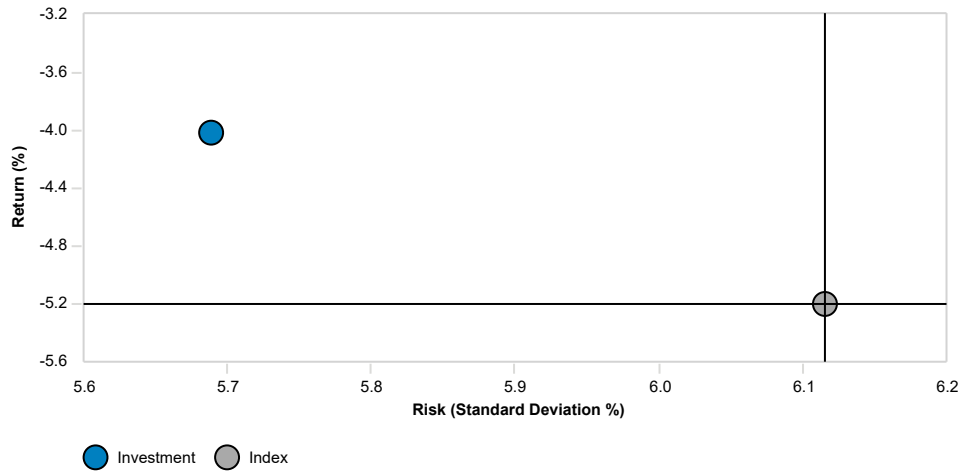
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-4.01	5.69	-0.99	96.03	6	86.74	6
Index	-5.21	6.12	-1.12	100.00	6	100.00	6

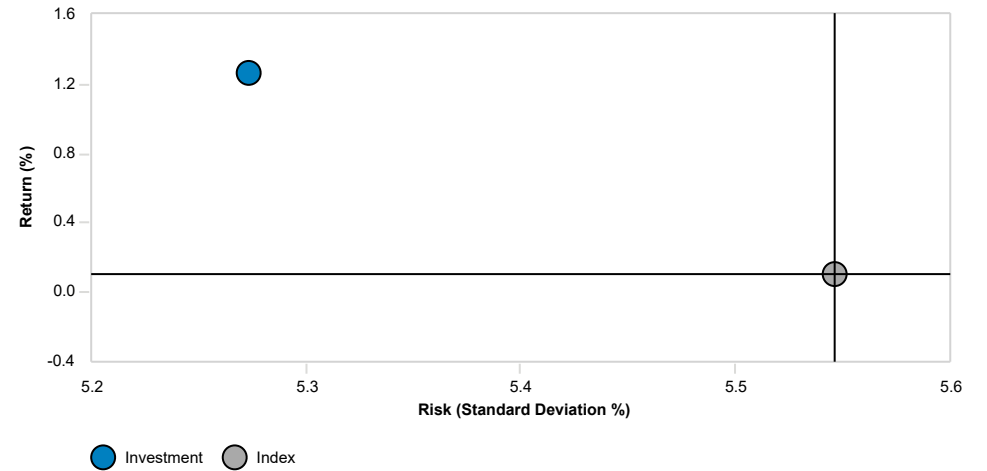
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	1.27	5.27	-0.06	102.72	14	86.76	6
Index	0.10	5.55	-0.26	100.00	14	100.00	6

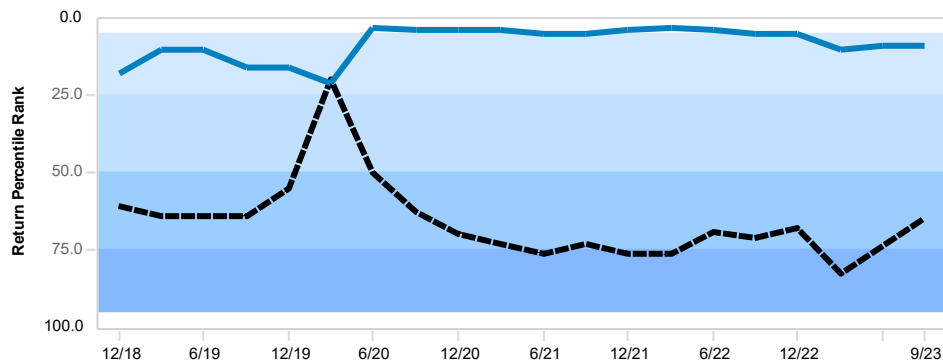
Risk and Return 3 Years



Risk and Return 5 Years

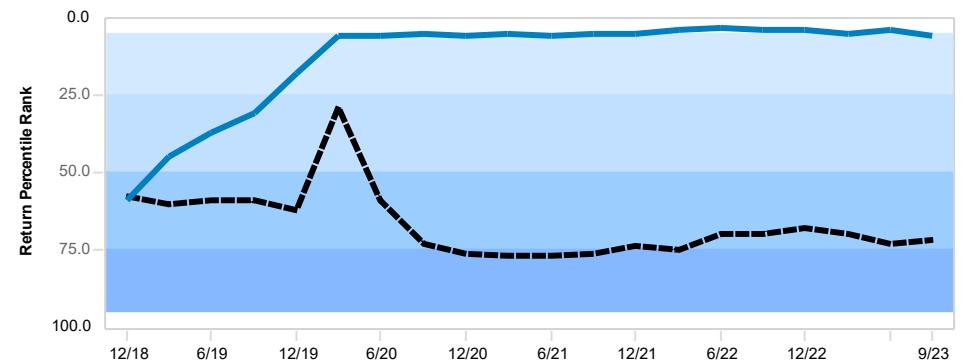


3 Year Rolling Percentile Rank IM U.S. Broad Market Core Fixed Income (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	20 (100%)	0 (0%)	0 (0%)	0 (0%)
Index	20	1 (5%)	1 (5%)	14 (70%)	4 (20%)

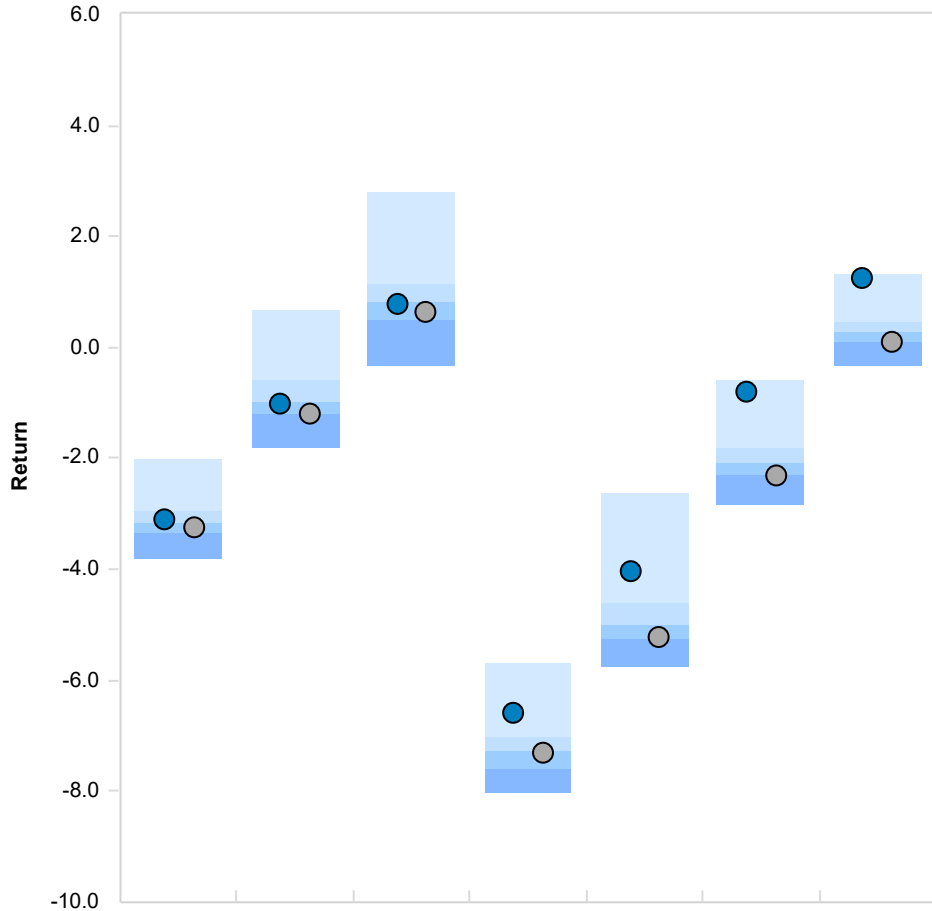
5 Year Rolling Percentile Rank IM U.S. Broad Market Core Fixed Income (SA+CF)



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

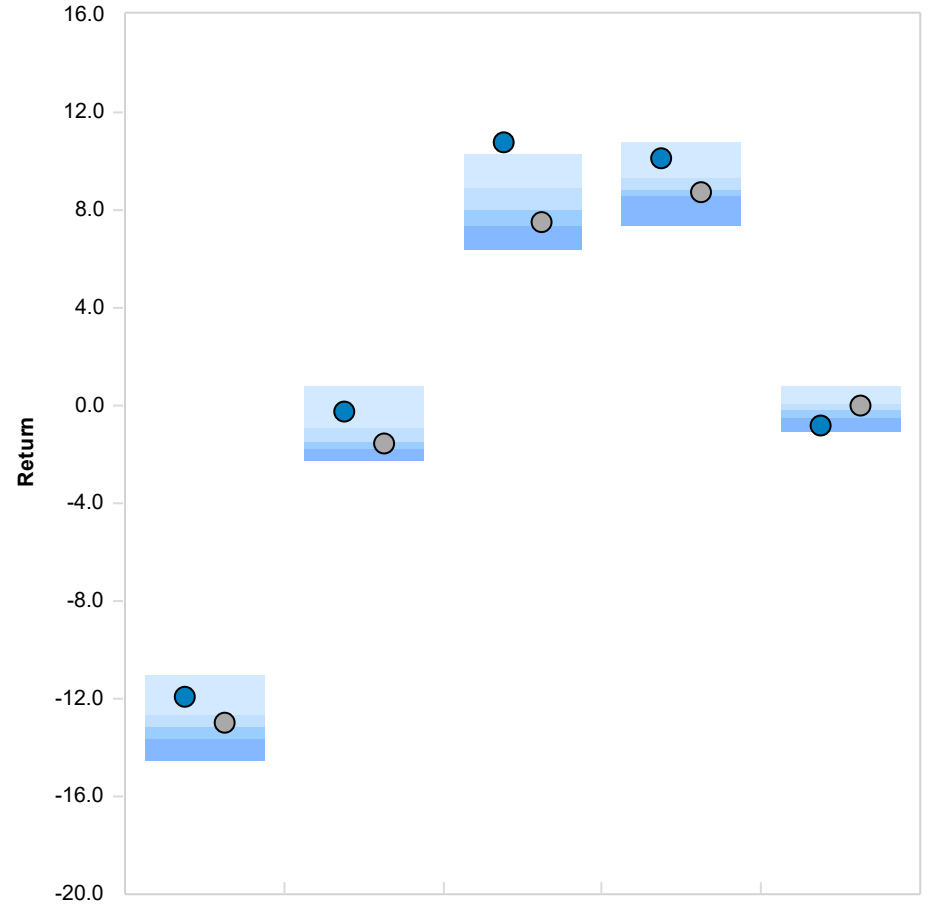


Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-3.08 (38)	-1.01 (54)	0.77 (54)	-6.58 (14)	-4.01 (9)	-0.80 (8)	1.27 (6)
● Index	-3.23 (59)	-1.21 (75)	0.64 (63)	-7.29 (54)	-5.21 (65)	-2.30 (76)	0.10 (72)
Median	-3.17	-0.98	0.82	-7.27	-5.02	-2.09	0.29

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



	2022	2021	2020	2019	2018
● Investment	-11.92 (11)	-0.25 (9)	10.80 (3)	10.15 (8)	-0.81 (89)
● Index	-13.01 (35)	-1.55 (55)	7.51 (69)	8.72 (66)	0.01 (34)
Median	-13.14	-1.47	8.04	8.83	-0.14

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	-0.51 (15)	2.66 (94)	1.80 (43)	-4.40 (22)	-4.36 (16)	-5.37 (15)
Index	-0.84 (65)	2.96 (71)	1.87 (34)	-4.75 (65)	-4.69 (29)	-5.93 (59)
Median	-0.77	3.12	1.72	-4.65	-4.90	-5.88



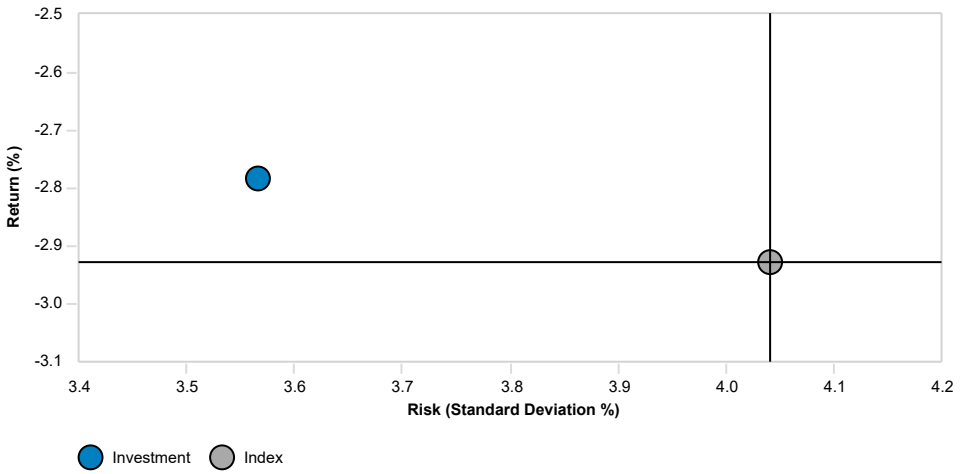
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-2.78	3.57	-1.26	86.13	4	90.05	8
Index	-2.93	4.04	-1.14	100.00	5	100.00	7

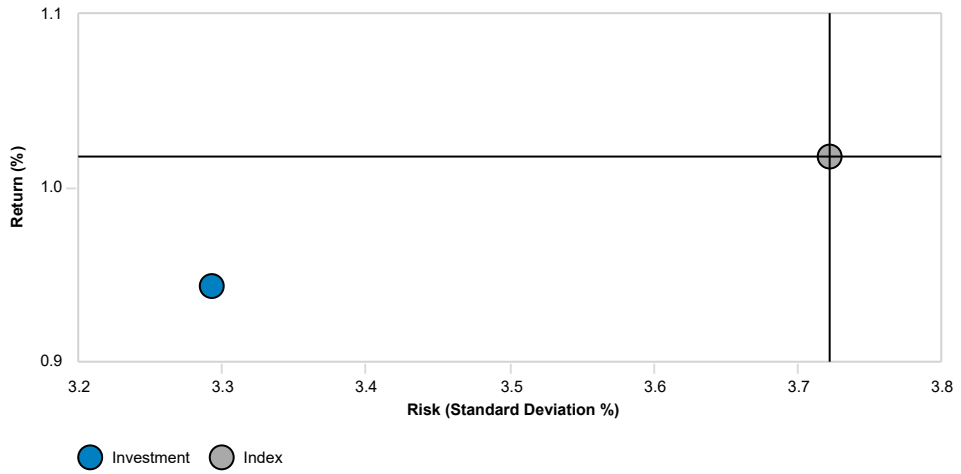
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	0.94	3.29	-0.22	87.00	12	85.83	8
Index	1.02	3.72	-0.17	100.00	13	100.00	7

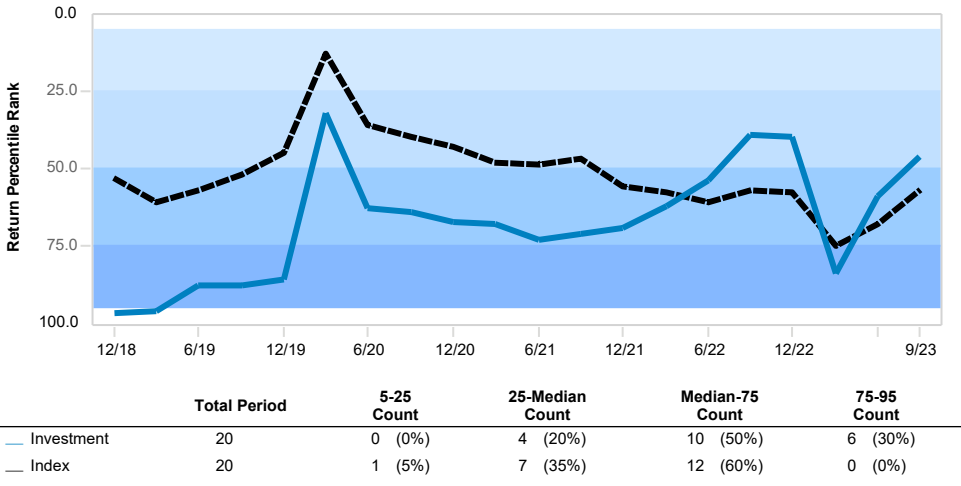
Risk and Return 3 Years



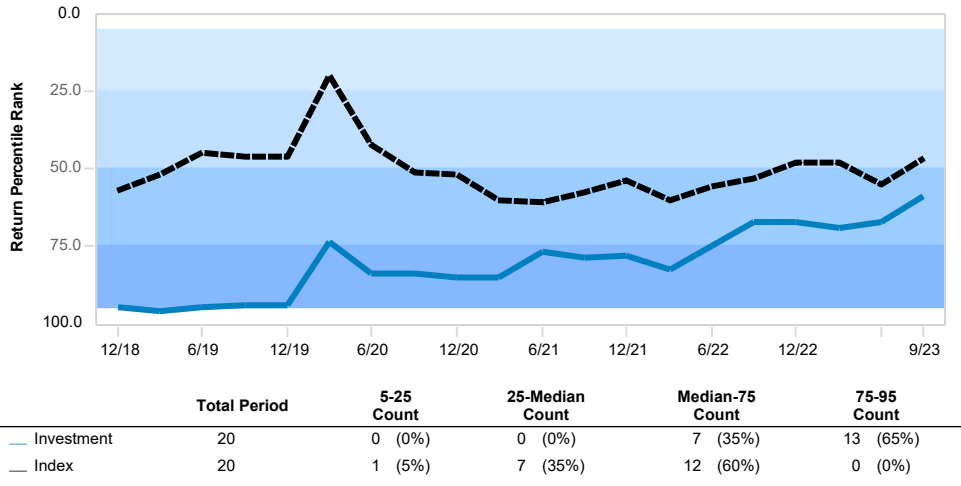
Risk and Return 5 Years



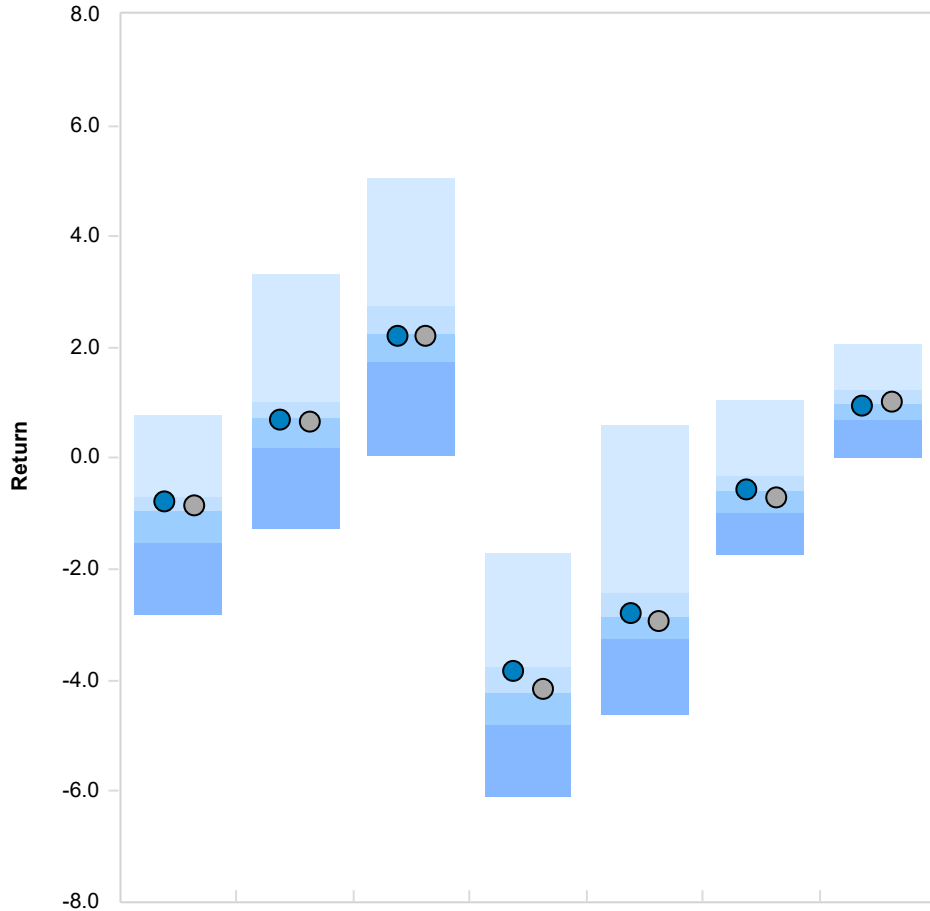
3 Year Rolling Percentile Rank IM U.S. Intermediate Duration (SA+CF)



5 Year Rolling Percentile Rank IM U.S. Intermediate Duration (SA+CF)

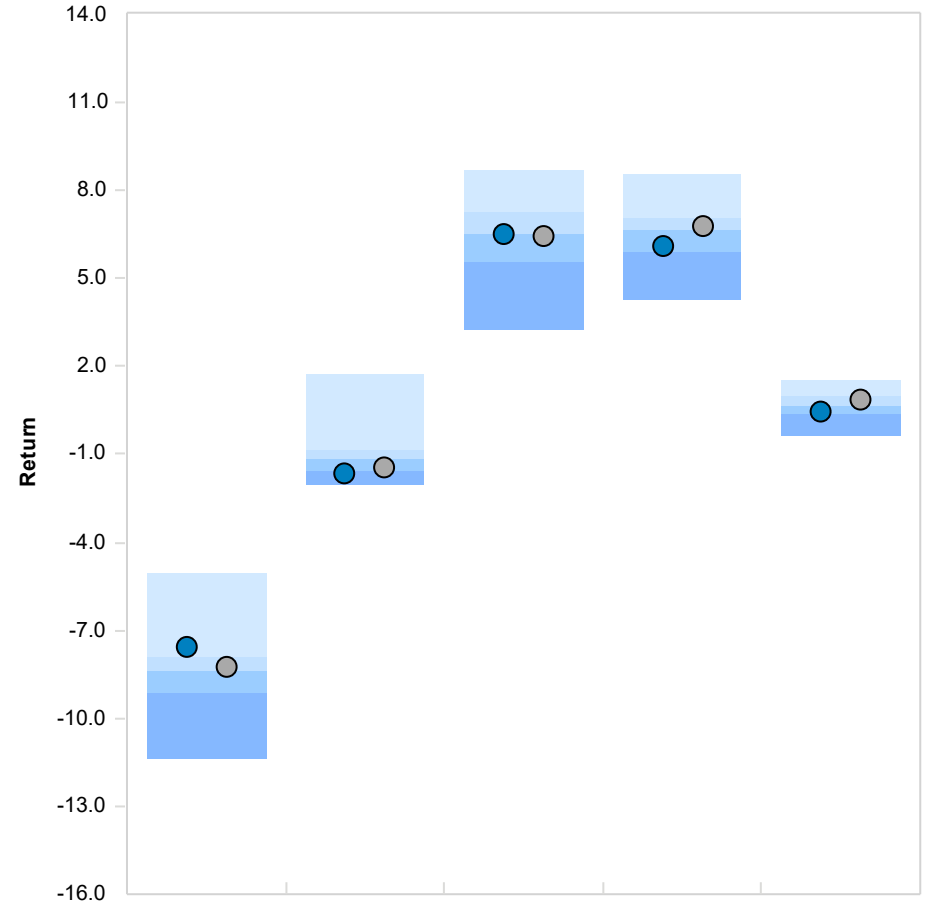


Peer Group Analysis - IM U.S. Intermediate Duration (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-0.77 (30)	0.69 (52)	2.23 (54)	-3.81 (29)	-2.78 (46)	-0.55 (45)	0.94 (59)
● Index	-0.83 (37)	0.65 (55)	2.20 (56)	-4.17 (45)	-2.93 (57)	-0.69 (59)	1.02 (47)
Median	-0.94	0.72	2.26	-4.24	-2.86	-0.59	1.00

Peer Group Analysis - IM U.S. Intermediate Duration (SA+CF)



	2022	2021	2020	2019	2018
● Investment	-7.55 (20)	-1.65 (83)	6.52 (49)	6.11 (71)	0.47 (66)
● Index	-8.24 (41)	-1.44 (66)	6.43 (54)	6.80 (42)	0.88 (35)
Median	-8.36	-1.20	6.49	6.66	0.68

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	-0.45 (37)	1.92 (85)	1.53 (46)	-2.79 (25)	-2.28 (22)	-4.15 (32)
Index	-0.81 (80)	2.33 (49)	1.54 (45)	-3.06 (52)	-2.37 (25)	-4.51 (63)
Median	-0.56	2.33	1.50	-3.05	-2.66	-4.41



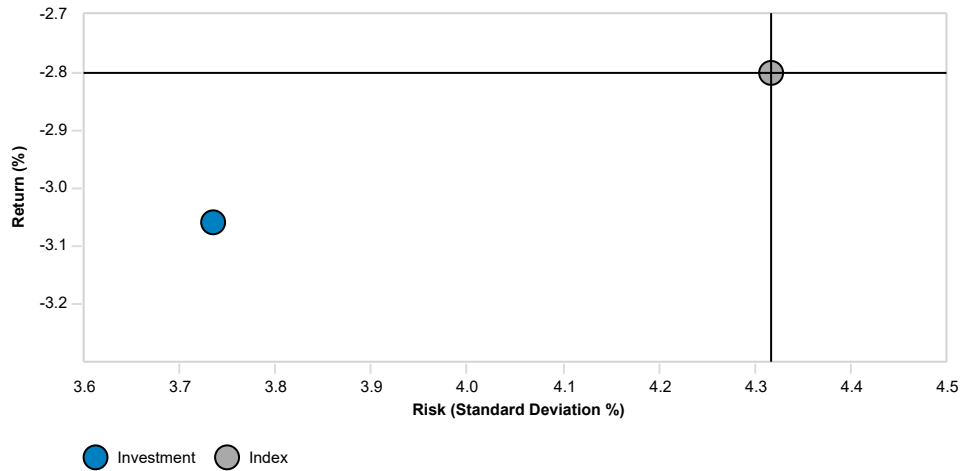
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-3.06	3.74	-1.28	80.44	4	91.90	8
Index	-2.80	4.32	-1.04	100.00	5	100.00	7

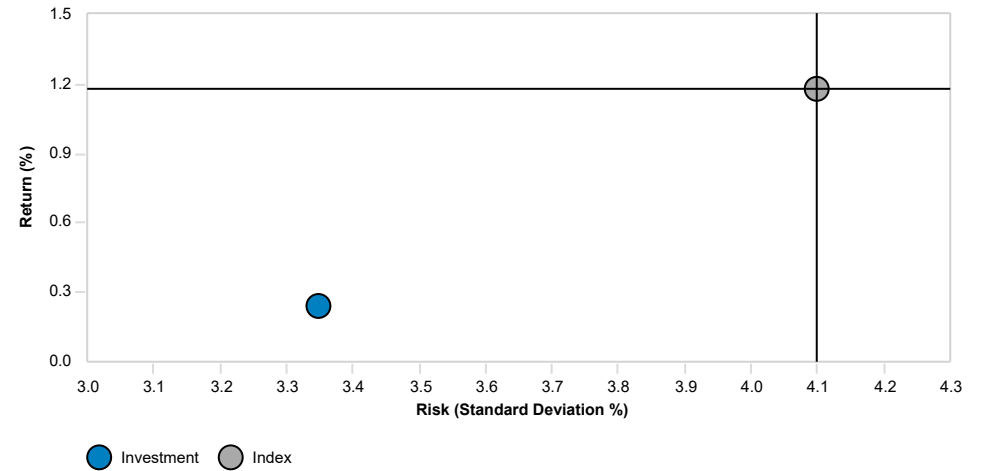
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	0.24	3.35	-0.43	72.97	11	85.80	9
Index	1.18	4.10	-0.11	100.00	13	100.00	7

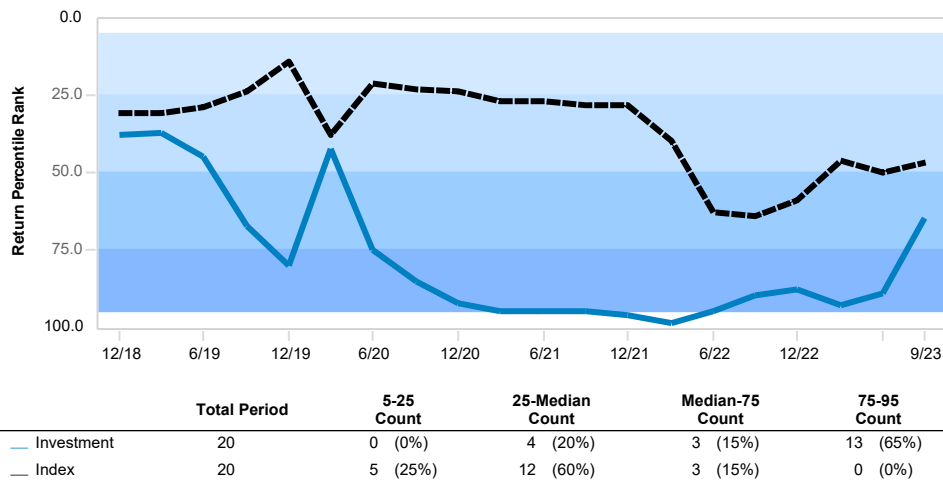
Risk and Return 3 Years



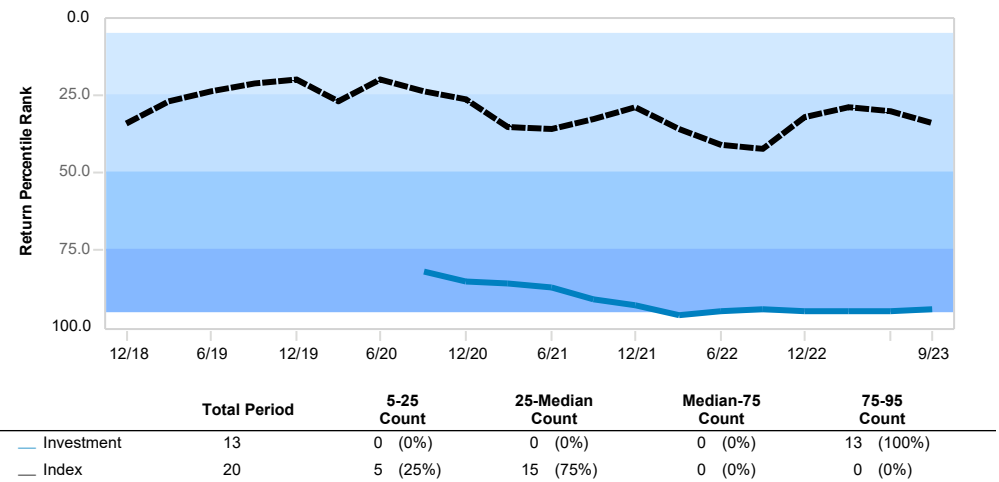
Risk and Return 5 Years



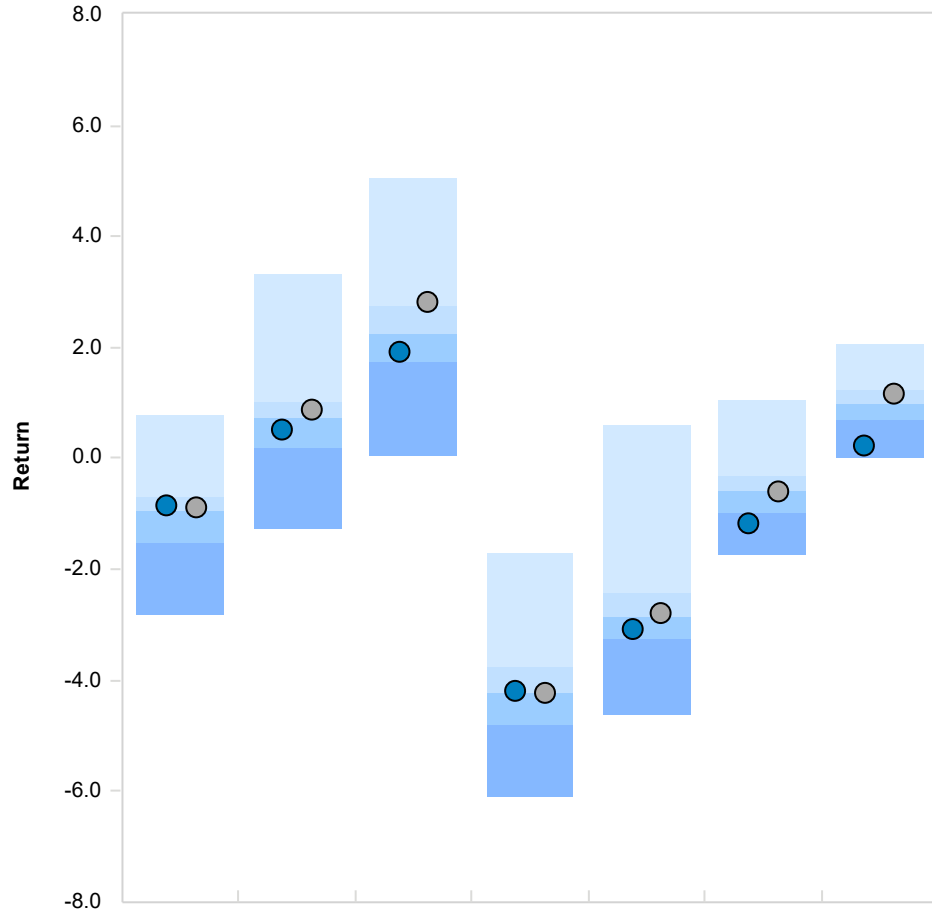
3 Year Rolling Percentile Rank IM U.S. Intermediate Duration (SA+CF)



5 Year Rolling Percentile Rank IM U.S. Intermediate Duration (SA+CF)

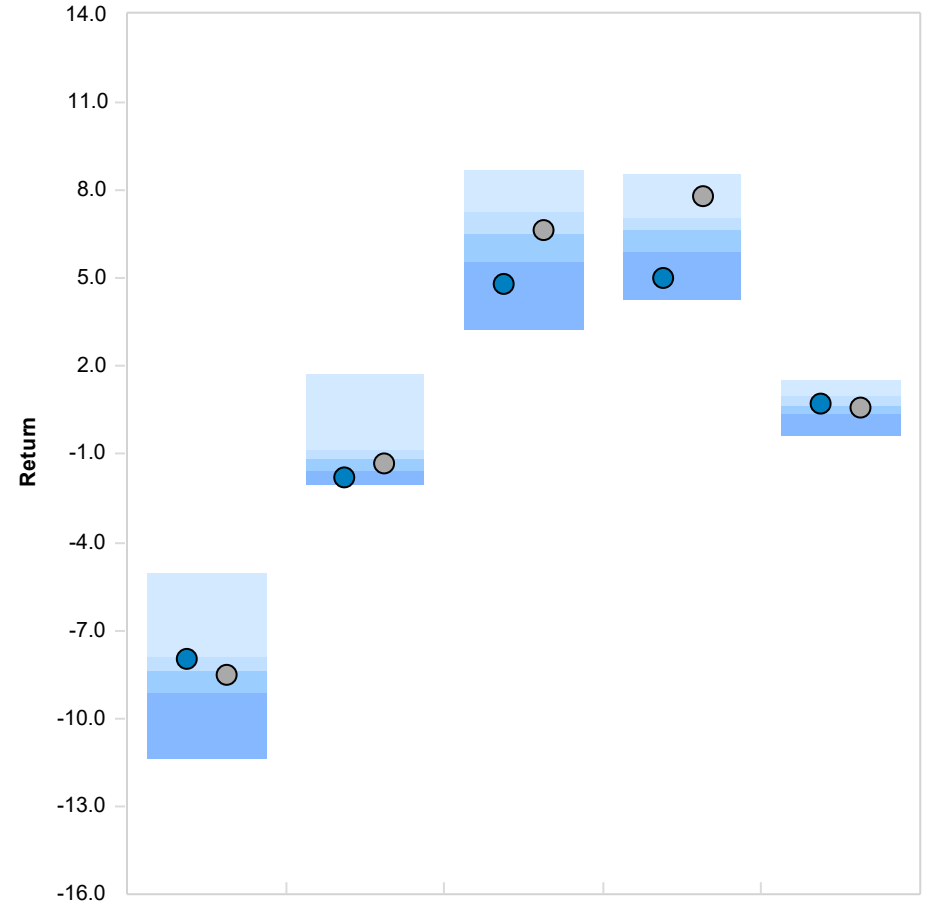


Peer Group Analysis - IM U.S. Intermediate Duration (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-0.86 (39)	0.51 (64)	1.92 (69)	-4.17 (45)	-3.06 (65)	-1.17 (83)	0.24 (94)
● Index	-0.87 (39)	0.89 (35)	2.82 (23)	-4.22 (48)	-2.80 (47)	-0.59 (50)	1.18 (34)
Median	-0.94	0.72	2.26	-4.24	-2.86	-0.59	1.00

Peer Group Analysis - IM U.S. Intermediate Duration (SA+CF)



	2022	2021	2020	2019	2018
● Investment	-8.01 (31)	-1.80 (90)	4.79 (89)	5.02 (92)	0.74 (47)
● Index	-8.55 (58)	-1.29 (58)	6.62 (47)	7.78 (11)	0.58 (59)
Median	-8.36	-1.20	6.49	6.66	0.68

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	-0.71 (66)	2.11 (75)	1.40 (66)	-2.90 (30)	-2.41 (28)	-4.26 (39)
Index	-0.61 (55)	2.39 (42)	1.91 (14)	-3.07 (53)	-2.84 (64)	-4.72 (83)
Median	-0.56	2.33	1.50	-3.05	-2.66	-4.41



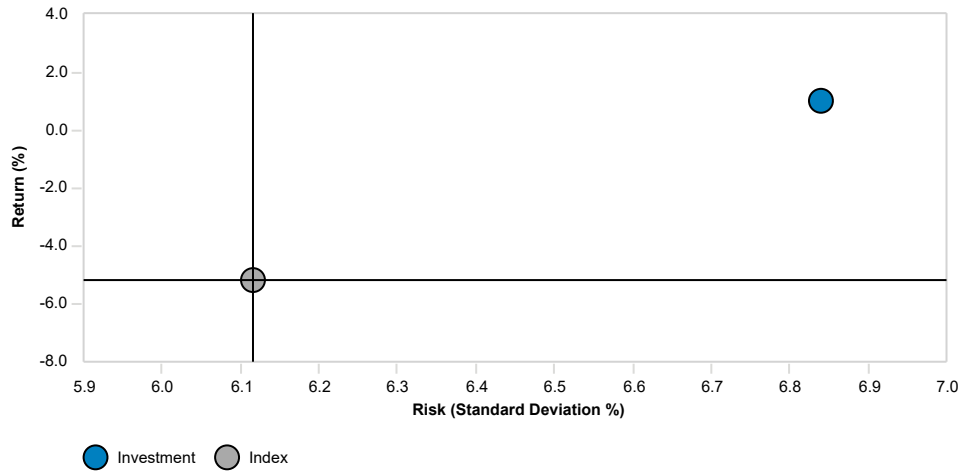
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	1.05	6.84	-0.06	120.00	7	51.78	5
Index	-5.21	6.12	-1.12	100.00	6	100.00	6

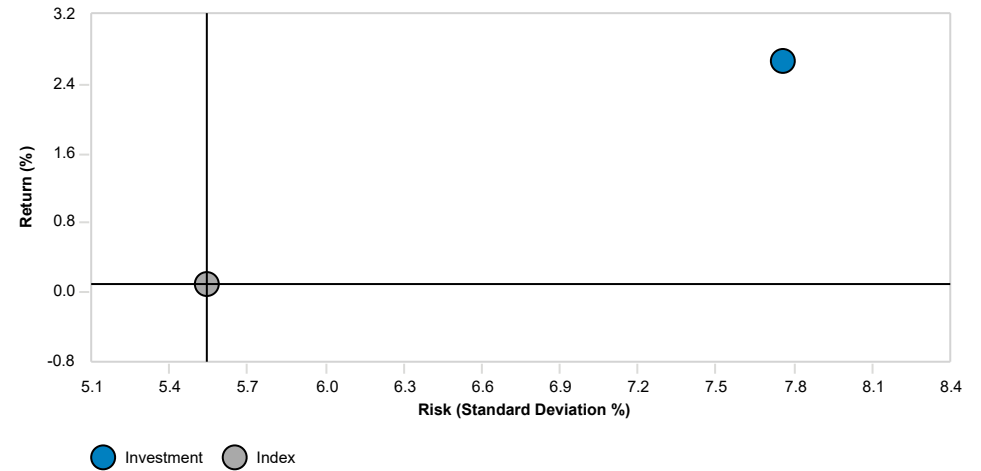
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	2.67	7.75	0.16	107.64	13	70.39	7
Index	0.10	5.55	-0.26	100.00	14	100.00	6

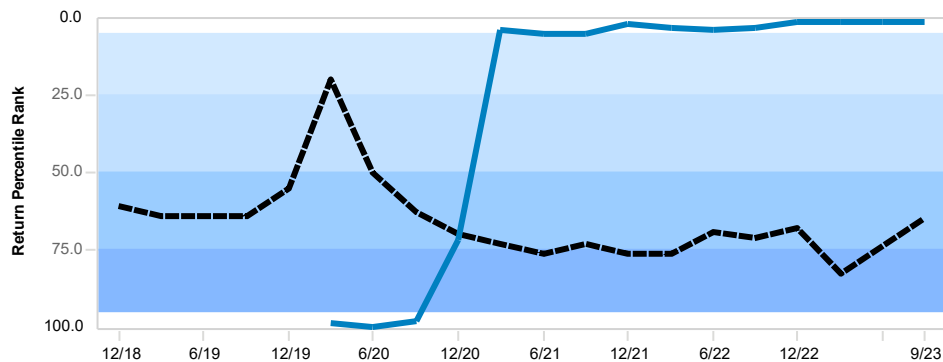
Risk and Return 3 Years



Risk and Return 5 Years

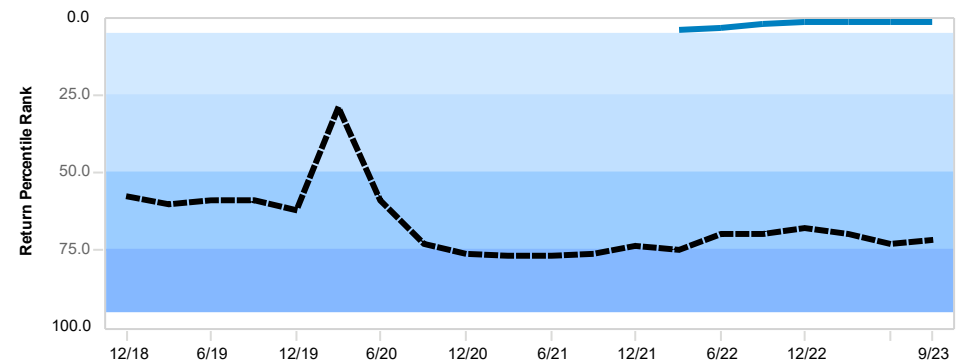


3 Year Rolling Percentile Rank IM U.S. Broad Market Core Fixed Income (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	15	11 (73%)	0 (0%)	1 (7%)	3 (20%)
Index	20	1 (5%)	1 (5%)	14 (70%)	4 (20%)

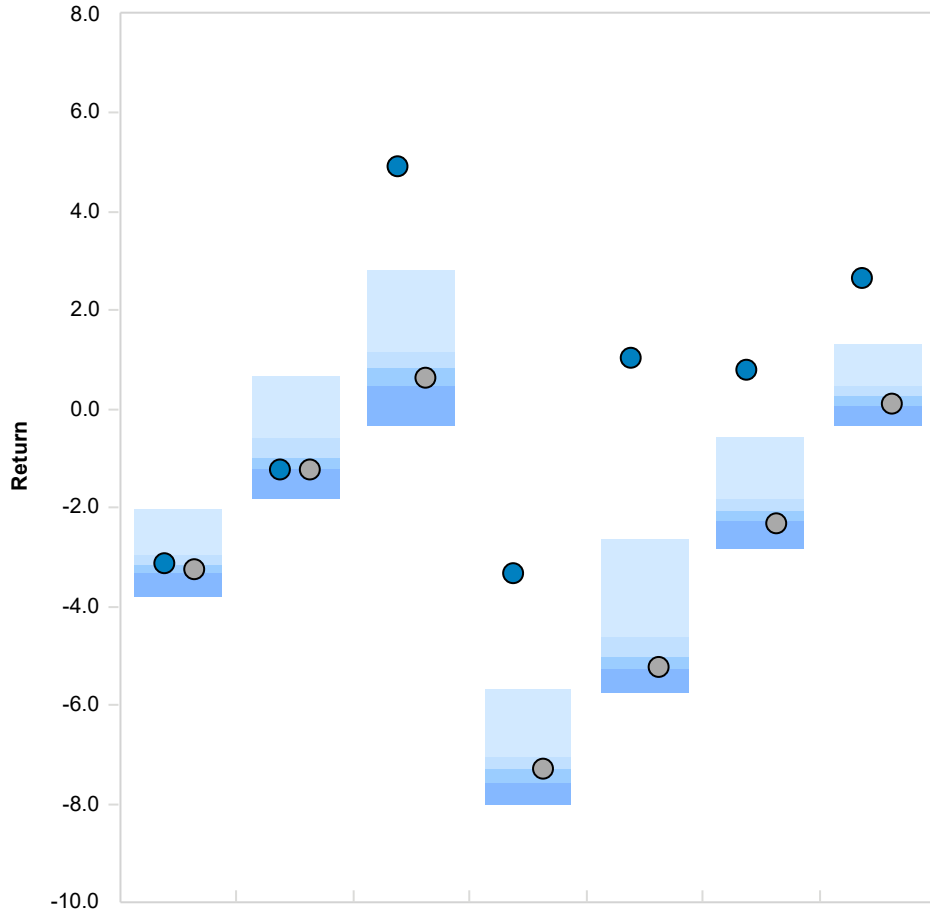
5 Year Rolling Percentile Rank IM U.S. Broad Market Core Fixed Income (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	7	7 (100%)	0 (0%)	0 (0%)	0 (0%)
Index	20	0 (0%)	1 (5%)	15 (75%)	4 (20%)

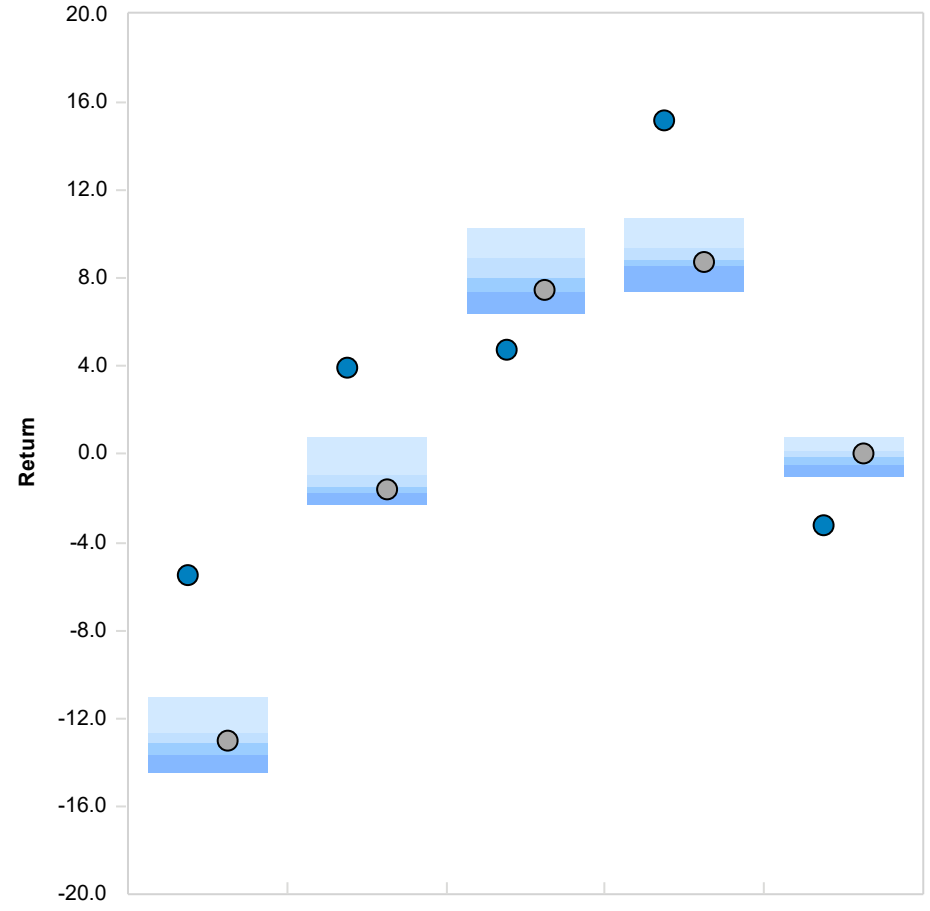


Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-3.13 (45)	-1.23 (76)	4.94 (1)	-3.33 (3)	1.05 (1)	0.79 (2)	2.67 (1)
● Index	-3.23 (59)	-1.21 (75)	0.64 (63)	-7.29 (54)	-5.21 (65)	-2.30 (76)	0.10 (72)
Median	-3.17	-0.98	0.82	-7.27	-5.02	-2.09	0.29

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



	2022	2021	2020	2019	2018
● Investment	-5.53 (1)	3.95 (1)	4.78 (99)	15.16 (1)	-3.20 (100)
● Index	-13.01 (35)	-1.55 (55)	7.51 (69)	8.72 (66)	0.01 (34)
Median	-13.14	-1.47	8.04	8.83	-0.14

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	0.52 (3)	1.43 (99)	6.25 (1)	-2.57 (3)	-4.89 (50)	-4.05 (1)
Index	-0.84 (65)	2.96 (71)	1.87 (34)	-4.75 (65)	-4.69 (29)	-5.93 (59)
Median	-0.77	3.12	1.72	-4.65	-4.90	-5.88



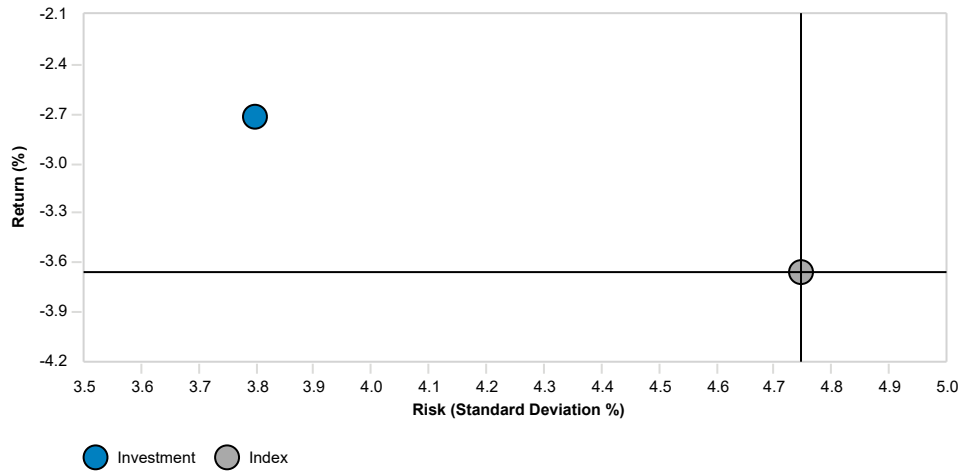
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-2.71	3.80	-1.15	88.38	4	81.94	8
Index	-3.66	4.75	-1.12	100.00	5	100.00	7

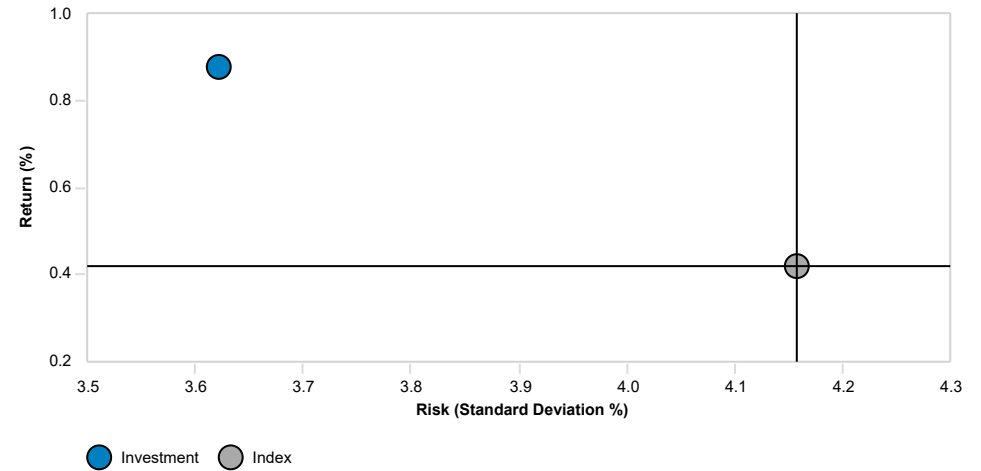
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	0.88	3.62	-0.21	97.36	12	88.29	8
Index	0.42	4.16	-0.29	100.00	13	100.00	7

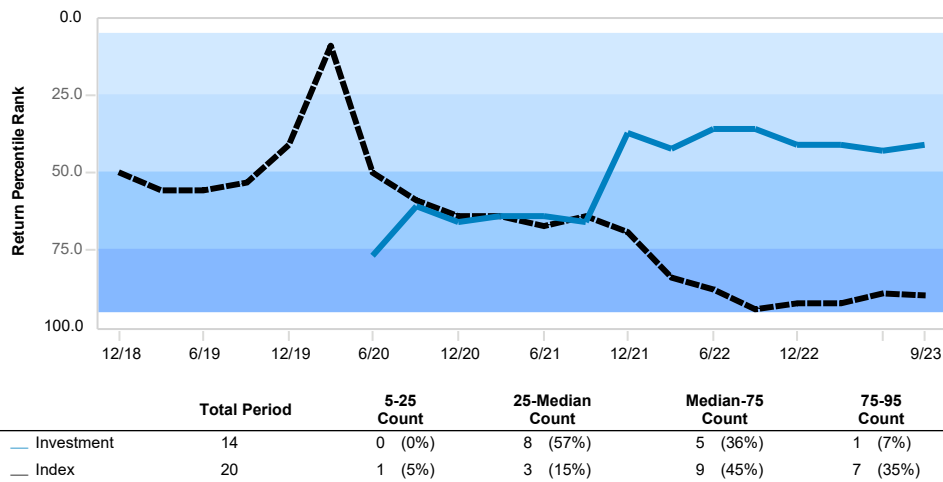
Risk and Return 3 Years



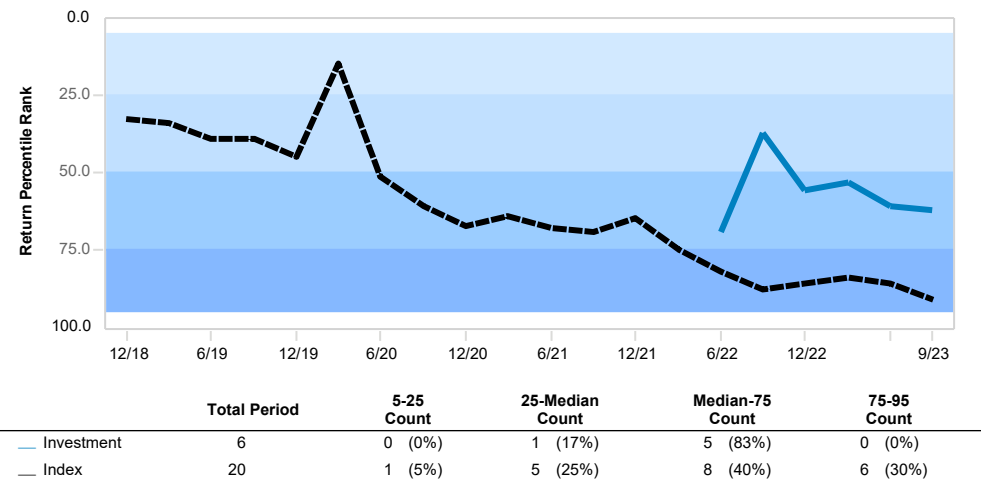
Risk and Return 5 Years



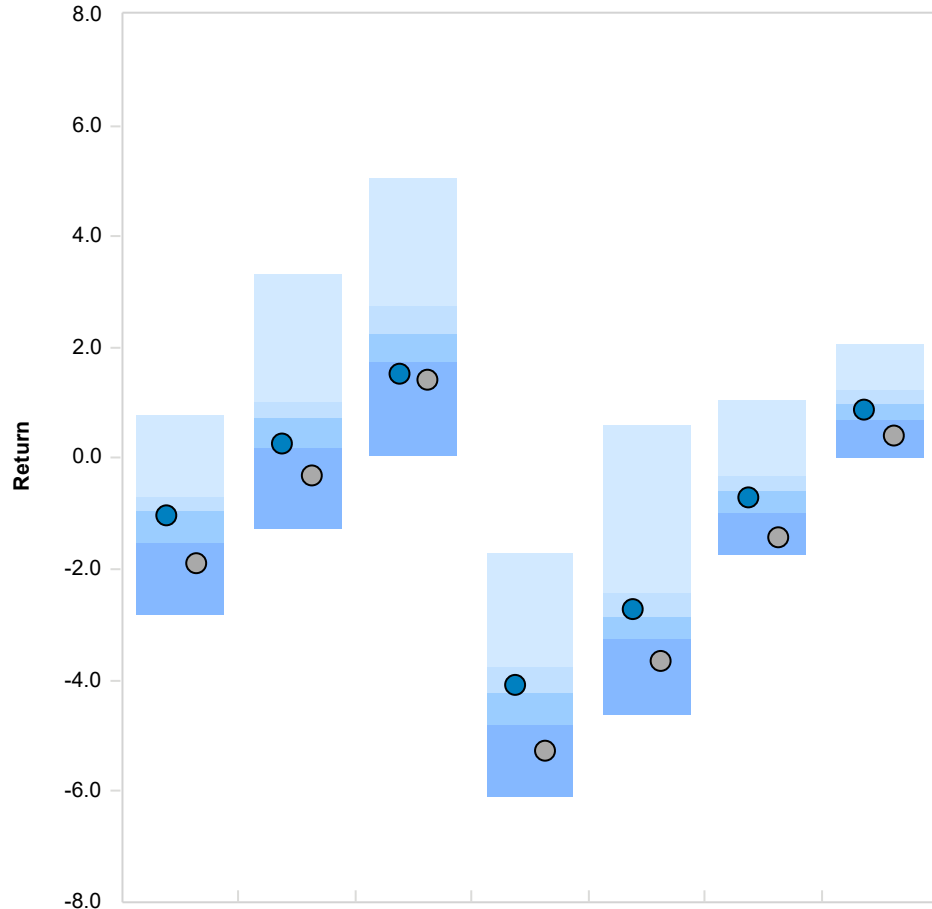
3 Year Rolling Percentile Rank IM U.S. Intermediate Duration (SA+CF)



5 Year Rolling Percentile Rank IM U.S. Intermediate Duration (SA+CF)

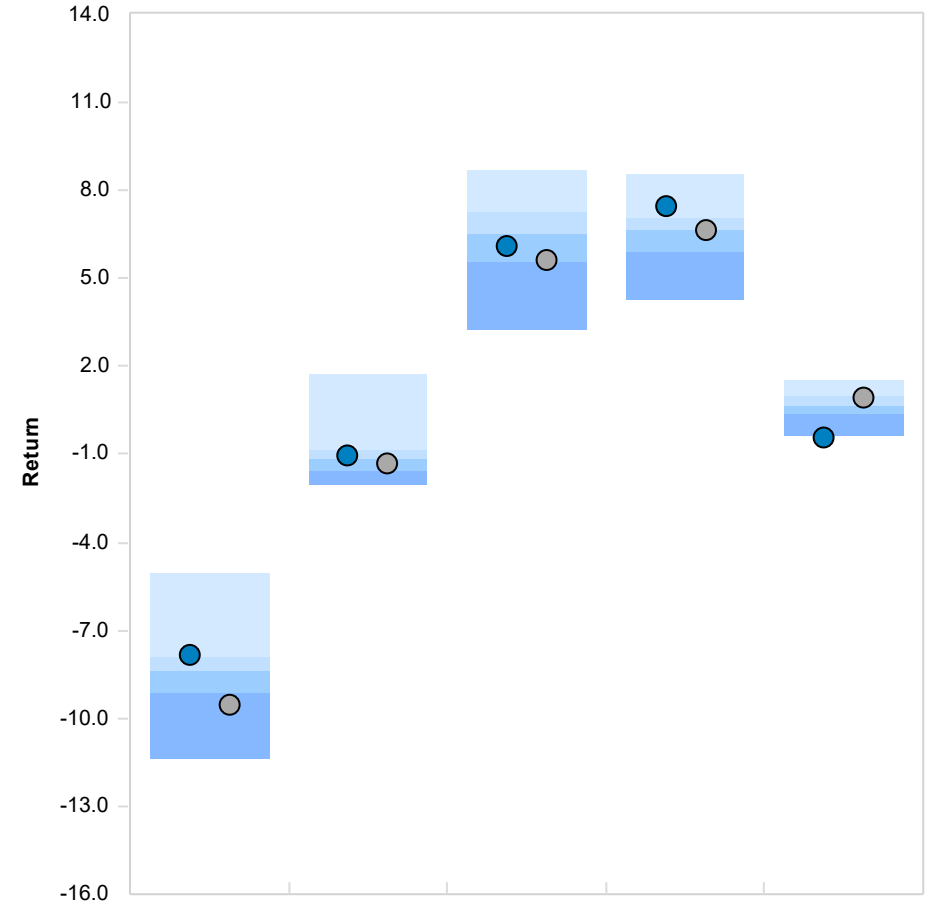


Peer Group Analysis - IM U.S. Intermediate Duration (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-1.03 (61)	0.26 (74)	1.52 (79)	-4.09 (42)	-2.71 (41)	-0.69 (57)	0.88 (62)
● Index	-1.89 (87)	-0.30 (87)	1.42 (80)	-5.25 (88)	-3.66 (90)	-1.41 (91)	0.42 (91)
Median	-0.94	0.72	2.26	-4.24	-2.86	-0.59	1.00

Peer Group Analysis - IM U.S. Intermediate Duration (SA+CF)



	2022	2021	2020	2019	2018
● Investment	-7.85 (25)	-1.04 (35)	6.13 (65)	7.47 (15)	-0.40 (96)
● Index	-9.51 (85)	-1.29 (58)	5.60 (75)	6.67 (49)	0.92 (32)
Median	-8.36	-1.20	6.49	6.66	0.68

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	-0.98 (91)	2.31 (54)	1.26 (75)	-2.86 (27)	-2.28 (22)	-4.13 (30)
Index	-0.75 (72)	2.39 (42)	1.72 (27)	-3.84 (91)	-2.93 (70)	-4.69 (80)
Median	-0.56	2.33	1.50	-3.05	-2.66	-4.41



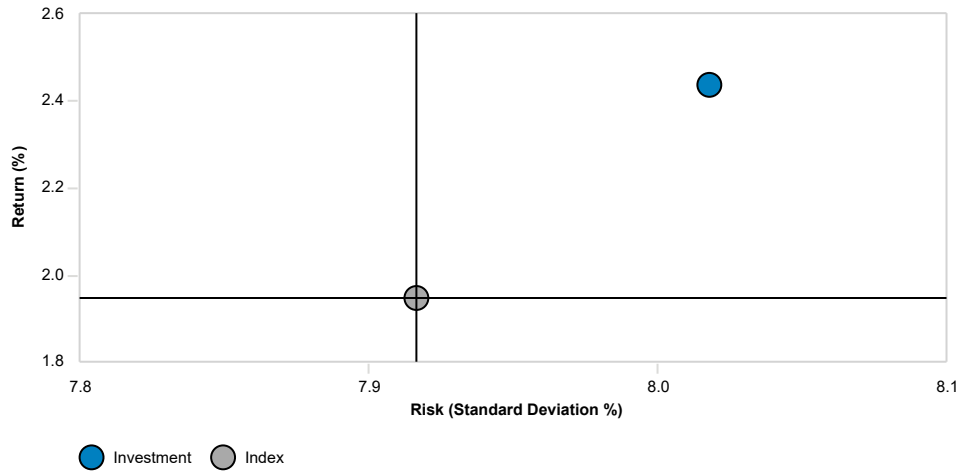
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	2.44	8.02	0.13	103.54	9	98.79	3
Index	1.95	7.92	0.07	100.00	9	100.00	3

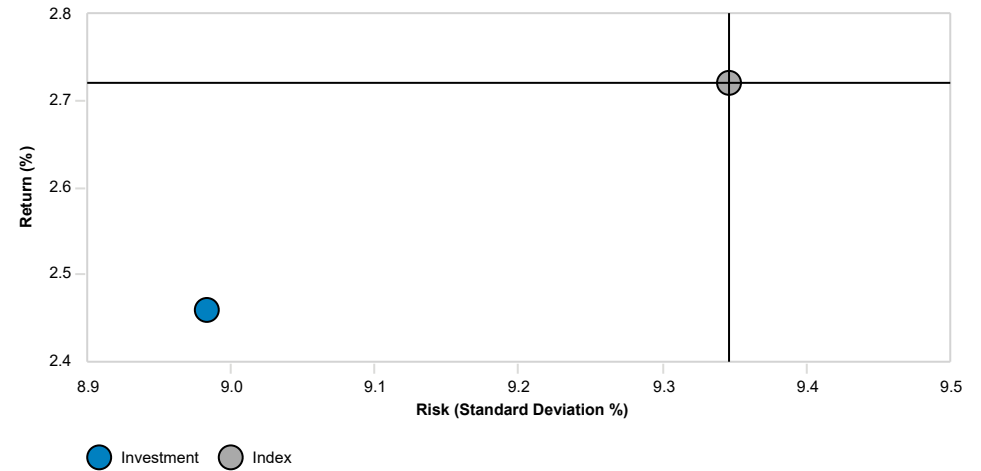
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	2.46	8.98	0.13	95.69	15	97.39	5
Index	2.72	9.35	0.15	100.00	15	100.00	5

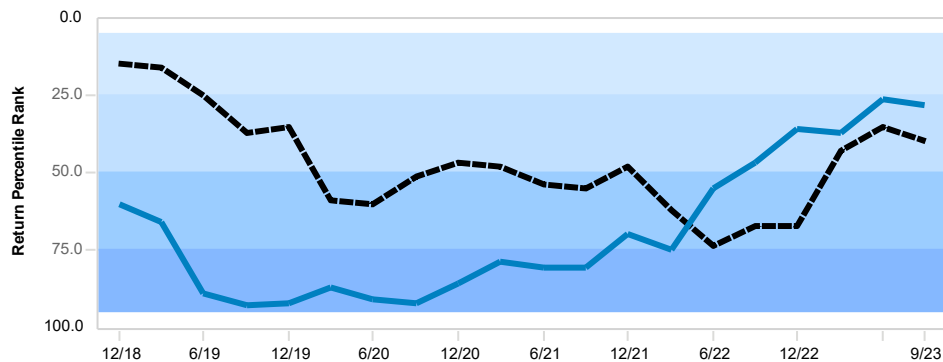
Risk and Return 3 Years



Risk and Return 5 Years

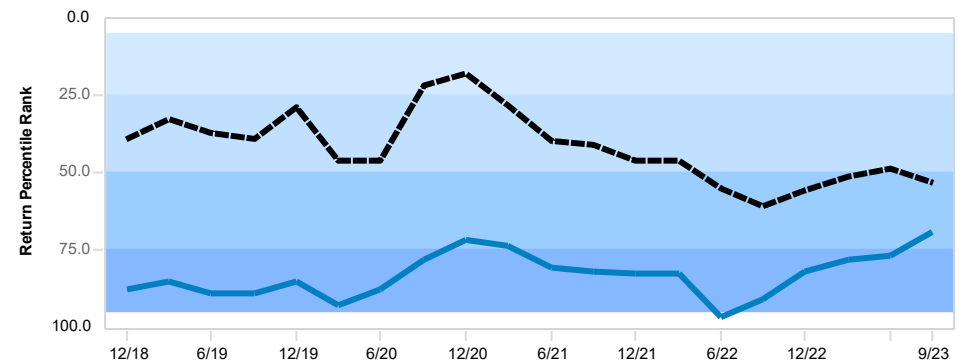


3 Year Rolling Percentile Rank IM U.S. High Yield Bonds (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	0 (0%)	5 (25%)	5 (25%)	10 (50%)
Index	20	3 (15%)	8 (40%)	9 (45%)	0 (0%)

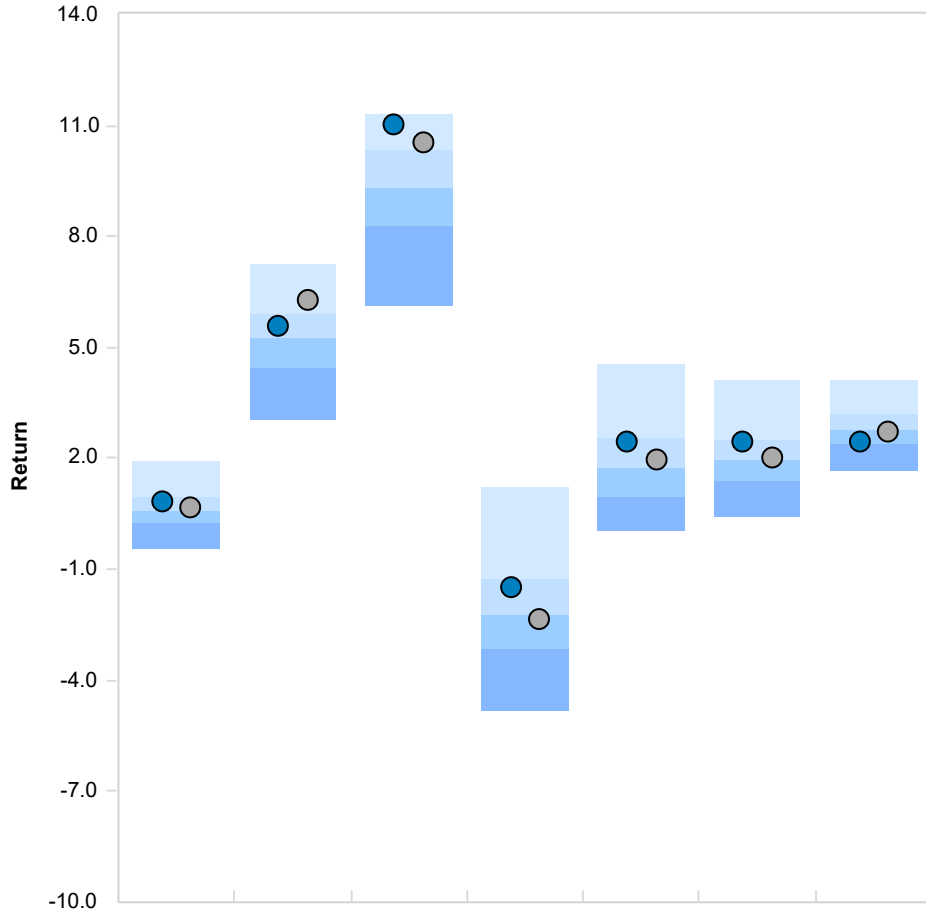
5 Year Rolling Percentile Rank IM U.S. High Yield Bonds (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	0 (0%)	0 (0%)	3 (15%)	17 (85%)
Index	20	2 (10%)	13 (65%)	5 (25%)	0 (0%)

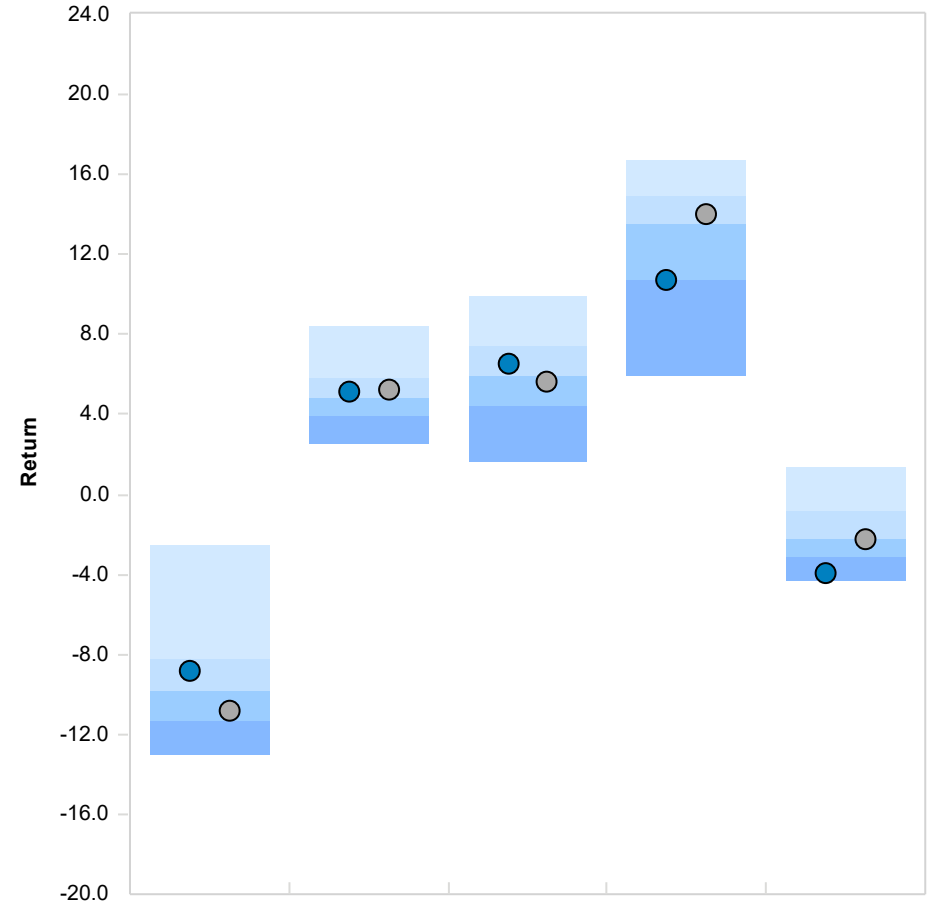


Peer Group Analysis - IM U.S. High Yield Bonds (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	0.81 (30)	5.56 (35)	11.03 (10)	-1.46 (30)	2.44 (28)	2.44 (27)	2.46 (69)
● Index	0.67 (42)	6.27 (16)	10.55 (18)	-2.34 (53)	1.95 (40)	2.00 (49)	2.72 (53)
Median	0.56	5.24	9.32	-2.24	1.78	1.99	2.76

Peer Group Analysis - IM U.S. High Yield Bonds (SA+CF)



	2022	2021	2020	2019	2018
● Investment	-8.86 (34)	5.15 (44)	6.53 (42)	10.71 (76)	-3.94 (91)
● Index	-10.85 (67)	5.22 (42)	5.60 (62)	14.05 (44)	-2.22 (49)
Median	-9.79	4.84	5.95	13.52	-2.25

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	1.78 (24)	2.88 (74)	5.18 (2)	-0.32 (32)	-9.70 (63)	-3.73 (40)
Index	1.87 (18)	3.62 (26)	4.03 (46)	-0.63 (59)	-9.90 (72)	-4.29 (63)
Median	1.46	3.23	3.98	-0.51	-9.41	-3.96



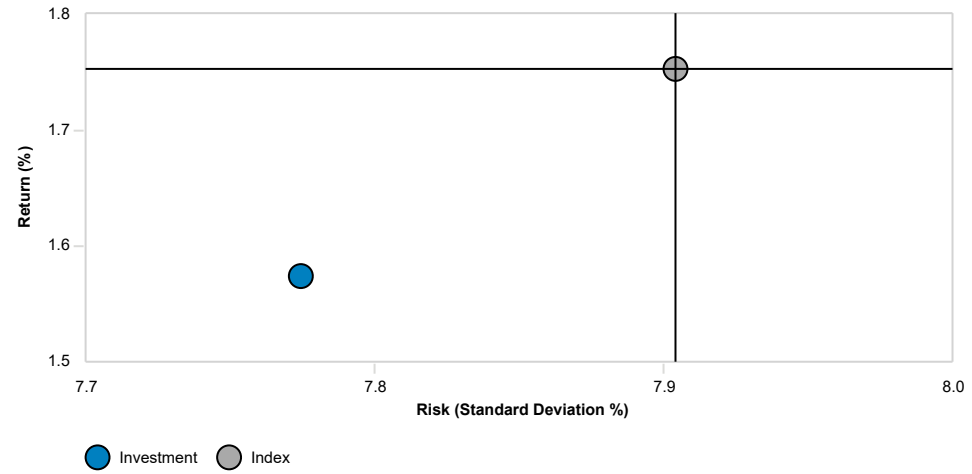
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	1.57	7.77	0.02	99.27	9	101.20	3
Index	1.75	7.90	0.05	100.00	9	100.00	3

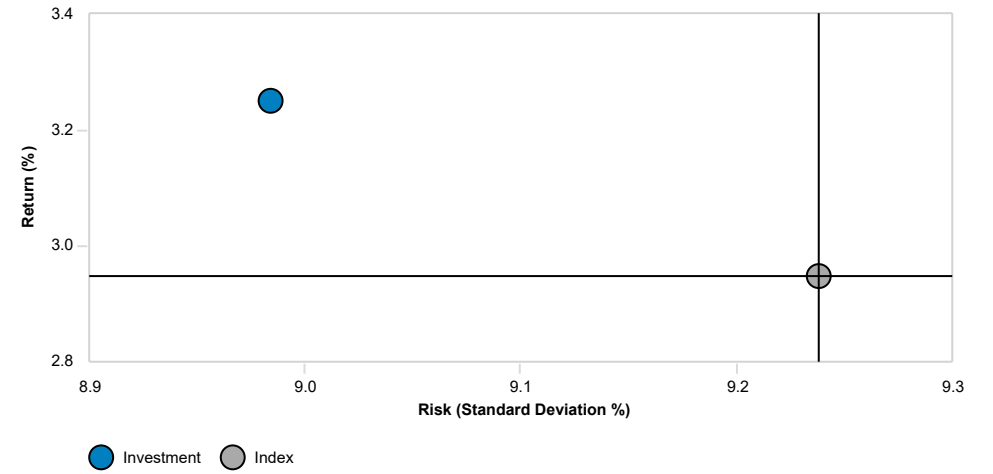
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	3.25	8.98	0.21	101.12	15	98.62	5
Index	2.95	9.24	0.18	100.00	15	100.00	5

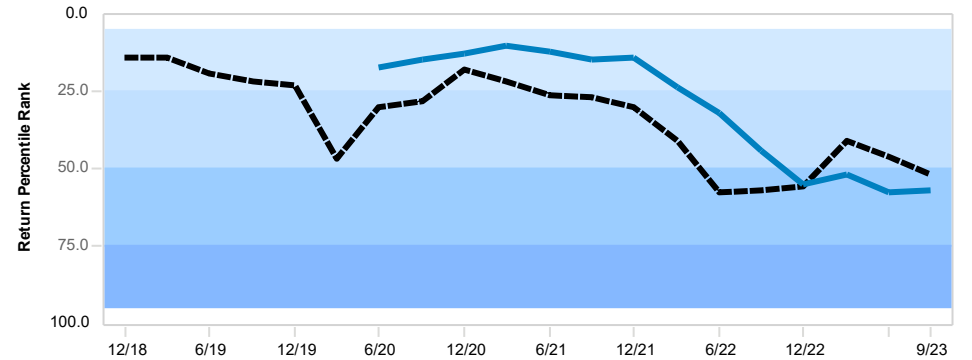
Risk and Return 3 Years



Risk and Return 5 Years

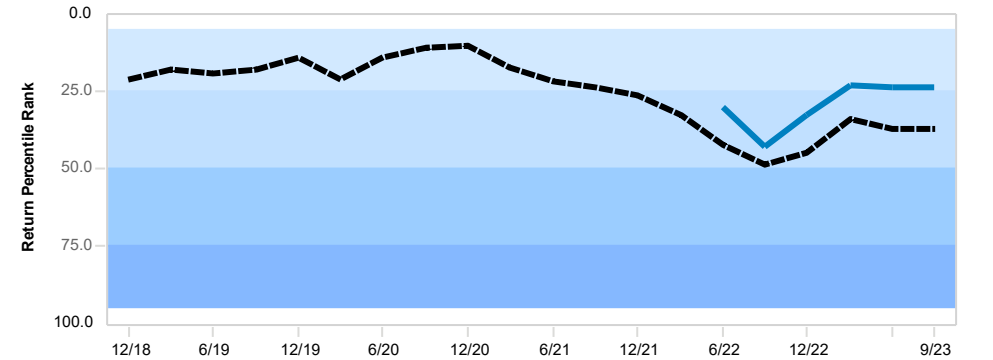


3 Year Rolling Percentile Rank IM U.S. High Yield Bonds (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	14	8 (57%)	2 (14%)	4 (29%)	0 (0%)
Index	20	7 (35%)	9 (45%)	4 (20%)	0 (0%)

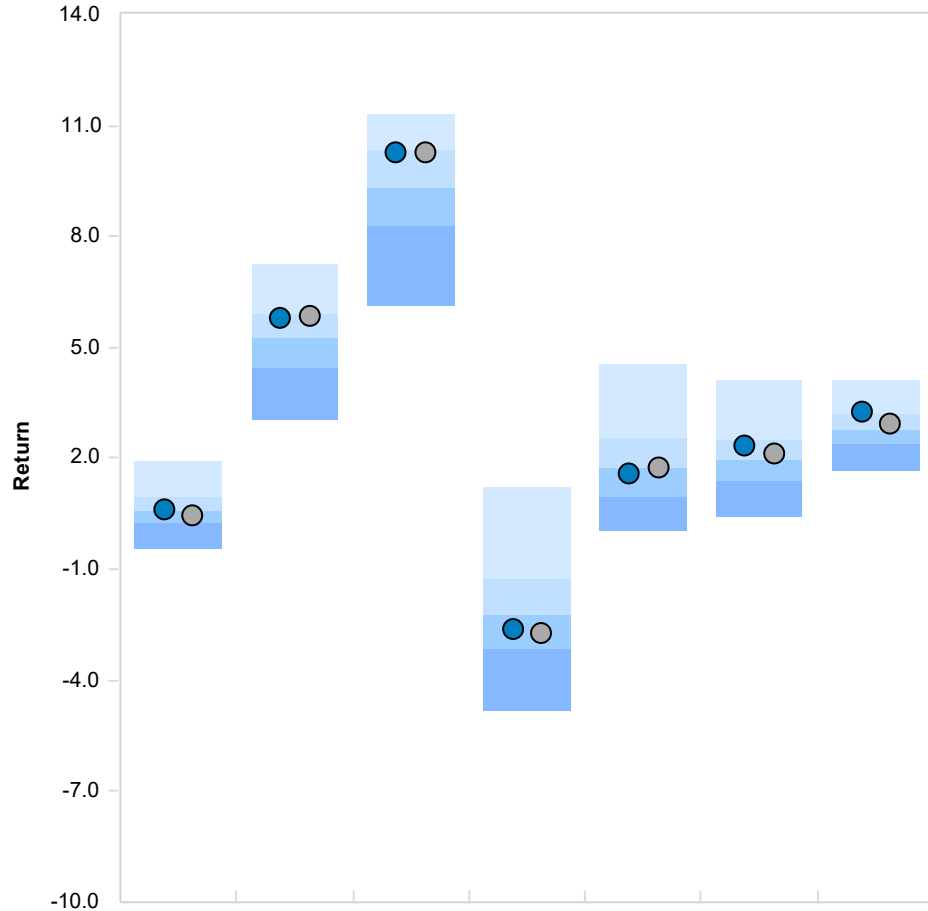
5 Year Rolling Percentile Rank IM U.S. High Yield Bonds (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	6	3 (50%)	3 (50%)	0 (0%)	0 (0%)
Index	20	12 (60%)	8 (40%)	0 (0%)	0 (0%)

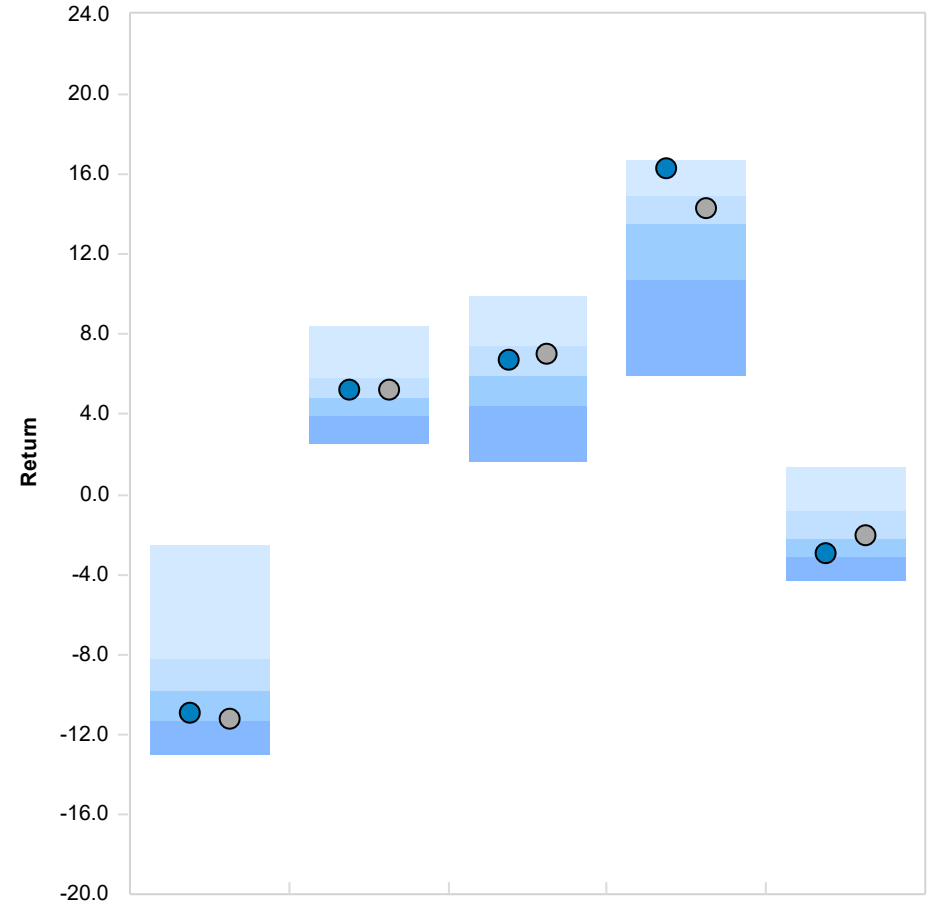


Peer Group Analysis - IM U.S. High Yield Bonds (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	0.65 (44)	5.81 (29)	10.30 (28)	-2.59 (59)	1.57 (57)	2.34 (31)	3.25 (24)
● Index	0.46 (59)	5.87 (28)	10.28 (28)	-2.70 (64)	1.75 (52)	2.11 (44)	2.95 (37)
Median	0.56	5.24	9.32	-2.24	1.78	1.99	2.76

Peer Group Analysis - IM U.S. High Yield Bonds (SA+CF)



	2022	2021	2020	2019	2018
● Investment	-10.87 (68)	5.27 (41)	6.78 (37)	16.30 (8)	-2.90 (70)
● Index	-11.18 (74)	5.26 (41)	7.05 (32)	14.32 (35)	-2.08 (45)
Median	-9.79	4.84	5.95	13.52	-2.25

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	1.50 (48)	3.58 (28)	4.24 (28)	-1.39 (93)	-9.62 (58)	-4.06 (55)
Index	1.75 (25)	3.57 (30)	4.17 (31)	-0.64 (59)	-9.84 (68)	-4.82 (91)
Median	1.46	3.23	3.98	-0.51	-9.41	-3.96



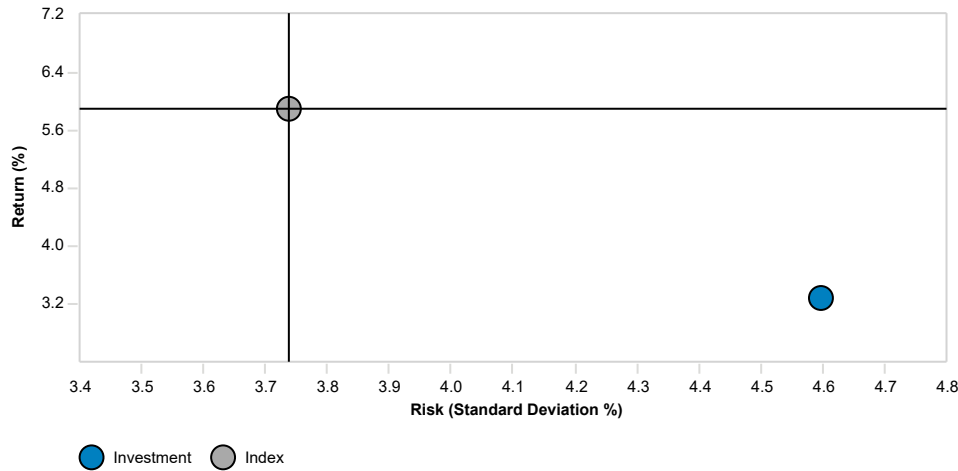
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	3.29	4.60	0.36	90.41	10	166.54	2
Index	5.91	3.74	1.13	100.00	10	100.00	2

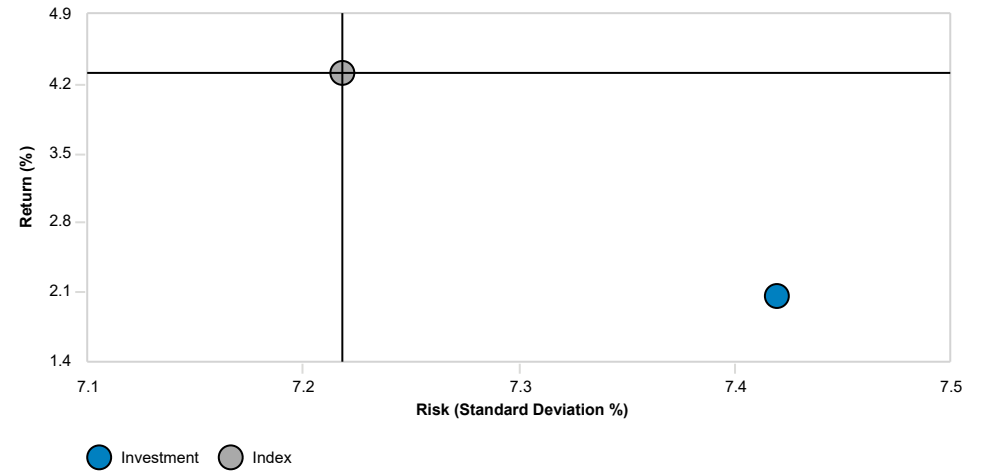
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	2.06	7.42	0.08	86.69	15	117.49	5
Index	4.31	7.22	0.38	100.00	16	100.00	4

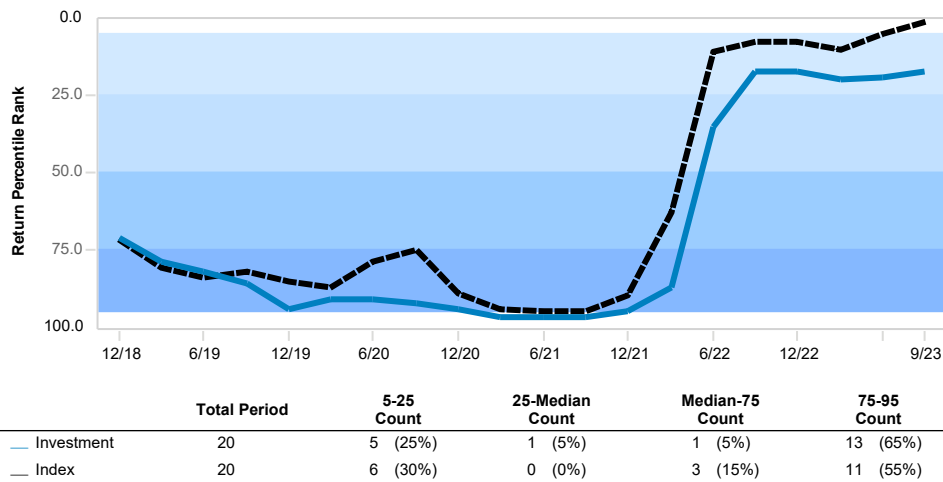
Risk and Return 3 Years



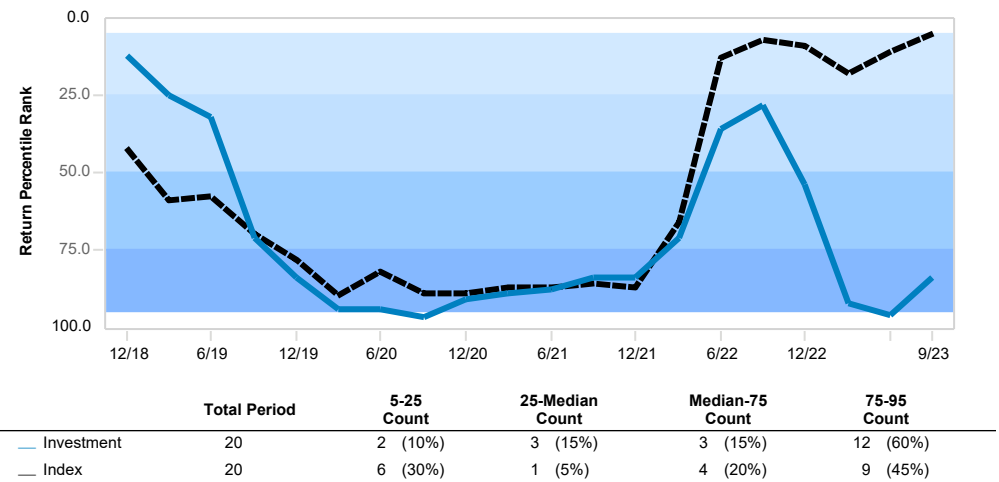
Risk and Return 5 Years



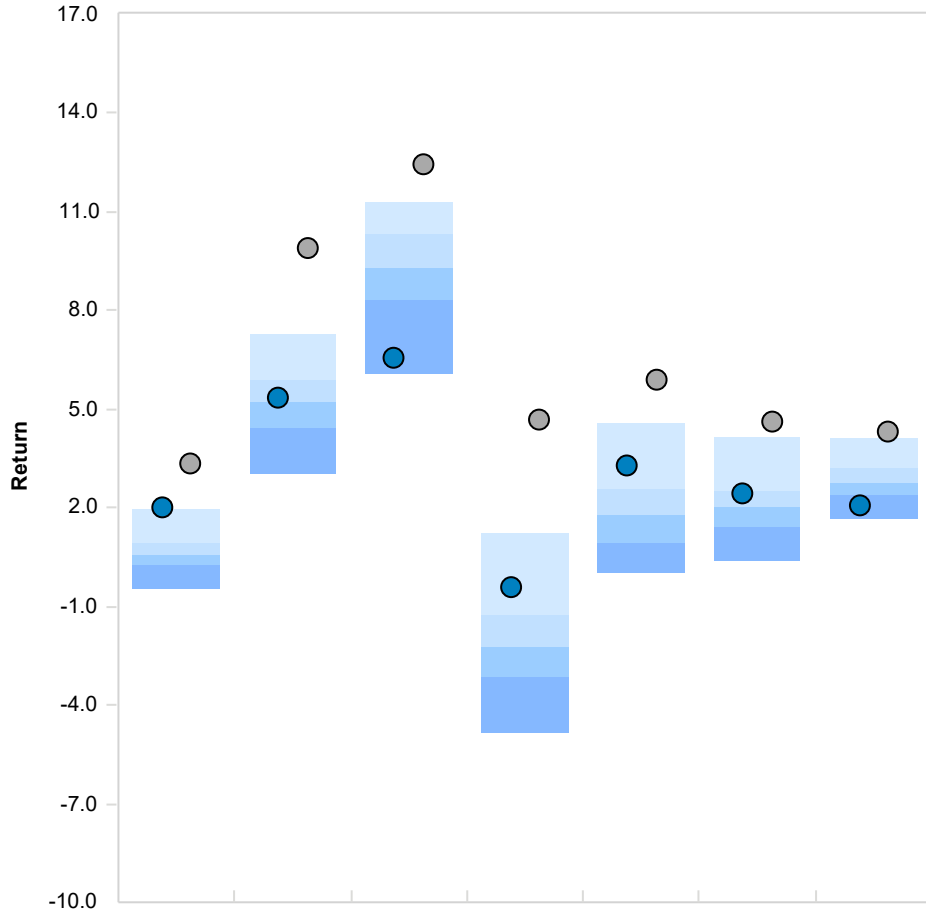
3 Year Rolling Percentile Rank IM U.S. High Yield Bonds (SA+CF)



5 Year Rolling Percentile Rank IM U.S. High Yield Bonds (SA+CF)

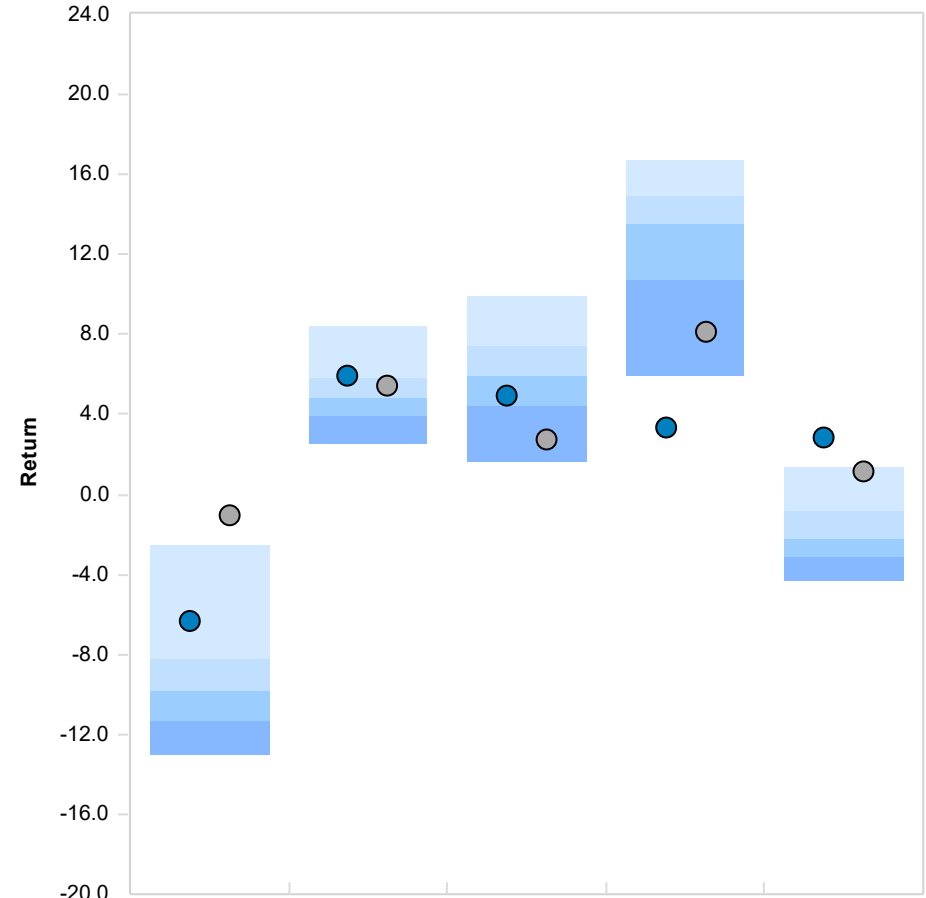


Peer Group Analysis - IM U.S. High Yield Bonds (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	2.02 (4)	5.36 (45)	6.58 (92)	-0.38 (20)	3.29 (17)	2.43 (28)	2.06 (84)
● Index	3.37 (1)	9.91 (2)	12.47 (2)	4.65 (1)	5.91 (1)	4.61 (4)	4.31 (5)
Median	0.56	5.24	9.32	-2.24	1.78	1.99	2.76

Peer Group Analysis - IM U.S. High Yield Bonds (SA+CF)



	2022	2021	2020	2019	2018
● Investment	-6.38 (19)	5.99 (20)	4.98 (69)	3.31 (99)	2.84 (2)
● Index	-1.06 (2)	5.40 (36)	2.78 (90)	8.16 (87)	1.14 (8)
Median	-9.79	4.84	5.95	13.52	-2.25

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	1.05 (82)	2.20 (92)	1.16 (95)	0.10 (18)	-6.50 (16)	-1.12 (5)
Index	3.12 (5)	3.11 (57)	2.33 (88)	1.19 (2)	-4.35 (8)	-0.10 (2)
Median	1.46	3.23	3.98	-0.51	-9.41	-3.96



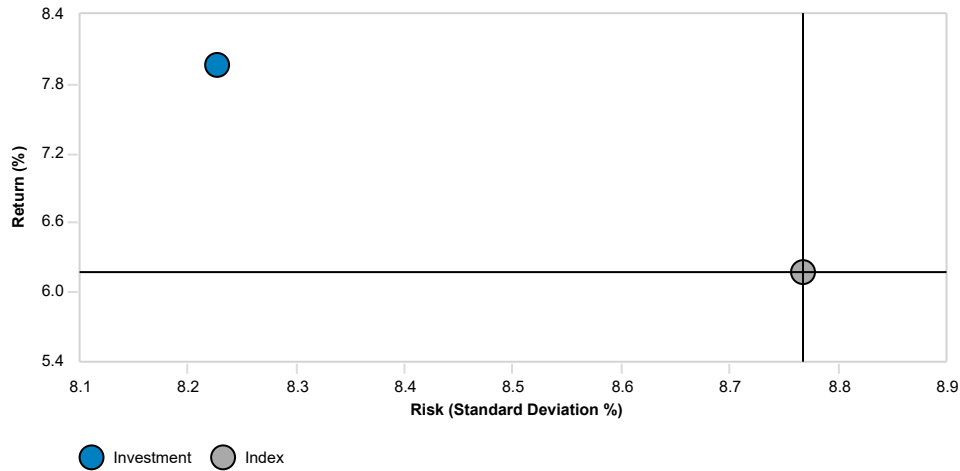
Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	7.98	8.23	0.75	84.88	8	27.24	4
Index	6.17	8.77	0.52	100.00	8	100.00	4

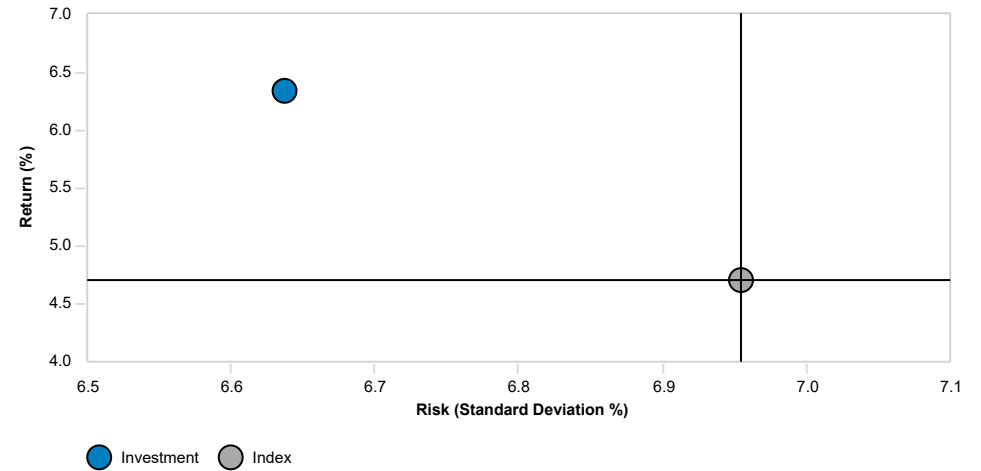
Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	6.34	6.64	0.69	94.57	15	36.22	5
Index	4.71	6.95	0.44	100.00	15	100.00	5

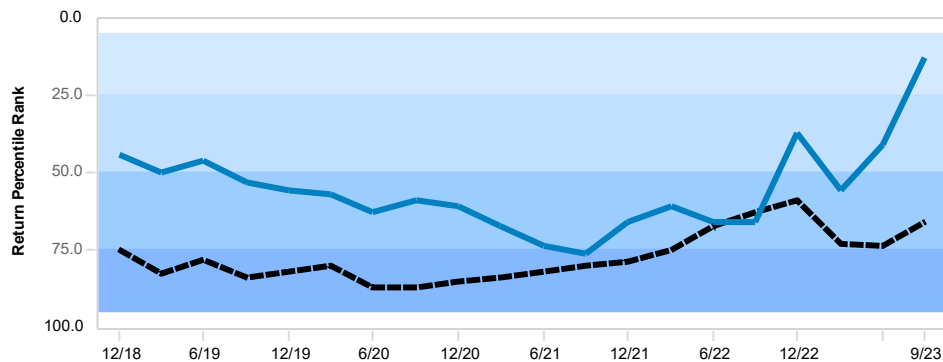
Risk and Return 3 Years



Risk and Return 5 Years

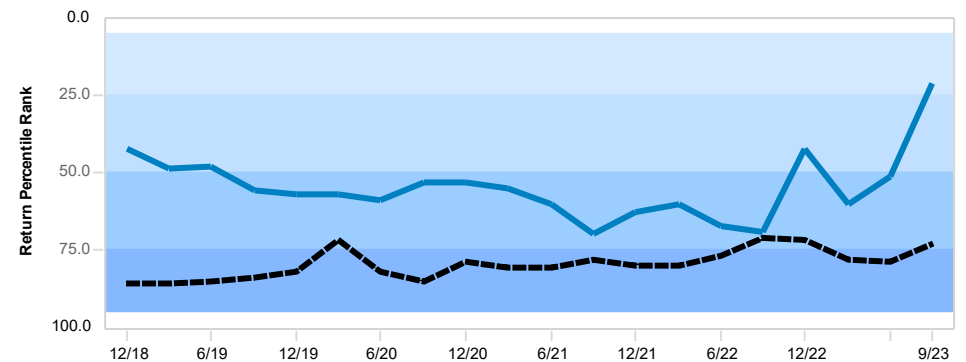


3 Year Rolling Percentile Rank IM U.S. Private Real Estate (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	1 (5%)	5 (25%)	13 (65%)	1 (5%)
Index	20	0 (0%)	0 (0%)	8 (40%)	12 (60%)

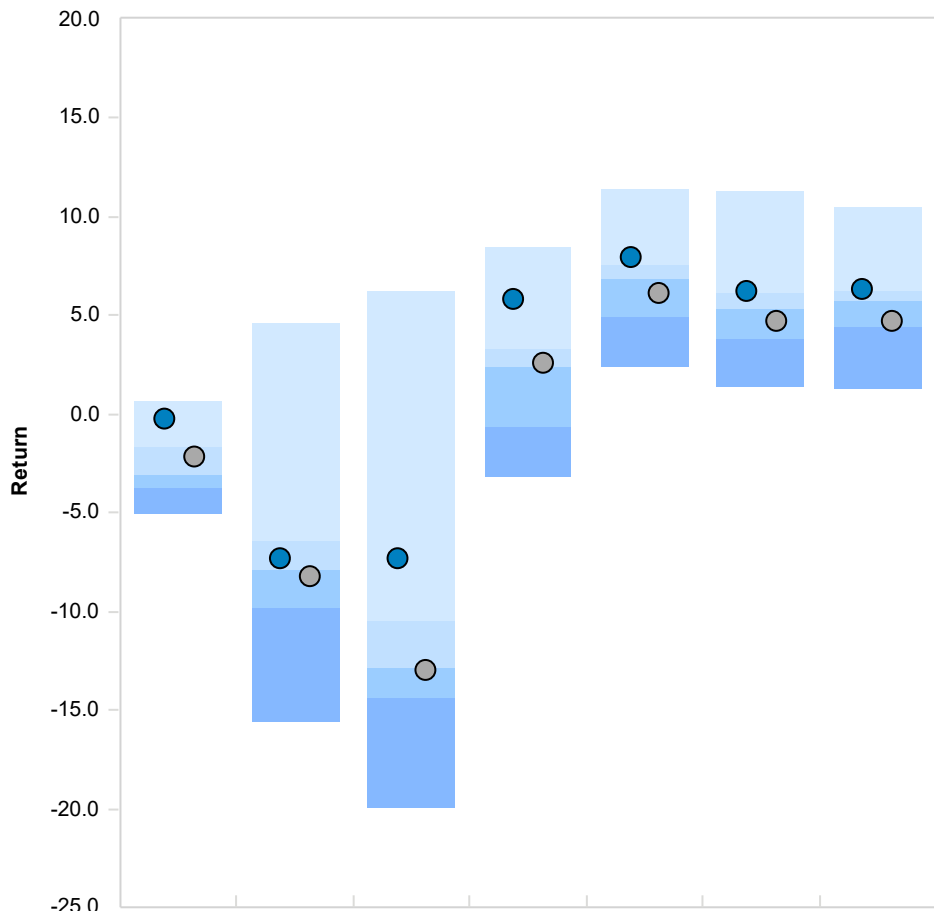
5 Year Rolling Percentile Rank IM U.S. Private Real Estate (SA+CF)



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

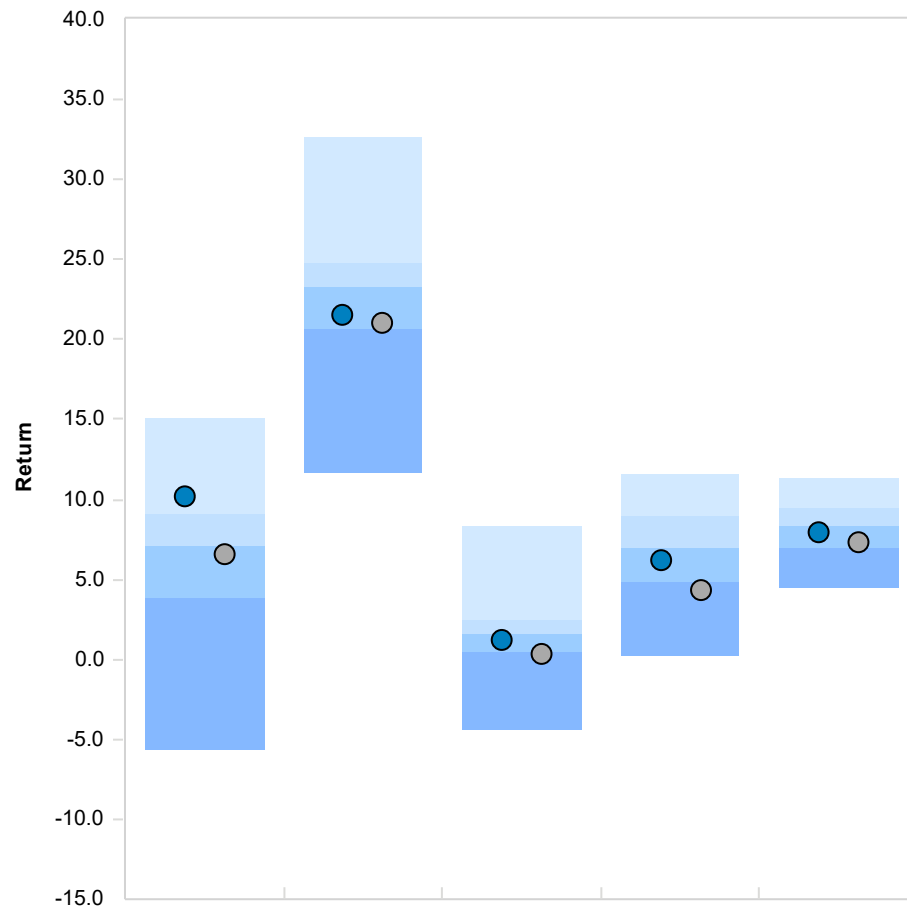


Peer Group Analysis - IM U.S. Private Real Estate (SA+CF)



	QTR	YTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-0.22 (9)	-7.33 (38)	-7.33 (17)	5.79 (11)	7.98 (13)	6.27 (20)	6.34 (21)
● Index	-2.16 (31)	-8.19 (59)	-12.93 (53)	2.62 (49)	6.17 (66)	4.73 (62)	4.71 (73)
Median	-3.09	-7.88	-12.83	2.45	6.81	5.36	5.72

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



	2022	2021	2020	2019	2018
● Investment	10.20 (9)	21.48 (66)	1.26 (60)	6.17 (70)	7.96 (57)
● Index	6.55 (53)	21.02 (69)	0.34 (77)	4.39 (79)	7.36 (71)
Median	7.13	23.30	1.57	7.01	8.35

Comparative Performance

	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022
Investment	-2.24 (66)	-5.00 (85)	0.00 (8)	-0.06 (63)	3.04 (77)	7.01 (43)
Index	-2.88 (71)	-3.38 (65)	-5.17 (58)	0.31 (57)	4.54 (37)	7.14 (36)
Median	-1.98	-2.98	-4.97	0.59	4.17	6.68



Private Equity Summary of Partnership
Total Private Equity w Life Settlement Composite
As of September 30, 2023

Private Equity Summary of Partnership

Partnerships	Vintage Year	Capital Commitment \$	Market Value \$
Total Private Equity w Life Settlement Composite		334,900,410	192,084,858
Accolade Partners V	2015	3,000,000	5,132,585
Accolade Partners VI	2018	3,000,000	2,742,053
Adams Street 2003 U.S Fund	2003	13,733,000	177,708
Adams Street 2008 Global	2008	10,000,000	3,411,159
Adams Street 2009 Global	2009	5,000,000	2,439,763
Auldbrass Spec Opps II	2018	4,000,000	2,637,740
Birchmere Ventures IV	2012	525,000	39,415
BlackRock Multi-Alternative Opps	2016	3,000,000	2,195,149
Blackstone Tac Op I	2012	2,000,000	259,716
Blackstone Tac Op II	2015	3,000,000	471,369
Blackstone Tac Op III	2019	5,000,000	4,389,663
CCA Black	2015	7,500,000	6,759,935
CCA Blue	2013	3,800,000	-
CCA Green	2009	15,000,000	-
CCA Longevity Fund VI LP	2019	5,000,000	3,004,698
Commonfund Venture Partners XII	2018	3,000,000	4,827,147
Constitution Ironsides Direct Investment Fund IV	2016	3,000,000	1,553,084
Constitution Ironsides Opportunities Fund	2018	4,000,000	2,020,169
Constitution Ironsides Partnership Fund II	2011	6,000,000	-
Constitution Ironsides Partnership Fund III	2014	8,000,000	5,002,289
Crestline Opportunity Fund III	2016	4,000,000	2,277,292
Crestline Recovery II	2011	3,000,000	37,855
DCM Fund IV	2015	3,000,000	3,358,800
Draper Triangle II	2005	10,000,000	4,551
Draper Triangle III	2013	13,500,000	11,125,906
Emerald Advisors Fin Srv I	2018	2,000,000	1,550,758
Entrust Special Opportunities Fund III	2015	3,000,000	1,133,651
Entrust Special Opportunities Fund IV	2018	3,000,000	2,595,164
Farol Fund II	2020	4,000,000	5,495,552
Five Points III	2017	3,000,000	2,963,664
Glouston Private Equity Opportunities IV	2011	3,000,000	227,231
Goldman Sachs Private Equity Partners 2004	2005	10,000,000	75,748
Greenspring Early Stage I LP	2018	4,000,000	5,550,842
Greenspring Opportunities II-A	2013	3,000,000	2,205,452
Greenspring Opportunities III	2014	3,000,000	2,349,856
Greenspring Opportunities IV	2015	3,000,000	2,255,120
Greenspring Opportunities V	2018	3,000,000	3,300,848
Greenspring Secondaries I	2014	1,000,000	576,435
Greenspring Secondaries II	2016	2,000,000	707,672

Data Sources:
Market Values - BNY Mellon and Investment Managers
Commitments - Asset Strategies



**Private Equity Summary of Partnership
Total Private Equity w Life Settlement Composite
As of September 30, 2023**

Partnerships	Vintage Year	Capital Commitment \$	Market Value \$
iNetworks INOF II	2013	-	6,596,754
iNetworks Opportunity Fund	2013	11,000,000	15,195,150
iNetworks Opportunity Fund II	2020	12,500,000	9,461,767
JMI Equity Fund IX-A	2019	3,000,000	4,851,470
Magarac Ventures	2022	10,000,000	1,876,878
Mellon PAM Fund V	2005	10,000,000	20,094
Mesirow Partners Fund IV	2006	17,000,000	2,375,151
North Haven Capital Partners VI	2015	3,000,000	2,265,150
North Haven Senior Loan Fund	2018	4,000,000	2,820,000
Pharos Capital Partners III	2013	3,000,000	1,938,173
PLSG Accelerator Fund	2011	250,000	47,907
ValStone Partners IV	2008	20,000,000	-
ValStone Partners V	2013	20,000,000	17,396,257
ValStone Partners VI	2017	20,000,000	18,095,496
Valstone Senior Living	2018	13,092,410	14,288,571

*Data Sources:
Market Values - BNY Mellon and Investment Managers
Commitments - Asset Strategies*



Historical Hybrid Composition
Total Fund Policy Index
As of September 30, 2023

Historical Hybrid Composition			
Allocation Mandate	Weight (%)	Allocation Mandate	Weight (%)
Jan-1979		Jun-2010	
Russell 3000 Index	65.00	FT Wilshire 5000 Total Market TR Index	20.00
Blmbg. U.S. Aggregate Index	35.00	MSCI AC World ex USA (Net)	25.00
Mar-2007		Blmbg. U.S. Aggregate Index	14.00
FT Wilshire 5000 Total Market TR Index	45.00	FTSE High Yield Market Capped Index	10.00
MSCI EAFE (Net) Index	10.00	Bloomberg U.S. TIPS Index	6.00
Blmbg. U.S. Aggregate Index	25.00	Bloomberg Commodity Index Total Return	5.00
Bloomberg Commodity Index Total Return	5.00	NCREIF Fund Index-Open End Diversified Core Equity (VW) (Net) Monthly	10.00
NCREIF Fund Index-Open End Diversified Core Equity (VW) (Net) Monthly	5.00	Private Equity Composite	10.00
Private Equity Composite	5.00	Mar-2013	
90 Day U.S. Treasury Bill	5.00	FT Wilshire 5000 Total Market TR Index	16.10
Sep-2008		MSCI AC World ex USA (Net)	18.90
FT Wilshire 5000 Total Market TR Index	45.00	Blmbg. U.S. Aggregate Index	10.00
MSCI AC World ex USA (Net)	10.00	FTSE High Yield Market Capped Index	12.00
Blmbg. U.S. Aggregate Index	25.00	Bloomberg U.S. TIPS Index	5.00
Bloomberg Commodity Index Total Return	5.00	Bloomberg Commodity Index Total Return	8.00
NCREIF Fund Index-Open End Diversified Core Equity (VW) (Net) Monthly	5.00	NCREIF Fund Index-Open End Diversified Core Equity (VW) (Net) Monthly	10.00
Private Equity Composite	5.00	Private Equity Composite	20.00
90 Day U.S. Treasury Bill	5.00	Apr-2016	
Dec-2008		FT Wilshire 5000 Total Market TR Index	15.00
FT Wilshire 5000 Total Market TR Index	35.00	MSCI AC World ex USA (Net)	15.00
MSCI AC World ex USA (Net)	15.00	Blmbg. U.S. Aggregate Index	10.00
Blmbg. U.S. Aggregate Index	20.00	FTSE High Yield Market Capped Index	12.00
FTSE High Yield Market Capped Index	5.00	Bloomberg U.S. TIPS Index	8.00
Bloomberg U.S. TIPS Index	5.00	Bloomberg Commodity Index Total Return	2.50
Bloomberg Commodity Index Total Return	5.00	NCREIF Fund Index-Open End Diversified Core Equity (VW) (Net) Monthly	10.00
NCREIF Fund Index-Open End Diversified Core Equity (VW) (Net) Monthly	7.50	Private Equity Composite	22.50
Private Equity Composite	5.00	Alerian MLP Index	5.00
90 Day U.S. Treasury Bill	2.50	Jan-2019	
Sep-2009		FT Wilshire 5000 Total Market TR Index	16.50
FT Wilshire 5000 Total Market TR Index	30.00	MSCI AC World ex USA (Net)	16.50
MSCI AC World ex USA (Net)	20.00	Blmbg. U.S. Aggregate Index	12.50
Blmbg. U.S. Aggregate Index	15.00	FTSE High Yield Market Capped Index	12.00
FTSE High Yield Market Capped Index	10.00	Bloomberg U.S. TIPS Index	5.00
Bloomberg U.S. TIPS Index	7.50	NCREIF Fund Index-Open End Diversified Core Equity (VW) (Net) Monthly	12.50
Bloomberg Commodity Index Total Return	2.50	Private Equity Composite	20.00
NCREIF Fund Index-Open End Diversified Core Equity (VW) (Net) Monthly	10.00	Alerian MLP Index	5.00
Private Equity Composite	5.00		



Allocation Mandate	Weight (%)
Mar-2021	
Russell 3000 Index	16.50
MSCI AC World ex USA (Net)	16.50
Blmbg. U.S. Aggregate Index	12.50
FTSE High Yield Market Capped Index	12.00
Bloomberg U.S. TIPS Index	5.00
NCREIF Fund Index-Open End Diversified Core Equity (VW) (Net) Monthly	12.50
Liquid Policy Benchmark	5.00
Total Private Equity w Life Settlement Composite	20.00
Jul-2022	
Russell 3000 Index	16.50
MSCI AC World ex USA (Net)	16.50
Blmbg. U.S. Aggregate Index	12.50
FTSE High Yield Market Capped Index	12.00
CPI + 3%	5.00
NCREIF Fund Index-Open End Diversified Core Equity (VW) (Net) Monthly	12.50
Liquid Policy Benchmark	5.00
Total Private Equity w Life Settlement Composite	20.00



Historical Hybrid Composition

Allocation Mandate

Weight (%)

Nov-1993

FT Wilshire 5000 Total Market TR Index

100.00

Mar-2021

Russell 3000 Index

100.00



Historical Hybrid Composition	
Allocation Mandate	Weight (%)
Dec-2000	
MSCI EAFE (Net) Index	100.00
Sep-2008	
MSCI AC World ex USA (Net)	100.00
Mar-2015	
MSCI AC World ex USA IMI (Net)	100.00
Mar-2021	
MSCI AC World ex USA (Net)	100.00



Historical Hybrid Composition

Allocation Mandate

Weight (%)

Mar-2021

S&P 500 Index	30.00
S&P MidCap 400 Index	2.00
S&P SmallCap 600 Index	10.50
MSCI EAFE IMI (Net)	16.90
MSCI Emerging Markets IMI (Net)	6.10
Blmbg. U.S. Aggregate Index	25.00
ICE BofAML 1-3 Year Treasury	4.50
FTSE NAREIT Equity REIT Index	5.00



	Estimated Annual Fee (%)	Market Value (\$)	Estimated Annual Fee (\$)	Fee Schedule
Domestic Equity				
SSgA S&P 500 Index	0.02	72,278,179	14,456	0.02 % of Assets
Fragasso Large Core (EMWO)	0.61	6,264,782	38,449	1.00 % of First \$0 M 0.95 % of Next \$0 M 0.75 % of Next \$1 M 0.65 % of Next \$2 M 0.55 % of Next \$3 M 0.50 % of Next \$3 M 0.25 % of Next \$3 M 0.20 % Thereafter
Twin Capital Enhanced Equity	0.35	36,160,056	126,560	0.35 % of Assets
Vesper U.S. Large Cap Short-Term Reversal Strategy ETF (UTRN) (EMWO)	0.75	945,545	7,092	0.75 % of Assets
Earnest Small Value	0.93	13,779,559	128,347	1.00 % of First \$10 M 0.75 % of Next \$15 M 0.60 % of Next \$25 M 0.50 % Thereafter
Emerald Advisors Small Cap	0.76	12,635,738	95,814	1.00 % of First \$2 M 0.75 % of Next \$8 M 0.60 % Thereafter
Emerald Advisors All Cap (EMWO)	0.60	5,912,191	35,473	0.60 % of Assets
Ethos (EMWO)	0.47	1,672,854	7,862	0.47 % of Assets
CIM Small Cap (EMWO)	0.75	4,798,315	35,987	0.75 % of First \$5 M 0.40 % of Next \$10 M 0.25 % Thereafter
Cookson Peirce (EMWO)	0.50	1,268,976	6,345	0.50 % of Assets
International Equity				
SSgA ACWI ex US	0.07	35,115,435	24,581	0.07 % of Assets
Baillie Gifford Intl Equity	0.61	51,776,833	315,839	0.61 % of Assets
FIAM Select International Equity	0.33	29,387,526	96,846	0.34 % of First \$25 M 0.27 % of Next \$25 M 0.24 % of Next \$150 M 0.20 % Thereafter
Segall, Bryant & Hamill	0.64	34,661,556	220,639	0.75 % of First \$15 M 0.55 % of Next \$20 M 0.45 % of Next \$30 M 0.35 % Thereafter

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.



	Estimated Annual Fee (%)	Market Value (\$)	Estimated Annual Fee (\$)	Fee Schedule
Core Fixed w Israel Bonds				
C S McKee	0.25	33,328,533	83,321	0.25 % of Assets
Federated Core Broad	0.30	26,352,669	78,382	0.30 % of First \$25 M 0.25 % of Next \$25 M 0.20 % Thereafter
CIM Investment Mgmt	0.25	26,862,216	67,156	0.25 % of Assets
Emstone Partners (EMWO)	0.30	5,076,803	15,230	0.30 % of Assets
Gridiron Capital Fixed Income	0.65	12,886,293	83,761	0.65 % of Assets
FNB (EMWO)	0.35	2,625,960	9,191	0.35 % of First \$5 M 0.30 % of Next \$5 M 0.25 % of Next \$10 M 0.20 % Thereafter
Israel Bonds	0.20	7,425,626	14,851	0.20 % of Assets
High Yield Fixed				
Oaktree High Yield	0.50	55,363,141	276,816	0.50 % of Assets
Federated High Yield	0.45	52,111,441	234,501	0.45 % of Assets
Sound Point	1.00	735,054	7,351	1.00 % of Assets
Real Estate				
Morgan Stanley Prime Property Fund	0.84	79,531,068	668,061	0.84 % of Assets
Oaktree Real Estate^	1.94	4,630,582	89,833	1.94 % of Assets
Washington Alliance (EMWO)	1.50	14,515,764	217,736	1.50 % of Assets
Washington Alliance II (EMWO)	1.50	2,214,415	33,216	1.50 % of Assets
Siguler Guff Distressed RE^	1.36	6,016,536	81,825	1.36 % of Assets
Artemis Real Estate Partners Fund IV	1.50	624,222	9,363	1.50 % of Assets
ERECT Fund II	1.35	10,419,289	140,660	1.35 % of Assets
Infrastructure				
JP Morgan Infrastructure Fund (IIF Hedged)	1.00	27,158,635	271,586	1.00 % of Assets
IFM Global Infrastructure LP	0.77	26,284,679	202,392	0.77 % of Assets
Hedge Fund				
Gridiron Capital Multi-Asset (EMWO)	0.75	3,289,478	24,671	Performance Based 0.75 and 10.00
Liquid Policy Portfolio				
BlackRock Liquidity iShares Public Pension Fund*	0.08	2,036,334	1,629	0.08 % of Assets
Investments ex Private Equity		652,078,748	3,282,482	

^ Due to limitations in reporting as a result of the variable and commitment based fee structure, AndCo calculated an approximation for this noted fee schedule. This figure demonstrates the "effective" basis point charge, computed based on the most recently available assessed quarterly fee + expenses, divided by the ending market value. The actual fee schedule can be found in Appendix A.

* Estimated fee based on average of underlying funds

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.



****All fee information provided by Asset Strategies**

	Commitment Amount \$	2022 Mgmt Fees \$
Total Private Equity w Life Settlement Composite	293,940,928.00	2,693,112.62
Accolade Partners V	3,000,000.00	15,000.00
Accolade Partners VI	2,250,000.00	-
Adams Street 2003 U.S. Fund	13,733,000.00	-
Adams Street 2008 Global	10,000,000.00	19,774.00
Adams Street 2009 Global	5,000,000.00	15,425.00
Auldbrass Spec Opps II	4,000,000.00	71,282.86
Birchmere Ventures IV	525,000.00	-
Blackrock Multi-Alternative Opps	3,000,000.00	29,195.00
Blackstone Tac Op I	2,000,000.00	3,344.00
Blackstone Tac Op II	3,000,000.00	13,151.00
Blackstone Tac Op III	5,000,000.00	74,981.00
CCA Black	7,500,000.00	147,019.41
CCA Blue	3,800,000.00	12,425.51
CCA Longevity Fund VI LP	5,000,000.00	47,281.14
Commonfund Venture Partners XII*	3,000,000.00	21,000.00
Constitution Ironsides Direct Investment Fund IV	3,000,000.00	10,453.66
Constitution Ironsides Opportunities Fund	4,000,000.00	-
Constitution Ironsides Partnership Fund III	8,000,000.00	17,000.66
Crestline Opportunity Fund III	4,000,000.00	24,787.40
Crestline Recovery II	2,058,704.00	-
DCM Fund IV	3,000,000.00	30,508.00
Draper Triangle II	10,000,000.00	-
Draper Triangle III	13,500,000.00	144,148.00
Emerald Advisors Fin Srv I	2,000,000.00	22,250.00
Entrust Special Opportunities Fund III	3,000,000.00	13,230.37
Entrust Special Opportunities Fund IV	3,000,000.00	35,115.82
Farol Fund II	4,000,000.00	40,000.00
Five Points III	3,000,000.00	27,750.00
Glouston Private Equity Opportunities IV	3,000,000.00	4,519.00
Goldman Sachs Private Equity Partners 2004	10,000,000.00	-
Greenspring Early Stage I LP	4,000,000.00	55,275.00
Greenspring Opportunities II-A	3,000,000.00	-
Greenspring Opportunities III	3,000,000.00	57,000.00
Greenspring Opportunities IV	3,000,000.00	58,172.00
Greenspring Opportunities V	3,000,000.00	58,228.00
Greenspring Secondaries I	1,000,000.00	6,992.00
Greenspring Secondaries II	2,000,000.00	15,000.00



****All fee information provided by Asset Strategies**

	Commitment Amount \$	2022 Mgmt Fees \$
iNetworks INOF II	2,349,140.00	89,931.00
iNetworks Opportunity Fund	11,000,000.00	13,051.00
iNetworks Opportunity Fund II	12,500,000.00	269,014.00
JMI Equity Fund IX-A	3,000,000.00	26,472.00
Magarac Ventures	10,000,000.00	167,223.00
Mellon PAM Fund V	10,000,000.00	-
Mesirow Partners Fund IV	17,000,000.00	63,872.00
North Haven Capital Partners VI	3,000,000.00	10,159.00
North Haven Senior Loan Fund	4,000,000.00	58,202.00
Pharos Capital Partners III	3,000,000.00	34,272.00
PLSG Accelerator Fund	250,000.00	-
Valstone Partners V	20,000,000.00	283,863.00
Valstone Partners VI	20,000,000.00	286,744.79
Valstone Senior Living	12,475,084.00	300,000.00

**Commonfund Ven XII mangement fees for 2020 estimate based on Committed Amount and fee percent outlined in fund documents*



Oaktree Real Estate Opportunities VI LP Fee Calculation

The annual Management Fee shall be an amount equal to the sum of the amounts determined with respect to each Limited Partner as follows: (a) prior to the end of the Investment Period, the product of the Management Fee Percentage attributable to such Limited Partner's Capital Commitment and the Capital Commitment of such Limited Partner and (b) from and after the day following the end of the Investment Period, the product of the Management Fee Percentage attributable to such Limited Partner's Capital Commitment and the lesser of (i) such Limited Partner's allocable portion of the Aggregate Contributed Capital and (ii) such Limited Partner's allocable portion of the cost basis of the Permitted Investments held by the Fund as of the end of the next-to-last month of the immediately preceding calendar quarter.

Siguler Guff Distressed Real Estate Opportunities Fund II, LP Fee Calculation

A management fee shall be payable with respect to each Limited Partner by the Partnership to the Investment Manager (the "Management Fee") quarterly in arrears on the last day of each fiscal quarter. Up to and including the end of the Direct Investment Commitment Period or, if earlier, the date on which pursuant to Section 7.03(b) the Partners and Parallel Company Partners have voted to require the General Partner to cease making both Direct Investments and additional commitments to Funds (the "Investment Termination Date"), the Management Fee, for each Limited Partner, shall be payable at that Limited Partner's Blended Rate multiplied by the aggregate amount of such Limited Partner's Capital Commitment. From and after the end of the Direct Investment Commitment Period or, if earlier, the Investment Termination Date, the Management Fee, for each Limited Partner, shall be payable at that Limited Partner's Applicable Percentage (as hereinafter defined) per annum multiplied by the aggregate amount of such Limited Partner's Capital Commitment. The "Blended Rate" shall be a percentage of a Limited Partner's Capital Commitment calculated by combining (x) one percent (1%) per annum on the first \$10,000,000 of such Limited Partner's Capital Commitment, (y) eighty-five one hundredths of one percent (0.85%) per annum on the next \$40,000,000 of such Limited Partner's Capital Commitment and (z) five tenths of one percent (0.50%) per annum on such Limited Partner's remaining Capital Commitment. The "Applicable Percentage" shall represent an amount equal to eighty percent (80%) of the Blended Rate used to calculate the Management Fee for the preceding year. For example, in the first year following the termination of the Direct Investment Commitment Period or the Investment Termination Date, as the case may be, the Applicable Percentage with respect to Limited Partners with Capital Commitments less than or equal to \$10,000,000 (and therefore with Blended Rates of 1%) shall be 0.80% (80% of 1%), and for the following year, the Applicable Percentage shall be 0.64% (80% of 0.80%).



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



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