

March 31, 2023



## **North Dakota State Investment Board Pension Funds**

**Investment Measurement Service  
Quarterly Review**

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### March 31, 2023

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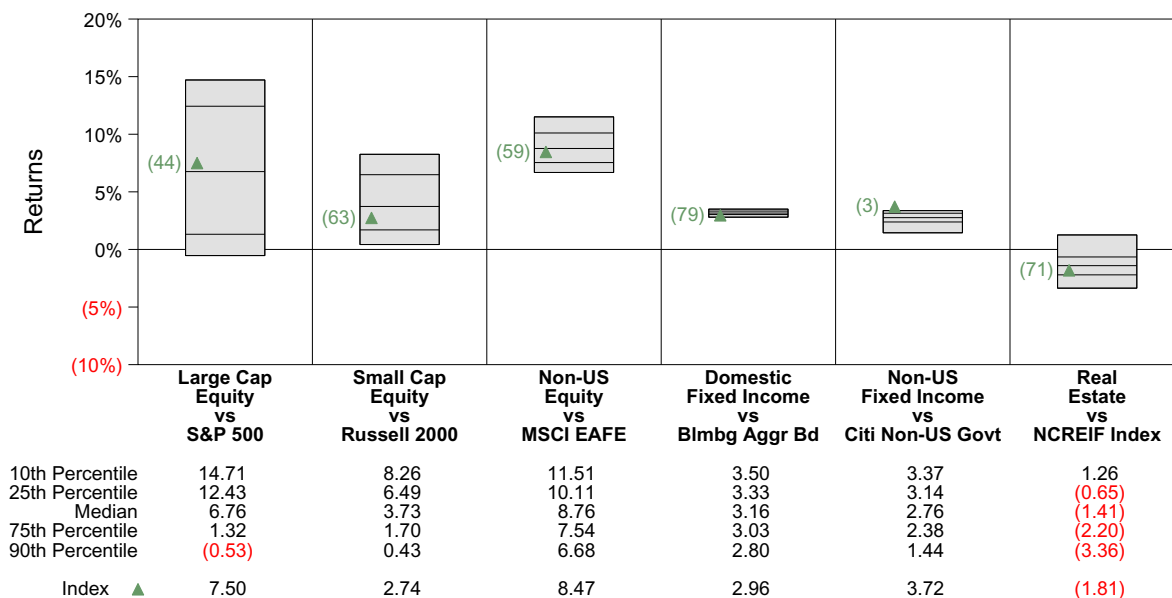
## Market Overview

### Active Management vs Index Returns

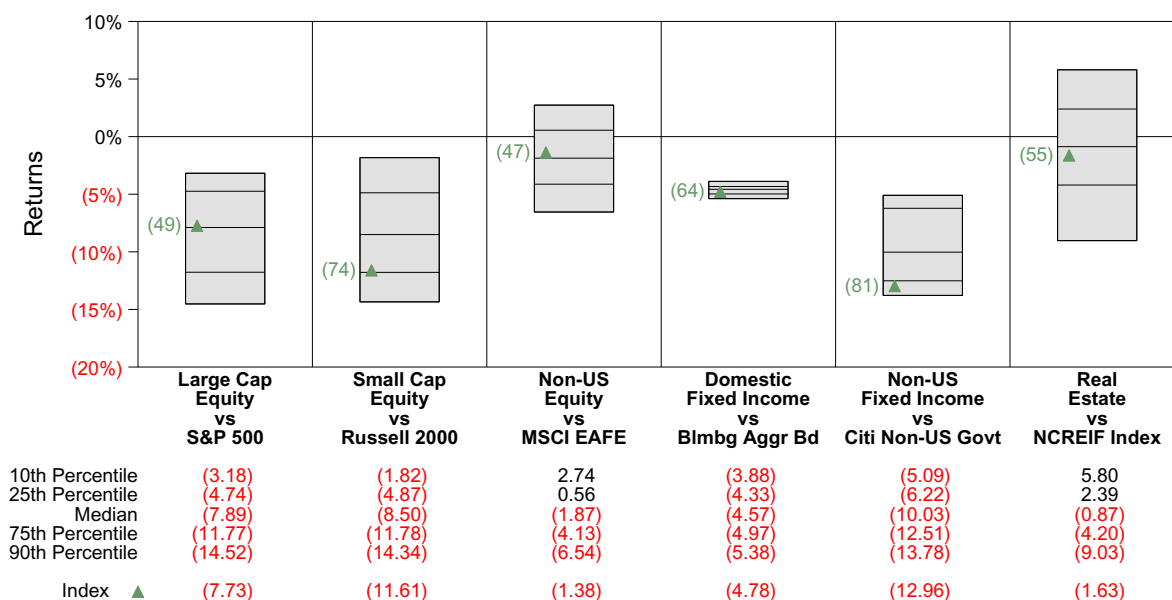
#### Market Overview

The charts below illustrate the range of returns across managers in Callan's Separate Account database over the most recent one quarter and one year time periods. The database is broken down by asset class to illustrate the difference in returns across those asset classes. An appropriate index is also shown for each asset class for comparison purposes. As an example, the first bar in the upper chart illustrates the range of returns for domestic equity managers over the last quarter. The triangle represents the S&P 500 return. The number next to the triangle represents the ranking of the S&P 500 in the Large Cap Equity manager database.

#### Range of Separate Account Manager Returns by Asset Class One Quarter Ended March 31, 2023



#### Range of Separate Account Manager Returns by Asset Class One Year Ended March 31, 2023



## Higher Interest Rates Work! That's Good?

### ECONOMY

**2** Fed rate hikes seem to be working as designed, but there is always a delicate balancing act in trying to avoid a recession. The U.S. economy has held up pretty well, but GDP is slowing and the bond market is signaling a recession is ahead. The risks of that event have increased.

## After Worst Year Ever, A Rebound for Bonds

### FIXED INCOME

**8** Following the worst year ever for core fixed income, the Bloomberg US Aggregate Bond Index rose 3.0% in 1Q. As with equities, it was a bumpy ride with solid returns in January and March sandwiching a negative February. Global indices also rose in the quarter

## Interest Continues as IRRs Stay Steady

### PRIVATE CREDIT

**12** Private credit generated net IRRs between 7% and 10% for trailing periods ended 9/30/22. Interest in the asset class remains strong and a renewed focus has been placed on relative value, downside protection, and managers' internal workout resources.

## 4Q22 and 1Q23 Gains Help Ease the Pain

### INSTITUTIONAL INVESTORS

**4** All investor types saw declines for the trailing year ended 1Q23, but the pain was eased by rebounds for stocks and bonds in 4Q22 and 1Q23. And while 2022 was a tough year, the silver lining is that return expectations going forward are now materially higher.

## Private RE Mixed; REITs Lag Equities

### REAL ESTATE/REAL ASSETS

**10** Income returns for the NCREIF Property Index were positive but appreciation fell for the four major property sectors. REITs lagged equities in the quarter, and real assets were mixed but also lagged equities. Transaction volume continues to decrease on a rolling four-quarter basis.

## Steady Gains Amid Volatile Markets

### HEDGE FUNDS/MACs

**13** Hedge funds ended the quarter in positive territory, although they underperformed broader equity indices, as the group provided steady performance through a volatile market environment. The median manager in the Callan Institutional Hedge Fund Peer Group rose 1.3%.

## Increase but the Ride Was Bumpy in 1Q

### EQUITY

**6** The S&P 500 posted a second straight quarter of positive performance, gaining 7.5% in 1Q23; large cap growth led all style and cap indices higher, advancing 14.4%. Results were mixed across developed markets but most delivered positive returns.

## Asset Class Adjusts To Tighter Conditions

### PRIVATE EQUITY

**11** Except for fundraising dollar volume, virtually all activity measures moderated in 1Q23. Company-level entry and exit transactions retreated to levels seen in 2020, which remain healthy but look meager compared to 2021's stimulus-fueled liquidity peak, and 2022's gradual slowdown.

## Index Rises After 3 Quarters of Losses

### DEFINED CONTRIBUTION

**15** The Callan DC Index rose 6.3% in 4Q22 after three straight quarterly declines. Balances also rose, driven by investment gains. TDFs continued to see the largest inflows. Allocations to equities rose slightly. Fees fell but the amount varied by plan size.

## Broad Market Quarterly Returns

### U.S. Equity Russell 3000



### Global ex-U.S. Equity MSCI ACWI ex USA



### U.S. Fixed Income Bloomberg Agg



### Global ex-U.S. Fixed Income Bloomberg Global Agg ex US



Sources: Bloomberg, FTSE Russell, MSCI

# Higher Interest Rates Work! That's Good, Right?!

ECONOMY | Jay Kloepfer

The Federal Reserve has two very public mandates: to support employment growth and to maintain low, stable inflation. When the economy falls into recession (GDP and jobs are contracting) and unemployment rises, the Fed typically steps in and lowers interest rates. Lower rates stimulate borrowing by consumers and businesses, and thereby spur demand that will ultimately pull the economy back into the black with positive economic growth and a resumption of hiring. When inflation rises, the Fed typically steps in and raises interest rates. Higher rates slow borrowing by consumers and businesses, and thereby lessen demand and slow the upward pressure on prices.

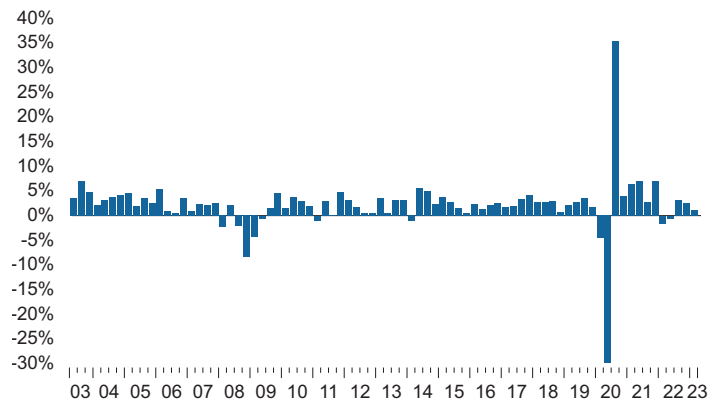
There is a balancing act on both sides of this policy equation: How much stimulus is enough to get the economy growing and spur recovery in the job market to pull down unemployment, before the resumption in demand pushes up prices? How high can interest rates go before the economy slows enough to tip into recession and unemployment shoots up? While this characterization is incredibly simplistic compared to the complex inner workings of the Fed, and ignores for the moment the impact of the Fed balance sheet and monetary tightening or easing, the story works to help explain the conundrum we currently face as we move into 2Q23.

The last three years saw incredible mayhem in the supply chains, capital flows, and job markets of the world, with equally volatile yet weirdly out-of-sync (at times) mayhem in the capital markets. We suffered through a pandemic with an uneven global policy response, and the invasion of Ukraine in winter 2022. Global energy fell to an effective price of zero in 2020 only to skyrocket immediately thereafter. Inflation surged hard after more than a decade of suppression, and central bank responses to withdraw stimulus and put out the inflation fire in 2022 spooked equity markets and drove fixed income returns to their worst year ever.

Underneath all this, the U.S. economy has actually held up pretty darn well. We regained the pre-pandemic levels of GDP and employment in fairly short order, given the depth of the declines. The job market in the U.S. has been particularly robust; even in 2022 as the capital markets plummeted, we added 4.8 million jobs

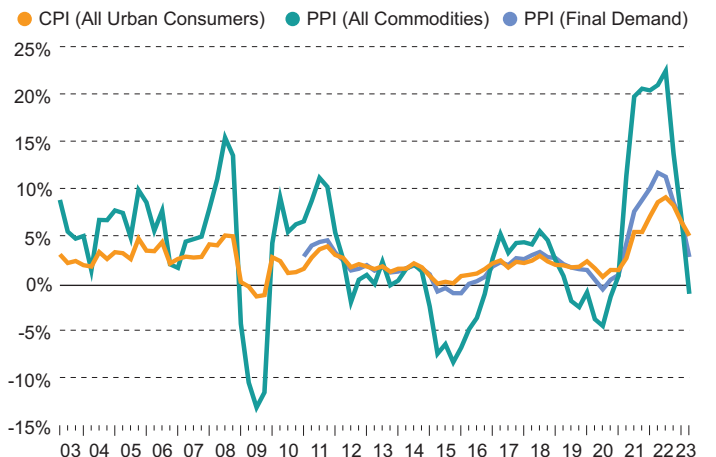
Quarterly Real GDP Growth

(20 Years)



Source: Bureau of Economic Analysis

Inflation Year-Over-Year



Source: Bureau of Labor Statistics

during the year, with two monster months in February and July, and an average of 330,000 new jobs in the other 10 months of 2022. On the downside, overall gains in jobs hide the continued mismatch between the supply of jobs from employers and the type of jobs workers are demanding. Many trade and service industries remain woefully understaffed. Personal income surged, first through pandemic support in 2020 and the inability to spend in lockdown, and then as wages and salaries rose when economic growth burst into the open in 2021 and 2022. However, inflation ate into income gains and drove up prices for businesses, crimping real returns and company margins. Now that the Fed Funds rate has reached 5% and mortgage rates are at 7%, is it time for us to tip into recession? Did the Fed do “too much, too late?”



1Q23 GDP grew 1.1%, a definite slowdown from the second half of 2022, and below consensus expectations of 2%. Two culprits for the slower growth were weaker retail sales and a drop in new home construction. Another culprit was inventory reduction—companies worked down their stockpiles. Reducing inventories in anticipation of slower demand can be a self-fulfilling prophecy, as inventory reduction is a negative to GDP, but it can also set the economy up for a stronger 2Q, with the potential to rebuild inventory in the coming months. The consensus among economic forecasters is for substantial slowdown in 2023, to near zero growth in 2Q and 3Q, reaching the soft landing that is the holy grail of central banks.

Over history, however, we have not enjoyed soft landings in recessions; unemployment has spiked far beyond what would be thought of as a soft landing. The data for tracking recessions are all lagged, but the sequence of events in the economy is typically 1) slowing activity that takes a while to show up in the GDP data, then 2) cutting back in the form of spending and hiring, 3) layoffs starting in high-flying industries, leading to 4) the multiplier effects of the slowdown snowballing into significant job losses across the broad economy. The stock market usually prices in recession first, often far ahead of the economic data, and then the market begins to advance, pricing in the recovery while the recession is still unfolding.

The bond market has been signaling belief in recession with an inverted yield curve. The market fully believed in the Fed's interest rate plans in March 2022 when inflation took off, and the yield curve shifted up sharply. As the year went on, the bond market then began worrying that the Fed would have to reverse course "soon" and start cutting rates to stave off recession, hence the inversion of the yield curve. The Fed has made it clear that inflation remains concern

### Recent Quarterly Economic Indicators

	1Q23	4Q22	3Q22	2Q22
Employment Cost: Total Compensation Growth	4.8%	5.1%	5.0%	5.1%
Nonfarm Business: Productivity Growth	-2.7%	1.6%	1.2%	-3.7%
GDP Growth	1.1%	2.6%	3.2%	-0.9%
Manufacturing Capacity Utilization	78.3%	78.5%	79.4%	79.6%
Consumer Sentiment Index (1966=100)	64.6	58.8	56.1	57.8

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve, IHS Economics, Reuters/University of Michigan

### The Long-Term View

Index	1Q23	Periods Ended 3/31/23			
		1 Yr	5 Yrs	10 Yrs	25 Yrs
U.S. Equity					
Russell 3000	7.2	-8.6	10.5	11.7	7.4
S&P 500	7.5	-7.7	11.2	12.2	7.4
Russell 2000	2.7	-11.6	4.7	8.0	6.8
Global ex-U.S. Equity					
MSCI EAFE	8.5	-1.4	3.5	5.0	4.3
MSCI ACWI ex USA	6.9	-5.1	2.5	4.2	--
MSCI Emerging Markets	4.0	-10.7	-0.9	2.0	--
MSCI ACWI ex USA Small Cap	4.7	-10.4	1.7	5.1	6.5
Fixed Income					
Bloomberg Agg	3.0	-4.8	0.9	1.4	4.0
90-Day T-Bill	1.1	2.5	1.4	0.9	1.9
Bloomberg Long G/C	5.8	-13.4	0.6	2.3	5.6
Bloomberg GI Agg ex US	3.1	-10.7	-3.2	-1.0	2.8
Real Estate					
NCREIF Property	-1.8	-1.6	6.7	8.3	8.8
FTSE Nareit Equity	2.7	-19.2	6.0	6.0	8.0
Alternatives					
CS Hedge Fund	0.2	-0.9	4.2	3.9	5.5
Cambridge PE*	0.8	-8.2	16.1	15.1	14.1
Bloomberg Commodity	-5.4	-12.5	5.4	-1.7	1.8
Gold Spot Price	8.8	1.6	8.4	2.2	7.8
Inflation – CPI-U	1.7	5.0	3.9	2.6	2.5

\*Data for most recent period lags. Data as of 9/30/22.

Sources: Bloomberg, Bureau of Economic Analysis, Credit Suisse, FTSE Russell, MSCI, NCREIF, Refinitiv/Cambridge, S&P Dow Jones Indices

No. 1, and the potential to cause a recession has not entered its deliberations. The strong job market in 1Q—almost a million new jobs—gives the Fed cover to continue course. The storm clouds on the horizon are the various measures of inflation: CPI-U and PCE both rose 5% in the first quarter, and the employment cost index for private industry rose 4.8%. While these rates are high relative to longer term history, they are down substantially from the peaks of mid-2022.

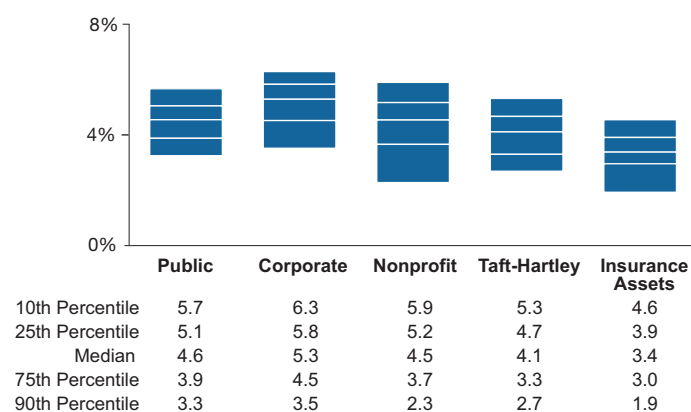
So higher interest rates are working, slowing demand and lessening price pressure, but inflation has a habit of being sticky on the downside. Squeezed margins means pressure to trim costs (and raise prices if possible). Highly visible layoffs in technology may soon expand to the broader economy. The chance of a recession in 2023 remains high.

# Returns Fall for Trailing Year, but 4Q22, 1Q23 Gains Help Ease the Pain

## INSTITUTIONAL INVESTORS

- Gains for stocks and bonds at the end of 2022 and beginning of 2023 eased the pain of a tough year for all institutional investors in 2022.
- While all investor types saw losses for the trailing one-year ending 1Q23, the declines were less than the double-digit losses they had experienced last year.
- Most investor types topped a 60% S&P 500/40% Bloomberg Aggregate benchmark over the trailing one year, with the exception of corporate plans.
- Results over the last 20 years for all investor types are in line with the stock-bonds benchmark.
- Entering 2023, for all investor types inflation is still an issue, despite recent declines.
  - Even if the rate goes to zero, the level of prices is permanently higher unless we get to deflation. The impact on individual and business real net income is substantial and portends slower growth in 2023 and 2024.
- Rate hikes from the Fed are another key concern.
  - The Fed has increased rates 475 bps since March 2022, from 0.0%-0.25% to 4.75%-5.0% in March 2023.
- While the painful losses across the board for investors in 2022 were a challenge, the silver lining is that higher returns are expected going forward.
  - Return targets are now in sight.
  - Risk reduction is on the table.

Quarterly Returns, Callan Database Groups (3/31/23)



Source: Callan

## Callan Database Median and Index Returns\* for Periods Ended 3/31/23

Database Group	Quarter	1 Year	3 Years	5 Years	10 Years	20 Years
Public Database	4.6	-4.8	11.2	6.2	7.2	7.9
Corporate Database	5.3	-7.3	5.5	4.2	5.9	7.3
Nonprofit Database	4.5	-4.7	11.2	5.8	6.7	7.7
Taft-Hartley Database	4.1	-4.0	11.2	6.4	7.3	7.5
Insurance Assets Database	3.4	-3.0	4.4	3.2	3.6	5.1
All Institutional Investors	4.6	-4.9	10.6	5.7	6.8	7.6
Large (>\$1 billion)	4.2	-4.9	11.2	6.5	7.3	8.0
Medium (\$100mm - \$1bn)	4.7	-4.9	10.7	5.8	7.0	7.6
Small (<\$100 million)	4.6	-4.9	10.4	5.5	6.6	7.2
60% S&P 500/40% Bloomberg Agg	5.7	-6.3	9.9	7.5	8.1	7.8

\*Returns less than one year are not annualized.

Source: Callan. Callan's database includes the following groups: public defined benefit (DB) plans, corporate DB plans, nonprofits, insurance assets, and Taft-Hartley plans. Approximately 10% to 15% of the database constituents are Callan's clients. All database group returns presented gross of fees. Past performance is no guarantee of future results. Reference to or inclusion in this report of any product, service, or entity should not be construed as a recommendation, approval, affiliation, or endorsement of such product, service, or entity by Callan.

- Private markets are now over target allocations.
  - Downward market valuations are slower in coming, distorting true exposures.
  - Interest remains strong in all private assets.
  - Sharpened interest in real assets continues.
  - But current real assets exposures did not help, given losses in the asset class.
- Strategic themes in client conversations: How much has the world changed, and does it alter how we should view and implement our portfolio?

### Corporated Defined Benefit (DB) Plans

- Liabilities fell sharply with rising interest rates. Liability-driven investing (LDI) portfolios were hammered by long duration exposure; typical LDI plan treaded water in funded status.
- Plans are questioning what they are doing with LDI, and why. Funded status no longer translates directly to contributions, or expense. Funding relief changed views.
- Total return-oriented plans saw funded status improve as equities declined less than liabilities.
- We expect higher interest rates will increase discussions about pension risk transfer. Most of our corporate DB clients are inclined to keep the plan on the balance sheet.

### Public DB Plans

- Downward pressure on actuarial discount rates may now abate as capital markets expectations are higher following the market decline.
- Higher return expectations and lowered discount rates have led to a number of discussions of de-risking, after years of risking-up to chase returns.
- Inflation impacts future liabilities through pressure on salary and hits plans now with COLAs. Political pressures are high on plans with discretionary COLAs. Most COLAs are NOT funded, which is the reason why many plans suspended or eliminated them to address funding shortfalls over the past decade.

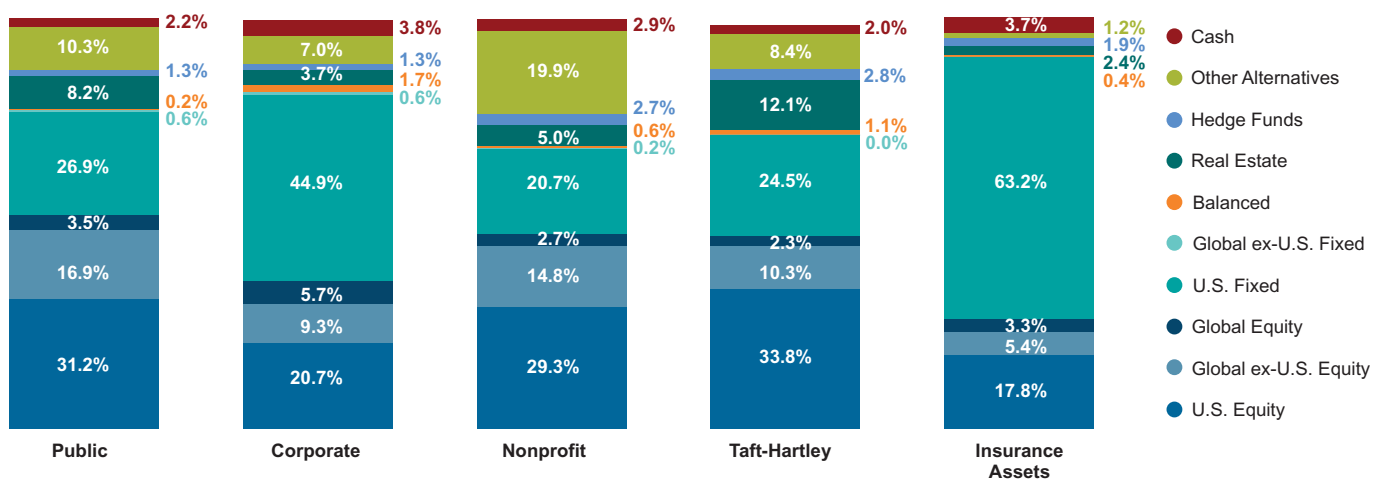
### Nonprofits

- They are expanding the depth and breadth of their private markets allocations to diversify a prior focus on growth.
- Inflation concerns will lead to reconsideration of spending policies in 2023.

### Defined Contribution (DC) Plans

- Pressure on investment management fees shows no signs of abating.
- Plans are also focused on compliance as they digest the implications of SECURE 2.0.

### Average Asset Allocation, Callan Database Groups



Note: Charts may not sum to 100% due to rounding. Other alternatives include but is not limited to: diversified multi-asset, private credit, private equity, and real assets.  
Source: Callan

# Equity

## U.S. Equities

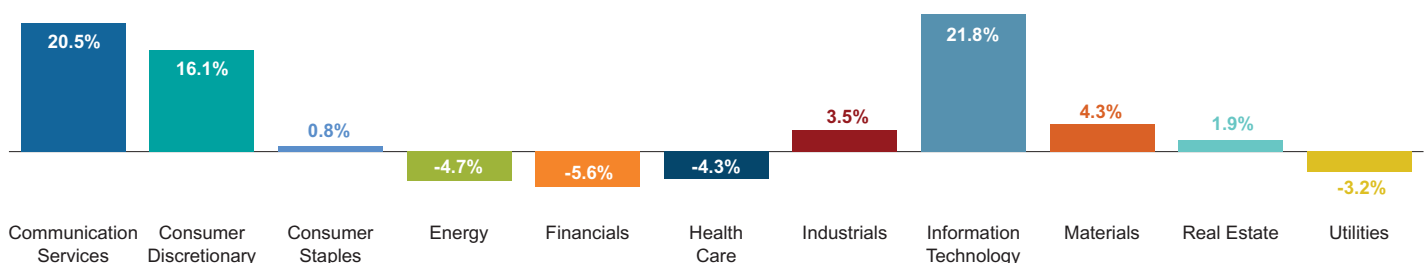
### Markets gain, with exception of small cap value

- The S&P 500 posted a second straight quarter of positive performance, gaining 7.5% in 1Q23; large cap growth led all style and cap indices higher, advancing 14.4%.
- Russell 2000 Value was a notable exception and experienced a slight decline of 0.7% due to greater exposure to Financials, specifically banks.
- During the quarter, three sectors comprising 44% of the S&P 500 (and 63% of the Russell 1000 Growth Index) drove performance: Technology (+21.8%), Communication Services (+20.5%), and Consumer Discretionary (+16.1%).
- Financials, Energy, and Health Care posted negative returns for the quarter but had only a modest impact on total returns given smaller weights in respective benchmarks.
- Small caps (Russell 2000) underperformed large caps (Russell 1000) and growth outperformed value during the quarter, a reversal from 2022. Greater exposure to banks in Russell 2000 (8.3%) versus Russell 1000 (3.3%) was one differentiator for returns; strong returns for mega-cap Technology also increased divergence.

### Large cap growth outperformance drivers

- The large cap growth outperformance was driven by increased valuations as interest rates declined and expectations of a more dovish Fed emerged.
- Asset managers may take a more cautious approach in equity markets into coming quarters as earnings estimates decline; expect a focus on quality, cash flow, defensive value names, and profitable growth stocks.

### Quarterly Performance of Industry Sectors (12/31/22)

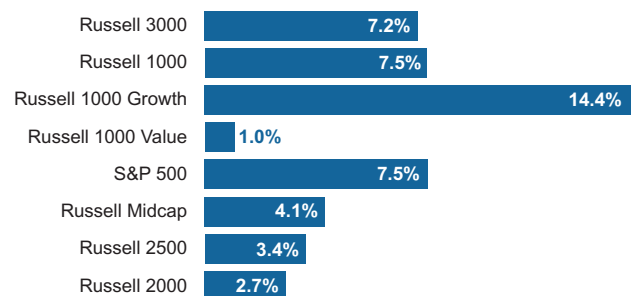


Source: S&P Dow Jones Indices

- Price multiples continue to be important as elevated valuations may compress if markets anticipate that monetary easing is not on the near-term horizon.
- Analyst estimates for future earnings are diverging, typically a sign of elevated economic turbulence.
- Investors “bought the dip” as stock performance reversed from the prior year; the worst-performing stocks for 2022 became best-performing stocks during 1Q23.

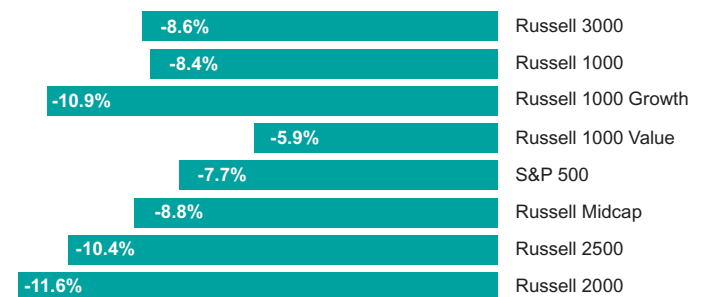
### U.S. Equity: Quarterly Returns

(3/31/23)



### U.S. Equity: One-Year Returns

(3/31/23)



Sources: FTSE Russell and S&P Dow Jones Indices

## Global Equity

### 1Q23 brought global equity markets back to black

- Positive results despite hiccups
- 1Q23 was marked by the collapse of Silicon Valley Bank and Credit Suisse, which sent fears of a banking crisis across global markets.
- Despite a Fed hike during the period, investors began to price in lower rate expectations.
- Europe outperformed other regions, making up ground lost in 2022 as inflation eased and recession fears lessened.

### Growth vs. value

- Growth outpaced value across developed and emerging markets.
- In a reversal from 2022, investors preferred growth alongside a drawdown in banks; Information Technology was the largest outperformer.

### U.S. dollar vs. other currencies

- After some strength early in the quarter, the U.S. dollar declined 1% as interest rate differentials narrowed globally.

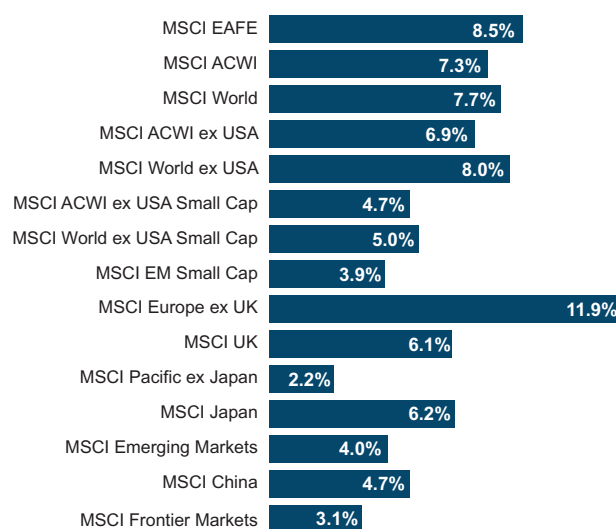
### Developed markets outpace U.S.

- Outperformance of developed markets over the past year has been driven by Europe.
- Europe beat U.S. as the worst fears in the wake of the Russia-Ukraine War were not realized.
- Europe benefited from falling gas prices and China reopening.
- Value-growth dispersion was impacted less in developed markets relative to U.S. given the composition of the markets.
- EAFE Value outperformed Growth by 2.5 percentage points.
- S&P 500 Value outperformed Growth by 15.2 percentage points.
- Weak dollar in recent quarters helped global ex-U.S. equities.
- Since DXY Index reached a 20-year high in September 2022, it has fallen by 10%.

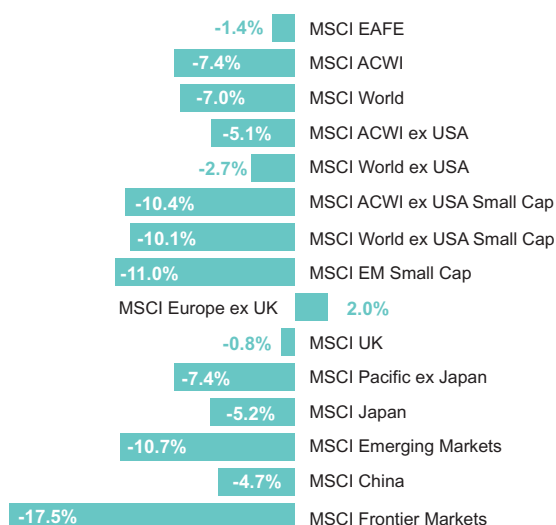
## Will Europe continue to be a source of return?

- EPS growth expectations have fallen for both S&P 500 (-7%) and Europe (-9%).
- However, euro zone provides valuation support relative to the U.S.
- Euro zone trades at a 30% discount vs. the U.S.

### Global ex-U.S. Equity: Quarterly Returns (U.S. Dollar, 3/31/23)



### Global ex-U.S. Equity: One-Year Returns (U.S. Dollar, 3/31/23)



Source: MSCI

# Fixed Income

## U.S. Fixed Income

### Bloomberg Aggregate was positive in 1Q but mixed

- January: +3.1%
- February: -2.6%
- March: +2.5%

### U.S. Treasury volatility was pronounced

- 2-year U.S. Treasury yield high was 5.08% on 3/8 and low was 3.77% on 3/24
- MOVE Index highest since 2008

### Yield curve remained inverted but also volatile

- 2yr/10yr | 3/31: -58 bps; max 3/8: -109; min 3/23: -38
- 1yr/10yr | 3/31: -116 bps

### Fed raised rates, bringing target to 4.75%–5.00%

- Median expectation from Fed is 5.1% for year-end 2023; market pricing in Fed cuts by year-end
- Inflation moderated but still high and job market tight

### Sector performance mixed

- Corporate Industrials excess return: +58 bps
- Corporate Financials excess return: -39 bps
- RMBS excess return: -50 bps
- CMBS excess return: -74 bps
- High yield excess return: +123 bps

### Valuations fair

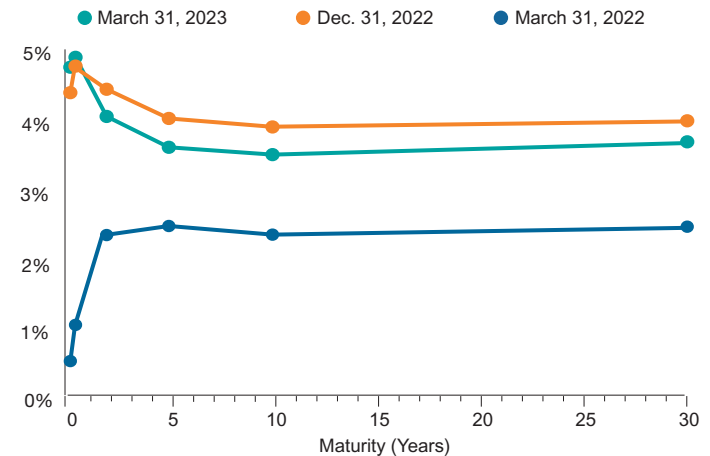
- Credit spreads have not widened materially and are close to historical averages

## Municipal Bonds

### Indices gained in 1Q23

- Lower quality outperformed (AAA: +2.5%; AA: +2.7%; A: +3.0%; BBB: +3.7%)
- Muni curve inverted but less so than U.S. Treasuries
- 2-year AAA yield: 2.41%; 10-year AAA yield: 2.28%
- Valuations relative to U.S. Treasuries are rich

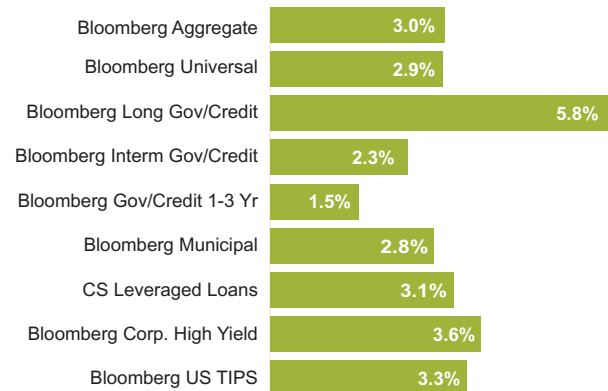
## U.S. Treasury Yield Curves



Source: Bloomberg

## U.S. Fixed Income: Quarterly Returns

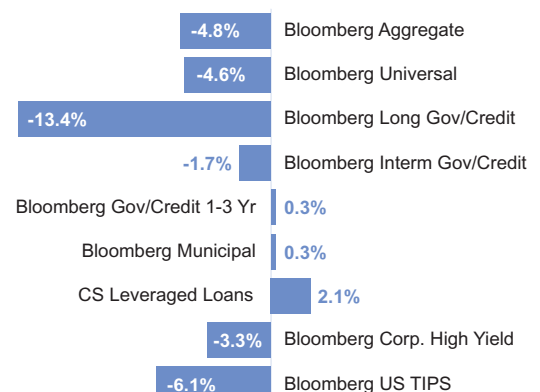
(3/31/23)



Sources: Bloomberg and Credit Suisse

## U.S. Fixed Income: One-Year Returns

(3/31/23)



Sources: Bloomberg and Credit Suisse

## FIXED INCOME (Continued)

- 10-year AAA Muni/10-year U.S. Treasury yield ratio 65%; below 10-year average of 88%
- Over the last 10 years, 10-year ratio was richer 4% of the time
- After-tax yield of Muni Bond Index = 5.5%; Bloomberg IG Corporate = 5.2% (Source: Eaton Vance)

### Supply/demand

- Outflows nearly \$2 billion but lower than the \$22 billion in 1Q22
- Supply about 25% lower year-over-year
- Munis not immune to turmoil in banking, but fundamentals remain sound
- Banks are third largest holder of munis (about 15%) but thus far have not been sellers
- Municipals could be affected by tighter lending standards but likely result would be more public issuance
- “Rainy Day” fund balances and state tax revenues robust

## Global Fixed Income

### Global Aggregate was positive in 1Q but mixed

- January: +3.3%
- February: -3.3%
- March: +3.2%
- ECB and UK hiked rates; Japan held steady

### U.S. dollar was mixed but mostly lower

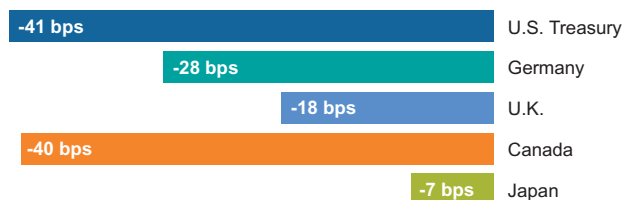
- Euro: +2% vs dollar
- British pound: +3% vs dollar
- Japanese yen: -1% vs dollar
- Australian dollar: -1% vs dollar
- Mexican peso: +8% vs dollar
- Brazilian real: +4% vs dollar

### Emerging market debt delivered solid results

- EM currencies did well versus U.S. dollar, especially in Latin America; Latin America local currency return: +4.1%; unhedged in \$US: +9.8%

## Change in 10-Year Global Government Bond Yields

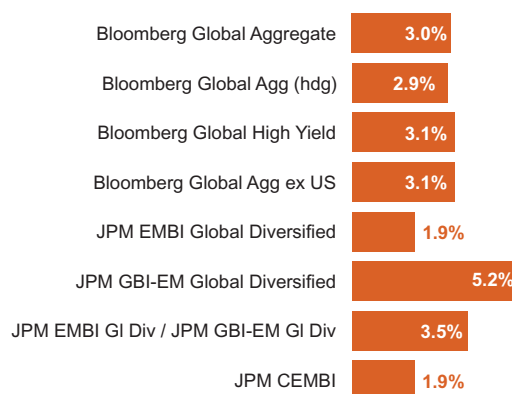
4Q22 to 1Q23



Source: Bloomberg

## Global Fixed Income: Quarterly Returns

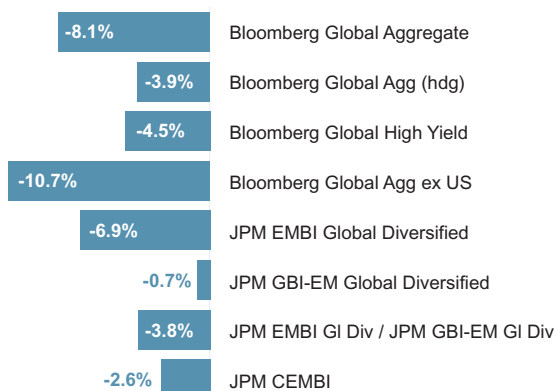
(3/31/23)



Sources: Bloomberg and JPMorgan Chase

## Global Fixed Income: One-Year Returns

(3/31/23)



Sources: Bloomberg and JPMorgan Chase



# Private Real Estate Sees Mixed Results, While REITs Lag Equities

REAL ESTATE/REAL ASSETS | Kristin Bradbury, Munir Iman, and Aaron Quach

## Income returns positive but appreciation negative

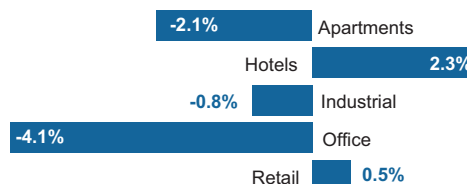
- Income returns were positive across all property sectors and regions in the NCREIF Property Index.
- All sectors and regions, except for Hotel, experienced negative appreciation.
- Valuations are reflective of higher interest rates, which have put upward pressure on capitalization rate and discount rate assumptions.
- Return dispersion by manager within the ODCE Index was due to the composition of underlying portfolios.
- Outstanding redemption requests for most large ODCE funds are approximately 8% to 16% of net asset value.
- There is more than \$200 billion of capital waiting to be deployed in North America.
- Majority of dry powder capital in opportunistic, value-add, and debt funds
- Transaction volume continues to decrease on a rolling four-quarter basis and is now below five-year averages.
- The rise in interest rates is the driving force behind the slowdown in transactions. A bid-ask spread remains and price discovery continues to occur among market participants.

## REITs Underperform Equity Indices

- Global REITs underperformed in 1Q23, rising 0.8% compared to a 7.7% rise for global equities (MSCI World).

## Sector Quarterly Returns by Property Type

(3/31/23)



Source: NCREIF

- U.S. REITs gained 2.7% in 1Q23, in contrast with the S&P 500 Index, which rose 7.5%.
- REITs are now trading at a discount to NAV (-12%) and offer relative value given the strength of underlying fundamentals.
- Historically, global REITs have traded at a -5.1% discount to NAV.

## Real assets mixed but lagged global equities

- Real assets were mixed in 1Q but generally underperformed global equities.
- Gold (S&P Gold Spot Price Index: +8.8%), REITs (MSCI US REIT: +2.7%), infrastructure (DJB Global Infrastructure: +2.5%), and TIPS (Bloomberg TIPS: +2.0%) all posted positive returns.
- The S&P GSCI Index fell 4.9% with oil down about 7%. WTI Crude closed the quarter at \$74/barrel, just before OPEC announced its intention to cut production in May.

## Callan Database Median and Index Returns\* for Periods Ended 3/31/23

Private Real Assets	Quarter	Year to Date	1 Year	3 Years	5 Years	10 Years	15 Years
<b>Real Estate ODCE Style</b>	<b>-1.7</b>	<b>-1.7</b>	<b>-2.2</b>	<b>8.4</b>	<b>7.5</b>	<b>9.0</b>	<b>5.1</b>
NFI-ODCE (value-weighted, net)	-3.4	-3.4	-3.9	7.5	6.6	8.5	5.0
NCREIF Property	-1.8	-1.8	-1.6	7.2	6.7	8.3	6.3
NCREIF Farmland	2.1	2.1	8.9	7.5	6.5	8.5	10.2
NCREIF Timberland	1.8	1.7	11.3	8.1	5.5	5.8	4.6
<b>Public Real Estate</b>							
<b>Global Real Estate Style</b>	<b>1.8</b>	<b>1.8</b>	<b>-20.2</b>	<b>7.9</b>	<b>3.3</b>	<b>4.7</b>	<b>4.5</b>
FTSE EPRA Nareit Developed	0.8	0.8	-21.4	6.6	0.9	2.5	2.5
<b>Global ex-U.S. Real Estate Style</b>	<b>0.1</b>	<b>0.0</b>	<b>-21.9</b>	<b>2.8</b>	<b>-0.7</b>	<b>3.4</b>	<b>2.4</b>
FTSE EPRA Nareit Dev ex US	-1.7	-1.6	-23.0	1.1	-3.1	0.3	0.7
<b>U.S. REIT Style</b>	<b>3.1</b>	<b>3.1</b>	<b>-19.0</b>	<b>11.4</b>	<b>7.2</b>	<b>6.9</b>	<b>7.3</b>
FTSE EPRA Nareit Equity REITs	2.7	2.7	-19.2	12.1	6.0	6.0	6.3

\*Returns less than one year are not annualized. Sources: Callan, FTSE Russell, NCREIF



# Deceleration in 2022, with Trends for 2023 Very Unclear

## PRIVATE EQUITY | Gary Robertson

Private equity continued the trend of slower activity in 1Q23, after the frothy 2021 peak period. Fundraising dollar volume ticked up slightly, but overall combined company-level entry and exit volumes averaged drops of about 34% by count and 54% by dollar volume from 4Q22. Exits continue to suffer more than fund commitments and new investments.

**Fundraising** ► Based on preliminary data, 1Q23 private equity partnerships holding final closes totaled \$188.7 billion, up 20% from 4Q22. New partnerships formed dropped 47% to 339, with the trend continuing of larger funds consolidating most commitments. Secondary funds surged to 17% of commitments, which is an anomaly for the strategy that normally has a low single-digit market share. New buyout funds with 44% of commitments remains low. Venture capital has declined from recent 30%-plus levels but remains significant. (Unless otherwise noted, all data comes from PitchBook.)

**Buyouts** ► Funds closed 2,429 investments with \$123 billion in disclosed deal value, a 21% decline in count and a 53% drop in dollar value from 4Q.

**VC Investments** ► New investments in venture capital companies totaled 10,271 rounds of financing, down 10%, with \$78 billion of announced value, down 11%.

**Exits** ► There were 462 private M&A exits of private equity-backed companies, a 3% increase. Disclosed values declined 36% to \$89 billion. There were 47 private equity-backed IPOs, down 20%, which raised an aggregate \$5 billion, down 44%.

Venture-backed M&A exits totaled 527 with disclosed value of \$22 billion. The number of sales rose only 1% from 4Q, but announced value jumped 175%. There were 58 VC-backed IPOs, down 51%, and the combined float totaled \$6 billion, a 33% decrease.

**Returns** ► Preliminary numbers (finals will be published in mid-May) for 4Q22 indicate a modestly up quarter for All Private Equity, with Buyout and Credit-related strategies offsetting continued declines in Venture Capital and Growth Equity.

### Funds Closed 1/1/23 to 3/31/23

Strategy	No. of Funds	Amt (\$mm)	Share
Venture Capital	200	31,629	17%
Growth Equity	14	15,316	8%
Buyouts	93	83,346	44%
Mezzanine Debt	8	16,012	8%
Distressed/Special Credit	3	10,515	6%
Energy	0	0	0%
Secondary and Other	20	31,608	17%
Fund-of-Funds	1	274	0%
<b>Totals</b>	<b>339</b>	<b>188,700</b>	<b>100%</b>

Source: PitchBook (Figures may not total due to rounding.)

### Private Equity Performance (%) (Pooled Horizon IRRs through 12/31/22\*)

Strategy	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years
All Venture	-5.40	-19.17	24.33	22.38	19.22	13.19	12.60	23.50
Growth Equity	-1.29	-14.64	19.32	18.13	15.85	12.62	14.76	15.15
All Buyouts	4.15	-3.00	17.52	15.75	15.14	10.06	15.01	12.77
Mezzanine	3.82	4.34	11.60	11.04	11.23	10.19	11.19	10.00
Credit Opportunities	2.53	4.37	8.60	7.02	8.24	8.74	9.79	9.54
Control Distressed	1.98	3.91	19.76	13.44	12.29	10.49	11.92	11.71
<b>All Private Equity</b>	<b>0.67</b>	<b>-8.32</b>	<b>18.62</b>	<b>16.60</b>	<b>15.20</b>	<b>10.90</b>	<b>13.83</b>	<b>13.71</b>
S&P 500	7.56	-18.11	7.66	9.42	12.56	8.81	9.80	7.64
Russell 3000	1.87	-13.01	-2.71	0.02	1.06	2.66	3.10	3.97

Note: Private equity returns are net of fees. Sources: Refinitiv/Cambridge and S&P Dow Jones Indices

\*Most recent data available at time of publication

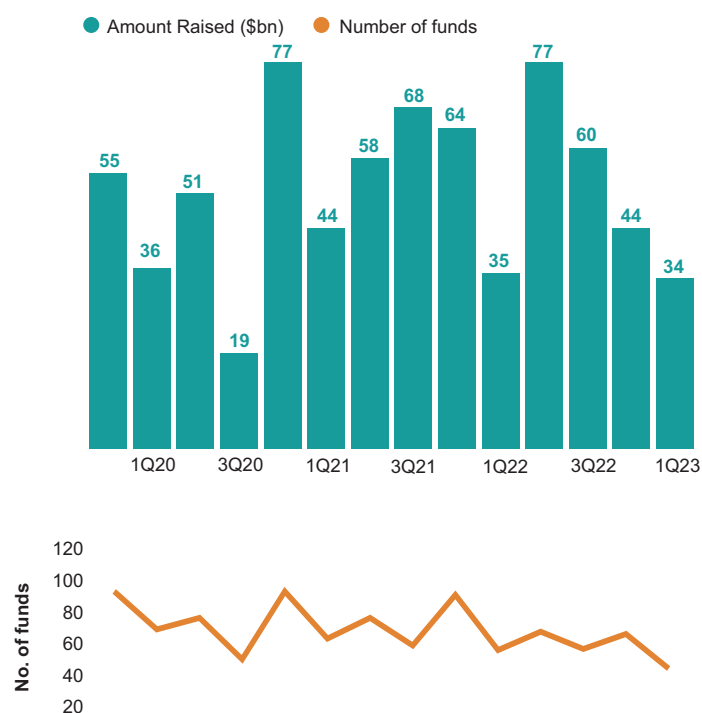
Note: Transaction count and dollar volume figures across all private equity measures are preliminary figures and are subject to update in subsequent versions of the *Capital Markets Review* and other Callan publications.

# Net IRRs Range Between 7%-10%; Interest Remains Strong

PRIVATE CREDIT | Catherine Beard

- Private credit performance varies across sub-asset class and underlying return drivers. On average, the asset class has generated net IRRs of 7% to 10% for trailing periods ended Sept. 30, 2022. Higher-risk strategies performed better than lower-risk strategies.
- As interest rates declined after the Global Financial Crisis (GFC), private credit attracted increased interest from institutional investors.
- Private credit fundraising was robust leading into the COVID dislocation with a particular focus on direct lending, asset-based lending, and distressed strategies.
- In the current rate environment, a renewed focus has been placed on relative value, downside protection, and managers' internal workout resources.
- There is renewed interest in strategies with strong collateral protection such as asset-based lending.
- Larger sponsor-backed lending is seeing a new focus due to the high yield/broadly syndicated loan disintermediation by private debt.
  - U.S. sub-investment grade corporate yields rose dramatically at the beginning of 2022 with yields peaking in September. This was a combination of higher interest rates due to tighter Fed policy and a widening of high yield spreads.
  - Spreads widened during the first half of 2022 due to weaker credit conditions as the U.S. economic outlook worsened. This has since moderated.
  - Default rates for U.S. corporate bonds ticked up in 1Q but remained well below the historical average of 3%-4%. Callan expects defaults to increase somewhat in coming months as economic growth slows and

## Private Credit Fundraising (\$bn)



Source: Preqin

potentially turns negative.

- The Corporate Bond Market Distress Index (CMDI) rose rapidly during the first nine months of 2022, especially for investment grade bonds, highlighting market volatility and a drying up of liquidity, but has fallen since then. In 2023, as the IG distress index continues to fall, the HY bond indicator is on the rise. The CMDI incorporates a range of indicators, including new issuance and pricing for primary and secondary market bonds and relative pricing between traded and nontraded bonds.

## Private Credit Performance (%) (Pooled Horizon IRRs through 9/30/22\*)

Strategy	Quarter	1 Year	3 Years	5 Years	8 Years	10 Years	15 Years	20 Years
Senior Debt	-2.4	-3.5	4.6	5.1	5.7	5.9	6.3	6.1
Mezzanine	0.2	5.0	11.8	11.1	10.8	11.3	10.5	11.3
Credit Opportunities	0.7	3.9	8.4	7.2	6.6	8.3	8.6	9.7
Total Private Credit	-0.1	2.6	8.4	7.7	7.4	8.6	8.8	9.7

Source: Refinitiv/Cambridge

\*Most recent data available at time of publication

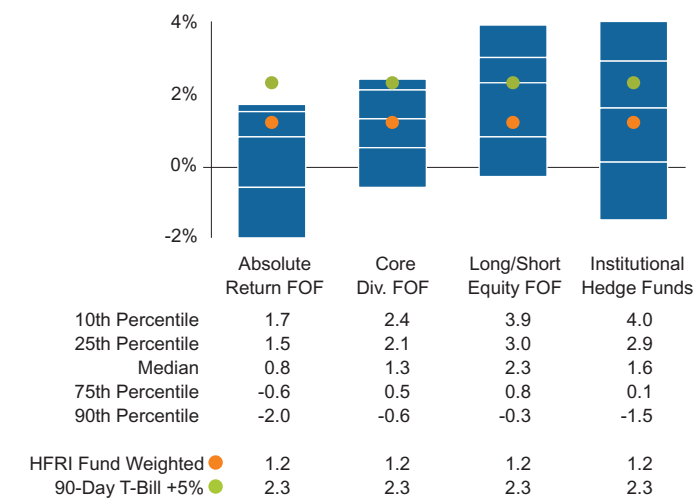
# Steady Gains Amid Volatile Markets

HEDGE FUNDS/MACs | Joe McGuane

- Equity and credit markets saw volatility spike during 1Q23, as sentiment on inflation and Federal Reserve policy whipsawed in response to signs of persistent inflation following strong economic data on the labor market.
- Both stocks and bonds gained ground, and hedge funds ended the quarter in positive territory, although they underperformed broader equity indices, as the group provided steady performance through a volatile market environment.
- Equity hedge strategies had a strong start to the year, as tech-focused managers saw performance soar.
- Relative value managers also had a nice quarter, as fixed income relative value strategies were able to profit off the move in short-term rates in March.
- Event-driven strategies posted gains, as some managers profited from merger arbitrage exposures as spreads tightened with the completion of several large strategic deals.

## Hedge Fund Style Group Returns

(3/31/23)



Sources: Callan, Credit Suisse, Federal Reserve

## Callan Peer Group Median and Index Returns\* for Periods Ended 3/31/23

Hedge Fund Universe	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years
Callan Institutional Hedge Fund Peer Group	1.6	2.6	9.2	5.7	5.8	6.1
Callan Fund-of-Funds Peer Group	1.2	0.9	8.1	4.2	4.2	3.7
Callan Absolute Return FOF Style	0.8	2.3	8.8	4.1	4.5	3.6
Callan Core Diversified FOF Style	1.3	1.5	8.1	4.0	4.0	3.4
Callan Long/Short Equity FOF Style	2.3	-2.3	6.6	4.5	4.6	4.1
HFRI Fund-Weighted Index	1.2	-2.1	10.5	4.7	4.4	4.0
HFRI Fixed Convertible Arbitrage	1.4	1.0	9.1	5.3	5.0	5.4
HFRI Distressed/Restructuring	0.9	-4.6	12.2	4.7	4.4	4.5
HFRI Emerging Markets	1.9	-4.9	8.0	1.0	2.8	2.0
HFRI Equity Market Neutral	0.8	2.5	4.1	1.9	2.9	2.0
HFRI Event-Driven	1.4	-2.2	11.7	4.5	4.6	4.5
HFRI Relative Value	1.3	0.0	7.7	3.6	3.9	4.7
HFRI Macro	-2.4	-0.4	7.0	4.6	2.7	2.4
HFRI Equity Hedge	2.5	-3.7	12.4	5.0	5.3	4.2
HFRI Multi-Strategy	1.4	-6.3	7.1	2.4	2.8	3.1
HFRI Merger Arbitrage	-1.8	-0.3	9.7	5.3	4.3	4.0
90-Day T-Bill + 5%	2.3	7.5	5.9	6.4	5.9	5.7

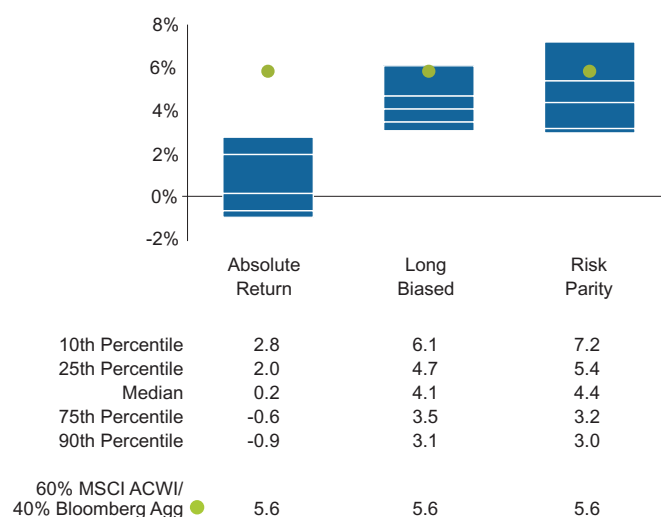
\*Net of fees. Sources: Callan, Credit Suisse, Hedge Fund Research

- Macro strategies generated negative performance on the quarter, as losses came from short positions in U.S. rates, and short positions in U.S. equity indices detracted from performance.
- The median manager in the Callan Institutional Hedge Fund Peer Group rose 1.6%.
- Within this style group of 50 peers, the average hedged credit manager gained 2.1%, as high yield markets had a strong start to the year as near-term recession risks receded and capital market access improved.
- Hedged rates managers rose 1.5%, as those strategies were able to profit off short-term rates falling in March, as the banking crisis flared up.
- The average hedged equity manager fell 0.3%, as managers with a focus on tech, media, and telecom (TMT) and consumer stocks led the rally after lagging for all of 2022.
- Within the HFRI Indices, the best-performing strategy in 1Q was the equity hedge index (+2.5%), as managers that were focused on growth stocks saw a strong bounce in performance compared to last year.
- Event-driven strategies finished up 1.4%, as hard catalyst situations contributed to performance along with select merger arbitrage exposures as spreads tightened.

- Macro strategies ended the quarter 2.4% lower, primarily due to losses in short fixed income exposures, as banking turmoil abruptly shifted rate expectations.
- Across the Callan Hedge FOF Database, the median Callan Long-Short Equity FOF gained 2.3%, as managers benefited from a strong S&P 500 during 1Q.
- The median Callan Core Diversified FOF rose 1.3%, as equity hedge exposure offset negative performance from macro managers during the quarter.
- Callan Absolute Return FOF was up 0.8%, as multi-strategy and equity hedge exposure was able to offset the underperformance from macro managers in the quarter.
- The median Callan MAC Risk Parity manager gained 4.4%, as equities and fixed income drove performance during the quarter.
- The Callan MAC Long Biased peer group rose 4.1%, as strong equity performance led the group higher.
- The Callan MAC Absolute Return manager finished up 0.2%, as a bias toward value equities caused underperformance relative to the other peer groups, as growth equities had a strong start to the year.

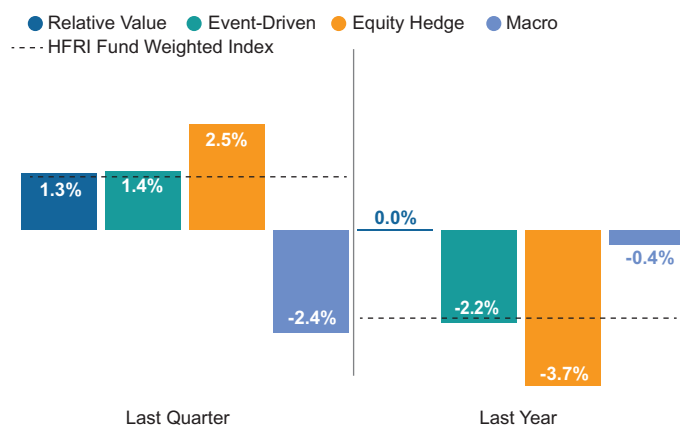
## MAC Style Group Returns

(3/31/23)



## HFRI Hedge Fund-Weighted Strategy Returns

(3/31/23)



Source: HFRI

Sources: Bloomberg, Callan, Eurekahedge, S&P Dow Jones Indices

# Index Rises After Three Straight Quarters of Losses

DEFINED CONTRIBUTION | Scotty Lee

## Performance: Index gains 6.3%, breaking streak of losses

- The Callan DC Index™ rose 6.3% in 4Q22 after three previous quarterly declines.
- The Age 45 Target Date Fund gained 8.4%.

## Growth Sources: Investment gains lead to rise in balances

- Balances rose by 5.8% after a 4.7% decrease the previous quarter, driven by investment gains.

## Turnover: Net transfers increase slightly

- Turnover (net transfer activity levels within DC plans) slightly increased to 0.18% from the previous quarter's 0.14%.
- Despite the small increase, the Index's historical average (0.56%) remained steady.

## Net Cash Flow: TDFs remain in top spot

- Target date funds (TDFs) received the largest net inflows in the DC Index, garnering 84.6% of quarterly net flows.
- Investors withdrew assets from U.S. large cap equity (-19.5%) and global ex-U.S. equity (-9.5%).
- Stable value (-34.7%) saw relatively large outflows.

## Equity Allocation: Exposure rises

- The Index's overall allocation to equity (70.1%) rose slightly from the previous quarter's level (69.3%).

## Asset Allocation: Capital preservation declines

- Global ex-U.S. equity (5.0%) and U.S. large cap (25.2%) were among the asset classes with the largest percentage increases in allocation.
- Stable value (10.0%) had a decrease in allocation from the previous quarter's level (10.5%).

## Prevalance: Balanced funds dip—again

- The prevalence of a balanced fund (40.8%) decreased again to its lowest level since the inception of the Index in 2006.

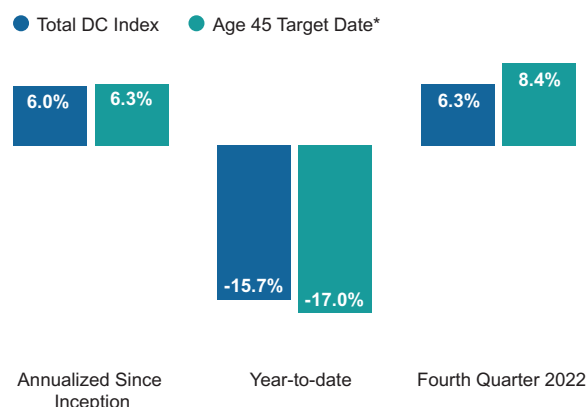
## Management Fees: Declines vary by plan size

- Less than \$500 million in assets: fees fell by 1 basis point.
- \$500 million-\$1 billion: -2 bps.
- More than \$1 billion: -4 bps.

*Underlying fund performance, asset allocation, and cash flows of more than 100 large defined contribution plans representing approximately \$400 billion in assets are tracked in the Callan DC Index.*

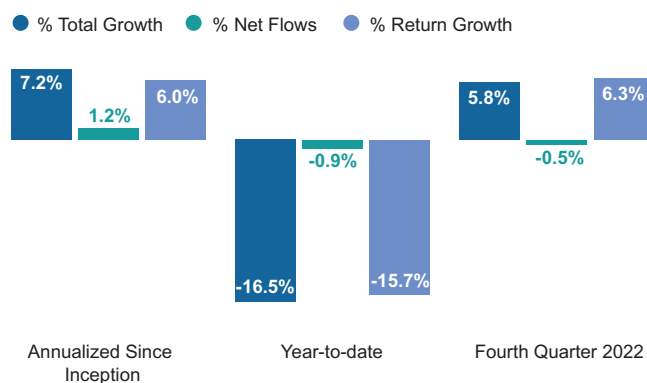
## Investment Performance

(12/31/22)



## Growth Sources

(12/31/22)



## Net Cash Flow Analysis (4Q22)

(Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Target Date Funds	84.6%
Money Market	8.0%
U.S. Large Cap	-19.5%
Stable Value	-34.7%
<b>Total Turnover**</b>	<b>0.2%</b>

Data provided here is the most recent available at time of publication.

Source: Callan DC Index

Note: DC Index inception date is January 2006.

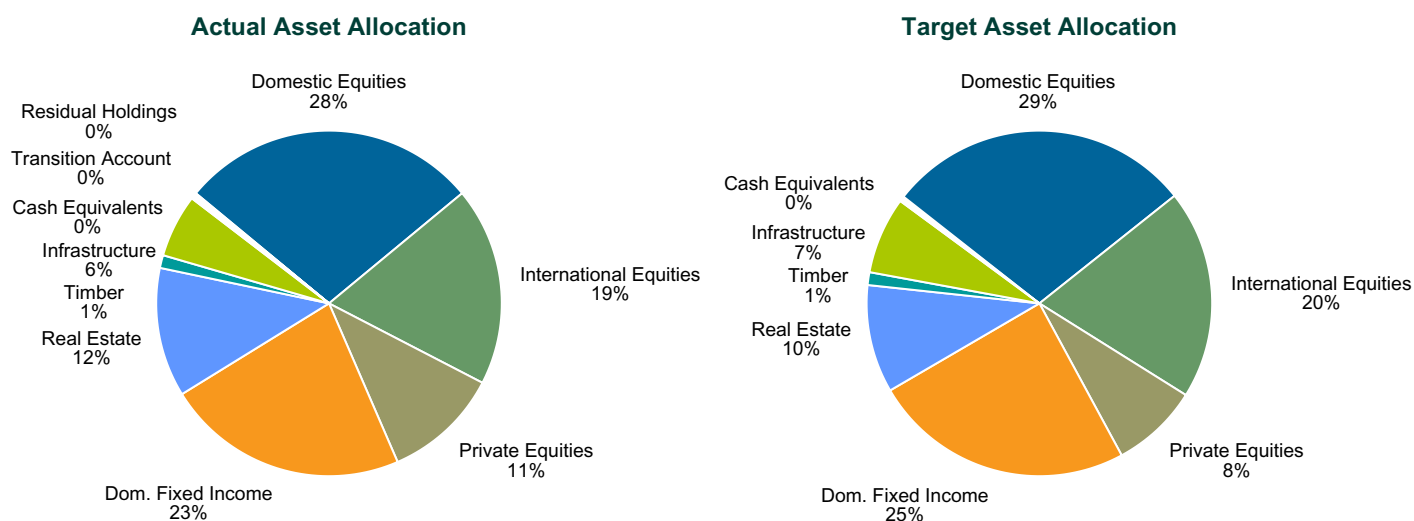
\* The Age 45 Fund transitioned from the average 2035 TDF to the 2040 TDF in June 2018.

\*\* Total Index "turnover" measures the percentage of total invested assets (transfers only, excluding contributions and withdrawals) that moved between asset classes.



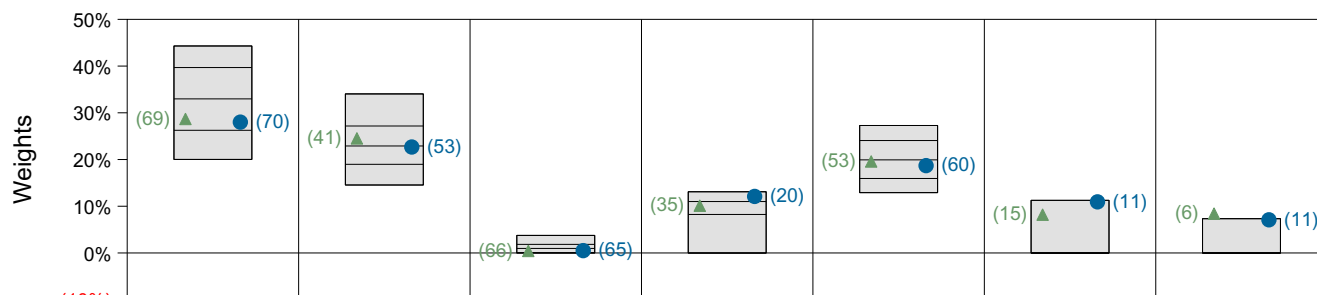
## Actual vs Target Asset Allocation As of March 31, 2023

The top left chart shows the Fund's asset allocation as of March 31, 2023. The top right chart shows the Fund's target asset allocation as outlined in the investment policy statement. The bottom chart ranks the fund's asset allocation and the target allocation versus the Callan Public Fund Sponsor Database.



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equities	1,987,990	28.0%	28.7%	(0.7%)	(48,975)
International Equities	1,323,333	18.6%	19.6%	(1.0%)	(67,597)
Private Equities	776,497	10.9%	8.2%	2.7%	194,306
Dom. Fixed Income	1,610,170	22.7%	24.5%	(1.8%)	(131,094)
Real Estate	858,929	12.1%	10.1%	2.0%	139,946
Timber	86,117	1.2%	1.2%	0.0%	0
Infrastructure	417,764	5.9%	7.2%	(1.3%)	(94,678)
Cash Equivalents	35,128	0.5%	0.4%	0.1%	4,027
Transition Account	318	0.0%	0.0%	0.0%	318
Residual Holdings	3,746	0.1%	0.0%	0.1%	3,746
Total	7,099,993	100.0%	100.0%		

### Asset Class Weights vs Callan Public Fund Sponsor Database



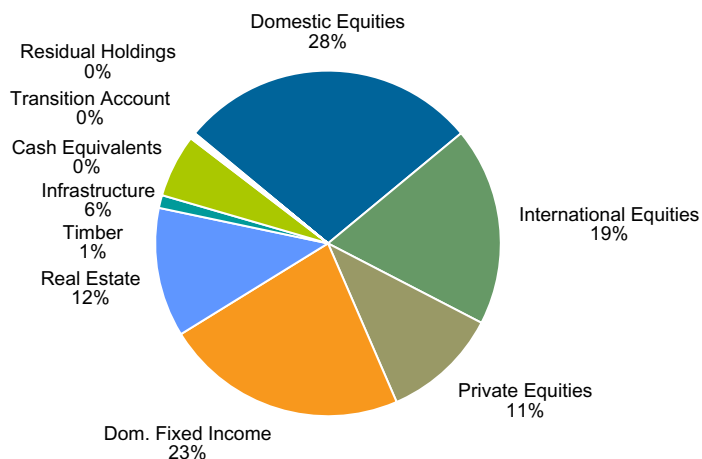
	Domestic Broad Eq	Dom. Fixed Income	Cash Equivalents	Real Estate	Intl Equity	Private Equities	Real Assets
10th Percentile	44.30	34.04	3.76	13.10	27.28	11.26	7.33
25th Percentile	39.69	27.17	1.84	11.00	24.06	0.00	0.00
Median	32.98	22.90	0.97	8.24	19.92	0.00	0.00
75th Percentile	26.26	18.97	0.07	0.00	15.94	0.00	0.00
90th Percentile	20.02	14.55	0.00	0.00	12.91	0.00	0.00
<b>Fund</b> ●	28.00	22.68	0.49	12.10	18.69	10.94	7.10
<b>Target</b> ▲	28.69	24.52	0.44	10.13	19.59	8.20	8.43
% Group Invested	92.86%	97.62%	80.95%	69.05%	90.48%	22.62%	20.24%

\* Current Quarter Target = 24.4% Russell 1000 Index, 19.6% MSCI ACWI xUS IMI, 17.1% Blmbg Aggregate, 10.1% NCREIF Total Index, 8.2% Private Equity, 7.4% Blmbg HY Corp 2% Iss Cap, 4.3% Russell 2000 Index, 3.6% CPI All Urban Cons lagged 3 months, 3.6% NCREIF NFI-ODCE Eq Wt Net, 1.2% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

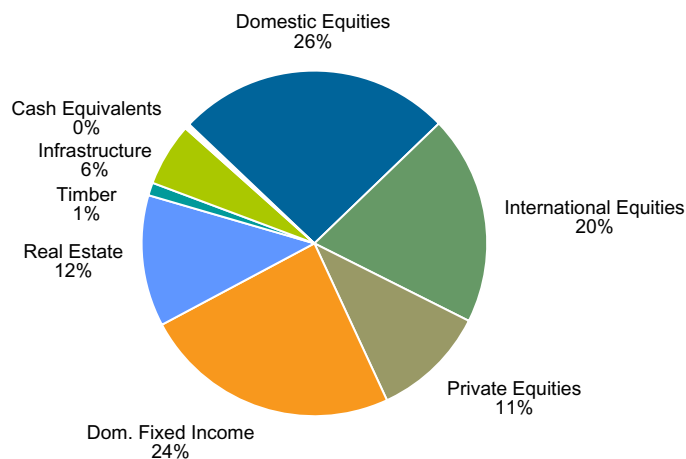
## Actual vs Corridor Target Allocation As of March 31, 2023

The top left chart shows the Fund's asset allocation as of March 31, 2023. The top right chart shows the Fund's target asset allocation as outlined in the investment policy statement. The bottom chart ranks the fund's asset allocation and the target allocation versus the Callan Public Fund Sponsor Database.

**Actual Asset Allocation**

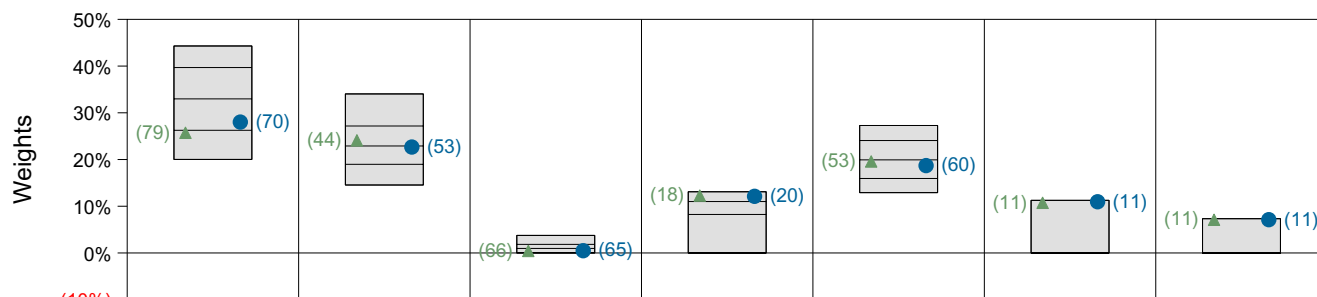


**Corridor Target Allocation**



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equities	1,987,990	28.0%	25.7%	2.3%	161,318
International Equities	1,323,333	18.6%	19.6%	(1.0%)	(67,597)
Private Equities	776,497	10.9%	10.7%	0.2%	13,961
Dom. Fixed Income	1,610,170	22.7%	24.1%	(1.4%)	(101,146)
Real Estate	858,929	12.1%	12.3%	(0.2%)	(13,612)
Timber	86,117	1.2%	1.2%	(0.0%)	(964)
Infrastructure	417,764	5.9%	5.9%	(0.0%)	(50)
Cash Equivalents	35,128	0.5%	0.4%	0.1%	4,027
Transition Account	318	0.0%	0.0%	0.0%	318
Residual Holdings	3,746	0.1%	0.0%	0.1%	3,746
Total	7,099,993	100.0%	100.0%		

### Asset Class Weights vs Callan Public Fund Sponsor Database



	Domestic Broad Eq	Dom. Fixed Income	Cash Equivalents	Real Estate	Intl Equity	Private Equities	Real Assets
10th Percentile	44.30	34.04	3.76	13.10	27.28	11.26	7.33
25th Percentile	39.69	27.17	1.84	11.00	24.06	0.00	0.00
Median	32.98	22.90	0.97	8.24	19.92	0.00	0.00
75th Percentile	26.26	18.97	0.07	0.00	15.94	0.00	0.00
90th Percentile	20.02	14.55	0.00	0.00	12.91	0.00	0.00
Fund	28.00	22.68	0.49	12.10	18.69	10.94	7.10
Target	25.73	24.10	0.44	12.29	19.59	10.74	7.11
% Group Invested	92.86%	97.62%	80.95%	69.05%	90.48%	22.62%	20.24%

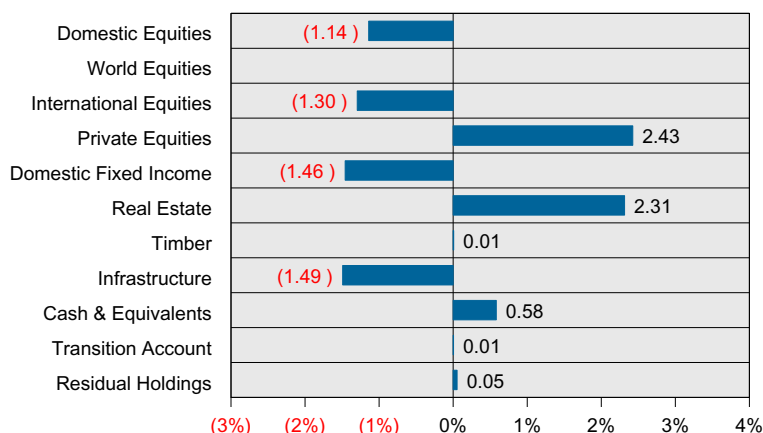
\* Current Quarter Target = 21.9% Russell 1000 Index, 19.6% MSCI ACWI xUS IMI, 16.8% Blmbg Aggregate, 12.3% NCREIF Total Index, 10.7% Private Equity, 7.3% Blmbg HY Corp 2% Iss Cap, 3.9% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 1.2% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.



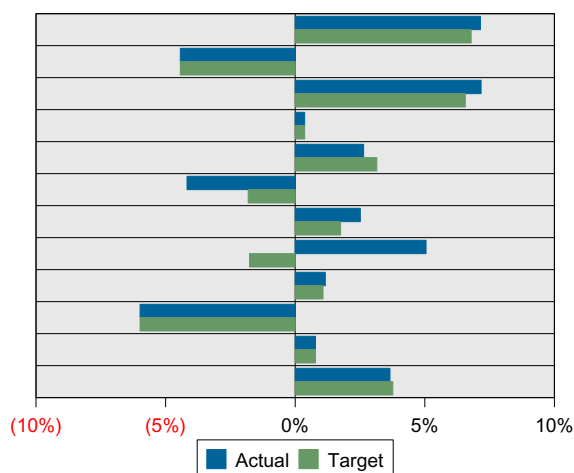
## Quarterly Total Fund Relative Attribution - March 31, 2023

The following analysis approaches Total Fund Attribution from the perspective of relative return. Relative return attribution separates and quantifies the sources of total fund excess return relative to its target. This excess return is separated into two relative attribution effects: Asset Allocation Effect and Manager Selection Effect. The Asset Allocation Effect represents the excess return due to the actual total fund asset allocation differing from the target asset allocation. Manager Selection Effect represents the total fund impact of the individual managers excess returns relative to their benchmarks.

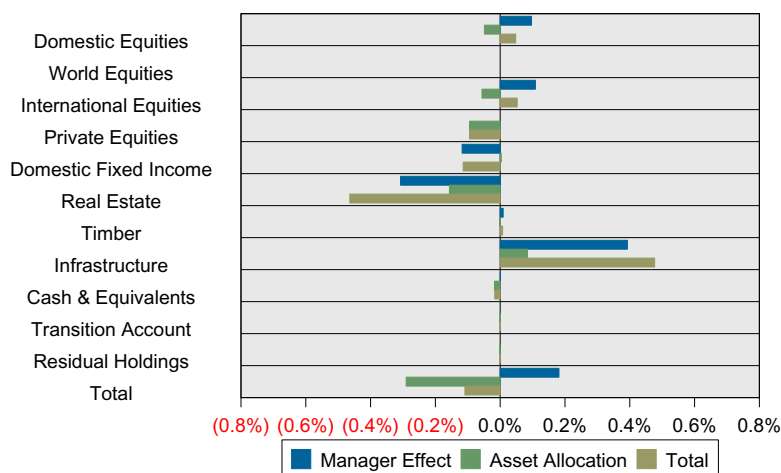
### Asset Class Under or Overweighting



### Actual vs Target Returns



### Relative Attribution by Asset Class



### Relative Attribution Effects for Quarter ended March 31, 2023

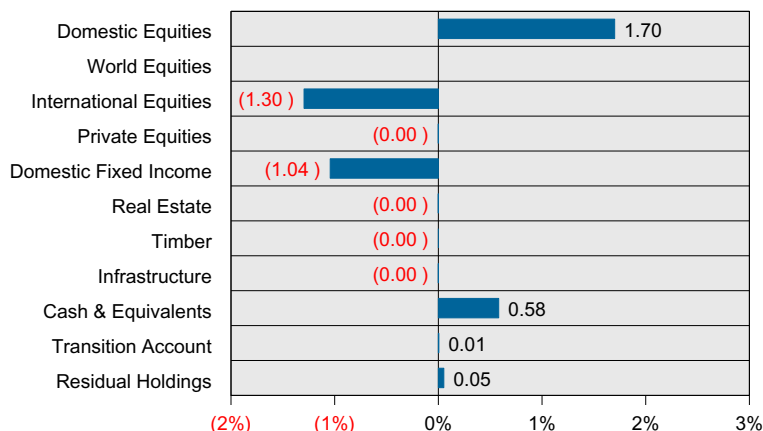
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	27%	29%	7.15%	6.79%	0.10%	(0.05%)	0.05%
World Equities	0%	0%	(4.43%)	(4.43%)	0.00%	0.00%	0.00%
International Equities	18%	20%	7.17%	6.56%	0.11%	(0.06%)	0.05%
Private Equities	11%	8%	0.37%	0.37%	0.00%	(0.09%)	(0.09%)
Domestic Fixed Income	23%	25%	2.64%	3.15%	(0.12%)	0.00%	(0.11%)
Real Estate	12%	10%	(4.17%)	(1.81%)	(0.31%)	(0.16%)	(0.46%)
Timber	1%	1%	2.51%	1.75%	0.01%	(0.00%)	0.01%
Infrastructure	6%	7%	5.05%	(1.76%)	0.39%	0.08%	0.48%
Cash & Equivalents	1%	0%	1.16%	1.07%	0.00%	(0.02%)	(0.02%)
Transition Account	0%	0%	(5.99%)	(5.99%)	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	0.78%	0.78%	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>3.66%</b>	<b>3.76%</b>	<b>+ 0.18%</b>	<b>+ (0.29%)</b>	<b>(0.11%)</b>

\* Current Quarter Target = 24.4% Russell 1000 Index, 19.6% MSCI ACWI xUS IMI, 17.1% Blmbg Aggregate, 10.1% NCREIF Total Index, 8.2% Private Equity, 7.4% Blmbg HY Corp 2% Iss Cap, 4.3% Russell 2000 Index, 3.6% CPI All Urban Cons lagged 3 months, 3.6% NCREIF NFI-ODCE Eq Wt Net, 1.2% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

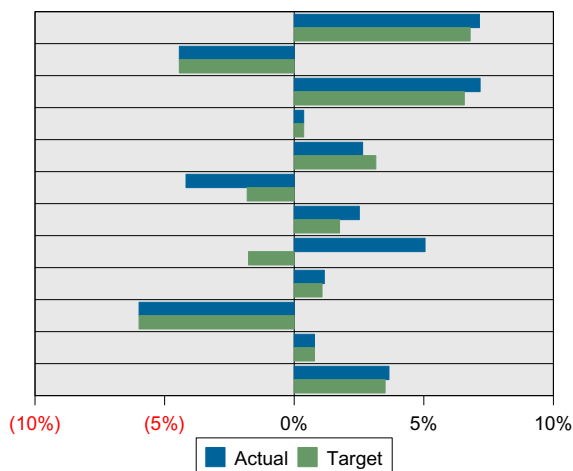
## Quarterly Total Fund Relative Attribution - Corridor Target - March 31, 2023

The following analysis approaches Total Fund Attribution from the perspective of relative return. Relative return attribution separates and quantifies the sources of total fund excess return relative to its target. This excess return is separated into two relative attribution effects: Asset Allocation Effect and Manager Selection Effect. The Asset Allocation Effect represents the excess return due to the actual total fund asset allocation differing from the target asset allocation. Manager Selection Effect represents the total fund impact of the individual managers excess returns relative to their benchmarks.

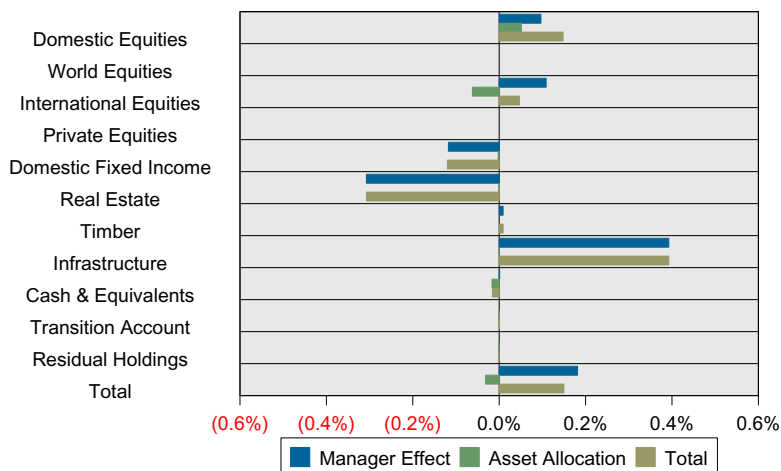
### Asset Class Under or Overweighting



### Actual vs Target Returns



### Relative Attribution by Asset Class



### Relative Attribution Effects for Quarter ended March 31, 2023

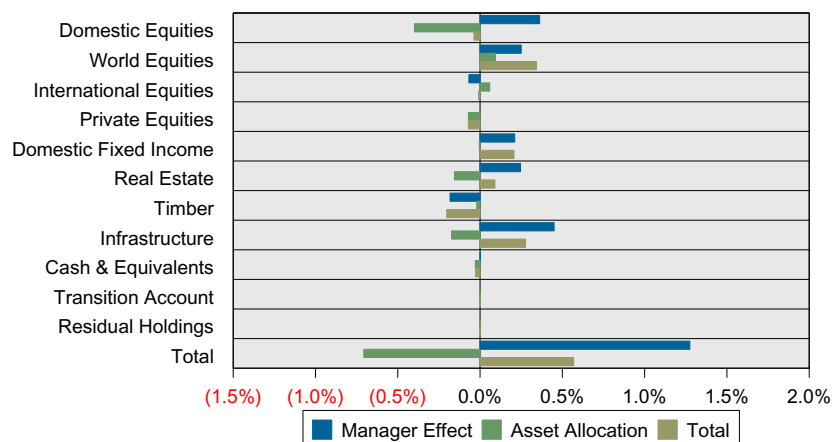
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	27%	26%	7.15%	6.79%	0.10%	0.05%	0.15%
World Equities	0%	0%	(4.43%)	(4.43%)	0.00%	0.00%	0.00%
International Equities	18%	20%	7.17%	6.56%	0.11%	(0.06%)	0.05%
Private Equities	11%	11%	0.37%	0.37%	0.00%	0.00%	0.00%
Domestic Fixed Income	23%	24%	2.64%	3.15%	(0.12%)	(0.00%)	(0.12%)
Real Estate	12%	12%	(4.17%)	(1.81%)	(0.31%)	0.00%	(0.31%)
Timber	1%	1%	2.51%	1.75%	0.01%	0.00%	0.01%
Infrastructure	6%	6%	5.05%	(1.76%)	0.39%	0.00%	0.39%
Cash & Equivalents	1%	0%	1.16%	1.07%	0.00%	(0.02%)	(0.02%)
Transition Account	0%	0%	(5.99%)	(5.99%)	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	0.78%	0.78%	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>3.66%</b>	<b>3.51%</b>	<b>+ 0.18%</b>	<b>+ (0.03%)</b>	<b>0.15%</b>

\* Current Quarter Target = 21.9% Russell 1000 Index, 19.6% MSCI ACWI xUS IMI, 16.8% Blmbg Aggregate, 12.3% NCREIF Total Index, 10.7% Private Equity, 7.3% Blmbg HY Corp 2% Iss Cap, 3.9% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 1.2% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

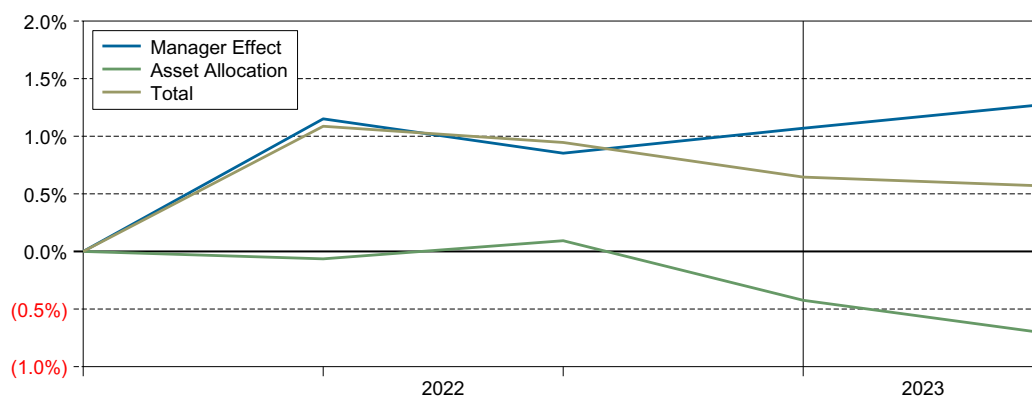
## Cumulative Total Fund Relative Attribution - March 31, 2023

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### One Year Relative Attribution Effects



### Cumulative Relative Attribution Effects



### One Year Relative Attribution Effects

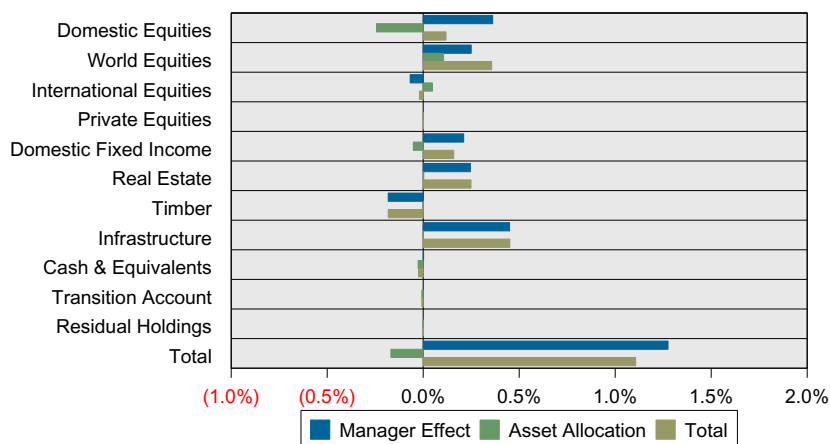
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	25%	26%	(7.31%)	(8.74%)	0.36%	(0.40%)	(0.04%)
World Equities	5%	5%	(17.90%)	(20.05%)	0.25%	0.09%	0.34%
International Equities	16%	17%	(5.84%)	(5.43%)	(0.07%)	0.06%	(0.01%)
Private Equities	10%	8%	(3.37%)	(3.37%)	0.00%	(0.07%)	(0.07%)
Domestic Fixed Income	24%	25%	(3.53%)	(4.29%)	0.21%	(0.00%)	0.21%
Real Estate	12%	10%	0.47%	(1.63%)	0.25%	(0.16%)	0.09%
Timber	1%	1%	(3.60%)	11.31%	(0.18%)	(0.02%)	(0.20%)
Infrastructure	6%	7%	10.18%	1.28%	0.45%	(0.17%)	0.28%
Cash & Equivalents	1%	0%	2.81%	2.50%	0.00%	(0.03%)	(0.03%)
Transition Account	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>(3.84%)</b>	<b>(4.41%)</b>	<b>1.27%</b>	<b>(0.71%)</b>	<b>0.57%</b>

\* Current Quarter Target = 24.4% Russell 1000 Index, 19.6% MSCI ACWI xUS IMI, 17.1% Blmbg Aggregate, 10.1% NCREIF Total Index, 8.2% Private Equity, 7.4% Blmbg HY Corp 2% Iss Cap, 4.3% Russell 2000 Index, 3.6% CPI All Urban Cons lagged 3 months, 3.6% NCREIF NFI-ODCE Eq Wt Net, 1.2% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

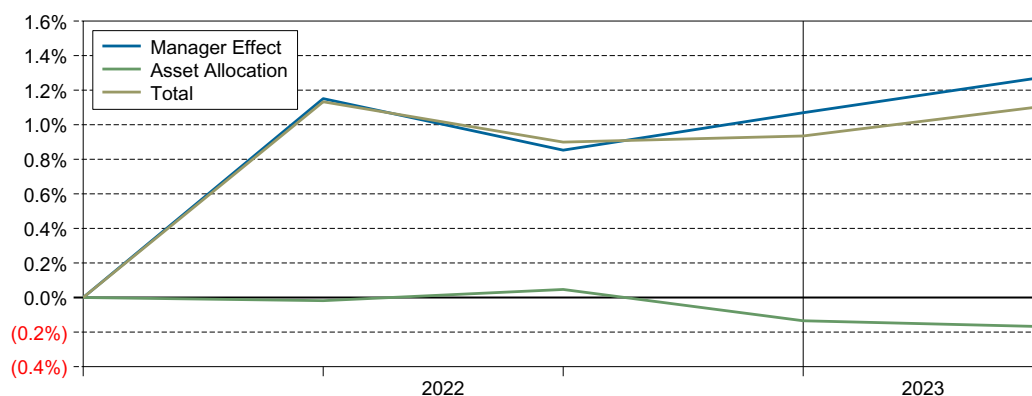
## Cumulative Total Fund Relative Attribution - Corridor Target - March 31, 2023

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### One Year Relative Attribution Effects



### Cumulative Relative Attribution Effects



### One Year Relative Attribution Effects

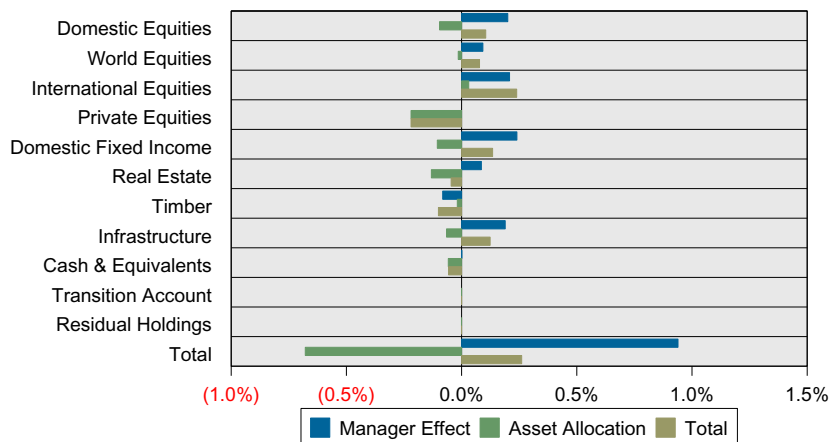
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	25%	24%	(7.31%)	(8.74%)	0.36%	(0.24%)	0.12%
World Equities	5%	5%	345.25%	333.62%	0.25%	0.11%	0.36%
International Equities	16%	17%	(5.84%)	(5.43%)	(0.07%)	0.05%	(0.02%)
Private Equities	10%	10%	(3.37%)	(3.37%)	0.00%	0.00%	0.00%
Domestic Fixed Income	24%	24%	(3.53%)	(4.29%)	0.21%	(0.05%)	0.16%
Real Estate	12%	13%	0.47%	(1.63%)	0.25%	0.00%	0.25%
Timber	1%	1%	(3.60%)	11.31%	(0.18%)	0.00%	(0.18%)
Infrastructure	6%	6%	10.18%	1.28%	0.45%	0.00%	0.45%
Cash & Equivalents	1%	0%	2.81%	2.50%	0.00%	(0.03%)	(0.02%)
Transition Account	0%	0%	-	-	0.00%	(0.01%)	(0.01%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>(3.84%)</b>	<b>(4.94%)</b>	<b>1.27%</b>	<b>(0.17%)</b>	<b>1.11%</b>

\* Current Quarter Target = 21.9% Russell 1000 Index, 19.6% MSCI ACWI xUS IMI, 16.8% Blmbg Aggregate, 12.3% NCREIF Total Index, 10.7% Private Equity, 7.3% Blmbg HY Corp 2% Iss Cap, 3.9% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 1.2% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

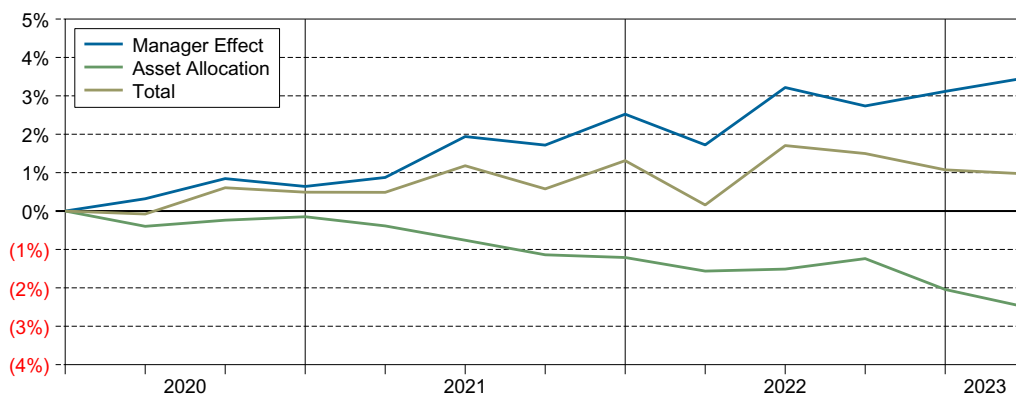
## Cumulative Total Fund Relative Attribution - March 31, 2023

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### Three Year Annualized Relative Attribution Effects



### Cumulative Relative Attribution Effects



### Three Year Annualized Relative Attribution Effects

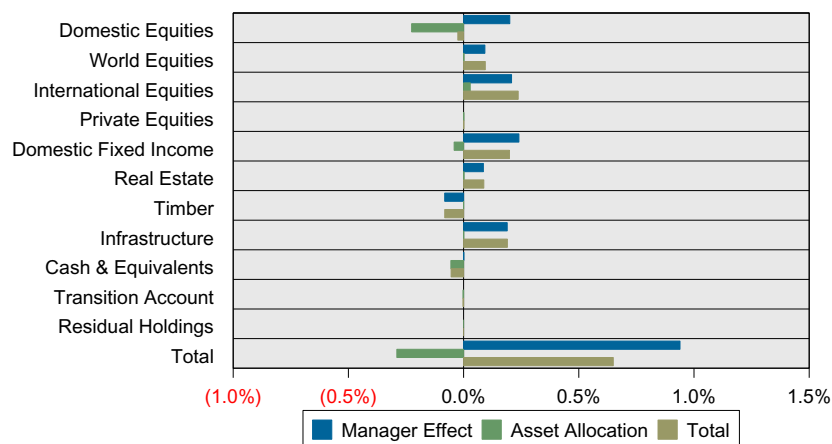
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	24%	23%	19.48%	18.66%	0.20%	(0.10%)	0.10%
World Equities	10%	10%	11.59%	10.69%	0.09%	(0.01%)	0.08%
International Equities	15%	16%	13.27%	11.81%	0.21%	0.03%	0.24%
Private Equities	7%	8%	19.60%	19.60%	0.00%	(0.22%)	(0.22%)
Domestic Fixed Income	25%	24%	0.65%	(0.19%)	0.24%	(0.11%)	0.13%
Real Estate	11%	10%	7.88%	7.15%	0.09%	(0.13%)	(0.05%)
Timber	2%	2%	2.35%	8.09%	(0.08%)	(0.02%)	(0.10%)
Infrastructure	5%	7%	9.71%	6.56%	0.19%	(0.07%)	0.12%
Cash & Equivalents	1%	0%	1.02%	0.89%	0.00%	(0.06%)	(0.06%)
Transition Account	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>11.38%</b>	<b>11.11%</b>	<b>+ 0.94%</b>	<b>+ (0.68%)</b>	<b>0.26%</b>

\* Current Quarter Target = 24.4% Russell 1000 Index, 19.6% MSCI ACWI xUS IMI, 17.1% Blmbg Aggregate, 10.1% NCREIF Total Index, 8.2% Private Equity, 7.4% Blmbg HY Corp 2% Iss Cap, 4.3% Russell 2000 Index, 3.6% CPI All Urban Cons lagged 3 months, 3.6% NCREIF NFI-ODCE Eq Wt Net, 1.2% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

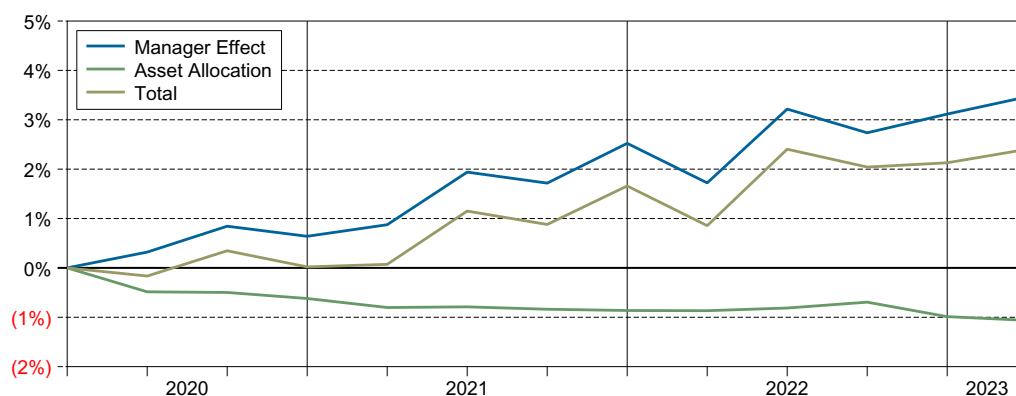
## Cumulative Total Fund Relative Attribution - Corridor Target - March 31, 2023

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### Three Year Annualized Relative Attribution Effects



### Cumulative Relative Attribution Effects



### Three Year Annualized Relative Attribution Effects

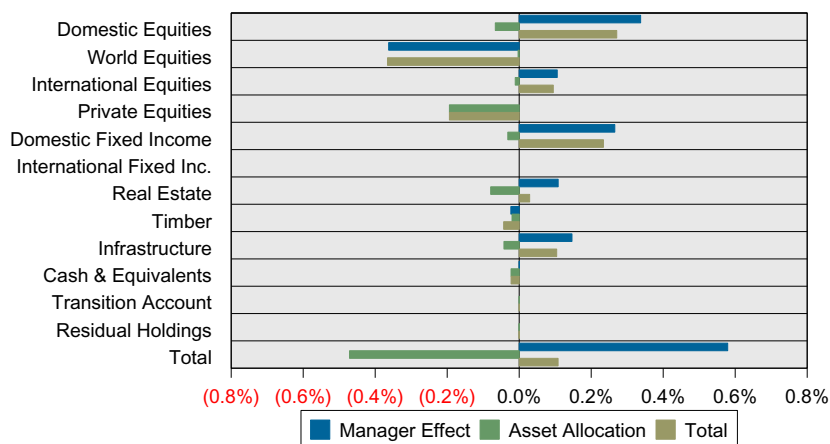
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	24%	24%	19.48%	18.66%	0.20%	(0.23%)	(0.02%)
World Equities	10%	10%	96.05%	94.48%	0.09%	0.00%	0.09%
International Equities	15%	16%	13.27%	11.81%	0.21%	0.03%	0.24%
Private Equities	7%	7%	19.60%	19.60%	0.00%	0.00%	0.00%
Domestic Fixed Income	25%	25%	0.65%	(0.19%)	0.24%	(0.04%)	0.20%
Real Estate	11%	11%	7.88%	7.15%	0.09%	0.00%	0.09%
Timber	2%	2%	2.35%	8.09%	(0.08%)	0.00%	(0.08%)
Infrastructure	5%	5%	9.71%	6.56%	0.19%	0.00%	0.19%
Cash & Equivalents	1%	0%	1.02%	0.89%	0.00%	(0.06%)	(0.05%)
Transition Account	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>11.38%</b>	<b>10.73%</b>	<b>0.94%</b>	<b>(0.29%)</b>	<b>0.65%</b>

\* Current Quarter Target = 21.9% Russell 1000 Index, 19.6% MSCI ACWI xUS IMI, 16.8% Blmbg Aggregate, 12.3% NCREIF Total Index, 10.7% Private Equity, 7.3% Blmbg HY Corp 2% Iss Cap, 3.9% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 1.2% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

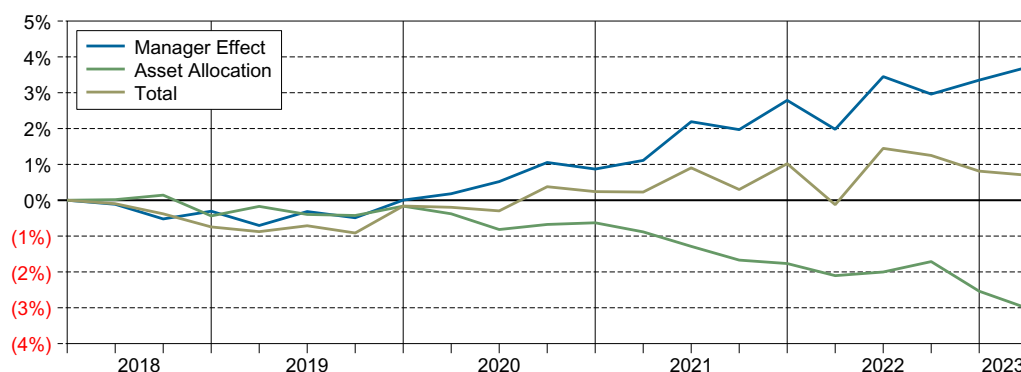
## Cumulative Total Fund Relative Attribution - March 31, 2023

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### Five Year Annualized Relative Attribution Effects



### Cumulative Relative Attribution Effects



### Five Year Annualized Relative Attribution Effects

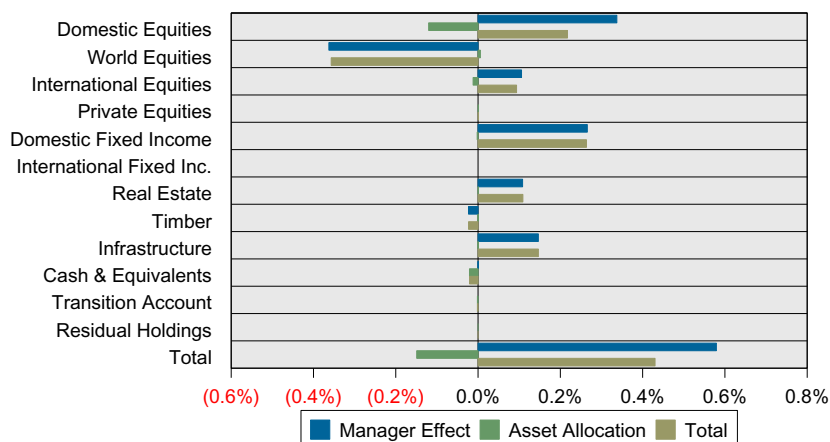
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	22%	11.17%	9.63%	0.34%	(0.07%)	0.27%
World Equities	13%	12%	2.67%	4.80%	(0.36%)	(0.00%)	(0.37%)
International Equities	15%	15%	3.22%	2.55%	0.11%	(0.01%)	0.09%
Private Equities	6%	7%	13.88%	13.88%	0.00%	(0.19%)	(0.19%)
Domestic Fixed Income	24%	24%	2.65%	1.66%	0.27%	(0.03%)	0.23%
International Fixed Inc.	0%	0%	-	-	0.00%	0.00%	0.00%
Real Estate	11%	10%	7.69%	6.71%	0.11%	(0.08%)	0.03%
Timber	2%	2%	3.24%	5.54%	(0.02%)	(0.02%)	(0.04%)
Infrastructure	5%	6%	7.97%	5.36%	0.15%	(0.04%)	0.10%
Cash & Equivalents	1%	0%	1.43%	1.41%	0.00%	(0.02%)	(0.02%)
Transition Account	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>6.67%</b>	<b>6.56%</b>	<b>+ 0.58%</b>	<b>+ (0.47%)</b>	<b>0.11%</b>

\* Current Quarter Target = 24.4% Russell 1000 Index, 19.6% MSCI ACWI xUS IMI, 17.1% Blmbg Aggregate, 10.1% NCREIF Total Index, 8.2% Private Equity, 7.4% Blmbg HY Corp 2% Iss Cap, 4.3% Russell 2000 Index, 3.6% CPI All Urban Cons lagged 3 months, 3.6% NCREIF NFI-ODCE Eq Wt Net, 1.2% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

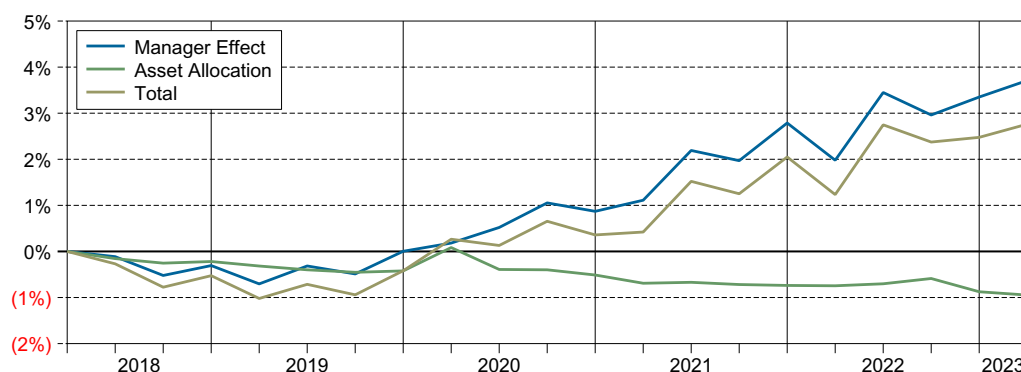
## Cumulative Total Fund Relative Attribution - Corridor Target - March 31, 2023

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### Five Year Annualized Relative Attribution Effects



### Cumulative Relative Attribution Effects



### Five Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	24%	11.17%	9.63%	0.34%	(0.12%)	0.22%
World Equities	13%	12%	43.98%	46.96%	(0.36%)	0.01%	(0.36%)
International Equities	15%	15%	3.22%	2.55%	0.11%	(0.01%)	0.09%
Private Equities	6%	6%	13.88%	13.88%	0.00%	0.00%	0.00%
Domestic Fixed Income	24%	24%	2.65%	1.66%	0.27%	(0.00%)	0.26%
International Fixed Inc.	0%	0%	-	-	0.00%	0.00%	0.00%
Real Estate	11%	11%	7.69%	6.71%	0.11%	0.00%	0.11%
Timber	2%	2%	3.24%	5.54%	(0.02%)	0.00%	(0.02%)
Infrastructure	5%	5%	7.97%	5.36%	0.15%	0.00%	0.15%
Cash & Equivalents	1%	0%	1.43%	1.41%	0.00%	(0.02%)	(0.02%)
Transition Account	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>6.67%</b>	<b>6.24%</b>	<b>+ 0.58%</b>	<b>+ (0.15%)</b>	<b>0.43%</b>

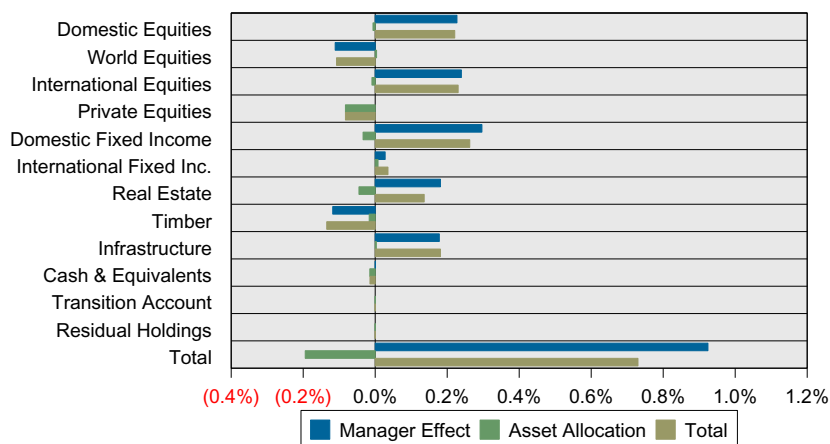
\* Current Quarter Target = 21.9% Russell 1000 Index, 19.6% MSCI ACWI xUS IMI, 16.8% Blmbg Aggregate, 12.3% NCREIF Total Index, 10.7% Private Equity, 7.3% Blmbg HY Corp 2% Iss Cap, 3.9% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 1.2% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.



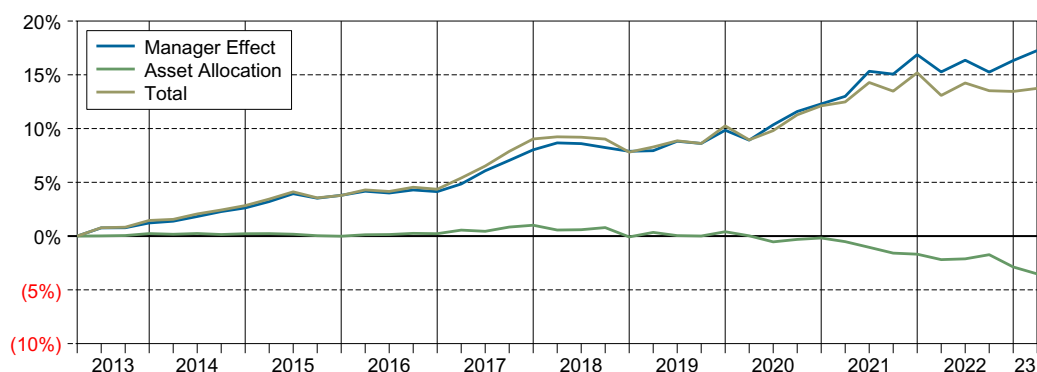
## Cumulative Total Fund Relative Attribution - March 31, 2023

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### Ten Year Annualized Relative Attribution Effects



### Cumulative Relative Attribution Effects



### Ten Year Annualized Relative Attribution Effects

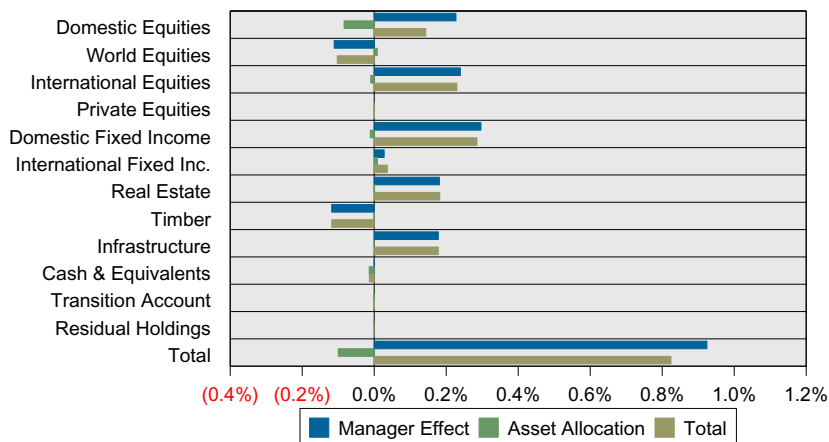
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	22%	12.28%	11.23%	0.23%	(0.01%)	0.22%
World Equities	14%	14%	6.55%	7.22%	(0.11%)	0.00%	(0.11%)
International Equities	15%	15%	5.87%	4.31%	0.24%	(0.01%)	0.23%
Private Equities	5%	6%	7.90%	7.90%	0.00%	(0.08%)	(0.08%)
Domestic Fixed Income	21%	21%	3.50%	2.17%	0.30%	(0.03%)	0.26%
International Fixed Inc.	2%	2%	-	-	0.03%	0.01%	0.04%
Real Estate	11%	10%	10.17%	8.34%	0.18%	(0.05%)	0.14%
Timber	3%	3%	1.64%	5.82%	(0.12%)	(0.02%)	(0.13%)
Infrastructure	5%	6%	7.04%	3.26%	0.18%	0.00%	0.18%
Cash & Equivalents	1%	1%	0.92%	0.87%	0.00%	(0.01%)	(0.01%)
Transition Account	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>7.64%</b>	<b>6.91%</b>	<b>+ 0.92%</b>	<b>+ (0.19%)</b>	<b>0.73%</b>

\* Current Quarter Target = 24.4% Russell 1000 Index, 19.6% MSCI ACWI xUS IMI, 17.1% Blmbg Aggregate, 10.1% NCREIF Total Index, 8.2% Private Equity, 7.4% Blmbg HY Corp 2% Iss Cap, 4.3% Russell 2000 Index, 3.6% CPI All Urban Cons lagged 3 months, 3.6% NCREIF NFI-ODCE Eq Wt Net, 1.2% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

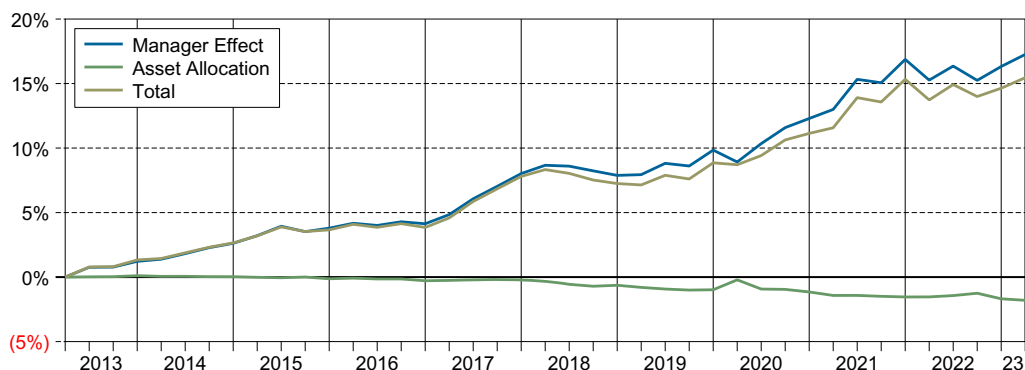
## Cumulative Total Fund Relative Attribution - Corridor Target - March 31, 2023

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### Ten Year Annualized Relative Attribution Effects



### Cumulative Relative Attribution Effects



### Ten Year Annualized Relative Attribution Effects

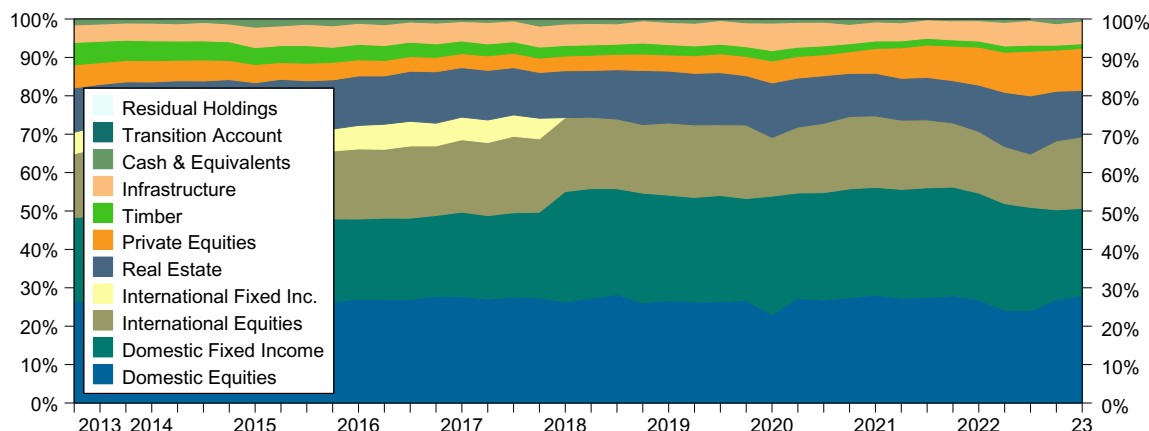
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	24%	12.28%	11.23%	0.23%	(0.08%)	0.14%
World Equities	14%	14%	26.18%	26.97%	(0.11%)	0.01%	(0.10%)
International Equities	15%	15%	5.87%	4.31%	0.24%	(0.01%)	0.23%
Private Equities	5%	5%	7.90%	7.90%	0.00%	0.00%	0.00%
Domestic Fixed Income	21%	21%	3.50%	2.17%	0.30%	(0.01%)	0.29%
International Fixed Inc.	2%	2%	-	-	0.03%	0.01%	0.04%
Real Estate	11%	11%	10.17%	8.34%	0.18%	0.00%	0.18%
Timber	3%	3%	1.64%	5.82%	(0.12%)	0.00%	(0.12%)
Infrastructure	5%	5%	7.04%	3.26%	0.18%	(0.00%)	0.18%
Cash & Equivalents	1%	1%	0.92%	0.87%	0.00%	(0.01%)	(0.01%)
Transition Account	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>7.64%</b>	<b>6.82%</b>	<b>+ 0.92%</b>	<b>+ (0.10%)</b>	<b>0.82%</b>

\* Current Quarter Target = 21.9% Russell 1000 Index, 19.6% MSCI ACWI xUS IMI, 16.8% Blmbg Aggregate, 12.3% NCREIF Total Index, 10.7% Private Equity, 7.3% Blmbg HY Corp 2% Iss Cap, 3.9% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 1.2% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

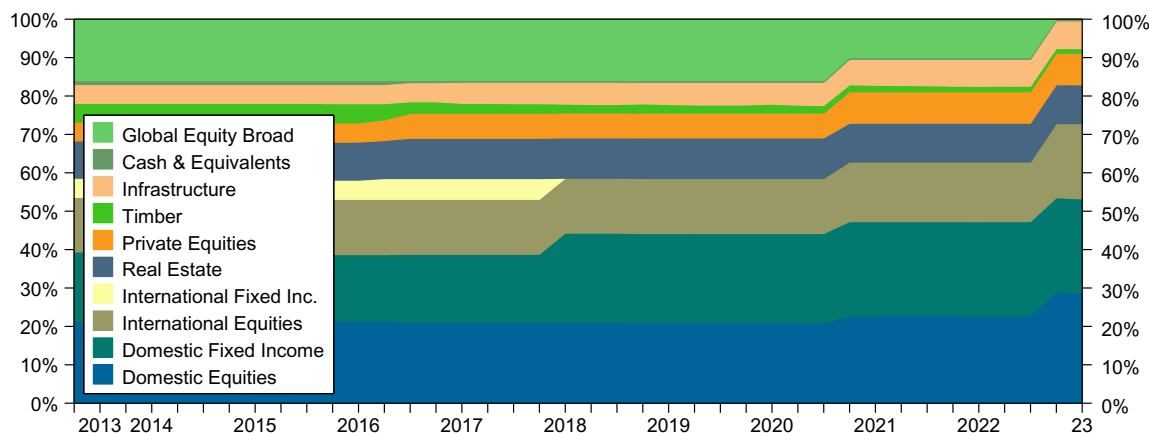
## Actual vs Target Historical Asset Allocation

The Historical asset allocation for a fund is by far the largest factor explaining its performance. The charts below show the fund's historical actual asset allocation, the fund's historical target asset allocation, and the historical asset allocation of the average fund in the Callan Public Fund Sponsor Database.

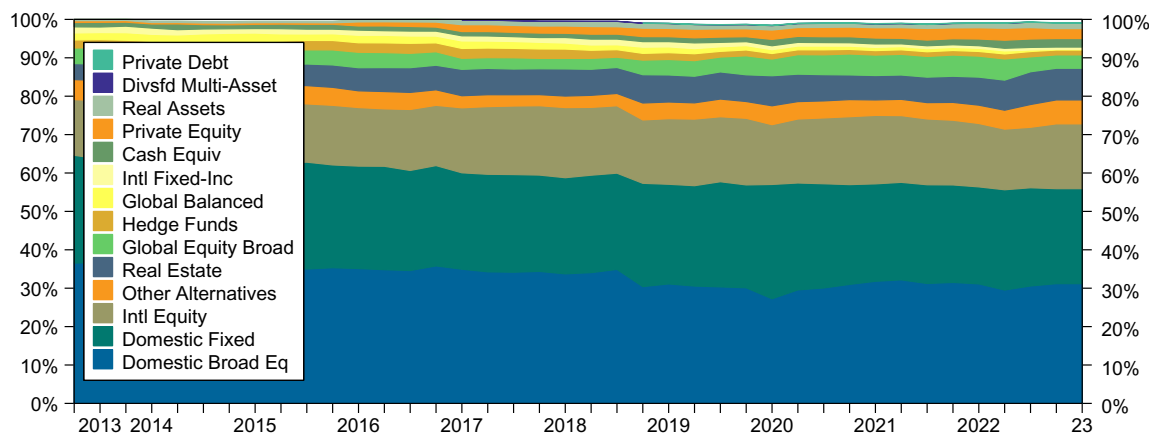
### Actual Historical Asset Allocation



### Target Historical Asset Allocation



### Average Callan Public Fund Sponsor Database Historical Asset Allocation

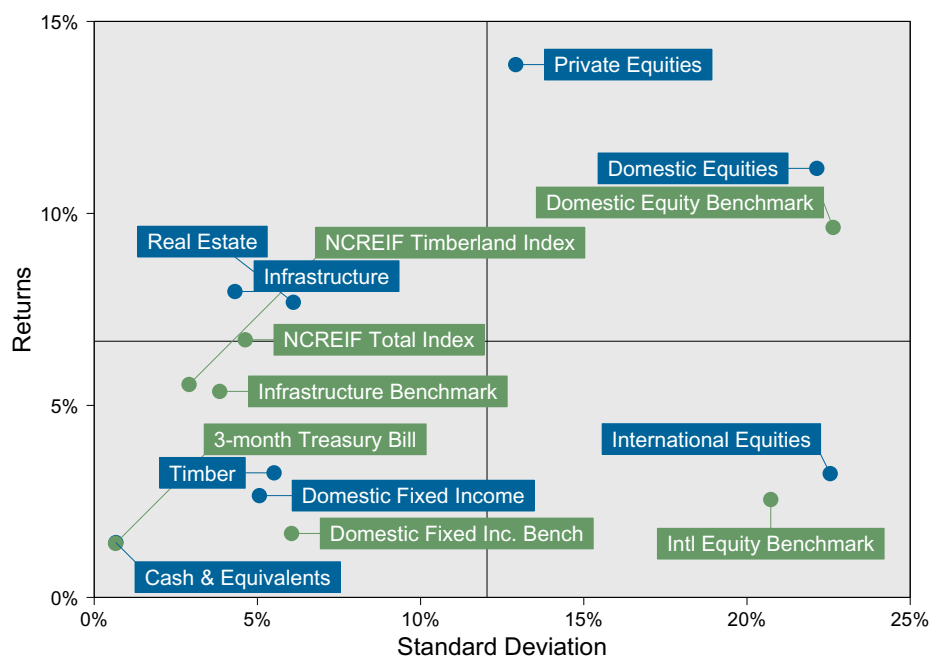


\* Current Quarter Target = 24.4% Russell 1000 Index, 19.6% MSCI ACWI xUS IMI, 17.1% Blmbg Aggregate, 10.1% NCREIF Total Index, 8.2% Private Equity, 7.4% Blmbg HY Corp 2% Iss Cap, 4.3% Russell 2000 Index, 3.6% CPI All Urban Cons lagged 3 months, 3.6% NCREIF NFI-ODCE Eq Wt Net, 1.2% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

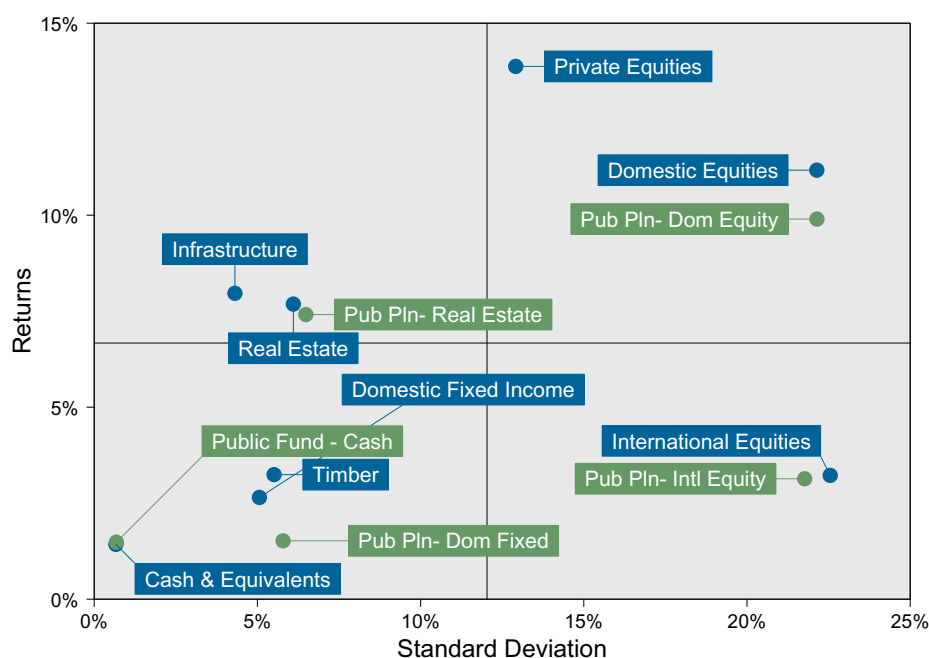
## Asset Class Risk and Return

The charts below show the five year annualized risk and return for each asset class component of the Total Fund. The first graph contrasts these values with those of the appropriate index for each asset class. The second chart contrasts them with the risk and return of the median portfolio in each of the appropriate CAI comparative databases. In each case, the crosshairs on the chart represent the return and risk of the Total Fund.

### Five Year Annualized Risk vs Return Asset Classes vs Benchmark Indices



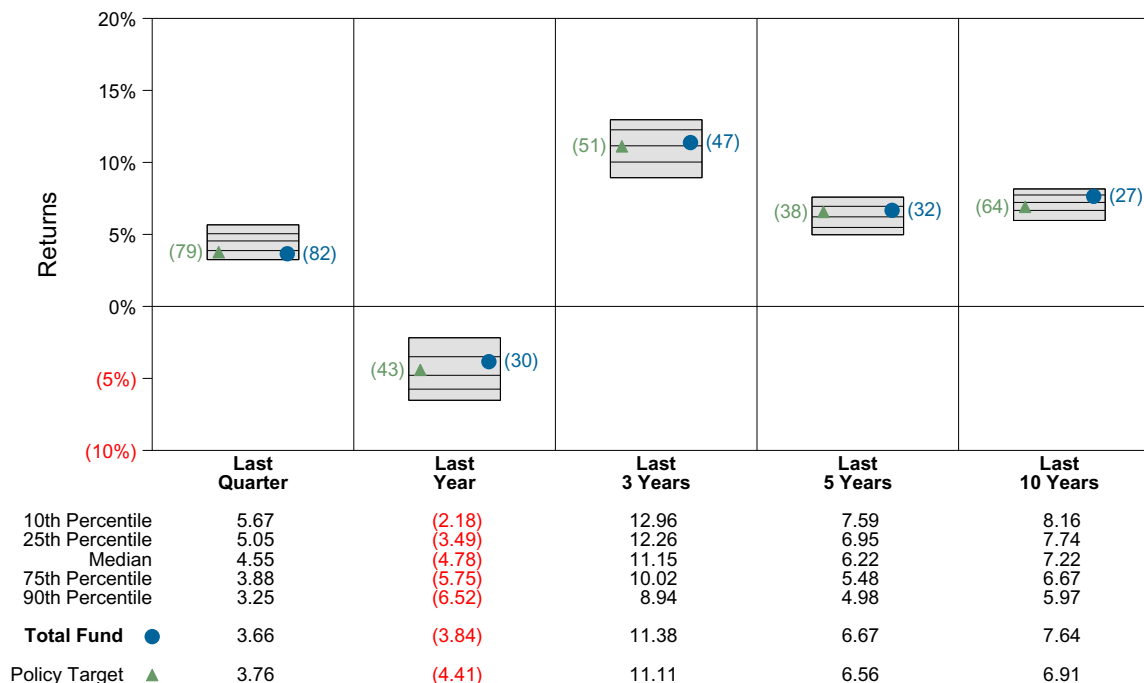
### Five Year Annualized Risk vs Return Asset Classes vs Asset Class Median



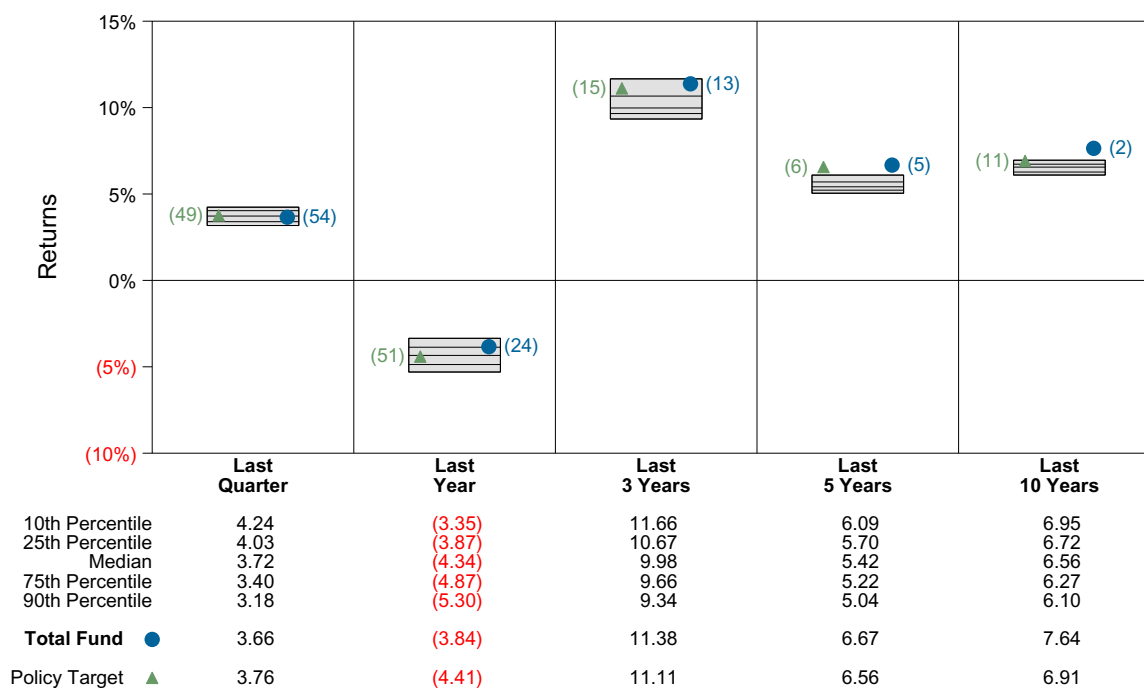
## Total Fund Ranking

The first two charts show the ranking of the Total Fund's performance relative to that of the Callan Public Fund Sponsor Database for periods ended March 31, 2023. The first chart is a standard unadjusted ranking. In the second chart each fund in the database is adjusted to have the same historical asset allocation as that of the Total Fund.

### Callan Public Fund Sponsor Database



### Asset Allocation Adjusted Ranking

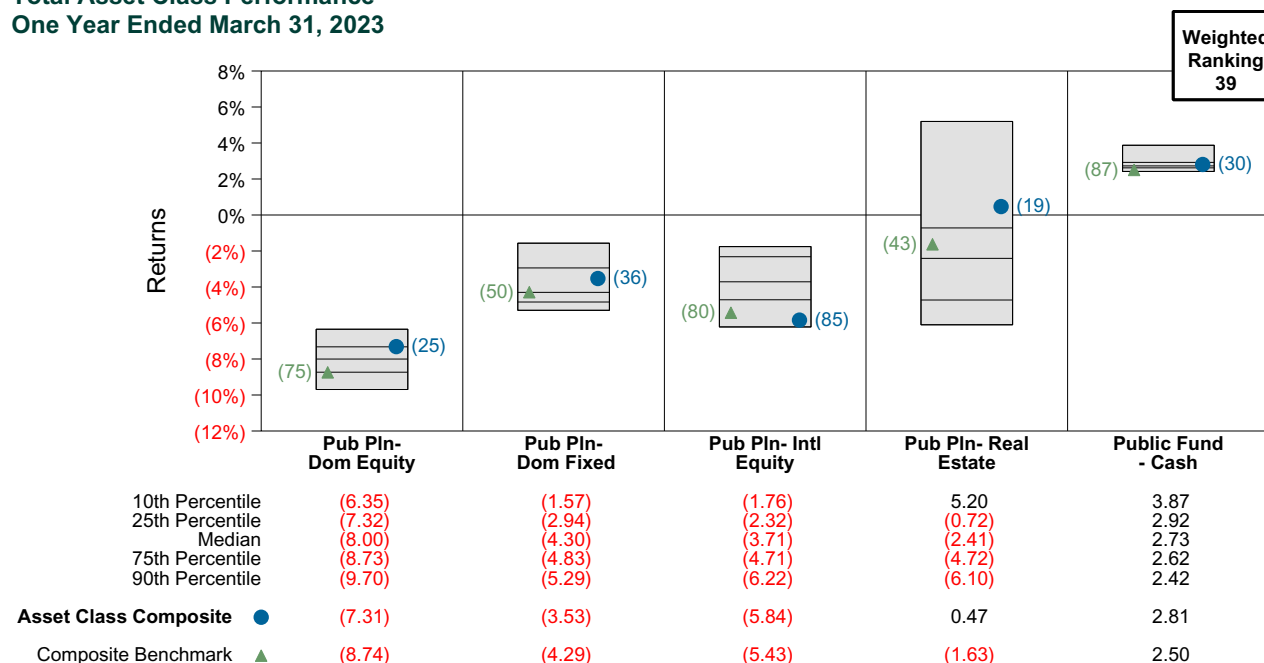


\* Current Quarter Target = 24.4% Russell 1000 Index, 19.6% MSCI ACWI xUS IMI, 17.1% Blmbg Aggregate, 10.1% NCREIF Total Index, 8.2% Private Equity, 7.4% Blmbg HY Corp 2% Iss Cap, 4.3% Russell 2000 Index, 3.6% CPI All Urban Cons lagged 3 months, 3.6% NCREIF NFI-ODCE Eq Wt Net, 1.2% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

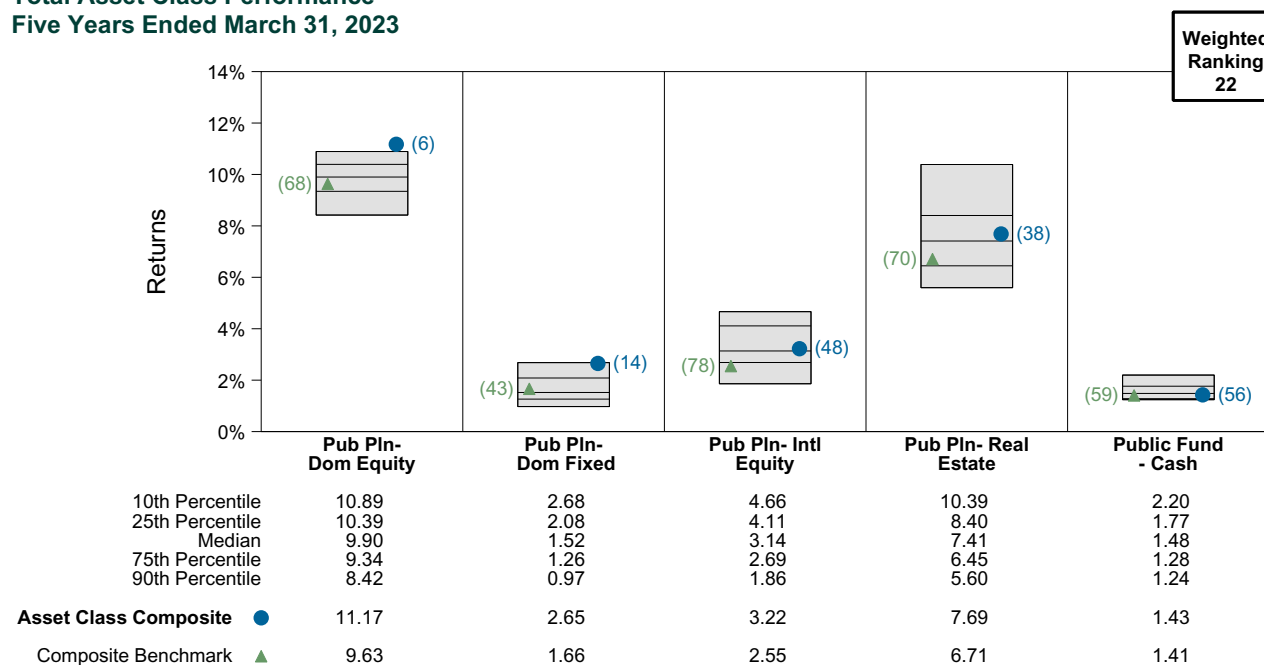
## Asset Class Rankings

The charts below show the rankings of each asset class component of the Total Fund relative to appropriate comparative databases. In the upper right corner of each graph is the weighted average of the rankings across the different asset classes. The weights of the fund's actual asset allocation are used to make this calculation. The weighted average ranking can be viewed as a measure of the fund's overall success in picking managers and structuring asset classes.

### Total Asset Class Performance One Year Ended March 31, 2023



### Total Asset Class Performance Five Years Ended March 31, 2023



\* Current Quarter Target = 24.4% Russell 1000 Index, 19.6% MSCI ACWI xUS IMI, 17.1% Blmbg Aggregate, 10.1% NCREIF Total Index, 8.2% Private Equity, 7.4% Blmbg HY Corp 2% Iss Cap, 4.3% Russell 2000 Index, 3.6% CPI All Urban Cons lagged 3 months, 3.6% NCREIF NFI-ODCE Eq Wt Net, 1.2% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

## Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of March 31, 2023, with the distribution as of December 31, 2022. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

### Asset Distribution Across Investment Managers

	March 31, 2023				December 31, 2022	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
<b>Global Equities</b>	<b>\$4,088,138,303</b>	<b>57.58%</b>	<b>\$32,875,473</b>	<b>\$223,986,994</b>	<b>\$3,831,275,836</b>	<b>55.64%</b>
<b>Public Equities</b>	<b>\$3,311,640,930</b>	<b>46.64%</b>	<b>\$(1,099,236)</b>	<b>\$221,277,394</b>	<b>\$3,091,462,772</b>	<b>44.90%</b>
<b>World Equities</b>	<b>\$0</b>	<b>0.00%</b>	<b>\$11</b>	<b>\$(0)</b>	<b>\$-11</b>	<b>(0.00%)</b>
EPOCH Investment Partners	0	0.00%	18	(0)	-18	(0.00%)
LSV Asset Management	0	0.00%	(7)	(0)	7	0.00%
<b>Domestic Equities</b>	<b>\$1,987,990,432</b>	<b>28.00%</b>	<b>\$(399,270)</b>	<b>\$132,701,533</b>	<b>\$1,855,688,170</b>	<b>26.95%</b>
<b>Large Cap</b>	<b>\$1,689,323,473</b>	<b>23.79%</b>	<b>\$(250,785)</b>	<b>\$112,962,242</b>	<b>\$1,576,612,017</b>	<b>22.90%</b>
L.A. Capital	50,289,436	0.71%	(25,663)	5,173,553	45,141,546	0.66%
LA Capital Enhanced	695,610,350	9.80%	(194,764)	45,504,325	650,300,789	9.44%
NTAM Quant Enh R1000	267,447,584	3.77%	0	15,856,385	251,591,199	3.65%
NTAM R1000 Index	410,809,325	5.79%	(30,358)	28,545,697	382,293,986	5.55%
Parametric-Clifton Enh R1000	265,166,778	3.73%	0	17,882,282	247,284,496	3.59%
<b>Small Cap</b>	<b>\$298,666,959</b>	<b>4.21%</b>	<b>\$(148,485)</b>	<b>\$19,739,291</b>	<b>\$279,076,153</b>	<b>4.05%</b>
Atlanta Capital	98,657,765	1.39%	(148,485)	8,671,494	90,134,756	1.31%
Riverbridge Small Cap Growth	92,089,526	1.30%	0	8,050,675	84,038,851	1.22%
Sycamore Small Cap Value	92,297,512	1.30%	0	2,587,290	89,710,222	1.30%
NTAM R2000 Index	15,622,156	0.22%	0	429,833	15,192,323	0.22%
<b>Total International Equity</b>	<b>\$1,323,332,991</b>	<b>18.64%</b>	<b>\$(628,989)</b>	<b>\$88,595,842</b>	<b>\$1,235,366,139</b>	<b>17.94%</b>
<b>International All Cap</b>	<b>\$506,887,149</b>	<b>7.14%</b>	<b>\$(342,232)</b>	<b>\$36,229,357</b>	<b>\$471,000,025</b>	<b>6.84%</b>
William Blair Int'l Leaders	190,662,003	2.69%	0	15,825,575	174,836,428	2.54%
Arrowstreet ACWI ex US	298,295,935	4.20%	(342,232)	19,245,126	279,393,040	4.06%
State St MSCI ACWI exUS	17,929,212	0.25%	0	1,158,656	16,770,556	0.24%
<b>Developed Intl Large Cap</b>	<b>\$508,075,994</b>	<b>7.16%</b>	<b>\$0</b>	<b>\$39,002,538</b>	<b>\$469,073,456</b>	<b>6.81%</b>
NTAM World Ex US	116,600,685	1.64%	0	8,694,570	107,906,115	1.57%
State St MSCI World exUS	391,475,309	5.51%	0	30,307,967	361,167,342	5.25%
<b>Developed Intl Small Cap</b>	<b>\$87,710,861</b>	<b>1.24%</b>	<b>\$(88,967)</b>	<b>\$4,272,959</b>	<b>\$83,526,869</b>	<b>1.21%</b>
DFA Intl Small Cap Value	35,503,185	0.50%	0	2,176,187	33,326,998	0.48%
Wellington Intl SM Cap	34,438,204	0.49%	(87,152)	1,245,557	33,279,798	0.48%
State St MSCI exUS Small	17,769,472	0.25%	(1,815)	851,215	16,920,072	0.25%
<b>Emerging Markets</b>	<b>\$220,658,987</b>	<b>3.11%</b>	<b>\$(197,790)</b>	<b>\$9,090,988</b>	<b>\$211,765,789</b>	<b>3.08%</b>
Axiom Emerging Markets	151,178,800	2.13%	(197,790)	6,126,602	145,249,987	2.11%
DFA Emerging Mkts SmallCap	52,646,547	0.74%	0	2,298,080	50,348,466	0.73%
State St MSCI Em Mkts	16,833,640	0.24%	0	666,305	16,167,335	0.23%
<b>Transition Account</b>	<b>\$317,506</b>	<b>0.00%</b>	<b>\$(70,988)</b>	<b>\$(19,979)</b>	<b>\$408,474</b>	<b>0.01%</b>
<b>Private Equity</b>	<b>\$776,497,373</b>	<b>10.94%</b>	<b>\$33,974,709</b>	<b>\$2,709,600</b>	<b>\$739,813,064</b>	<b>10.74%</b>
Total ASP (Brinson) Fds 1998-2003	343,456	0.00%	(526)	(8,879)	352,861	0.01%
Total ASP (Brinson) Non-US Fds 1999-2004	176,634	0.00%	0	4,424	172,210	0.00%
Adams Street 2008 Non-US Partnership Fd	3,945,773	0.06%	(309,491)	233,381	4,021,883	0.06%
Adams Street Direct Co-Invest Fund 2006	16,385	0.00%	0	721	15,664	0.00%
Total Adams Street 2010 Funds	8,635,619	0.12%	(312,779)	(135,836)	9,084,234	0.13%
Adams Street 2015 Global Fund	38,935,825	0.55%	(782,456)	(633,323)	40,351,604	0.59%
Adams Street 2016 Global Fund	36,452,814	0.51%	0	232,842	36,219,972	0.53%
Adams Street 2017 Global Fund	77,723,028	1.09%	0	(232,692)	77,955,720	1.13%
Adams Street 2018 Global Fund	72,655,693	1.02%	2,145,000	367,320	70,143,373	1.02%
Adams Street 2019 Global Fund	61,623,005	0.87%	4,160,000	(371,703)	57,834,708	0.84%
Adams Street 2020 Global Fund	40,271,846	0.57%	3,180,000	(29,770)	37,121,616	0.54%
Adams Street 2021 Global Fund	21,035,997	0.30%	3,882,000	203,607	16,950,390	0.25%
BlackRock PEP	218,636,236	3.08%	3,246,627	0	215,389,609	3.13%
Blackrock PEP 2020	79,688,238	1.12%	11,676,193	0	68,012,045	0.99%
Sixth Street Partners - TAO	86,462,808	1.22%	7,867,320	1,607,796	76,987,692	1.12%
Private Equity Misc Funds*	29,894,016	0.42%	(777,179)	1,471,712	29,199,483	0.42%

\* Comprised of Matlin Patterson II, Matlin Patterson III, InvestAmerica Lewis & Clark, InvestAmerica L&C II, Corsair III, Capital Intl Fd V, Capital Intl Fd VI, EIG, Quantum Energy Partners, Hearthstone MSII, Hearthstone MSIII.

## Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of March 31, 2023, with the distribution as of December 31, 2022. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

### Asset Distribution Across Investment Managers

	March 31, 2023				December 31, 2022	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
<b>Global Fixed Income</b>	<b>\$1,610,169,546</b>	<b>22.68%</b>	<b>\$(41,001,678)</b>	<b>\$42,215,006</b>	<b>\$1,608,956,218</b>	<b>23.37%</b>
<b>Domestic Fixed Income</b>	<b>\$1,610,169,546</b>	<b>22.68%</b>	<b>\$(41,001,678)</b>	<b>\$42,215,006</b>	<b>\$1,608,956,218</b>	<b>23.37%</b>
<b>Investment Grade</b>	<b>\$1,121,404,430</b>	<b>15.79%</b>	<b>\$(39,776,220)</b>	<b>\$33,209,518</b>	<b>\$1,127,971,132</b>	<b>16.38%</b>
Manulife-Declaration TRBF	110,156,403	1.55%	(39,194,820)	2,693,990	146,657,233	2.13%
PIMCO DISCO II	103,386,513	1.46%	0	2,136,299	101,250,214	1.47%
PIMCO Core Plus Constrained	281,157,904	3.96%	(120,539,142)	8,886,932	392,810,114	5.70%
Prudential Core	288,166,873	4.06%	(120,247,848)	9,466,075	398,948,646	5.79%
SSgA Long US Treas Index	0	0.00%	(90,018,734)	1,713,809	88,304,925	1.28%
State Street Gov Index	127,117,171	1.79%	123,100,000	4,017,171	-	-
State Street Credit Index	34,539,819	0.49%	33,600,000	939,819	-	-
Western US Core Fixed Income	176,832,886	2.49%	173,227,331	3,605,555	-	-
Fixed Income Transition	46,861	0.00%	296,994	(250,133)	-	-
<b>Below Investment Grade</b>	<b>\$488,765,116</b>	<b>6.88%</b>	<b>\$(1,225,458)</b>	<b>\$9,005,488</b>	<b>\$480,985,086</b>	<b>6.99%</b>
Ares ND Credit Strategies Fd	160,063,033	2.25%	0	1,843,035	158,219,998	2.30%
Cerberus ND Private Credit Fd	199,425,479	2.81%	0	4,016,024	195,409,455	2.84%
Goldman Sachs 2006 Offshore	22,974	0.00%	0	397	22,577	0.00%
Goldman Sachs Offshore V	52,552	0.00%	0	3,803	48,749	0.00%
Loomis Sayles	126,639,671	1.78%	(145,021)	3,362,308	123,422,384	1.79%
PIMCO Bravo II Fund	2,561,407	0.04%	(1,080,437)	(220,079)	3,861,923	0.06%
<b>Global Real Assets</b>	<b>\$1,362,811,022</b>	<b>19.19%</b>	<b>\$16,383,982</b>	<b>\$(15,278,628)</b>	<b>\$1,361,705,669</b>	<b>19.78%</b>
<b>Real Estate</b>	<b>\$858,929,194</b>	<b>12.10%</b>	<b>\$5,802,392</b>	<b>\$(37,179,264)</b>	<b>\$890,306,067</b>	<b>12.93%</b>
Invesco Core Real Estate	428,207,721	6.03%	(338,083)	(22,478,860)	451,024,664	6.55%
Invesco RE Fund VI	38,642,247	0.54%	4,610,984	(389,127)	34,420,390	0.50%
Invesco Asia RE Fund III	17,604,791	0.25%	0	1,696,845	15,907,946	0.23%
Invesco Value Added Fd IV	2,048,035	0.03%	631	(51,675)	2,099,079	0.03%
Invesco Value Added Fd V	67,907,265	0.96%	1,528,860	(4,314,657)	70,693,062	1.03%
JP Morgan SPC & Strat RE	303,906,591	4.28%	0	(11,673,479)	315,580,071	4.58%
JP Morgan Greater European Opp Fd	612,544	0.01%	0	31,689	580,855	0.01%
<b>Other Real Assets</b>	<b>\$503,881,828</b>	<b>7.10%</b>	<b>\$10,581,590</b>	<b>\$21,900,636</b>	<b>\$471,399,602</b>	<b>6.85%</b>
<b>Infrastructure</b>	<b>\$417,764,494</b>	<b>5.88%</b>	<b>\$12,481,590</b>	<b>\$19,763,010</b>	<b>\$385,519,894</b>	<b>5.60%</b>
ISQ Global Infrastructure II	69,137,743	0.97%	0	4,851,129	64,286,614	0.93%
ISQ Global Infrastructure III	13,273,387	0.19%	7,247,990	204,336	5,821,061	0.08%
The Rohatyn Group	15,682,334	0.22%	65,388	(293,765)	15,910,711	0.23%
JP Morgan IIF Infrastructure	125,872,403	1.77%	(1,335,947)	10,004,989	117,203,361	1.70%
Grosvenor CIS Fund I	9,950,933	0.14%	(762,028)	1,067,169	9,645,792	0.14%
Grosvenor CIS Fund II	22,255,359	0.31%	(595,725)	1,250,649	21,600,435	0.31%
Grosvenor CIS Fund III	29,457,674	0.41%	7,935,645	1,298,983	20,223,046	0.29%
Macquarie Infrastructure Fund IV	78,595,352	1.11%	(36,746)	727,288	77,904,810	1.13%
Macquarie Infrastructure Fund V	53,539,309	0.75%	(36,986)	652,231	52,924,064	0.77%
<b>Timber</b>	<b>\$86,117,334</b>	<b>1.21%</b>	<b>\$(1,900,000)</b>	<b>\$2,137,626</b>	<b>\$85,879,708</b>	<b>1.25%</b>
TIR Teredo	23,412,694	0.33%	0	2,957,483	20,455,211	0.30%
TIR Springbank	62,704,640	0.88%	(1,900,000)	(819,857)	65,424,497	0.95%
<b>Cash</b>	<b>\$35,127,969</b>	<b>0.49%</b>	<b>\$(45,578,370)</b>	<b>\$794,568</b>	<b>\$79,911,771</b>	<b>1.16%</b>
Northern Trust Cash Account	24,239,545	0.34%	(45,578,370)	676,466	69,141,449	1.00%
Bank of ND	10,888,424	0.15%	0	118,102	10,770,322	0.16%
<b>Residual Holdings</b>	<b>\$3,746,386</b>	<b>0.05%</b>	<b>\$182</b>	<b>\$29,063</b>	<b>\$3,717,141</b>	<b>0.05%</b>
<b>Total Fund</b>	<b>\$7,099,993,226</b>	<b>100.0%</b>	<b>\$(37,320,412)</b>	<b>\$251,747,003</b>	<b>\$6,885,566,634</b>	<b>100.0%</b>



## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended March 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended March 31, 2023

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
<b>Global Equities</b>					
Gross	5.83%	(6.02%)	17.73%	8.03%	9.31%
Net	5.80%	(6.24%)	17.43%	7.78%	9.01%
Weighted Benchmark	5.80%	(6.59%)	17.19%	8.40%	8.89%
<b>Public Equities</b>					
Gross	7.15%	(6.31%)	16.94%	-	-
Net	7.12%	(6.58%)	16.60%	-	-
Weighted Benchmark	6.70%	(7.39%)	15.89%	-	-
<b>Total Domestic Equity</b>					
Gross	7.15%	(7.31%)	19.48%	11.17%	12.28%
Net	7.13%	(7.53%)	19.21%	10.95%	12.05%
Weighted Benchmark	6.79%	(8.74%)	18.66%	9.63%	11.23%
<b>Large Cap Equity</b>					
Gross	7.16%	(8.47%)	19.85%	12.35%	13.17%
Net	7.14%	(8.62%)	19.68%	12.21%	13.02%
Large Cap Benchmark(1)	7.46%	(8.39%)	18.55%	10.87%	12.01%
L.A. Capital - Gross	11.46%	(10.39%)	19.86%	14.27%	14.68%
L.A. Capital - Net	11.40%	(10.95%)	19.46%	13.95%	14.40%
Russell 1000 Growth Index	14.37%	(10.90%)	18.58%	13.66%	14.59%
LACM Enhanced Index - Gross	7.00%	(7.40%)	19.28%	11.59%	12.47%
LACM Enhanced Index - Net	6.97%	(7.48%)	19.16%	11.48%	12.35%
Russell 1000 Index	7.46%	(8.39%)	18.55%	10.87%	12.01%
NTAM R1000 Index - Gross	7.47%	-	-	-	-
NTAM R1000 Index - Net	7.47%	-	-	-	-
Russell 1000 Index	7.46%	(8.39%)	18.55%	10.87%	12.01%
NTAM Quant Enh R1000 - Gross	6.26%	(6.60%)	19.50%	9.82%	11.53%
NTAM Quant Enh R1000 - Net	6.26%	(6.97%)	19.29%	9.71%	11.35%
NTAM Quant Enh S&P500 - Gross	6.26%	(6.60%)	19.50%	9.82%	11.53%
Benchmark(2)	7.46%	(8.03%)	18.47%	11.11%	12.21%
Parametric-Clifton Enh R1000 - Gross	7.23%	(8.92%)	19.17%	10.86%	12.00%
Parametric-Clifton Enh R1000 - Net	7.23%	(8.92%)	19.13%	10.84%	11.97%
Benchmark(3)	7.46%	(7.77%)	18.59%	11.18%	12.24%
<b>Small Cap Equity</b>					
Gross	7.07%	(1.87%)	17.86%	7.10%	9.14%
Net	7.02%	(2.42%)	17.17%	6.57%	8.66%
Russell 2000 Index	2.74%	(11.61%)	17.51%	4.71%	8.04%
Atlanta Capital - Gross	9.62%	3.37%	20.00%	10.71%	-
Atlanta Capital - Net	9.46%	2.70%	19.26%	10.00%	-
S&P 600 Small Cap Index	2.57%	(8.82%)	21.71%	6.30%	9.87%
Riverbridge Small Cap Growth - Gross	9.58%	(10.98%)	-	-	-
Riverbridge Small Cap Growth - Net	9.58%	(11.51%)	-	-	-
Russell 2000 Growth Index	6.07%	(10.60%)	13.36%	4.26%	8.49%
Sycamore Small Cap Value - Gross	2.88%	1.05%	-	-	-
Sycamore Small Cap Value - Net	2.88%	0.54%	-	-	-
Russell 2000 Value Index	(0.66%)	(12.96%)	21.01%	4.55%	7.22%
NTAM R2000 Index - Gross	2.83%	-	-	-	-
NTAM R2000 Index - Net	2.83%	-	-	-	-
Russell 2000 Index	2.74%	(11.61%)	17.51%	4.71%	8.04%

(1) S&P 500 Index through 12/31/2011 and Russell 1000 Index thereafter.

(2) S&P 500 Index through 9/30/2022 and Russell 1000 Index thereafter.

(3) S&P 500 Index through 6/30/2022 and Russell 1000 Index thereafter.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended March 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended March 31, 2023

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
<b>Total International Equity</b>					
Gross	7.17%	(5.84%)	13.27%	3.22%	5.87%
Net	7.12%	(6.08%)	12.93%	2.97%	5.61%
MSCI ACWIxUS IMI(1)	6.56%	(5.43%)	11.81%	2.55%	4.31%
<b>International All Cap</b>					
Gross	7.69%	-	-	-	-
Net	7.62%	-	-	-	-
MSCI ACWI xUS IMI	6.56%	(5.84%)	12.20%	2.35%	4.28%
William Blair Int'l Leaders - Gross	9.05%	(8.88%)	11.01%	5.75%	-
William Blair Int'l Leaders - Net	9.05%	(9.14%)	10.66%	5.40%	-
MSCI ACWI xUS IMI	6.56%	(5.84%)	12.20%	2.35%	4.28%
Arrowstreet ACWI ex US - Gross	6.89%	(1.92%)	-	-	-
Arrowstreet ACWI ex US - Net	6.77%	(2.23%)	-	-	-
MSCI ACWI xUS IMI	6.56%	(5.84%)	12.20%	2.35%	4.28%
State St MSCI ACWI exUS - Gross	6.91%	-	-	-	-
State St MSCI ACWI exUS - Net	6.91%	-	-	-	-
MSCI ACWI xUS IMI	6.56%	(5.84%)	12.20%	2.35%	4.28%
<b>Developed Intl Large Cap</b>					
Gross	8.31%	-	-	-	-
Net	8.31%	-	-	-	-
MSCI World xUS	8.02%	(2.74%)	13.49%	3.80%	4.91%
NTAM World ex US - Gross	8.06%	(1.26%)	13.89%	4.18%	-
NTAM World ex US - Net	8.06%	(1.30%)	13.84%	4.14%	-
MSCI World xUS	8.02%	(2.74%)	13.49%	3.80%	4.91%
State St MSCI World exUS - Gross	8.39%	-	-	-	-
State St MSCI World exUS - Net	8.39%	-	-	-	-
MSCI World xUS	8.02%	(2.74%)	13.49%	3.80%	4.91%
<b>Developed Intl Small Cap</b>					
Gross	5.11%	-	-	-	-
Net	5.01%	-	-	-	-
MSCI World xUS Small	4.99%	(10.13%)	13.43%	1.54%	5.54%
DFA Intl Small Cap Value - Net	6.53%	(1.34%)	19.20%	1.29%	5.73%
MSCI World xUS Sm Value	4.55%	(7.38%)	15.22%	1.29%	4.97%
Wellington Management - Gross	3.74%	(6.34%)	13.28%	(0.27%)	6.97%
Wellington Management - Net	3.48%	(7.45%)	12.21%	(1.18%)	6.05%
Benchmark(4)	4.92%	(9.83%)	12.22%	(0.36%)	4.89%
State St MSCI exUS Small - Gross	5.03%	-	-	-	-
State St MSCI exUS Small - Net	5.02%	-	-	-	-
MSCI World xUS Small	4.99%	(10.13%)	13.43%	1.54%	5.54%
<b>Emerging Markets</b>					
Gross	4.29%	(15.31%)	8.82%	(0.55%)	2.96%
Net	4.20%	(15.60%)	8.20%	(0.89%)	2.70%
MSCI EM	3.96%	(10.70%)	7.83%	(0.91%)	2.00%
Axiom Emerging Markets - Gross(3)	4.22%	(18.43%)	5.24%	(1.41%)	-
Axiom Emerging Markets - Net	4.08%	(18.83%)	4.42%	(1.87%)	-
MSCI EM	3.96%	(10.70%)	7.83%	(0.91%)	2.00%
DFA Emerging Mkts SmallCap - Net	4.56%	(7.30%)	19.06%	1.52%	4.04%
MSCI EM	3.96%	(10.70%)	7.83%	(0.91%)	2.00%
State St MSCI Em Mkts - Gross	4.12%	-	-	-	-
State St MSCI Em Mkts - Net	4.12%	-	-	-	-
MSCI EM	3.96%	(10.70%)	7.83%	(0.91%)	2.00%

(1) Prior to 10/1/2022, the benchmark is calculated based on the approved investment policy asset allocation target.

(2) MSCI EAFE through 12/31/1996; 50% Hedged EAFE through 3/31/2011; MSCI EAFE again through 6/30/2016; MSCI World ex-US thereafter.

(3) Axiom's performance are reported net of fees through 6/30/2020.

(4) EPAC, Developed World, <\$2B through 2/28/2022; MSCI EAFE Small Cap Index thereafter.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended March 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended March 31, 2023					
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
<b>Private Equity*</b>					
Net	0.37%	(3.37%)	19.60%	13.87%	7.89%
Total ASP (Brinson) Fds 1998-2003	(2.52%)	(4.85%)	(1.10%)	(0.54%)	1.81%
Total ASP (Brinson) Non-US 1999-2004	2.57%	35.64%	12.30%	7.12%	7.00%
Adams St 2008 Non-US P-ship Fund	6.29%	(12.16%)	10.32%	11.65%	12.71%
Adams St Direct Co-Invest Fd 2006	4.60%	35.42%	(24.96%)	(22.99%)	(8.19%)
Total Adams Street 2010 Funds	(1.55%)	(18.77%)	19.03%	17.83%	15.61%
Adams Street 2015 Global Fund	(1.57%)	(15.07%)	21.23%	19.96%	-
Adams Street 2016 Global Fund	0.64%	(7.05%)	22.19%	18.43%	-
Adams Street 2017 Global Fund	(0.30%)	(4.59%)	25.74%	20.63%	-
Adams Street 2018 Global Fund	0.52%	(7.49%)	26.18%	-	-
Adams Street 2019 Global Fund	(0.64%)	(12.99%)	48.43%	-	-
Adams Street 2020 Global Fund	(0.08%)	(11.65%)	-	-	-
Adams Street 2021 Global Fund	1.16%	(17.62%)	-	-	-
BlackRock PEP	0.00%	2.63%	22.06%	15.73%	-
Blackrock PEP 2020	0.00%	5.94%	-	-	-
Sixth Street Partners - TAO	2.09%	5.06%	-	-	-
Private Equity Misc Funds**	5.19%	(6.73%)	(5.25%)	(3.11%)	(3.38%)

\* Corsair III was taken out from the Private Equity Composite on July 1, 2009. It was then added back into the Private Equity Composite on October 1, 2011. At this time Corsair IV, Capital Intl and EIG were also added to this composite.

\*\* Comprised of Matlin Patterson II, Matlin Patterson III, InvestAmerica Lewis & Clark, InvestAmerica L&C II, Corsair III, Capital Intl Fd V, Capital Intl Fd VI, EIG, Quantum Energy Partners, Hearthstone MSII, Hearthstone MSIII.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended March 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended March 31, 2023

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
<b>Global Fixed Income</b>					
Gross	2.64%	(3.53%)	0.65%	2.65%	3.27%
Net	2.62%	(3.65%)	0.52%	2.51%	3.08%
Weighted Benchmark	3.15%	(4.29%)	(0.19%)	1.66%	2.02%
<b>Domestic Fixed Income</b>					
Gross	2.64%	(3.53%)	0.65%	2.65%	3.50%
Net	2.62%	(3.65%)	0.52%	2.51%	3.33%
Weighted Benchmark	3.15%	(4.29%)	(0.19%)	1.66%	2.17%
<b>Investment Grade</b>					
Gross	2.97%	(5.67%)	(1.60%)	1.56%	2.57%
Net	2.96%	(5.78%)	(1.70%)	1.45%	2.46%
Blmbg Aggregate	2.96%	(4.78%)	(2.77%)	0.91%	1.36%
Manulife-Declaration TRBF- Net	1.63%	(2.54%)	3.24%	2.37%	3.10%
Libor-3 Month	1.25%	3.44%	1.33%	1.74%	1.19%
PIMCO Core Plus Cons. - Gross(1)	2.95%	(5.18%)	(1.76%)	1.37%	1.84%
PIMCO Core Plus Cons. - Net	2.91%	(5.41%)	(1.97%)	1.19%	1.61%
Blended Benchmark(2)	2.96%	(4.78%)	(2.77%)	1.06%	0.87%
PIMCO DiSCO II - Net	2.11%	1.27%	6.47%	4.68%	6.95%
Blmbg Aggregate	2.96%	(4.78%)	(2.77%)	0.91%	1.36%
Prudential Core - Gross	3.14%	(4.96%)	(1.43%)	1.26%	-
Prudential Core - Net	3.14%	(5.05%)	(1.53%)	1.14%	-
Blmbg Aggregate	2.96%	(4.78%)	(2.77%)	0.91%	1.36%
<b>Below Investment Grade</b>					
Gross	1.88%	2.09%	6.86%	5.60%	5.90%
Net	1.84%	1.94%	6.68%	5.38%	5.58%
Blmbg HY Corp 2% Issue	3.57%	(3.35%)	5.88%	3.19%	4.09%
Ares ND Credit Strategies Fd - Net	1.16%	6.42%	7.40%	7.63%	-
Cerberus ND Private Credit Fd - Net	2.06%	7.22%	8.64%	9.08%	-
S&P/LSTA Leveraged Loan B	3.89%	2.75%	9.17%	3.99%	4.02%
Goldman Sachs 2006 Offshore - Net	1.76%	45.50%	18.19%	13.30%	19.20%
Goldman Sachs Offshore V - Net	7.80%	6.44%	9.35%	25.37%	13.59%
PIMCO Bravo II Fund - Net	(7.91%)	(33.75%)	(10.41%)	(4.32%)	-
Blmbg HY Corp 2% Issue	3.57%	(3.35%)	5.88%	3.19%	4.09%
Loomis Sayles - Gross	2.72%	(4.85%)	5.66%	2.50%	3.97%
Loomis Sayles - Net	2.61%	(5.30%)	5.17%	2.00%	3.46%
Blmbg HY Corp 2% Issue	3.57%	(3.35%)	5.88%	3.19%	4.09%

(1) The product changed from Commingled Fund to Separate Account in March 2014.

(2) Libor-3 month through Feb. 28, 2014; Fund's performance through March 31, 2014; Libor-3 month through June 30, 2018; Blmbg Aggregate thereafter.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended March 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended March 31, 2023

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
<b>Global Real Assets</b>					
Gross	(1.12%)	2.90%	7.96%	7.37%	7.96%
Net	(1.24%)	2.55%	7.54%	6.93%	7.53%
Weighted Benchmark	(1.57%)	0.30%	6.95%	6.08%	6.45%
<b>Real Estate</b>					
Gross	(4.17%)	0.47%	7.88%	7.69%	10.17%
Net	(4.29%)	0.06%	7.37%	7.14%	9.64%
NCREIF Total Index	(1.81%)	(1.63%)	7.15%	6.71%	8.34%
Invesco Core Real Estate - Gross	(4.98%)	7.66%	8.66%	8.38%	9.70%
Invesco Core Real Estate - Net	(5.06%)	7.33%	8.32%	8.03%	9.34%
Invesco RE Fund VI - Net	(1.18%)	-	-	-	-
Invesco Asia RE Fund III - Net	10.67%	(8.52%)	(0.40%)	15.76%	-
Invesco Value Added Fd IV - Net	(2.46%)	(42.55%)	(12.48%)	(2.88%)	-
Invesco Value Added Fd V - Net	(6.10%)	(2.32%)	8.93%	-	-
JP Morgan SPC & Strat RE - Gross	(3.70%)	(7.31%)	6.76%	6.72%	9.38%
JP Morgan SPC & Strat RE - Net	(3.93%)	(7.95%)	5.87%	5.75%	8.38%
JPM Greater European Opp Fd - Net	5.46%	(3.69%)	(0.73%)	(15.33%)	(1.13%)
NCREIF Total Index	(1.81%)	(1.63%)	7.15%	6.71%	8.34%
<b>Other Real Assets</b>					
Gross	4.60%	7.41%	7.98%	-	-
Net	4.50%	7.18%	7.71%	-	-
Weighted Benchmark	(1.26%)	2.67%	6.72%	-	-
<b>Infrastructure</b>					
Gross	5.05%	10.18%	9.71%	7.97%	7.04%
Net	4.92%	9.89%	9.35%	7.57%	6.55%
Weighted Benchmark	(1.76%)	1.28%	6.56%	5.36%	3.26%
ISQ Global Infrastructure II - Net	7.55%	16.97%	16.01%	-	-
ISQ Global Infrastructure III - Net	1.31%	(24.85%)	-	-	-
The Rohatyn Group - Net	(1.84%)	(4.40%)	(6.41%)	(8.97%)	(2.53%)
JP Morgan IIF - Gross	8.54%	5.26%	6.81%	7.12%	6.38%
JP Morgan IIF - Net	8.12%	4.41%	5.95%	6.33%	5.55%
Grosvenor CIS Fund - Net	11.06%	14.19%	11.68%	8.70%	9.04%
Grosvenor CIS Fund II - Net	5.79%	15.62%	14.98%	13.29%	-
Grosvenor CIS Fund III - Net	5.38%	7.01%	-	-	-
Benchmark(1)	(1.76%)	1.28%	6.56%	5.36%	3.26%
Macquarie Infrastructure Fd IV - Net	0.93%	14.75%	13.47%	-	-
Macquarie Infrastructure Fd V - Net	1.23%	15.23%	-	-	-
Benchmark(2)	(1.76%)	1.28%	6.56%	-	-
<b>Timber</b>					
Net	2.51%	(3.60%)	2.35%	3.24%	1.64%
TIR Teredo - Net	14.46%	12.95%	12.68%	8.82%	6.85%
TIR Springbank - Net	(1.27%)	(8.60%)	(0.59%)	1.63%	(0.36%)
NCREIF Timberland Index	1.75%	11.31%	8.09%	5.54%	5.82%
<b>Cash &amp; Cash Equivalents - Net</b>	<b>1.16%</b>	<b>2.81%</b>	<b>1.02%</b>	<b>1.43%</b>	<b>0.92%</b>
Cash Account - Net	1.18%	2.80%	1.02%	1.42%	0.92%
Bank of ND - Net	1.10%	2.73%	0.99%	1.41%	-
3-month Treasury Bill	1.07%	2.50%	0.89%	1.41%	0.87%
<b>Total Fund</b>					
Gross	3.66%	(3.84%)	11.38%	6.67%	7.64%
Net	3.61%	(4.05%)	11.11%	6.42%	7.35%
Target*	3.76%	(4.41%)	11.11%	6.56%	6.91%
Corridor Benchmark	3.51%	(4.94%)	10.73%	6.24%	6.82%

\* Current Quarter Target = 21.9% Russell 1000 Index, 19.6% MSCI ACWI xUS IMI, 16.8% Blmbg Aggregate, 12.3% NCREIF Total Index, 10.7% Private Equity, 7.3% Blmbg HY Corp 2% Iss Cap, 3.9% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 1.2% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

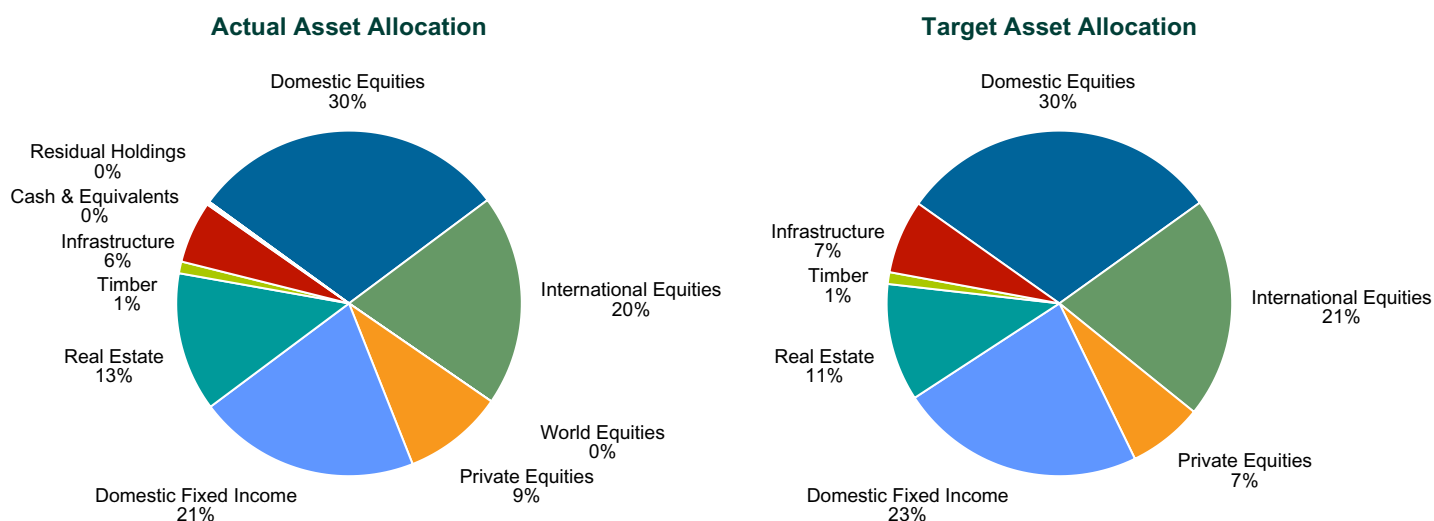
(1) CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.

(2) 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net.



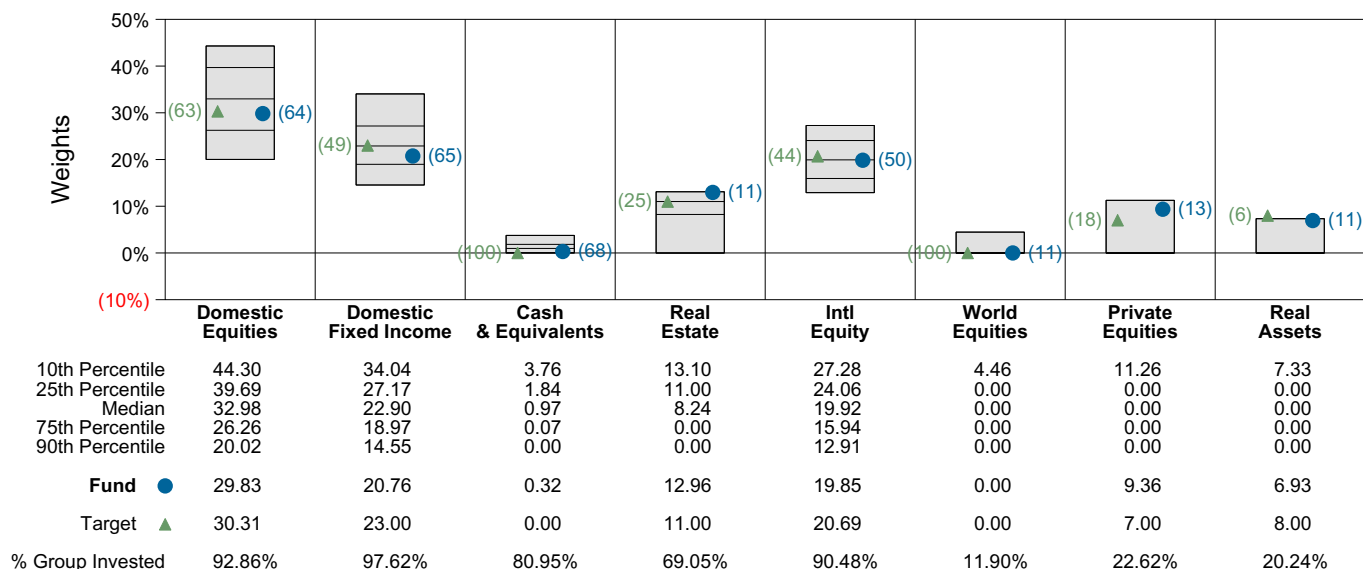
## Actual vs Target Asset Allocation As of March 31, 2023

The top left chart shows the Fund's asset allocation as of March 31, 2023. The top right chart shows the Fund's target asset allocation as outlined in the investment policy statement. The bottom chart ranks the fund's asset allocation and the target allocation versus the Callan Public Fund Sponsor Database.



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equities	1,136,467	29.8%	30.3%	(0.5%)	(18,319)
International Equities	755,882	19.8%	20.7%	(0.9%)	(32,581)
World Equities	31	0.0%	0.0%	0.0%	31
Private Equities	356,737	9.4%	7.0%	2.4%	90,017
Domestic Fixed Income	790,862	20.8%	23.0%	(2.2%)	(85,505)
Real Estate	493,746	13.0%	11.0%	2.0%	74,614
Timber	43,549	1.1%	1.1%	0.0%	0
Infrastructure	220,603	5.8%	6.9%	(1.1%)	(40,671)
Cash & Equivalents	12,047	0.3%	0.0%	0.3%	12,047
Residual Holdings	368	0.0%	0.0%	0.0%	368
Total	3,810,292	100.0%	100.0%		

### Asset Class Weights vs Callan Public Fund Sponsor Database

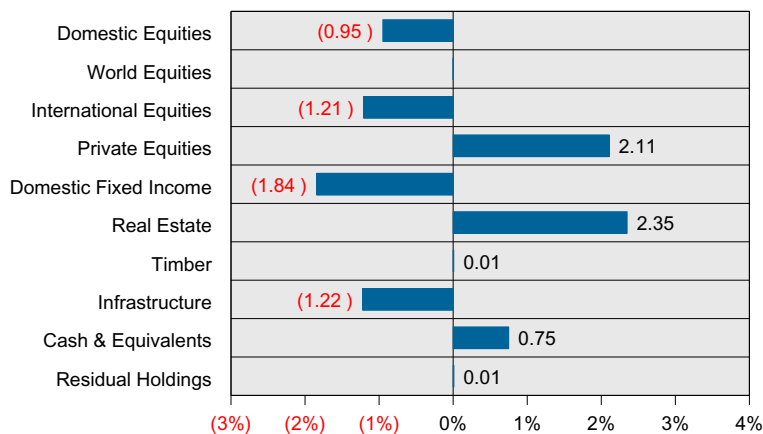


\* Current Quarter Target = 25.8% Russell 1000 Index, 20.7% MSCI ACWI xUS IMI, 16.0% Blmbg Aggregate, 11.0% NCREIF Total Index, 7.0% Blmbg HY Corp 2% Iss Cap, 7.0% Private Equity, 4.5% Russell 2000 Index, 3.4% NCREIF NFI-ODCE Eq Wt Net, 3.4% CPI All Urban Cons lagged 3 months and 1.1% NCREIF Timberland Index.

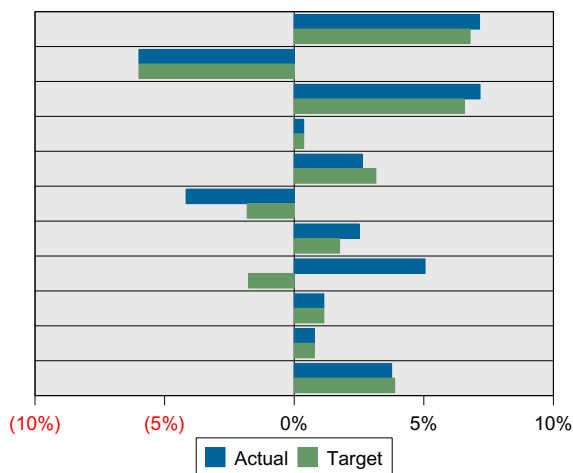
## Quarterly Total Fund Relative Attribution - March 31, 2023

The following analysis approaches Total Fund Attribution from the perspective of relative return. Relative return attribution separates and quantifies the sources of total fund excess return relative to its target. This excess return is separated into two relative attribution effects: Asset Allocation Effect and Manager Selection Effect. The Asset Allocation Effect represents the excess return due to the actual total fund asset allocation differing from the target asset allocation. Manager Selection Effect represents the total fund impact of the individual managers excess returns relative to their benchmarks.

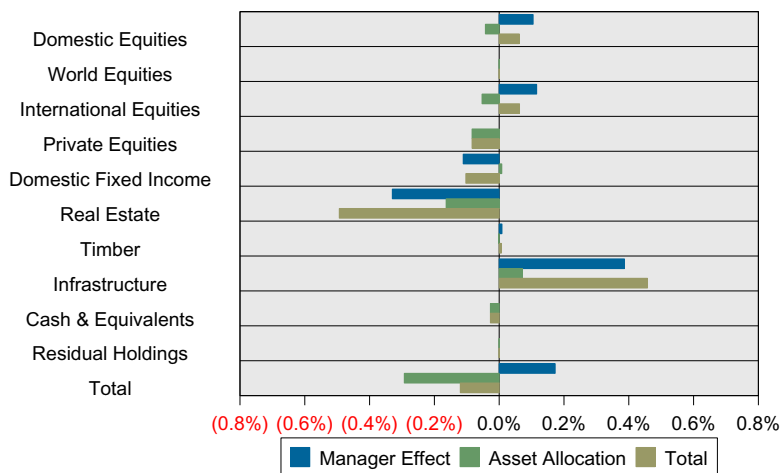
### Asset Class Under or Overweighting



### Actual vs Target Returns



### Relative Attribution by Asset Class



### Relative Attribution Effects for Quarter ended March 31, 2023

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	29%	30%	7.15%	6.79%	0.10%	(0.04%)	0.06%
World Equities	0%	0%	(5.99%)	(5.99%)	0.00%	(0.00%)	(0.00%)
International Equities	20%	21%	7.17%	6.56%	0.12%	(0.05%)	0.06%
Private Equities	9%	7%	0.37%	0.37%	0.00%	(0.08%)	(0.08%)
Domestic Fixed Income	21%	23%	2.63%	3.15%	(0.11%)	0.01%	(0.10%)
Real Estate	13%	11%	(4.17%)	(1.81%)	(0.33%)	(0.16%)	(0.49%)
Timber	1%	1%	2.51%	1.75%	0.01%	(0.00%)	0.01%
Infrastructure	6%	7%	5.05%	(1.76%)	0.39%	0.07%	0.46%
Cash & Equivalents	1%	0%	1.14%	1.14%	0.00%	(0.03%)	(0.03%)
Residual Holdings	0%	0%	0.78%	0.78%	0.00%	(0.00%)	(0.00%)

**Total** **3.76% = 3.88% + 0.17% + (0.29%)** **(0.12%)**

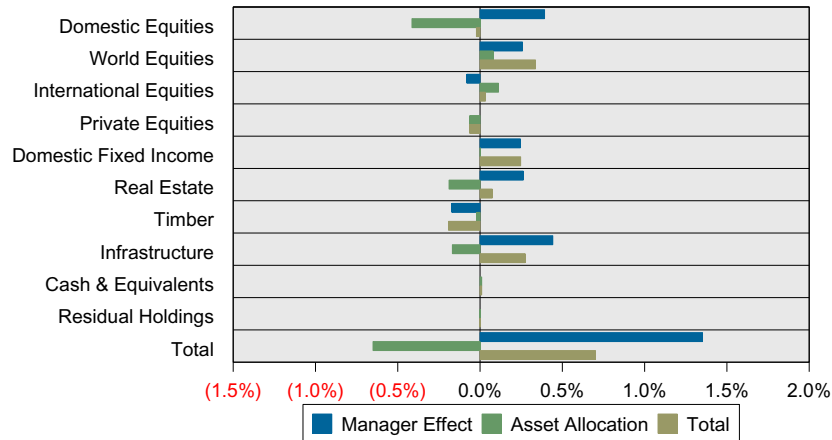
\* Current Quarter Target = 25.8% Russell 1000 Index, 20.7% MSCI ACWI xUS IMI, 16.0% Blmbg Aggregate, 11.0% NCREIF Total Index, 7.0% Blmbg HY Corp 2% Iss Cap, 7.0% Private Equity, 4.5% Russell 2000 Index, 3.4% NCREIF NFI-ODCE Eq Wt Net, 3.4% CPI All Urban Cons lagged 3 months and 1.1% NCREIF Timberland Index.



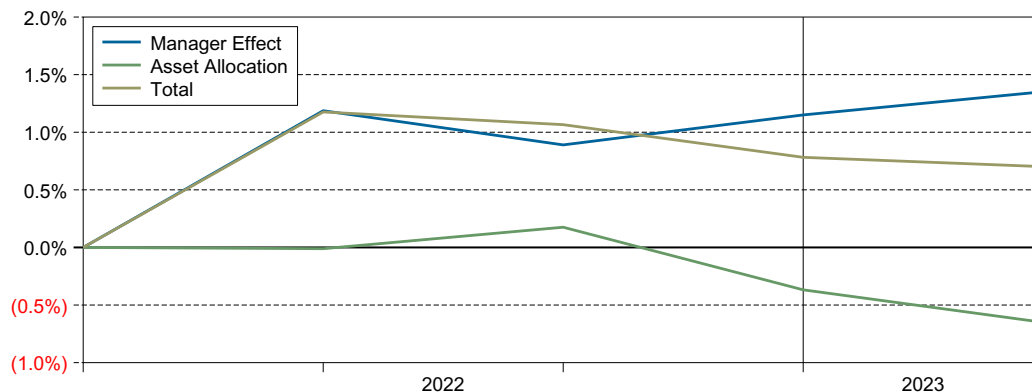
## Cumulative Total Fund Relative Attribution - March 31, 2023

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### One Year Relative Attribution Effects



### Cumulative Relative Attribution Effects



### One Year Relative Attribution Effects

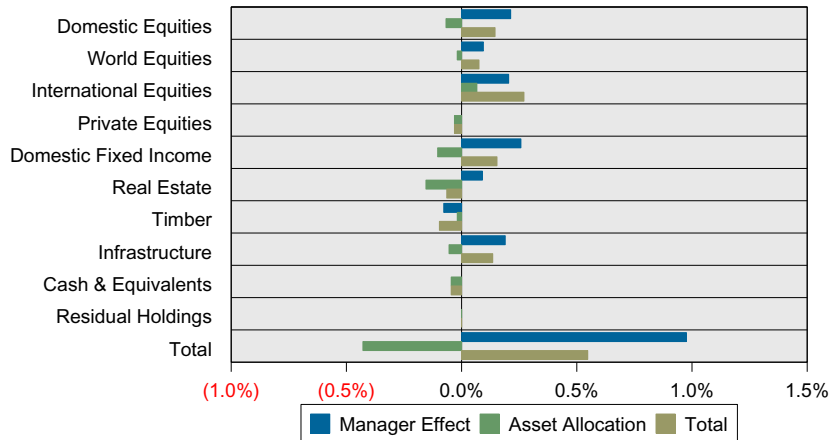
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	26%	27%	(7.28%)	(8.74%)	0.39%	(0.41%)	(0.02%)
World Equities	5%	5%	(19.66%)	(21.80%)	0.26%	0.08%	0.34%
International Equities	17%	19%	(5.84%)	(5.43%)	(0.08%)	0.11%	0.03%
Private Equities	9%	7%	(3.37%)	(3.37%)	0.00%	(0.06%)	(0.06%)
Domestic Fixed Income	22%	23%	(3.34%)	(4.29%)	0.24%	0.00%	0.25%
Real Estate	13%	11%	0.47%	(1.63%)	0.26%	(0.19%)	0.07%
Timber	1%	1%	(3.60%)	11.31%	(0.17%)	(0.02%)	(0.19%)
Infrastructure	5%	7%	10.18%	1.28%	0.44%	(0.17%)	0.27%
Cash & Equivalents	0%	0%	2.66%	2.66%	0.00%	0.01%	0.01%
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>(3.84%)</b>	<b>(4.54%)</b>	<b>+ 1.35%</b>	<b>+ (0.65%)</b>	<b>0.70%</b>

\* Current Quarter Target = 25.8% Russell 1000 Index, 20.7% MSCI ACWI xUS IMI, 16.0% Blmbg Aggregate, 11.0% NCREIF Total Index, 7.0% Blmbg HY Corp 2% Iss Cap, 7.0% Private Equity, 4.5% Russell 2000 Index, 3.4% NCREIF NFI-ODCE Eq Wt Net, 3.4% CPI All Urban Cons lagged 3 months and 1.1% NCREIF Timberland Index.

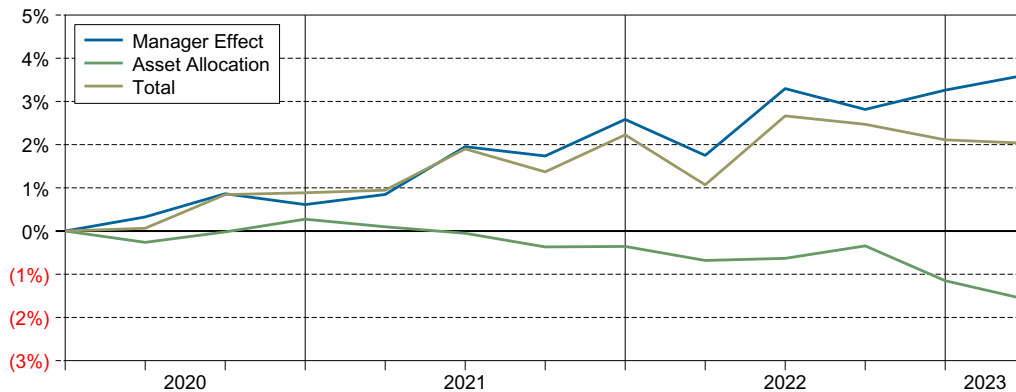
## Cumulative Total Fund Relative Attribution - March 31, 2023

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### Three Year Annualized Relative Attribution Effects



### Cumulative Relative Attribution Effects



### Three Year Annualized Relative Attribution Effects

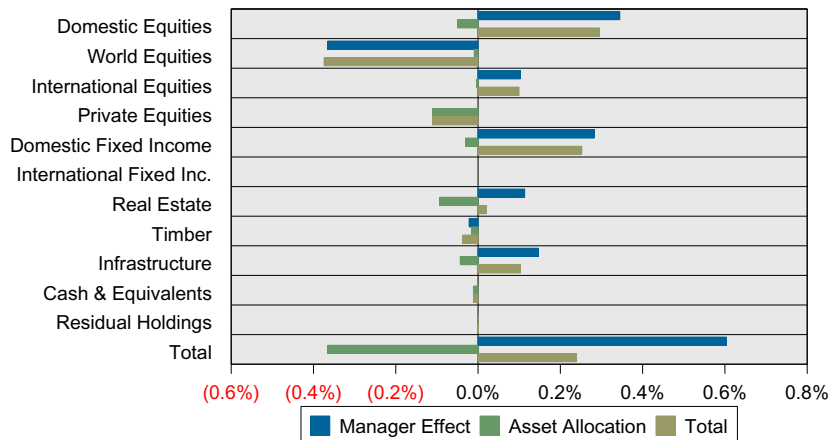
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	25%	24%	19.49%	18.67%	0.21%	(0.07%)	0.15%
World Equities	10%	10%	10.79%	9.88%	0.09%	(0.02%)	0.08%
International Equities	16%	17%	13.34%	11.86%	0.20%	0.07%	0.27%
Private Equities	7%	7%	19.61%	19.61%	0.00%	(0.03%)	(0.03%)
Domestic Fixed Income	23%	23%	0.81%	(0.17%)	0.26%	(0.10%)	0.15%
Real Estate	12%	11%	7.88%	7.15%	0.09%	(0.15%)	(0.06%)
Timber	2%	1%	2.35%	8.09%	(0.08%)	(0.02%)	(0.10%)
Infrastructure	5%	7%	9.72%	6.56%	0.19%	(0.05%)	0.14%
Cash & Equivalents	0%	0%	0.97%	0.97%	0.00%	(0.05%)	(0.05%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>11.52%</b>	<b>10.97%</b>	<b>+ 0.98%</b>	<b>+ (0.43%)</b>	<b>0.55%</b>

\* Current Quarter Target = 25.8% Russell 1000 Index, 20.7% MSCI ACWI xUS IMI, 16.0% Blmbg Aggregate, 11.0% NCREIF Total Index, 7.0% Blmbg HY Corp 2% Iss Cap, 7.0% Private Equity, 4.5% Russell 2000 Index, 3.4% NCREIF NFI-ODCE Eq Wt Net, 3.4% CPI All Urban Cons lagged 3 months and 1.1% NCREIF Timberland Index.

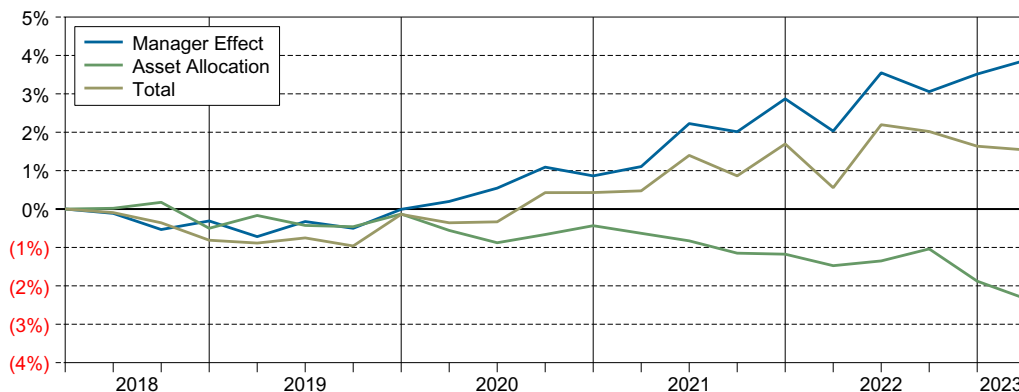
## Cumulative Total Fund Relative Attribution - March 31, 2023

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### Five Year Annualized Relative Attribution Effects



### Cumulative Relative Attribution Effects



### Five Year Annualized Relative Attribution Effects

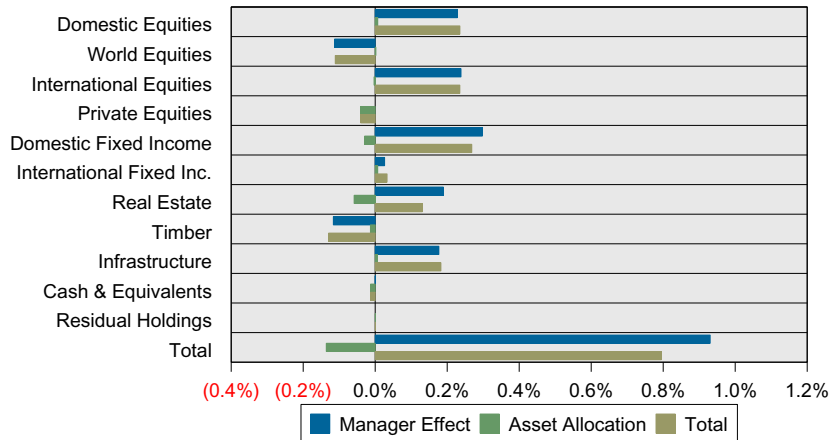
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	24%	23%	11.18%	9.64%	0.34%	(0.05%)	0.29%
World Equities	13%	12%	2.23%	4.34%	(0.37%)	(0.01%)	(0.37%)
International Equities	16%	16%	3.23%	2.55%	0.10%	(0.00%)	0.10%
Private Equities	5%	7%	13.88%	13.88%	0.00%	(0.11%)	(0.11%)
Domestic Fixed Income	23%	23%	2.77%	1.67%	0.28%	(0.03%)	0.25%
International Fixed Inc.	0%	0%	-	-	0.00%	0.00%	0.00%
Real Estate	12%	11%	7.68%	6.71%	0.11%	(0.09%)	0.02%
Timber	2%	2%	3.25%	5.54%	(0.02%)	(0.02%)	(0.04%)
Infrastructure	5%	6%	7.97%	5.36%	0.15%	(0.04%)	0.10%
Cash & Equivalents	0%	0%	1.41%	1.41%	0.00%	(0.01%)	(0.01%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>6.73%</b>	<b>6.49%</b>	<b>+ 0.60%</b>	<b>+ (0.37%)</b>	<b>0.24%</b>

\* Current Quarter Target = 25.8% Russell 1000 Index, 20.7% MSCI ACWI xUS IMI, 16.0% Blmbg Aggregate, 11.0% NCREIF Total Index, 7.0% Blmbg HY Corp 2% Iss Cap, 7.0% Private Equity, 4.5% Russell 2000 Index, 3.4% NCREIF NFI-ODCE Eq Wt Net, 3.4% CPI All Urban Cons lagged 3 months and 1.1% NCREIF Timberland Index.

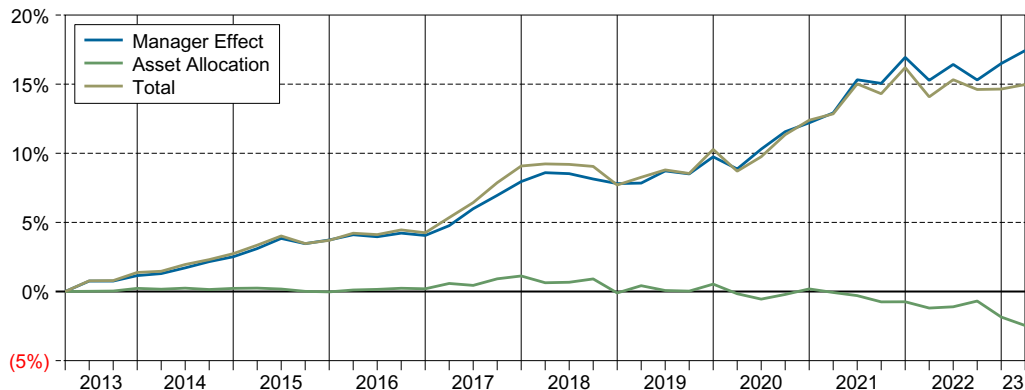
## Cumulative Total Fund Relative Attribution - March 31, 2023

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### Ten Year Annualized Relative Attribution Effects



### Cumulative Relative Attribution Effects



### Ten Year Annualized Relative Attribution Effects

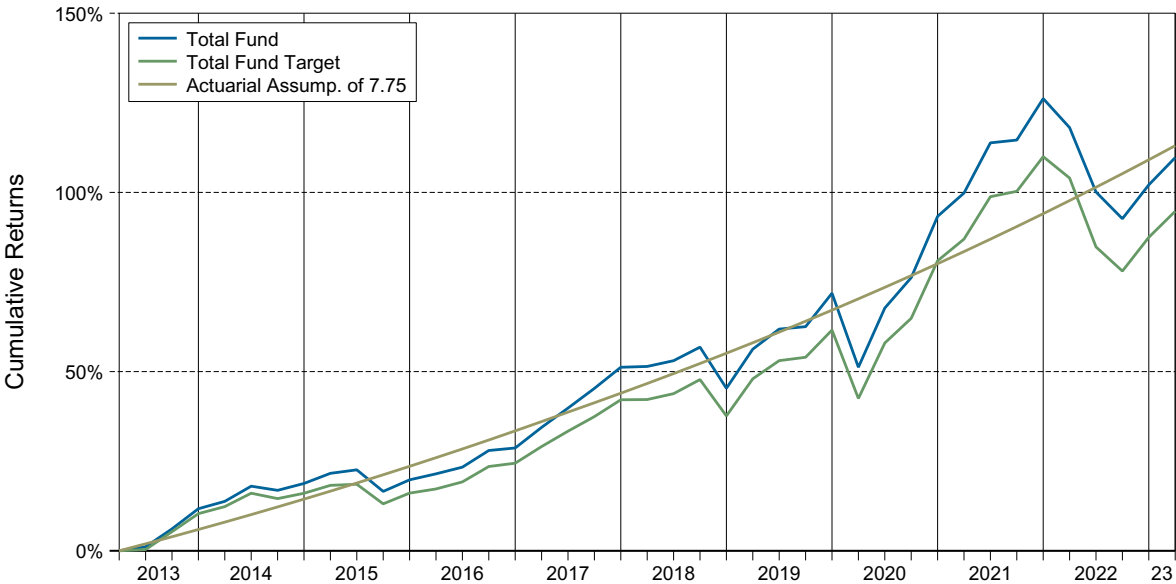
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	22%	12.27%	11.24%	0.23%	0.01%	0.24%
World Equities	15%	14%	6.32%	6.99%	(0.11%)	0.00%	(0.11%)
International Equities	16%	15%	5.84%	4.29%	0.24%	(0.00%)	0.24%
Private Equities	5%	6%	7.88%	7.88%	0.00%	(0.04%)	(0.04%)
Domestic Fixed Income	21%	20%	3.58%	2.20%	0.30%	(0.03%)	0.27%
International Fixed Inc.	2%	2%	-	-	0.03%	0.01%	0.03%
Real Estate	11%	11%	10.18%	8.34%	0.19%	(0.06%)	0.13%
Timber	3%	3%	1.64%	5.82%	(0.12%)	(0.01%)	(0.13%)
Infrastructure	5%	6%	7.04%	3.26%	0.18%	0.01%	0.18%
Cash & Equivalents	1%	0%	0.92%	0.90%	0.00%	(0.01%)	(0.01%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>7.69%</b>	<b>6.89%</b>	<b>+ 0.93%</b>	<b>+ (0.14%)</b>	<b>0.79%</b>

\* Current Quarter Target = 25.8% Russell 1000 Index, 20.7% MSCI ACWI xUS IMI, 16.0% Blmbg Aggregate, 11.0% NCREIF Total Index, 7.0% Blmbg HY Corp 2% Iss Cap, 7.0% Private Equity, 4.5% Russell 2000 Index, 3.4% NCREIF NFI-ODCE Eq Wt Net, 3.4% CPI All Urban Cons lagged 3 months and 1.1% NCREIF Timberland Index.

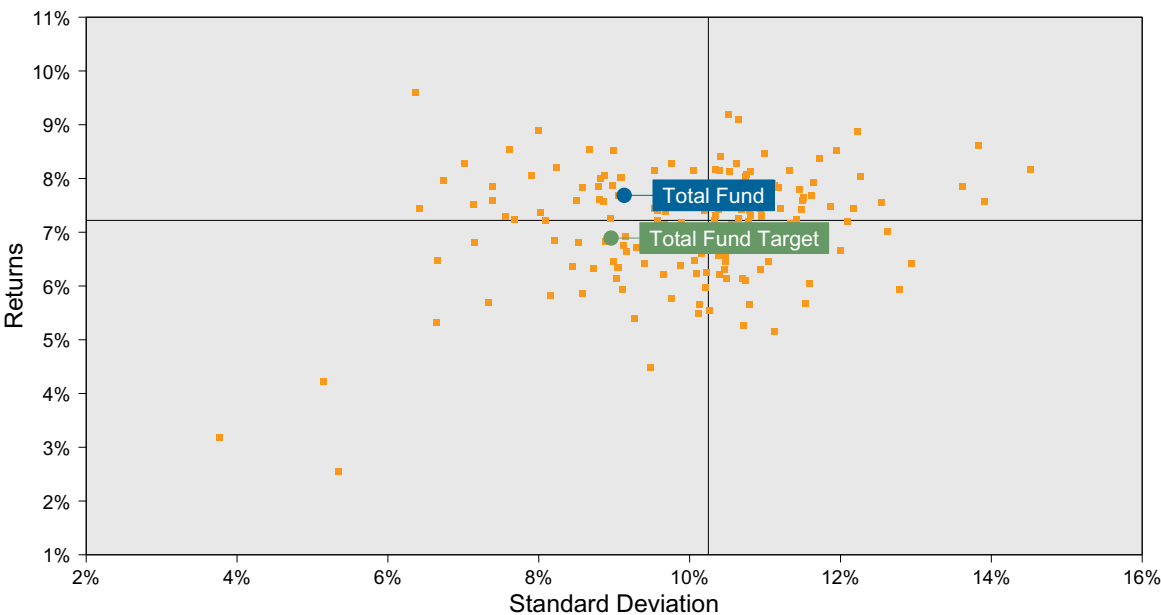
## Cumulative Performance Relative to Target

The first chart below illustrates the cumulative performance of the Total Fund relative to the cumulative performance of the Fund's Target Asset Mix. The Target Mix is assumed to be rebalanced each quarter with no transaction costs. The second chart below shows the return and the risk of the Total Fund and the Target Mix, contrasted with the returns and risks of the funds in the Callan Public Fund Sponsor Database.

### Cumulative Returns Actual vs Target



### Ten Year Annualized Risk vs Return



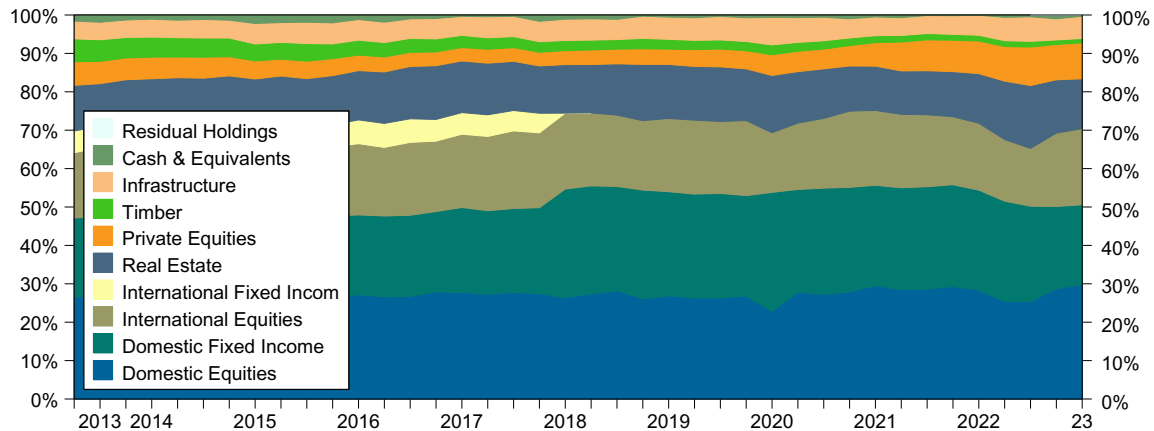
Squares represent membership of the Callan Public Fund Sponsor Database

\* Current Quarter Target = 25.8% Russell 1000 Index, 20.7% MSCI ACWI xUS IMI, 16.0% Blmbg Aggregate, 11.0% NCREIF Total Index, 7.0% Blmbg HY Corp 2% Iss Cap, 7.0% Private Equity, 4.5% Russell 2000 Index, 3.4% NCREIF NFI-ODCE Eq Wt Net, 3.4% CPI All Urban Cons lagged 3 months and 1.1% NCREIF Timberland Index.

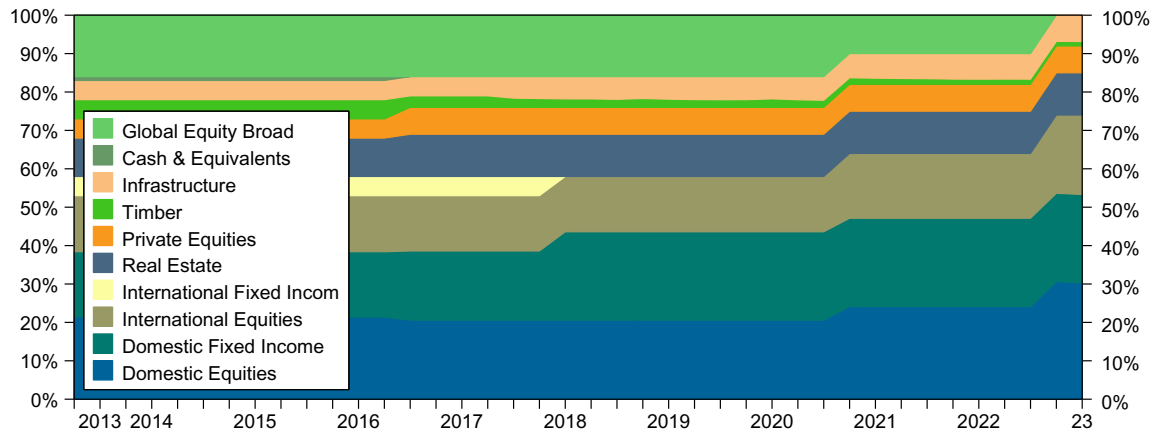
## Actual vs Target Historical Asset Allocation

The Historical asset allocation for a fund is by far the largest factor explaining its performance. The charts below show the fund's historical actual asset allocation, the fund's historical target asset allocation, and the historical asset allocation of the average fund in the Callan Public Fund Sponsor Database.

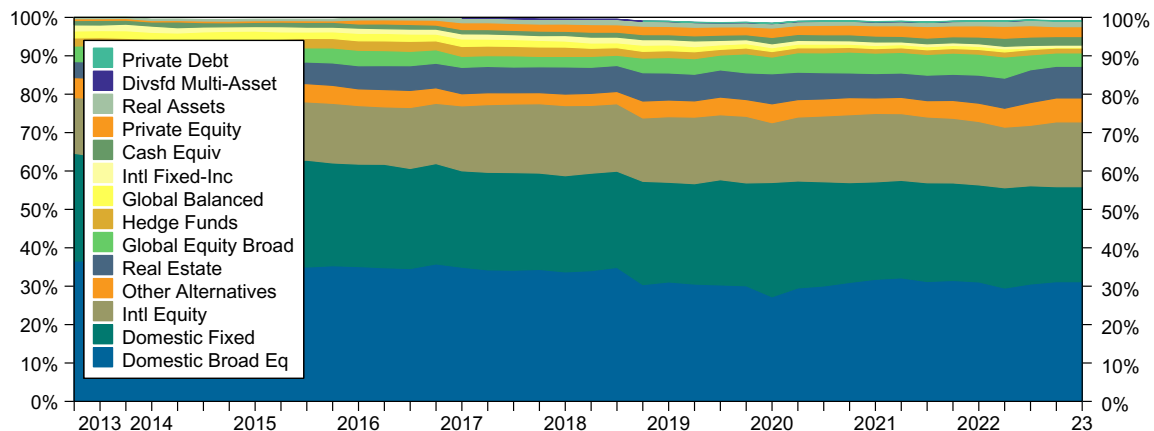
### Actual Historical Asset Allocation



### Target Historical Asset Allocation



### Average Callan Public Fund Sponsor Database Historical Asset Allocation

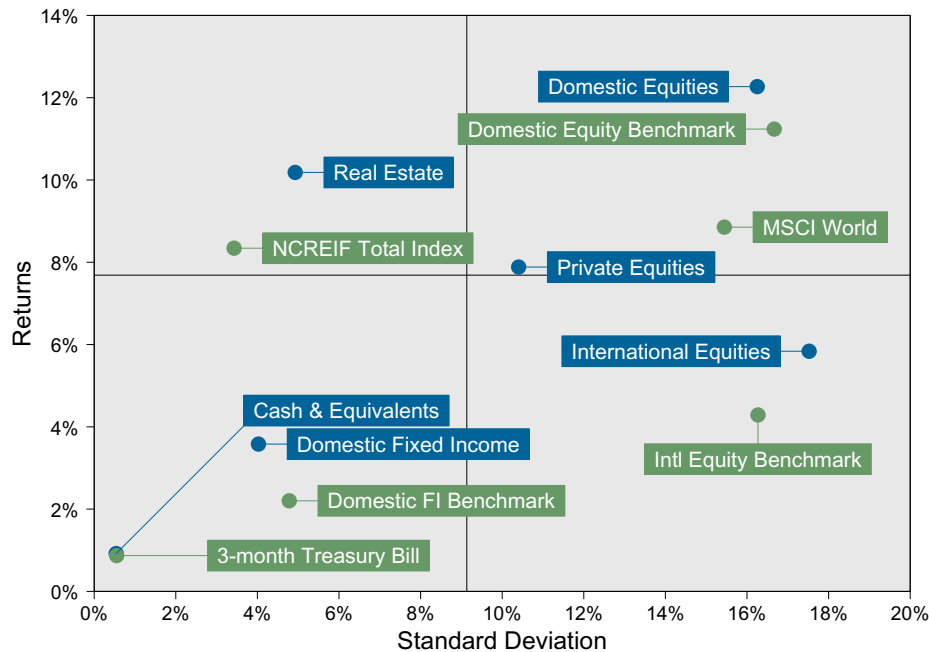


\* Current Quarter Target = 25.8% Russell 1000 Index, 20.7% MSCI ACWI xUS IMI, 16.0% Blmbg Aggregate, 11.0% NCREIF Total Index, 7.0% Blmbg HY Corp 2% Iss Cap, 7.0% Private Equity, 4.5% Russell 2000 Index, 3.4% NCREIF NFI-ODCE Eq Wt Net, 3.4% CPI All Urban Cons lagged 3 months and 1.1% NCREIF Timberland Index.

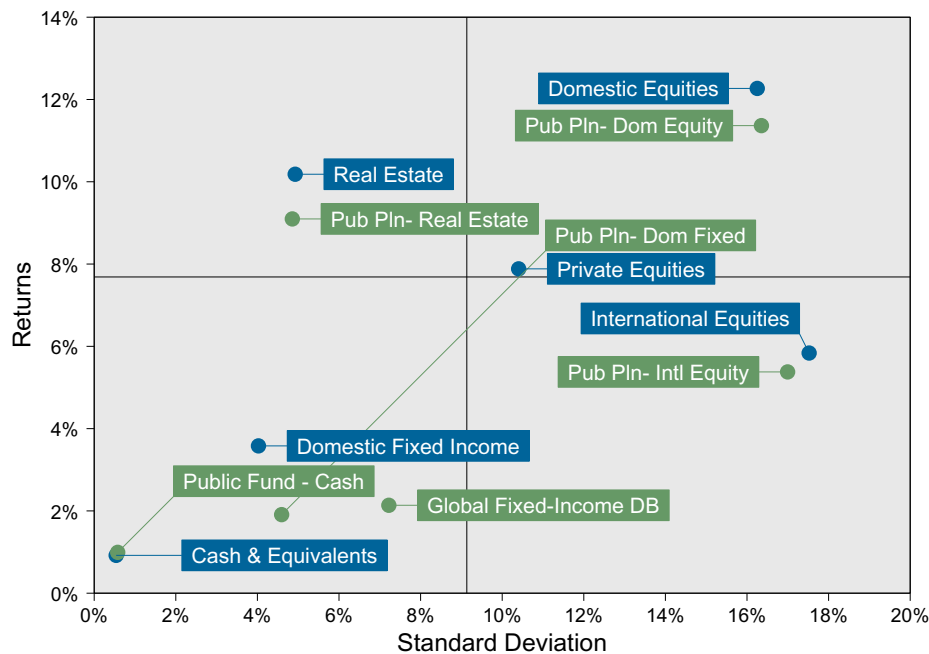
## Asset Class Risk and Return

The charts below show the ten year annualized risk and return for each asset class component of the Total Fund. The first graph contrasts these values with those of the appropriate index for each asset class. The second chart contrasts them with the risk and return of the median portfolio in each of the appropriate CAI comparative databases. In each case, the crosshairs on the chart represent the return and risk of the Total Fund.

Ten Year Annualized Risk vs Return  
Asset Classes vs Benchmark Indices



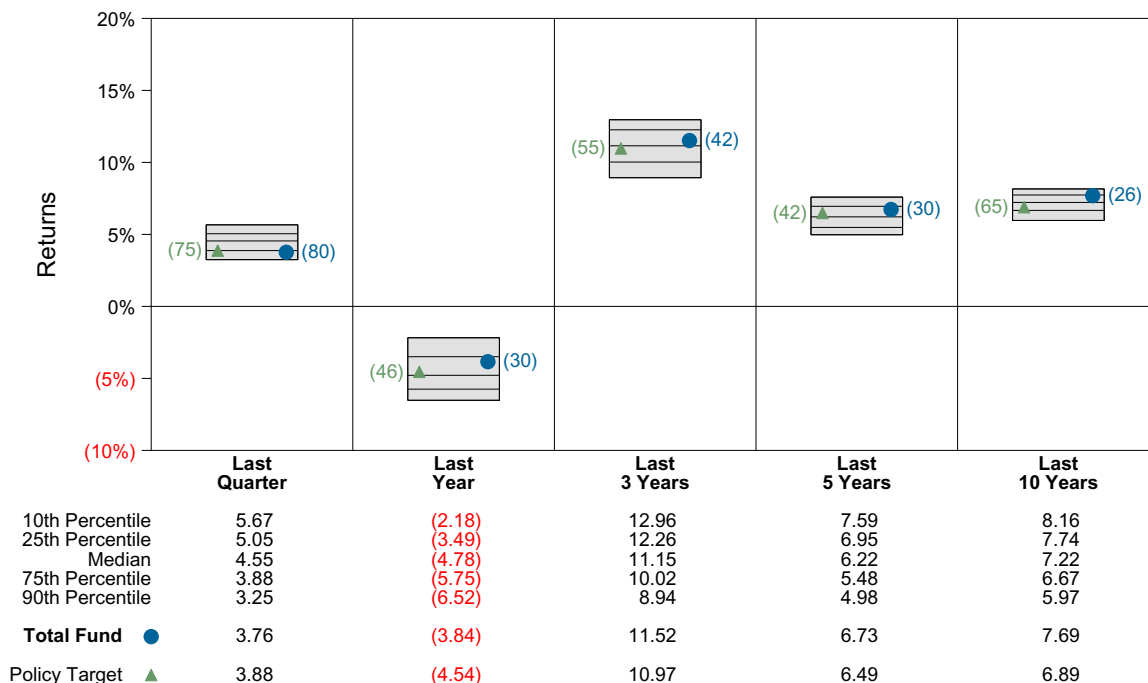
Ten Year Annualized Risk vs Return  
Asset Classes vs Asset Class Median



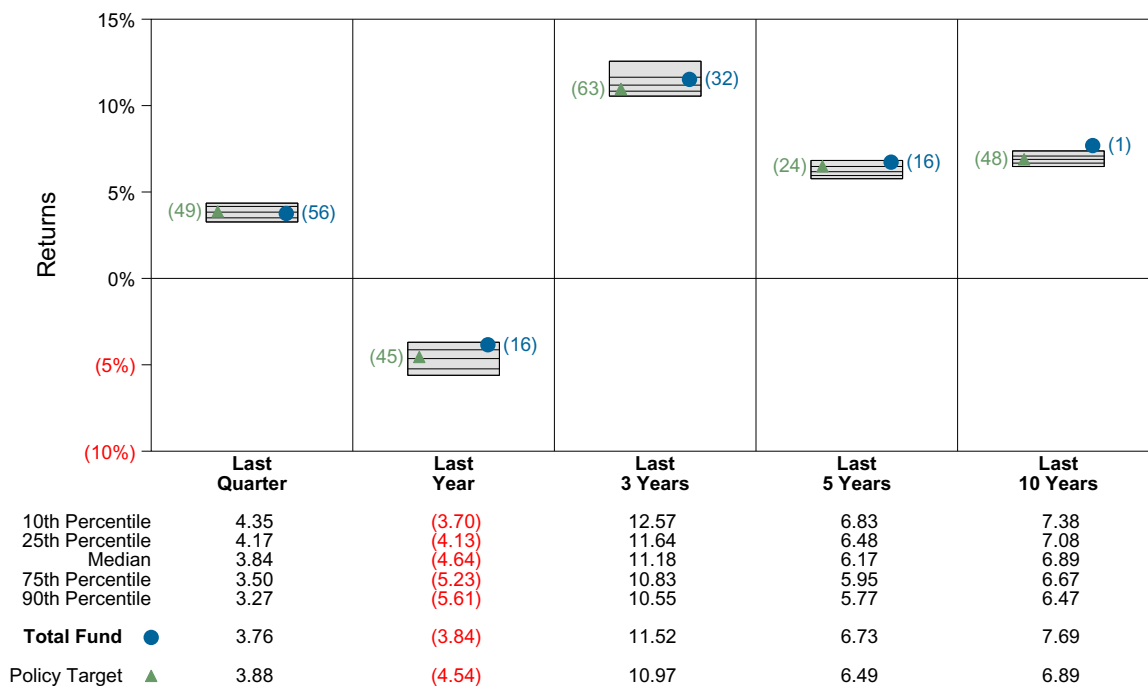
## Total Fund Ranking

The first two charts show the ranking of the Total Fund's performance relative to that of the Callan Public Fund Sponsor Database for periods ended March 31, 2023. The first chart is a standard unadjusted ranking. In the second chart each fund in the database is adjusted to have the same historical asset allocation as that of the Total Fund.

### Callan Public Fund Sponsor Database



### Asset Allocation Adjusted Ranking



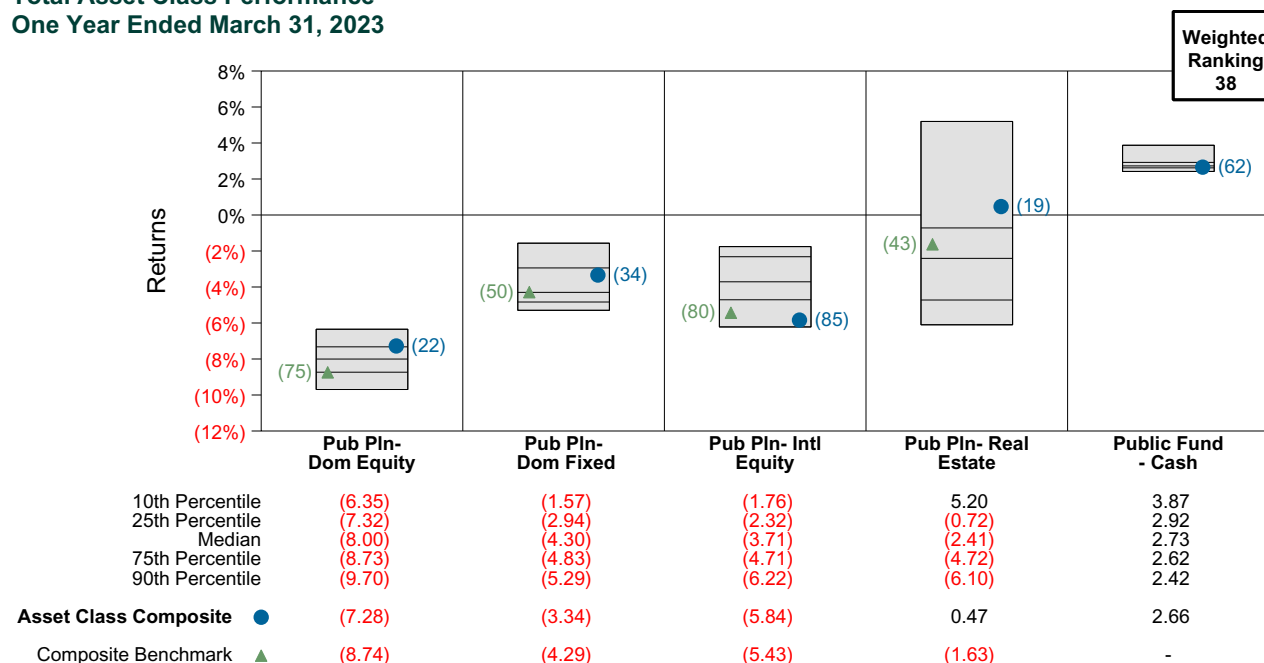
\* Current Quarter Target = 25.8% Russell 1000 Index, 20.7% MSCI ACWI xUS IMI, 16.0% Blmbg Aggregate, 11.0% NCREIF Total Index, 7.0% Blmbg HY Corp 2% Iss Cap, 7.0% Private Equity, 4.5% Russell 2000 Index, 3.4% NCREIF NFI-ODCE Eq Wt Net, 3.4% CPI All Urban Cons lagged 3 months and 1.1% NCREIF Timberland Index.



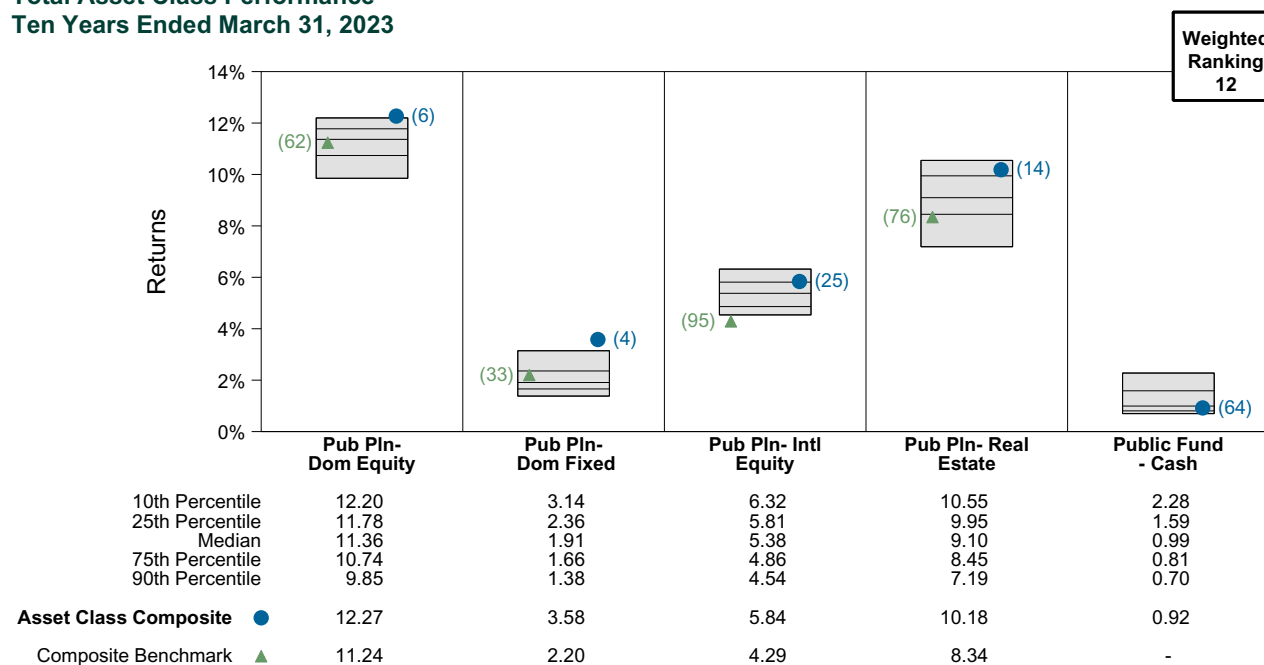
## Asset Class Rankings

The charts below show the rankings of each asset class component of the Total Fund relative to appropriate comparative databases. In the upper right corner of each graph is the weighted average of the rankings across the different asset classes. The weights of the fund's actual asset allocation are used to make this calculation. The weighted average ranking can be viewed as a measure of the fund's overall success in picking managers and structuring asset classes.

### Total Asset Class Performance One Year Ended March 31, 2023



### Total Asset Class Performance Ten Years Ended March 31, 2023



\* Current Quarter Target = 25.8% Russell 1000 Index, 20.7% MSCI ACWI xUS IMI, 16.0% Blmbg Aggregate, 11.0% NCREIF Total Index, 7.0% Blmbg HY Corp 2% Iss Cap, 7.0% Private Equity, 4.5% Russell 2000 Index, 3.4% NCREIF NFI-ODCE Eq Wt Net, 3.4% CPI All Urban Cons lagged 3 months and 1.1% NCREIF Timberland Index.

## Asset Class Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of March 31, 2023, with the distribution as of December 31, 2022. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

### Asset Class Allocation

	March 31, 2023				December 31, 2022	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
<b>Global Equities</b>	<b>\$2,249,117,121</b>	<b>59.03%</b>	<b>\$17,403,299</b>	<b>\$127,514,644</b>	<b>\$2,104,199,177</b>	<b>57.00%</b>
<b>Public Equities</b>	<b>\$1,892,380,061</b>	<b>49.66%</b>	<b>\$1,794,698</b>	<b>\$126,269,805</b>	<b>\$1,764,315,559</b>	<b>47.80%</b>
<b>World Equities</b>	<b>\$31,174</b>	<b>0.00%</b>	<b>\$(6,969)</b>	<b>\$(1,962)</b>	<b>\$40,104</b>	<b>0.00%</b>
<b>Total Domestic Equity</b>	<b>\$1,136,466,582</b>	<b>29.83%</b>	<b>\$1,535,034</b>	<b>\$75,737,776</b>	<b>\$1,059,193,772</b>	<b>28.69%</b>
Large Cap	965,610,689	25.34%	1,353,491	64,469,215	899,787,983	24.38%
Small Cap	170,855,893	4.48%	181,543	11,268,561	159,405,789	4.32%
<b>Total International Equity</b>	<b>\$755,882,306</b>	<b>19.84%</b>	<b>\$266,633</b>	<b>\$50,533,991</b>	<b>\$705,081,682</b>	<b>19.10%</b>
International All Cap	289,297,624	7.59%	47,123	20,658,435	268,592,067	7.28%
Developed Intl Large Cap	289,976,138	7.61%	245,501	22,237,214	267,493,423	7.25%
Developed Intl Small Cap	50,059,552	1.31%	(8,208)	2,435,800	47,631,960	1.29%
Emerging Markets	126,548,992	3.32%	(17,783)	5,202,542	121,364,232	3.29%
<b>Private Equities</b>	<b>\$356,737,059</b>	<b>9.36%</b>	<b>\$15,608,601</b>	<b>\$1,244,840</b>	<b>\$339,883,618</b>	<b>9.21%</b>
<b>Global Fixed Income</b>	<b>\$790,862,057</b>	<b>20.76%</b>	<b>\$(21,118,904)</b>	<b>\$20,620,802</b>	<b>\$791,360,160</b>	<b>21.44%</b>
<b>Domestic Fixed Income</b>	<b>\$790,862,057</b>	<b>20.76%</b>	<b>\$(21,118,904)</b>	<b>\$20,620,802</b>	<b>\$791,360,160</b>	<b>21.44%</b>
Investment Grade	547,316,953	14.36%	(20,557,256)	16,279,432	551,594,776	14.94%
Below Investment Grade	243,545,105	6.39%	(561,648)	4,341,369	239,765,384	6.50%
<b>Global Real Assets</b>	<b>\$757,897,872</b>	<b>19.89%</b>	<b>\$8,432,106</b>	<b>\$(9,895,186)</b>	<b>\$759,360,952</b>	<b>20.57%</b>
<b>Real Estate</b>	<b>\$493,745,823</b>	<b>12.96%</b>	<b>\$2,459,772</b>	<b>\$(21,400,882)</b>	<b>\$512,686,933</b>	<b>13.89%</b>
<b>Other Real Assets</b>	<b>\$264,152,049</b>	<b>6.93%</b>	<b>\$5,972,334</b>	<b>\$11,505,695</b>	<b>\$246,674,020</b>	<b>6.68%</b>
Infrastructure	220,603,328	5.79%	6,933,146	10,424,718	203,245,464	5.51%
Timber	43,548,721	1.14%	(960,812)	1,080,977	43,428,556	1.18%
<b>Cash</b>	<b>\$12,046,692</b>	<b>0.32%</b>	<b>\$(24,253,216)</b>	<b>\$318,491</b>	<b>\$35,981,417</b>	<b>0.97%</b>
<b>Residual Holdings</b>	<b>\$367,830</b>	<b>0.01%</b>	<b>\$18</b>	<b>\$2,854</b>	<b>\$364,959</b>	<b>0.01%</b>
<b>Total Fund</b>	<b>\$3,810,291,572</b>	<b>100.0%</b>	<b>\$(19,536,697)</b>	<b>\$138,561,604</b>	<b>\$3,691,266,665</b>	<b>100.0%</b>

PLEASE REFER TO PAGES 29-30 FOR INVESTMENT MANAGER LEVEL ASSET ALLOCATION.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended March 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended March 31, 2023

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
<b>Global Equities</b>					
Gross	6.05%	(6.10%)	17.57%	7.90%	9.22%
Net	6.02%	(6.33%)	17.28%	7.65%	8.94%
Weighted Benchmark	5.95%	(6.72%)	16.58%	8.13%	8.69%
<b>Public Equities</b>					
Gross	7.16%	(6.36%)	16.92%	-	-
Net	7.13%	(6.63%)	16.59%	-	-
Weighted Benchmark	6.70%	(7.39%)	15.87%	-	-
<b>Total Domestic Equity</b>					
Gross	7.15%	(7.28%)	19.49%	11.18%	12.27%
Net	7.13%	(7.50%)	19.23%	10.96%	12.06%
Weighted Benchmark	6.79%	(8.74%)	18.67%	9.64%	11.24%
<b>Large Cap Equity</b>					
Gross	7.16%	(8.44%)	19.88%	12.38%	13.17%
Net	7.15%	(8.60%)	19.72%	12.24%	13.02%
Benchmark(1)	7.46%	(8.39%)	18.55%	10.87%	12.01%
<b>Small Cap Equity</b>					
Gross	7.07%	(1.86%)	17.88%	7.12%	9.10%
Net	7.02%	(2.41%)	17.18%	6.58%	8.66%
Russell 2000 Index	2.74%	(11.61%)	17.51%	4.71%	8.04%
<b>Total International Equity</b>					
Gross	7.17%	(5.84%)	13.34%	3.23%	5.84%
Net	7.12%	(6.08%)	13.00%	2.98%	5.60%
MSCI ACWI xUS IMI(2)	6.56%	(5.43%)	11.86%	2.55%	4.29%
<b>International All Cap</b>					
Gross	7.69%	-	-	-	-
Net	7.62%	-	-	-	-
MSCI ACWI xUS IMI	6.56%	(5.84%)	12.20%	2.35%	4.28%
<b>Developed Intl Large Cap</b>					
Gross	8.31%	-	-	-	-
Net	8.31%	-	-	-	-
MSCI World xUS	8.02%	(2.74%)	13.49%	3.80%	4.91%
<b>Developed Intl Small Cap</b>					
Gross	5.11%	-	-	-	-
Net	5.01%	-	-	-	-
MSCI World xUS Small	4.99%	(10.13%)	13.43%	1.54%	5.54%
<b>Emerging Markets</b>					
Gross	4.29%	(15.32%)	8.82%	(0.54%)	2.94%
Net	4.20%	(15.61%)	8.20%	(0.88%)	2.71%
Benchmark(4)	3.96%	(10.70%)	7.83%	(0.91%)	2.00%
<b>Private Equities</b>					
Net	0.37%	(3.37%)	19.61%	13.88%	7.87%

(1) S&P 500 Index through 12/31/2011 and the Russell 1000 Index thereafter.

(2) Prior to 10/1/2022, the benchmark is calculated based on the approved investment policy asset allocation target.

(3) 50% Hedged EAFE through 3/31/2011, MSCI EAFE through 6/30/2016; MSCI World ex-US thereafter.

(4) MSCI Emerging Mkts Idx (Gross) through 6/30/2011 and MSCI Emerging Mkts Idx Net thereafter.

PLEASE REFER TO PAGES 31-35 FOR INVESTMENT MANAGER LEVEL RETURNS.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended March 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended March 31, 2023

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
<b>Global Fixed Income</b>					
Gross	2.63%	(3.34%)	0.81%	2.77%	3.34%
Net	2.61%	(3.45%)	0.68%	2.63%	3.15%
Weighted Benchmark	3.15%	(4.29%)	(0.17%)	1.67%	2.02%
<b>Domestic Fixed Income</b>					
Gross	2.63%	(3.34%)	0.81%	2.77%	3.58%
Net	2.61%	(3.45%)	0.68%	2.63%	3.41%
Weighted Benchmark	3.15%	(4.29%)	(0.17%)	1.67%	2.20%
<b>Inv. Grade Fixed Income</b>					
Gross	2.97%	(5.68%)	(1.61%)	1.55%	2.57%
Net	2.96%	(5.79%)	(1.71%)	1.45%	2.46%
Blmbg Aggregate Index	2.96%	(4.78%)	(2.77%)	0.91%	1.36%
<b>Below Inv. Grade Fixed Income</b>					
Gross	1.81%	2.19%	6.90%	5.65%	5.93%
Net	1.79%	2.06%	6.72%	5.45%	5.61%
Blmbg HY Corp 2% Issue	3.57%	(3.35%)	5.88%	3.19%	4.09%
<b>Global Real Assets</b>					
Gross	(1.30%)	2.78%	7.97%	7.39%	8.02%
Net	(1.42%)	2.43%	7.55%	6.94%	7.59%
Weighted Benchmark	(1.58%)	(17.53%)	0.26%	2.06%	4.42%
<b>Real Estate</b>					
Gross	(4.17%)	0.47%	7.88%	7.68%	10.18%
Net	(4.29%)	0.06%	7.37%	7.14%	9.65%
NCREIF Total Index	(1.81%)	(1.63%)	7.15%	6.71%	8.34%
<b>Other Real Assets</b>					
Gross	4.62%	7.50%	8.04%	-	-
Net	4.51%	7.27%	7.77%	-	-
Weighted Benchmark	(1.26%)	2.67%	6.72%	-	-
<b>Infrastructure</b>					
Gross	5.05%	10.18%	9.72%	7.97%	7.04%
Net	4.92%	9.89%	9.35%	7.57%	6.55%
Benchmark(1)	(1.76%)	1.28%	6.56%	5.36%	3.26%
<b>Timber</b>					
Net	2.51%	(3.60%)	2.35%	3.25%	1.64%
NCREIF Timberland Index	1.75%	11.31%	8.09%	5.54%	5.82%
<b>Cash &amp; Equivalents - Net</b>	<b>1.14%</b>	<b>2.66%</b>	<b>0.97%</b>	<b>1.41%</b>	<b>0.92%</b>
3-month Treasury Bill	1.07%	2.50%	0.89%	1.41%	0.87%
<b>Total Fund</b>					
Gross	3.76%	(3.84%)	11.52%	6.73%	7.69%
Net	3.72%	(4.07%)	11.24%	6.47%	7.40%
Target*	3.88%	(4.54%)	10.97%	6.49%	6.89%

\* Current Quarter Target = 25.8% Russell 1000 Index, 20.7% MSCI ACWI xUS IML, 16.0% Blmbg Aggregate, 11.0% NCREIF Total Index, 7.0% Blmbg HY Corp 2% Iss Cap, 7.0% Private Equity, 4.5% Russell 2000 Index, 3.4% NCREIF NFI-ODCE Eq Wt Net, 3.4% CPI All Urban Cons lagged 3 months and 1.1% NCREIF Timberland Index.

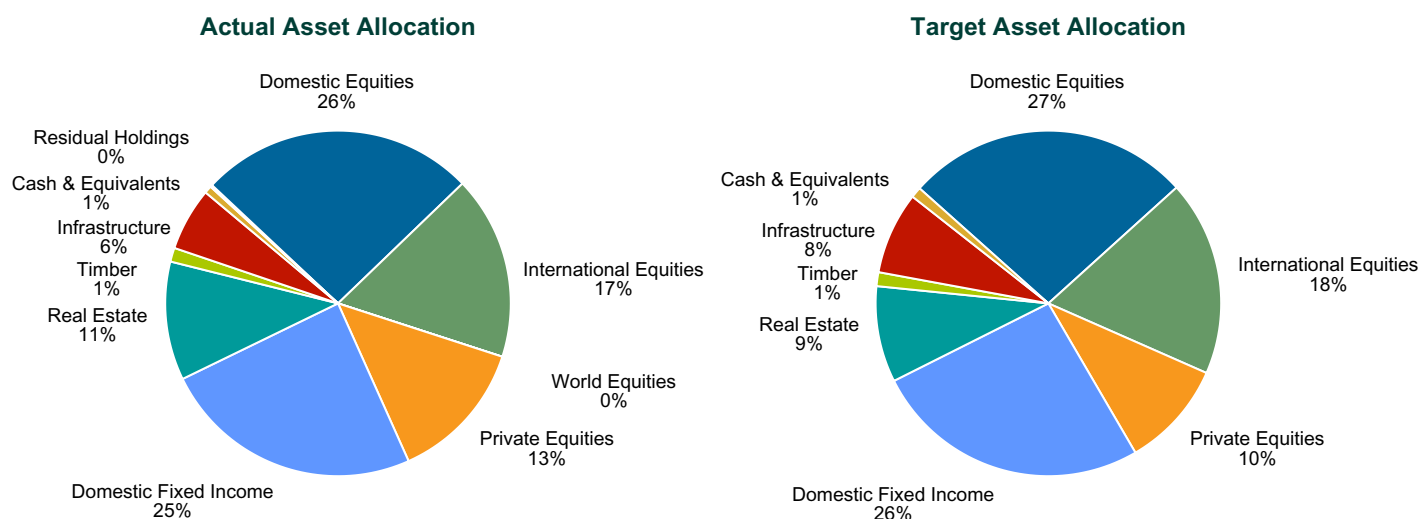
(1) CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.

PLEASE REFER TO PAGES 31-35 FOR INVESTMENT MANAGER LEVEL RETURNS.



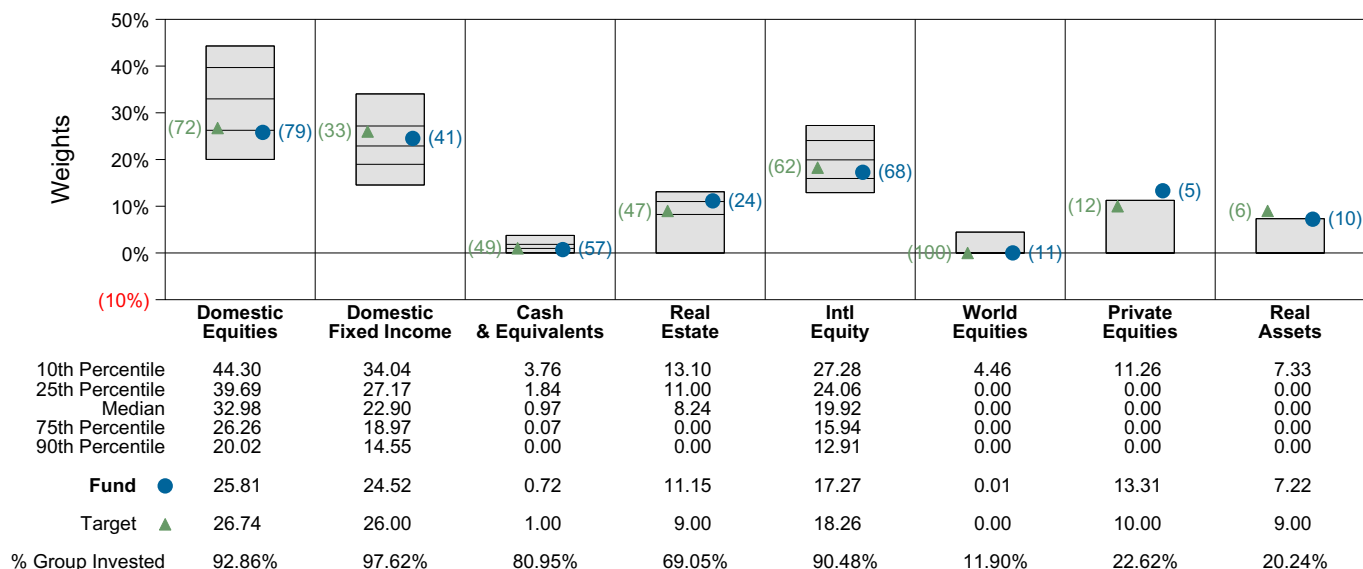
## Actual vs Target Asset Allocation As of March 31, 2023

The top left chart shows the Fund's asset allocation as of March 31, 2023. The top right chart shows the Fund's target asset allocation as outlined in the investment policy statement. The bottom chart ranks the fund's asset allocation and the target allocation versus the Callan Public Fund Sponsor Database.



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equities	784,501	25.8%	26.7%	(0.9%)	(28,464)
International Equities	521,562	17.2%	18.3%	(1.1%)	(33,513)
World Equities	284	0.0%	0.0%	0.0%	284
Private Equities	404,682	13.3%	10.0%	3.3%	100,673
Domestic Fixed Income	745,303	24.5%	26.0%	(1.5%)	(45,120)
Real Estate	338,963	11.1%	9.0%	2.1%	65,355
Timber	38,873	1.3%	1.3%	0.0%	0
Infrastructure	180,717	5.9%	7.7%	(1.8%)	(54,018)
Cash & Equivalents	21,858	0.7%	1.0%	(0.3%)	(8,542)
Residual Holdings	3,346	0.1%	0.0%	0.1%	3,346
Total	3,040,089	100.0%	100.0%		

### Asset Class Weights vs Callan Public Fund Sponsor Database

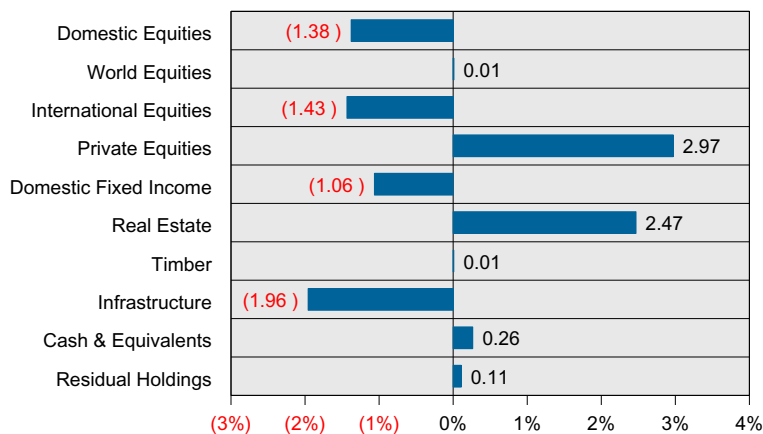


\* Current Quarter Target = 22.7% Russell 1000 Index, 18.3% MSCI ACWI xUS IMI, 18.0% Blmbg Aggregate, 10.0% Private Equity, 9.0% NCREIF Total Index, 8.0% Blmbg HY Corp 2% Iss Cap, 4.0% Russell 2000 Index, 3.9% CPI All Urban Cons lagged 3 months, 3.9% NCREIF NFI-ODCE Eq Wt Net, 1.3% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

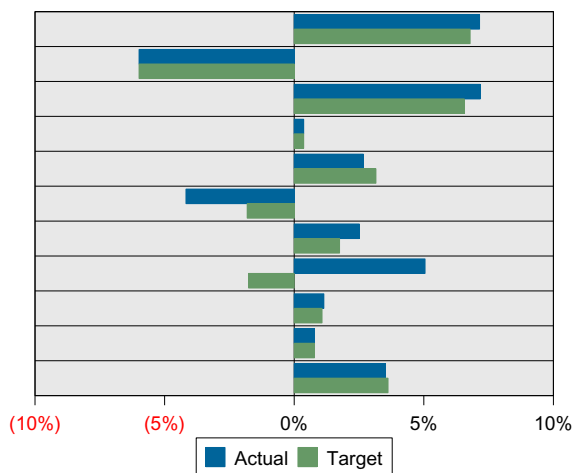
## Quarterly Total Fund Relative Attribution - March 31, 2023

The following analysis approaches Total Fund Attribution from the perspective of relative return. Relative return attribution separates and quantifies the sources of total fund excess return relative to its target. This excess return is separated into two relative attribution effects: Asset Allocation Effect and Manager Selection Effect. The Asset Allocation Effect represents the excess return due to the actual total fund asset allocation differing from the target asset allocation. Manager Selection Effect represents the total fund impact of the individual managers excess returns relative to their benchmarks.

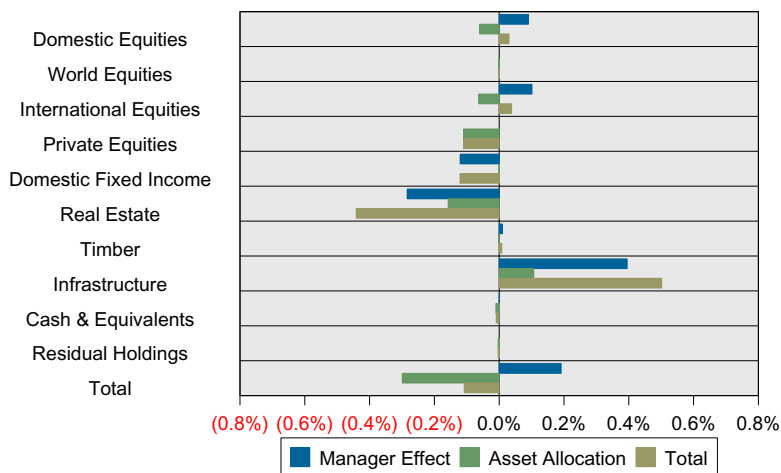
### Asset Class Under or Overweighting



### Actual vs Target Returns



### Relative Attribution by Asset Class



### Relative Attribution Effects for Quarter ended March 31, 2023

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	25%	27%	7.15%	6.79%	0.09%	(0.06%)	0.03%
World Equities	0%	0%	(5.99%)	(5.99%)	0.00%	(0.00%)	(0.00%)
International Equities	17%	18%	7.18%	6.56%	0.10%	(0.06%)	0.04%
Private Equities	13%	10%	0.37%	0.37%	0.00%	(0.11%)	(0.11%)
Domestic Fixed Income	25%	26%	2.67%	3.15%	(0.12%)	(0.00%)	(0.12%)
Real Estate	11%	9%	(4.18%)	(1.81%)	(0.28%)	(0.16%)	(0.44%)
Timber	1%	1%	2.51%	1.75%	0.01%	(0.00%)	0.01%
Infrastructure	6%	8%	5.05%	(1.76%)	0.40%	0.11%	0.50%
Cash & Equivalents	1%	1%	1.14%	1.07%	0.00%	(0.01%)	(0.01%)
Residual Holdings	0%	0%	0.78%	0.78%	0.00%	(0.00%)	(0.00%)

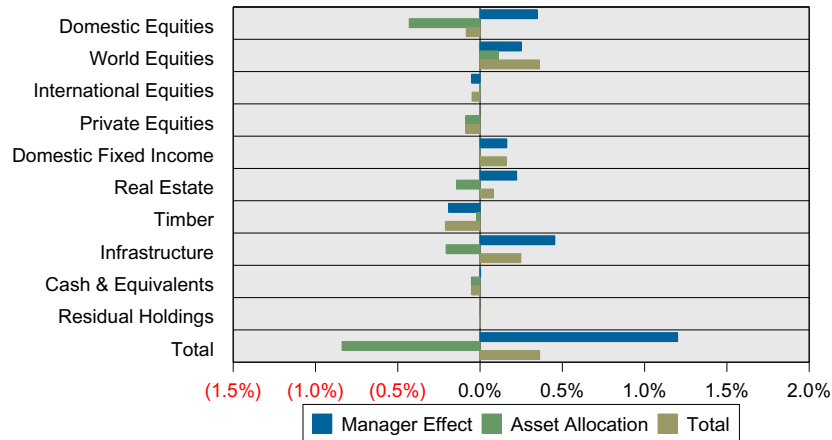
**Total** **3.51% = 3.62% + 0.19% + (0.30%) (0.11%)**

\* Current Quarter Target = 22.7% Russell 1000 Index, 18.3% MSCI ACWI xUS IMI, 18.0% Blmbg Aggregate, 10.0% Private Equity, 9.0% NCREIF Total Index, 8.0% Blmbg HY Corp 2% Iss Cap, 4.0% Russell 2000 Index, 3.9% CPI All Urban Cons lagged 3 months, 3.9% NCREIF NFI-ODCE Eq Wt Net, 1.3% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

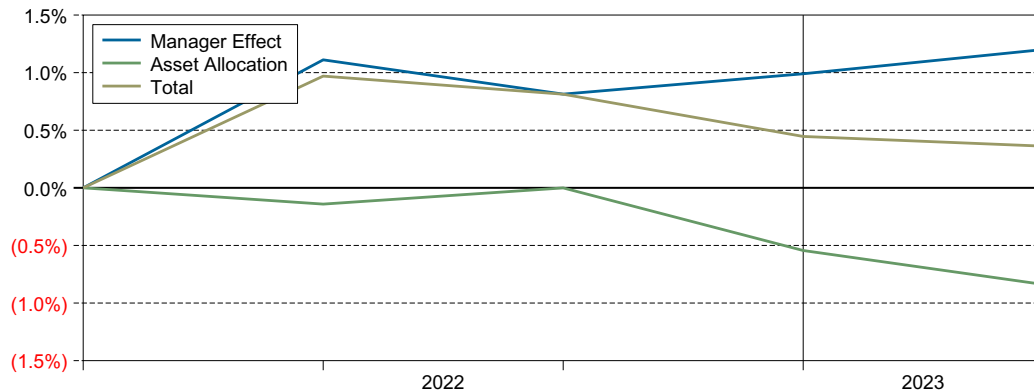
## Cumulative Total Fund Relative Attribution - March 31, 2023

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### One Year Relative Attribution Effects



### Cumulative Relative Attribution Effects



### One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	24%	(7.27%)	(8.74%)	0.35%	(0.43%)	(0.08%)
World Equities	5%	5%	(19.86%)	(21.99%)	0.25%	0.11%	0.36%
International Equities	14%	16%	(5.73%)	(5.43%)	(0.05%)	0.00%	(0.05%)
Private Equities	12%	10%	(3.38%)	(3.38%)	0.00%	(0.09%)	(0.09%)
Domestic Fixed Income	26%	26%	(3.75%)	(4.28%)	0.16%	(0.00%)	0.16%
Real Estate	11%	9%	0.46%	(1.63%)	0.22%	(0.14%)	0.08%
Timber	1%	1%	(3.60%)	11.31%	(0.19%)	(0.02%)	(0.21%)
Infrastructure	6%	8%	10.18%	1.28%	0.45%	(0.21%)	0.25%
Cash & Equivalents	1%	1%	2.82%	2.50%	0.00%	(0.05%)	(0.05%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>(3.88%)</b>	<b>(4.24%)</b>	<b>+ 1.20%</b>	<b>+ (0.84%)</b>	<b>0.36%</b>

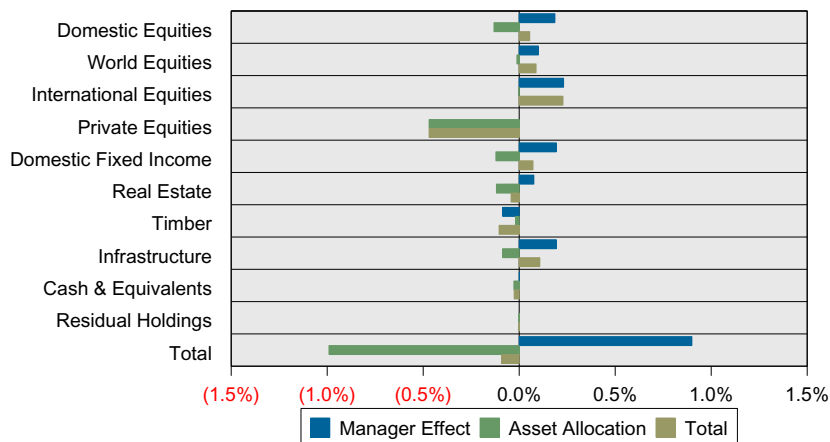
\* Current Quarter Target = 22.7% Russell 1000 Index, 18.3% MSCI ACWI xUS IMI, 18.0% Blmbg Aggregate, 10.0% Private Equity, 9.0% NCREIF Total Index, 8.0% Blmbg HY Corp 2% Iss Cap, 4.0% Russell 2000 Index, 3.9% CPI All Urban Cons lagged 3 months, 3.9% NCREIF NFI-ODCE Eq Wt Net, 1.3% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.



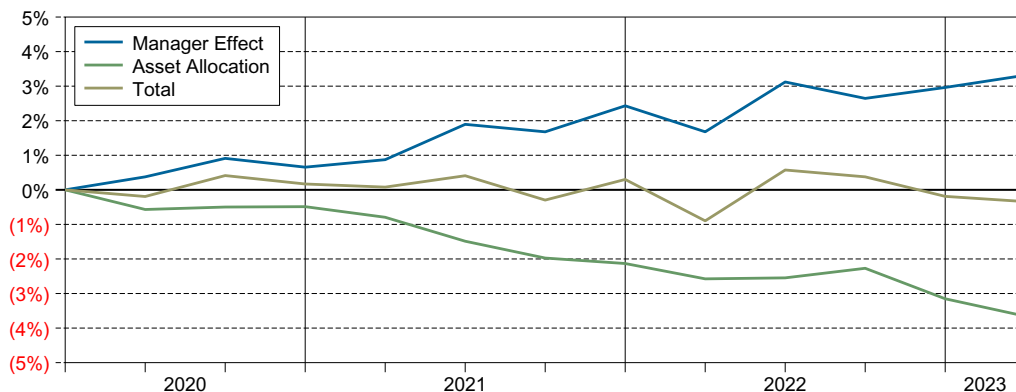
## Cumulative Total Fund Relative Attribution - March 31, 2023

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### Three Year Annualized Relative Attribution Effects



### Cumulative Relative Attribution Effects



### Three Year Annualized Relative Attribution Effects

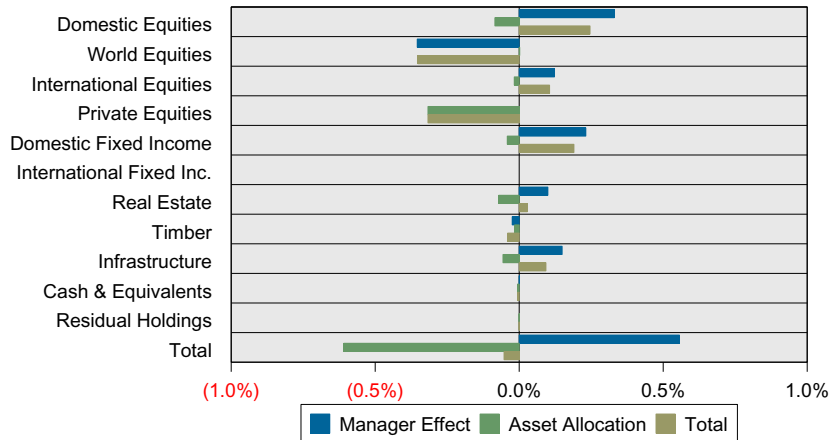
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	22%	19.46%	18.65%	0.19%	(0.13%)	0.05%
World Equities	10%	10%	10.70%	9.78%	0.10%	(0.01%)	0.09%
International Equities	15%	15%	13.28%	11.73%	0.23%	(0.00%)	0.23%
Private Equities	8%	9%	19.61%	19.61%	0.00%	(0.47%)	(0.47%)
Domestic Fixed Income	26%	25%	0.44%	(0.16%)	0.19%	(0.12%)	0.07%
Real Estate	10%	9%	7.88%	7.15%	0.08%	(0.12%)	(0.04%)
Timber	2%	2%	2.35%	8.09%	(0.09%)	(0.02%)	(0.10%)
Infrastructure	5%	7%	9.72%	6.56%	0.19%	(0.09%)	0.11%
Cash & Equivalents	1%	1%	1.02%	0.89%	0.00%	(0.03%)	(0.03%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>11.31%</b>	<b>11.40%</b>	<b>+ 0.90%</b>	<b>+ (0.99%)</b>	<b>(0.09%)</b>

\* Current Quarter Target = 22.7% Russell 1000 Index, 18.3% MSCI ACWI xUS IMI, 18.0% Blmbg Aggregate, 10.0% Private Equity, 9.0% NCREIF Total Index, 8.0% Blmbg HY Corp 2% Iss Cap, 4.0% Russell 2000 Index, 3.9% CPI All Urban Cons lagged 3 months, 3.9% NCREIF NFI-ODCE Eq Wt Net, 1.3% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

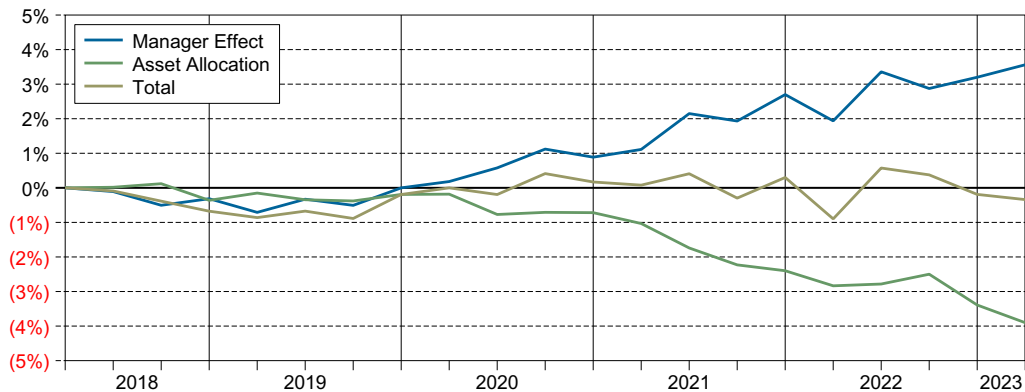
## Cumulative Total Fund Relative Attribution - March 31, 2023

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### Five Year Annualized Relative Attribution Effects



### Cumulative Relative Attribution Effects



### Five Year Annualized Relative Attribution Effects

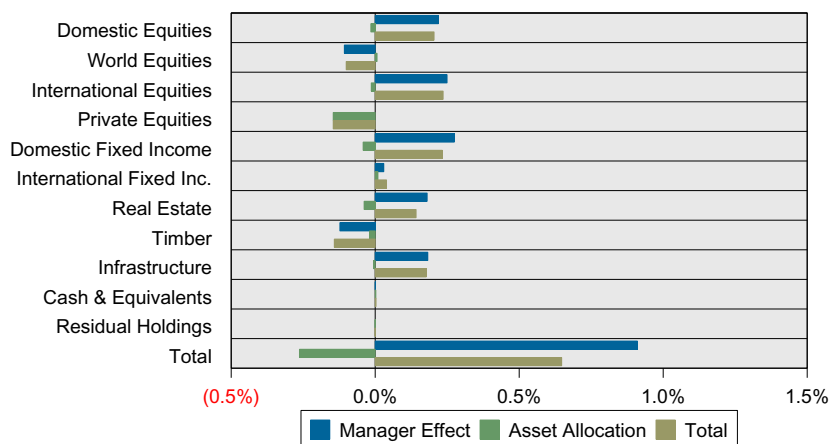
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	22%	11.21%	9.67%	0.33%	(0.08%)	0.25%
World Equities	13%	12%	2.18%	4.28%	(0.35%)	0.00%	(0.35%)
International Equities	15%	15%	3.28%	2.54%	0.12%	(0.02%)	0.11%
Private Equities	7%	8%	13.88%	13.88%	0.00%	(0.32%)	(0.32%)
Domestic Fixed Income	25%	24%	2.49%	1.68%	0.23%	(0.04%)	0.19%
International Fixed Inc.	0%	0%	-	-	0.00%	0.00%	0.00%
Real Estate	10%	10%	7.68%	6.71%	0.10%	(0.07%)	0.03%
Timber	2%	2%	3.25%	5.54%	(0.02%)	(0.06%)	(0.04%)
Infrastructure	5%	7%	7.97%	5.36%	0.15%	(0.06%)	0.09%
Cash & Equivalents	1%	1%	1.45%	1.41%	0.00%	(0.01%)	(0.01%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>6.64%</b>	<b>6.69%</b>	<b>+ 0.56%</b>	<b>+ (0.61%)</b>	<b>(0.05%)</b>

\* Current Quarter Target = 22.7% Russell 1000 Index, 18.3% MSCI ACWI xUS IMI, 18.0% Blmbg Aggregate, 10.0% Private Equity, 9.0% NCREIF Total Index, 8.0% Blmbg HY Corp 2% Iss Cap, 4.0% Russell 2000 Index, 3.9% CPI All Urban Cons lagged 3 months, 3.9% NCREIF NFI-ODCE Eq Wt Net, 1.3% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

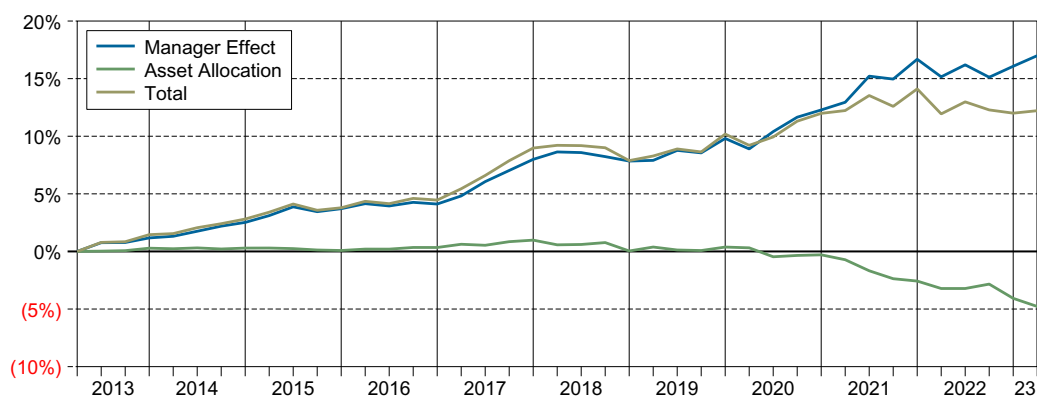
## Cumulative Total Fund Relative Attribution - March 31, 2023

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### Ten Year Annualized Relative Attribution Effects



### Cumulative Relative Attribution Effects



### Ten Year Annualized Relative Attribution Effects

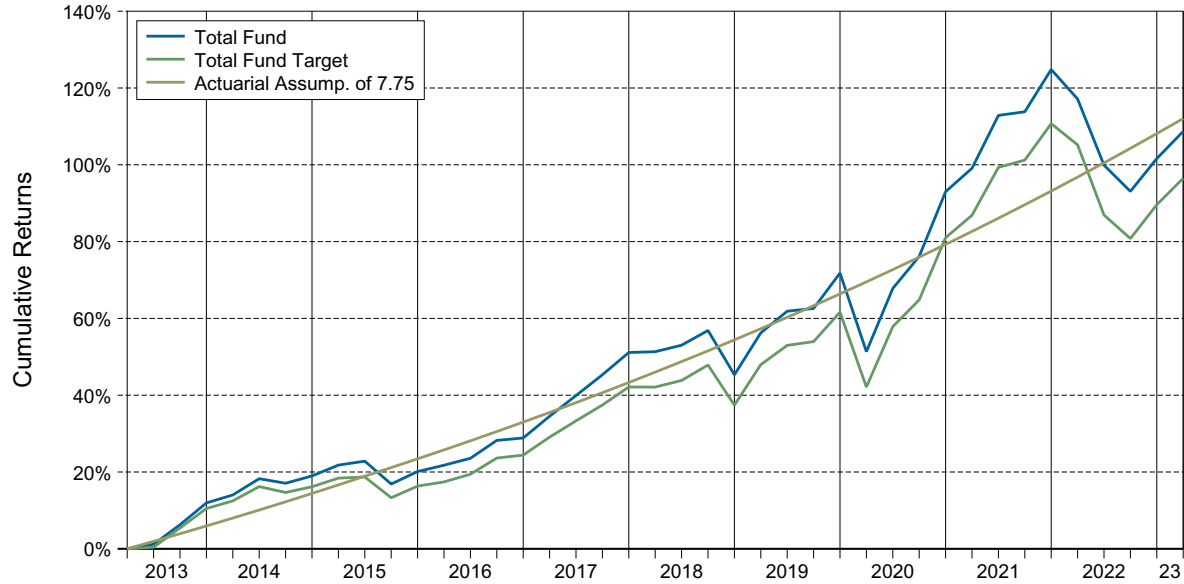
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	22%	12.28%	11.25%	0.22%	(0.02%)	0.20%
World Equities	14%	14%	6.29%	6.96%	(0.11%)	0.01%	(0.10%)
International Equities	15%	15%	5.90%	4.31%	0.25%	(0.01%)	0.24%
Private Equities	5%	7%	7.89%	7.89%	0.00%	(0.15%)	(0.15%)
Domestic Fixed Income	21%	21%	3.40%	2.14%	0.27%	(0.04%)	0.23%
International Fixed Inc.	2%	3%	-	-	0.03%	0.01%	0.04%
Real Estate	10%	10%	10.18%	8.34%	0.18%	(0.04%)	0.14%
Timber	3%	3%	1.64%	5.82%	(0.12%)	(0.02%)	(0.14%)
Infrastructure	5%	6%	7.04%	3.26%	0.18%	(0.01%)	0.18%
Cash & Equivalents	1%	1%	0.94%	0.87%	0.00%	0.00%	0.00%
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>7.63%</b>	<b>6.99%</b>	<b>0.91%</b>	<b>(0.26%)</b>	<b>0.65%</b>

\* Current Quarter Target = 22.7% Russell 1000 Index, 18.3% MSCI ACWI xUS IMI, 18.0% Blmbg Aggregate, 10.0% Private Equity, 9.0% NCREIF Total Index, 8.0% Blmbg HY Corp 2% Iss Cap, 4.0% Russell 2000 Index, 3.9% CPI All Urban Cons lagged 3 months, 3.9% NCREIF NFI-ODCE Eq Wt Net, 1.3% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

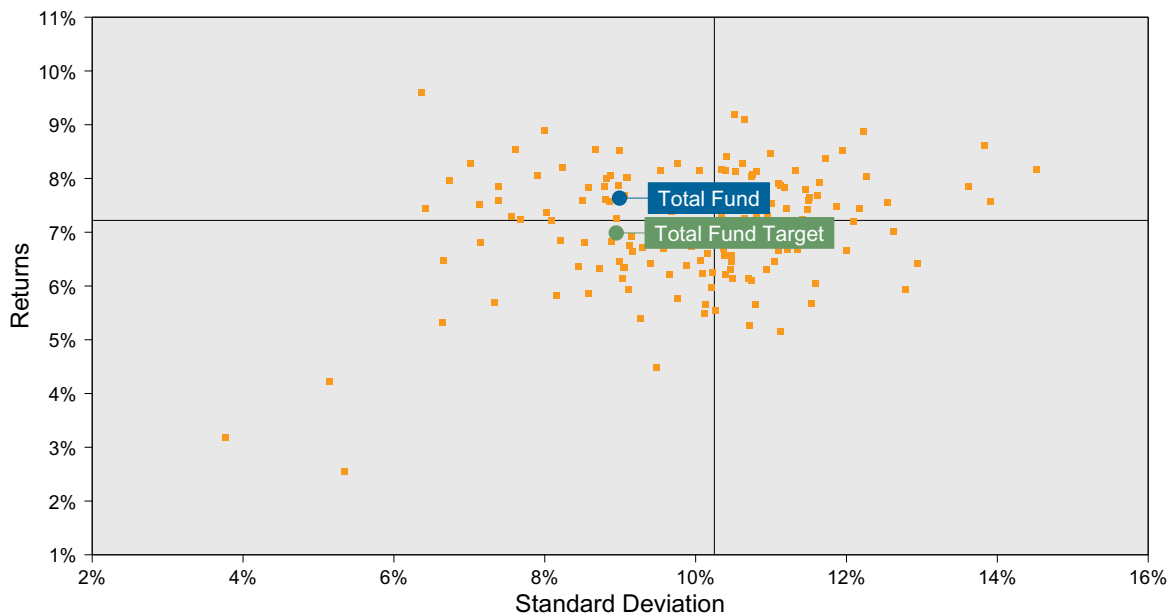
## Cumulative Performance Relative to Target

The first chart below illustrates the cumulative performance of the Total Fund relative to the cumulative performance of the Fund's Target Asset Mix. The Target Mix is assumed to be rebalanced each quarter with no transaction costs. The second chart below shows the return and the risk of the Total Fund and the Target Mix, contrasted with the returns and risks of the funds in the Callan Public Fund Sponsor Database.

### Cumulative Returns Actual vs Target



### Ten Year Annualized Risk vs Return



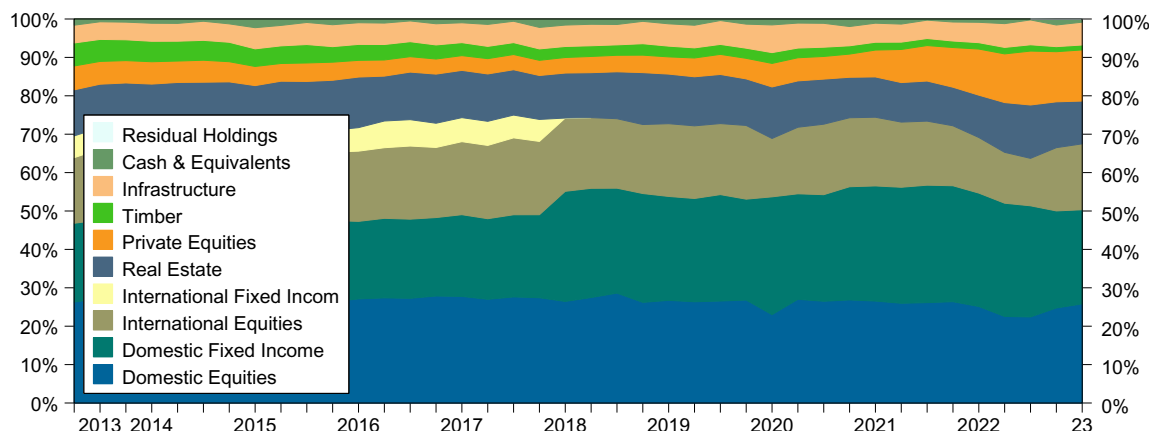
Squares represent membership of the Callan Public Fund Sponsor Database

\* Current Quarter Target = 22.7% Russell 1000 Index, 18.3% MSCI ACWI xUS IMI, 18.0% Blmbg Aggregate, 10.0% Private Equity, 9.0% NCREIF Total Index, 8.0% Blmbg HY Corp 2% Iss Cap, 4.0% Russell 2000 Index, 3.9% CPI All Urban Cons lagged 3 months, 3.9% NCREIF NFI-ODCE Eq Wt Net, 1.3% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

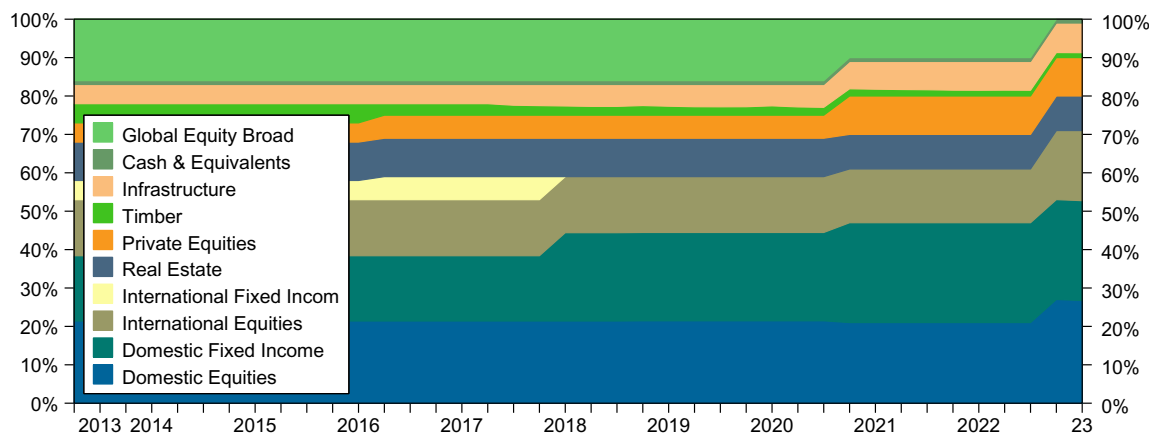
## Actual vs Target Historical Asset Allocation

The Historical asset allocation for a fund is by far the largest factor explaining its performance. The charts below show the fund's historical actual asset allocation, the fund's historical target asset allocation, and the historical asset allocation of the average fund in the Callan Public Fund Sponsor Database.

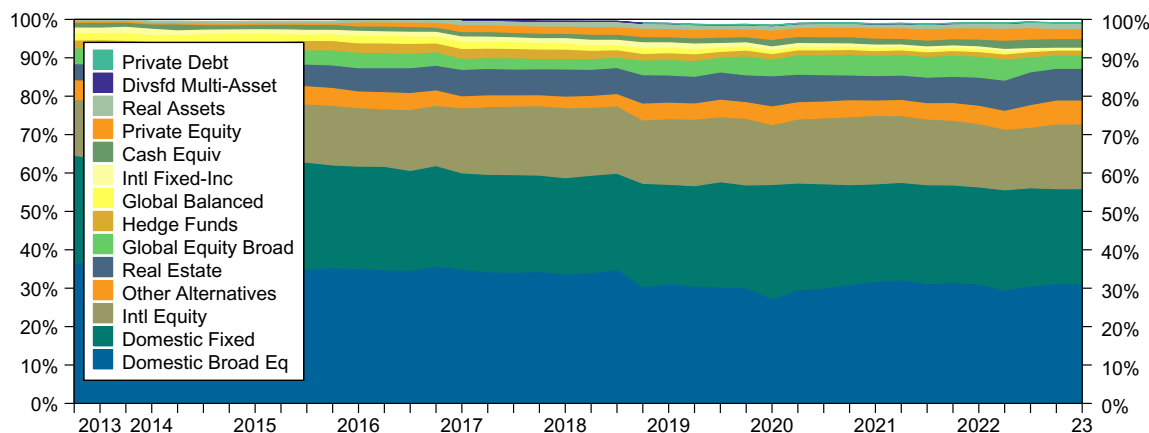
### Actual Historical Asset Allocation



### Target Historical Asset Allocation



### Average Callan Public Fund Sponsor Database Historical Asset Allocation

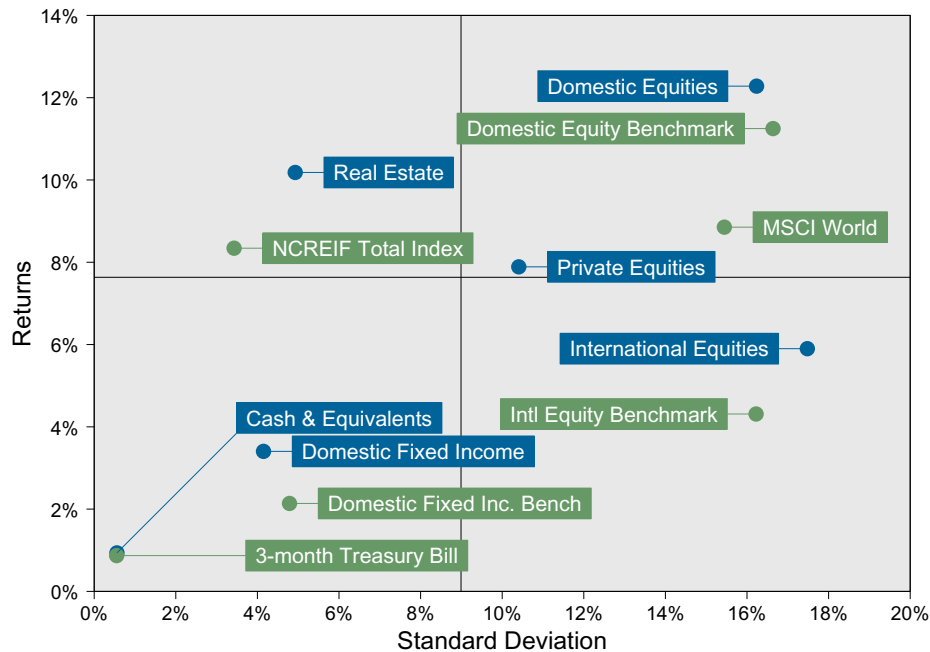


\* Current Quarter Target = 22.7% Russell 1000 Index, 18.3% MSCI ACWI xUS IMI, 18.0% Blmbg Aggregate, 10.0% Private Equity, 9.0% NCREIF Total Index, 8.0% Blmbg HY Corp 2% Iss Cap, 4.0% Russell 2000 Index, 3.9% CPI All Urban Cons lagged 3 months, 3.9% NCREIF NFI-ODCE Eq Wt Net, 1.3% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

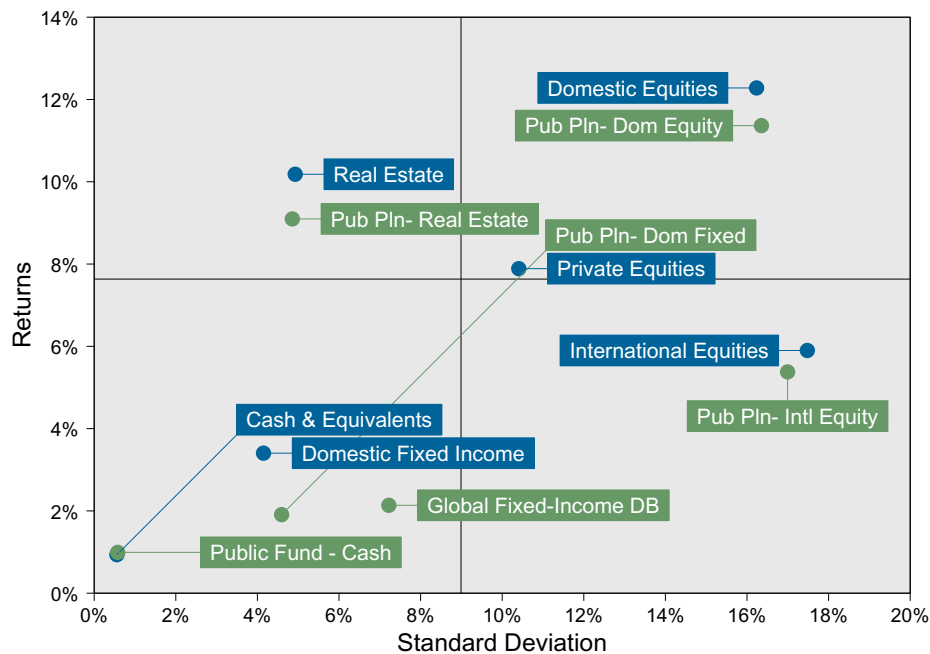
## Asset Class Risk and Return

The charts below show the ten year annualized risk and return for each asset class component of the Total Fund. The first graph contrasts these values with those of the appropriate index for each asset class. The second chart contrasts them with the risk and return of the median portfolio in each of the appropriate CAI comparative databases. In each case, the crosshairs on the chart represent the return and risk of the Total Fund.

Ten Year Annualized Risk vs Return  
Asset Classes vs Benchmark Indices



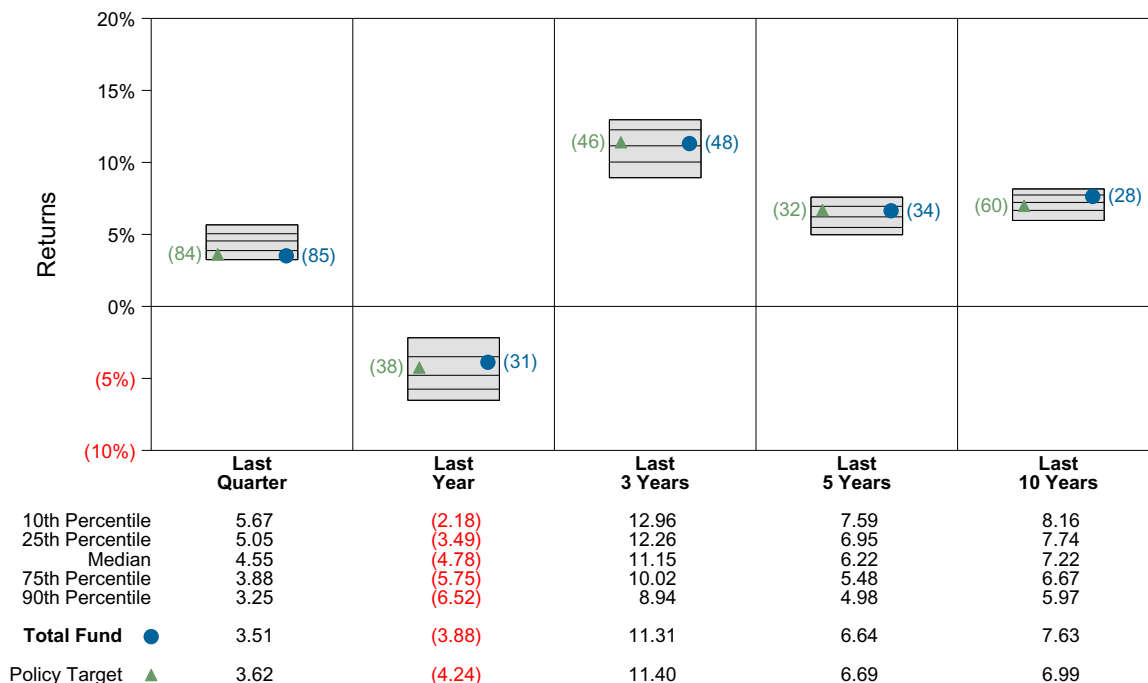
Ten Year Annualized Risk vs Return  
Asset Classes vs Asset Class Median



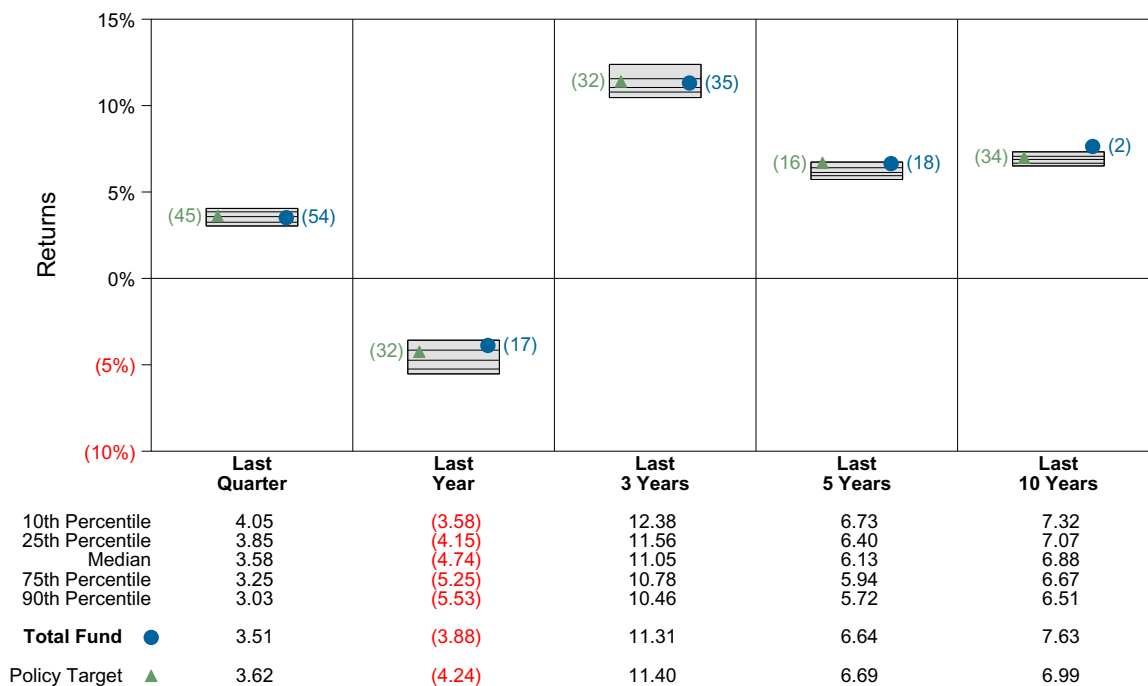
## Total Fund Ranking

The first two charts show the ranking of the Total Fund's performance relative to that of the Callan Public Fund Sponsor Database for periods ended March 31, 2023. The first chart is a standard unadjusted ranking. In the second chart each fund in the database is adjusted to have the same historical asset allocation as that of the Total Fund.

### Callan Public Fund Sponsor Database



### Asset Allocation Adjusted Ranking

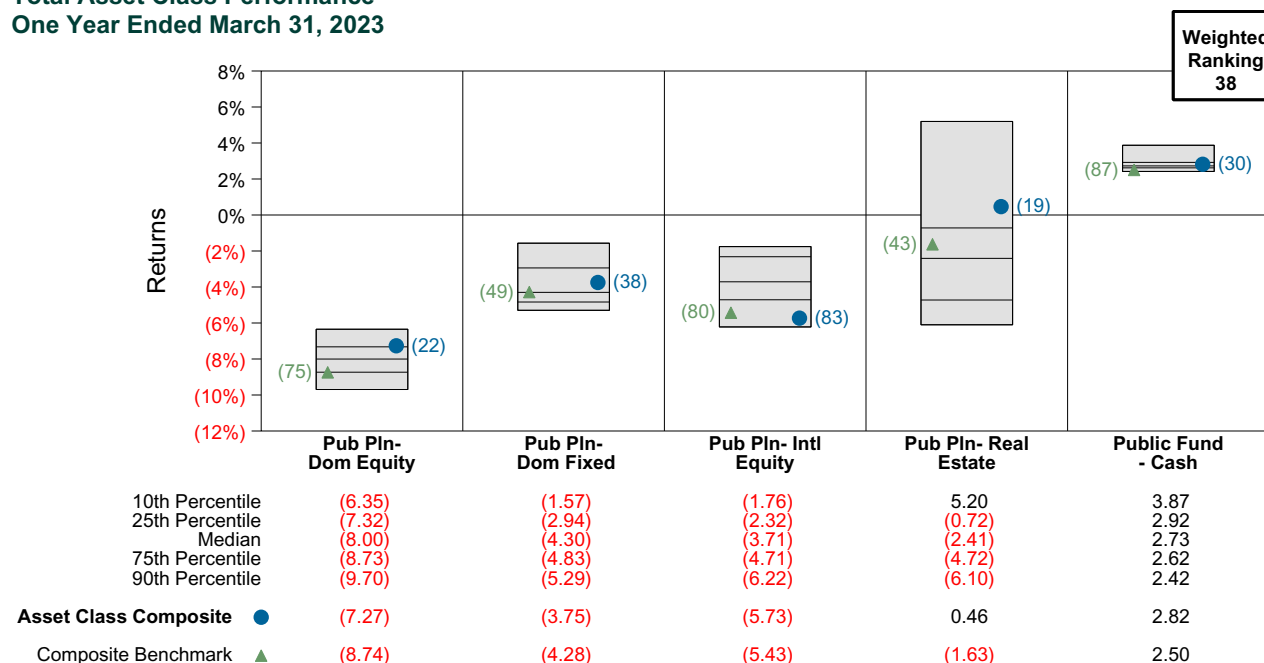


\* Current Quarter Target = 22.7% Russell 1000 Index, 18.3% MSCI ACWI xUS IMI, 18.0% Blmbg Aggregate, 10.0% Private Equity, 9.0% NCREIF Total Index, 8.0% Blmbg HY Corp 2% Iss Cap, 4.0% Russell 2000 Index, 3.9% CPI All Urban Cons lagged 3 months, 3.9% NCREIF NFI-ODCE Eq Wt Net, 1.3% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

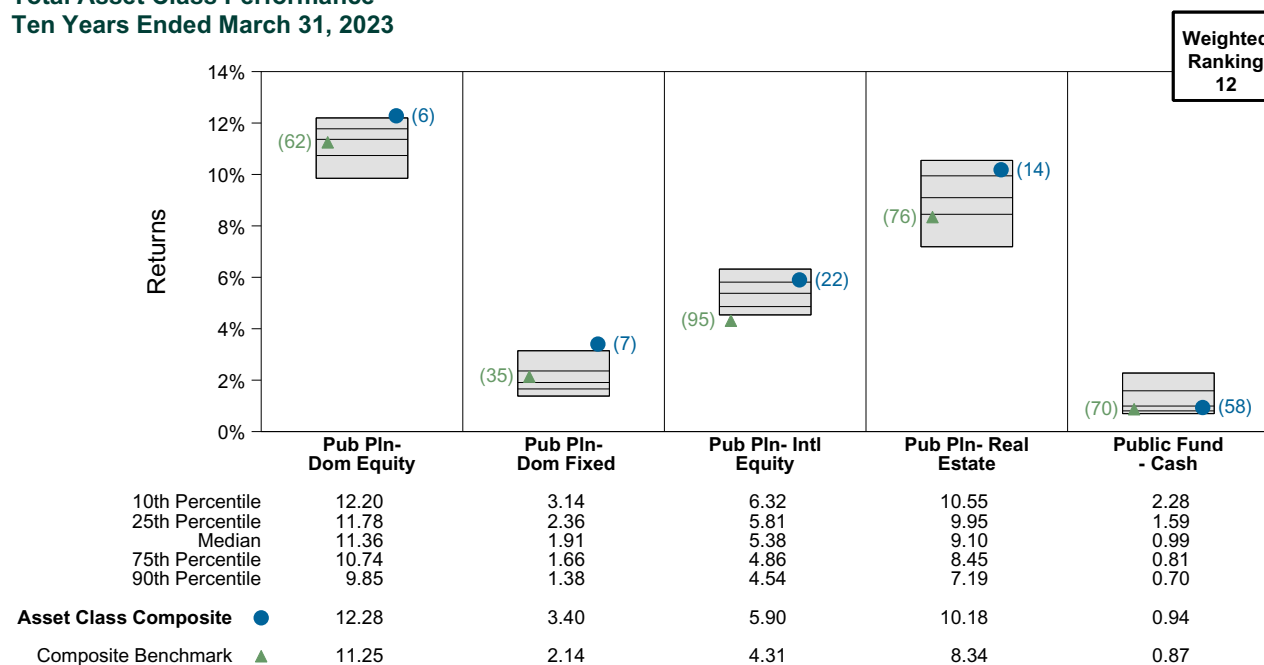
## Asset Class Rankings

The charts below show the rankings of each asset class component of the Total Fund relative to appropriate comparative databases. In the upper right corner of each graph is the weighted average of the rankings across the different asset classes. The weights of the fund's actual asset allocation are used to make this calculation. The weighted average ranking can be viewed as a measure of the fund's overall success in picking managers and structuring asset classes.

### Total Asset Class Performance One Year Ended March 31, 2023



### Total Asset Class Performance Ten Years Ended March 31, 2023



\* Current Quarter Target = 22.7% Russell 1000 Index, 18.3% MSCI ACWI xUS IMI, 18.0% Blmbg Aggregate, 10.0% Private Equity, 9.0% NCREIF Total Index, 8.0% Blmbg HY Corp 2% Iss Cap, 4.0% Russell 2000 Index, 3.9% CPI All Urban Cons lagged 3 months, 3.9% NCREIF NFI-ODCE Eq Wt Net, 1.3% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.



## Asset Class Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of March 31, 2023, with the distribution as of December 31, 2022. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

### Asset Class Allocation

	March 31, 2023				December 31, 2022	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
<b>Global Equities</b>	<b>\$1,711,028,580</b>	<b>56.28%</b>	<b>\$19,627,651</b>	<b>\$88,533,982</b>	<b>\$1,602,866,947</b>	<b>54.29%</b>
<b>Public Equities</b>	<b>\$1,306,346,306</b>	<b>42.97%</b>	<b>\$1,921,265</b>	<b>\$87,121,837</b>	<b>\$1,217,303,204</b>	<b>41.23%</b>
<b>World Equities</b>	<b>\$283,536</b>	<b>0.01%</b>	<b>\$(63,383)</b>	<b>\$(17,842)</b>	<b>\$364,762</b>	<b>0.01%</b>
<b>Domestic Equities</b>	<b>\$784,500,846</b>	<b>25.81%</b>	<b>\$1,605,831</b>	<b>\$52,243,733</b>	<b>\$730,651,281</b>	<b>24.75%</b>
Large Cap	666,824,755	21.93%	1,397,846	44,489,898	620,937,011	21.03%
Small Cap	117,676,091	3.87%	207,985	7,753,835	109,714,270	3.72%
<b>Total International Equity</b>	<b>\$521,561,924</b>	<b>17.16%</b>	<b>\$378,817</b>	<b>\$34,895,946</b>	<b>\$486,287,161</b>	<b>16.47%</b>
International All Cap	200,279,917	6.59%	107,224	14,295,965	185,876,727	6.30%
Developed Intl Large Cap	200,749,650	6.60%	245,501	15,387,727	185,116,421	6.27%
Developed Intl Small Cap	34,656,085	1.14%	7,417	1,685,397	32,963,270	1.12%
Emerging Markets	85,876,273	2.82%	18,675	3,526,856	82,330,742	2.79%
<b>Private Equities</b>	<b>\$404,682,274</b>	<b>13.31%</b>	<b>\$17,706,386</b>	<b>\$1,412,145</b>	<b>\$385,563,742</b>	<b>13.06%</b>
<b>Global Fixed Income</b>	<b>\$745,302,812</b>	<b>24.52%</b>	<b>\$(20,391,403)</b>	<b>\$19,760,825</b>	<b>\$745,933,390</b>	<b>25.27%</b>
<b>Domestic Fixed Income</b>	<b>\$745,302,812</b>	<b>24.52%</b>	<b>\$(20,391,403)</b>	<b>\$19,760,825</b>	<b>\$745,933,390</b>	<b>25.27%</b>
Investment Grade	517,479,981	17.02%	(19,494,124)	15,391,019	521,583,085	17.67%
Below Investment Grade	227,822,832	7.49%	(897,280)	4,369,807	224,350,305	7.60%
<b>Global Real Assets</b>	<b>\$558,553,464</b>	<b>18.37%</b>	<b>\$6,297,984</b>	<b>\$(5,198,256)</b>	<b>\$557,453,737</b>	<b>18.88%</b>
<b>Real Estate</b>	<b>\$338,963,134</b>	<b>11.15%</b>	<b>\$1,414,155</b>	<b>\$(14,701,020)</b>	<b>\$352,249,999</b>	<b>11.93%</b>
<b>Other Real Assets</b>	<b>\$219,590,330</b>	<b>7.22%</b>	<b>\$4,883,828</b>	<b>\$9,502,764</b>	<b>\$205,203,738</b>	<b>6.95%</b>
Infrastructure	180,717,494	5.94%	5,741,476	8,537,852	166,438,165	5.64%
Timber	38,872,836	1.28%	(857,648)	964,911	38,765,573	1.31%
<b>Cash</b>	<b>\$21,858,439</b>	<b>0.72%</b>	<b>\$(21,321,652)</b>	<b>\$448,882</b>	<b>\$42,731,210</b>	<b>1.45%</b>
<b>Residual Holdings</b>	<b>\$3,345,563</b>	<b>0.11%</b>	<b>\$163</b>	<b>\$25,954</b>	<b>\$3,319,446</b>	<b>0.11%</b>
<b>Total Fund</b>	<b>\$3,040,088,858</b>	<b>100.0%</b>	<b>\$(15,787,258)</b>	<b>\$103,571,387</b>	<b>\$2,952,304,730</b>	<b>100.0%</b>

PLEASE REFER TO PAGES 29-30 FOR INVESTMENT MANAGER LEVEL ASSET ALLOCATION.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended March 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended March 31, 2023

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
<b>Global Equities</b>					
Gross	5.51%	(6.03%)	17.95%	8.23%	9.38%
Net	5.48%	(6.24%)	17.67%	7.99%	9.10%
Weighted Benchmark	5.57%	(6.39%)	18.02%	8.84%	9.04%
<b>Public Equities</b>					
Gross	7.16%	(6.39%)	16.96%	-	-
Net	7.13%	(6.66%)	16.63%	-	-
Weighted Benchmark	6.70%	(7.39%)	15.90%	-	-
<b>Total Domestic Equity</b>					
Gross	7.15%	(7.27%)	19.46%	11.21%	12.28%
Net	7.13%	(7.49%)	19.19%	10.99%	12.07%
Weighted Benchmark	6.79%	(8.74%)	18.65%	9.67%	11.25%
<b>Large Cap Equity</b>					
Gross	7.16%	(8.45%)	19.86%	12.36%	13.16%
Net	7.15%	(8.61%)	19.69%	12.22%	13.01%
Benchmark(1)	7.46%	(8.39%)	18.55%	10.87%	12.01%
<b>Small Cap Equity</b>					
Gross	7.07%	(1.87%)	17.88%	7.11%	9.10%
Net	7.02%	(2.42%)	17.18%	6.58%	8.66%
Russell 2000 Index	2.74%	(11.61%)	17.51%	4.71%	8.04%
<b>Total International Equity</b>					
Gross	7.18%	(5.73%)	13.28%	3.28%	5.90%
Net	7.13%	(5.97%)	12.95%	3.03%	5.66%
MSCI ACWI xUS IMI(2)	6.56%	(5.43%)	11.73%	2.54%	4.31%
<b>International All Cap</b>					
Gross	7.69%	-	-	-	-
Net	7.62%	-	-	-	-
MSCI ACWI xUS IMI	6.56%	(5.84%)	12.20%	2.35%	4.28%
<b>Developed Intl Large Cap</b>					
Gross	8.31%	-	-	-	-
Net	8.31%	-	-	-	-
MSCI World xUS	8.02%	(2.74%)	13.49%	3.80%	4.91%
<b>Developed Intl Small Cap</b>					
Gross	5.11%	-	-	-	-
Net	5.01%	-	-	-	-
MSCI World xUS Small	4.99%	(10.13%)	13.43%	1.54%	5.54%
<b>Emerging Markets</b>					
Gross	4.29%	(15.31%)	8.82%	(0.54%)	2.94%
Net	4.20%	(15.60%)	8.19%	(0.88%)	2.71%
Benchmark(4)	3.96%	(10.70%)	7.83%	(0.91%)	2.00%
<b>Private Equities</b>					
Net	0.37%	(3.38%)	19.61%	13.88%	7.88%

(1) S&P 500 Index through 12/31/2011 and the Russell 1000 Index thereafter.

(2) Prior to 10/1/2022, the benchmark is calculated based on the approved investment policy asset allocation target.

(2) 50% Hedged EAFE through 3/31/2011; MSCI EAFE through 6/30/16; MSCI World ex-US thereafter.

(3) MSCI Emerging Mkts Idx (Gross) through 6/30/2011 and MSCI Emerging Mkts Idx Net thereafter.

PLEASE REFER TO PAGES 31-35 FOR INVESTMENT MANAGER LEVEL RETURNS.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended March 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended March 31, 2023

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
<b>Global Fixed Income</b>					
Gross	2.67%	(3.75%)	0.44%	2.49%	3.16%
Net	2.65%	(3.87%)	0.31%	2.35%	2.96%
Weighted Benchmark	3.15%	(4.28%)	(0.16%)	1.68%	1.98%
<b>Domestic Fixed Income</b>					
Gross	2.67%	(3.75%)	0.44%	2.49%	3.40%
Net	2.65%	(3.87%)	0.31%	2.35%	3.23%
Weighted Benchmark	3.15%	(4.28%)	(0.16%)	1.68%	2.14%
<b>Inv. Grade Fixed Income</b>					
Gross	2.97%	(5.68%)	(1.61%)	1.55%	2.57%
Net	2.96%	(5.79%)	(1.71%)	1.45%	2.45%
Blmbg Aggregate	2.96%	(4.78%)	(2.77%)	0.91%	1.36%
<b>Below Inv. Grade Fixed Income</b>					
Gross	1.95%	1.78%	6.77%	5.49%	5.84%
Net	1.91%	1.60%	6.57%	5.26%	5.51%
Blmbg HY Corp 2% Issue	3.57%	(3.35%)	5.88%	3.19%	4.09%
<b>Global Real Assets</b>					
Gross	(0.93%)	3.01%	7.93%	7.34%	7.94%
Net	(1.05%)	2.67%	7.51%	6.90%	7.51%
Weighted Benchmark	(1.54%)	0.50%	6.94%	6.05%	6.43%
<b>Real Estate</b>					
Gross	(4.18%)	0.46%	7.88%	7.68%	10.18%
Net	(4.30%)	0.05%	7.37%	7.14%	9.65%
NCREIF Total Index	(1.81%)	(1.63%)	7.15%	6.71%	8.34%
<b>Other Real Assets</b>					
Gross	4.59%	7.31%	7.93%	-	-
Net	4.49%	7.09%	7.66%	-	-
Weighted Benchmark	(1.27%)	2.65%	6.72%	-	-
<b>Infrastructure</b>					
Gross	5.05%	10.18%	9.72%	7.97%	7.04%
Net	4.92%	9.89%	9.35%	7.57%	6.55%
Benchmark(1)	(1.76%)	1.28%	6.56%	5.36%	3.26%
<b>Timber</b>					
Net	2.51%	(3.60%)	2.35%	3.25%	1.64%
NCREIF Timberland Index	1.75%	11.31%	8.09%	5.54%	5.82%
<b>Cash &amp; Equivalents - Net</b>	<b>1.14%</b>	<b>2.82%</b>	<b>1.02%</b>	<b>1.45%</b>	<b>0.94%</b>
3-month Treasury Bill	1.07%	2.50%	0.89%	1.41%	0.87%
<b>Total Fund</b>					
Gross	3.51%	(3.88%)	11.31%	6.64%	7.63%
Net	3.47%	(4.09%)	11.05%	6.39%	7.36%
Target*	3.62%	(4.24%)	11.40%	6.69%	6.99%

\* Current Quarter Target = 22.7% Russell 1000 Index, 18.3% MSCI ACWI xUS IMI, 18.0% Blmbg Aggregate, 10.0% Private Equity, 9.0% NCREIF Total Index, 8.0% Blmbg HY Corp 2% Iss Cap, 4.0% Russell 2000 Index, 3.9% CPI All Urban Cons lagged 3 months, 3.9% NCREIF NFI-ODCE Eq Wt Net, 1.3% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

(1) CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.

PLEASE REFER TO PAGES 31-35 FOR INVESTMENT MANAGER LEVEL RETURNS.



## Domestic Equities Period Ended March 31, 2023

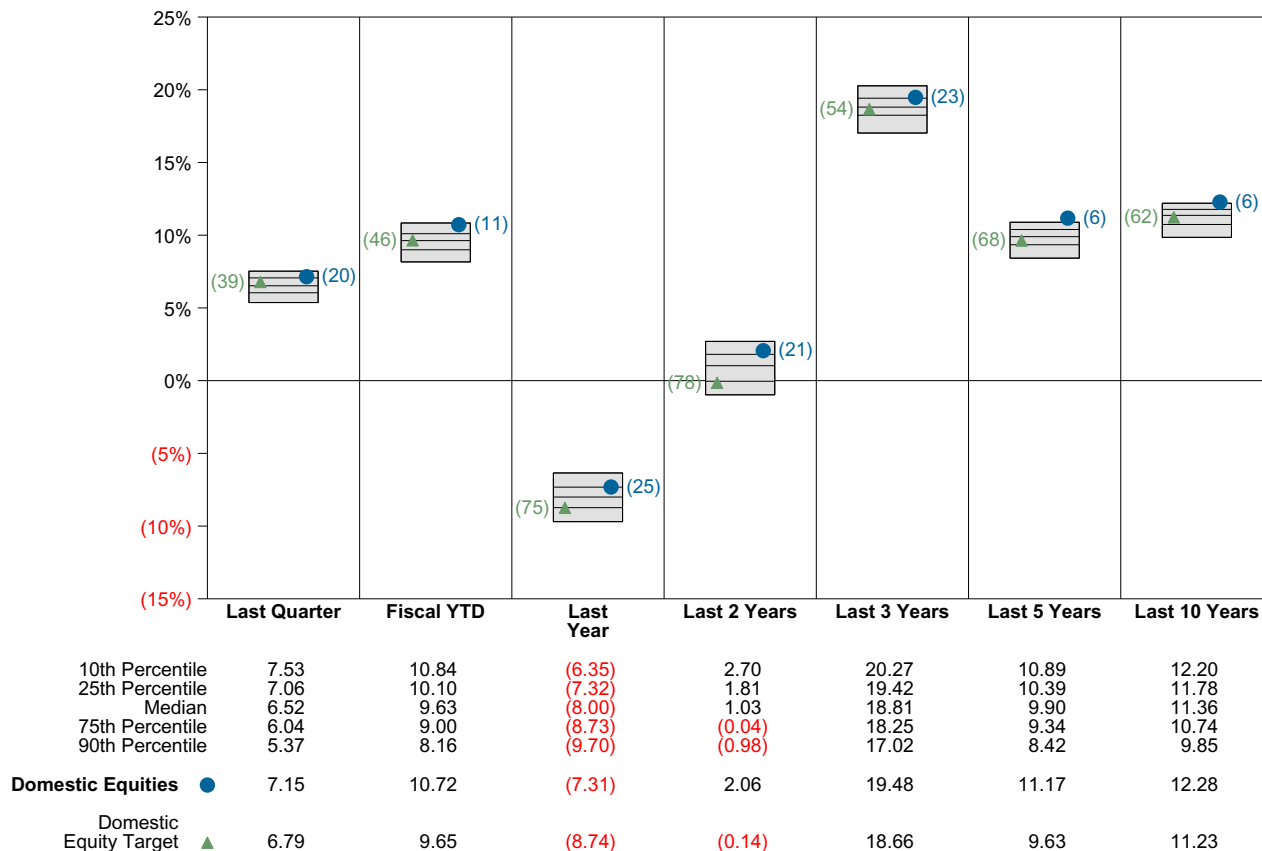
### Quarterly Summary and Highlights

- Domestic Equities's portfolio posted a 7.15% return for the quarter placing it in the 20 percentile of the Public Fund - Domestic Equity group for the quarter and in the 25 percentile for the last year.
- Domestic Equities's portfolio outperformed the Domestic Equity Target by 0.36% for the quarter and outperformed the Domestic Equity Target for the year by 1.43%.

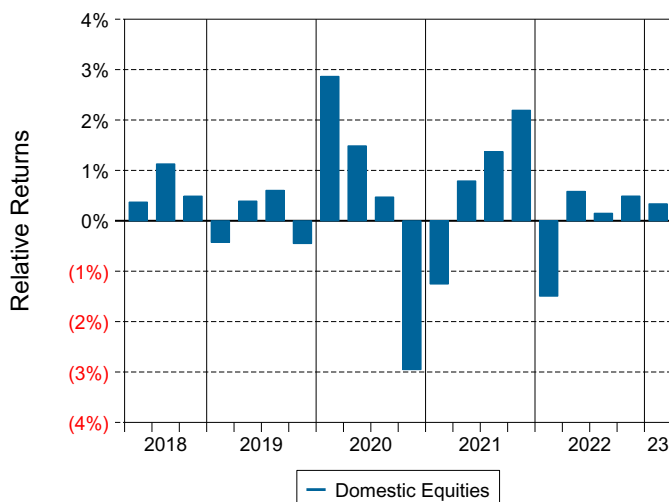
### Quarterly Asset Growth

Beginning Market Value	\$1,855,688,170
Net New Investment	\$-399,270
Investment Gains/(Losses)	\$132,701,533
Ending Market Value	\$1,987,990,432

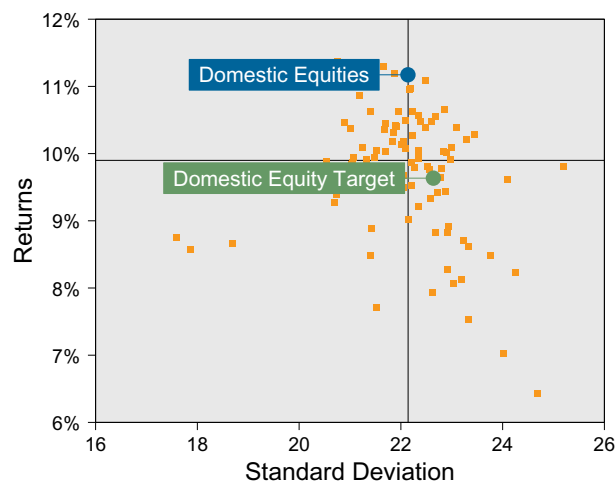
### Performance vs Public Fund - Domestic Equity (Gross)



### Relative Return vs Domestic Equity Target



### Public Fund - Domestic Equity (Gross) Annualized Five Year Risk vs Return



## L.A. Capital Period Ended March 31, 2023

### Investment Philosophy

The LA Capital Structured portfolio is a large growth portfolio benchmarked to the Russell 1000 Growth Index. It is an active assignment meaning that it targets a 2% alpha and constrains its risk budget (tracking error) to 4% relative to the benchmark. LA Capital believes that investment results are driven by Investor Preferences and thus recognize that when preferences shift a different posture related to that factor is warranted.

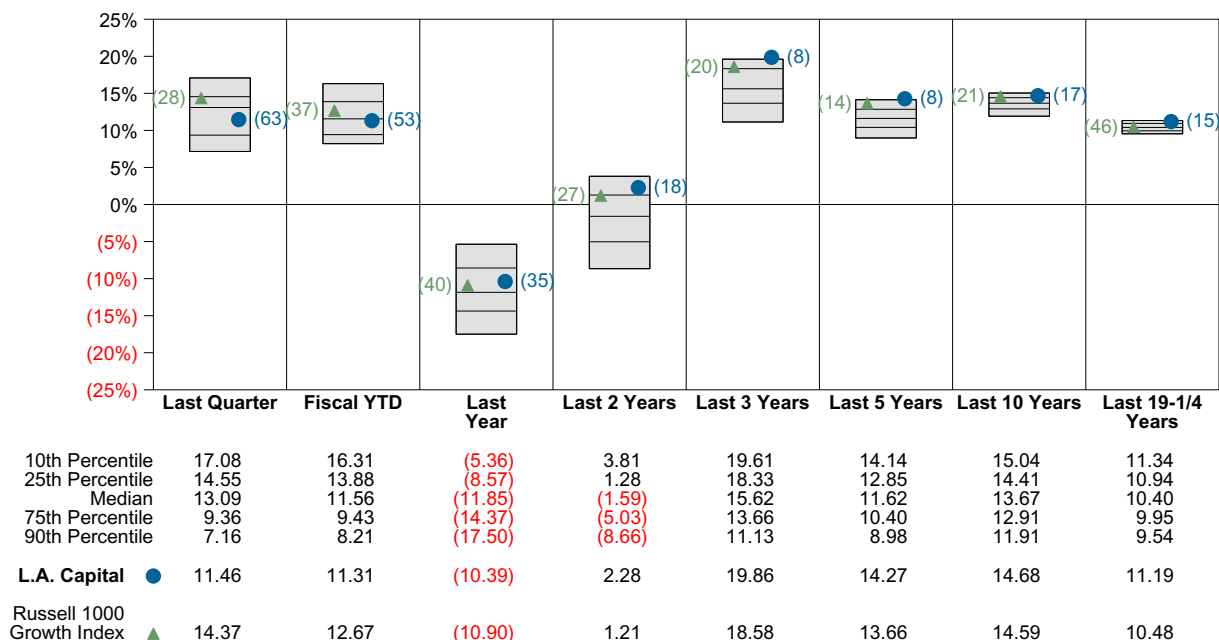
### Quarterly Summary and Highlights

- L.A. Capital's portfolio posted a 11.46% return for the quarter placing it in the 63 percentile of the Callan Large Cap Growth group for the quarter and in the 35 percentile for the last year.
- L.A. Capital's portfolio underperformed the Russell 1000 Growth Index by 2.90% for the quarter and outperformed the Russell 1000 Growth Index for the year by 0.51%.

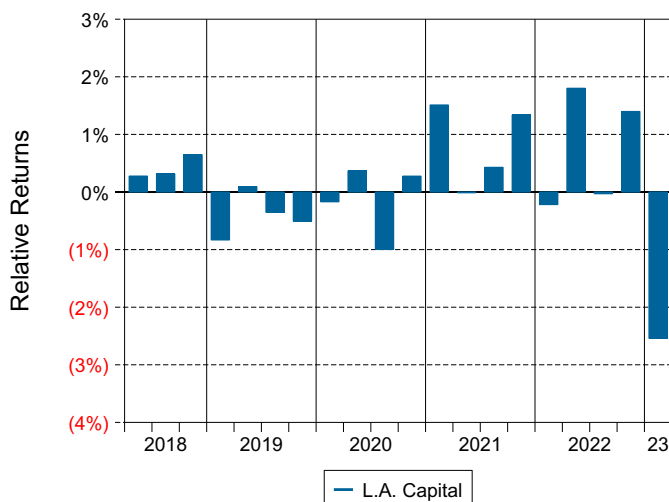
### Quarterly Asset Growth

Beginning Market Value	\$45,141,546
Net New Investment	\$-25,663
Investment Gains/(Losses)	\$5,173,553
Ending Market Value	\$50,289,436

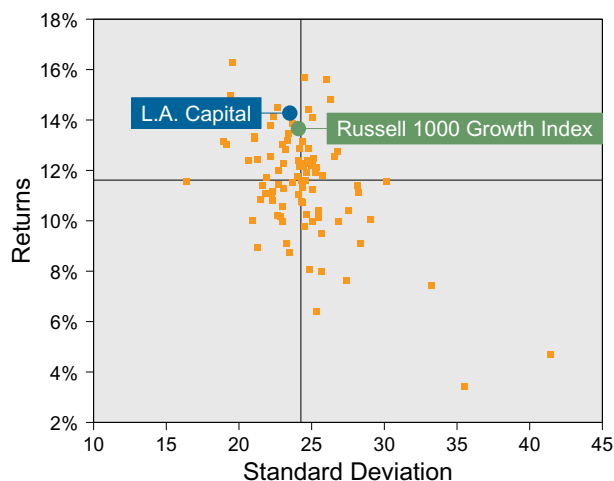
### Performance vs Callan Large Cap Growth (Gross)



### Relative Return vs Russell 1000 Growth Index



### Callan Large Cap Growth (Gross) Annualized Five Year Risk vs Return



## L.A. Capital Management Enhanced Index Period Ended March 31, 2023

### Investment Philosophy

The LA Capital Enhanced portfolio is a large core portfolio benchmarked to the Russell 1000 Index. Characterized as an enhanced index assignment, its objective is to track the benchmark with lower variability. The pension portfolio began in August of 2000 and the insurance portfolio was initiated in April of 2004. Since October of 2006 a small portion of each of the two core accounts was allocated into the Large Cap Alpha Fund with intent to add incremental alpha to the assignment given that the information ratio was expected to be higher.

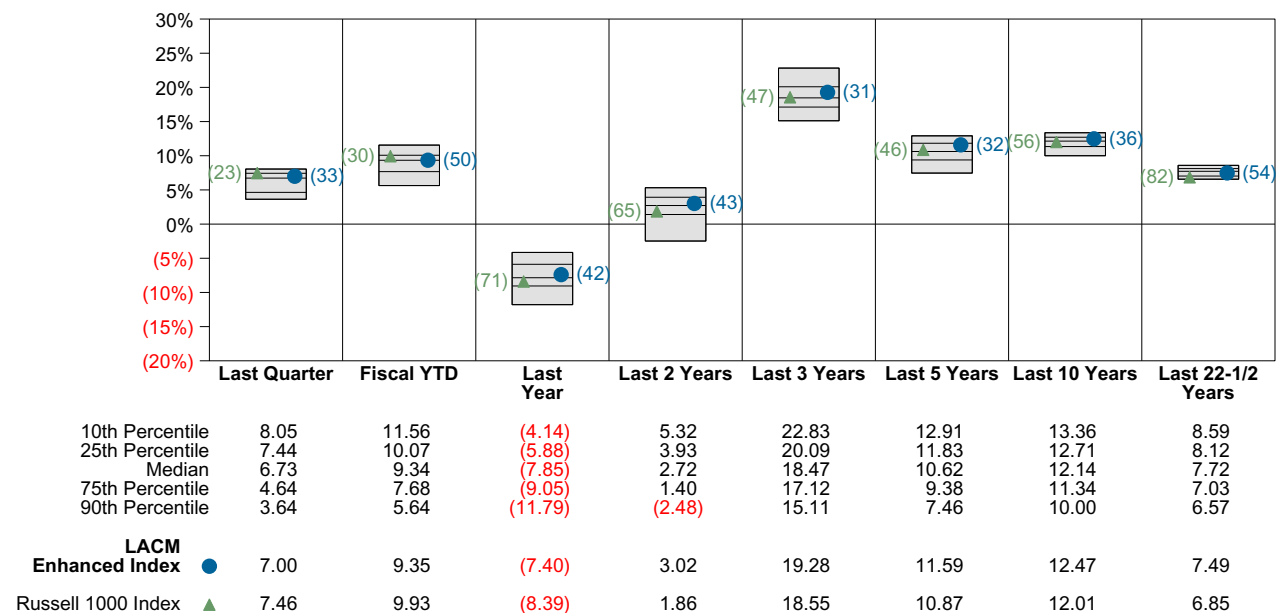
### Quarterly Summary and Highlights

- LACM Enhanced Index's portfolio posted a 7.00% return for the quarter placing it in the 33 percentile of the Callan Large Cap Core group for the quarter and in the 42 percentile for the last year.
- LACM Enhanced Index's portfolio underperformed the Russell 1000 Index by 0.46% for the quarter and outperformed the Russell 1000 Index for the year by 1.00%.

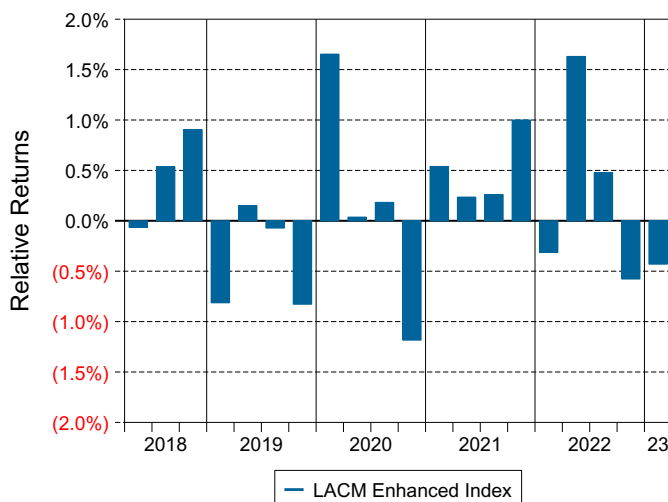
### Quarterly Asset Growth

Beginning Market Value	\$650,300,789
Net New Investment	\$-194,764
Investment Gains/(Losses)	\$45,504,325
Ending Market Value	\$695,610,350

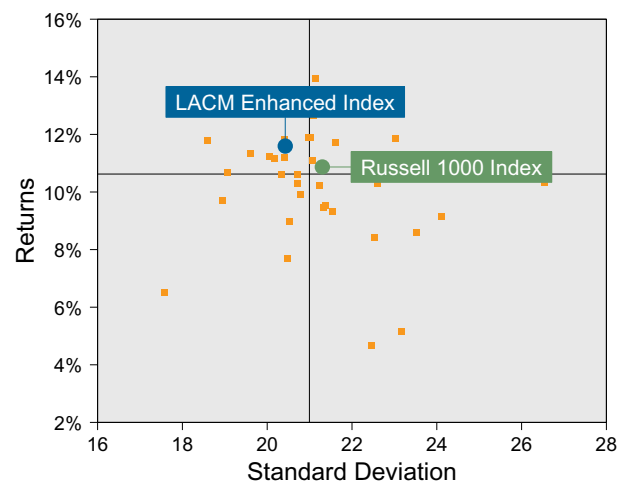
### Performance vs Callan Large Cap Core (Gross)



### Relative Return vs Russell 1000 Index



### Callan Large Cap Core (Gross) Annualized Five Year Risk vs Return



NTAM R1000 Index  
Period Ended March 31, 2023

Investment Philosophy

The primary objective of the Northern Trust Russell 1000 Index Fund is to approximate the risk and return characteristics of the Russell 1000 Index.

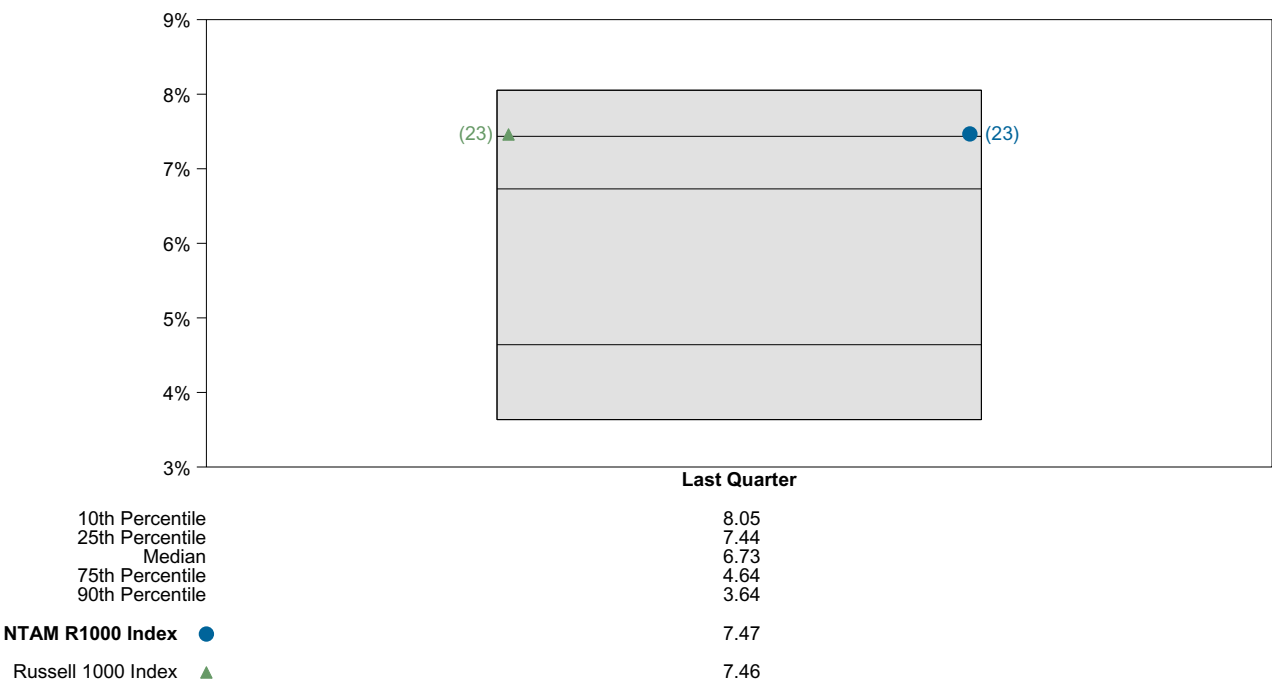
Quarterly Summary and Highlights

- NTAM R1000 Index's portfolio posted a 7.47% return for the quarter placing it in the 23 percentile of the Callan Large Cap Core group for the quarter.
- NTAM R1000 Index's portfolio outperformed the Russell 1000 Index by 0.01% for the quarter.

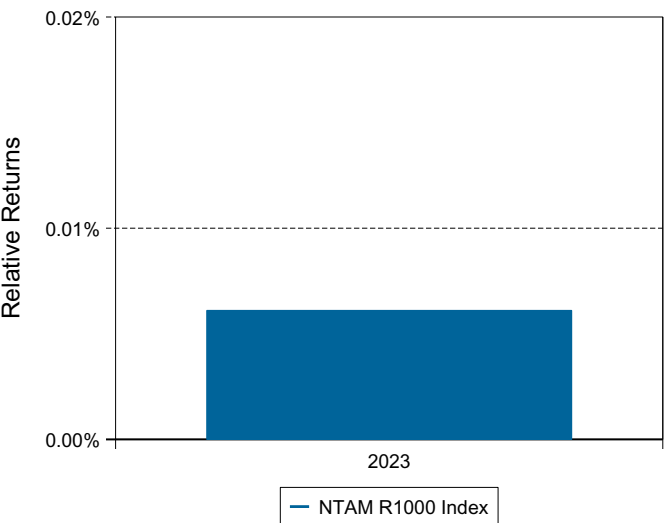
Quarterly Asset Growth

Beginning Market Value	\$382,293,986
Net New Investment	\$-30,358
Investment Gains/(Losses)	\$28,545,697
Ending Market Value	\$410,809,325

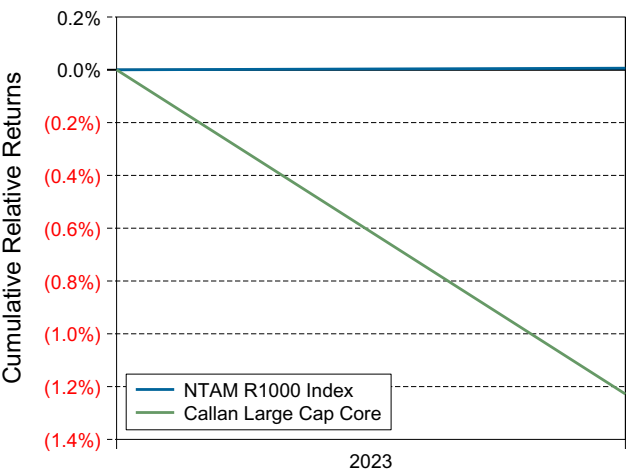
Performance vs Callan Large Cap Core (Gross)



Relative Return vs Russell 1000 Index



Cumulative Returns vs Russell 1000 Index





## NTAM Quant Enh R1000

### Period Ended March 31, 2023

#### Investment Philosophy

The Fund's Investment Objective is to exceed the total return of the Russell 1000 Index\* (the Benchmark) by 150 basis points on a gross of fee basis while targeting expected tracking error of no greater than 150-200 basis points. **Effective October 1, 2022, the benchmark changed from S&P500 to Russell 1000. Benchmark returns for the S&P500 Index are linked to Russell 1000 Index.**

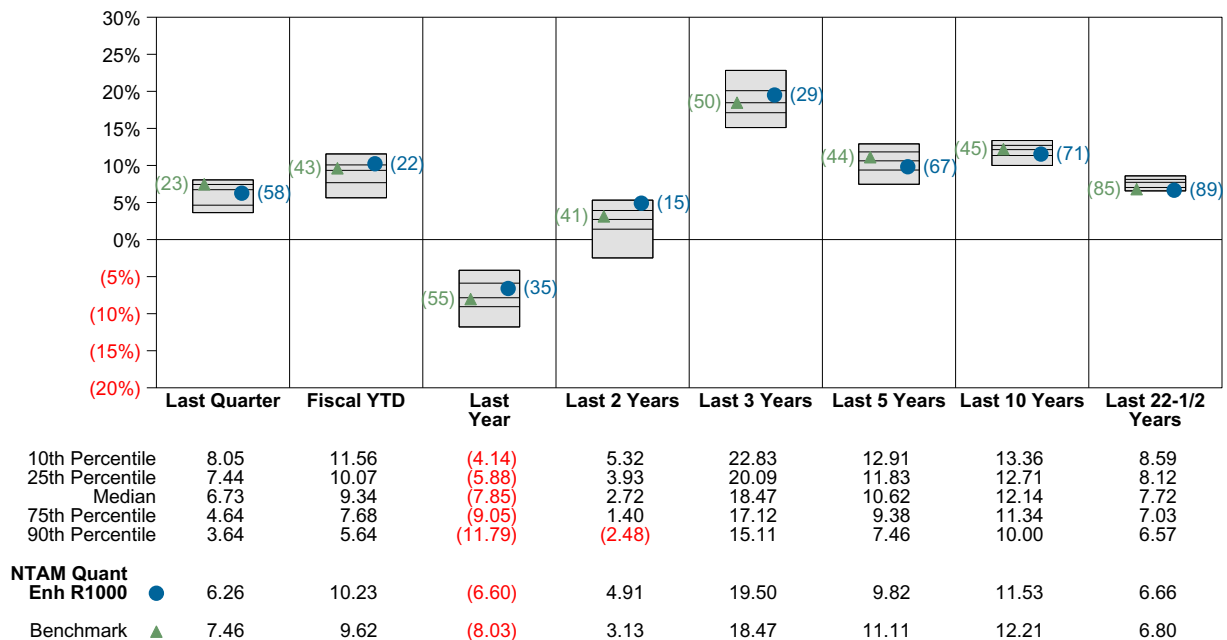
#### Quarterly Summary and Highlights

- NTAM Quant Enh R1000's portfolio posted a 6.26% return for the quarter placing it in the 58 percentile of the Callan Large Cap Core group for the quarter and in the 35 percentile for the last year.
- NTAM Quant Enh R1000's portfolio underperformed the Benchmark by 1.20% for the quarter and outperformed the Benchmark for the year by 1.43%.

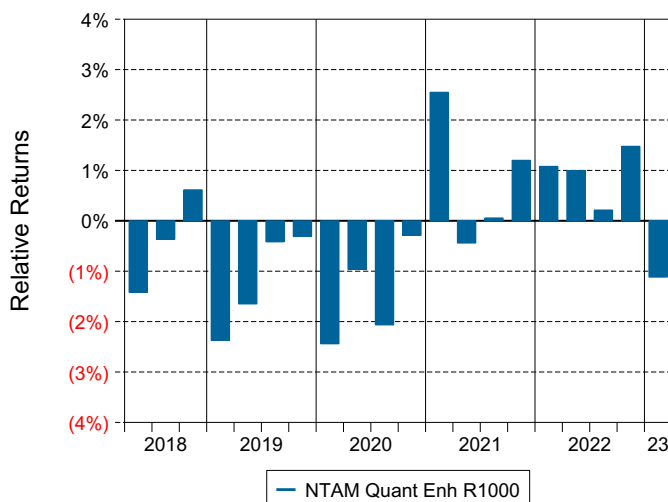
#### Quarterly Asset Growth

Beginning Market Value	\$251,591,199
Net New Investment	\$0
Investment Gains/(Losses)	\$15,856,385
Ending Market Value	\$267,447,584

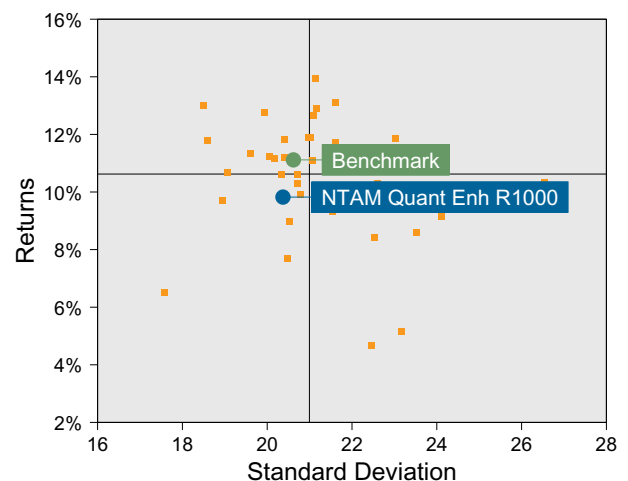
#### Performance vs Callan Large Cap Core (Gross)



#### Relative Return vs Benchmark



#### Callan Large Cap Core (Gross) Annualized Five Year Risk vs Return



## Parametric-Clifton Enh R1000 Period Ended March 31, 2023

### Investment Philosophy

The Enhanced US Large Cap strategy seeks to outperform the Russell 1000 Index by 50-100 basis points annually. The strategy seeks to exhibit risk levels similar to the Russell Index and achieve a modest level of outperformance consistency relative to the Russell Index. **Effective July 1, 2022, the strategy benchmark changed from S&P500 to Russell 1000. Benchmark returns for the S&P500 Index are linked to Russell 1000 Index.**

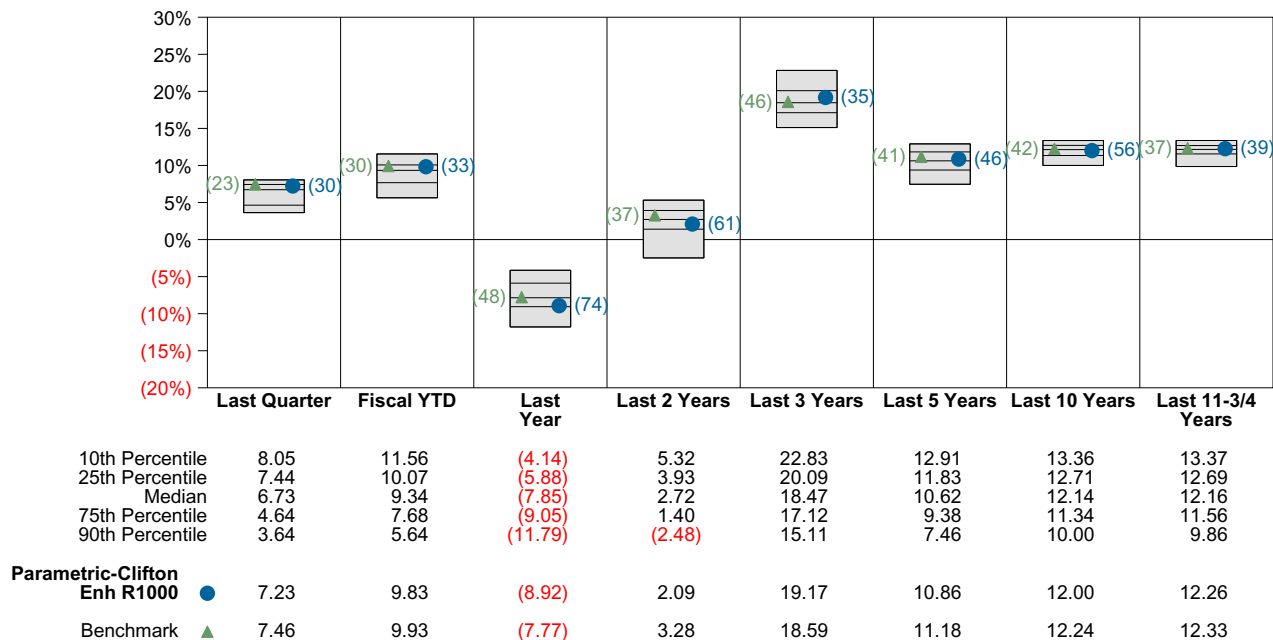
### Quarterly Summary and Highlights

- Parametric-Clifton Enh R1000's portfolio posted a 7.23% return for the quarter placing it in the 30 percentile of the Callan Large Cap Core group for the quarter and in the 74 percentile for the last year.
- Parametric-Clifton Enh R1000's portfolio underperformed the Benchmark by 0.23% for the quarter and underperformed the Benchmark for the year by 1.15%.

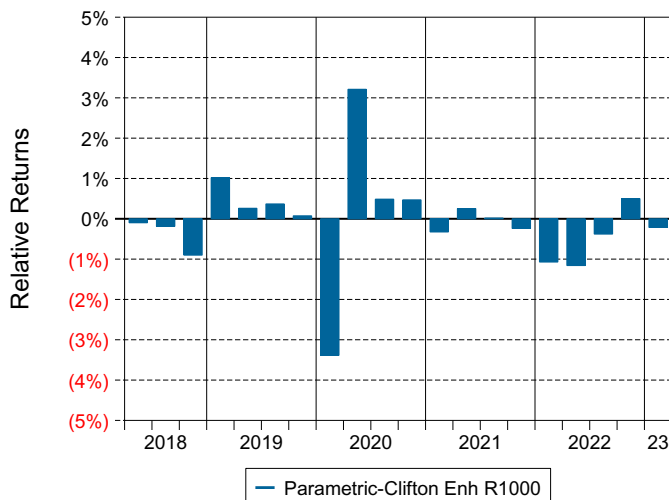
### Quarterly Asset Growth

Beginning Market Value	\$247,284,496
Net New Investment	\$0
Investment Gains/(Losses)	\$17,882,282
Ending Market Value	\$265,166,778

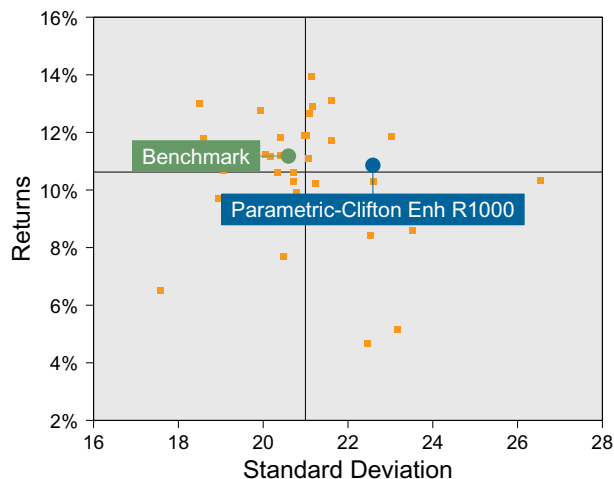
### Performance vs Callan Large Cap Core (Gross)



### Relative Return vs Benchmark



### Callan Large Cap Core (Gross) Annualized Five Year Risk vs Return



## Atlanta Capital Period Ended March 31, 2023

### Investment Philosophy

Atlanta Capital Managements approach with its small cap product is to focus on high quality companies with an overall portfolio risk exposure tied to the Russell 2000 Index. Key characteristics of this portfolio include: (1) stocks rated B+ or better by S&P, (2) equally weighting 75 stocks, (3) sector concentrations similar to that of the benchmark. A group of ten analysts is in charge of screening the Russell 2000 to identify companies they believe have strong price appreciation potential and good business fundamentals. These analysts present the ideas to the portfolio management team, led by Chip Reed, who makes the final decisions on the inclusion of stocks. In general, stocks are sold from the portfolio if the B+ or better financial rating is no longer met, there is an adverse change in the fundamental business, or because of regular portfolio maintenance to ensure broad diversification.

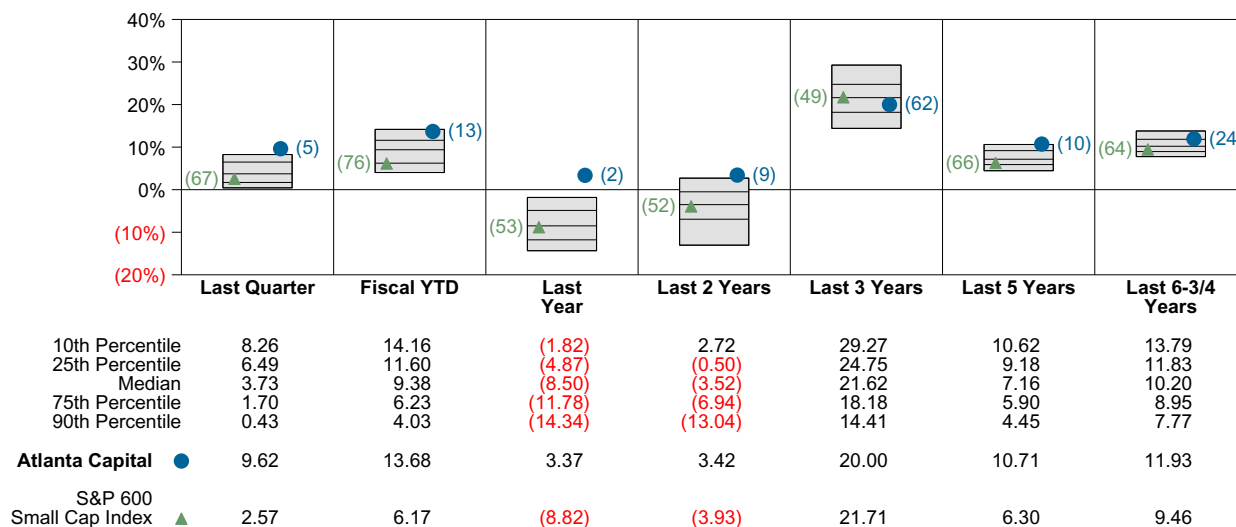
### Quarterly Summary and Highlights

- Atlanta Capital's portfolio posted a 9.62% return for the quarter placing it in the 5 percentile of the Callan Small Capitalization group for the quarter and in the 2 percentile for the last year.
- Atlanta Capital's portfolio outperformed the S&P 600 Small Cap Index by 7.06% for the quarter and outperformed the S&P 600 Small Cap Index for the year by 12.19%.

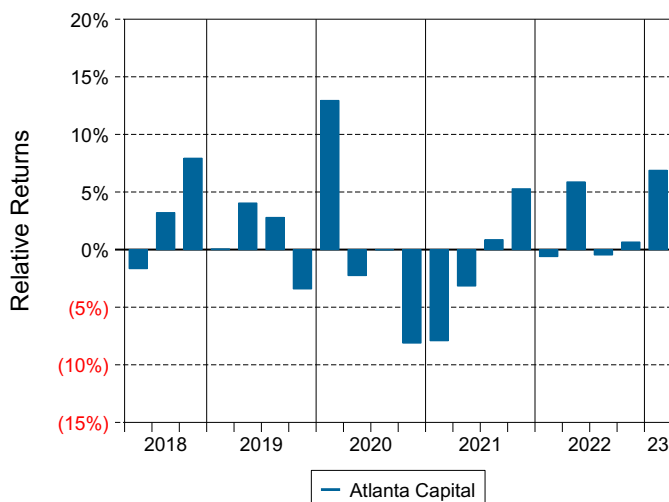
### Quarterly Asset Growth

Beginning Market Value	\$90,134,756
Net New Investment	\$-148,485
Investment Gains/(Losses)	\$8,671,494
Ending Market Value	\$98,657,765

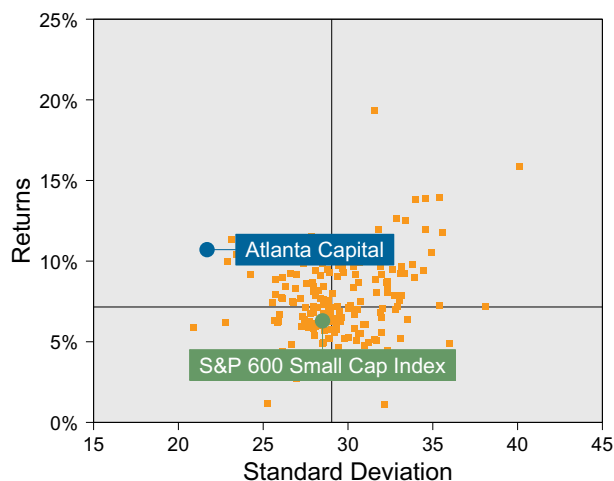
### Performance vs Callan Small Capitalization (Gross)



### Relative Return vs S&P 600 Small Cap Index



### Callan Small Capitalization (Gross) Annualized Five Year Risk vs Return



## Riverbridge Small Cap Growth Period Ended March 31, 2023

### Investment Philosophy

Riverbridge believes earnings power determines the value of a franchise. They focus on companies that are building earnings power and intrinsic value of the company over long periods of time. They also look for high-quality growth companies that demonstrate the ability to sustain strong secular earnings growth, regardless of overall economic conditions.

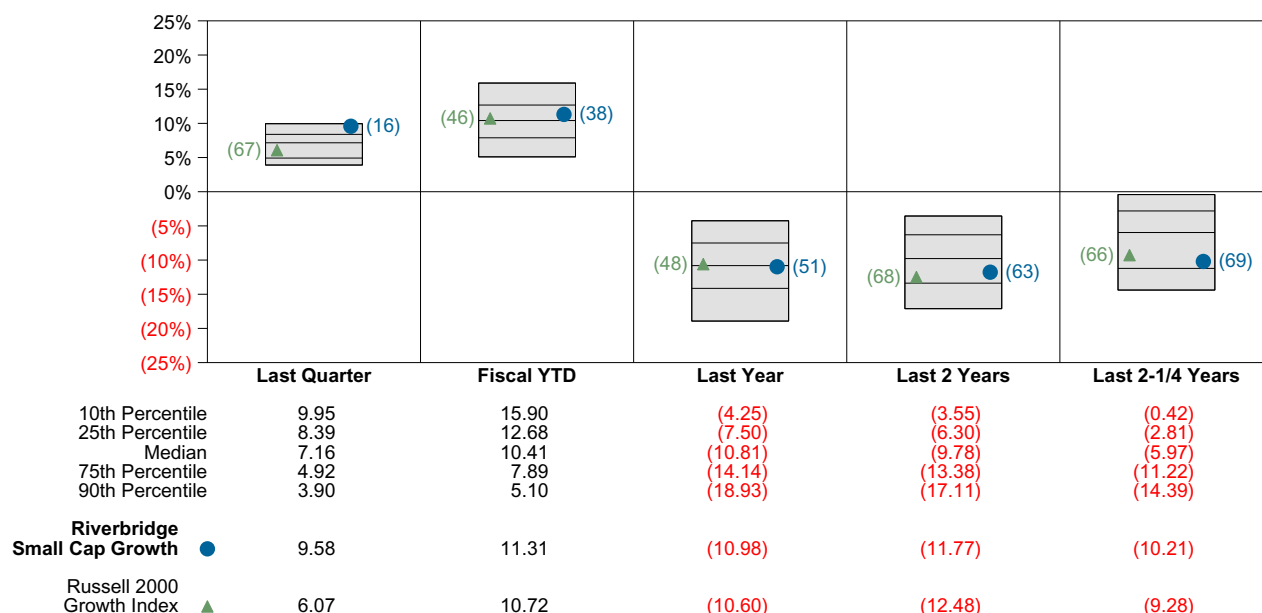
### Quarterly Summary and Highlights

- Riverbridge Small Cap Growth's portfolio posted a 9.58% return for the quarter placing it in the 16 percentile of the Callan Small Cap Growth group for the quarter and in the 51 percentile for the last year.
- Riverbridge Small Cap Growth's portfolio outperformed the Russell 2000 Growth Index by 3.51% for the quarter and underperformed the Russell 2000 Growth Index for the year by 0.38%.

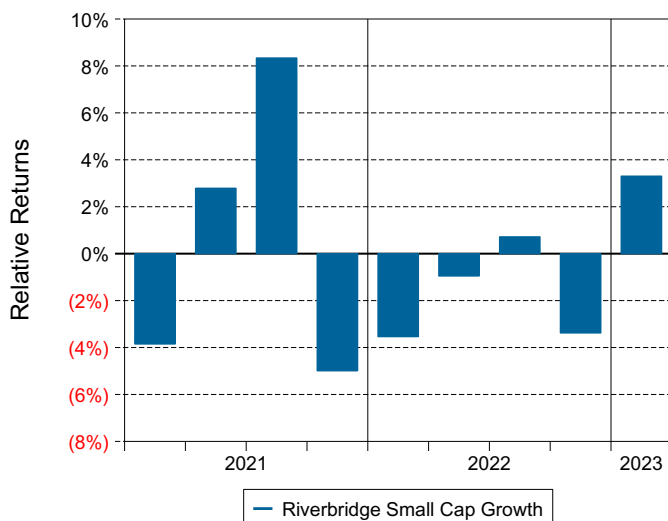
### Quarterly Asset Growth

Beginning Market Value	\$84,038,851
Net New Investment	\$0
Investment Gains/(Losses)	\$8,050,675
Ending Market Value	\$92,089,526

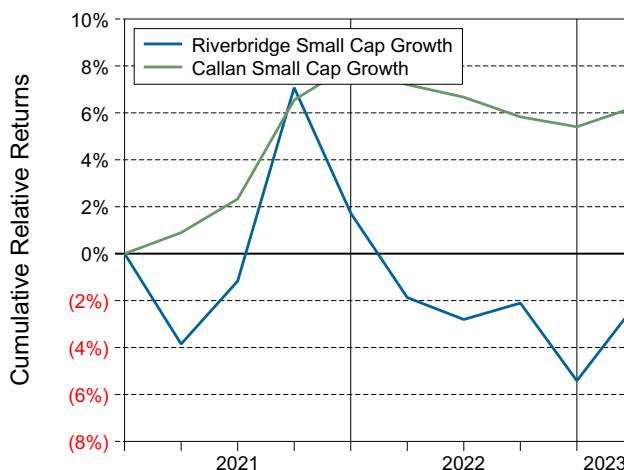
### Performance vs Callan Small Cap Growth (Gross)



### Relative Return vs Russell 2000 Growth Index



### Cumulative Returns vs Russell 2000 Growth Index



## Sycamore Small Cap Value Period Ended March 31, 2023

### Investment Philosophy

The Victory Small Cap Value Equity investment approach focuses on companies with market capitalizations between \$100 million and \$2 billion that are believed offer above-average total return potential with limited risk. The Small Cap Value Equity investment process seeks to identify high quality, low expectation small cap companies that appear poised for continued or improved earnings. Portfolios typically hold 100-125 stocks with average annual portfolio turnover of 40%. The team will begin to sell when a company's market capitalization exceeds \$4 billion, however they focus on the weighted average market capitalization of the total portfolio and thus may retain exposure to some mid cap companies.

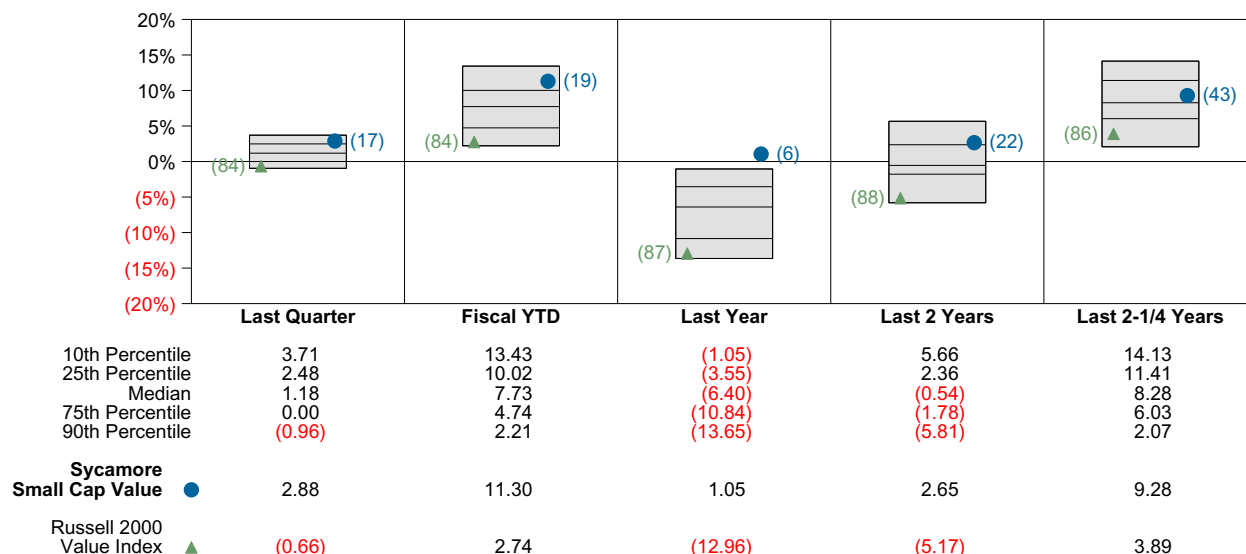
### Quarterly Summary and Highlights

- Sycamore Small Cap Value's portfolio posted a 2.88% return for the quarter placing it in the 17 percentile of the Callan Small Cap Value group for the quarter and in the 6 percentile for the last year.
- Sycamore Small Cap Value's portfolio outperformed the Russell 2000 Value Index by 3.54% for the quarter and outperformed the Russell 2000 Value Index for the year by 14.01%.

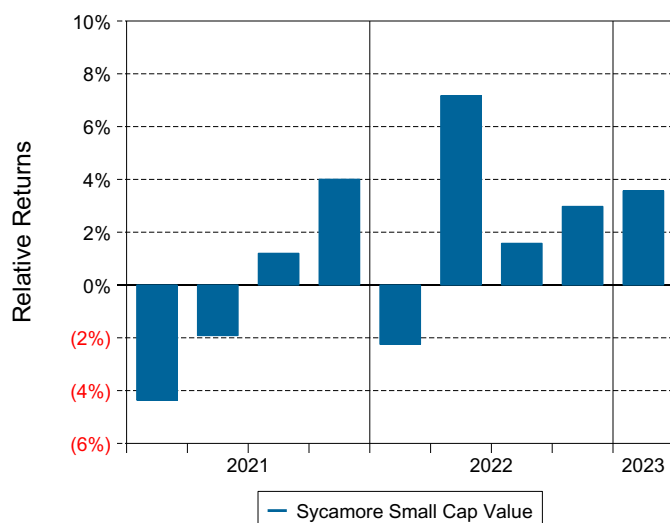
### Quarterly Asset Growth

Beginning Market Value	\$89,710,222
Net New Investment	\$0
Investment Gains/(Losses)	\$2,587,290
Ending Market Value	\$92,297,512

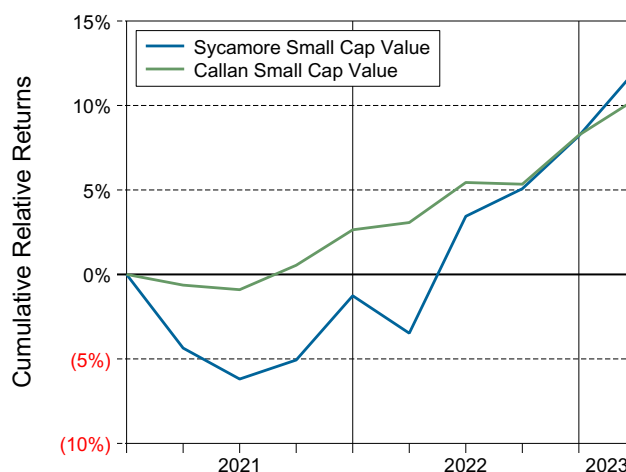
### Performance vs Callan Small Cap Value (Gross)



### Relative Return vs Russell 2000 Value Index



### Cumulative Returns vs Russell 2000 Value Index



NTAM R2000 Index  
Period Ended March 31, 2023

Investment Philosophy

The primary objective of the Northern Trust Russell 2000 Equity Index Fund is to approximate the risk and return characteristics of the Russell 2000 Index.

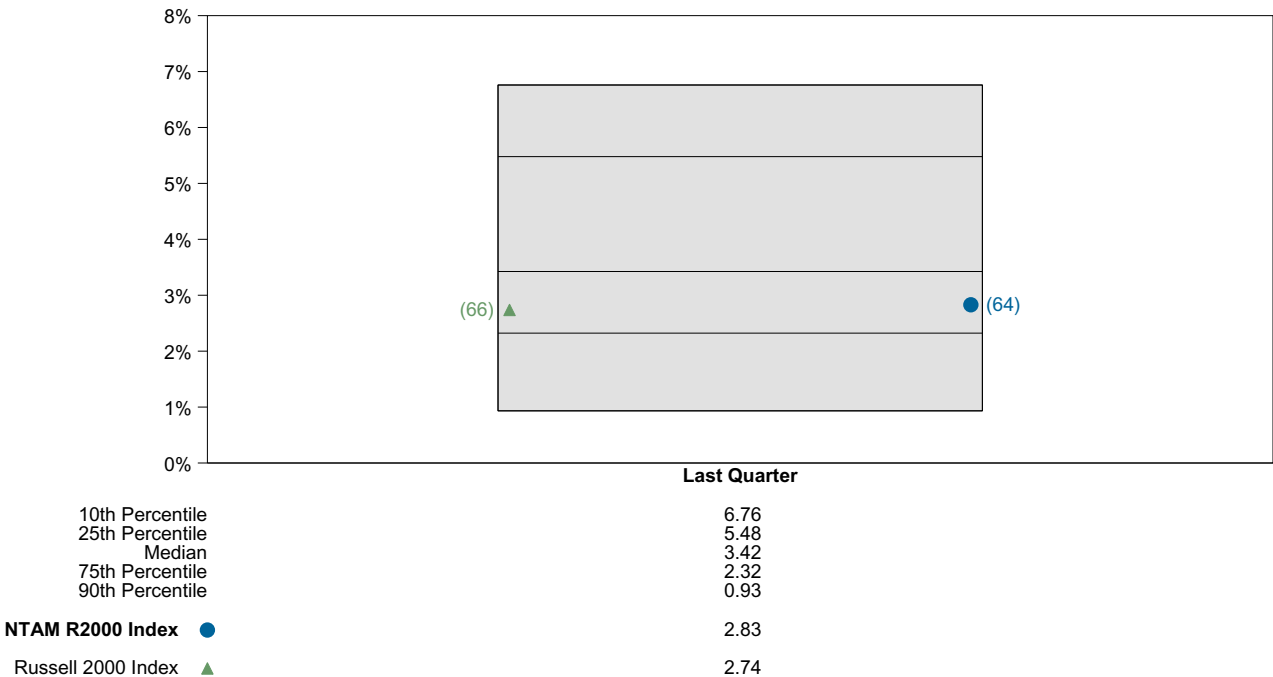
Quarterly Summary and Highlights

- NTAM R2000 Index's portfolio posted a 2.83% return for the quarter placing it in the 64 percentile of the Callan Small Cap Core group for the quarter.
- NTAM R2000 Index's portfolio outperformed the Russell 2000 Index by 0.09% for the quarter.

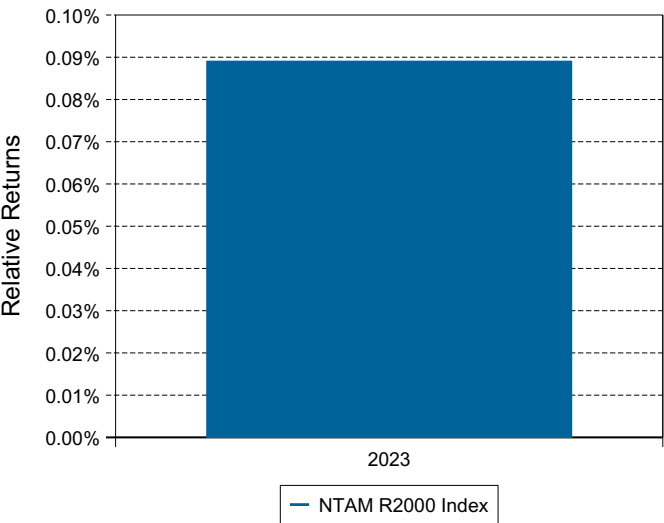
Quarterly Asset Growth

Beginning Market Value	\$15,192,323
Net New Investment	\$0
Investment Gains/(Losses)	\$429,833
Ending Market Value	\$15,622,156

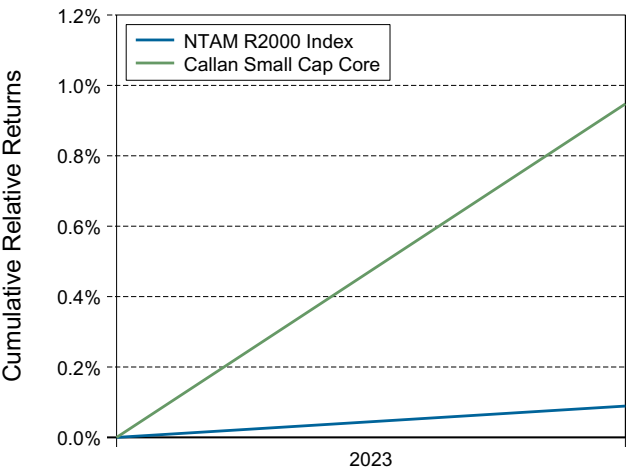
Performance vs Callan Small Cap Core (Gross)



Relative Return vs Russell 2000 Index



Cumulative Returns vs Russell 2000 Index





## International Equities Period Ended March 31, 2023

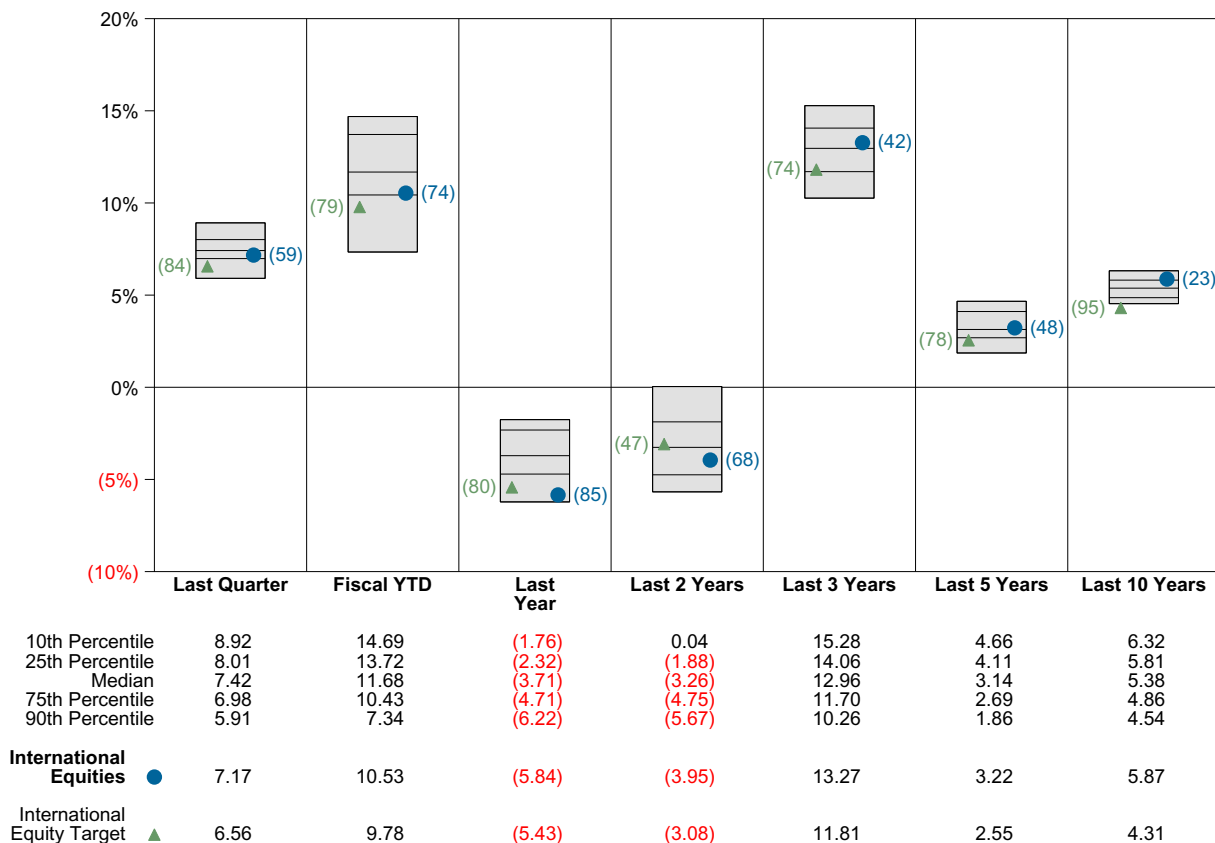
### Quarterly Summary and Highlights

- International Equities's portfolio posted a 7.17% return for the quarter placing it in the 59 percentile of the Public Fund - International Equity group for the quarter and in the 85 percentile for the last year.
- International Equities's portfolio outperformed the International Equity Target by 0.61% for the quarter and underperformed the International Equity Target for the year by 0.41%.

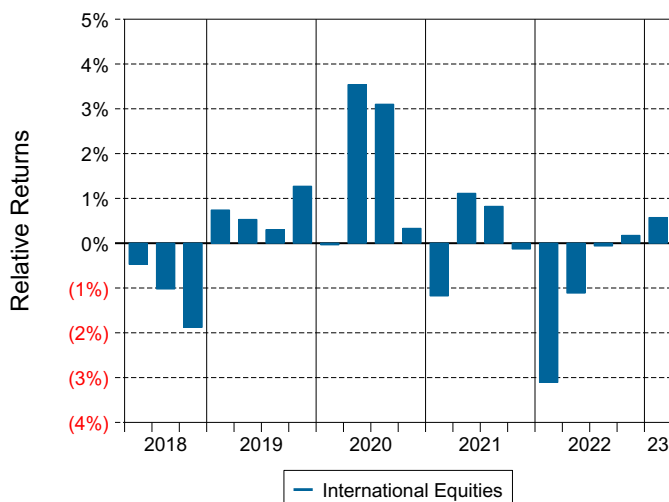
### Quarterly Asset Growth

Beginning Market Value	\$1,235,366,139
Net New Investment	\$-628,989
Investment Gains/(Losses)	\$88,595,842
Ending Market Value	\$1,323,332,991

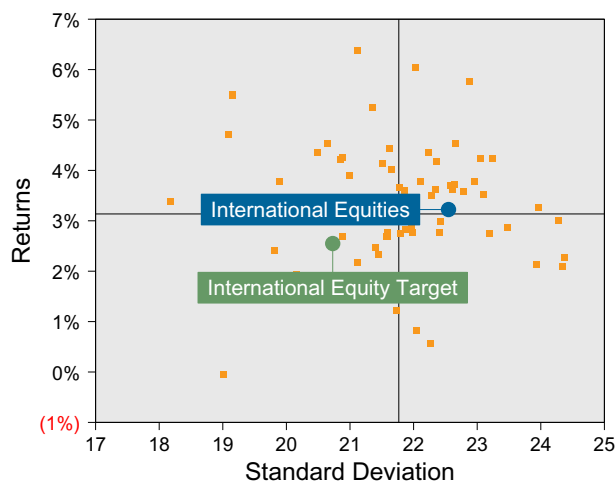
### Performance vs Public Fund - International Equity (Gross)



### Relative Return vs International Equity Target



### Public Fund - International Equity (Gross) Annualized Five Year Risk vs Return





## William Blair Int'l Leaders Period Ended March 31, 2023

### Investment Philosophy

One of the basic investment tenets of William Blair & Company has been its focus on quality growth companies. They believe that investing in quality growth companies will generate above average results with generally less risk than the market. This opportunity exists because they believe the market underestimates the durability and rate of growth in companies that have the following characteristics: strong management with a unique vision, competitive advantages that prolong the duration and size of earnings growth, and conservative financing. Internationally, they believe that this philosophy can be combined with strategic flexibility in managing geographic exposure, capitalization, sector emphasis, and relative growth and valuation at the portfolio level in order to provide an appropriate degree of adaptability to cyclical conditions.

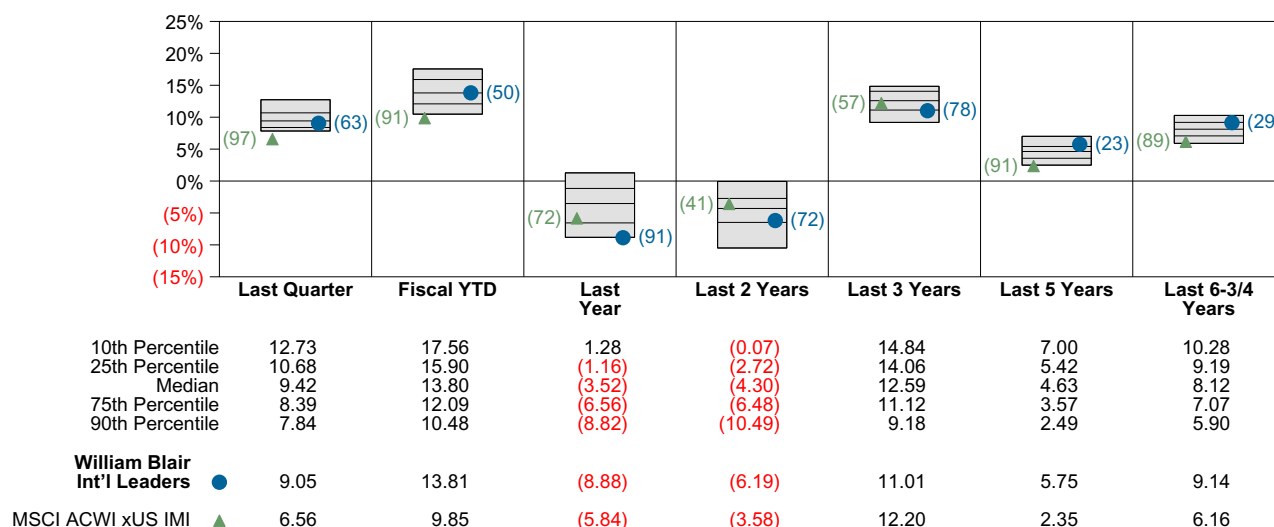
### Quarterly Summary and Highlights

- William Blair Int'l Leaders's portfolio posted a 9.05% return for the quarter placing it in the 63 percentile of the Callan Non-US All Country Growth Equity group for the quarter and in the 91 percentile for the last year.
- William Blair Int'l Leaders's portfolio outperformed the MSCI ACWI xUS IMI by 2.49% for the quarter and underperformed the MSCI ACWI xUS IMI for the year by 3.04%.

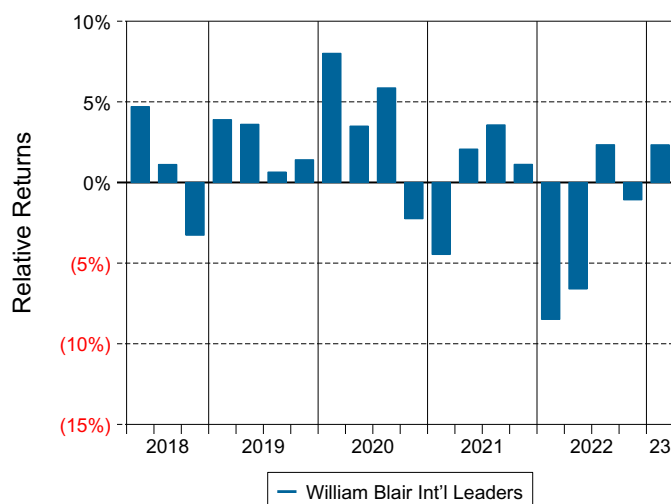
### Quarterly Asset Growth

Beginning Market Value	\$174,836,428
Net New Investment	\$0
Investment Gains/(Losses)	\$15,825,575
Ending Market Value	\$190,662,003

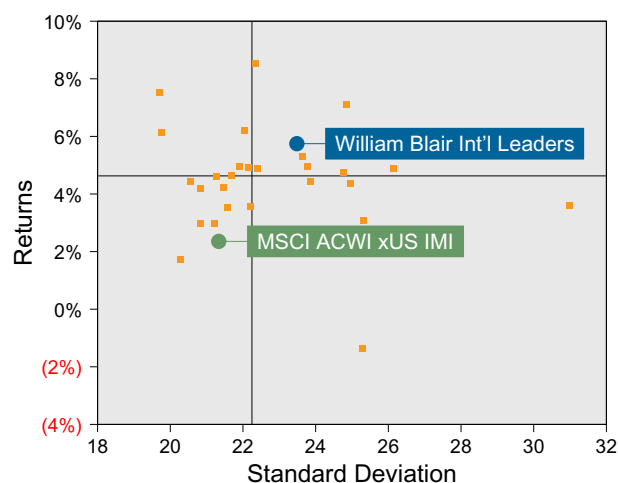
### Performance vs Callan Non-US All Country Growth Equity (Gross)



### Relative Return vs MSCI ACWI xUS IMI



### Callan Non-US All Country Growth Equity (Gross) Annualized Five Year Risk vs Return



## Arrowstreet ACWI ex US Period Ended March 31, 2023

### Investment Philosophy

Arrowstreet is a 100% employed-owned firm whose strategies are team-managed by a deep and experienced team. The firm employs a quantitative process that identifies direct and indirect relationships to forecast stock price returns. The investment approach seeks to provide a risk controlled, core exposure to Non-US developed and emerging countries. The portfolio is diversified with 150 to 775 holdings (typically 307-467) across countries and sectors. The firm's dedication to research has led to a model that has adapted to multiple market environments and provided consistent results over time.

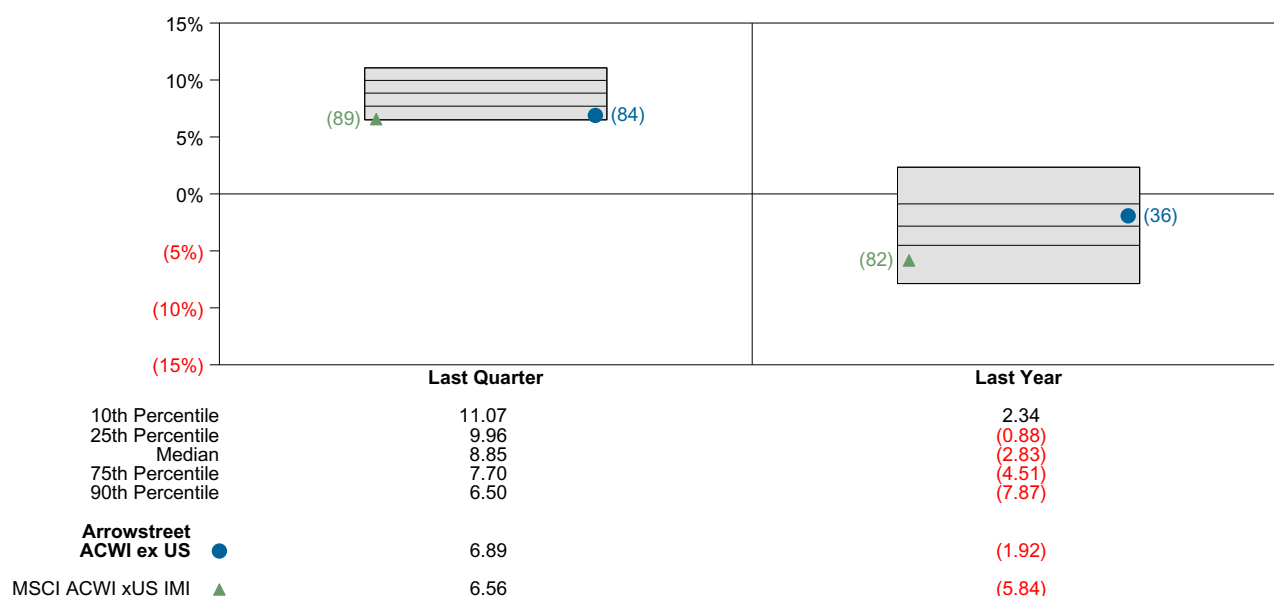
### Quarterly Summary and Highlights

- Arrowstreet ACWI ex US's portfolio posted a 6.89% return for the quarter placing it in the 84 percentile of the Callan Non-US All Country Broad Equity group for the quarter and in the 36 percentile for the last year.
- Arrowstreet ACWI ex US's portfolio outperformed the MSCI ACWI xUS IMI by 0.33% for the quarter and outperformed the MSCI ACWI xUS IMI for the year by 3.91%.

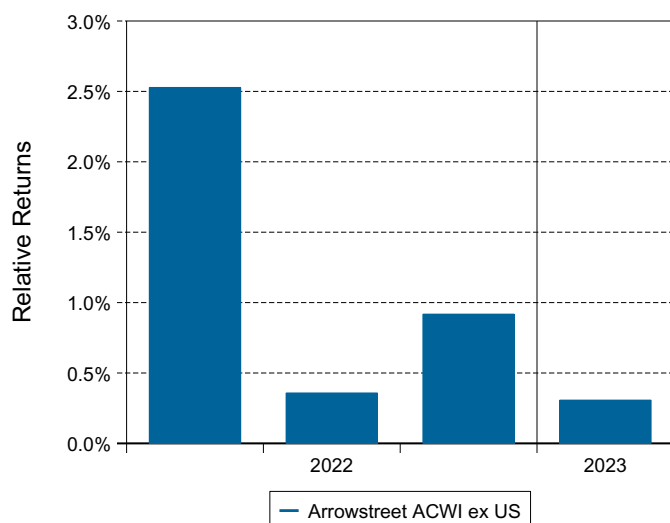
### Quarterly Asset Growth

Beginning Market Value	\$279,393,040
Net New Investment	\$-342,232
Investment Gains/(Losses)	\$19,245,126
Ending Market Value	\$298,295,935

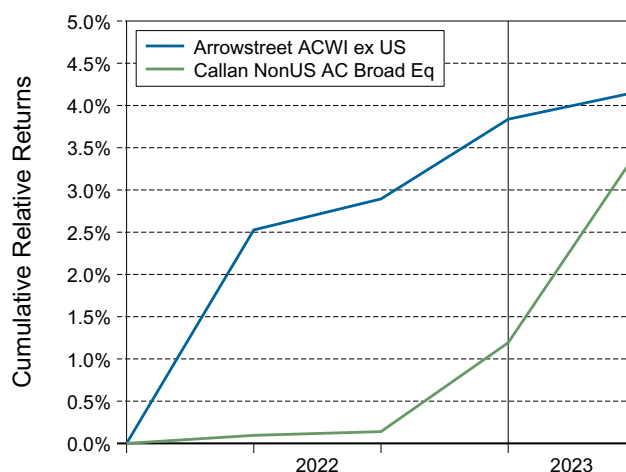
### Performance vs Callan Non-US All Country Broad Equity (Gross)



### Relative Return vs MSCI ACWI xUS IMI



### Cumulative Returns vs MSCI ACWI xUS IMI



# State St MSCI ACWI exUS Period Ended March 31, 2023

## Investment Philosophy

SSgA's passive equity team believes that over the long term, markets are generally efficient (Capital Asset Pricing Model or CAPM), and as such, the best way for clients to capture attractive long-term returns is to own the market. Through its transparency, ability to maintain consistent exposure and low cost, passive management offers clients the best way to achieve their desired exposure. Further, it allows our clients better control over their strategic asset allocation a far more significant driver of returns than individual stock selection. Accordingly, we favor the use of beta to both preserve and grow clients' wealth, and believe strongly that it should serve as the core of any plan's portfolio.

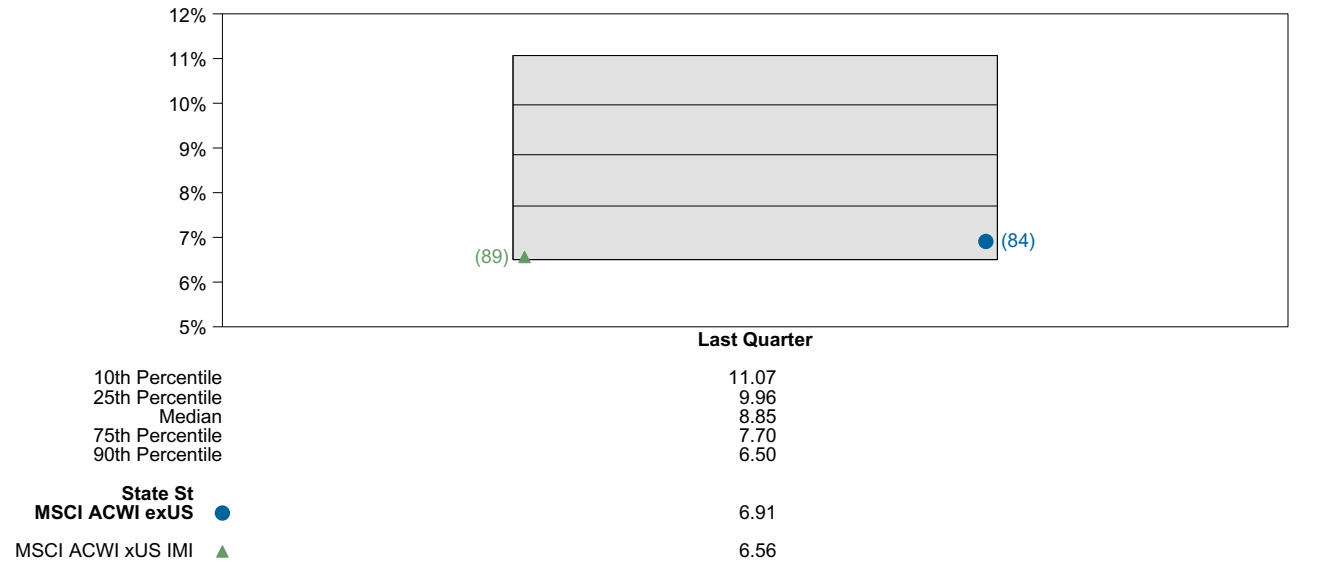
## Quarterly Summary and Highlights

- State St MSCI ACWI exUS's portfolio posted a 6.91% return for the quarter placing it in the 84 percentile of the Callan Non-US All Country Broad Equity group for the quarter.
- State St MSCI ACWI exUS's portfolio outperformed the MSCI ACWI xUS IMI by 0.35% for the quarter.

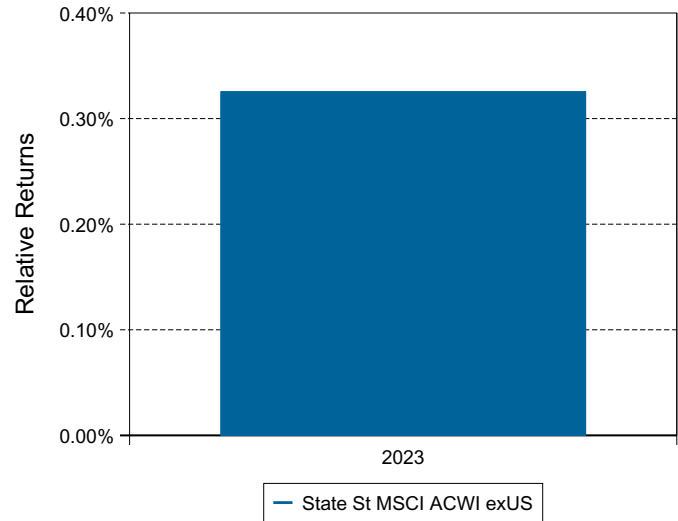
## Quarterly Asset Growth

Beginning Market Value	\$16,770,556
Net New Investment	\$0
Investment Gains/(Losses)	\$1,158,656
Ending Market Value	\$17,929,212

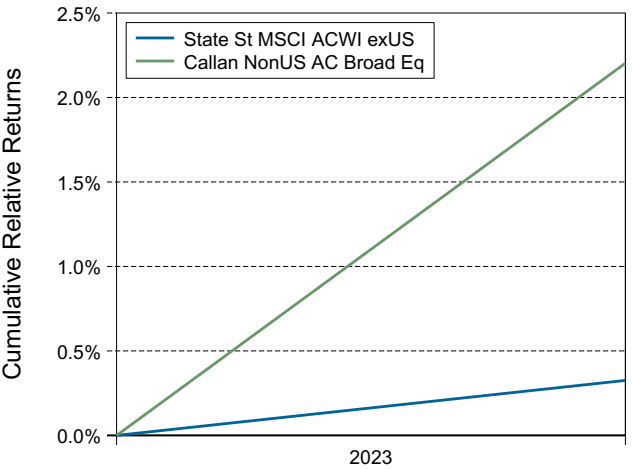
## Performance vs Callan Non-US All Country Broad Equity (Gross)



## Relative Return vs MSCI ACWI xUS IMI



## Cumulative Returns vs MSCI ACWI xUS IMI



## DFA International Small Cap Value Fund Period Ended March 31, 2023

### Investment Philosophy

The International Small Cap Value Portfolio invests in the stocks of small, non-US developed markets companies that Dimensional believes to be value stocks at the time of purchase. Specifically, it looks at companies that fall within the smallest 8-10% of each country's market capitalization, and who's shares have a high book value in relation to their market value (BtM). It does not invest in emerging markets.

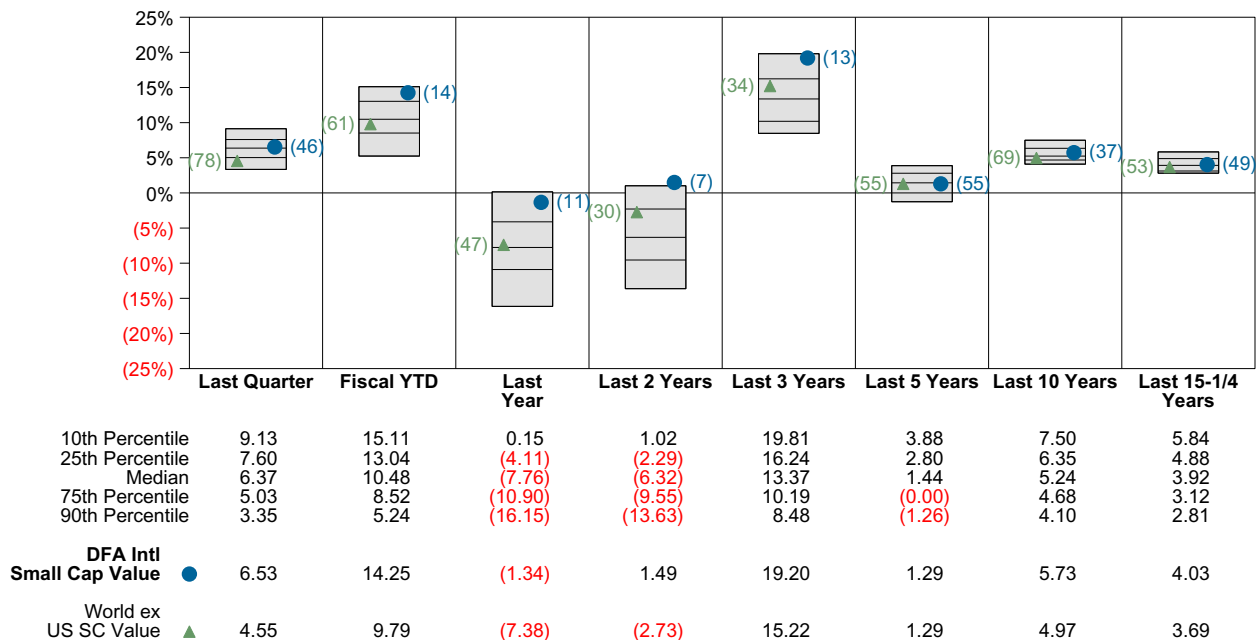
### Quarterly Summary and Highlights

- DFA Intl Small Cap Value's portfolio posted a 6.53% return for the quarter placing it in the 46 percentile of the Callan International Small Cap Mut Funds group for the quarter and in the 11 percentile for the last year.
- DFA Intl Small Cap Value's portfolio outperformed the World ex US SC Value by 1.98% for the quarter and outperformed the World ex US SC Value for the year by 6.04%.

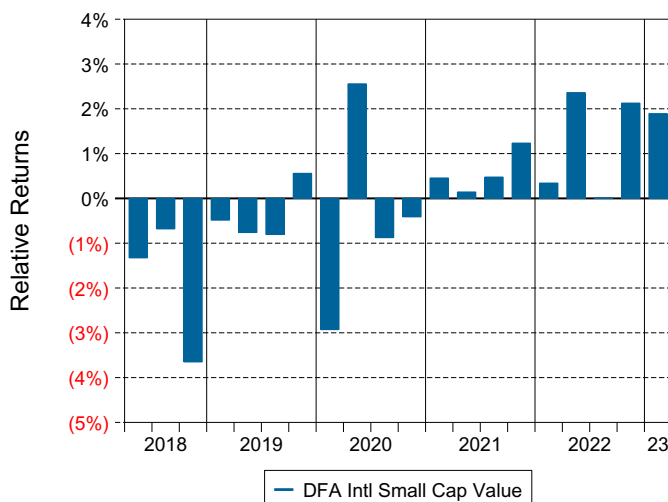
### Quarterly Asset Growth

Beginning Market Value	\$33,326,998
Net New Investment	\$0
Investment Gains/(Losses)	\$2,176,187
Ending Market Value	\$35,503,185

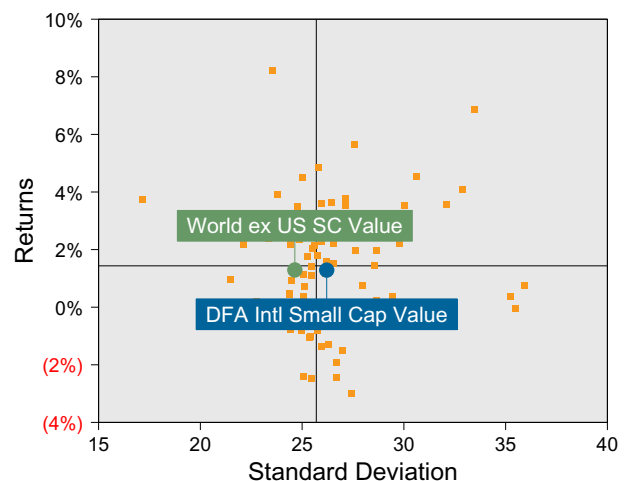
### Performance vs Callan International Small Cap Mut Funds (Net)



### Relative Return vs World ex US SC Value



### Callan International Small Cap Mut Funds (Net) Annualized Five Year Risk vs Return



## NTAM World Ex US Period Ended March 31, 2023

### Investment Philosophy

The Fund's objective is to provide investment results that approximate the overall performance of the MSCI World ex-US Equity Index.

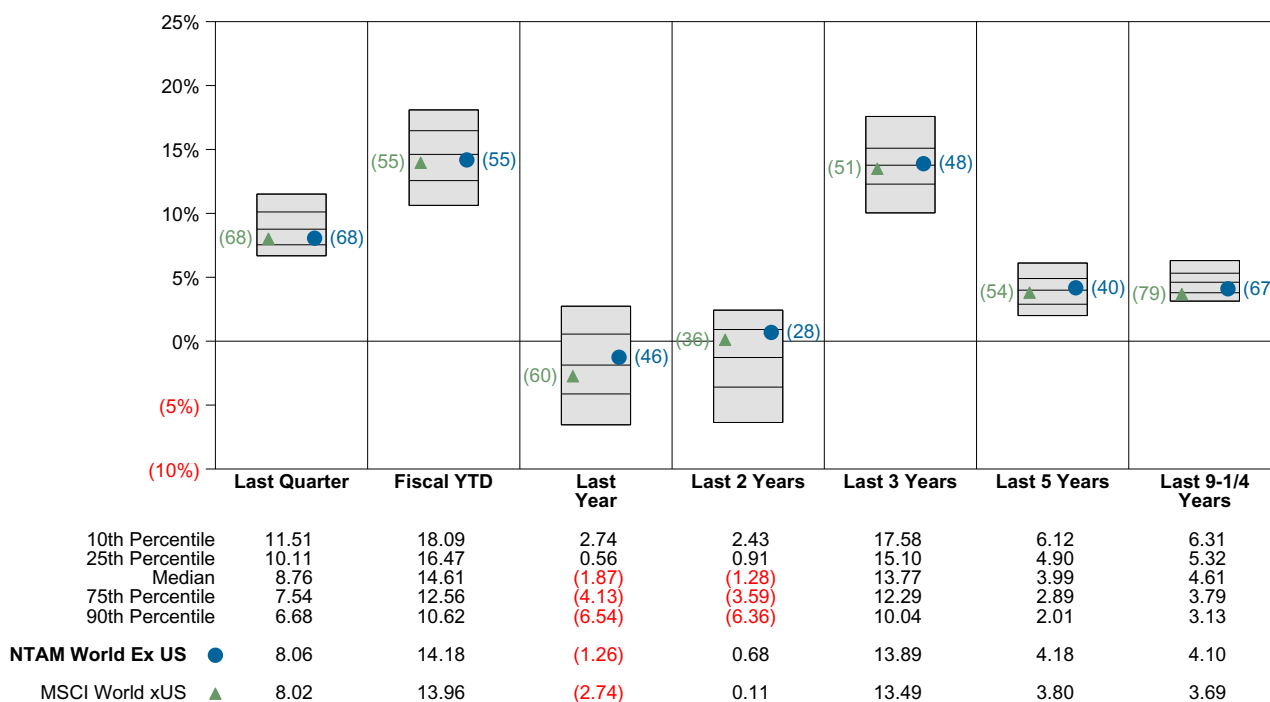
### Quarterly Summary and Highlights

- NTAM World Ex US's portfolio posted a 8.06% return for the quarter placing it in the 68 percentile of the Callan Non-US Equity group for the quarter and in the 46 percentile for the last year.
- NTAM World Ex US's portfolio outperformed the MSCI World xUS by 0.04% for the quarter and outperformed the MSCI World xUS for the year by 1.48%.

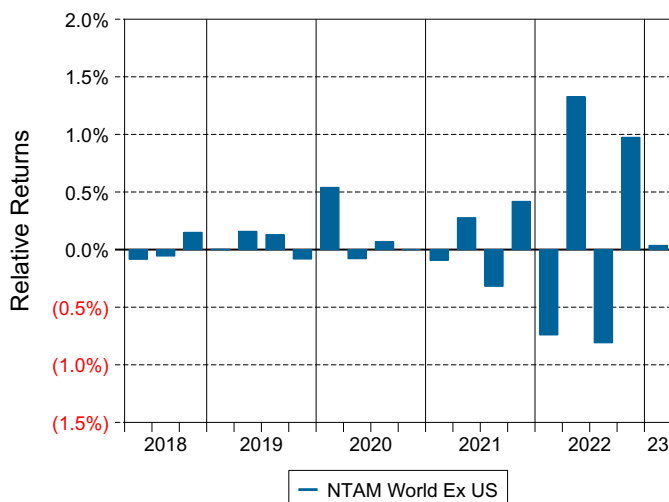
### Quarterly Asset Growth

Beginning Market Value	\$107,906,115
Net New Investment	\$0
Investment Gains/(Losses)	\$8,694,570
Ending Market Value	\$116,600,685

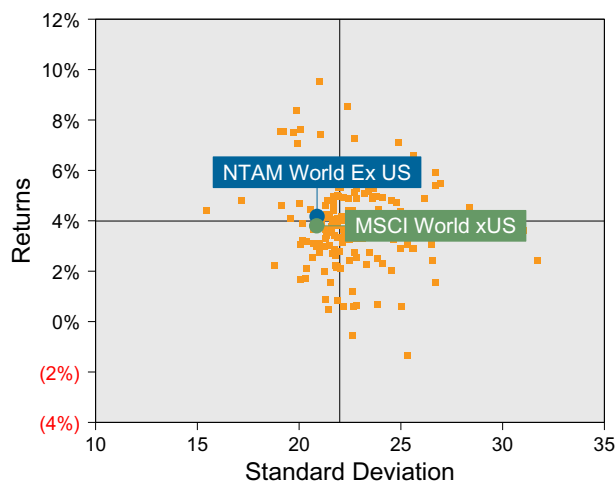
### Performance vs Callan Non-US Equity (Gross)



### Relative Return vs MSCI World xUS



### Callan Non-US Equity (Gross) Annualized Five Year Risk vs Return



State St MSCI World exUS  
Period Ended March 31, 2023

Investment Philosophy

SSGA's investment process is built on meeting the clients objectives, minimizing transaction costs and making decisions through a team framework. To determine which indexing methodology to use, they begin by considering the following factors: size of the portfolio, breadth of the benchmark, liquidity of constituents, custody costs, tracking error tolerance, availability of data, and the seasoning of the portfolio. Most often, full replication is used due to their belief in efficient markets.

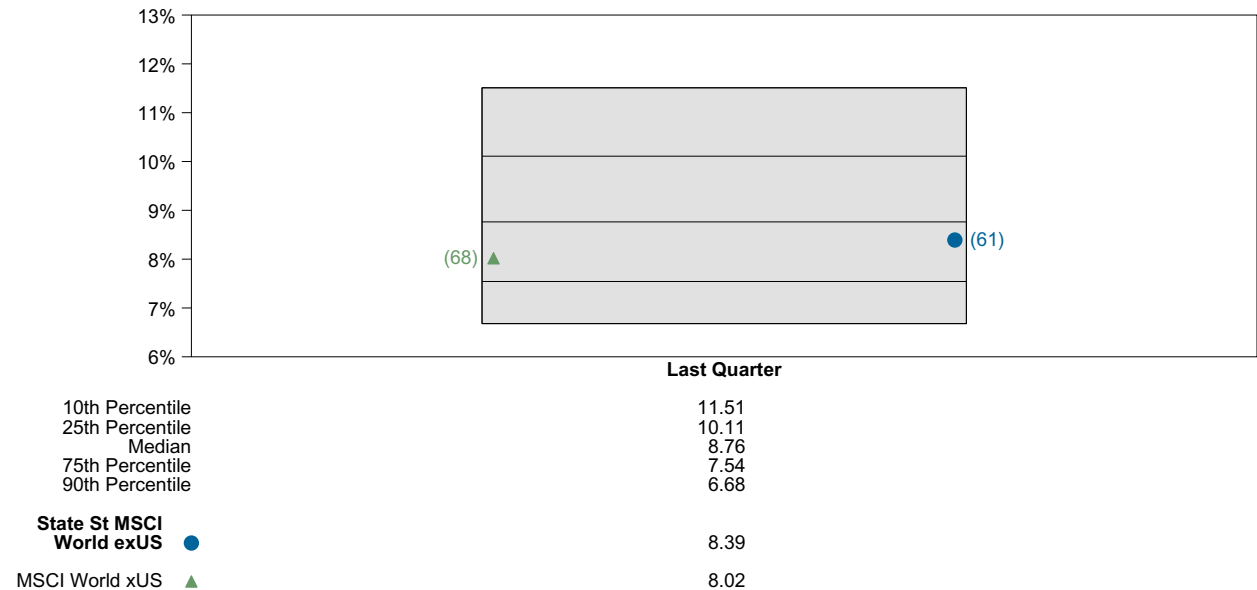
Quarterly Summary and Highlights

- State St MSCI World exUS's portfolio posted a 8.39% return for the quarter placing it in the 61 percentile of the Callan Non-US Equity group for the quarter.
- State St MSCI World exUS's portfolio outperformed the MSCI World xUS by 0.37% for the quarter.

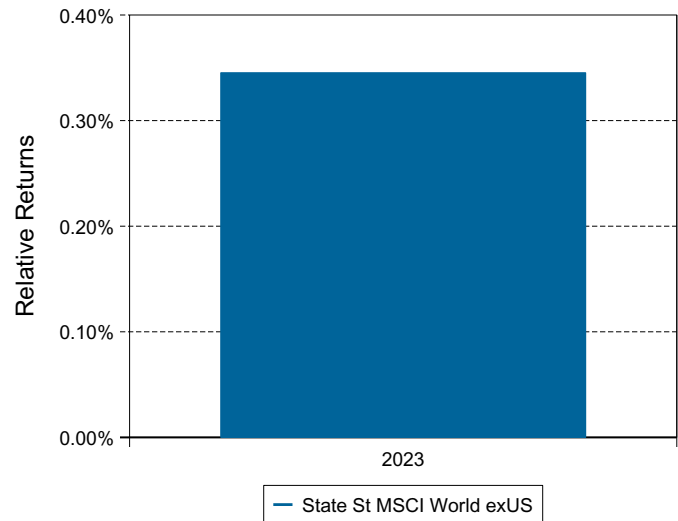
Quarterly Asset Growth

Beginning Market Value	\$361,167,342
Net New Investment	\$0
Investment Gains/(Losses)	\$30,307,967
Ending Market Value	\$391,475,309

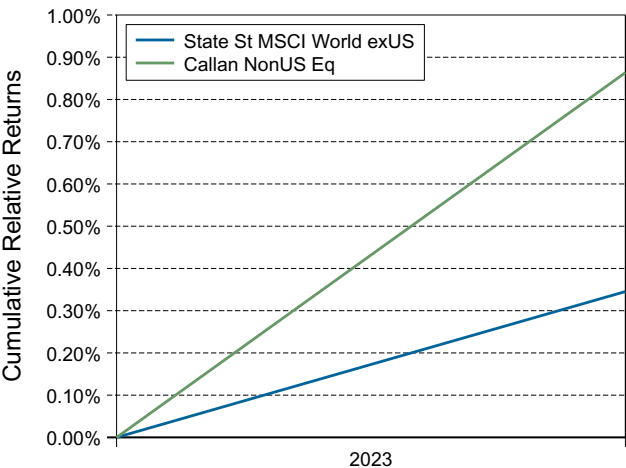
Performance vs Callan Non-US Equity (Gross)



Relative Return vs MSCI World xUS



Cumulative Returns vs MSCI World xUS



## Wellington Management Period Ended March 31, 2023

### Investment Philosophy

The objective of the International Small Cap Opportunities Portfolio (the "Portfolio") is to provide long-term total return in excess of the MSCI EAFE Small Cap Index (the "Index"). **The Benchmark is comprised of EPAC, Developed World, <\$2B through 2/28/2022 and MSCI EAFE Small Cap Index thereafter.**

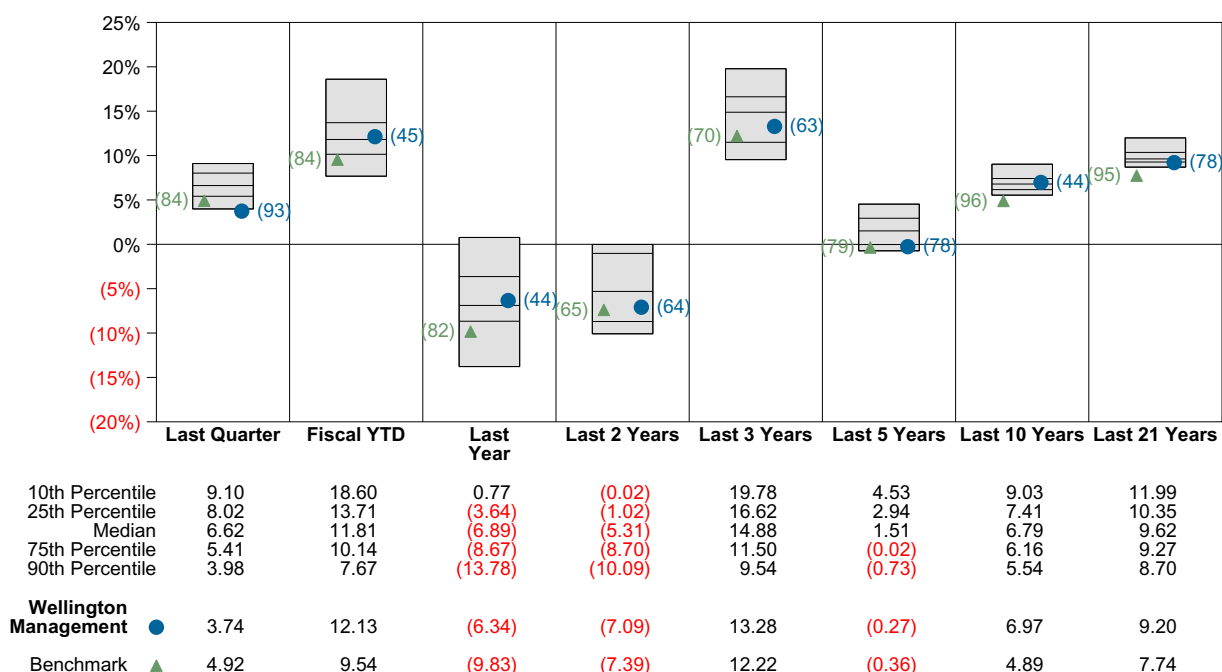
### Quarterly Summary and Highlights

- Wellington Management's portfolio posted a 3.74% return for the quarter placing it in the 93 percentile of the Callan International Small Cap group for the quarter and in the 44 percentile for the last year.
- Wellington Management's portfolio underperformed the Benchmark by 1.18% for the quarter and outperformed the Benchmark for the year by 3.50%.

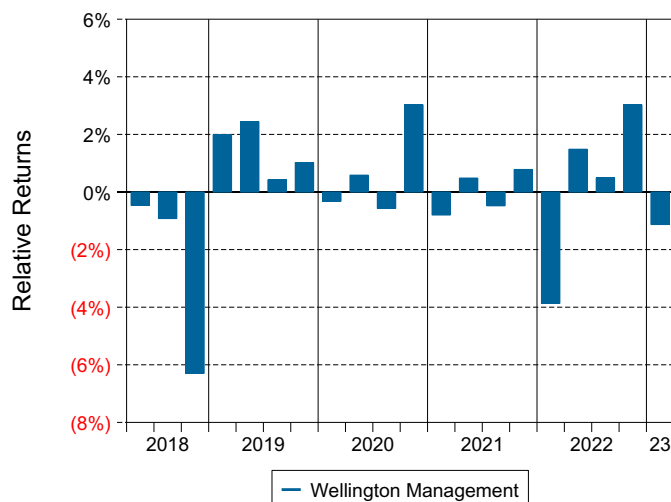
### Quarterly Asset Growth

Beginning Market Value	\$33,279,798
Net New Investment	\$-87,152
Investment Gains/(Losses)	\$1,245,557
Ending Market Value	\$34,438,204

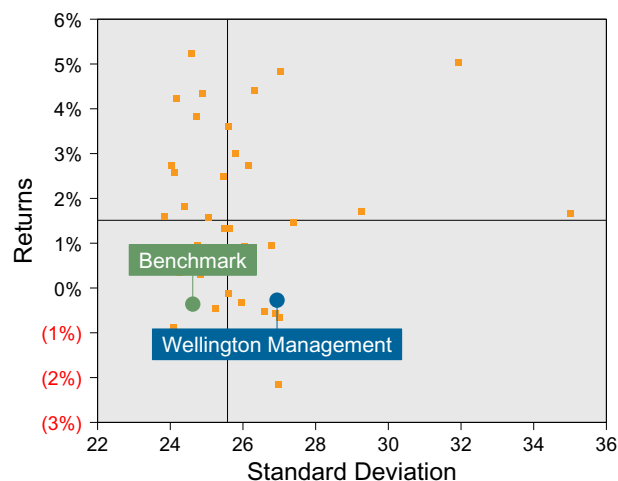
### Performance vs Callan International Small Cap (Gross)



### Relative Return vs Benchmark



### Callan International Small Cap (Gross) Annualized Five Year Risk vs Return



# State St MSCI exUS Small Period Ended March 31, 2023

**Investment Philosophy**  
SSGA's objective is to provide the most cost-effective implementation with stringent risk control and tracking requirements.

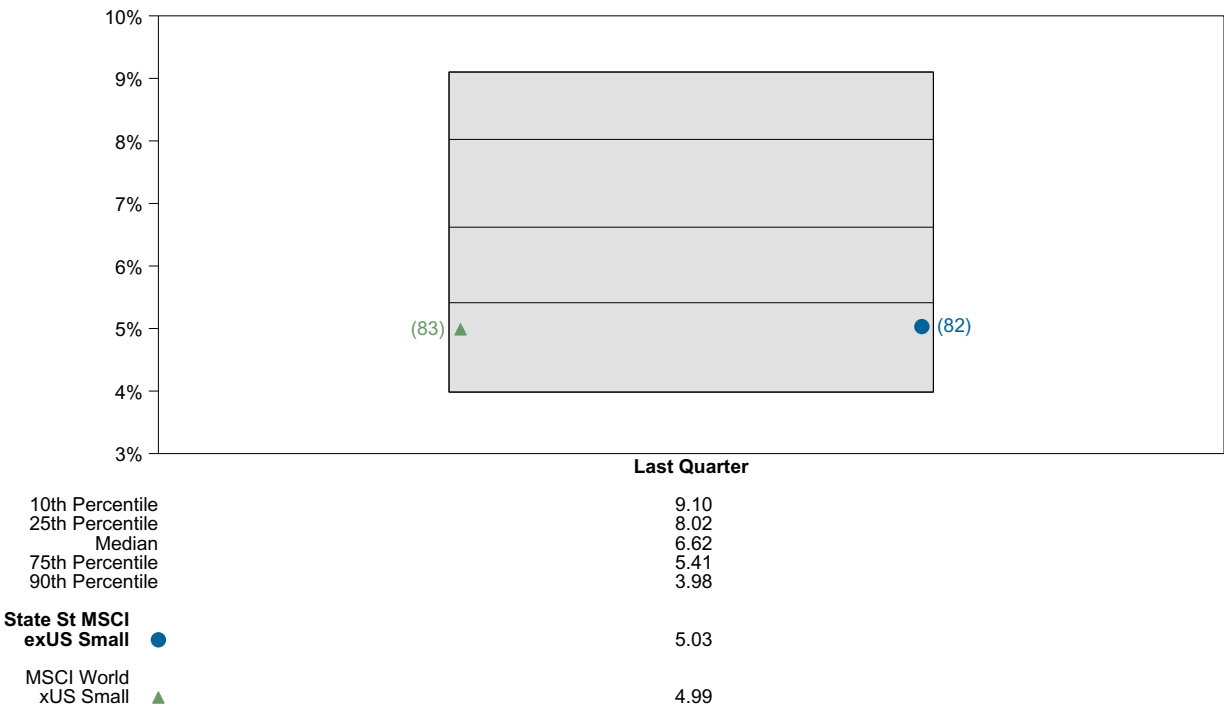
## Quarterly Summary and Highlights

- State St MSCI exUS Small's portfolio posted a 5.03% return for the quarter placing it in the 82 percentile of the Callan International Small Cap group for the quarter.
- State St MSCI exUS Small's portfolio outperformed the MSCI World xUS Small by 0.04% for the quarter.

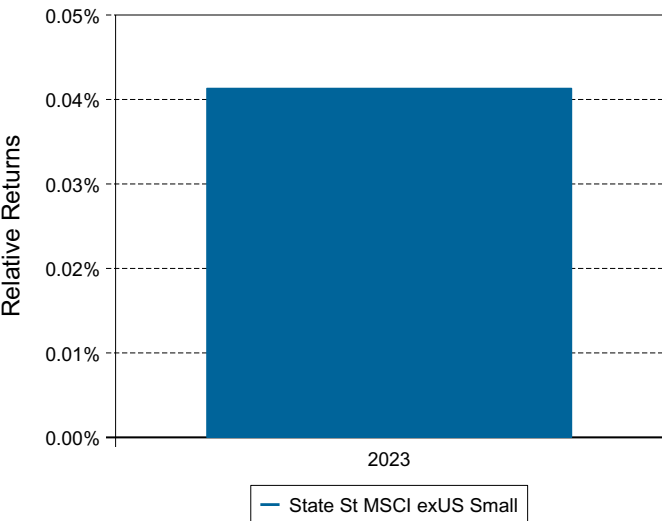
## Quarterly Asset Growth

Beginning Market Value	\$16,920,072
Net New Investment	\$-1,815
Investment Gains/(Losses)	\$851,215
Ending Market Value	\$17,769,472

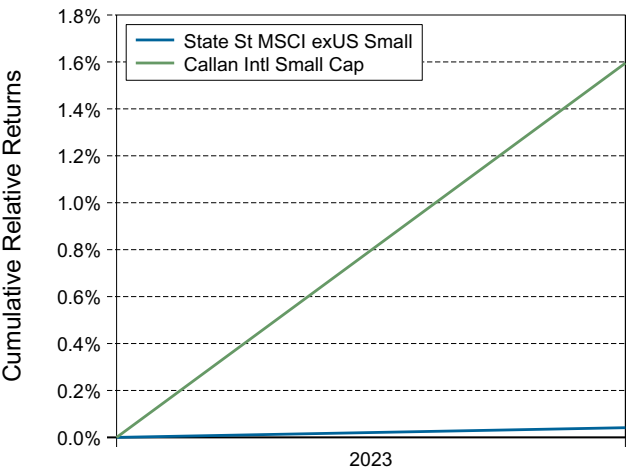
## Performance vs Callan International Small Cap (Gross)



## Relative Return vs MSCI World xUS Small



## Cumulative Returns vs MSCI World xUS Small





## Axiom Emerging Markets Period Ended March 31, 2023

### Investment Philosophy

Axiom employs a bottom-up, growth-oriented investment discipline. The process relies on detailed fundamental stock analysis to identify companies that are improving more rapidly than is generally expected and where positive changes are not yet reflected in expectations or valuation.

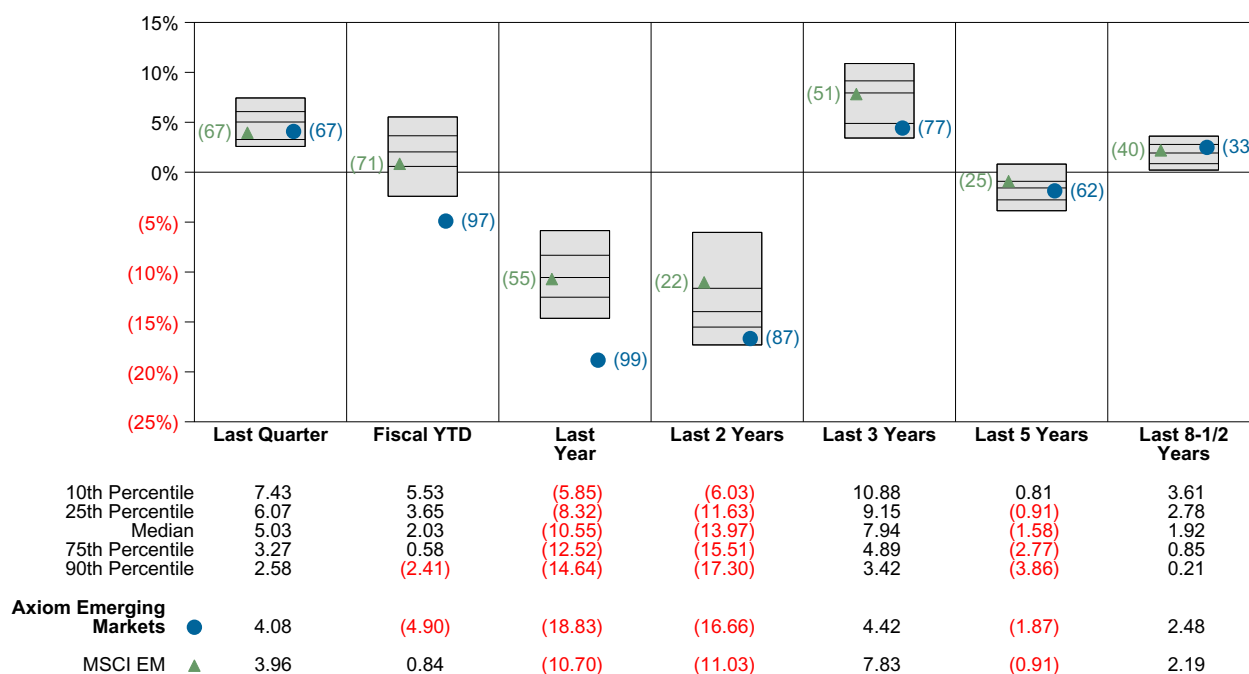
### Quarterly Summary and Highlights

- Axiom Emerging Markets's portfolio posted a 4.08% return for the quarter placing it in the 67 percentile of the Callan Emerging Markets Equity Mut Funds group for the quarter and in the 99 percentile for the last year.
- Axiom Emerging Markets's portfolio outperformed the MSCI EM by 0.13% for the quarter and underperformed the MSCI EM for the year by 8.13%.

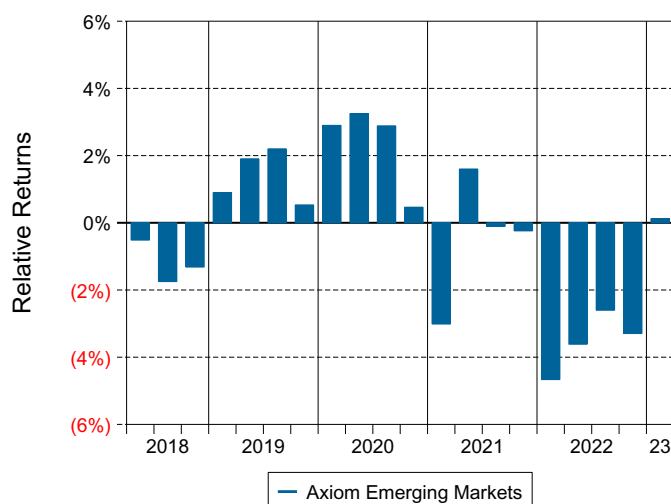
### Quarterly Asset Growth

Beginning Market Value	\$145,249,987
Net New Investment	\$0
Investment Gains/(Losses)	\$5,928,812
Ending Market Value	\$151,178,800

### Performance vs Callan Emerging Markets Equity Mut Funds (Net)



### Relative Return vs MSCI EM



### Callan Emerging Markets Equity Mut Funds (Net) Annualized Five Year Risk vs Return



## DFA Emerging Mkts SmallCap Period Ended March 31, 2023

### Investment Philosophy

The investment objective of the Emerging Markets Small Cap Portfolio is to achieve long-term capital appreciation. The Portfolio is a Feeder Portfolio and pursues its objective by investing substantially all of its assets in its corresponding Master Fund, The Emerging Markets Small Cap Series, which has the same investment objective and policies as the Emerging Markets Small Cap Portfolio.

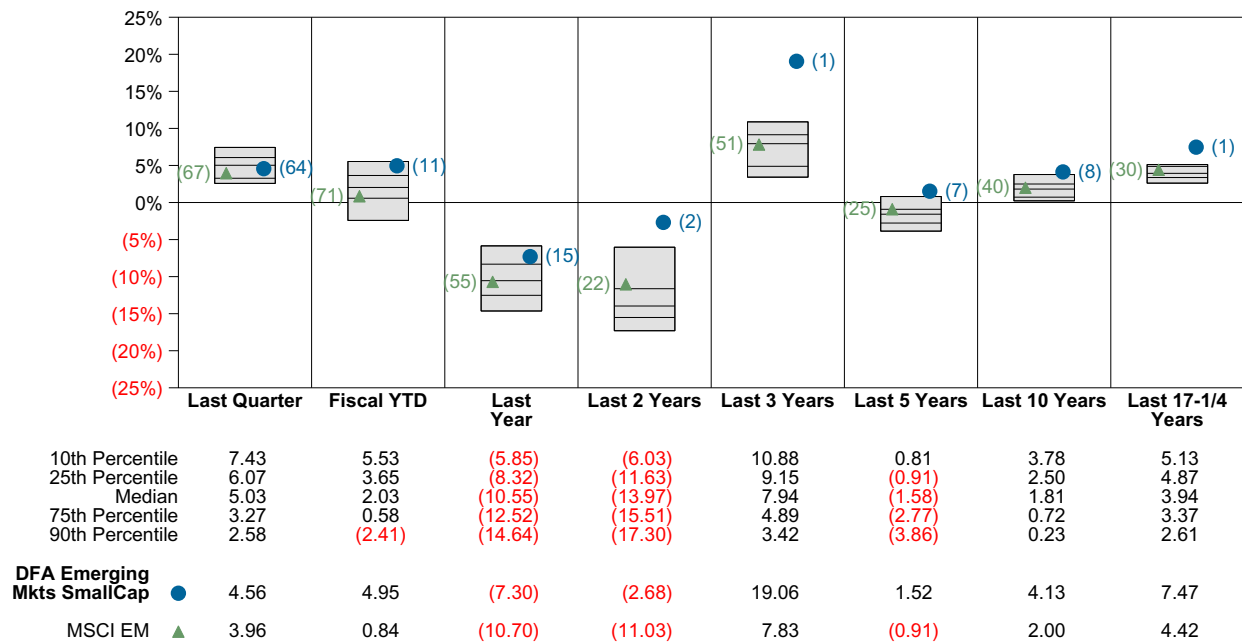
### Quarterly Summary and Highlights

- DFA Emerging Mkts SmallCap's portfolio posted a 4.56% return for the quarter placing it in the 64 percentile of the Callan Emerging Markets Equity Mut Funds group for the quarter and in the 15 percentile for the last year.
- DFA Emerging Mkts SmallCap's portfolio outperformed the MSCI EM by 0.61% for the quarter and outperformed the MSCI EM for the year by 3.40%.

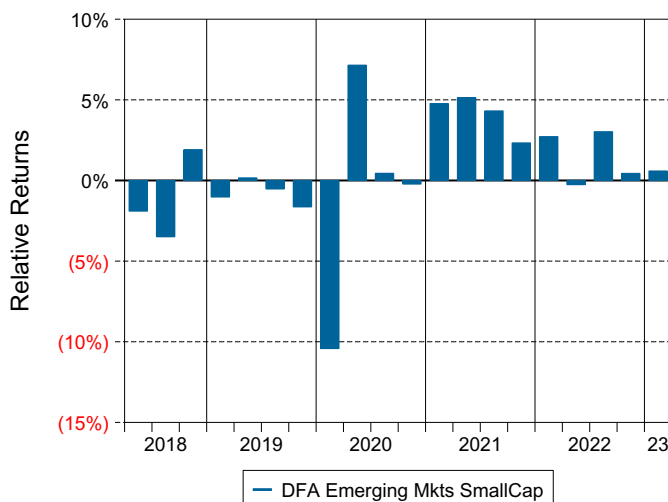
### Quarterly Asset Growth

Beginning Market Value	\$50,348,466
Net New Investment	\$0
Investment Gains/(Losses)	\$2,298,080
Ending Market Value	\$52,646,547

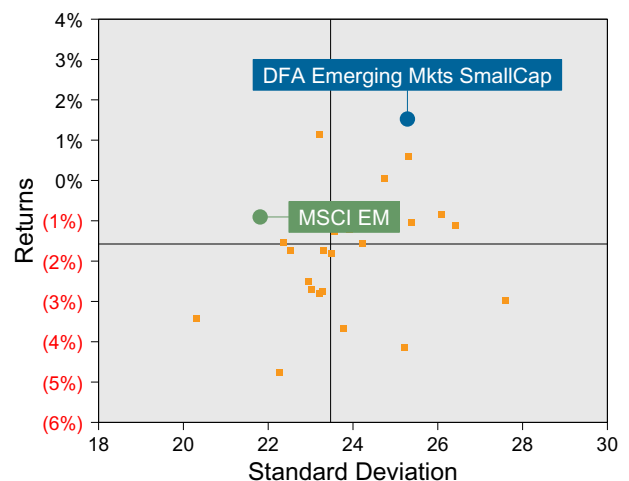
### Performance vs Callan Emerging Markets Equity Mut Funds (Net)



### Relative Return vs MSCI EM



### Callan Emerging Markets Equity Mut Funds (Net) Annualized Five Year Risk vs Return



# State St MSCI Em Mkts Period Ended March 31, 2023

## Investment Philosophy

This passive product seeks to replicate the composition and returns of the Emerging Markets Free Index.

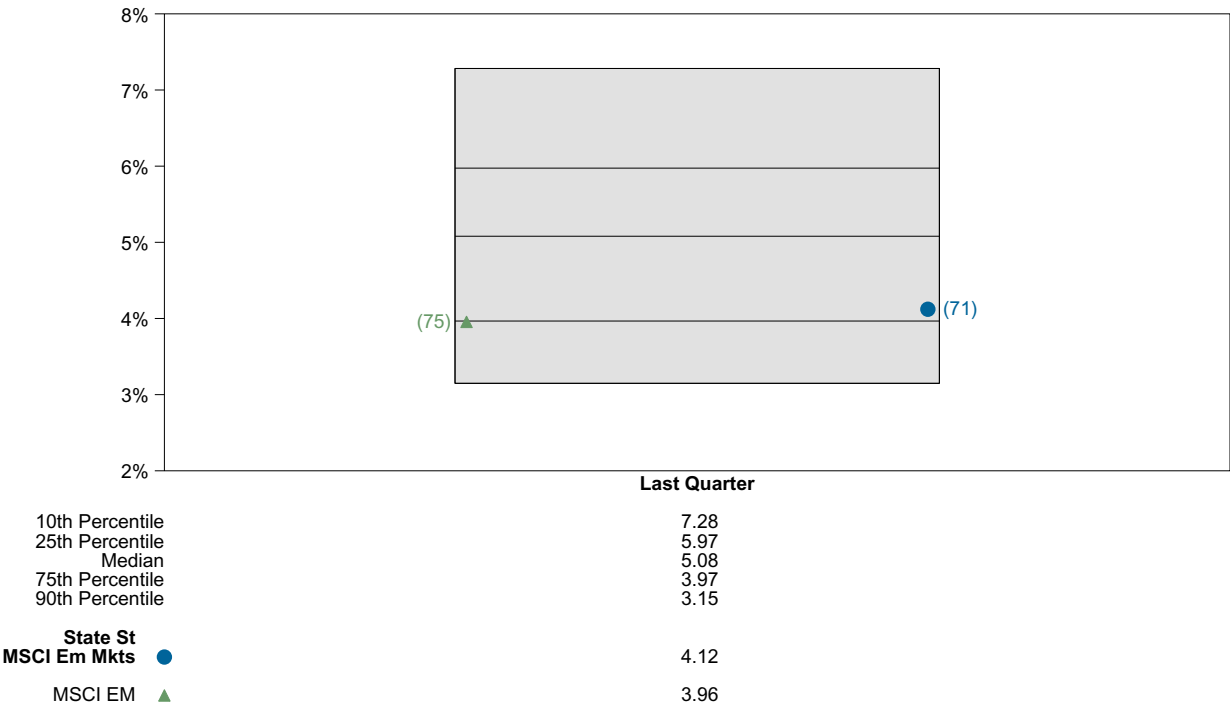
## Quarterly Summary and Highlights

- State St MSCI Em Mkts's portfolio posted a 4.12% return for the quarter placing it in the 71 percentile of the Callan Emerging Broad group for the quarter.
- State St MSCI Em Mkts's portfolio outperformed the MSCI EM by 0.17% for the quarter.

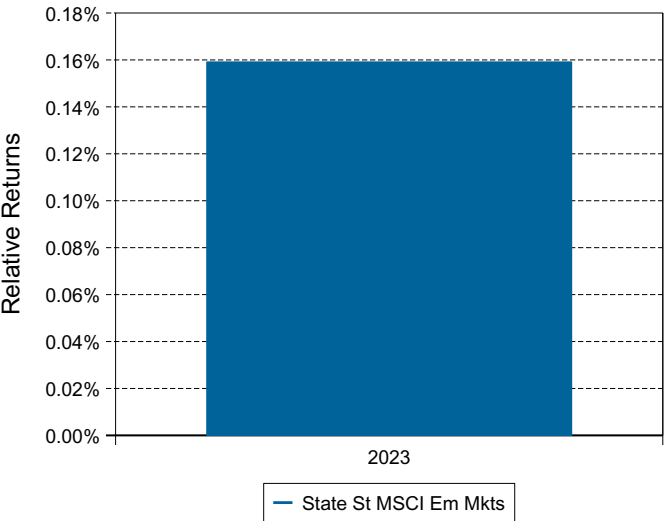
## Quarterly Asset Growth

Beginning Market Value	\$16,167,335
Net New Investment	\$0
Investment Gains/(Losses)	\$666,305
Ending Market Value	\$16,833,640

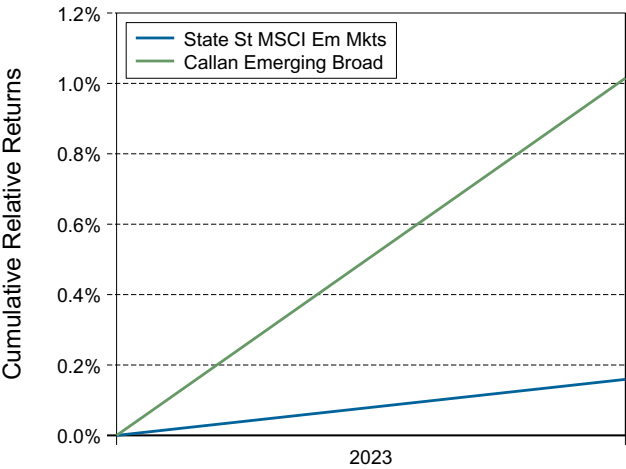
## Performance vs Callan Emerging Broad (Gross)



## Relative Return vs MSCI EM



## Cumulative Returns vs MSCI EM





## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended March 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended March 31, 2023

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 22-1/4 Years
<b>Private Equity</b>	<b>0.37%</b>	<b>(3.37%)</b>	<b>19.60%</b>	<b>13.87%</b>	<b>5.03%</b>
Total ASP (Brinson) Fds 1998-2003	(2.52%)	(4.85%)	(1.10%)	(0.54%)	-
Total ASP (Brinson) Non-US 1999-2004	2.57%	35.64%	12.30%	7.12%	-
Adams Street 2008 Non-US P-ship Fd	6.29%	(12.16%)	10.32%	11.65%	-
Adams Street Direct Co-Invest Fd 2006	4.60%	35.42%	(24.96%)	(22.99%)	-
Total Adams Street 2010 Funds	(1.55%)	(18.77%)	19.03%	17.83%	-
Adams Street 2015 Global Fund	(1.57%)	(15.07%)	21.23%	19.96%	-
Adams Street 2016 Global Fund	0.64%	(7.05%)	22.19%	18.43%	-
Adams Street 2017 Global Fund	(0.30%)	(4.59%)	25.74%	20.63%	-
Adams Street 2018 Global Fund	0.52%	(7.49%)	26.18%	-	-
Adams Street 2019 Global Fund	(0.64%)	(12.99%)	48.43%	-	-
Adams Street 2020 Global Fund	(0.08%)	(11.65%)	-	-	-
Adams Street 2021 Global Fund	1.16%	(17.62%)	-	-	-
BlackRock PEP	0.00%	2.63%	22.06%	15.73%	-
Blackrock PEP 2020	0.00%	5.94%	-	-	-
Sixth Street Partners - TAO	2.09%	5.06%	-	-	-
Private Equity Misc Funds*	5.19%	(6.73%)	(5.25%)	(3.11%)	-
 Russell 1000 Index	 7.46%	 (8.39%)	 18.55%	 10.87%	 7.39%
Russell 2000 Index	2.74%	(11.61%)	17.51%	4.71%	7.52%

\* Comprised of Matlin Patterson II, Matlin Patterson III, InvestAmerica Lewis & Clark, InvestAmerica L&C II, Corsair III, Capital Intl Fd V, Capital Intl Fd VI, EIG, Quantum Energy Partners, Hearthstone MSII, Hearthstone MSIII.



## Domestic Fixed Income Period Ended March 31, 2023

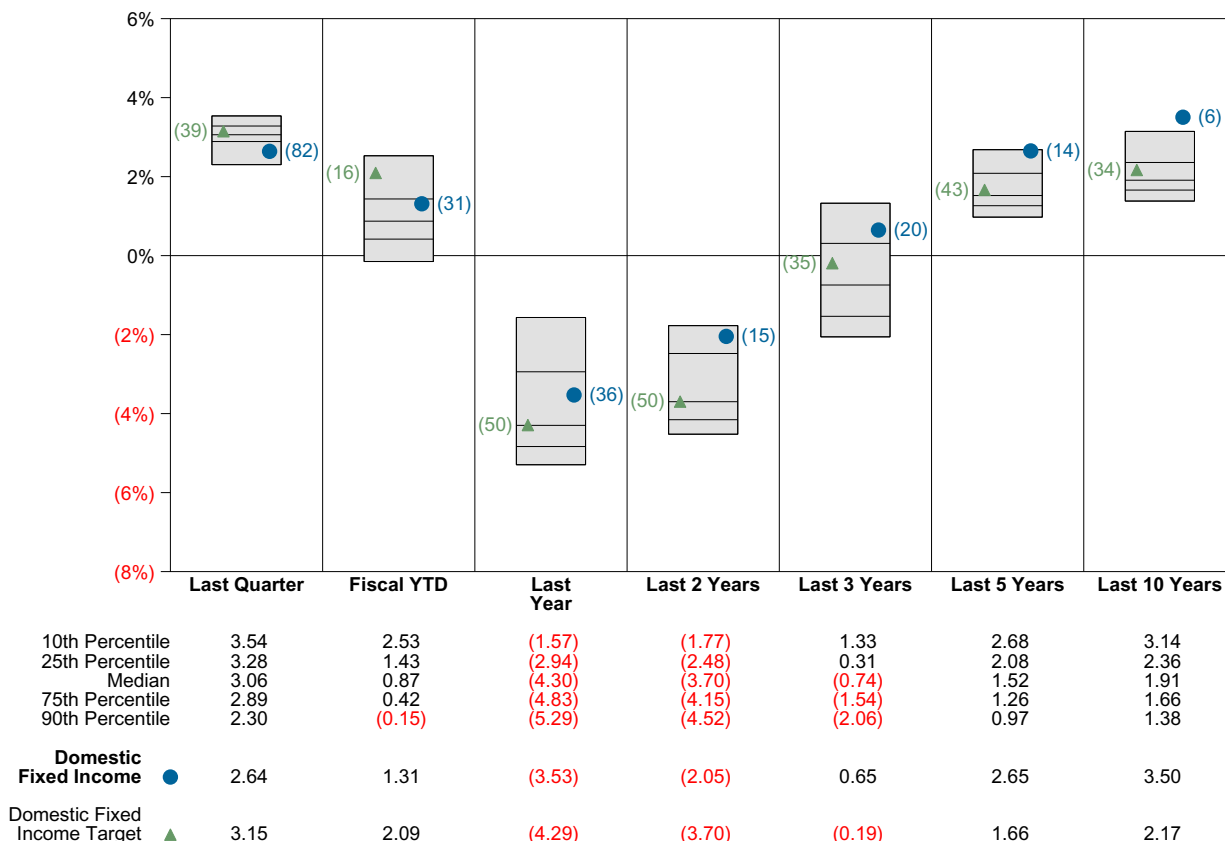
### Quarterly Summary and Highlights

- Domestic Fixed Income's portfolio posted a 2.64% return for the quarter placing it in the 82 percentile of the Public Fund - Domestic Fixed group for the quarter and in the 36 percentile for the last year.
- Domestic Fixed Income's portfolio underperformed the Domestic Fixed Income Target by 0.51% for the quarter and outperformed the Domestic Fixed Income Target for the year by 0.76%.

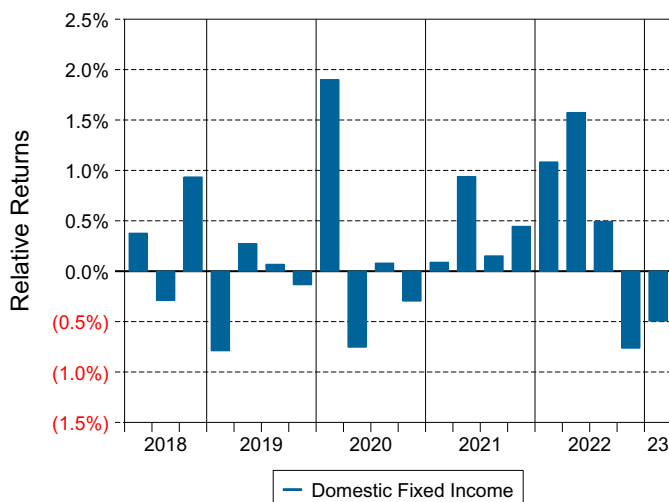
### Quarterly Asset Growth

Beginning Market Value	\$1,608,956,218
Net New Investment	\$-41,001,678
Investment Gains/(Losses)	\$42,215,006
Ending Market Value	\$1,610,169,546

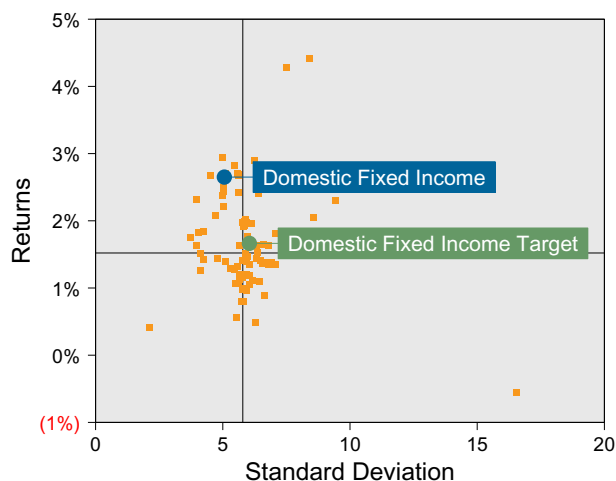
### Performance vs Public Fund - Domestic Fixed (Gross)



### Relative Returns vs Domestic Fixed Income Target



### Public Fund - Domestic Fixed (Gross) Annualized Five Year Risk vs Return



## Manulife-Declaration TRBF Period Ended March 31, 2023

### Investment Philosophy

The Fund's portfolio holdings consist primarily of RMBS issued by private sector companies (Non-Agency RMBS) and government agencies (Agency MBS) and CMBS issued by private sector companies. Agency MBS includes securities issued by the Federal National Mortgage Association (Fannie Mae), the Federal Home Loan Mortgage Corporation (Freddie Mac) and the Government National Mortgage Association (Ginnie Mae). Portfolio holdings may range from short tenure senior classes to stressed issues or subordinated securities with substantial risk of non-payment and correspondingly higher yields. Smaller portfolio allocations may include consumer asset-backed securities (ABS), or other structured credit securities and corporate bonds. As a diversification strategy and a potential hedge to credit risk, the Fund may invest in securities which tend to benefit from slow mortgage prepayments and economic growth, such as interest only (IO) MBS.

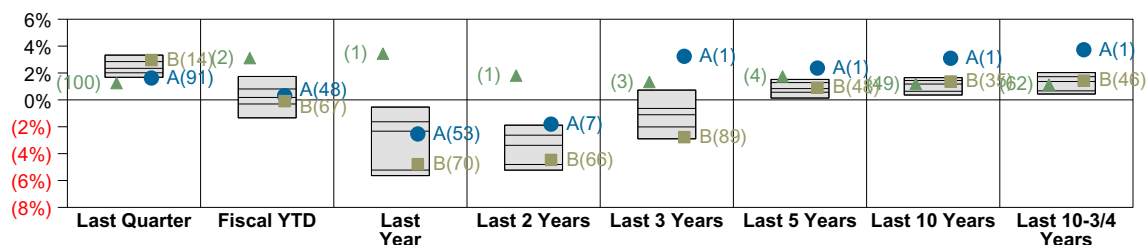
### Quarterly Summary and Highlights

- Manulife-Declaration TRBF's portfolio posted a 1.63% return for the quarter placing it in the 91 percentile of the Callan Intermediate Fixed Inc Mut Funds group for the quarter and in the 53 percentile for the last year.
- Manulife-Declaration TRBF's portfolio outperformed the LIBOR - 3 Month by 0.37% for the quarter and underperformed the LIBOR - 3 Month for the year by 5.98%.

### Quarterly Asset Growth

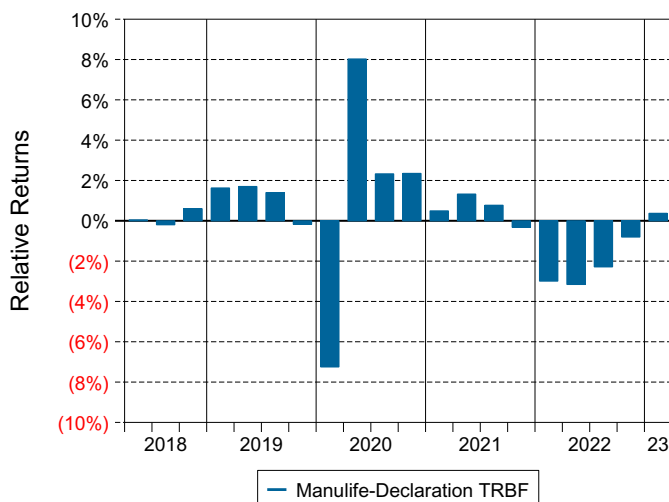
Beginning Market Value	\$146,657,233
Net New Investment	\$-39,194,820
Investment Gains/(Losses)	\$2,693,990
Ending Market Value	\$110,156,403

### Performance vs Callan Intermediate Fixed Inc Mut Funds (Net)

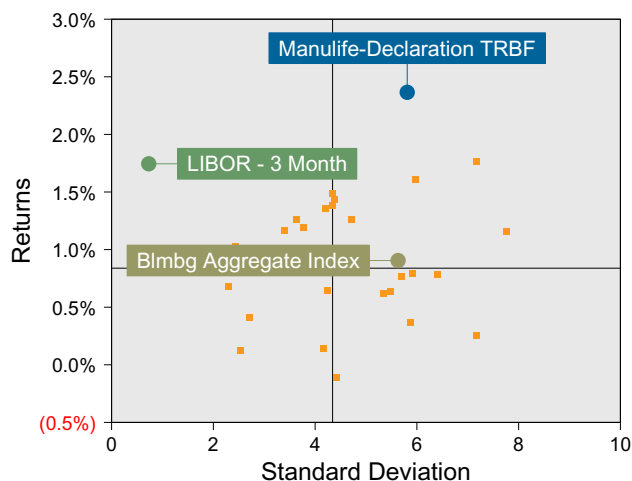


10th Percentile	3.33	1.74	(0.54)	(1.88)	0.73	1.52	1.66	2.03
25th Percentile	2.85	0.81	(1.63)	(2.63)	(0.64)	1.29	1.44	1.73
Median	2.35	0.18	(2.33)	(3.38)	(1.10)	0.84	1.18	1.37
75th Percentile	2.02	(0.30)	(5.22)	(4.81)	(2.01)	0.57	0.64	0.67
90th Percentile	1.68	(1.34)	(5.63)	(5.23)	(2.90)	0.14	0.36	0.44
Manulife-Declaration TRBF	● A 1.63	0.31	(2.54)	(1.81)	3.24	2.37	3.10	3.73
Blmbg Aggregate Index	■ B 2.96	(0.09)	(4.78)	(4.47)	(2.77)	0.91	1.36	1.42
LIBOR - 3 Month	▲ 1.25	3.11	3.44	1.81	1.33	1.74	1.19	1.13

### Relative Return vs LIBOR - 3 Month



### Callan Intermediate Fixed Inc Mut Funds (Net) Annualized Five Year Risk vs Return





## PIMCO DiSCO II

### Period Ended March 31, 2023

#### Investment Philosophy

The PIMCO Distressed Senior Credit Opportunities Fund is an opportunistic private-equity style Fund which seeks to provide investors enhanced returns principally through long-biased investments in undervalued senior and super senior structured credit securities that are expected to produce attractive levels of current income and that may also appreciate in value over the long term. The fund will look to capitalize on forced sales by liquidity constrained investors.

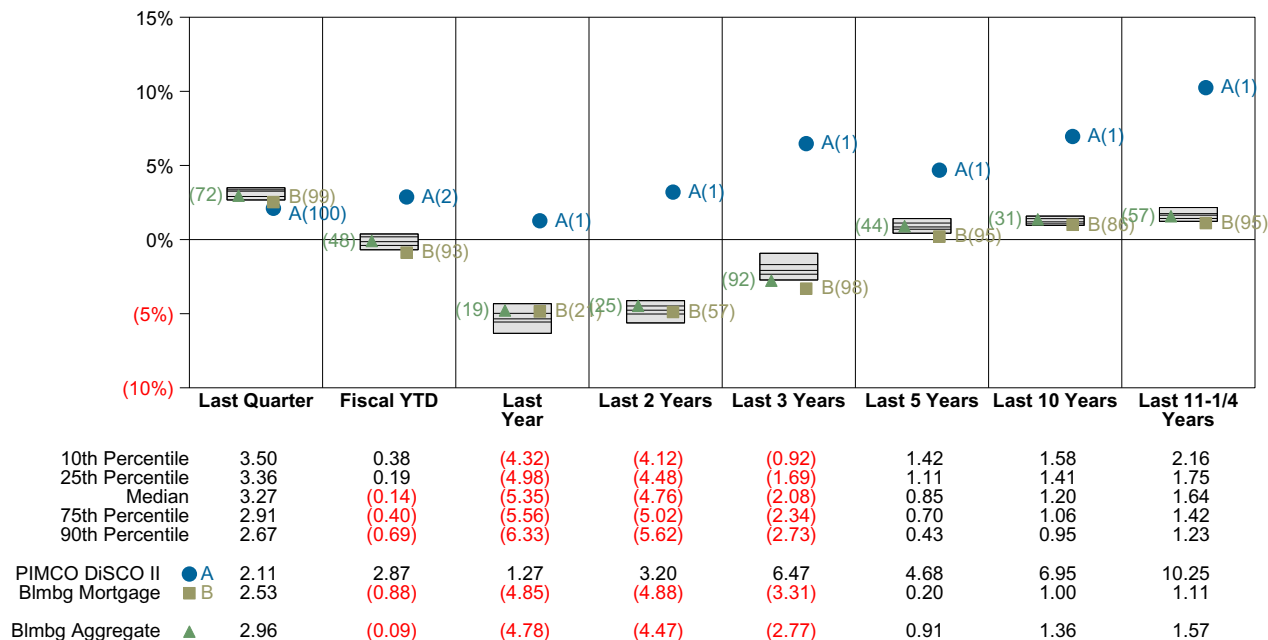
#### Quarterly Summary and Highlights

- PIMCO DiSCO II's portfolio posted a 2.11% return for the quarter placing it in the 100 percentile of the Callan Core Bond Mutual Funds group for the quarter and in the 1 percentile for the last year.
- PIMCO DiSCO II's portfolio underperformed the Blmbg Aggregate by 0.85% for the quarter and outperformed the Blmbg Aggregate for the year by 6.05%.

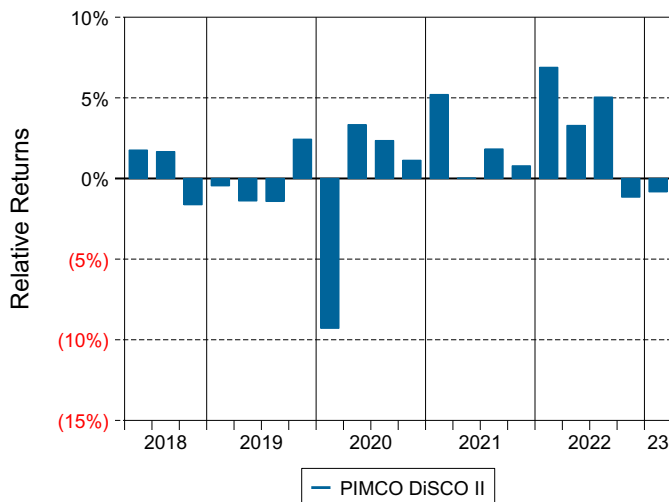
#### Quarterly Asset Growth

Beginning Market Value	\$101,250,214
Net New Investment	\$0
Investment Gains/(Losses)	\$2,136,299
Ending Market Value	\$103,386,513

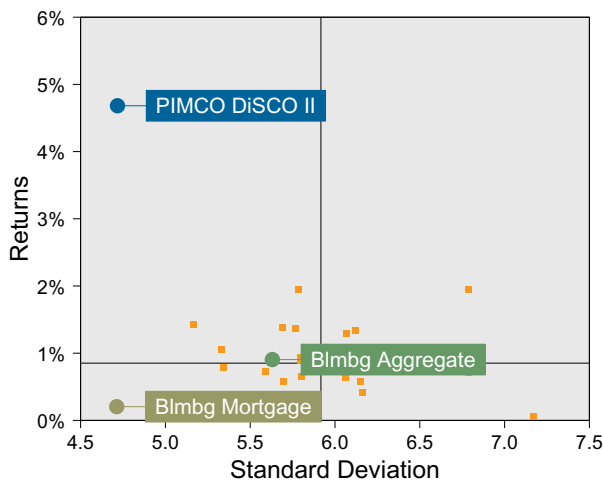
#### Performance vs Callan Core Bond Mutual Funds (Net)



#### Relative Return vs Blmbg Aggregate



#### Callan Core Bond Mutual Funds (Net) Annualized Five Year Risk vs Return



## PIMCO Core Plus Constrained Period Ended March 31, 2023

### Investment Philosophy

PIMCO's investment process utilizes both "top-down" and "bottom-up" strategies. Top-down strategies focus on duration, yield curve positioning, volatility, and sector rotation. These strategies are deployed from a macro view of the portfolio driven by their secular outlook of the forces likely to influence the economy and financial markets over the next three to five years and their cyclical views of two- to four-quarter trends. Implementation in portfolios is effected by selecting securities that achieve the designated objectives. Bottom-up strategies drive their security selection process and facilitate the identification and analysis of undervalued securities. **The product changed from Commingled Fund to Separate Account in March 2014. \*Libor-3 month through February 28, 2017; Fund's performance through March 31, 2014; Libor-3 month through June 30, 2018; Bloomberg Aggregate thereafter.**

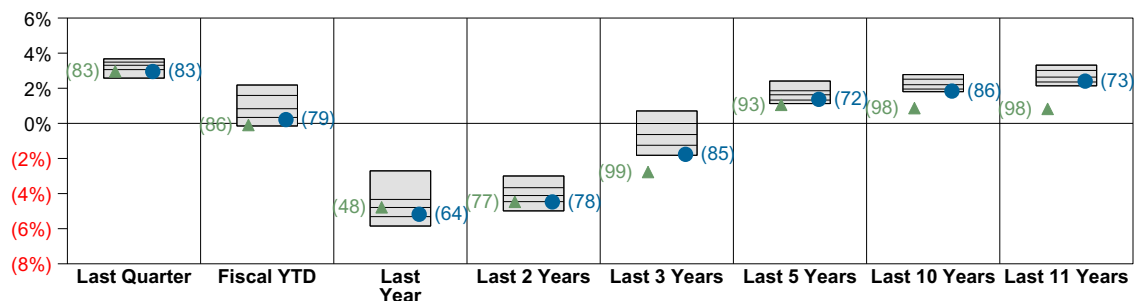
### Quarterly Summary and Highlights

- PIMCO Core Plus Constrained's portfolio posted a 2.95% return for the quarter placing it in the 83 percentile of the Callan Core Plus Fixed Income group for the quarter and in the 64 percentile for the last year.
- PIMCO Core Plus Constrained's portfolio underperformed the Blended Benchmark\* by 0.01% for the quarter and underperformed the Blended Benchmark\* for the year by 0.39%.

### Quarterly Asset Growth

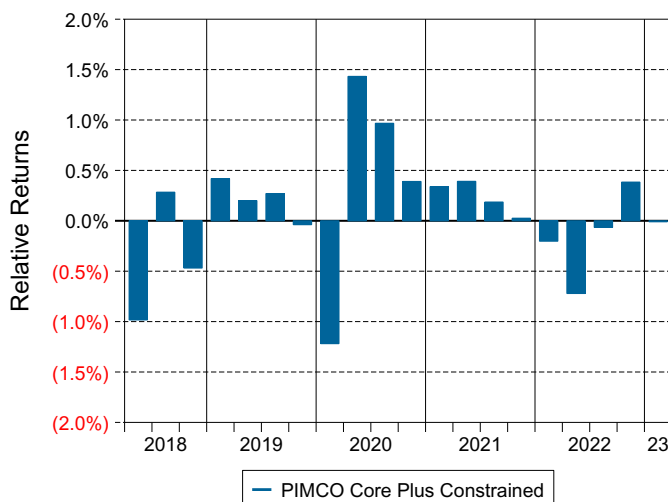
Beginning Market Value	\$392,810,114
Net New Investment	\$-120,539,142
Investment Gains/(Losses)	\$8,886,932
Ending Market Value	\$281,157,904

### Performance vs Callan Core Plus Fixed Income (Gross)

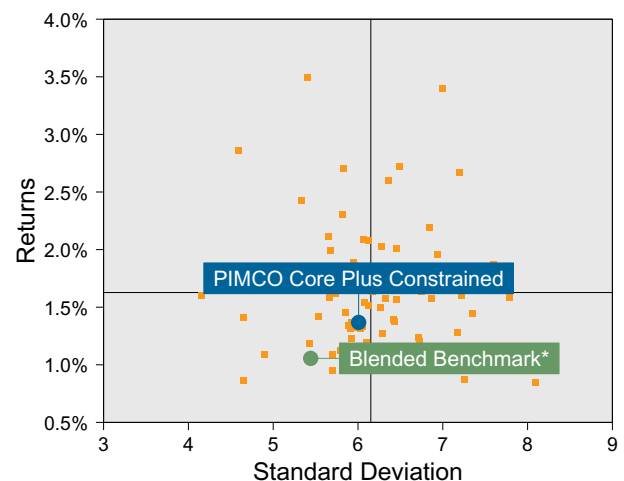


10th Percentile	3.67	2.18	(2.71)	(3.00)	0.71	2.41	2.78	3.32
25th Percentile	3.49	1.59	(4.33)	(3.66)	(0.01)	1.86	2.52	3.02
Median	3.31	0.83	(4.79)	(4.11)	(0.64)	1.63	2.20	2.63
75th Percentile	3.06	0.34	(5.31)	(4.46)	(1.25)	1.33	1.95	2.36
90th Percentile	2.58	(0.15)	(5.85)	(4.99)	(1.82)	1.13	1.80	2.14
<b>PIMCO Core Plus Constrained</b>	● 2.95	0.21	(5.18)	(4.48)	(1.76)	1.37	1.84	2.41
<b>Blended Benchmark*</b>	▲ 2.96	(0.09)	(4.78)	(4.47)	(2.77)	1.06	0.87	0.82

### Relative Return vs Blended Benchmark\*



### Callan Core Plus Fixed Income (Gross) Annualized Five Year Risk vs Return



## Prudential Core Period Ended March 31, 2023

### Investment Philosophy

The PGIM Fixed Income Core Fixed Income strategy seeks to provide +60 bps over the Bloomberg Barclays Aggregate Index over a market cycle. The strategy tends to generate its excess return from fairly equal increments of both sector allocation and subsector/security allocation. Duration and yield curve positioning is generally de-emphasized, but will be considered when market opportunities dictate. The primary way they add value is through intensive research-based sector, industry, and security selection. The strategy is predominately investment grade, but may also invest nominally in crossover/high yield bonds and emerging markets debt, when guidelines permit.

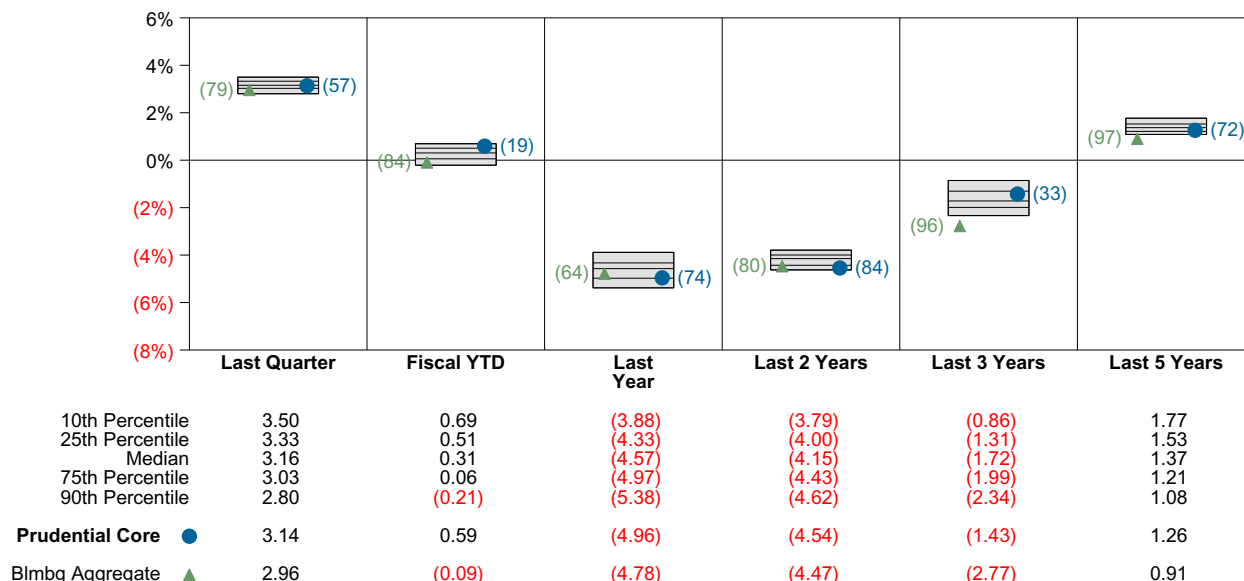
### Quarterly Summary and Highlights

- Prudential Core's portfolio posted a 3.14% return for the quarter placing it in the 57 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 74 percentile for the last year.
- Prudential Core's portfolio outperformed the Blmbg Aggregate by 0.17% for the quarter and underperformed the Blmbg Aggregate for the year by 0.18%.

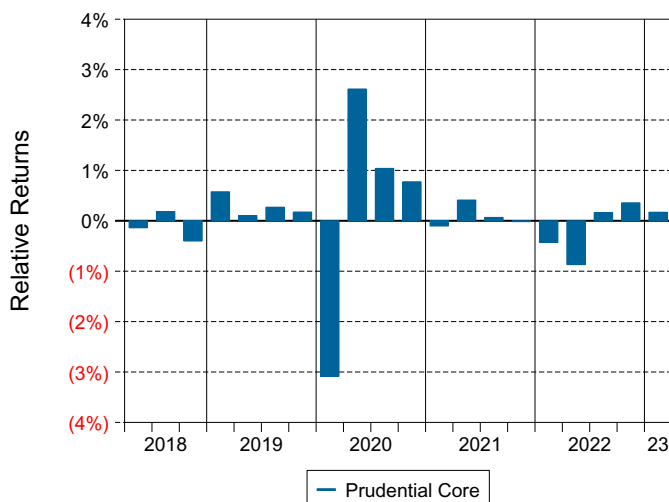
### Quarterly Asset Growth

Beginning Market Value	\$398,948,646
Net New Investment	\$-120,247,848
Investment Gains/(Losses)	\$9,466,075
Ending Market Value	\$288,166,873

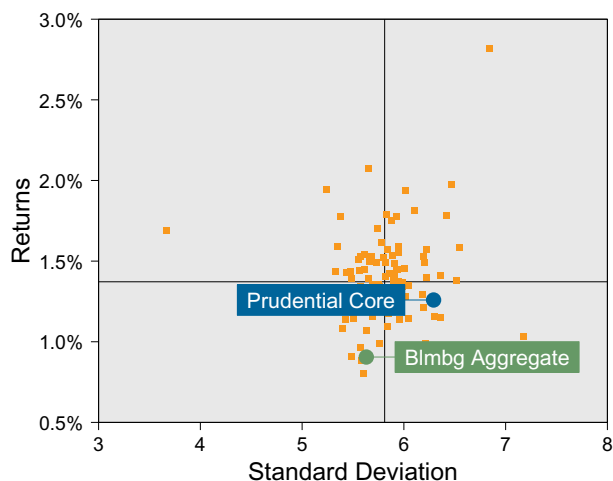
### Performance vs Callan Core Bond Fixed Income (Gross)



### Relative Return vs Blmbg Aggregate



### Callan Core Bond Fixed Income (Gross) Annualized Five Year Risk vs Return



## Ares ND Credit Strategies Fd Period Ended March 31, 2023

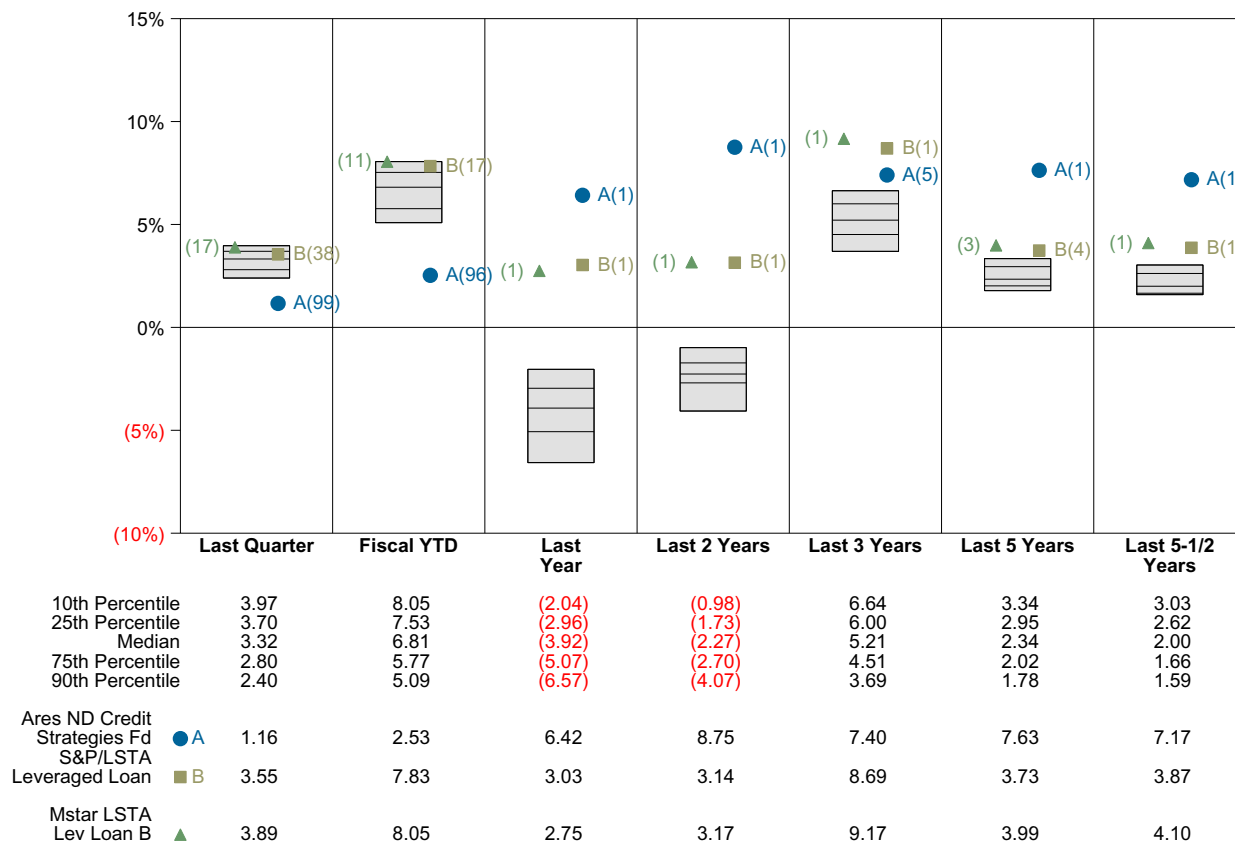
### Quarterly Summary and Highlights

- Ares ND Credit Strategies Fd's portfolio posted a 1.16% return for the quarter placing it in the 99 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 1 percentile for the last year.
- Ares ND Credit Strategies Fd's portfolio underperformed the Mstar LSTA Lev Loan B by 2.72% for the quarter and outperformed the Mstar LSTA Lev Loan B for the year by 3.67%.

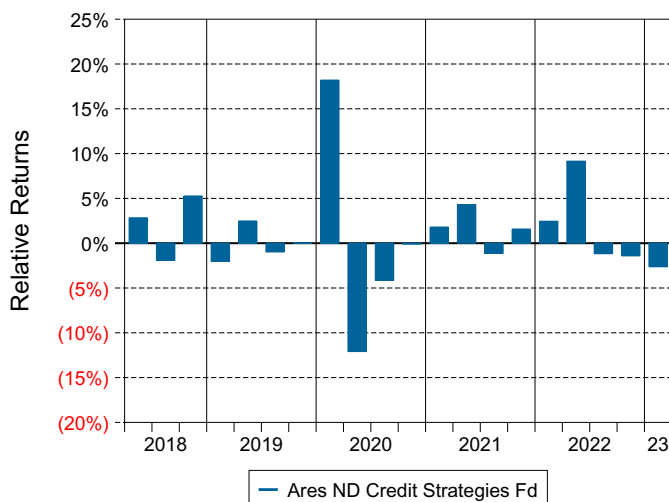
### Quarterly Asset Growth

Beginning Market Value	\$158,219,998
Net New Investment	\$0
Investment Gains/(Losses)	\$1,843,035
Ending Market Value	\$160,063,033

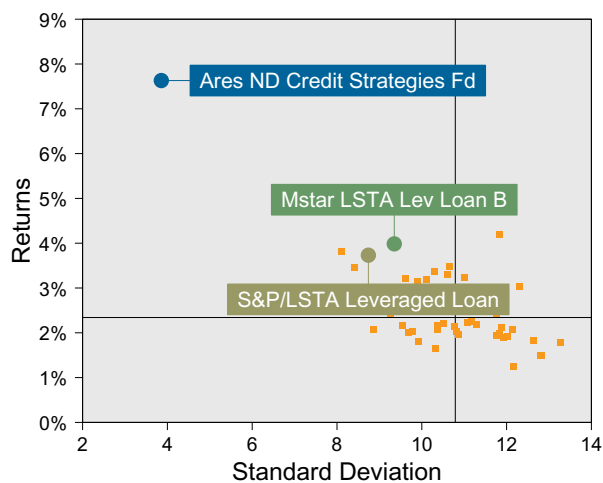
### Performance vs Callan High Yield Mutual Funds (Net)



### Relative Return vs Mstar LSTA Lev Loan B



### Callan High Yield Mutual Funds (Net) Annualized Five Year Risk vs Return



## Cerberus ND Private Credit Fd Period Ended March 31, 2023

### Investment Philosophy

The investment objective of the LLC is to achieve superior risk-adjusted rates of return primarily through origination of, and investment in, secured debt assets consistent with the Loan Opportunities Strategy of the Cerberus Business Finance lending platform ("CBF", "Cerberus Business Finance" or the "Cerberus Lending Platform"). The Cerberus Lending Platform is a direct origination and lending business focused on providing secured debt primarily to U.S. middle-market companies. The LLC expects to generate both current income and capital appreciation.

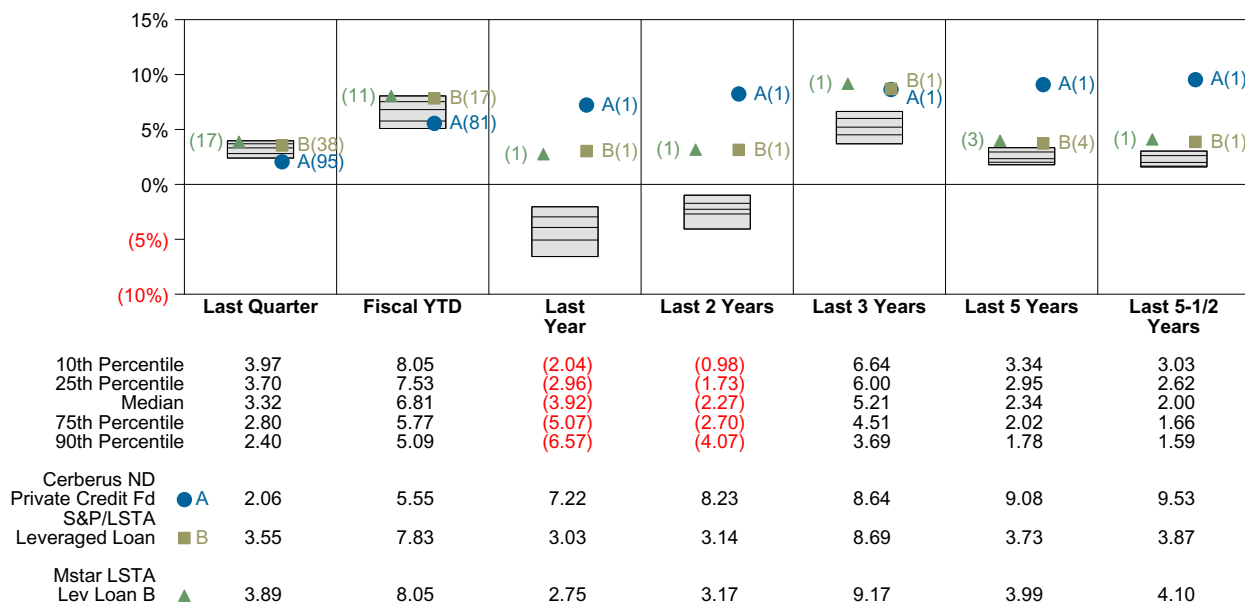
### Quarterly Summary and Highlights

- Cerberus ND Private Credit Fd's portfolio posted a 2.06% return for the quarter placing it in the 95 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 1 percentile for the last year.
- Cerberus ND Private Credit Fd's portfolio underperformed the Mstar LSTA Lev Loan B by 1.83% for the quarter and outperformed the Mstar LSTA Lev Loan B for the year by 4.47%.

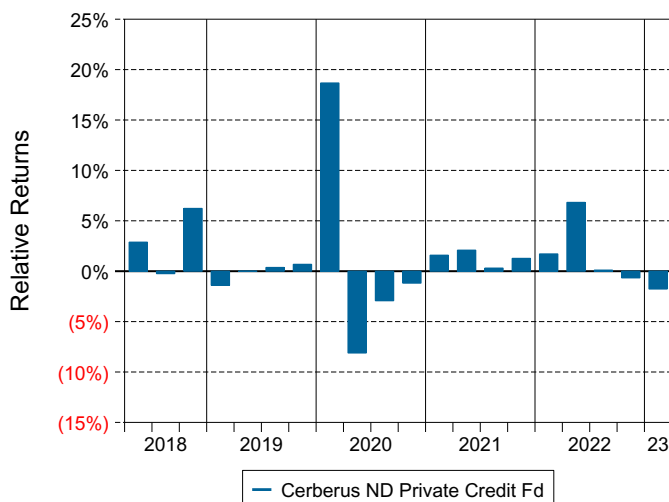
### Quarterly Asset Growth

Beginning Market Value	\$195,409,455
Net New Investment	\$0
Investment Gains/(Losses)	\$4,016,024
Ending Market Value	\$199,425,479

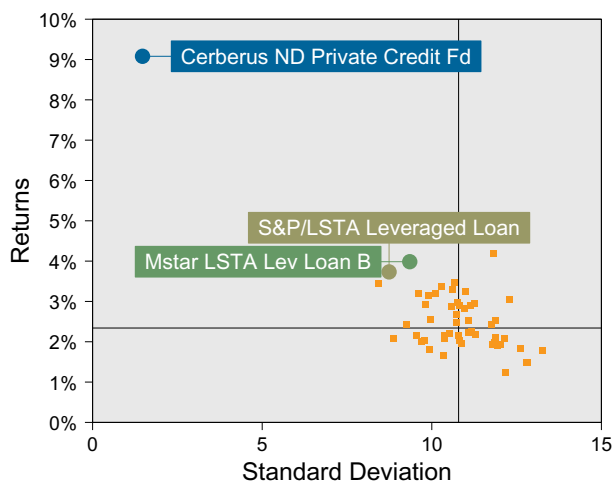
### Performance vs Callan High Yield Mutual Funds (Net)



### Relative Return vs Mstar LSTA Lev Loan B



### Callan High Yield Mutual Funds (Net) Annualized Five Year Risk vs Return



## Goldman Sachs 2006 Offshore Period Ended March 31, 2023

### Investment Philosophy

GS Mezzanine Partners seeks large-sized mezzanine investments comprised generally of fixed income securities and an associated equity component. They focus on providing "private high yield" capital for mid- to large-sized leveraged and management buyout transactions, recapitalizations, financings, re-financings, acquisitions and restructurings for private equity firms, private family companies and corporate issuers.

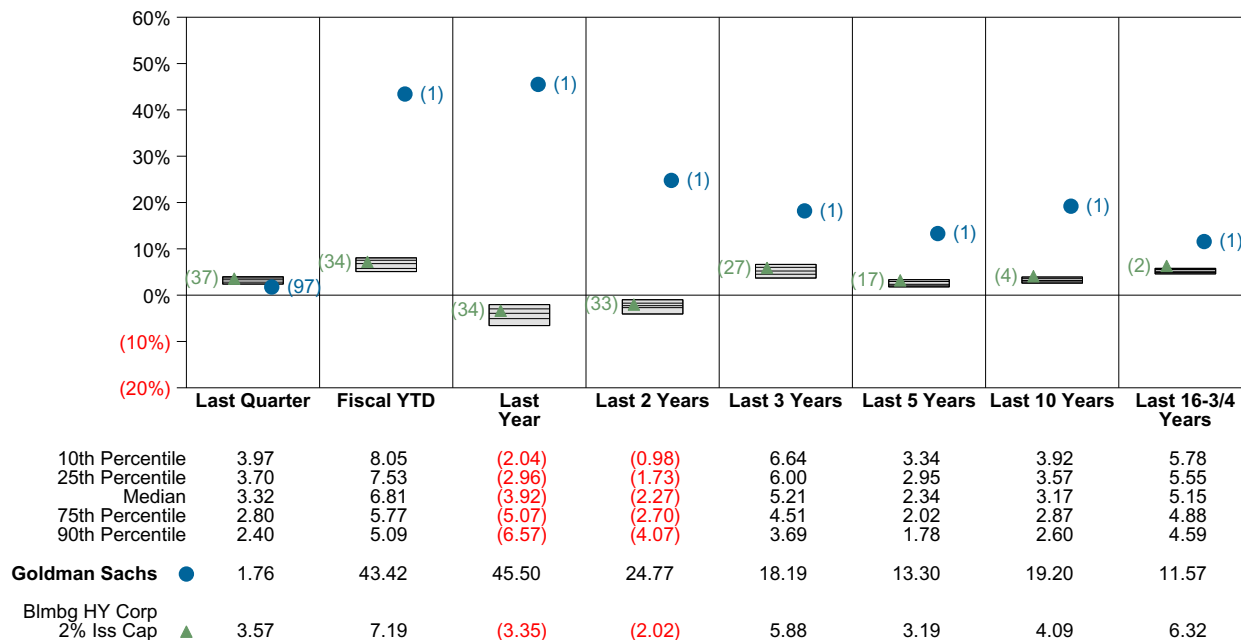
### Quarterly Summary and Highlights

- Goldman Sachs's portfolio posted a 1.76% return for the quarter placing it in the 97 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 1 percentile for the last year.
- Goldman Sachs's portfolio underperformed the Blmbg HY Corp 2% Iss Cap by 1.81% for the quarter and outperformed the Blmbg HY Corp 2% Iss Cap for the year by 48.85%.

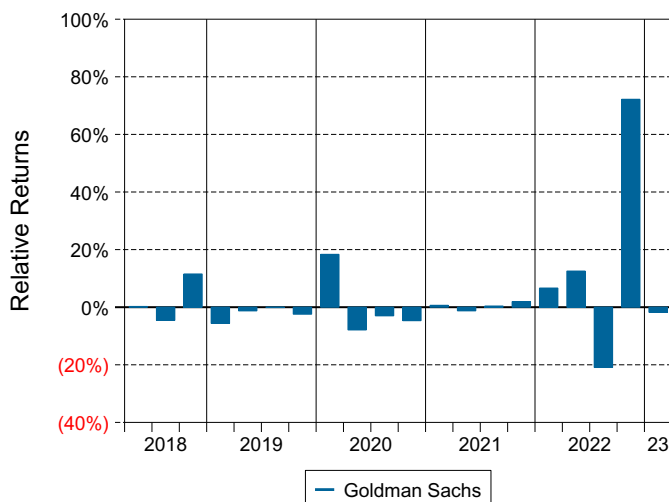
### Quarterly Asset Growth

Beginning Market Value	\$22,577
Net New Investment	\$0
Investment Gains/(Losses)	\$397
Ending Market Value	\$22,974

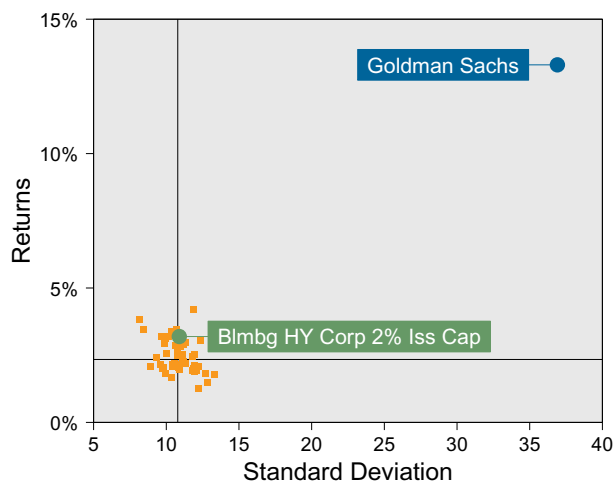
### Performance vs Callan High Yield Mutual Funds (Net)



### Relative Return vs Blmbg HY Corp 2% Iss Cap



### Callan High Yield Mutual Funds (Net) Annualized Five Year Risk vs Return



## Goldman Sachs Offshore Fund V Period Ended March 31, 2023

### Investment Philosophy

GS Mezzanine Partners seeks large-sized mezzanine investments comprised generally of fixed income securities and an associated equity component. They focus on providing "private high yield" capital for mid- to large-sized leveraged and management buyout transactions, recapitalizations, financings, re-financings, acquisitions and restructurings for private equity firms, private family companies and corporate issuers.

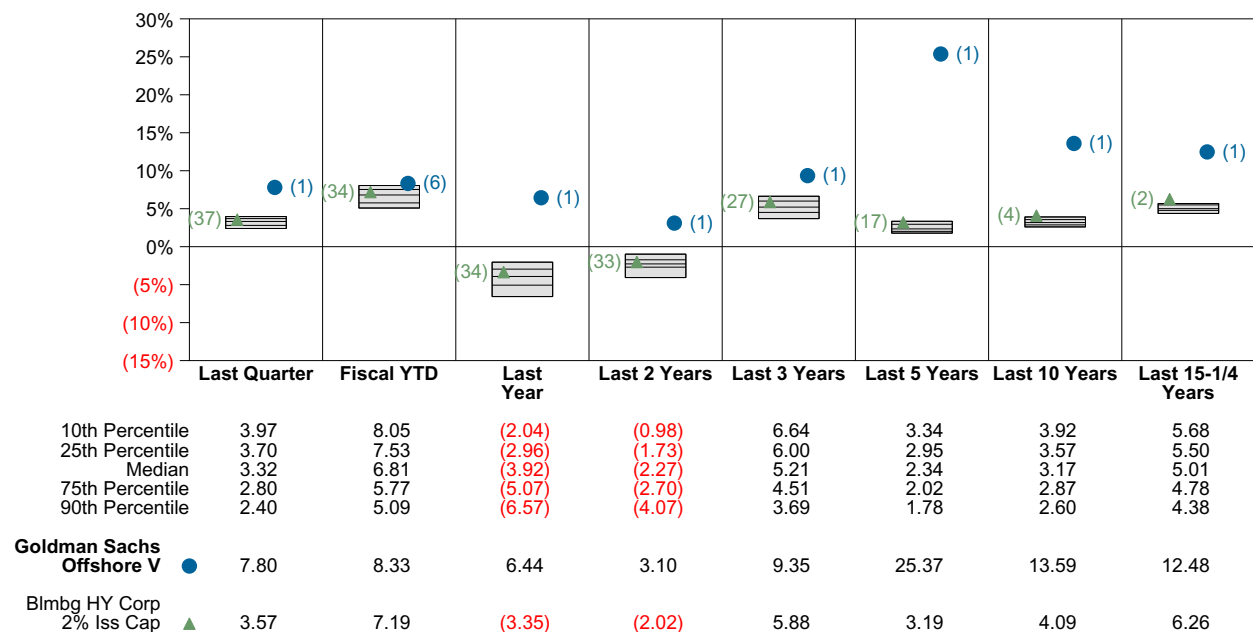
### Quarterly Summary and Highlights

- Goldman Sachs Offshore V's portfolio posted a 7.80% return for the quarter placing it in the 1 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 1 percentile for the last year.
- Goldman Sachs Offshore V's portfolio outperformed the Blmbg HY Corp 2% Iss Cap by 4.23% for the quarter and outperformed the Blmbg HY Corp 2% Iss Cap for the year by 9.80%.

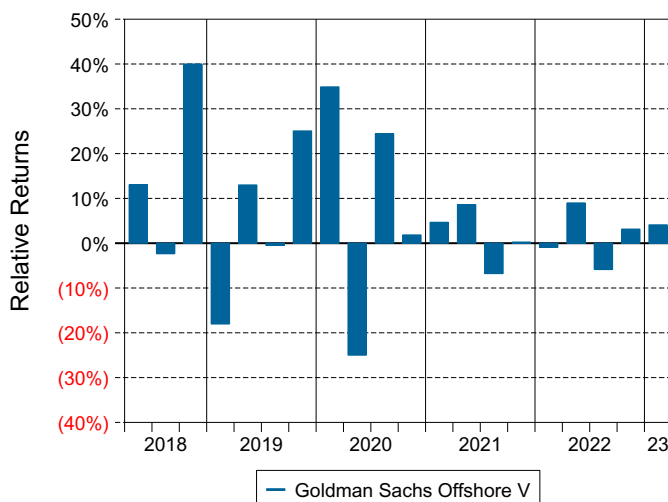
### Quarterly Asset Growth

Beginning Market Value	\$48,749
Net New Investment	\$0
Investment Gains/(Losses)	\$3,803
Ending Market Value	\$52,552

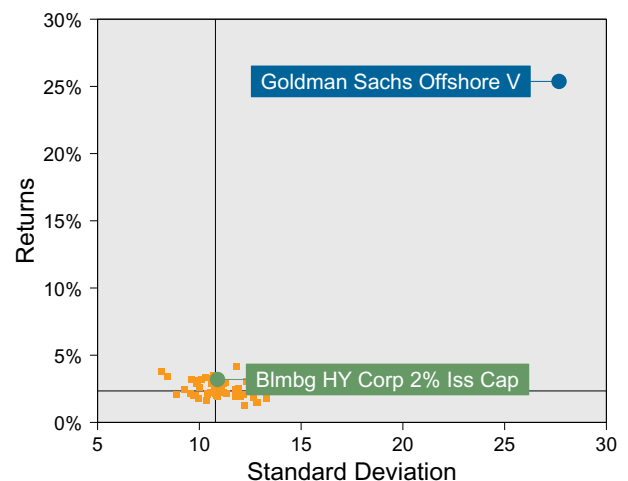
### Performance vs Callan High Yield Mutual Funds (Net)



### Relative Return vs Blmbg HY Corp 2% Iss Cap



### Callan High Yield Mutual Funds (Net) Annualized Five Year Risk vs Return



## Loomis Sayles Period Ended March 31, 2023

### Investment Philosophy

The High Yield Full Discretion Strategy seeks to identify attractive sectors and specific investment opportunities primarily within the global fixed income market through a global economic and interest rate framework. Portfolio managers incorporate a long-term macroeconomic view along with a stringent bottom-up investment evaluation process that drives security selection and resulting sector allocations. Opportunistic investments in non-benchmark sectors including investment grade corporate, emerging market, and non-US dollar debt and convertible bonds help to manage overall portfolio risk and enhance total return potential.

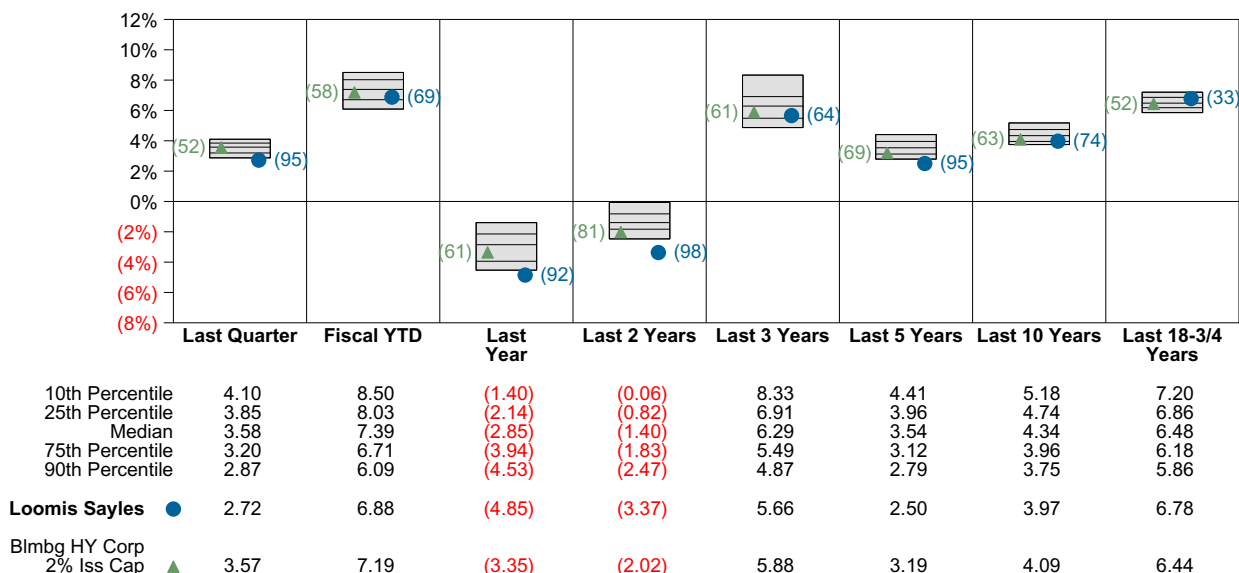
### Quarterly Summary and Highlights

- Loomis Sayles's portfolio posted a 2.72% return for the quarter placing it in the 95 percentile of the Callan High Yield Fixed Income group for the quarter and in the 92 percentile for the last year.
- Loomis Sayles's portfolio underperformed the Blmbg HY Corp 2% Iss Cap by 0.84% for the quarter and underperformed the Blmbg HY Corp 2% Iss Cap for the year by 1.50%.

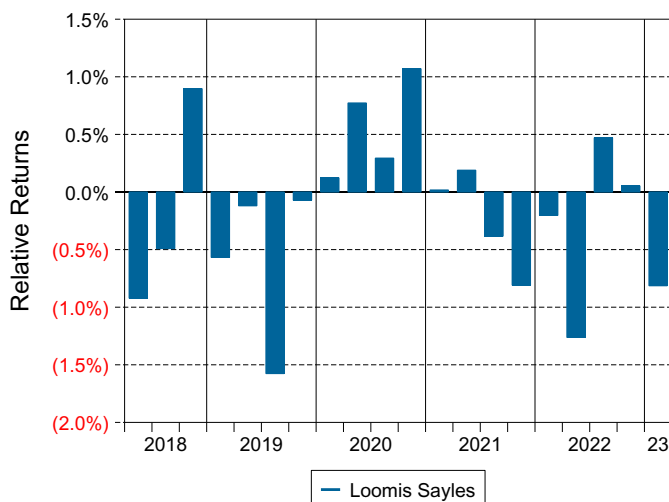
### Quarterly Asset Growth

Beginning Market Value	\$123,422,384
Net New Investment	\$-145,021
Investment Gains/(Losses)	\$3,362,308
Ending Market Value	\$126,639,671

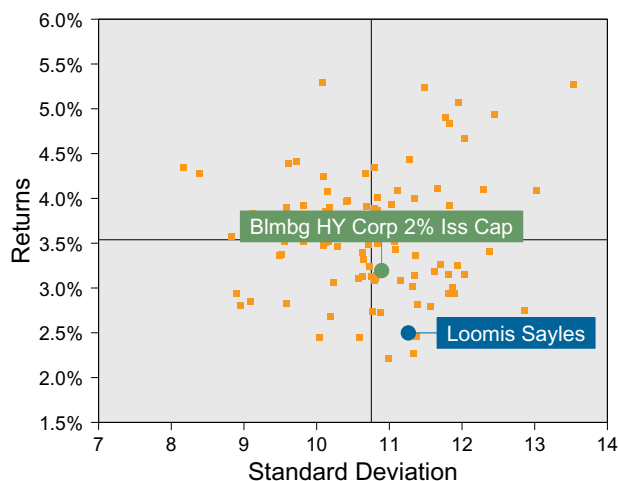
### Performance vs Callan High Yield Fixed Income (Gross)



### Relative Return vs Blmbg HY Corp 2% Iss Cap



### Callan High Yield Fixed Income (Gross) Annualized Five Year Risk vs Return





## PIMCO Bravo II Fund Period Ended March 31, 2023

### Investment Philosophy

The BRAVO II Fund is a private equity style fund targeting an annualized IRR of 15-20% and multiple of 1.8-2x, net of fees and carried interest with an initial 5-year term. The fund will seek to capitalize on non-economic asset sale decisions by global financial institutions. The fund will have the flexibility to acquire attractively discounted, less liquid loans, structured credit and other assets tied to residential or commercial real estate markets in the U.S. and Europe.

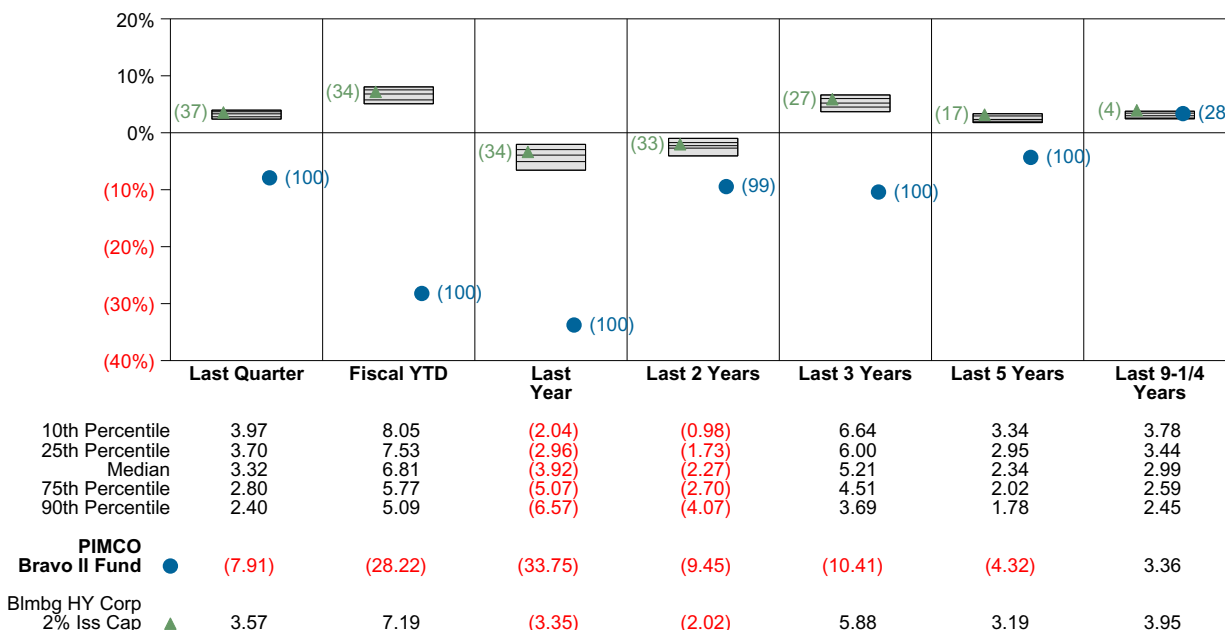
### Quarterly Summary and Highlights

- PIMCO Bravo II Fund's portfolio posted a (7.91)% return for the quarter placing it in the 100 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 100 percentile for the last year.
- PIMCO Bravo II Fund's portfolio underperformed the Blmbg HY Corp 2% Iss Cap by 11.48% for the quarter and underperformed the Blmbg HY Corp 2% Iss Cap for the year by 30.40%.

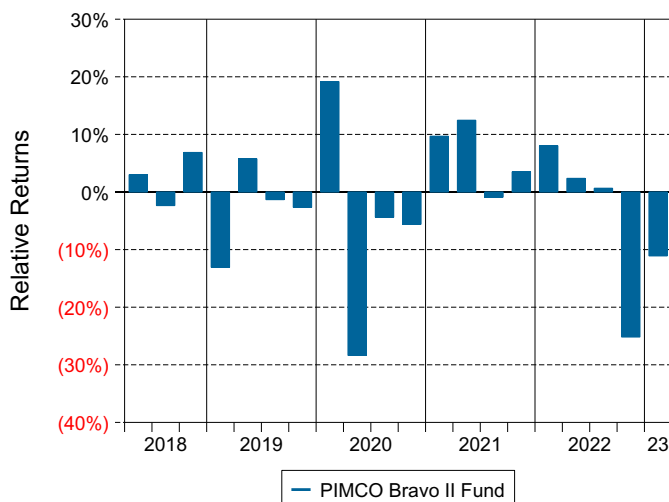
### Quarterly Asset Growth

Beginning Market Value	\$3,861,923
Net New Investment	\$-1,080,437
Investment Gains/(Losses)	\$-220,079
Ending Market Value	\$2,561,407

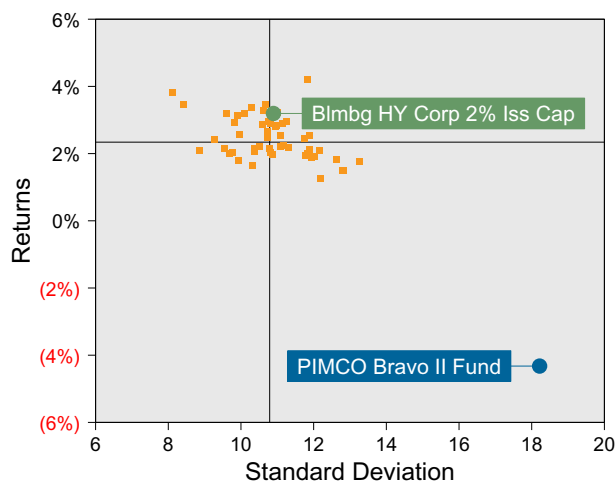
### Performance vs Callan High Yield Mutual Funds (Net)



### Relative Return vs Blmbg HY Corp 2% Iss Cap



### Callan High Yield Mutual Funds (Net) Annualized Five Year Risk vs Return





## Real Estate Period Ended March 31, 2023

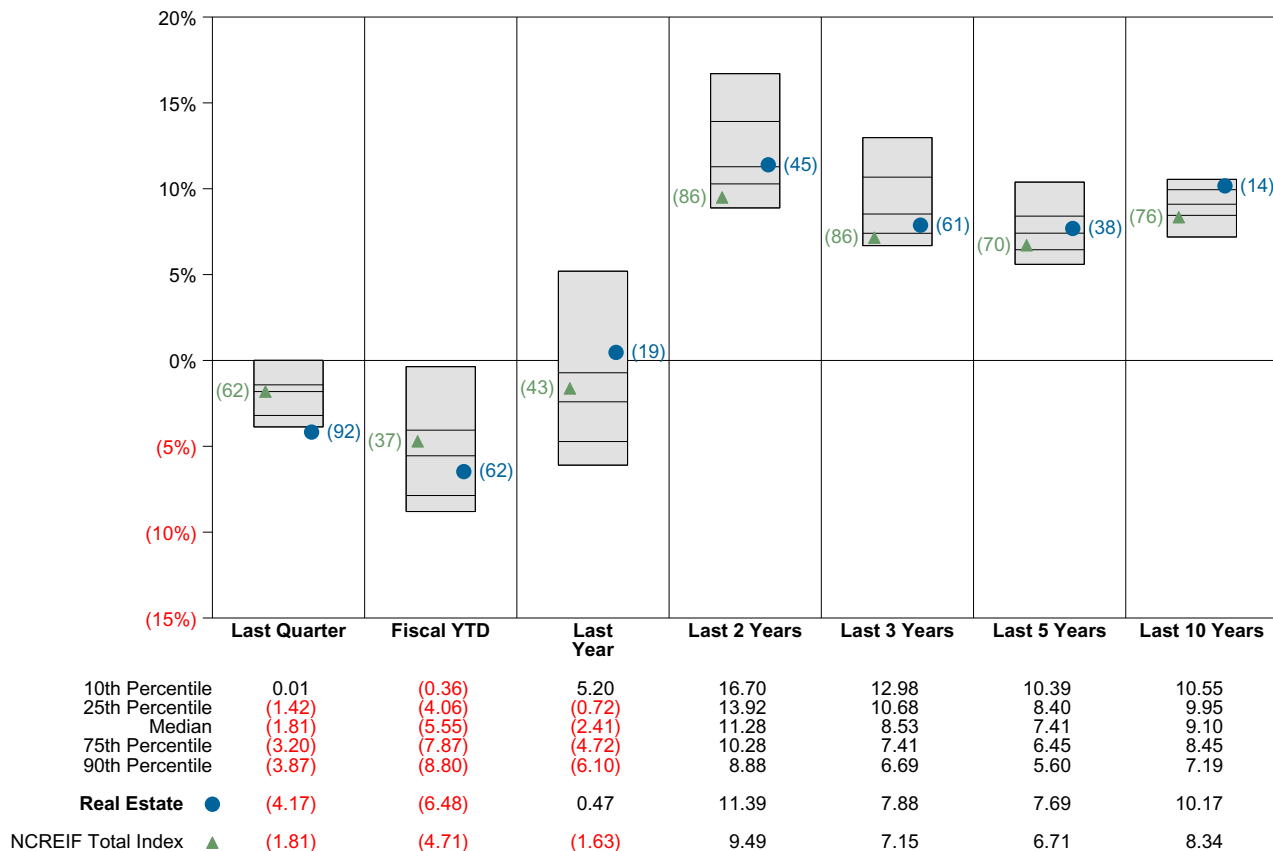
### Quarterly Summary and Highlights

- Real Estate's portfolio posted a (4.17)% return for the quarter placing it in the 92 percentile of the Public Fund - Real Estate group for the quarter and in the 19 percentile for the last year.
- Real Estate's portfolio underperformed the NCREIF Total Index by 2.36% for the quarter and outperformed the NCREIF Total Index for the year by 2.10%.

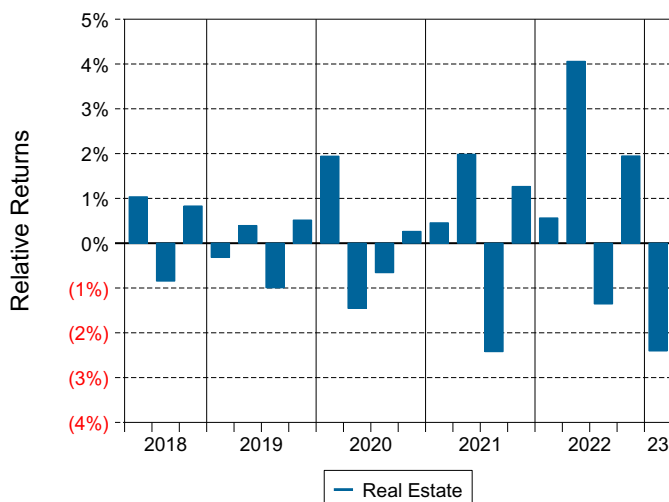
### Quarterly Asset Growth

Beginning Market Value	\$890,306,067
Net New Investment	\$5,802,392
Investment Gains/(Losses)	\$-37,179,264
Ending Market Value	\$858,929,194

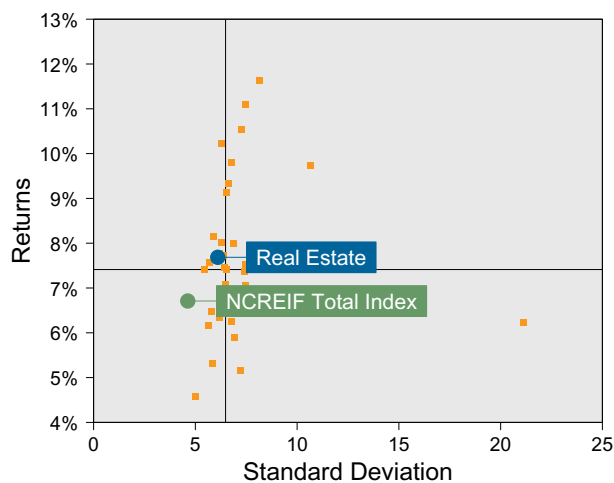
### Performance vs Public Fund - Real Estate (Gross)



### Relative Return vs NCREIF Total Index



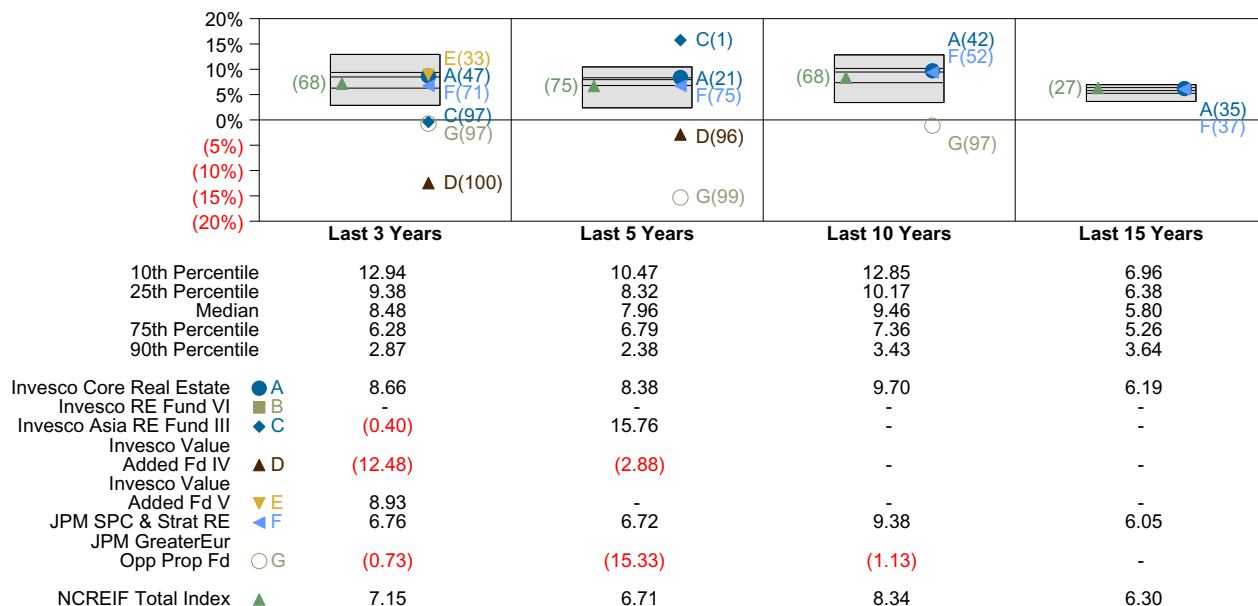
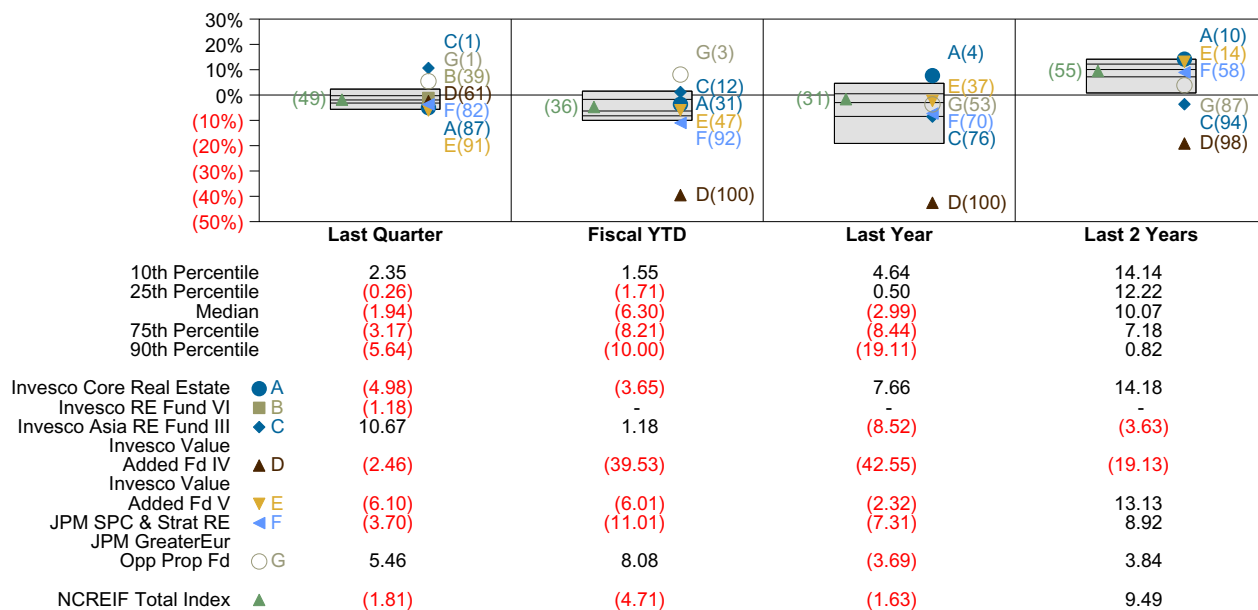
### Public Fund - Real Estate (Gross) Annualized Five Year Risk vs Return



# North Dakota State Investment Board Pension Funds Performance vs Callan Total Domestic Real Estate DB Periods Ended March 31, 2023

## Return Ranking

The chart below illustrates fund rankings over various periods versus the Callan Total Domestic Real Estate DB. The bars represent the range of returns from the 10th percentile to the 90th percentile for each period for all funds in the Callan Total Domestic Real Estate DB. The numbers to the right of the bar represent the percentile rankings of the funds being analyzed. The table below the chart details the rates of return plotted in the graph above.





## TIR Teredo Period Ended March 31, 2023

### Investment Philosophy

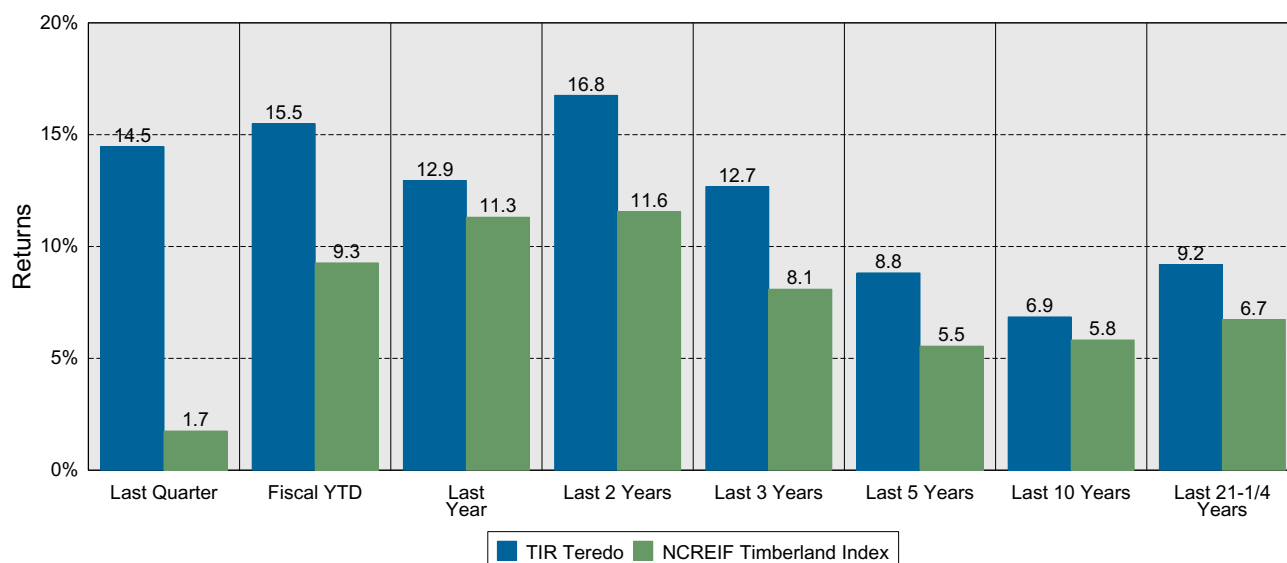
Teredo Timber LLC - The investment objective of Teredo is to provide competitive investment returns from increasing saw timber production through the 20 year term of the partnership. TIR's management strategy is to maximize saw timber volume by applying intensive forest management techniques which accelerate growth through the diameter class distribution. Periodic cash flows are produced from thinning and final harvests of the individual timber stands.

### Quarterly Summary and Highlights

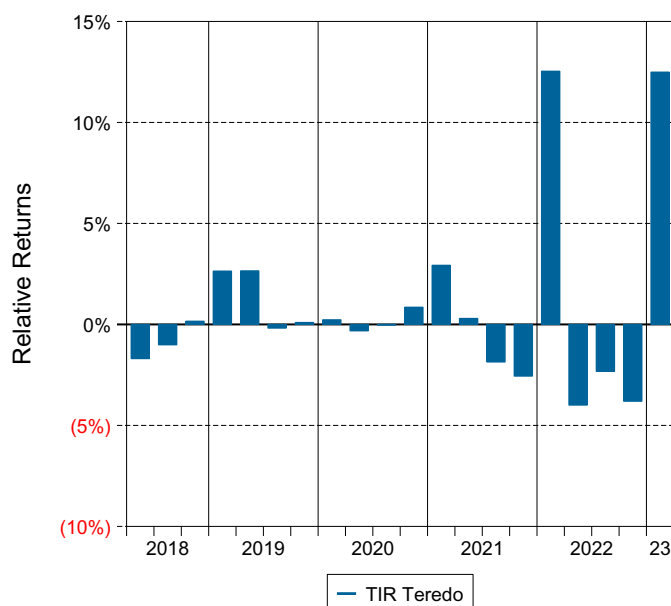
- TIR Teredo's portfolio outperformed the NCREIF Timberland Index by 12.71% for the quarter and outperformed the NCREIF Timberland Index for the year by 1.64%.

### Quarterly Asset Growth

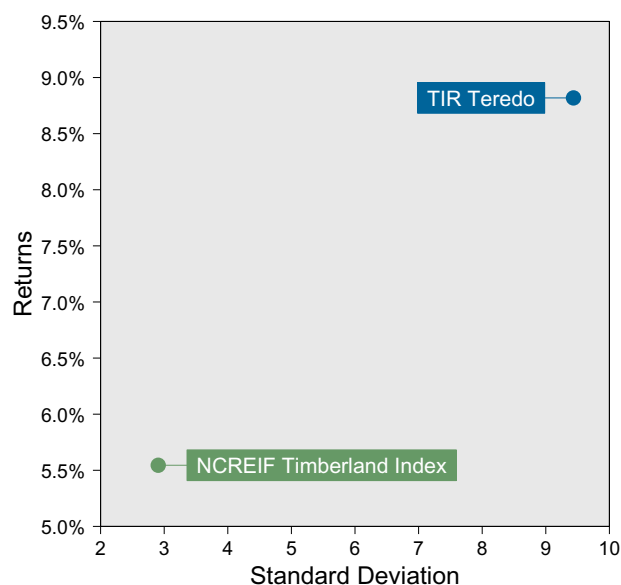
Beginning Market Value	\$20,455,211
Net New Investment	\$0
Investment Gains/(Losses)	\$2,957,483
Ending Market Value	\$23,412,694



### Relative Return vs NCREIF Timberland Index



### Annualized Five Year Risk vs Return



## TIR Springbank Period Ended March 31, 2023

### Investment Philosophy

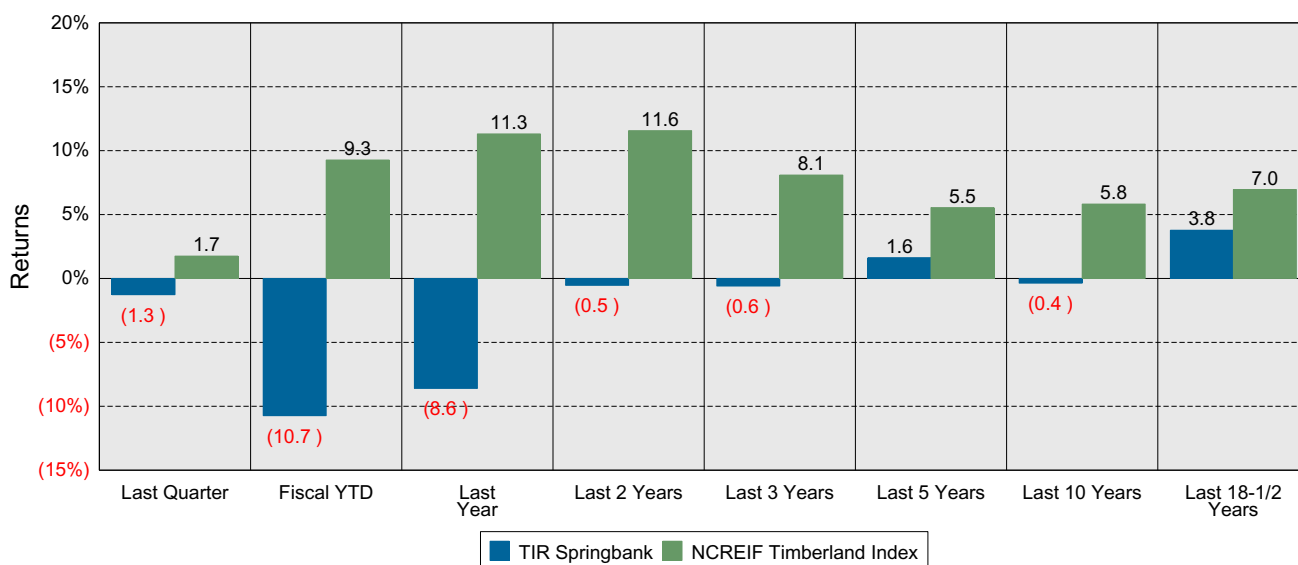
Springbank LLC - The investment objective of Springbank is to maximize long-term investment potential by means of the formation of a dedicated land management group, intensive timber management to increase timber production, the coordination of timber harvesting with land management activities and direct marketing and selective real estate partnerships.

### Quarterly Summary and Highlights

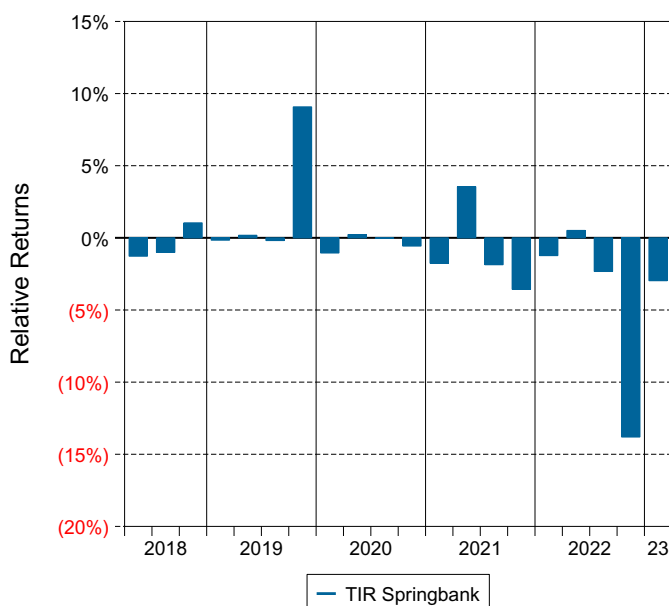
- TIR Springbank's portfolio underperformed the NCREIF Timberland Index by 3.02% for the quarter and underperformed the NCREIF Timberland Index for the year by 19.91%.

### Quarterly Asset Growth

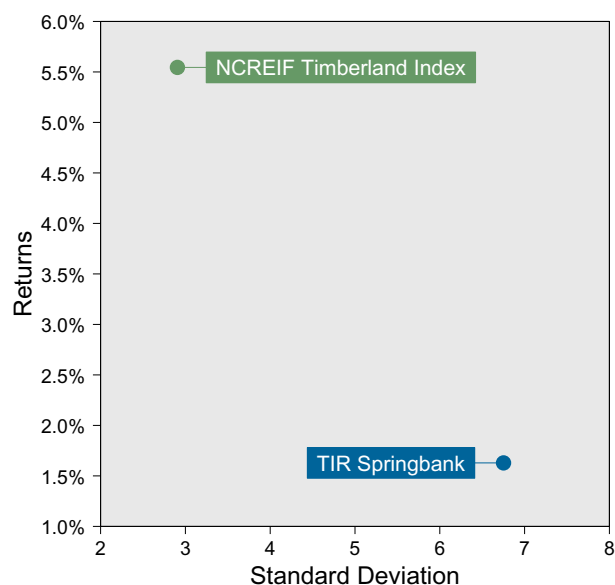
Beginning Market Value	\$65,424,497
Net New Investment	\$-1,900,000
Investment Gains/(Losses)	\$-819,857
Ending Market Value	\$62,704,640



### Relative Return vs NCREIF Timberland Index



### Annualized Five Year Risk vs Return







## ISQ Global Infrastructure II Period Ended March 31, 2023

### Investment Philosophy

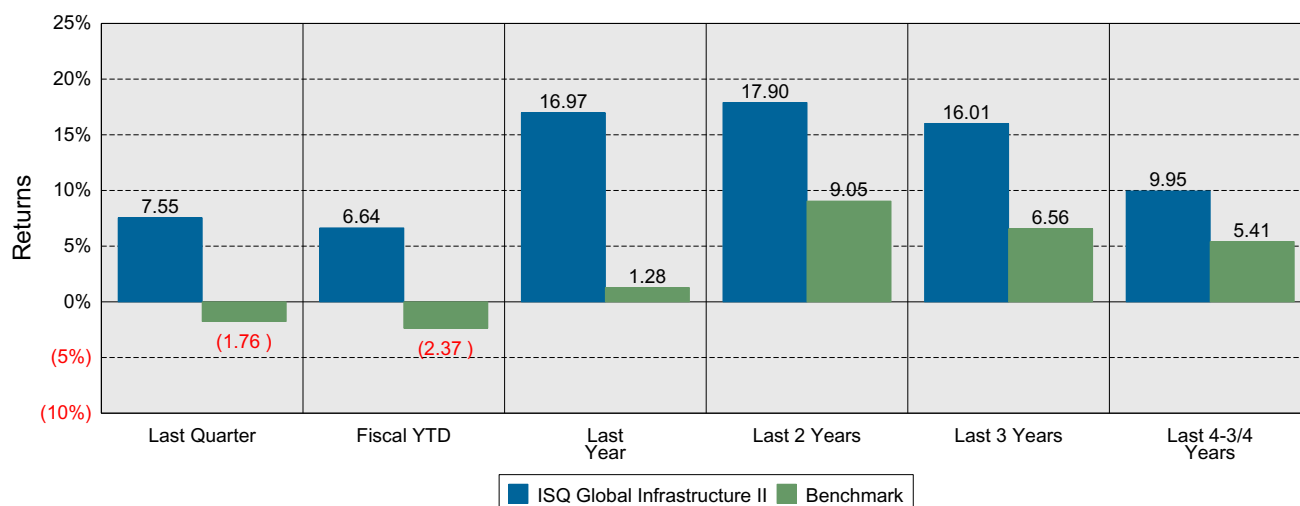
The ISQ Global Infrastructure Fund II seeks to achieve long-term capital appreciation as well as current income through equity and equity related investments in infrastructure and infrastructure related assets located globally, with a focus on North America, Europe, and selected growth economies in Asia and Latin America. The Fund may also invest in debt Securities that have equity-like returns or an equity component, or are related to its equity investments, including without limitation convertible debt, bank loans and participations and other similar instruments. **The Benchmark is comprised of 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net.**

### Quarterly Summary and Highlights

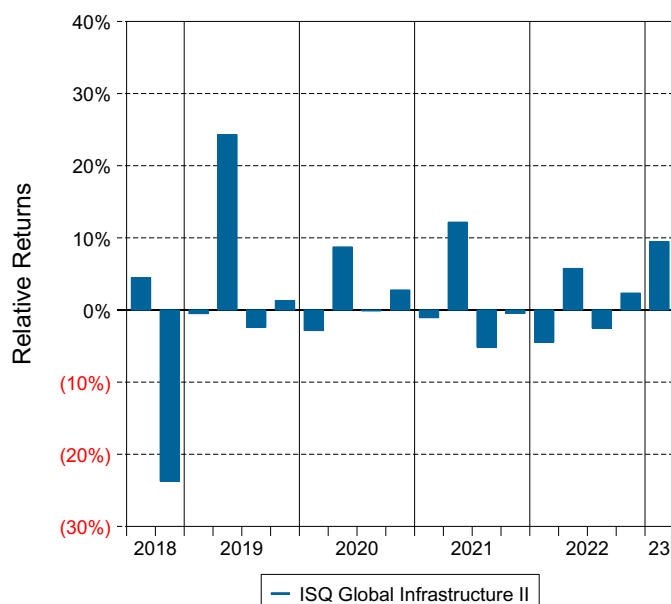
- ISQ Global Infrastructure II's portfolio outperformed the Benchmark by 9.31% for the quarter and outperformed the Benchmark for the year by 15.70%.

### Quarterly Asset Growth

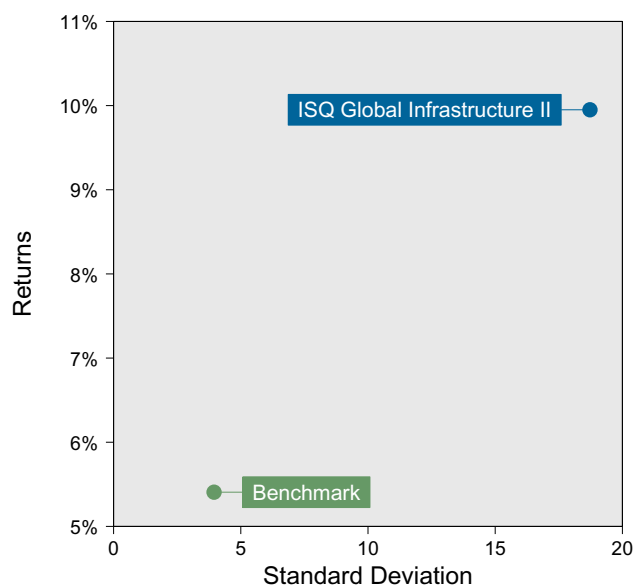
Beginning Market Value	\$64,286,614
Net New Investment	\$0
Investment Gains/(Losses)	\$4,851,129
Ending Market Value	\$69,137,743



### Relative Return vs Benchmark



### Annualized Four and Three-Quarter Year Risk vs Return



## ISQ Global Infrastructure III Period Ended March 31, 2023

### Investment Philosophy

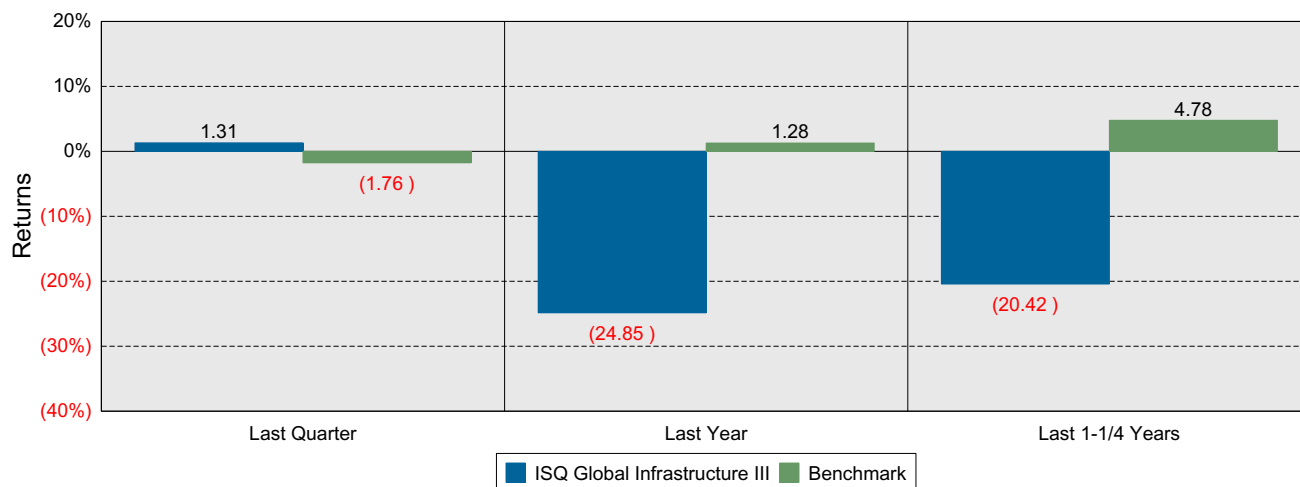
The ISQ Global Infrastructure Fund II seeks to achieve long-term capital appreciation as well as current income through equity and equity related investments in infrastructure and infrastructure related assets located globally, with a focus on North America, Europe, and selected growth economies in Asia and Latin America. The Fund may also invest in debt Securities that have equity-like returns or an equity component, or are related to its equity investments, including without limitation convertible debt, bank loans and participations and other similar instruments. **The Benchmark is comprised of 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net.**

### Quarterly Summary and Highlights

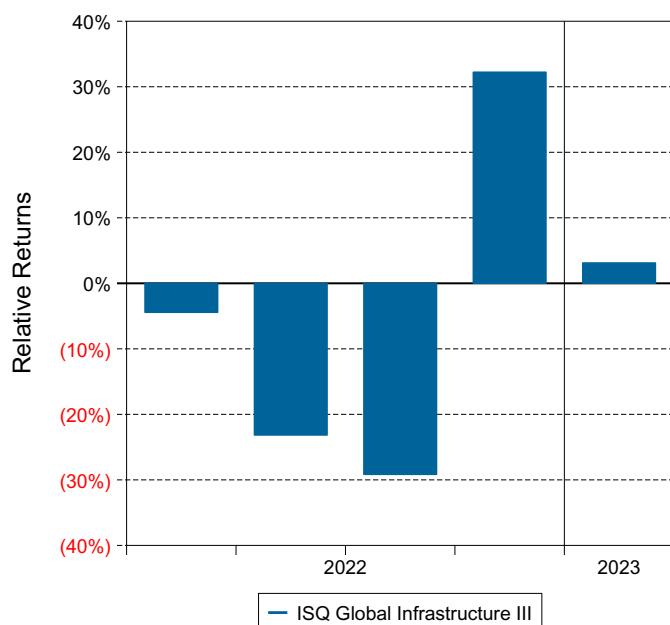
- ISQ Global Infrastructure III's portfolio outperformed the Benchmark by 3.07% for the quarter and underperformed the Benchmark for the year by 26.13%.

### Quarterly Asset Growth

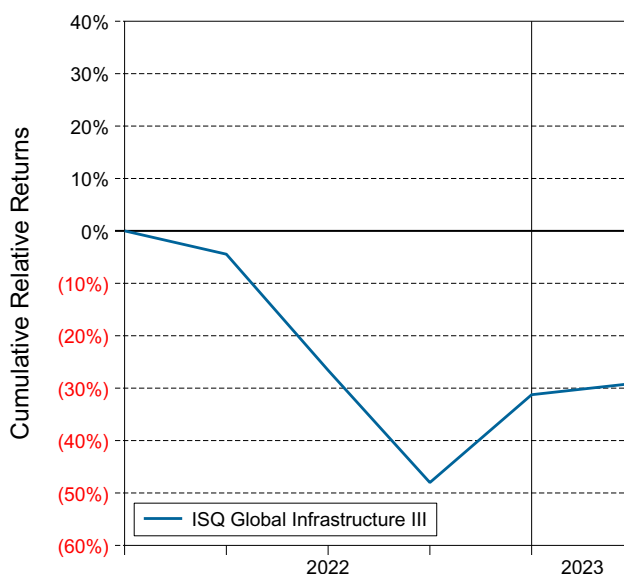
Beginning Market Value	\$5,821,061
Net New Investment	\$7,247,990
Investment Gains/(Losses)	\$204,336
Ending Market Value	\$13,273,387



### Relative Return vs Benchmark



### Cumulative Returns vs Benchmark



## The Rohatyn Group Period Ended March 31, 2023

### Investment Philosophy

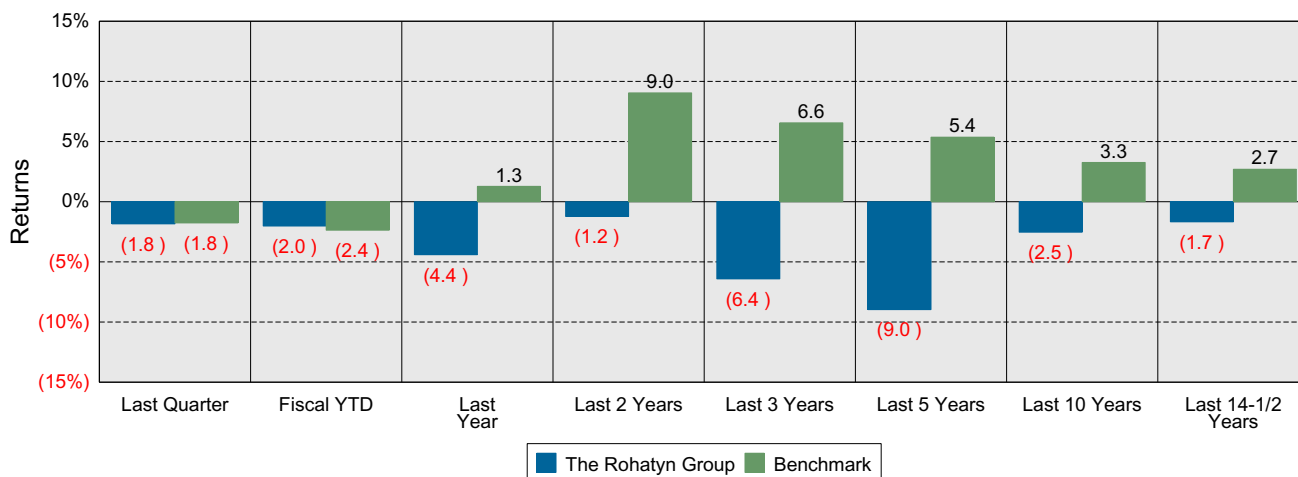
The Rohatyn Group's Asian Infrastructure & Related Resources Opportunity (AIRRO) Fund seeks to invest in infrastructure and related resources opportunities across the greater Asia Pacific region. The Fund seeks to invest in a broad range of assets, including: core infrastructure, power both from conventional and renewable sources, communications, water and waste-water, public works, urban development and other "social" infrastructure assets and related resources. The management of the AIRRO Fund was transferred from JP Morgan to The Rohatyn Group in May, 2018. **The Benchmark is comprised of CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.**

### Quarterly Summary and Highlights

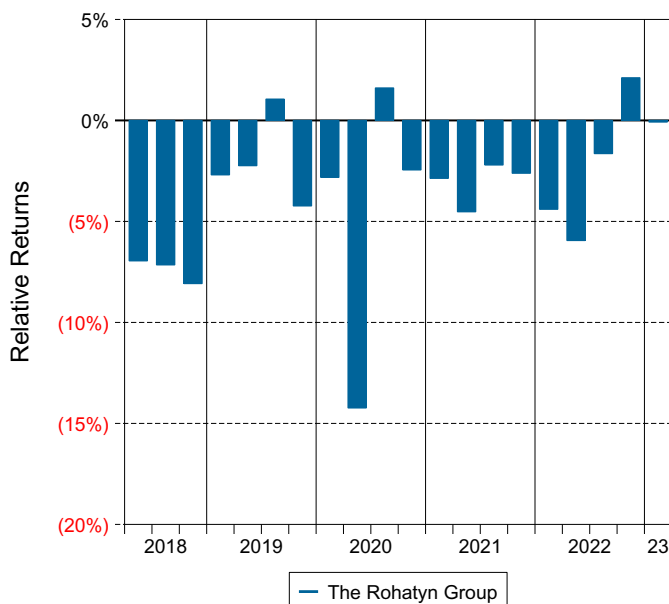
- The Rohatyn Group's portfolio underperformed the Benchmark by 0.08% for the quarter and underperformed the Benchmark for the year by 5.68%.

### Quarterly Asset Growth

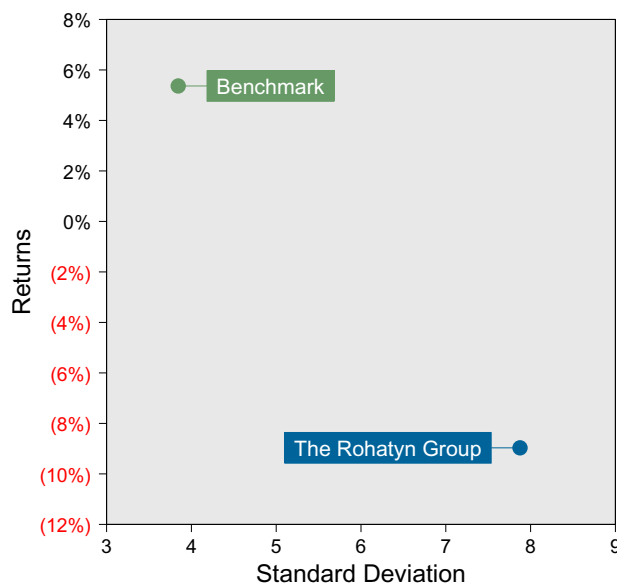
Beginning Market Value	\$15,910,711
Net New Investment	\$65,388
Investment Gains/(Losses)	\$-293,765
Ending Market Value	\$15,682,334



### Relative Return vs Benchmark



### Annualized Five Year Risk vs Return



## JP Morgan IIF Infrastructure Period Ended March 31, 2023

### Investment Philosophy

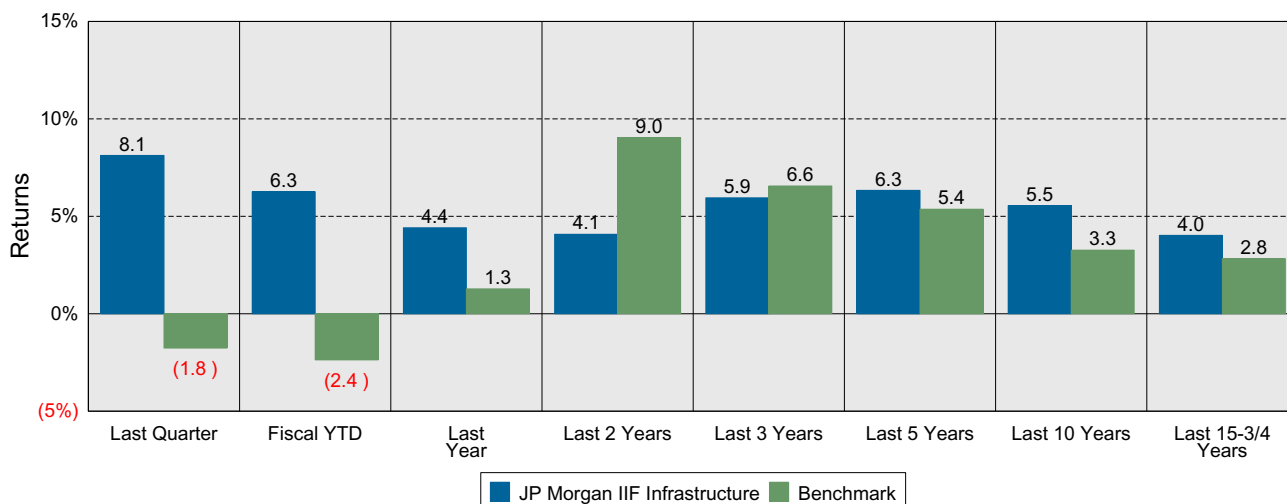
The only open-ended private commingled infrastructure fund in the U.S, the JPMorgan Infrastructure Investments Fund invests in stabilized assets in OECD countries with selected value-added opportunities, across infrastructure industry sub-sectors, including: toll roads, bridges and tunnels; oil and gas pipelines; electricity transmission and distribution facilities; contracted power generation assets; water distribution; waste-water collection and processing; railway lines and rapid rail links; and seaports and airports. **The Benchmark is comprised of CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.**

### Quarterly Summary and Highlights

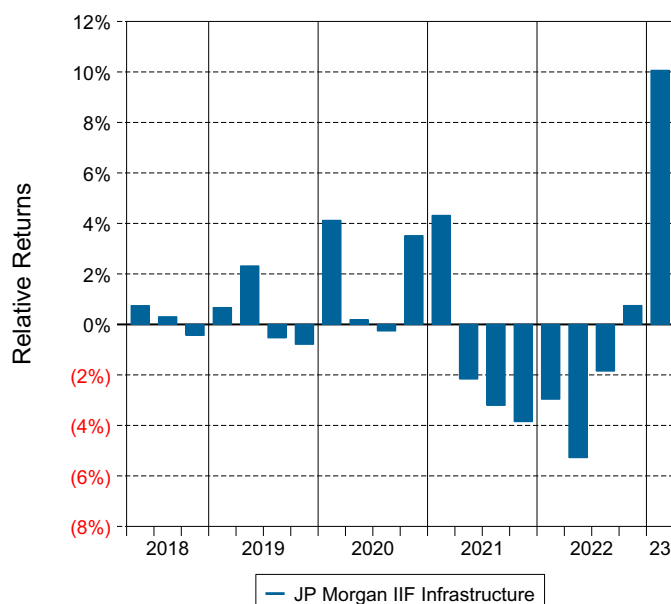
- JP Morgan IIF Infrastructure's portfolio outperformed the Benchmark by 9.89% for the quarter and outperformed the Benchmark for the year by 3.14%.

### Quarterly Asset Growth

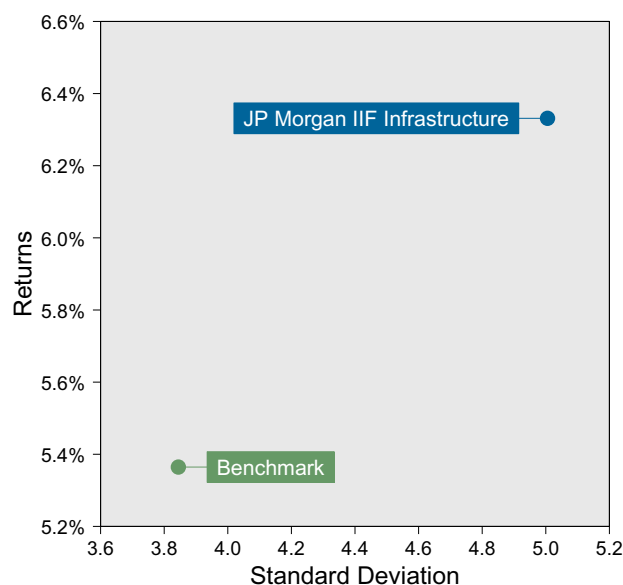
Beginning Market Value	\$117,203,361
Net Net Investment	\$-852,899
Investment Gains/(Losses)	\$9,521,941
Ending Market Value	\$125,872,403



### Relative Return vs Benchmark



### Annualized Five Year Risk vs Return



## Grosvenor CIS Fund Period Ended March 31, 2023

### Investment Philosophy

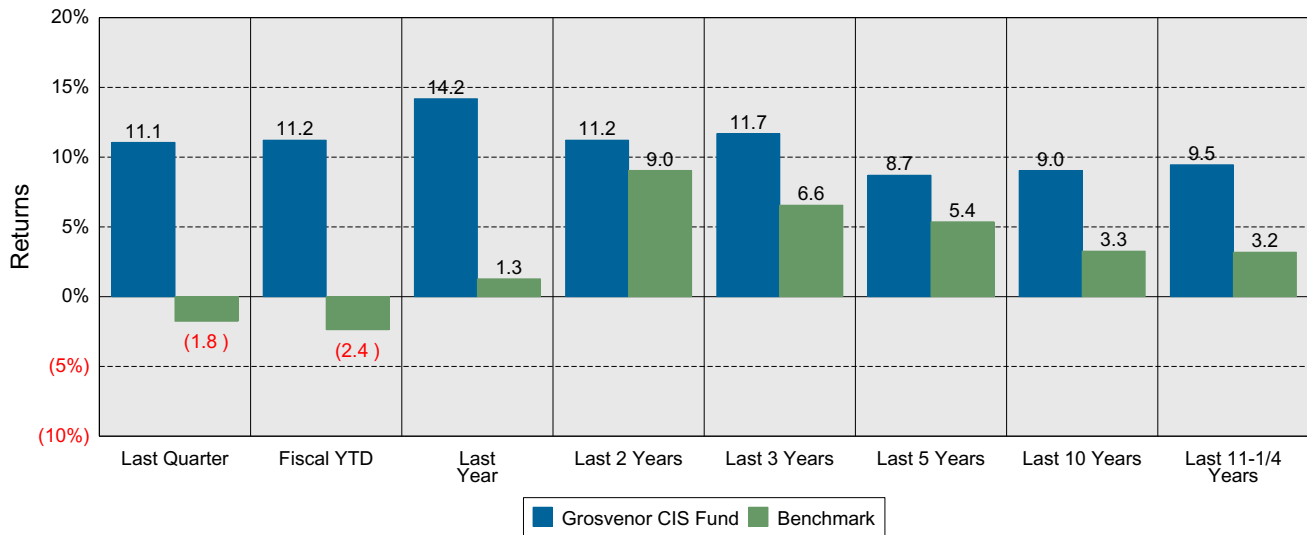
The Customized Infrastructure Strategies LP is a commingled fund focused on providing a comprehensive, diversified solution for investors looking to access the infrastructure asset class. The Fund seeks to generate stable, long-term yield and attractive risk-adjusted returns by investing in a diversified portfolio of primary core and core plus infrastructure funds (30%), co-investments (40%) and opportunistic secondary fund purchases (30%). **The Benchmark is comprised of CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.**

### Quarterly Summary and Highlights

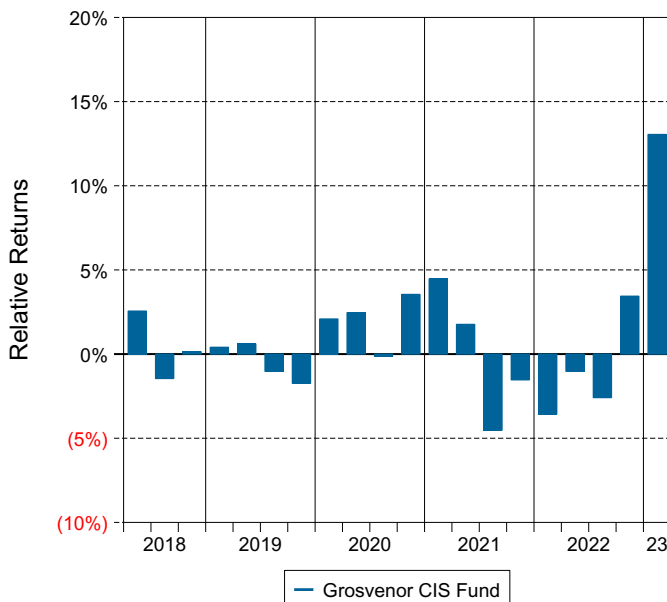
- Grosvenor CIS Fund's portfolio outperformed the Benchmark by 12.82% for the quarter and outperformed the Benchmark for the year by 12.91%.

### Quarterly Asset Growth

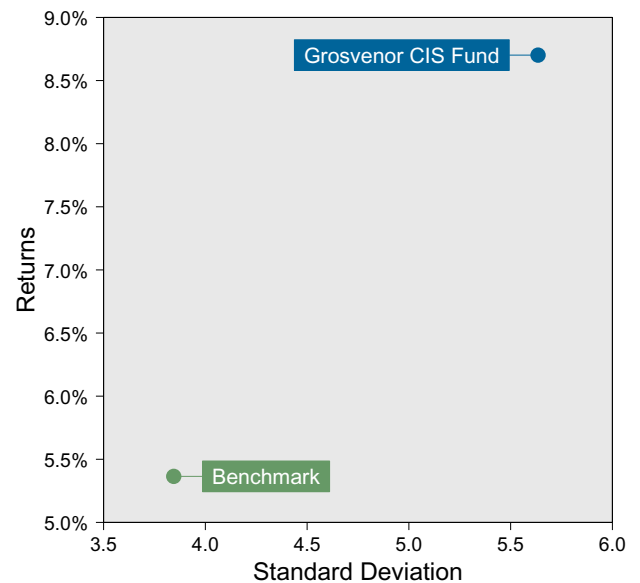
Beginning Market Value	\$9,645,792
Net New Investment	\$-762,028
Investment Gains/(Losses)	\$1,067,169
Ending Market Value	\$9,950,933



### Relative Return vs Benchmark



### Annualized Five Year Risk vs Return



## Grosvenor CIS Fund II Period Ended March 31, 2023

### Investment Philosophy

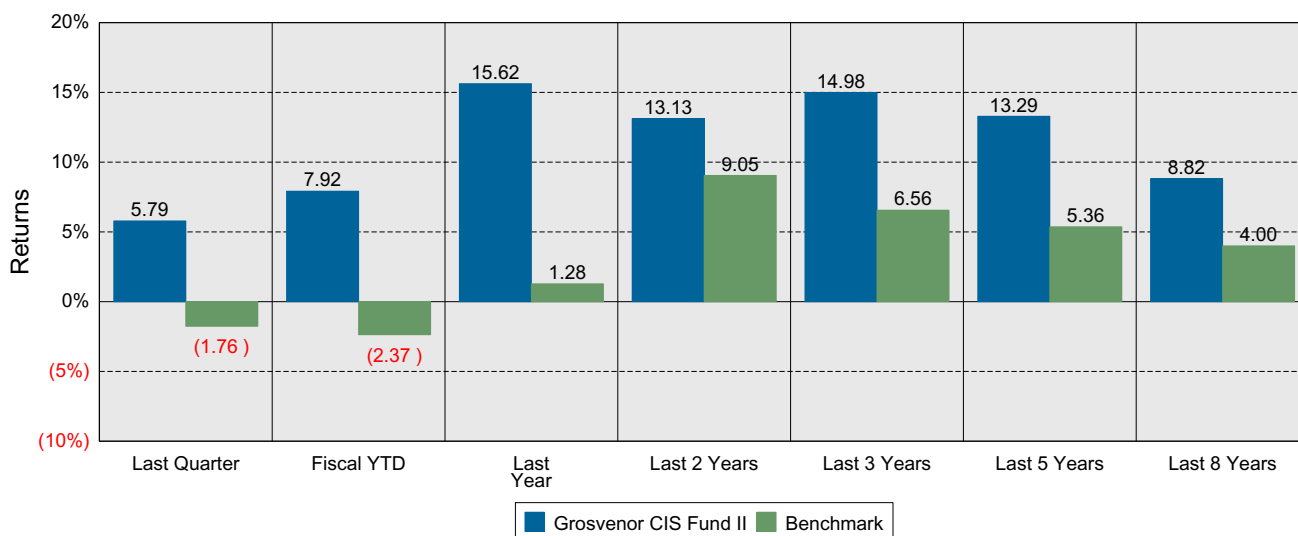
The Customized Infrastructure Strategies LP is a commingled fund focused on providing a comprehensive, diversified solution for investors looking to access the infrastructure asset class. The Fund seeks to generate stable, long-term yield and attractive risk-adjusted returns by investing in a diversified portfolio of primary core and core plus infrastructure funds (30%), co-investments (40%) and opportunistic secondary fund purchases (30%). **The Benchmark is comprised of CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.**

### Quarterly Summary and Highlights

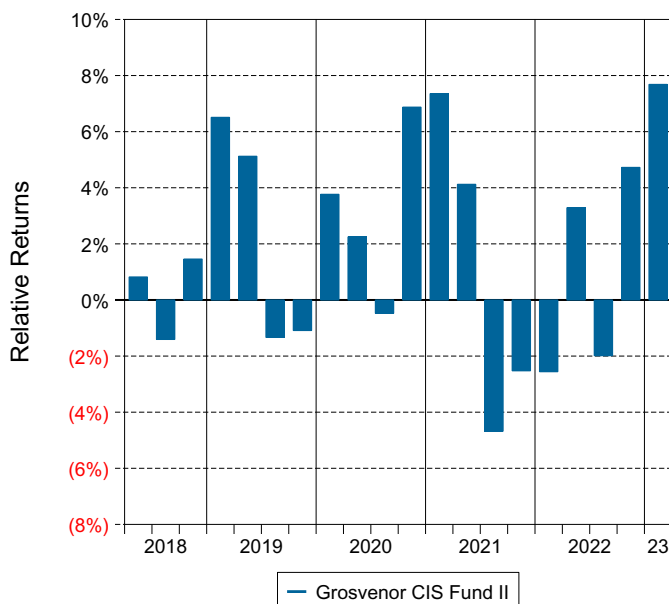
- Grosvenor CIS Fund II's portfolio outperformed the Benchmark by 7.55% for the quarter and outperformed the Benchmark for the year by 14.35%.

### Quarterly Asset Growth

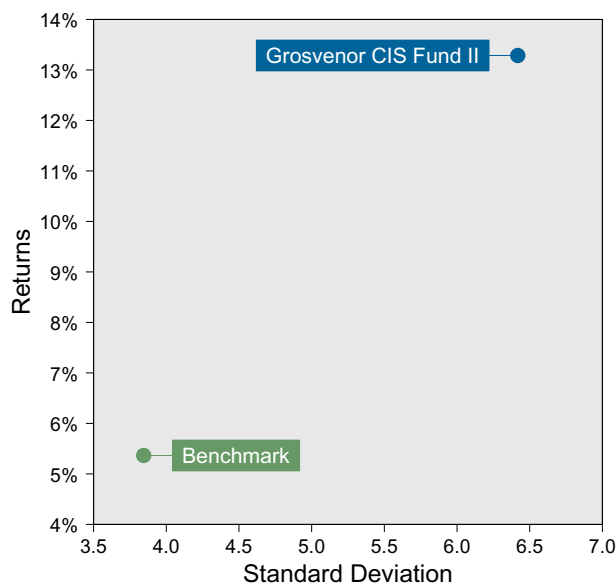
Beginning Market Value	\$21,600,435
Net New Investment	\$-595,725
Investment Gains/(Losses)	\$1,250,649
Ending Market Value	\$22,255,359



### Relative Return vs Benchmark



### Annualized Five Year Risk vs Return



# Grosvenor CIS Fund III

## Period Ended March 31, 2023

### Investment Philosophy

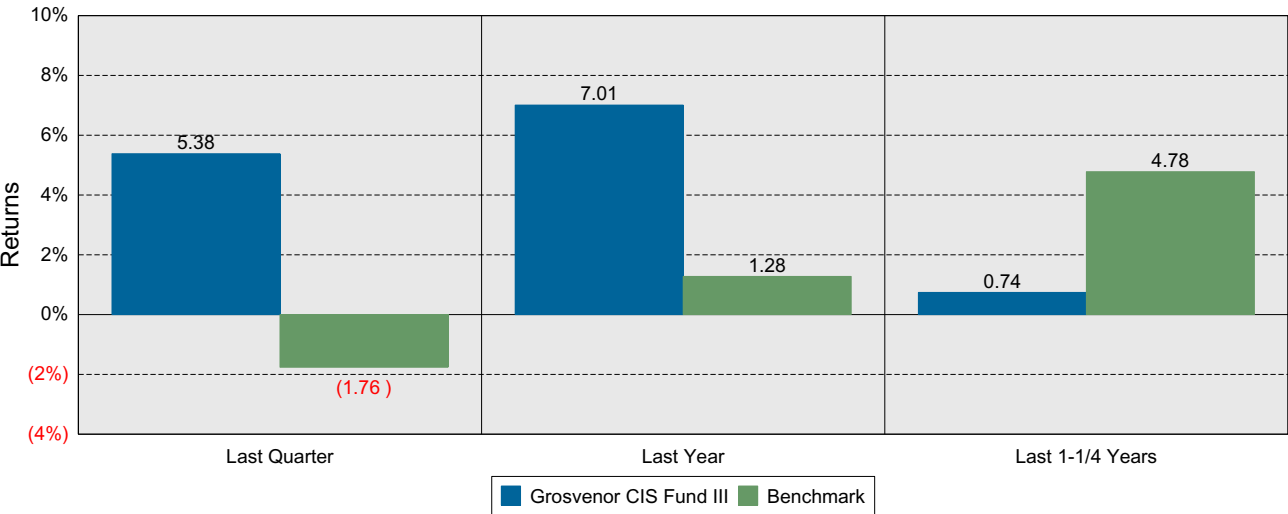
The Customized Infrastructure Strategies LP is a commingled fund focused on providing a comprehensive, diversified solution for investors looking to access the infrastructure asset class. The Fund seeks to generate stable, long-term yield and attractive risk-adjusted returns by investing in a diversified portfolio of primary core and core plus infrastructure funds (30%), co-investments (40%) and opportunistic secondary fund purchases (30%). **The Benchmark is comprised of 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net.**

### Quarterly Summary and Highlights

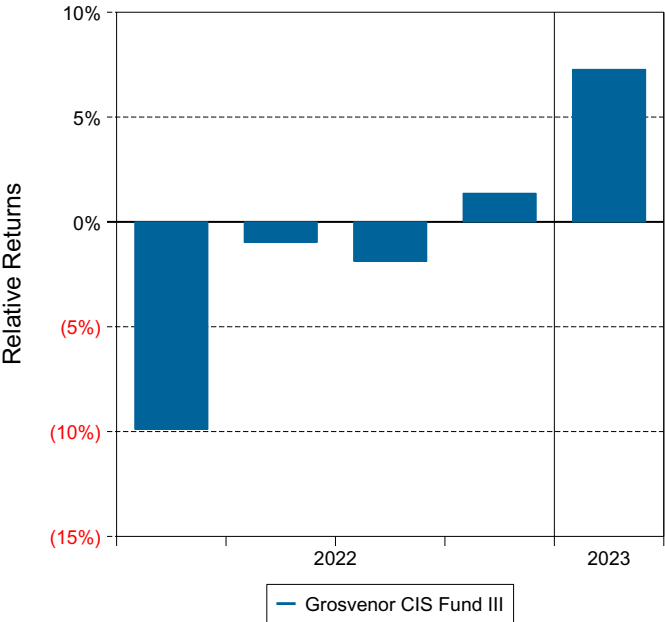
- Grosvenor CIS Fund III's portfolio outperformed the Benchmark by 7.14% for the quarter and outperformed the Benchmark for the year by 5.73%.

### Quarterly Asset Growth

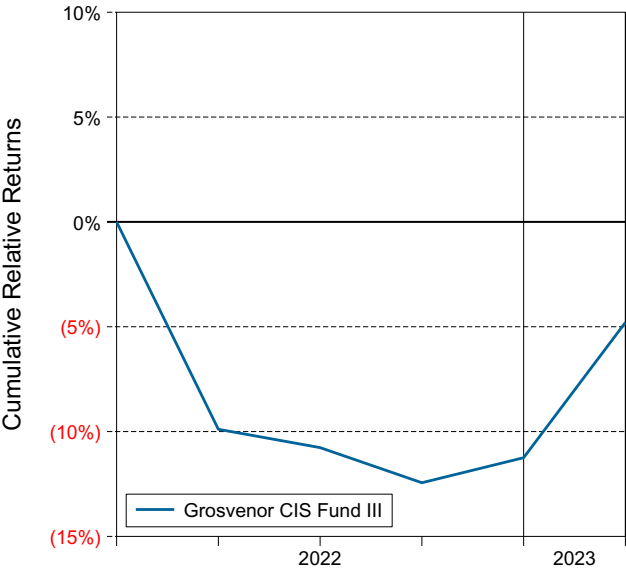
Beginning Market Value	\$20,223,046
Net New Investment	\$7,935,645
Investment Gains/(Losses)	\$1,298,983
Ending Market Value	\$29,457,674



Relative Return vs Benchmark



Cumulative Returns vs Benchmark



## Macquarie Infrastructure Fund IV Period Ended March 31, 2023

### Investment Philosophy

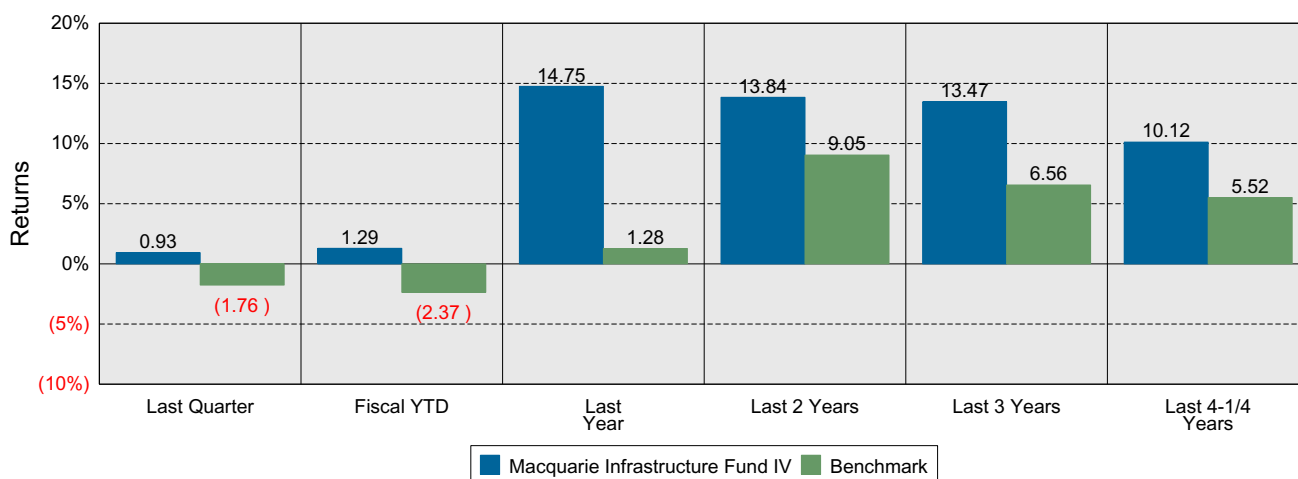
Macquarie's principal investment philosophy is to invest in infrastructure assets that exhibit monopolistic and/or contractual revenue drivers, limited substitution risk and high barriers to entry. The manager has continued to focus on investments where the team's sector expertise and operating experience will provide a competitive advantage in sourcing and due diligence. Furthermore, the manager will also continue to focus on opportunities where its active management capabilities can add value for investors in terms of enhancing returns and the substantial mitigation and/or elimination of material operational risks. **The Benchmark is comprised of 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net.**

### Quarterly Summary and Highlights

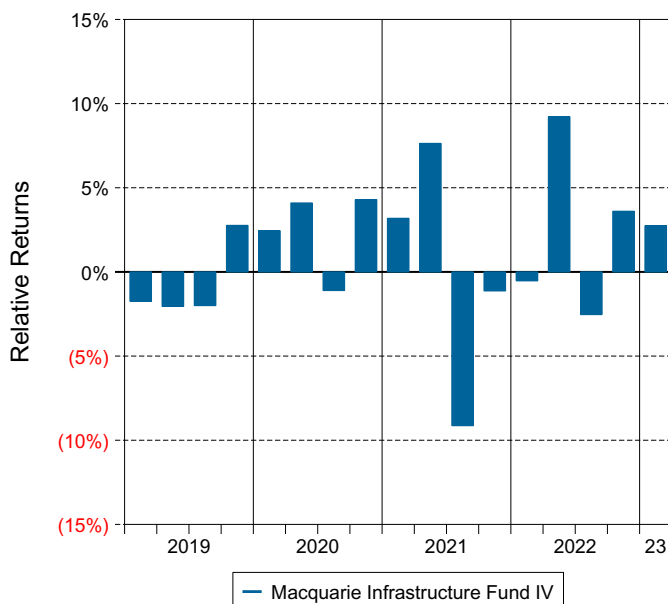
- Macquarie Infrastructure Fund IV's portfolio outperformed the Benchmark by 2.70% for the quarter and outperformed the Benchmark for the year by 13.48%.

### Quarterly Asset Growth

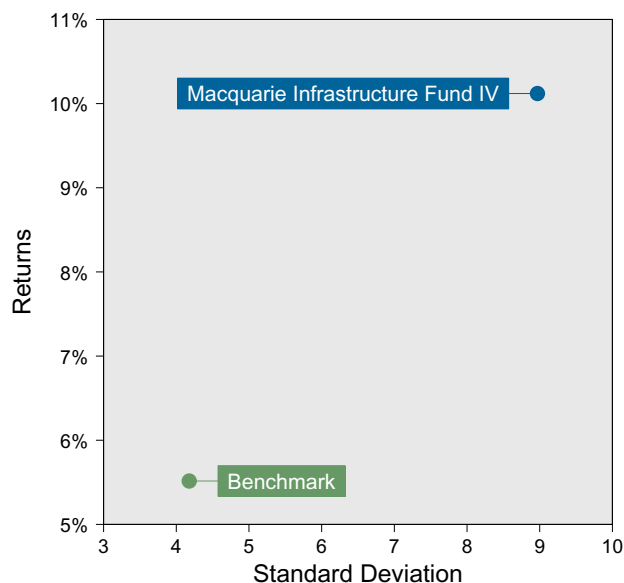
Beginning Market Value	\$77,904,810
Net New Investment	\$-36,746
Investment Gains/(Losses)	\$727,288
Ending Market Value	\$78,595,352



### Relative Return vs Benchmark



### Annualized Four and One-Quarter Year Risk vs Return





# Macquarie Infrastructure Fund V Period Ended March 31, 2023

## Investment Philosophy

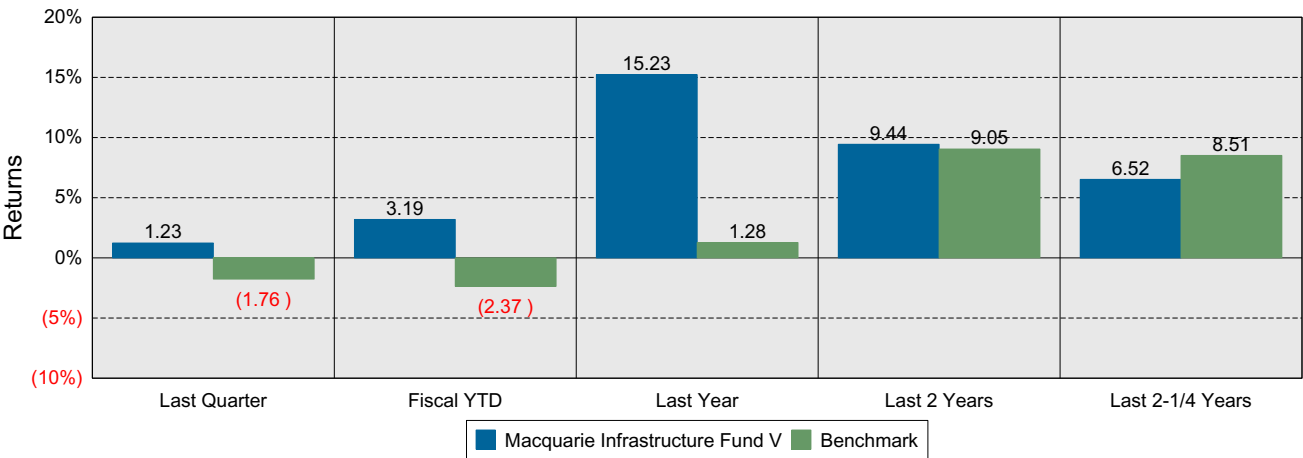
Macquarie’s principal investment philosophy is to invest in infrastructure assets that exhibit monopolistic and/or contractual revenue drivers, limited substitution risk and high barriers to entry. The manager has continued to focus on investments where the team’s sector expertise and operating experience will provide a competitive advantage in sourcing and due diligence. Furthermore, the manager will also continue to focus on opportunities where its active management capabilities can add value for investors in terms of enhancing returns and the substantial mitigation and/or elimination of material operational risks. **The Benchmark is comprised of 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net.**

## Quarterly Summary and Highlights

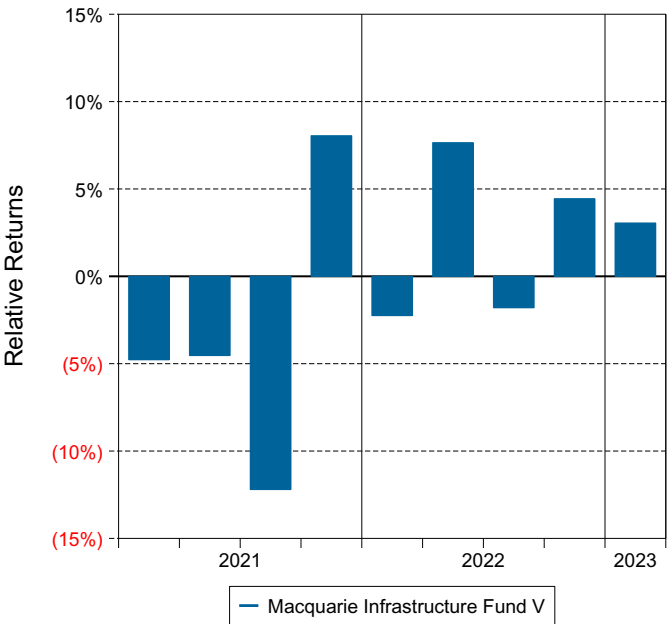
- Macquarie Infrastructure Fund V’s portfolio outperformed the Benchmark by 2.99% for the quarter and outperformed the Benchmark for the year by 13.95%.

## Quarterly Asset Growth

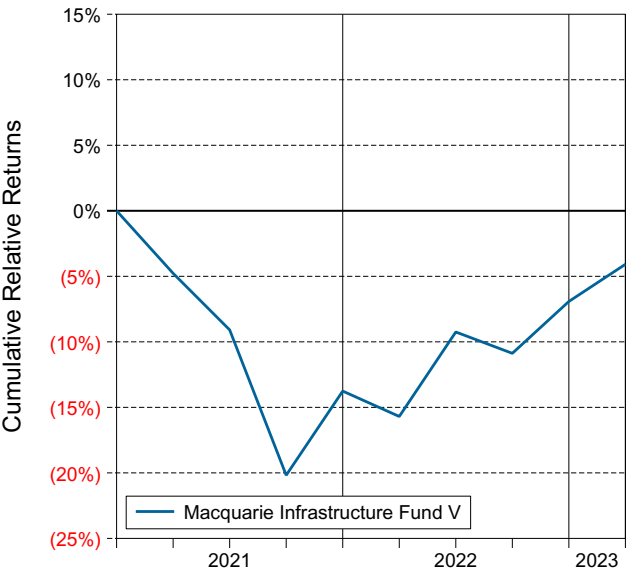
Beginning Market Value	\$52,924,064
Net New Investment	\$-36,986
Investment Gains/(Losses)	\$652,231
Ending Market Value	\$53,539,309



Relative Return vs Benchmark



Cumulative Returns vs Benchmark





## Quarterly Highlights

The Callan Institute provides research to update clients on the latest industry trends and carefully structured educational programs to enhance the knowledge of industry professionals. Visit [www.callan.com/research-library](http://www.callan.com/research-library) to see all of our publications, and [www.callan.com/blog](http://www.callan.com/blog) to view our blog. For more information contact Barb Gerraty at 415-274-3093 / [institute@callan.com](mailto:institute@callan.com).

## New Research from Callan's Experts

**2023 DC Trends Survey** | Callan's 16th annual DC Trends Survey now covers SECURE 2.0 (pre-passage) and diversity topics, along with the key tenets of DC plan management, governance, and financial wellness.

**2023-2032 Capital Markets Assumptions** | A white paper detailing the process involved in creating our 2023-2032 capital markets assumptions and the reasoning behind them.

**1Q23 Real Assets Reporter: Energy Transition** | Jan Mende describes energy-transition investments and the role they can play in institutional portfolios.

**The Periodic Table of Investment Returns** | A visual representation of annual returns for key asset classes, ranked from best to worst performance for each calendar year.

## Blog Highlights

**The PRT Decision: What Plan Sponsors Need to Know** | Despite the turbulence of 2022, many corporate defined benefit (DB) plan sponsors are considering pension risk transfers (PRTs).

**Can Institutional Investors Target 'Food Deserts' for Investment?** | While food desert investments have not been prevalent in institutional real estate portfolios, increasing government incentives and additional sources of financing may help support these opportunities in the future.

**Putting 2022 Public DB Plan Performance into Perspective** | While 2022 was indeed challenging, viewing plan returns over the long-term shows results that are favorable when stacked up against actuarial discount rates.

## Webinar Replays

**Callan's 2023 DC Survey Results Webinar** | This webinar focuses on the results of Callan's 2023 DC Trends Survey, including fiduciary positioning, investments, retirement solutions, fees, and more.

**Research Cafe: ESG Interview Series** | During this interview, Tom Shingler of Callan discusses with Richard Ashley, partner and co-chair of US Employee Benefits and Executive Compensation practice at DLA Piper, key features of the new ESG and proxy voting rule.

## Quarterly Periodicals

**Private Equity Update, 4Q22** | A high-level summary of private equity activity in the quarter through all the investment stages

**Active vs. Passive Charts, 4Q22** | A comparison of active managers alongside relevant benchmarks over the long term

**Market Pulse, 4Q22** | A quarterly market reference guide covering trends in the U.S. economy, developments for institutional investors, and the latest data on the capital markets

**Capital Markets Review, 4Q22** | Analysis and a broad overview of the economy and public and private markets activity each quarter across a wide range of asset classes

**Hedge Fund Update, 4Q22** | Commentary on developments for hedge funds and multi-asset class (MAC) strategies

**Real Assets Update, 4Q22** | A summary of market activity for real assets and private real estate during the quarter

**Private Credit Update, 4Q22** | A review of performance and fundraising activity for private credit during the quarter

## Events

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A complete list of all upcoming events can be found on our website: [callan.com/events-education](http://callan.com/events-education).

*Please mark your calendar and look forward to upcoming invitations:*

### 2023 June Workshops

June 27, 2023 – New York

June 29, 2023 – Chicago

For more information about events, please contact Barb Gerraty: 415-274-3093 / [gerraty@callan.com](mailto:gerraty@callan.com)

## Education: By the Numbers

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50+

Unique pieces of research the Institute generates each year

525

Attendees (on average) of the Institute's annual National Conference

3,700

Total attendees of the "Callan College" since 1994

## Education

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Founded in 1994, the "Callan College" offers educational sessions for industry professionals involved in the investment decision-making process.

### Introduction to Investments

#### May 23-25 – Virtual

This program familiarizes institutional investor trustees and staff and asset management advisers with basic investment theory, terminology, and practices. Our virtual session is held over three days with virtual modules of 2.5-3 hours, while the in-person session lasts one-and-a-half days. This course is designed for individuals with less than two years of experience with asset-management oversight and/or support responsibilities. Virtual tuition is \$950 per person and includes instruction and digital materials. In-person tuition is \$2,350 per person and includes instruction, all materials, breakfast and lunch on each day, and dinner on the first evening with the instructors.

Additional information including registration can be found at: [callan.com/events-education](http://callan.com/events-education)



"Research is the foundation of all we do at Callan, and sharing our best thinking with the investment community is our way of helping to foster dialogue to raise the bar across the industry."

Greg Allen, CEO and Chief Research Officer



### List of Callan's Investment Manager Clients

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Callan takes its fiduciary and disclosure responsibilities to clients very seriously. We recognize that there are numerous potential conflicts of interest encountered in the investment consulting industry, and that it is our responsibility to manage those conflicts effectively and in the best interest of our clients. At Callan, we employ a robust process to identify, manage, monitor, and disclose potential conflicts on an ongoing basis.

The list below is an important component of our conflicts management and disclosure process. It identifies those investment managers that pay Callan fees for educational, consulting, software, database, or reporting products and services. We update the list quarterly because we believe that our fund sponsor clients should know the investment managers that do business with Callan, particularly those investment manager clients that the fund sponsor clients may be using or considering using. Please note that if an investment manager receives a product or service on a complimentary basis (e.g., attending an educational event), they are not included in the list below. Callan is committed to ensuring that we do not consider an investment manager's business relationship with Callan, or lack thereof, in performing evaluations for or making suggestions or recommendations to its other clients. Please refer to Callan's ADV Part 2A for a more detailed description of the services and products that Callan makes available to investment manager clients through our Institutional Consulting Group, Independent Adviser Group, and Fund Sponsor Consulting Group. Due to the complex corporate and organizational ownership structures of many investment management firms, parent and affiliate firm relationships are not indicated on our list.

Fund sponsor clients may request a copy of the most currently available list at any time. Fund sponsor clients may also request specific information regarding the fees paid to Callan by particular fund manager clients. Per company policy, information requests regarding fees are handled exclusively by Callan's Compliance department.

#### Manager Name

abrdn (Aberdeen Standard Investments)

ABS Global Investments

Acadian Asset Management LLC

Adams Street Partners, LLC

AEGON USA Investment Management Inc.

AllianceBernstein

Allspring Global Investments, LLC

Altrinsic Global Advisors, LC

American Century Investments

Amundi US, Inc.

Antares Capital LP

Apollo Global Management, Inc.

AQR Capital Management

Ares Management LLC

Ariel Investments, LLC

Aristotle Capital Management, LLC

Atlanta Capital Management Co., LLC

AXA Investment Managers

#### Manager Name

Axiom Investors LLC

Baillie Gifford International, LLC

Baird Advisors

Barings LLC

Baron Capital Management, Inc.

Barrow, Hanley, Mewhinney & Strauss, LLC

Belle Haven Investments

BentallGreenOak

Beutel, Goodman & Company Ltd.

BlackRock

Blackstone Group (The)

Blue Owl Capital, Inc.

BNY Mellon Asset Management

Boston Partners

Brandes Investment Partners, L.P.

Brandywine Global Investment Management, LLC

Brookfield Asset Management Inc.

Brookfield Public Securities Group

**Manager Name**

Brown Brothers Harriman &amp; Company

Burgundy Asset Management Ltd.

Capital Group

CastleArk Management, LLC

CIBC Asset Management Inc.

ClearBridge Investments, LLC

Cohen &amp; Steers Capital Management, Inc.

Columbia Threadneedle Investments North America

Comvest Partners

CQS

Credit Suisse Asset Management, LLC

D.E. Shaw Investment Management, LLC

DePrince, Race &amp; Zollo, Inc.

Dimensional Fund Advisors L.P.

Doubleline

DWS

EARNEST Partners, LLC

Epoch Investment Partners, Inc.

Fayez Sarofim &amp; Company

Federated Hermes, Inc.

Fidelity Institutional Asset Management

Fiera Capital Corporation

First Hawaiian Bank Wealth Management Division

First Eagle Investment Management, LLC

First Sentier Investors

Fisher Investments

Franklin Templeton

Fred Alger Management, LLC

GAM (USA) Inc.

GlobeFlex Capital, L.P.

GoldenTree Asset Management, LP

Goldman Sachs

Golub Capital

Guggenheim Investments

GW&amp;K Investment Management

Harbor Capital Advisors

Harding Loevner LP

Hardman Johnston Global Advisors LLC

Heitman LLC

Hotchkis &amp; Wiley Capital Management, LLC

**Manager Name**

Impax Asset Management LLC

Income Research + Management

Insight Investment

Intech Investment Management LLC

Intercontinental Real Estate Corporation

Invesco

J.P. Morgan

Janus

Jennison Associates LLC

Jobs Peak Advisors

Kayne Anderson Rudnick Investment Management, LLC

KeyCorp

Kohlberg Kravis Roberts &amp; Co. (KKR)

Lazard Asset Management

LGIM America

Lincoln National Corporation

Longview Partners

Loomis, Sayles &amp; Company, L.P.

Lord Abbett &amp; Company

LSV Asset Management

MacKay Shields LLC

Macquarie Asset Management (MAM)

Manulife Investment Management

Marathon Asset Management, L.P.

MetLife Investment Management

MFS Investment Management

MidFirst Bank

Mondrian Investment Partners Limited

Montag &amp; Caldwell, LLC

Morgan Stanley Investment Management

MUFG Union Bank, N.A.

Natixis Investment Managers

Neuberger Berman

Newton Investment Management

Northern Trust Asset Management

Nuveen

Oaktree Capital Management, L.P.

P/E Investments

Pacific Investment Management Company

Pantheon Ventures

**Manager Name**

Parametric Portfolio Associates LLC

Partners Group (USA) Inc.

Pathway Capital Management, LP

PFM Asset Management LLC

PGIM DC Solutions

PGIM Fixed Income

PGIM Quantitative Solutions LLC

Pictet Asset Management

PineBridge Investments

Polen Capital Management, LLC

Pretium Partners, LLC

Principal Asset Management

Putnam Investments, LLC

Raymond James Investment Management

RBC Global Asset Management

Regions Financial Corporation

Riverbridge Partners LLC

Robeco Institutional Asset Management, US Inc.

S&amp;P Dow Jones Indices

Sands Capital Management

Schroder Investment Management North America Inc.

Segall Bryant &amp; Hamill

**Manager Name**

SLC Management

Smith Graham &amp; Co. Investment Advisors, L.P.

State Street Global Advisors

Strategic Global Advisors, LLC

T. Rowe Price Associates, Inc.

The TCW Group, Inc.

Thompson, Siegel &amp; Walmsley LLC

Tri-Star Trust Bank

UBS Asset Management

VanEck

Versus Capital Group

Victory Capital Management Inc.

Virtus Investment Partners, Inc.

Vontobel Asset Management

Voya

Walter Scott &amp; Partners Limited

WCM Investment Management

Wellington Management Company, LLP

Western Asset Management Company LLC

Westfield Capital Management Company, LP

William Blair &amp; Company LLC

Xponance, Inc.



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