

March 31, 2024

**Pennsylvania SERS 401(a)**



**Investment Measurement Service  
Quarterly Review**

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### March 31, 2024

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## Investors, Be Careful for What You Wish

### ECONOMY

**2** Investors spent the 2010s wishing for a return to normal in interest rates. The U.S. economy is not back to this mythical equilibrium but is close. So, we achieved the yearned-for goal of normal interest rates, and the markets should be happy about this achievement. Right? Not so.

## Agg Falls as Rates Rose; HY Benefits

### FIXED INCOME

**8** The Bloomberg US Aggregate Bond Index fell 0.8% as rates rose. Investment grade corporates outperformed like-duration Treasuries. Lower quality also outperformed, with high yield corporates and leveraged loans posting the highest returns.

## Long-term Returns Top Leveraged Loans

### PRIVATE CREDIT

**12** In 4Q23, private credit gained 3.1%, just above leveraged loans but well below a high yield benchmark. But over longer time periods it has handily outperformed both, with gains of 8.1% over the last 10 years. Investor interest in the asset class continues.

## Investors Show Gains but Lag Benchmark

### INSTITUTIONAL INVESTORS

**4** Nonprofits performed best, while risk-averse corporate DB plans lagged. Public DB plans are reviewing their fixed-income structures in the new yield environment. Corporate DB plans saw interest rate hedging work. DC plans continue to focus on fees.

## Private, Public Indices Fall on Rate Worries

### REAL ESTATE/REAL ASSETS

**10** Both the NCREIF Property Index and the ODCE dropped, although income returns were positive. REITs trailed equities both in the U.S. and globally. In the U.S., stronger equity returns hurt, while rate concerns led to underperformance in Europe. Asian REITs outperformed.

## Strong Start to Year and Optimism in '24

### HEDGE FUNDS/MACs

**13** All four major hedge fund types had positive performance, and the Callan Institutional Hedge Fund Peer Group rose 4.1%. MACs also saw gains. The market environment should remain positive for the asset class, especially for skilled long/short managers.

## Big Rally at the Start of Year in Stocks

### EQUITY

**6** The U.S. equity markets were off to an exceptional start with the S&P 500 posting a YTD gain of 11%, its best first quarter since 2019. Broad global markets also delivered strong returns on the decreasing expected probability of a recession in the U.S. and continued optimism around AI.

## Huge Drop in Activity From 2021-22 Peak

### PRIVATE EQUITY

**11** Fundraising fell sharply in 2023 from the highs of 2021-22. Buyout activity also declined. There is a bifurcation in VC: An AI "supercycle" is accelerating early-stage deal activity and buoying valuations while late-stage companies struggle with slower growth.

## DC Index Rallies After Previous 3Q23 Loss

### DEFINED CONTRIBUTION

**15** The Callan DC Index rose in 4Q23 by 9.5% after a loss in 3Q. Investment gains powered the increase. Exposure to equities in plans rose, as U.S. large cap equity saw a jump in allocations. Management fee data showed a drop in fees across the board.

## 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

# Be Careful for What You Wish

ECONOMY | Jay Kloepfer

Since central bankers began the Zero Interest Rate Policy experiment following the Global Financial Crisis in 2008-09, including a revival of the policy in 2020 post-COVID, the market has bemoaned the lack of meaningful interest rates for debt investors. Investors spent the 2010s wishing for a “return to normal” in interest rates, which means a real return to investing in cash (a small premium over inflation); an upward sloping yield curve; and a 10-year Treasury rate that roughly equals nominal GDP growth.

What does that really mean? In a world of, say, 2% inflation (the Fed’s target), and real GDP growth of 2.0%-3.0% (let’s call it 2.5%), then cash would yield about 2.5%, 10-year Treasuries would yield about 4.5%, both savers and retirees would be satisfied with a positive real return to holding debt, and the economy could function on a real cost of capital that looks like the long-term average.

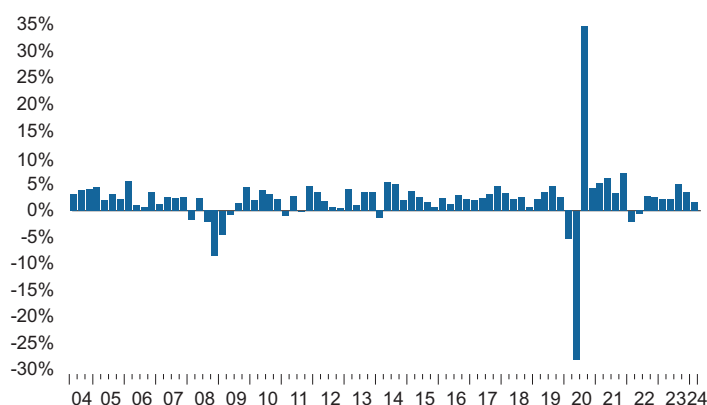
Today inflation is at 3.5% (March 2024), and economic growth has come in hotter than expected, meaning the Fed’s inflation-fighting efforts may not yet be over. The U.S. economy and global capital markets are not back to this mythical equilibrium, but one could argue there is a decent chance of getting there within the next year or so.

So we achieved the yearned-for goal of normal interest rates, and the markets should be happy about this achievement. Right? Not so—almost from the moment we began raising rates in 2022, moving in quick steps toward normalization, the capital markets have priced in an imminent recession and a reversal of interest rates, the very counter to normalization. What gives? Are we (the market) a giant collection of irrational actors? Did we regret our wished-for goal of normal interest rates once we saw what the goal would mean for the cost of debt, for mortgages, for short-term borrowing?

When I say the markets called for a reversal of rate hikes, it means the yield curve inverted, just three months after the Federal Reserve began raising rates. An inverted yield curve is simply the expression of market participants’ belief that interest rates

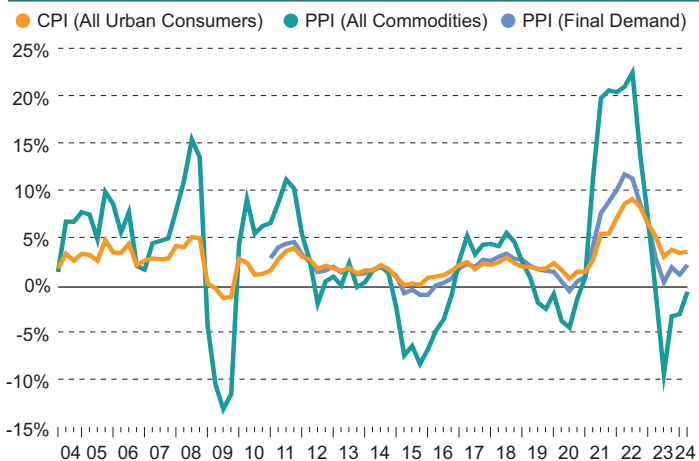
## Quarterly Real GDP Growth

(20 Years)



Source: Bureau of Economic Analysis

## Inflation Year-Over-Year



Source: Bureau of Labor Statistics

will come down at some point in the future, and it happens when bond investors move into longer-dated debt to pick up a bigger price gain when rates come down. This investor move drives up the price of longer bonds and drives down their yield. Why would investors expect rates to fall? They believe the rate hikes enacted by the Fed will slow the economy enough to cause recession and spur the Fed to start cutting rates to stimulate growth.

To the casual observer, this explanation of the path from investor expectations to an inverted yield curve to an economic forecast

looks like a long way to go. What makes the current situation particularly interesting is that many market participants, simply by virtue of the experience since 2009 and their age, have never lived through inflation greater than 2% and interest rates anywhere near their current level. We can talk about a return to normal, but for many, the 10-year plus period of ZIRP was their “normal.”

All forecasters expected the rate hikes begun in 2022 to cause a slowdown and likely a recession by 2023, and most certainly by 2024. GDP growth defied all forecasters and got stronger as 2023 progressed, finishing the year 2.5% higher than 2022. Driving the growth was a phenomenal year in the job market, as almost every industry segment finally surpassed its pre-pandemic peak. 1Q24 GDP growth came in at 1.6%, which is softer than the forecasts that led up to its release, and the first time growth has been below 2% in seven quarters, all the way back to the anomalous GDP losses in 1Q and 2Q in 2022. The Fed’s Open Market Committee voted on May 1 to hold the Fed Funds target at 5.25%-5.5%. The Fed directly referenced final sales to domestic purchasers as reason for holding rates steady, as these sales grew at 3%, 3.3%, and 3.1% over the last three quarters (through 1Q24). The Fed has also changed its tone regarding inflation, after inflation rose in the first quarter, with the CPI hitting 3.5% in March. CPI dropped to 3.0% in June 2023, bounced around in the fall and started 2024 at 3.1%, but the persistence of inflation is humbling to the Fed.

The logical conclusion is that the current strength of the economy is both a sign that there is no urgent need to lower rates, and that this strength and the current rate of inflation are not in alignment with the Fed’s goal of 2% inflation. So long as progress on inflation remains stalled, it will take longer than expected before the FOMC believes it will be appropriate to lower rates.

### Recent Quarterly Economic Indicators

	1Q24	4Q23	3Q23	2Q23	1Q23	4Q22
Employment Cost: Total Compensation Growth	4.2%	4.2%	4.3%	4.5%	4.8%	5.1%
Nonfarm Business: Productivity Growth	0.3%	3.5%	4.6%	3.3%	-0.3%	2.1%
GDP Growth	1.6%	3.3%	4.9%	2.1%	2.2%	2.6%
Manufacturing Capacity Utilization	76.9%	77.2%	77.7%	78.0%	78.2%	78.5%
Consumer Sentiment Index (1966=100)	78.4	64.9	69.6	62.3	64.6	58.8

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

### The Long-Term View

Index	1Q24	Periods Ended 3/31/24			
		1 Yr	5 Yrs	10 Yrs	25 Yrs
<b>U.S. Equity</b>					
Russell 3000	10.0	29.3	14.3	12.3	8.0
S&P 500	10.6	29.9	15.0	13.0	7.8
Russell 2000	5.2	19.7	8.1	7.6	8.4
<b>Global ex-U.S. Equity</b>					
MSCI EAFE	5.8	15.3	7.3	4.8	4.6
MSCI ACWI ex USA	4.7	13.3	6.0	4.3	--
MSCI Emerging Markets	2.4	8.2	2.2	2.9	--
MSCI ACWI ex USA Small Cap	2.1	12.8	6.2	4.7	7.2
<b>Fixed Income</b>					
Bloomberg Agg	-0.8	1.7	0.4	1.5	3.8
90-Day T-Bill	1.3	5.2	2.0	1.4	1.9
Bloomberg Long G/C	-2.4	-1.1	-0.6	2.3	5.2
Bloomberg GI Agg ex US	-3.2	-0.7	-2.5	-1.4	2.3
<b>Real Estate</b>					
NCREIF Property	-1.0	-7.2	3.8	6.4	7.9
FTSE Nareit Equity	-0.2	10.5	4.1	6.6	9.5
<b>Alternatives</b>					
Cambridge PE*	-0.4	4.2	14.6	14.3	13.9
Cambridge Senior Debt*	0.1	11.3	5.9	6.7	--
HFRI Fund Weighted	4.5	11.7	6.9	4.9	6.3
Bloomberg Commodity	2.2	-0.6	6.4	-1.6	2.7
<b>Inflation – CPI-U</b>	1.8	3.5	4.2	2.8	2.6

\*Data for most recent period lags. Data as of 3Q23.

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

# Investors Show Gains but Still Lag Benchmark

## INSTITUTIONAL INVESTORS

- Strong equity gains and a modest rebound in bonds helped all investor types show gains in the one-year period ending 1Q24.
- Given their generally more aggressive portfolios, nonprofits performed best, while risk-averse corporate plans saw lower returns.
- But all investor types significantly lagged a benchmark consisting of 60% S&P 500/40% Bloomberg Aggregate.
- Over longer periods, public defined benefit (DB) plans have performed best.
- Over the last 20 years, investors have seen gains but still lag equities and the 60%/40% benchmark.

### Market environment issues of concern to investors

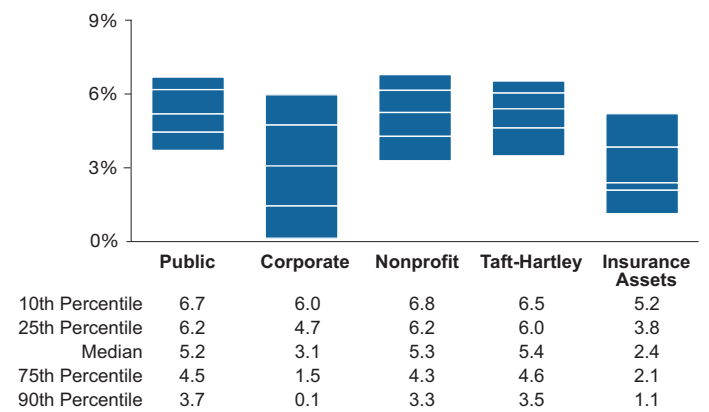
- On an annual-average over annual-average basis, forecasters from the Federal Reserve Bank of Philadelphia expect real GDP to increase 2.4% in 2024, up 0.7 percentage points from the estimate in the previous survey.
- The yield curve continues to be inverted, implying a recession is on the horizon.
  - Inversion started in July 2022 (20 months) or approximately 600+ days ago

- Many now saying this indicator may not be as good as it was
- Election years also tend to do weird things to indicators

### Public DB plans

- The median discount rate, according to the most recent NASRA survey, is 7.0%.
- A 7.0% return expectation can be achieved with 50% in fixed income.

### Quarterly Returns, Callan Database Groups (3/31/24)



Source: Callan

### Callan Database Median and Index Returns\* for Periods Ended 3/31/24

Database Group	Quarter	1 Year	3 Years	5 Years	10 Years	20 Years
Public Database	5.2	13.9	4.9	8.3	7.3	7.1
Corporate Database	3.1	9.1	1.1	5.4	5.7	6.5
Nonprofit Database	5.3	14.3	4.8	8.2	6.9	6.9
Taft-Hartley Database	5.4	13.2	4.9	7.9	7.2	6.8
Insurance Assets Database	2.4	8.6	1.8	4.4	4.1	4.7
All Institutional Investors	4.9	13.0	4.3	7.7	6.8	6.9
Large (>\$1 billion)	4.4	11.8	4.7	8.0	7.2	7.1
Medium (\$100mm - \$1bn)	5.1	13.2	4.4	7.8	6.9	6.9
Small (<\$100 million)	5.2	14.2	4.2	7.5	6.6	6.6
60% S&P 500/40% Bloomberg Agg	6.0	18.1	5.9	9.4	8.6	7.6

\*Returns less than one year are not annualized.

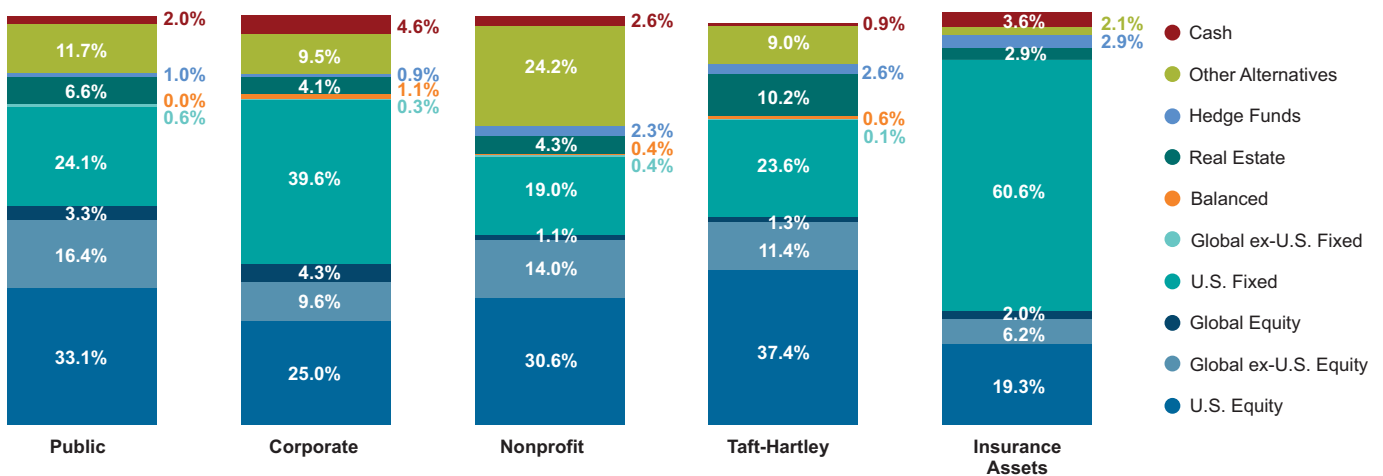
Source: Callan. Callan's database includes the following groups: public defined benefit (DB) plans, corporate DB plans, nonprofits, insurance assets, and Taft-Hartley plans. Approximately 10% to 15% of the database constituents are Callan's clients. All database group returns presented gross of fees. 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.

- Plans are starting to review their fixed income structures, specifically the need for risk in a higher-rate environment.
- More than a quarter of plans considered increasing their allocations to private real estate, a sharp jump from 3Q23, according to the Callan Consultant Survey.
- Interest in private credit took a big drop in 1Q24. At the same time, nearly 16% of clients are considering cutting allocations to the asset class, the most in survey history.
- There was also a big jump in the share of clients considering cuts to global ex-U.S. equity allocations.
- There was a smaller but still significant decrease in the share of clients considering reductions to U.S. equity.
- No clients planned changes to their fixed income allocations.

**Corporate DB plans**

- Liabilities decreased as rates rose.
- Interest rate hedging continues to work.
- Funded ratios for some clients improved as the equity markets increased.
- As closed plans’ liabilities shorten, intermediate fixed income will continue to gather interest.
- As credit spreads have tightened, it is important to manage or reduce any overweight to credit.
- Corporate DB plans are considering increasing private equity, up from 0% in 3Q23.
- According to the Consultant Survey, the share of plans with a funded status between 91% and 100% dropped dramatically.

**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

### Best first quarter in 5 years

- The U.S. equity markets were off to an exceptional start with the S&P 500 posting a YTD gain of 11%, its best first quarter since 2019. Performance was buoyed by continued optimism around a “soft landing” scenario, strong corporate earnings, and the Fed’s projected interest rate cuts in mid-2024.
- Almost all of the 11 S&P 500 sectors posted gains in 1Q24. Real estate was the only sector that posted losses, challenged by the interest rate environment and continued negative sentiment around office real estate.
- The best-performing sector was Communication Services, which generated a nearly 16% return during the quarter. Energy, Financials, Information Technology, and Industrials also posted double-digit returns.

### Large cap stocks dominate again

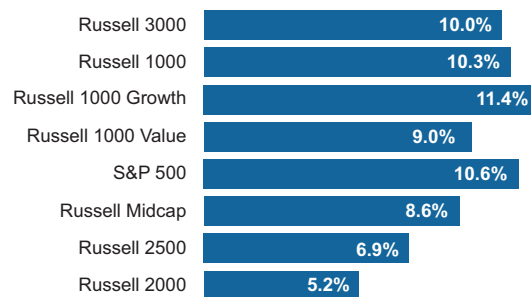
- Growth outpaced value across the market cap spectrum once again, and large cap stocks continued to outperform small cap stocks.
- The “Magnificent Seven” in aggregate continues to outpace the other constituents of the S&P 500 in terms of earnings growth and total returns.
- However, signs point to the broadening of returns within the index including: 1) The narrowing of dispersion in the premium gap of returns/earnings growth; as of 3/31/24, the premium gap of returns/earnings growth between the “Magnificent Seven” and the other 493 stocks in the index was 10%. In

recent periods, the gap has been >25%; 2) Only two stocks of the “Magnificent Seven” (Meta and NVIDIA) were among the top 10 performers within the index for the quarter.

- Returns within the “Magnificent Seven” cohort also show signs of disaggregation. Three stocks—Tesla, Apple, and Alphabet—exhibited negative to single-digit returns vs. other constituents, which generated low to high double-digit returns in 1Q24. In 2023, the entire cohort demonstrated positive double- and triple-digit returns.

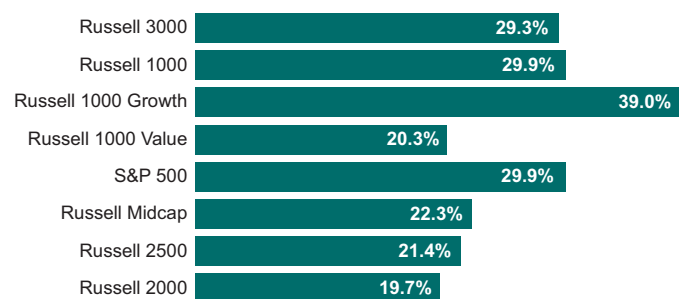
### U.S. Equity: Quarterly Returns

(3/31/24)



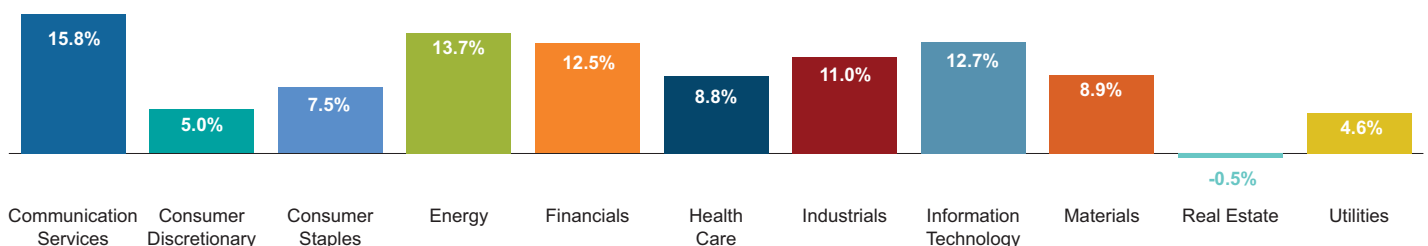
### U.S. Equity: One-Year Returns

(3/31/24)



Sources: FTSE Russell and S&P Dow Jones Indices

### Quarterly Performance of Industry Sectors (3/31/24)



Source: S&P Dow Jones Indices

## Global Equities

### Another strong quarter for Japan

- Broad markets delivered strong returns on the decreasing expected probability of a recession in the U.S. and continued optimism around artificial intelligence.
- Small caps once again trailed large caps in a higher interest rate environment, which tends to more negatively impact smaller companies with more significant borrowing needs.
- Japan performed well yet again, beating the S&P 500 in 1Q24, driven by continued stock buybacks, economic resiliency, and a weakening yen, which helped exports.

### Emerging markets struggle but exporters thrive

- Emerging markets underperformed developed markets as China struggled with increased regulatory scrutiny and a continued economic slowdown.
- Exporting countries such as Peru and Colombia benefited from increasing commodity prices. Turkey also performed well with a return to orthodox monetary policies after experimenting with counterintuitive methodologies.

### Value benefits from rising commodity prices

- Energy's volatility continued; after struggling in 4Q23, energy rebounded and helped deliver stronger performance in the commodity-heavy value space.

### U.S. dollar gains as rate cut expectations fall

- The U.S. dollar rose in 1Q as investors recalibrated their interest rate expectations, with conventional wisdom now indicating that the U.S. may only enact one rate cut in 2024.

### Positive tailwinds

- End of deflation
- Most prolonged stint of consumption gains since mid-1990s
- Increase in exports (positive impact to GDP)
- Reforms support the Japanese equity market through increased M&A and improved corporate governance

### Slow growth in China

- Sluggish growth continues, with weak home sales and deflationary pressures.

### Market valuation in China

- With Chinese markets now down 60% from a high-water mark in early 2021, Chinese equities are at decade-low allocations in global portfolios.

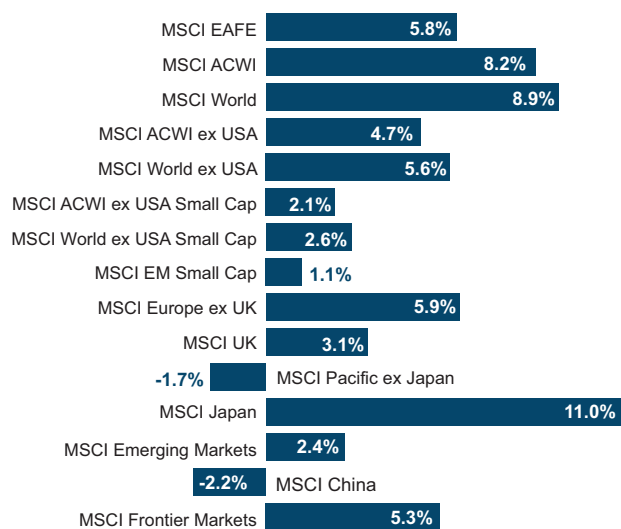
### Fast growth in India

- Highest real GDP growth and one of the only major countries with accelerating GDP growth.

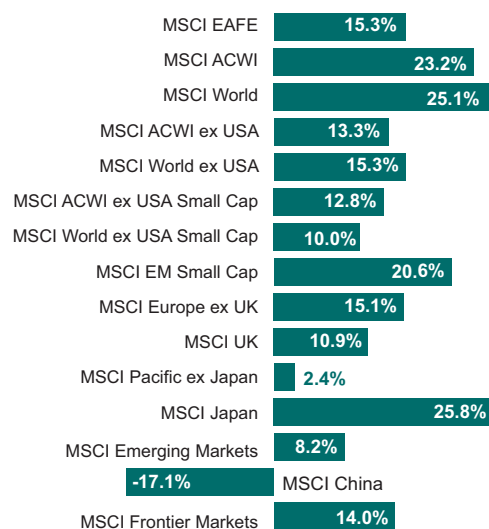
### Market valuation in India

- The MSCI India Index traded at 22.1 times forward earnings—above its 10-year average of 18.9 times.

### Global ex-U.S. Equity: Quarterly Returns (U.S. Dollar, 3/31/24)



### Global ex-U.S. Equity: One-Year Returns (U.S. Dollar, 3/31/24)



Source: MSCI

# Fixed Income

## U.S. Fixed Income

### Big increase in 10-year Treasury yield

- Markets' enthusiasm for multiple rate cuts starting in early 2024 was tempered by stronger-than-expected economic data.
- 10-year U.S. Treasury yield rose from 3.88% as of year-end to close the quarter at 4.21%.
- The yield curve remained inverted but less so than one year ago (2-year/10-year 42 bps vs. 57 one year ago).

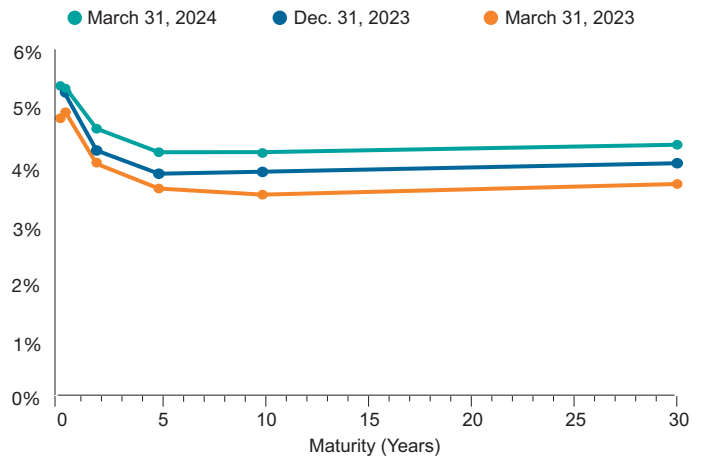
### Aggregate falls as rates climb

- The Bloomberg US Aggregate Bond Index fell 0.8% as rates rose.
- Investment grade corporates outperformed like-duration Treasuries, while mortgages underperformed.
- Lower quality also outperformed, with high yield corporates and leveraged loans posting the highest returns.
- Investment grade and high yield corporate spreads are now tighter than one standard deviation from the trailing 10-year average.

### Record corporate bond issuance

- Highest first quarter of new issuance on record, with \$529 billion in investment grade corporates, surpassing 2020's \$479 billion.
- High yield quarterly issuance was just as significant with a volume of \$85 billion, a level not seen since 2021.
- Both were met with strong investor demand.
- Corporate bond spreads continued to tighten across all qualities amid strong investor demand. Investment grade credit OAS declined 8 bps to 85 bps, while high yield corporates fell 24 bps, crossing the 300 bp level for the first time since January 2022.
- Investment grade credit spreads are now in the lowest 13th percentile over the last 20 years, while high yield bonds are in the 8th percentile. Bank loans are relatively more attractive, with spreads in the 42nd percentile since June 2008.
- However, all-in yields continue to provide high levels of income, with investment grade credit in the 77th percentile

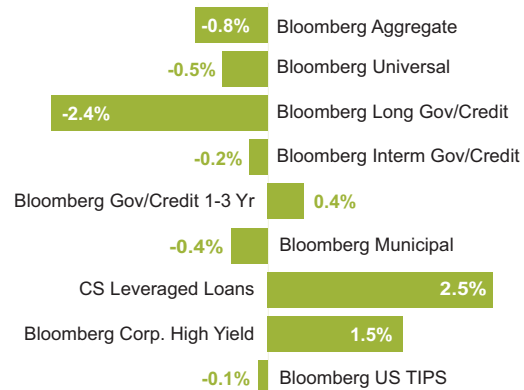
## U.S. Treasury Yield Curves



Source: Bloomberg

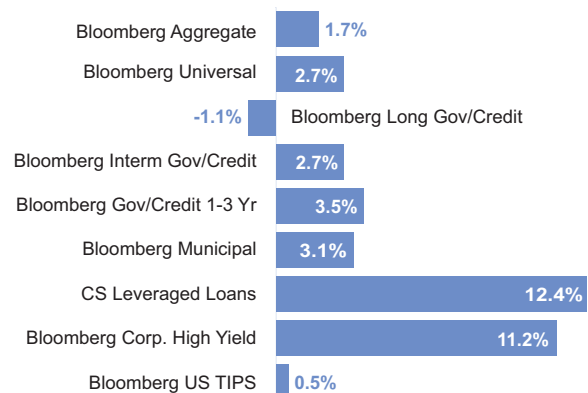
## U.S. Fixed Income: Quarterly Returns

(3/31/24)



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

(3/31/24)



Sources: Bloomberg and Credit Suisse

## FIXED INCOME (Continued)

over the last 20 years, while high yield is in the 58th percentile. Bank loan yields, which are benefitting from the inverted yield curve, are in the 81st percentile since June 2008.

### Municipal Bonds

#### Municipal bonds posted fairly flat returns in 1Q

- Yields rose, but less than for U.S. Treasuries.
- 10-year AAA municipal bond yield closed at 2.52%, up from 2.27% as of year-end.
- 10-year U.S. Treasury yield rose to 4.20% from 3.88%.
- Strong demand easily absorbed robust issuance.

#### BBBs performed best for quarter and year

- AAA: -0.8%
- AA: -0.6%
- A: +0.1%
- BBB: +0.6%
- High Yield: +1.5%

#### Valuations vs. U.S. Treasuries remained rich

- 10-year AAA Muni/10-year U.S. Treasury yield ratio 60%
- Well below 10-year median of 86%

### Global Fixed Income

#### Central banks close to rate cuts

- Central banks largely kept rates on hold but are getting closer to rate cuts as inflation moderates.
- Switzerland was the first to raise rates with a 25 bps increase.
- Japan was the last to exit negative interest rate policy, raising rates from -0.1% to a range of 0.0%-0.1%.

#### U.S. dollar strengthened

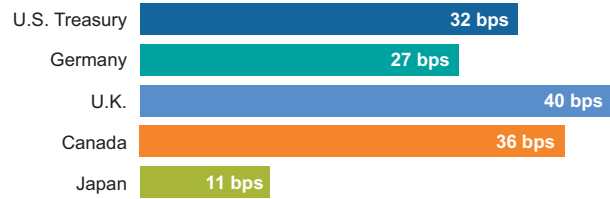
- Major currencies weakened relative to the dollar, a reversal of fortune from 4Q23.
- Hedged investors saw better returns.

#### Emerging markets were mixed

- Hard currency EM debt performed relatively well, especially high yield. The JPM EMBI Global Diversified Index rose 2.0%, with the high yield component up 4.9%.

### Change in 10-Year Global Government Bond Yields

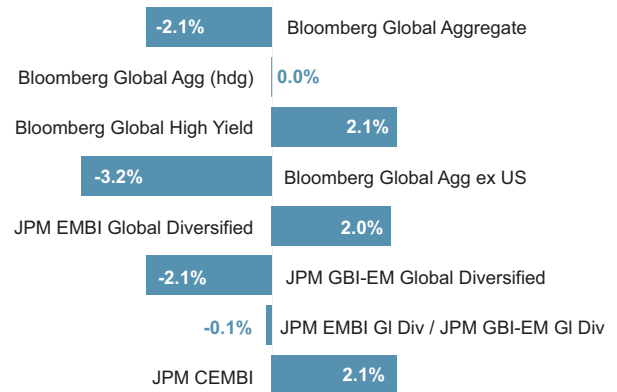
#### 4Q23 to 1Q24



Source: Bloomberg

### Global Fixed Income: Quarterly Returns

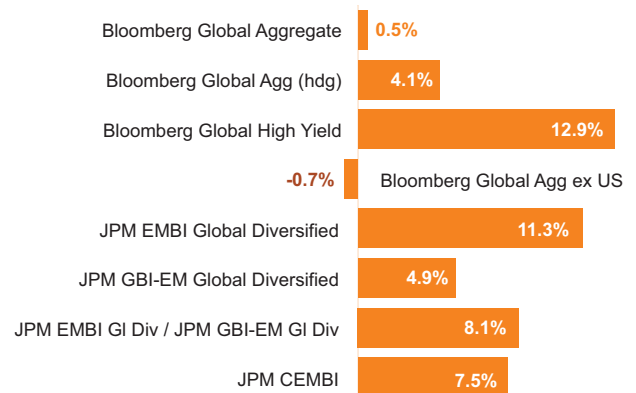
(3/31/24)



Sources: Bloomberg and JPMorgan Chase

### Global Fixed Income: One-Year Returns

(3/31/24)



Sources: Bloomberg and JPMorgan Chase

- Local currencies generally lost ground to the U.S. dollar, hurting returns for the JPM GBI-EM Global Diversified Index.

# Private, Public Indices Fall on Rate Concerns

REAL ESTATE/REAL ASSETS | Munir Iman

## Appreciation returns drive NPI lower

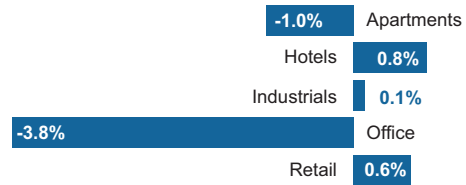
- The NCREIF Property Index, a measure of unlevered U.S. institutional real estate assets, fell 1.0% during 1Q24.
- The income return was 1.2% while the appreciation return was -2.1%.
- Hotels, which represent a small portion of the index, led property sector performance with a gain of 0.8%. Office finished last with a loss of 3.8%.
- Regionally, the South led with a gain of 0.1%, while the West was the worst performer with a drop of 1.4%.
- The NCREIF Open-End Diversified Core Equity (ODCE) Index, representing equity ownership positions in U.S. core real estate, fell 2.4% during 1Q, with an income return of 1.0% and an appreciation return of -3.4%.

## U.S. real estate securities

- U.S. REITs (-0.2%) underperformed the S&P 500 (+10.6%). The underperformance was driven by optimism about the broader economy and excitement about artificial intelligence, which drew capital flows away from REITs.
- Earnings growth for U.S. REITs is expected to be in the low single digits due to conservatism and elevated interest rates.
- Cyclical sectors including malls and lodging led U.S. REITs in 1Q, while net lease and storage trailed due to higher interest rate sensitivity and weak pricing power, respectively.

## Sector Quarterly Returns by Property Type

(3/31/24)



Source: NCREIF

- Dampening inflation, coupled with more dovish Federal Reserve sentiment, sparked a rally to close the year.

## Asia/Pacific real estate securities

- The FTSE EPRA Nareit Developed Asia Index (USD) fell 0.2% during the quarter. Strength in higher beta, growth-sensitive Japanese developers was a driver of the region's relative outperformance.
- Hong Kong was the primary underperformer due to concerns over a sustainable pickup in China growth momentum.

## European real estate securities

- The FTSE EPRA Nareit Developed Europe Index (USD) dropped by 5.0% during the quarter.
- Europe was the lowest-performing region, driven by signs of stickier inflation driving a repricing of rate cut expectations.
- The less-indebted U.K. outperformed continental Europe.

## Callan Database Median and Index Returns\* for Periods Ended 3/31/24

Private Real Assets	Quarter	Year to Date	1 Year	3 Years	5 Years	10 Years	20 Years
<b>Real Estate ODCE Style</b>	<b>-1.8</b>	<b>-1.8</b>	<b>-11.6</b>	<b>2.9</b>	<b>3.2</b>	<b>6.4</b>	<b>6.0</b>
NFI-ODCE (value-weighted, net)	-2.6	-2.6	-12.0	2.5	2.6	5.8	6.0
NCREIF Property	-1.0	-1.0	-7.2	3.6	3.8	6.4	7.5
NCREIF Farmland	0.7	0.7	3.6	7.4	6.0	7.1	12.2
NCREIF Timberland	2.1	2.1	9.8	11.0	7.0	5.8	7.1
<b>Public Real Estate</b>							
<b>Global Real Estate Style</b>	<b>-0.7</b>	<b>-0.7</b>	<b>9.4</b>	<b>0.8</b>	<b>2.9</b>	<b>5.5</b>	<b>7.1</b>
FTSE EPRA Nareit Developed	0.7	0.7	1.6	2.5	3.3	5.5	--
<b>Global ex-U.S. Real Estate Style</b>	<b>-1.0</b>	<b>-1.0</b>	<b>8.4</b>	<b>-4.2</b>	<b>-0.3</b>	<b>3.8</b>	<b>--</b>
FTSE EPRA Nareit Dev ex US	-2.0	-2.0	5.9	-5.8	-3.3	0.9	--
<b>U.S. REIT Style</b>	<b>-0.8</b>	<b>-0.8</b>	<b>9.9</b>	<b>3.7</b>	<b>5.3</b>	<b>7.3</b>	<b>8.3</b>
FTSE EPRA Nareit Equity REITs	-0.2	-0.2	10.5	4.1	4.1	6.6	7.4

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

# Significant Drops in Activity From Peak Years of 2021-22

PRIVATE EQUITY | Ashley Kahn

**Fundraising** ► In 2023, the number of funds raised declined sharply by ~50% from the highs of 2021–22. The 2023 vintage experienced the full impact of the denominator effect, which when combined with slower deal activity and exits, left minimal capital for new commitments.

**Buyouts** ► Buyout activity in 2023 declined by about a third compared to the highs of 2021–22, reflecting high interest rates, a wide bid-ask spread, and lingering effects from the slowdown in the public markets. 3Q23 appears to be the trough in buyout dealmaking, with early 2024 seeing improved liquidity conditions and higher public markets comps. Average deal size has declined; larger buyouts have been more difficult to finance, leading to greater activity for small/mid buyouts and add-on acquisitions.

**Venture Capital and Growth Equity** ► 2023 saw a substantial decline of ~50% in venture capital and growth equity activity, following the highs of 2021. There is a bifurcation by stage: An artificial intelligence “supercycle” is accelerating early-stage deal activity and buoying valuations, while late-stage companies struggle with slower growth, falling valuations, and lack of exit prospects.

A significant amount of capital is tied up in venture-backed companies waiting to go public, which is slowing down new

investment activity (e.g., SpaceX, Databricks, Chime, Scale AI, etc.). 2023–24 has witnessed a few high-profile IPOs (Instacart, Klaviyo, and Reddit), but there has not been an IPO above \$10 billion since 2021.

**Exits** ► Exits in 2023 have declined dramatically by over 50% compared to their all-time record in 2021. Only 8% of total private equity AUM generated liquidity in 2023 (the lowest level ever, lower even than in the depths of the Global Financial Crisis).

**Returns** ► The strong recovery of the public equity market in 2023 (led by the “Magnificent Seven” technology stocks) has left private equity in its wake. Private equity doesn’t recover as quickly as the public markets because the smoothing effect dampens private equity returns in both up and down markets.

## Funds Closed 1/1/23 to 12/31/23

Strategy	No. of Funds	Amt (\$mm)	Share
Venture Capital	1,584	199,090	21%
Growth Equity	139	103,324	11%
Buyouts	515	471,684	50%
Mezzanine Debt	24	36,050	4%
Distressed/Special Credit	42	46,018	5%
Energy	6	3,296	0%
Secondary and Other	137	74,616	8%
Fund-of-funds	25	5,567	1%
<b>Totals</b>	<b>1,472</b>	<b>552,402</b>	<b>100%</b>

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

## Private Equity Performance (%) (Pooled Horizon IRRs through 9/30/23\*)

Strategy	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years
All Venture	-2.4	-8.9	14.8	17.2	17.2	13.4	12.5	20.4
Growth Equity	-0.6	0.8	12.3	14.8	14.3	13.1	13.8	14.3
All Buyouts	0.1	10.2	16.8	15.0	14.6	12.4	14.6	12.8
Mezzanine	1.8	13.0	13.5	11.0	11.1	10.7	11.1	9.9
Credit Opportunities	1.2	8.2	11.1	7.1	7.5	10.1	9.3	9.6
Control Distressed	0.4	5.6	19.4	13.6	11.7	11.5	11.6	11.4
<b>All Private Equity</b>	<b>-0.4</b>	<b>4.2</b>	<b>15.4</b>	<b>14.8</b>	<b>14.3</b>	<b>12.5</b>	<b>13.6</b>	<b>13.0</b>
S&P 500	-3.3	21.6	10.2	9.9	11.9	11.3	9.7	7.9
Russell 3000	-3.3	20.5	9.4	9.1	11.3	11.1	9.7	8.1

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

\*Most recent data available at time of publication

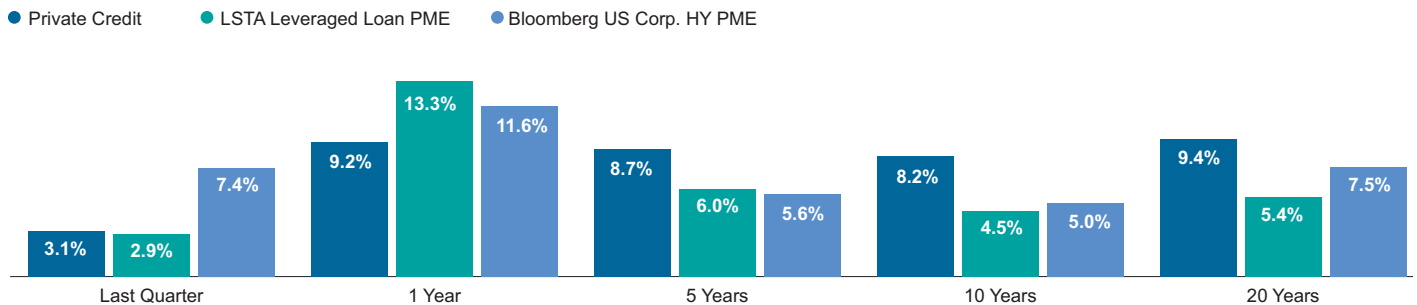
Note: Transaction count and dollar volume figures across all private equity measures are preliminary figures and are subject to update in subsequent versions of the *Capital Markets Review* and other Callan publications.

# Long-term Returns Top Leveraged Loans

## PRIVATE CREDIT | Cos Braswell

- Private credit performance varies across sub-asset class and underlying return drivers.
- In 4Q23, it gained 3.1%, slightly above a leveraged loan index and well below a high yield benchmark.
- Over the past 10 years, the asset class has generated a net IRR of 8.2%, outperforming leveraged loans and high yield bonds, as of Dec. 31, 2023.
- Higher-risk strategies have performed better than lower-risk strategies.
- Private credit remained in high demand across Callan’s investor base, and a number of large defined benefit plans are looking to increase their existing private credit allocations from 2%–3% to 5%–10%.
- While we always work to build out diversified client portfolios, we think there is particularly interesting relative value in upper middle market sponsor-backed lending and asset-based lending.
- We are seeing an uptick in stress for some individual names in direct lending portfolios due to a combination of input cost inflation and increased interest expense.
- Private credit AUM stood at over \$1.5 trillion at the end of 2023, with Preqin forecasting the asset class will grow to over \$2.5 trillion by 2028 at a 11.13% CAGR from 2023 to 2028.
- Direct lending is expected to grow steadily through 2028 as investors increase their private credit allocations.
- Distressed exposure will grow a bit more slowly, with other strategies such as opportunistic, special situations, and other niche diversifiers growing more quickly.

### Private Credit Performance (%) (Pooled Horizon IRRs through 12/31/23\*)



### Private Credit Performance (%) (Pooled Horizon IRRs by Strategy through 12/31/23\*)

Strategy	Quarter	1 Year	5 Years	10 Years	20 Years
Senior Debt	4.2	9.9	7.0	7.1	7.3
Mezzanine	3.3	12.3	11.7	11.1	11.1
Credit Opportunities	2.6	7.9	8.3	7.5	9.2
Total Private Credit	3.1	9.2	8.7	8.2	9.4

Source: LSEG/Cambridge

\*Most recent data available at time of publication

# Strong Start to Year For Most Strategies

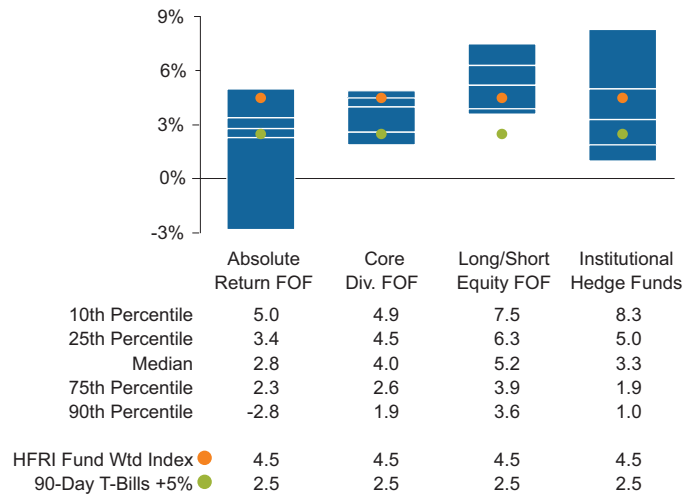
HEDGE FUNDS/MACs | Joe McGuane

2024 started the year off on a strong note, as risk assets saw a second consecutive double-digit quarter for U.S. equities. Interest rate expectations stayed front-and-center throughout the quarter as lingering inflationary pressures in the U.S. led to a tempering of Fed rate cut expectations for 2024. Positive macro-economic sentiment was further spurred by corporate earnings, and secular themes such as artificial intelligence (AI) growth and related efficiency gains helped move broad markets higher.

Hedge funds started the year off on a strong note, as macro strategies produced their strongest quarter in over 20 years. Macro managers were positioned for moderating inflation, interest rate volatility, and an improving economic outlook. Equity hedge strategies also performed well during 1Q, as managers saw performance coming from the Technology, Energy, and Health Care sectors. Event-driven had a positive quarter, as positions across special situations, distressed, and

## Hedge Fund Style Group Returns

(3/31/24)



Sources: Callan, Credit Suisse, Federal Reserve

## Callan Peer Group Median and Index Returns\* for Periods Ended 3/31/24

Hedge Fund Universe	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years
Callan Institutional Hedge Fund Peer Group	3.3	9.3	5.8	7.2	6.1	7.6
Callan Fund-of-Funds Peer Group	3.9	10.1	4.2	5.6	4.4	5.6
Callan Absolute Return FOF Style	2.8	8.2	5.2	5.1	4.2	5.3
Callan Core Diversified FOF Style	4.0	10.2	4.3	5.6	3.8	5.4
Callan Long/Short Equity FOF Style	5.2	13.0	1.1	6.1	5.5	6.2
HFRI Fund Weighted Index	4.5	11.7	4.1	6.9	4.9	5.9
HFRI Fixed Convertible Arbitrage	4.0	7.5	3.9	6.6	5.0	7.7
HFRI Distressed/Restructuring	2.8	9.9	4.1	6.5	4.1	7.0
HFRI Emerging Markets	3.0	9.7	0.2	4.1	3.5	5.3
HFRI Equity Market Neutral	4.1	9.5	5.5	3.8	3.3	3.1
HFRI Event-Driven	2.5	11.7	4.1	6.4	4.7	6.8
HFRI Relative Value	2.5	8.2	4.1	4.6	4.0	6.1
HFRI Macro	6.2	8.5	6.1	6.4	3.7	3.0
HFRI Equity Hedge	5.2	14.3	3.2	7.9	5.7	6.9
HFRI Multi-Strategy	2.0	10.6	0.3	4.6	3.1	5.4
HFRI Merger Arbitrage	0.3	7.2	4.7	5.6	4.6	4.6
90-Day T-Bill + 5%	2.5	10.2	7.6	7.0	6.4	6.0

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



activist positions drove performance. Relative value strategies performed well, as managers profited off interest rate volatility throughout the quarter.

Serving as a proxy for large, broadly diversified hedge funds with low-beta exposure to equity markets, the median Callan Institutional Hedge Fund Peer Group rose 3.3%. Within this style group of 50 peers, the average hedged credit manager gained 6.4%, driven by interest rate volatility. Meanwhile, the average hedged equity manager added 5.0%, as those focused on technology, energy, and health care drove performance. The median Callan Institutional hedged rates manager rose 0.7%, largely driven by relative value fixed income trades.

Within the HFRI Indices, the best performing strategy was macro, which gained 6.2%, as managers were positioned for moderating inflation, interest rate volatility, and an improving economic outlook.

Across the Callan Hedge FOF database, the median Callan Long-Short Equity FOF ended 5.2% higher, as managers with a focus on the technology sector drove performance. Meanwhile, the median Callan Core Diversified FOF rose 4.0%, as equity and event-driven strategies drove performance. Callan Absolute Return FOF gained 2.8%, as higher equity beta strategies were behind this move higher.

Since the Global Financial Crisis, liquid alternatives to hedge funds have become popular among investors for their attractive risk-adjusted returns that are similarly uncorrelated with traditional stock and bond investments but offered at a lower cost.

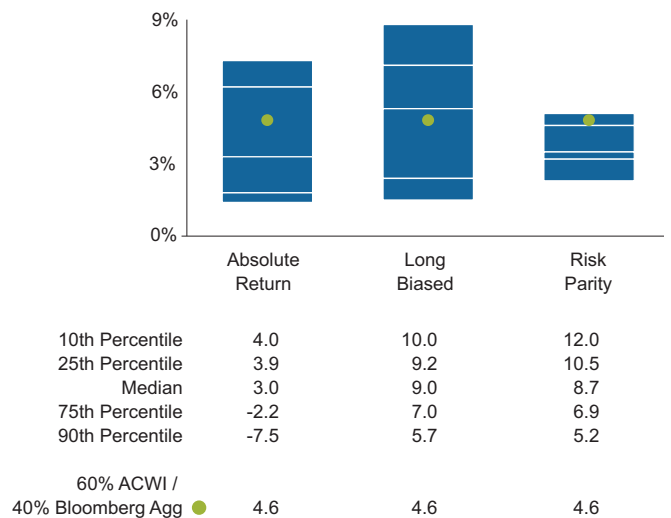
Within Callan's database of liquid alternative solutions, the Callan MAC Long Biased manager rose 9.0%, as the strong equity rally pushed performance higher. The Callan MAC Risk Parity peer group rose 8.7%, as equities and fixed income drove performance. The Callan MAC Absolute Return peer group rose 3.0%, as broad markets had a strong start to the year.

As it appears interest rates will be higher for longer, this will likely keep return expectations and opportunities for hedge

funds elevated. In the current market environment, where both businesses and investors face higher capital costs, this causes a greater focus on capital allocation, rewarding skilled investors for identifying the highest and best uses of scarce capital. The potential for alpha generation through long-short strategies remains strong, as there has been significant dispersion across asset classes and sectors.

### MAC Style Group Returns

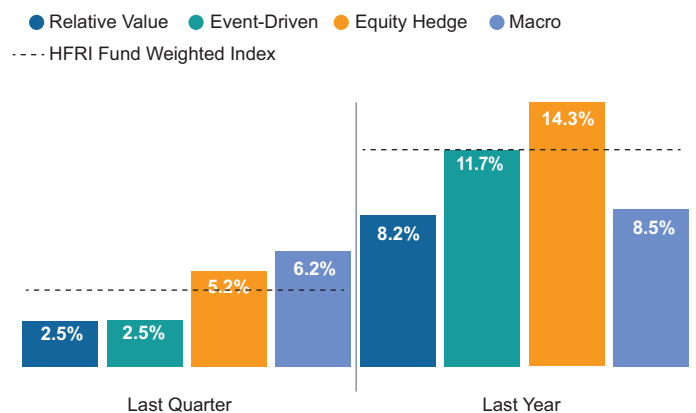
(3/31/24)



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

### HFRI Hedge Fund-Weighted Strategy Returns

(3/31/24)



Source: HFRI

# Index Rallies After Previous Quarter's Loss

DEFINED CONTRIBUTION | [Scotty Lee](#)

## Performance: One-year gain of 17%

- The Callan DC Index™ gained 9.5% in 4Q23, which brought the Index's trailing one-year gain to 17.2%.

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

- Balances within the DC Index rose by 9.0% after a 3.2% decrease in the previous quarter. Investment gains (9.5%) were the sole driver of the gain, while net flows (-0.5%) detracted.

## Turnover: Net transfers decrease

- Turnover (i.e., net transfer activity levels within plans) slightly fell to 0.24% from the previous quarter's measure of 0.26%. The Index's historical average (0.55%) remained steady.

## Net Cash Flow Analysis: TDFs remain in top spot

- Target date funds (TDFs) garnered 90.7% of quarterly net flows. Notably, stable value (-45.1%) saw relatively large outflows for the fifth consecutive quarter.

## Equity Allocation: Exposure rises

- The Index's overall allocation to equity (72.5%) rose slightly from the previous quarter's level (71.5%).

## Asset Allocation: Capital preservation declines

- U.S. large cap equity (26.9%) and target date funds (34.8%) were among the asset classes with the largest percentage increases in allocation, while stable value (7.4%) had the largest decrease in allocation due to net outflows.

## Prevalence of Asset Class: Global equity rises

- The prevalence of global equity funds (19.2%) rose by 3.4%. In contrast, the prevalence of U.S. small/mid cap funds (92.9%) fell by 3.3%.

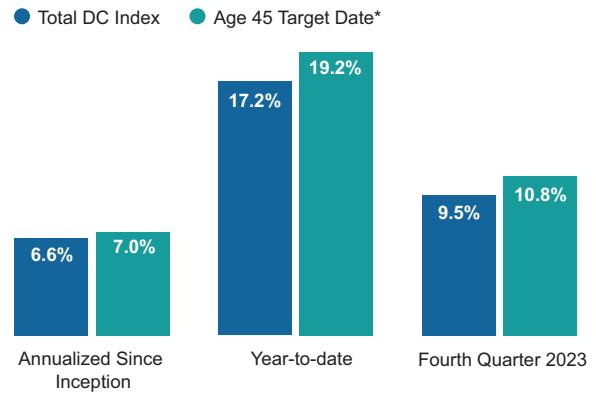
## Management Fees: Decline for all plan sizes

- For plans with assets less than \$500 million in assets, the average asset-weighted fee decreased by 3 basis points. Plans with assets between \$500 million and \$1 billion saw the largest fee decrease of 9 bps, while the fee for plans with more than \$1 billion in assets had a decrease of 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.*

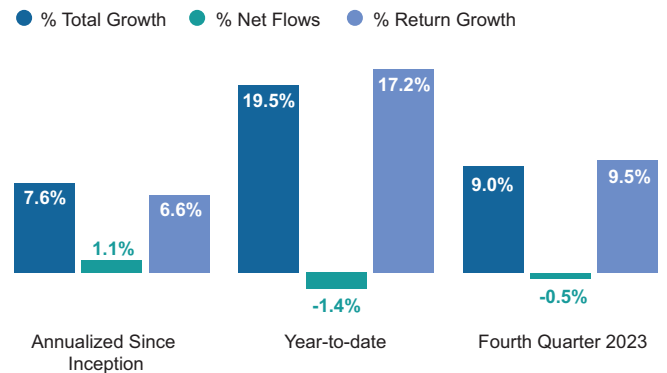
## Investment Performance

(12/31/23)



## Growth Sources

(12/31/2)



## Net Cash Flow Analysis (4Q23)

(Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Target Date Funds	90.7%
Global ex-U.S. Equity	6.9%
U.S. Small/Mid Cap	-16.9%
Stable Value	-45.1%
<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.



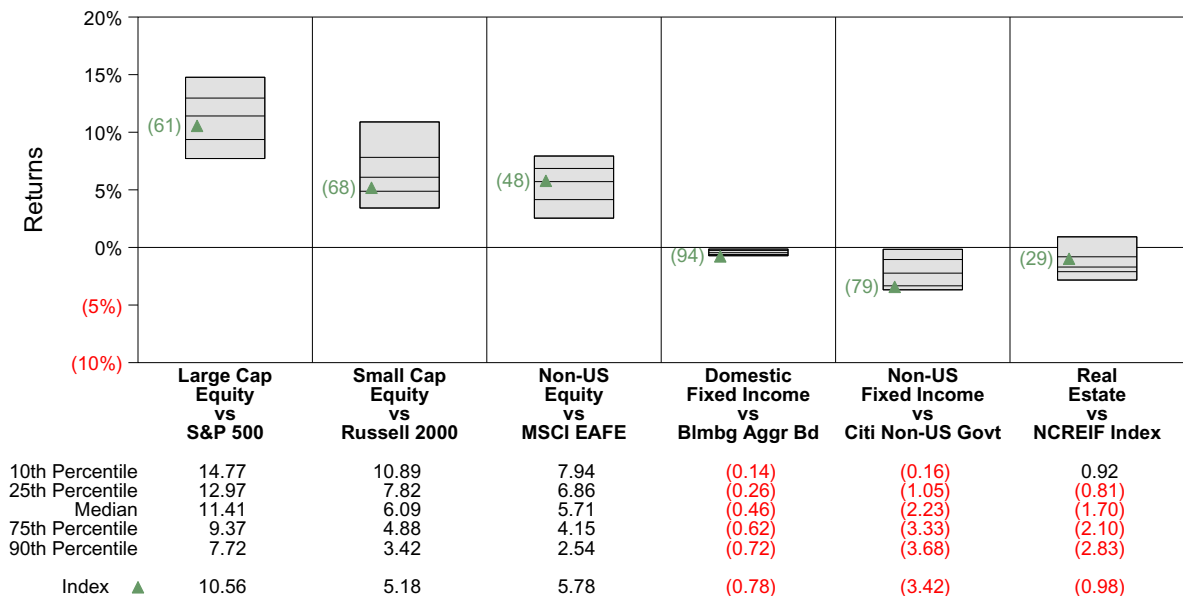
## Market Overview

### Active Management vs Index Returns

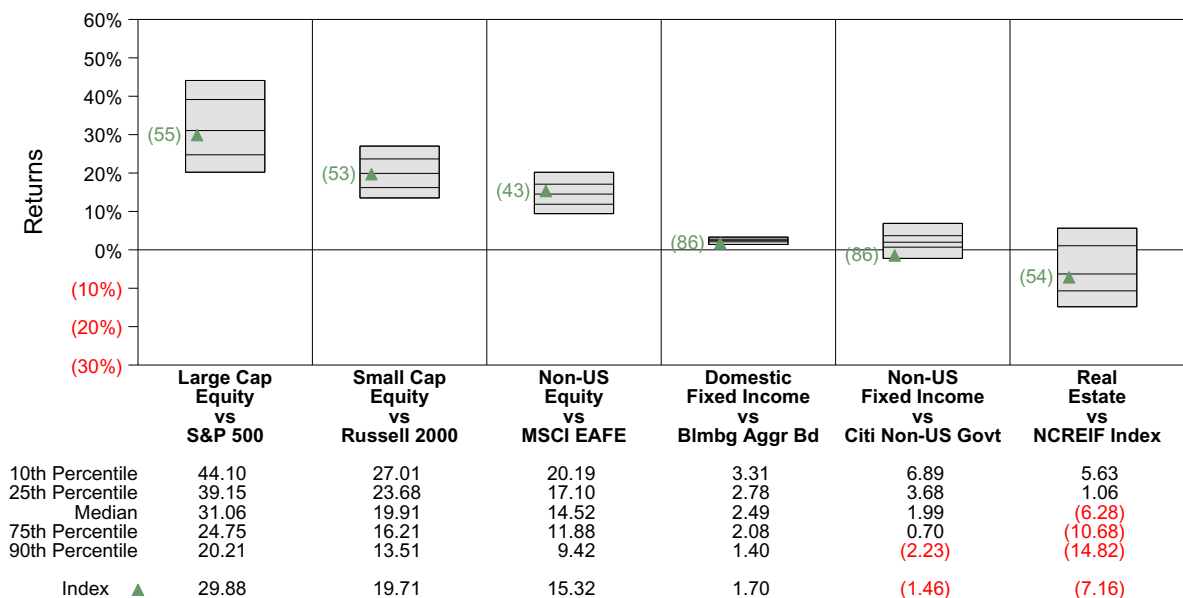
#### Market Overview

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, 2024



#### Range of Separate Account Manager Returns by Asset Class One Year Ended March 31, 2024

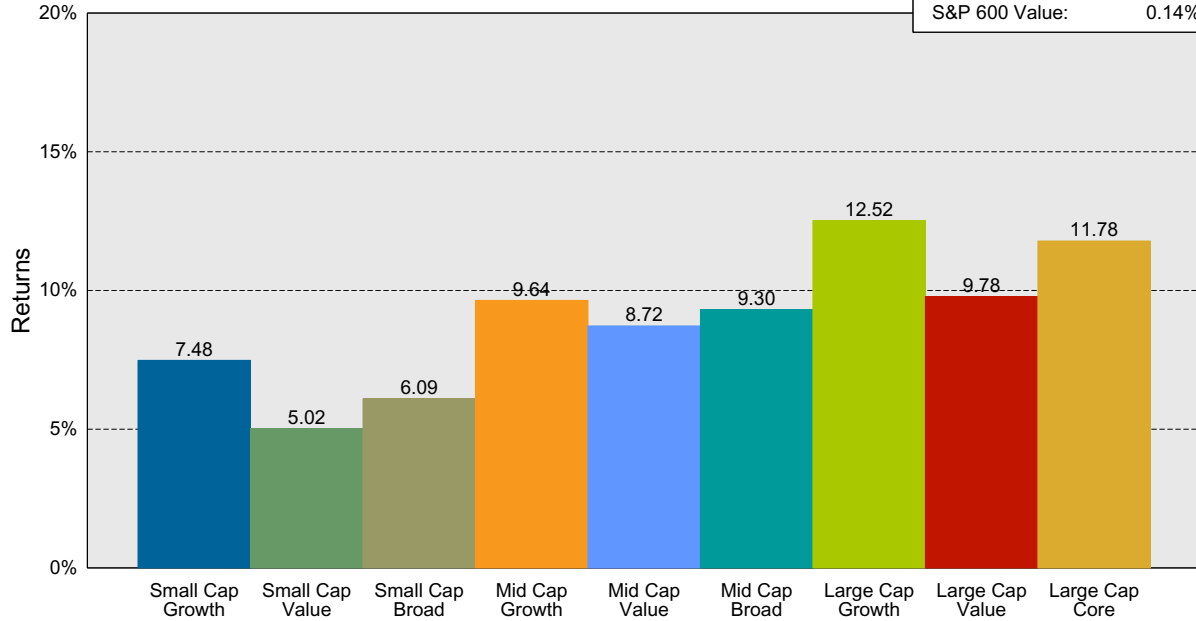


## Domestic Equity Active Management Overview

U.S. stocks rallied sharply in 1Q with the S&P 500 Index (+10.6%) closing the quarter at a record high for the 22nd time during the quarter. Communication Services (+15.8%), Energy (+13.7%), and Technology (+12.7%) were the top-performing sectors with Real Estate (-1.1%) being at the bottom and the only sector to deliver a negative return. The equal-weighted version of the Index gained a more modest 7.9% as the largest stocks continued to outperform. The top 10 holdings hit another high at 33.5% of the Index on a cap-weighted basis. Growth (R1000 Growth: +11.4%) outperformed Value (R1000 Value: +9.0%) and large cap (R1000: +10.3%) outperformed small (Russell 2000: +5.2%). Of the Magnificent 7, only Apple (-10.8%) and Tesla (-29.2%) suffered losses.

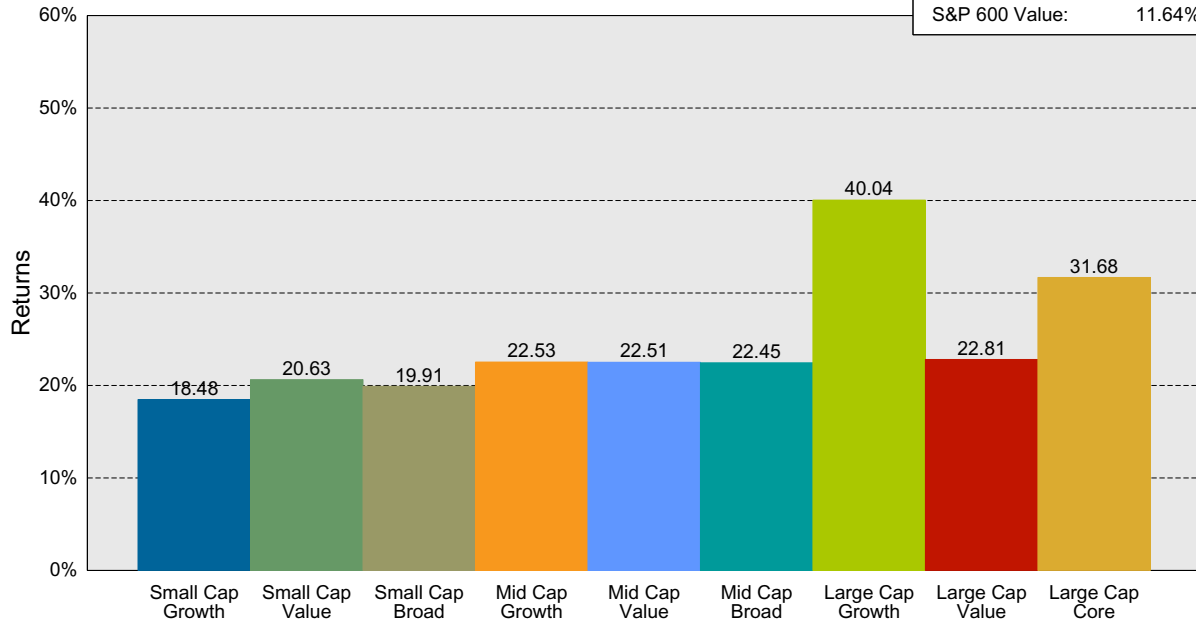
S&P 500:	10.56%
S&P 500 Growth:	12.75%
S&P 500 Value:	8.05%
S&P Mid Cap:	9.95%
S&P 600:	2.46%
S&P 600 Growth:	4.77%
S&P 600 Value:	0.14%

### Separate Account Style Group Median Returns for Quarter Ended March 31, 2024



S&P 500:	29.88%
S&P 500 Growth:	33.73%
S&P 500 Value:	25.58%
S&P Mid Cap:	23.33%
S&P 600:	15.93%
S&P 600 Growth:	20.12%
S&P 600 Value:	11.64%

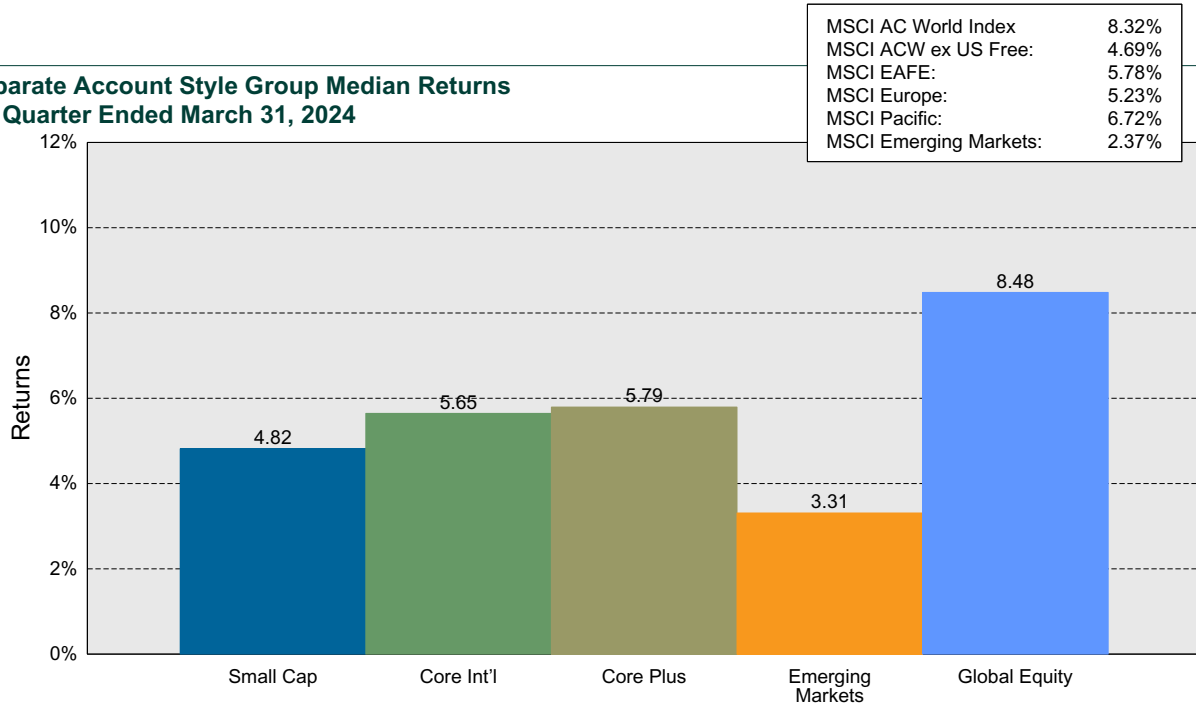
### Separate Account Style Group Median Returns for One Year Ended March 31, 2024



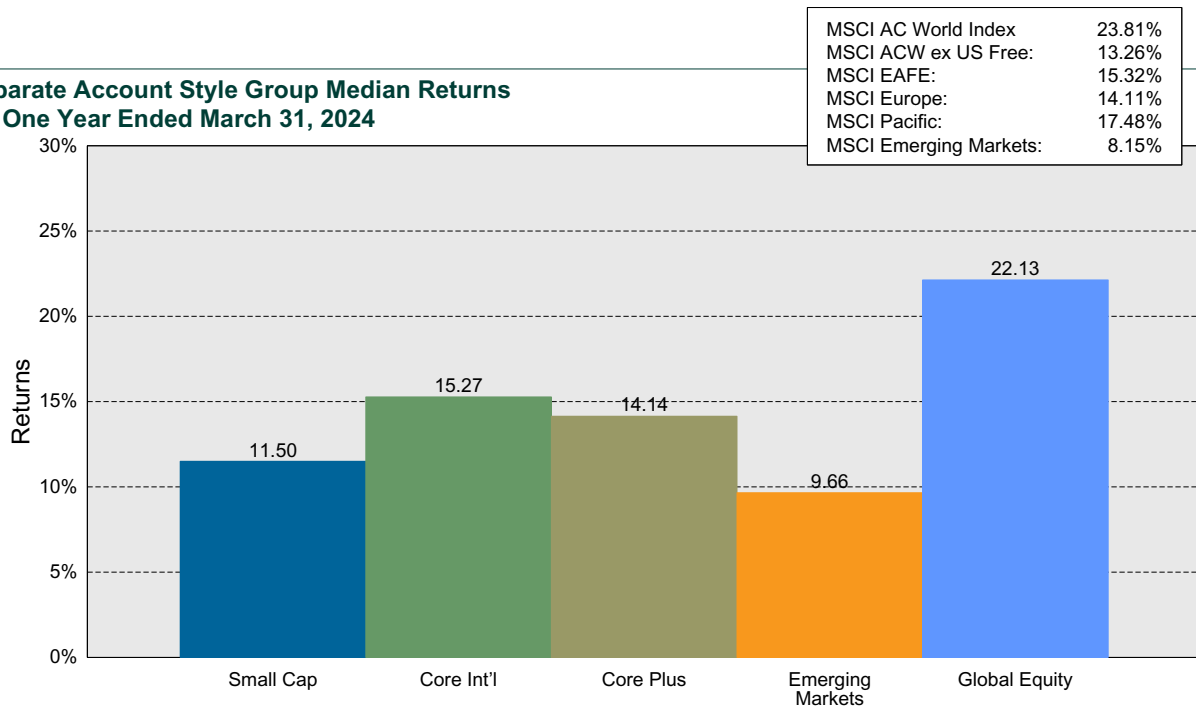
## International Equity Active Management Overview

The MSCI ACWI ex USA trailed U.S. stock indices and posted a 4.7% gain (Local: +8.2%). The U.S. dollar strengthened against most currencies, most notably the Japanese yen (-7%). As in the U.S., Information Technology (+10.7%) was the best-performing sector. Financials (+8.7%), the largest sector in the index, also bolstered results. Pacific ex-Japan (-1.7%) was hurt by weak performance from Hong Kong (-11.7%). In contrast, Japan (+11.0%) saw double-digit gains that were even better in local terms (+19.2%). Emerging Markets (MSCI EM: +2.4%) were up modestly but trailed developed market returns. As elsewhere, Information Technology was the best performing sector with Taiwan Semiconductor (+26.6%), at over 7% of the MSCI EM Index, being a key contributor to EM performance. Latin America (-4.0%) was dragged down by poor results from Brazil (-7.4%). Emerging Asia (+3.4%) was helped by India (+6.1%) and Taiwan (+12.5%) but hurt by China (-2.2%). In China, factory output and retail sales beat expectations in January and February, but the property sector remained under significant pressure.

### Separate Account Style Group Median Returns for Quarter Ended March 31, 2024



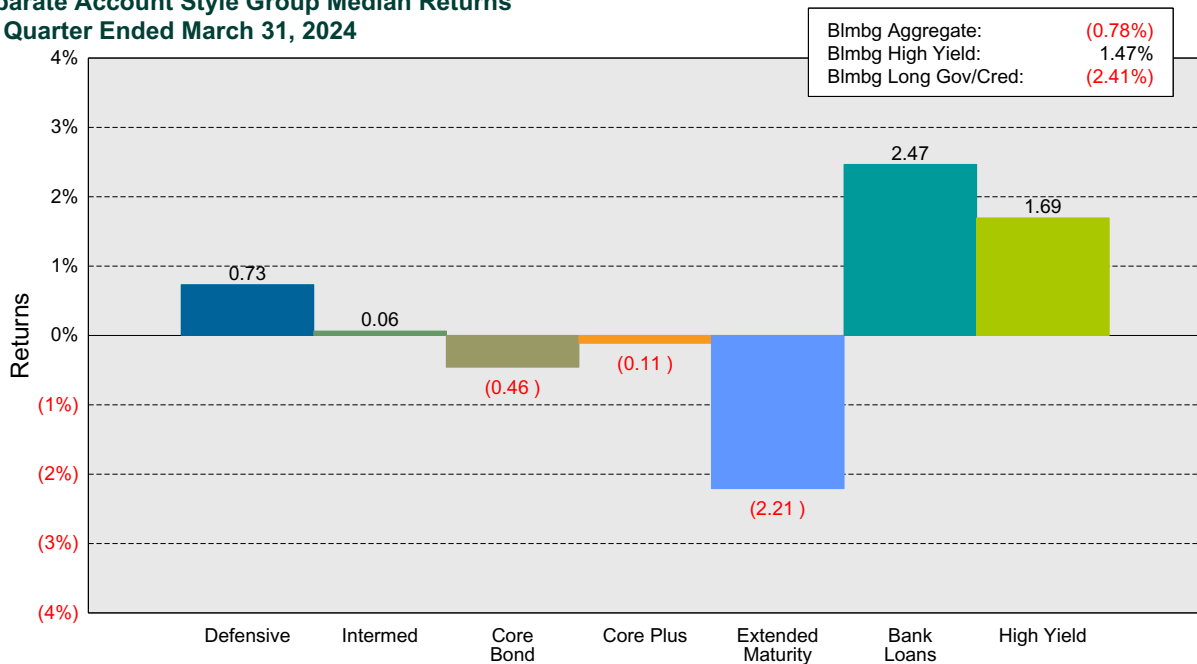
### Separate Account Style Group Median Returns for One Year Ended March 31, 2024



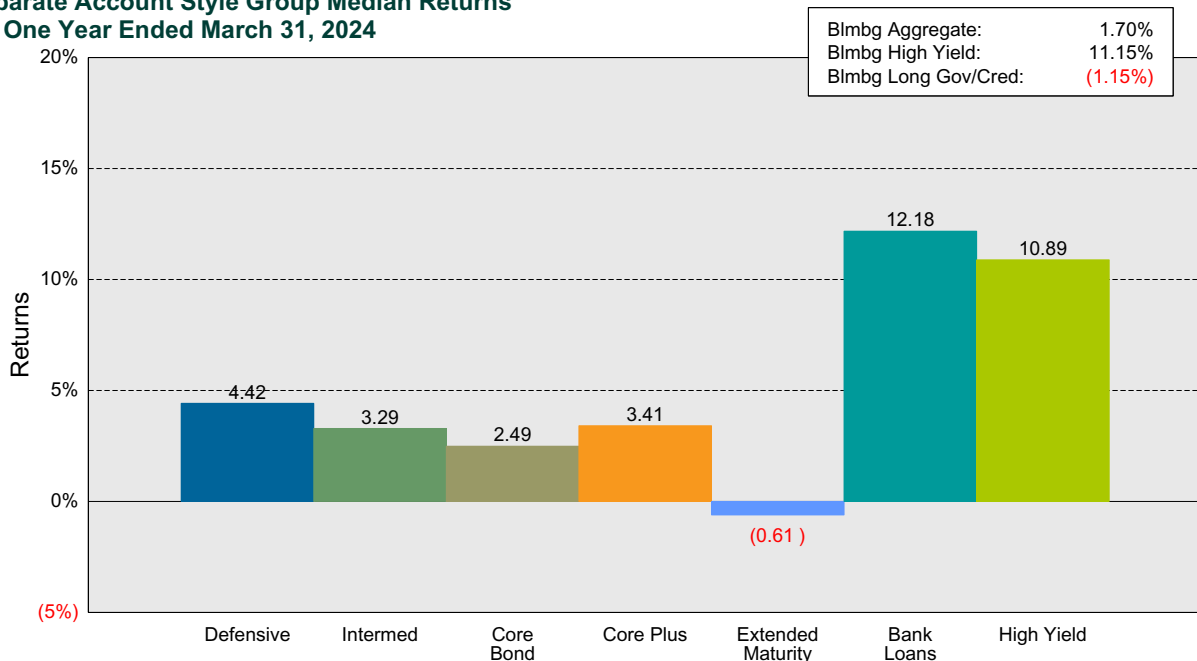
## Domestic Fixed Income Active Management Overview

Bond yields rose modestly in 1Q as expectations dwindled for aggressive rate cuts amid stubbornly high inflation. The U.S. Treasury 10-year yield rose from 3.88% as of year-end 2023 to 4.20% at the end of 1Q 2024. The Bloomberg US Aggregate Bond Index fell 0.8% for the quarter. Ten-year breakeven spreads, a measure of the markets expectation for inflation over the next decade, rose from 2.16% to 2.32%. Investment grade corporate bonds outperformed U.S. Treasuries by 89 bps on a duration-adjusted basis, fueled by strong demand that easily absorbed record supply for a first quarter and the second largest quarterly issuance ever. High yield corporates (Bloomberg HY: +1.5%) outperformed the investment grade market and leveraged loans performed even better (CS Leveraged Loan: +2.3%).

### Separate Account Style Group Median Returns for Quarter Ended March 31, 2024



### Separate Account Style Group Median Returns for One Year Ended March 31, 2024



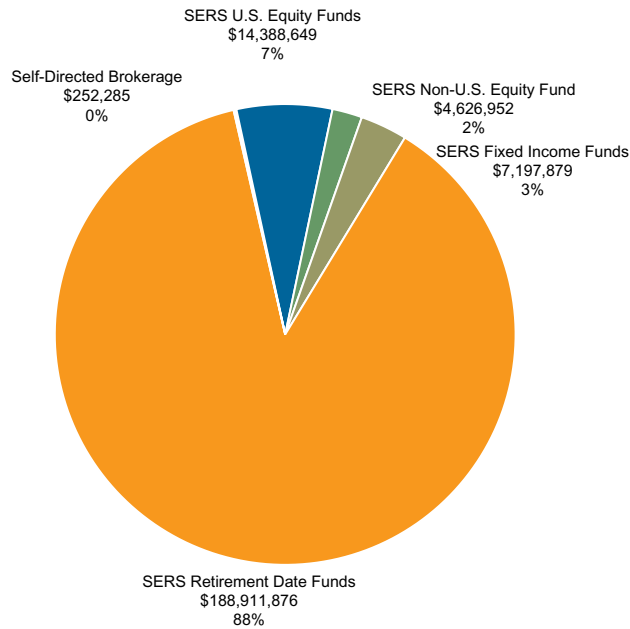




## Changes in Investment Fund Balances Period Ended March 31, 2024

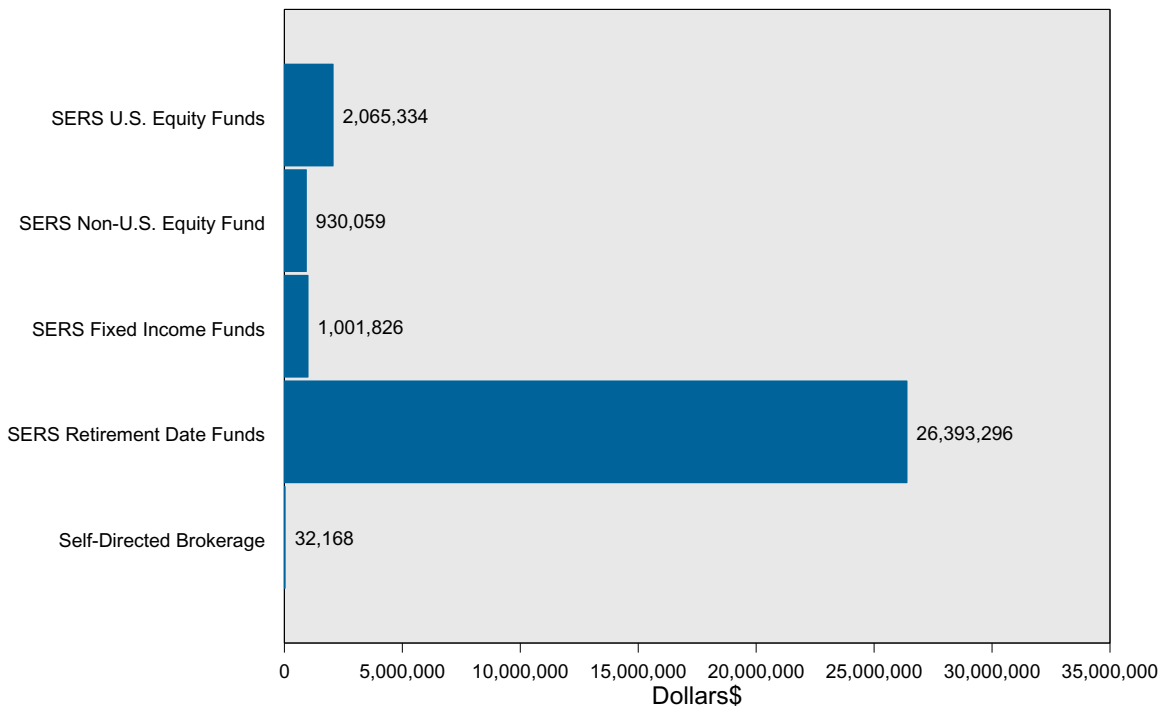
### Allocation Across Investment Options

The chart below illustrates the allocation of the aggregate fund assets across the various investment options for the quarter ended March 31, 2024.



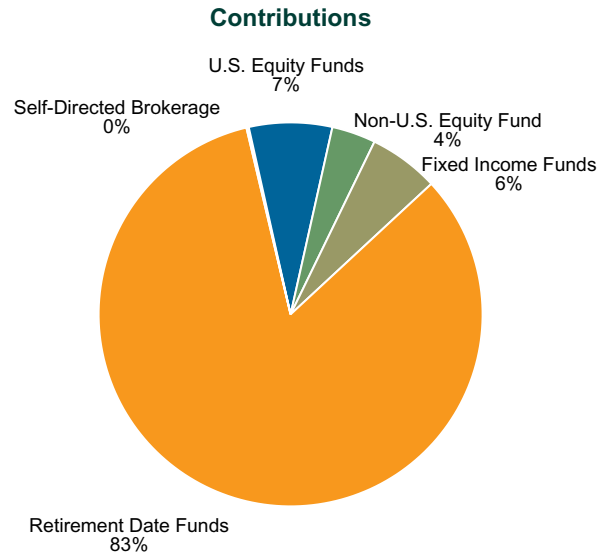
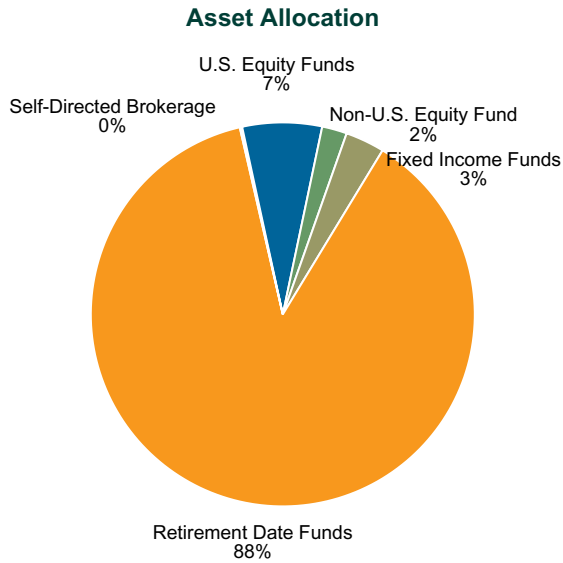
### Changes in Fund Values

The chart below shows the net change in fund values across the various investment options for the quarter ended March 31, 2024. The change in value for each fund is the result of a combination of 3 factors: 1) market movements; 2) contributions or disbursements into or out of the funds by the participants (and any matching done by the company); and 3) transfers between funds by the participants.

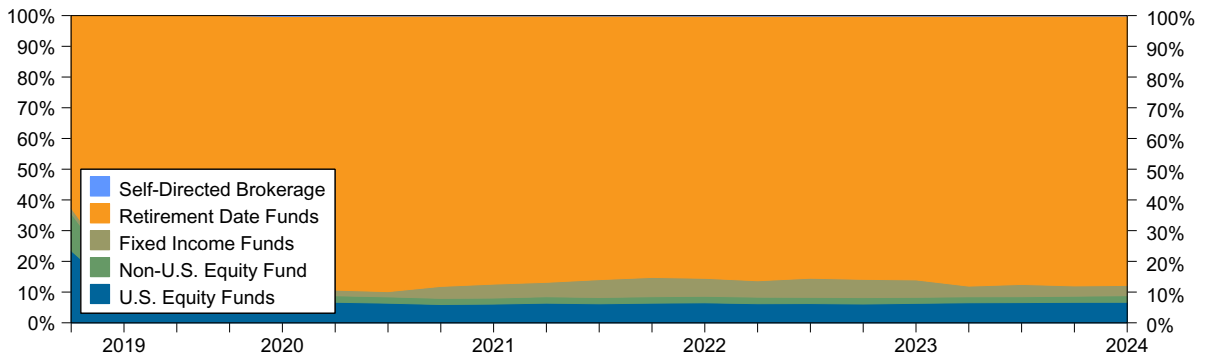


## Asset Allocation

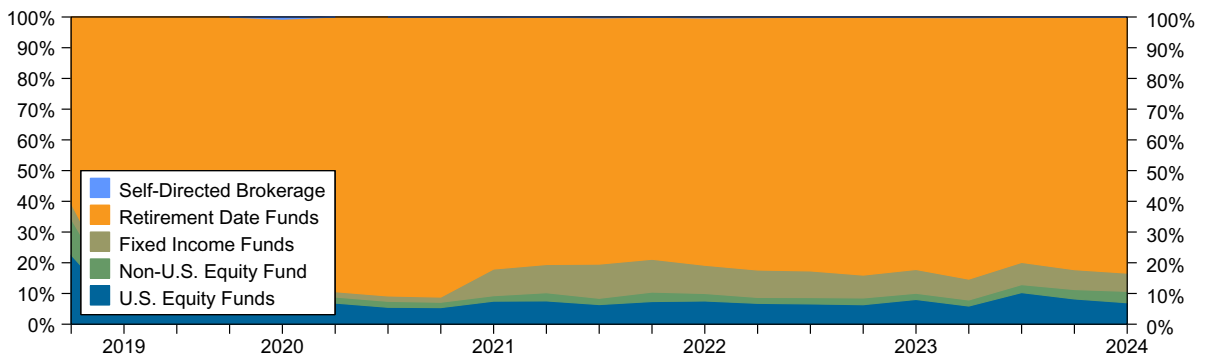
The charts below illustrate the historical asset allocation of the fund as well as the historical allocations of contributions to the fund. The pie charts on the top show the most recent allocations of both assets and contributions which include exchanges and transfers within the plan. The middle chart displays the historical allocation of fund assets. The bottom chart illustrates the historical allocation of contributions.



## Historical Asset Allocation



## Historical Allocation of Contributions



## Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of March 31, 2024, with the distribution as of December 31, 2023. 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, 2024			December 31, 2023		
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
<b>SERS Retirement Date Funds</b>	<b>\$188,911,876</b>	<b>87.71%</b>	<b>\$15,573,053</b>	<b>\$10,820,245</b>	<b>\$162,518,577</b>	<b>87.87%</b>
SERS Post Retirement Fund	2,569,515	1.19%	181,493	61,549	2,326,474	1.26%
SERS 2025 Retirement Fund	6,993,726	3.25%	561,783	184,823	6,247,121	3.38%
SERS 2030 Retirement Fund	17,023,047	7.90%	1,476,842	602,731	14,943,474	8.08%
SERS 2035 Retirement Fund	18,736,677	8.70%	1,557,610	826,741	16,352,326	8.84%
SERS 2040 Retirement Fund	22,003,287	10.22%	1,731,867	1,158,038	19,113,382	10.33%
SERS 2045 Retirement Fund	23,610,421	10.96%	1,824,846	1,415,195	20,370,380	11.01%
SERS 2050 Retirement Fund	25,315,610	11.75%	1,906,680	1,659,297	21,749,633	11.76%
SERS 2055 Retirement Fund	26,307,128	12.21%	2,024,576	1,783,028	22,499,523	12.16%
SERS 2060 Retirement Fund	24,782,566	11.51%	1,989,337	1,682,160	21,111,069	11.41%
SERS 2065 Retirement Fund	21,569,899	10.01%	2,318,019	1,446,684	17,805,196	9.63%
<b>SERS U.S. Equity</b>	<b>\$14,388,649</b>	<b>6.68%</b>	<b>\$837,804</b>	<b>\$1,227,531</b>	<b>\$12,323,315</b>	<b>6.66%</b>
SERS U.S. Large Company Index Fund	8,732,925	4.05%	736,368	797,956	7,198,601	3.89%
SERS U.S. All Company Index Fund	2,744,214	1.27%	30,034	243,011	2,471,169	1.34%
SERS U.S. SMID Company Index Fund	2,911,510	1.35%	71,402	186,563	2,653,544	1.43%
<b>SERS Non-U.S. Equity</b>	<b>\$4,626,952</b>	<b>2.15%</b>	<b>\$730,568</b>	<b>\$199,491</b>	<b>\$3,696,893</b>	<b>2.00%</b>
SERS Global Non-U.S. Index Fund	4,626,952	2.15%	730,568	199,491	3,696,893	2.00%
<b>SERS Fixed Income</b>	<b>\$7,197,879</b>	<b>3.34%</b>	<b>\$965,384</b>	<b>\$36,442</b>	<b>\$6,196,054</b>	<b>3.35%</b>
SERS Short Term Investment Fund	4,094,496	1.90%	690,121	47,085	3,357,290	1.82%
SERS U.S. Short Term Bond Index Fund	672,568	0.31%	59,893	2,232	610,443	0.33%
SERS U.S. TIPS Index Fund	687,160	0.32%	37,552	(561)	650,169	0.35%
SERS U.S. Bond Index Fund	1,743,655	0.81%	177,817	(12,313)	1,578,151	0.85%
<b>SERS Self-Directed Brokerage</b>	<b>\$252,285</b>	<b>0.12%</b>	<b>\$16,567</b>	<b>\$15,602</b>	<b>\$220,117</b>	<b>0.12%</b>
<b>Total Fund</b>	<b>\$215,377,641</b>	<b>100.0%</b>	<b>\$18,123,376</b>	<b>\$12,299,310</b>	<b>\$184,954,955</b>	<b>100.0%</b>

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended March 31, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2024

	Last Quarter	Last 1 Year	Last 3 Years	Last 5 Years
<b>Net Performance</b>				
<b>Target Date Funds</b>				
SERS Post Retirement Fund	2.50%	9.09%	1.20%	4.76%
BlackRock Post Retirement Index	2.47%	9.19%	1.24%	4.76%
Callan Tgt Date Ret Inc	2.62%	8.98%	1.35%	4.21%
SERS 2025 Retirement Fund	2.71%	9.86%	1.64%	5.46%
BlackRock 2025 Index	2.69%	9.93%	1.65%	5.44%
Callan Target Date 2025	3.70%	11.89%	2.43%	6.15%
SERS 2030 Retirement Fund	3.73%	12.58%	2.78%	6.68%
BlackRock 2030 Index	3.72%	12.70%	2.81%	6.66%
Callan Target Date 2030	4.55%	14.14%	3.14%	7.11%
SERS 2035 Retirement Fund	4.71%	15.16%	3.84%	7.82%
BlackRock 2035 Index	4.70%	15.28%	3.85%	7.80%
Callan Target Date 2035	5.47%	16.24%	3.94%	8.14%
SERS 2040 Retirement Fund	5.67%	17.70%	4.84%	8.87%
BlackRock 2040 Index	5.66%	17.80%	4.82%	8.82%
Callan Target Date 2040	6.45%	18.53%	4.78%	8.95%
SERS 2045 Retirement Fund	6.56%	20.10%	5.74%	9.80%
BlackRock 2045 Index	6.55%	20.18%	5.70%	9.72%
Callan Target Date 2045	6.96%	19.92%	5.37%	9.63%
SERS 2050 Retirement Fund	7.21%	21.71%	6.30%	10.34%
BlackRock 2050 Index	7.19%	21.79%	6.25%	10.26%
Callan Target Date 2050	7.26%	20.54%	5.60%	9.84%
SERS 2055 Retirement Fund	7.51%	22.30%	6.49%	10.50%
BlackRock 2055 Index	7.49%	22.40%	6.44%	10.42%
Callan Target Date 2055	7.48%	20.96%	5.77%	9.97%
SERS 2060 Retirement Fund	7.51%	22.31%	6.49%	10.49%
BlackRock 2060 Index	7.49%	22.41%	6.44%	10.42%
Callan Target Date 2060	7.50%	21.00%	5.70%	9.94%
SERS 2065 Retirement Fund	7.51%	22.33%	6.49%	-
BlackRock 2065 Index	7.49%	22.42%	6.44%	-
Callan Target Date 2065	7.62%	21.31%	5.68%	10.09%

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended March 31, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2024

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
<b>Net Performance</b>				
<b>Target Date Funds</b>				
SERS Post Retirement Fund	4.86%	4.49%	6.48%	-
BlackRock Post Retirement Index	4.85%	4.47%	6.47%	5.10%
Callan Tgt Date Ret Inc	4.28%	3.97%	5.84%	4.19%
SERS 2025 Retirement Fund	5.72%	5.32%	8.36%	-
BlackRock 2025 Index	5.68%	5.27%	8.33%	5.76%
Callan Target Date 2025	6.21%	5.79%	9.10%	6.34%
SERS 2030 Retirement Fund	6.79%	6.17%	9.28%	-
BlackRock 2030 Index	6.75%	6.11%	9.24%	6.26%
Callan Target Date 2030	7.09%	6.54%	9.96%	6.27%
SERS 2035 Retirement Fund	7.79%	6.97%	10.15%	-
BlackRock 2035 Index	7.74%	6.88%	10.08%	6.69%
Callan Target Date 2035	7.92%	7.17%	10.61%	7.15%
SERS 2040 Retirement Fund	8.71%	7.68%	10.92%	-
BlackRock 2040 Index	8.63%	7.57%	10.83%	7.07%
Callan Target Date 2040	8.62%	7.74%	11.17%	6.91%
SERS 2045 Retirement Fund	9.46%	8.26%	11.58%	-
BlackRock 2045 Index	9.36%	8.13%	11.48%	7.39%
Callan Target Date 2045	9.10%	8.13%	11.34%	-
SERS 2050 Retirement Fund	9.88%	8.56%	12.02%	-
BlackRock 2050 Index	9.77%	8.44%	11.93%	7.71%
Callan Target Date 2050	9.28%	8.31%	11.51%	-
SERS 2055 Retirement Fund	9.99%	8.64%	-	-
BlackRock 2055 Index	9.89%	8.52%	-	-
Callan Target Date 2055	9.42%	8.40%	11.92%	-
SERS 2060 Retirement Fund	9.98%	-	-	-
BlackRock 2060 Index	9.89%	-	-	-
Callan Target Date 2060	9.49%	8.52%	-	-

\*Funds not shown do not have longer term historical performance.

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended March 31, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2024

	Last Quarter	Last 1 Year	Last 3 Years	Last 5 Years
<b>Net Performance</b>				
<b>Domestic Equity</b>				
SERS U.S. Large Company Index Fund	10.55%	29.88%	11.49%	15.05%
S&P 500 Index	10.56%	29.88%	11.49%	15.05%
Callan Lg Cap Broad MF	11.25%	31.41%	9.95%	14.09%
SERS U.S. All Company Index Fund	9.92%	29.19%	9.73%	14.27%
Russell 3000 Index	10.02%	29.29%	9.78%	14.34%
Callan Multi Cap Brd MF	9.93%	27.32%	8.44%	12.45%
SERS U.S. SMID Company Idx Fund	7.09%	26.87%	1.23%	10.31%
Dow Jones US Completion	6.95%	26.33%	0.79%	9.97%
Callan SMID Broad MFs	7.60%	21.45%	3.27%	10.02%
<b>International Equity</b>				
SERS Global Non-U.S. Index Fund	4.66%	13.15%	2.10%	6.19%
MSCI ACWI ex US	4.69%	13.26%	1.94%	5.97%
Callan Non US Equity MFs	5.29%	13.33%	3.34%	6.95%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	1.29%	5.20%	2.63%	2.05%
3-month Treasury Bill	1.29%	5.24%	2.58%	2.02%
Callan Cash Database(1)	1.34%	5.47%	2.66%	2.19%
SERS U.S. Short Term Bond Idx Fund	0.41%	3.45%	0.23%	1.34%
Blmbg Gov/Cred 1-3 Yr	0.42%	3.49%	0.25%	1.36%
Callan Short US Govt MFs	0.55%	3.11%	(0.44%)	0.88%
SERS U.S. TIPS Index Fund	(0.08%)	0.45%	(0.52%)	2.49%
Blmbg US TIPS	(0.08%)	0.45%	(0.53%)	2.49%
Callan TIPS MFs	0.02%	0.26%	(0.70%)	2.39%
SERS U.S. Bond Index Fund	(0.78%)	1.68%	(2.46%)	0.36%
Blmbg Aggregate	(0.78%)	1.70%	(2.46%)	0.36%
Callan Core Bond MFs	(0.48%)	2.25%	(2.42%)	0.70%

(1) Callan Cash Database includes STIF, enhanced cash, and money market funds.

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended March 31, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2024

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
<b>Net Performance</b>				
<b>Domestic Equity</b>				
SERS U.S. Large Company Index Fund	14.09%	12.97%	15.65%	10.19%
S&P 500 Index	14.09%	12.96%	15.63%	10.15%
Callan Lg Cap Broad MF	13.72%	12.12%	15.01%	10.08%
SERS U.S. All Company Index Fund	13.39%	12.30%	-	-
Russell 3000 Index	13.45%	12.33%	15.44%	10.07%
Callan Multi Cap Brd MF	11.67%	10.28%	13.97%	9.31%
SERS U.S. SMID Company Idx Fund	9.95%	9.11%	14.47%	9.65%
Dow Jones US Completion	9.65%	8.83%	14.19%	9.40%
Callan SMID Broad MFs	9.56%	8.64%	14.03%	9.43%
<b>International Equity</b>				
SERS Global Non-U.S. Index Fund	6.14%	4.48%	8.06%	-
MSCI ACWI ex US	5.88%	4.25%	7.88%	5.68%
Callan Non US Equity MFs	6.50%	4.65%	8.47%	6.07%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	1.97%	1.49%	1.08%	1.65%
3-month Treasury Bill	1.90%	1.38%	0.96%	1.52%
Callan Cash Database(1)	2.11%	1.64%	1.24%	1.87%
Blmbg Gov/Cred 1-3 Yr	1.43%	1.29%	1.51%	2.05%
Callan Short US Govt MFs	1.06%	0.96%	1.14%	1.88%
Blmbg US TIPS	2.29%	2.21%	3.10%	3.36%
Callan TIPS MFs	2.19%	2.06%	2.97%	3.13%
SERS U.S. Bond Index Fund	1.06%	1.54%	2.55%	2.96%
Blmbg Aggregate	1.06%	1.54%	2.62%	2.99%
Callan Core Bond MFs	1.32%	1.73%	3.29%	3.22%

(1) Callan Cash Database includes STIF, enhanced cash, and money market funds.

\*Funds not shown do not have longer term historical performance.

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

	12/2023- 3/2024	2023	2022	2021	2020
<b>Net Performance</b>					
<b>Target Date Funds</b>					
SERS Post Retirement Fund	2.50%	11.13%	(14.63%)	6.95%	11.97%
BlackRock Post Retirement Index	2.47%	11.11%	(14.54%)	7.02%	11.80%
Callan Tgt Date Ret Inc	2.62%	10.56%	(12.88%)	6.31%	10.02%
SERS 2025 Retirement Fund	2.71%	12.00%	(15.23%)	8.99%	12.19%
BlackRock 2025 Index	2.69%	11.94%	(15.17%)	9.07%	12.01%
Callan Target Date 2025	3.70%	12.84%	(15.14%)	10.04%	12.58%
SERS 2030 Retirement Fund	3.73%	14.24%	(15.97%)	11.43%	12.88%
BlackRock 2030 Index	3.72%	14.23%	(15.92%)	11.50%	12.72%
Callan Target Date 2030	4.55%	14.51%	(16.04%)	11.63%	13.23%
SERS 2035 Retirement Fund	4.71%	16.29%	(16.67%)	13.80%	13.58%
BlackRock 2035 Index	4.70%	16.29%	(16.67%)	13.85%	13.44%
Callan Target Date 2035	5.47%	16.37%	(16.79%)	13.92%	14.28%
SERS 2040 Retirement Fund	5.67%	18.30%	(17.35%)	15.96%	14.14%
BlackRock 2040 Index	5.66%	18.29%	(17.38%)	15.97%	13.98%
Callan Target Date 2040	6.45%	17.98%	(17.40%)	15.85%	14.91%
SERS 2045 Retirement Fund	6.56%	20.14%	(17.89%)	17.72%	14.83%
BlackRock 2045 Index	6.55%	20.12%	(17.96%)	17.70%	14.65%
Callan Target Date 2045	6.96%	19.17%	(17.94%)	16.83%	15.52%
SERS 2050 Retirement Fund	7.21%	21.25%	(18.20%)	18.67%	15.20%
BlackRock 2050 Index	7.19%	21.23%	(18.30%)	18.62%	15.07%
Callan Target Date 2050	7.26%	19.89%	(18.09%)	17.17%	15.73%
SERS 2055 Retirement Fund	7.51%	21.56%	(18.27%)	18.83%	15.32%
BlackRock 2055 Index	7.49%	21.56%	(18.38%)	18.81%	15.18%
Callan Target Date 2055	7.48%	20.02%	(18.21%)	17.27%	15.83%
SERS 2060 Retirement Fund	7.51%	21.57%	(18.28%)	18.82%	15.31%
BlackRock 2060 Index	7.49%	21.57%	(18.39%)	18.81%	15.19%
Callan Target Date 2060	7.50%	19.96%	(18.27%)	17.41%	15.90%
SERS 2065 Retirement Fund	7.51%	21.62%	(18.30%)	18.77%	15.15%
BlackRock 2065 Index	7.49%	21.59%	(18.40%)	18.80%	15.19%
Callan Target Date 2065	7.62%	20.24%	(18.61%)	17.54%	16.47%



## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

	12/2023- 3/2024	2023	2022	2021	2020
<b>Net Performance</b>					
<b>Domestic Equity</b>					
SERS U.S. Large Company Index Fund	10.55%	26.29%	(18.12%)	28.70%	18.43%
S&P 500 Index	10.56%	26.29%	(18.11%)	28.71%	18.40%
Callan Lg Cap Broad MF	11.25%	25.85%	(18.55%)	25.50%	18.47%
SERS U.S. All Company Index Fund	9.92%	25.96%	(19.23%)	25.61%	21.20%
Russell 3000 Index	10.02%	25.96%	(19.21%)	25.66%	20.89%
Callan Multi Cap Brd MF	9.93%	22.01%	(18.29%)	24.17%	17.19%
SERS U.S. SMID Company Idx Fund	7.09%	25.39%	(26.13%)	12.89%	32.03%
Dow Jones US Completion	6.95%	24.99%	(26.56%)	12.36%	32.17%
Callan SMID Broad MFs	7.60%	16.85%	(20.87%)	19.19%	22.70%
<b>International Equity</b>					
SERS Global Non-U.S. Index Fund	4.66%	16.07%	(15.92%)	7.97%	11.15%
MSCI ACWI ex US	4.69%	15.62%	(16.00%)	7.82%	10.65%
Callan Non US Equity MFs	5.29%	17.70%	(15.77%)	9.47%	11.12%
<b>Domestic Fixed Income</b>					
SERS Short Term Investment Fund	1.29%	5.00%	1.59%	0.07%	0.67%
3-month Treasury Bill	1.29%	5.01%	1.46%	0.05%	0.67%
Callan Cash Database(1)	1.34%	5.31%	1.16%	0.13%	1.06%
SERS U.S. Short Term Bond Idx Fund	0.41%	4.59%	(3.69%)	(0.52%)	3.36%
Blmbg Gov/Cred 1-3 Yr	0.42%	4.61%	(3.69%)	(0.47%)	3.33%
Callan Short US Govt MFs	0.55%	4.17%	(5.07%)	(1.07%)	3.57%
SERS U.S. TIPS Index Fund	(0.08%)	3.90%	(11.76%)	5.87%	11.00%
Blmbg US TIPS	(0.08%)	3.90%	(11.85%)	5.96%	10.99%
Callan TIPS MFs	0.02%	3.75%	(11.89%)	5.50%	10.84%
SERS U.S. Bond Index Fund	(0.78%)	5.54%	(12.94%)	(1.65%)	7.56%
Blmbg Aggregate	(0.78%)	5.53%	(13.01%)	(1.54%)	7.51%
Callan Core Bond MFs	(0.48%)	5.98%	(13.48%)	(1.17%)	8.65%

(1) Callan Cash Database includes STIF, enhanced cash, and money market funds.

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended March 31, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2024

	Last Quarter	Last 1 Year	Last 3 Years	Last 5 Years
<b>Gross Performance</b>				
<b>Target Date Funds</b>				
SERS Post Retirement Fund	2.51%	9.16%	1.27%	4.83%
BlackRock Post Retirement Index	2.47%	9.19%	1.24%	4.76%
Callan Tgt Date Ret Inc	2.62%	8.98%	1.35%	4.21%
SERS 2025 Retirement Fund	2.73%	9.94%	1.71%	5.53%
BlackRock 2025 Index	2.69%	9.93%	1.65%	5.44%
Callan Target Date 2025	3.70%	11.89%	2.43%	6.15%
SERS 2030 Retirement Fund	3.74%	12.65%	2.85%	6.75%
BlackRock 2030 Index	3.72%	12.70%	2.81%	6.66%
Callan Target Date 2030	4.55%	14.14%	3.14%	7.11%
SERS 2035 Retirement Fund	4.73%	15.23%	3.91%	7.90%
BlackRock 2035 Index	4.70%	15.28%	3.85%	7.80%
Callan Target Date 2035	5.47%	16.24%	3.94%	8.14%
SERS 2040 Retirement Fund	5.69%	17.78%	4.91%	8.95%
BlackRock 2040 Index	5.66%	17.80%	4.82%	8.82%
Callan Target Date 2040	6.45%	18.53%	4.78%	8.95%
SERS 2045 Retirement Fund	6.58%	20.18%	5.81%	9.87%
BlackRock 2045 Index	6.55%	20.18%	5.70%	9.72%
Callan Target Date 2045	6.96%	19.92%	5.37%	9.63%
SERS 2050 Retirement Fund	7.23%	21.79%	6.37%	10.41%
BlackRock 2050 Index	7.19%	21.79%	6.25%	10.26%
Callan Target Date 2050	7.26%	20.54%	5.60%	9.84%
SERS 2055 Retirement Fund	7.52%	22.39%	6.56%	10.57%
BlackRock 2055 Index	7.49%	22.40%	6.44%	10.42%
Callan Target Date 2055	7.48%	20.96%	5.77%	9.97%
SERS 2060 Retirement Fund	7.52%	22.39%	6.56%	10.56%
BlackRock 2060 Index	7.49%	22.41%	6.44%	10.42%
Callan Target Date 2060	7.50%	21.00%	5.70%	9.94%
SERS 2065 Retirement Fund	7.53%	22.41%	6.56%	-
BlackRock 2065 Index	7.49%	22.42%	6.44%	-
Callan Target Date 2065	7.62%	21.31%	5.68%	10.09%

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended March 31, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2024

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
<b>Gross Performance</b>				
<b>Target Date Funds</b>				
SERS Post Retirement Fund	4.93%	4.56%	6.55%	-
BlackRock Post Retirement Index	4.85%	4.47%	6.47%	5.10%
Callan Tgt Date Ret Inc	4.28%	3.97%	5.84%	4.19%
SERS 2025 Retirement Fund	5.79%	5.39%	8.43%	-
BlackRock 2025 Index	5.68%	5.27%	8.33%	5.76%
Callan Target Date 2025	6.21%	5.79%	9.10%	6.34%
SERS 2030 Retirement Fund	6.86%	6.25%	9.36%	-
BlackRock 2030 Index	6.75%	6.11%	9.24%	6.26%
Callan Target Date 2030	7.09%	6.54%	9.96%	6.27%
SERS 2035 Retirement Fund	7.87%	7.04%	10.22%	-
BlackRock 2035 Index	7.74%	6.88%	10.08%	6.69%
Callan Target Date 2035	7.92%	7.17%	10.61%	7.15%
SERS 2040 Retirement Fund	8.78%	7.75%	10.99%	-
BlackRock 2040 Index	8.63%	7.57%	10.83%	7.07%
Callan Target Date 2040	8.62%	7.74%	11.17%	6.91%
SERS 2045 Retirement Fund	9.54%	8.33%	11.65%	-
BlackRock 2045 Index	9.36%	8.13%	11.48%	7.39%
Callan Target Date 2045	9.10%	8.13%	11.34%	-
SERS 2050 Retirement Fund	9.96%	8.64%	12.10%	-
BlackRock 2050 Index	9.77%	8.44%	11.93%	7.71%
Callan Target Date 2050	9.28%	8.31%	11.51%	-
SERS 2055 Retirement Fund	10.06%	8.71%	-	-
BlackRock 2055 Index	9.89%	8.52%	-	-
Callan Target Date 2055	9.42%	8.40%	11.92%	-
SERS 2060 Retirement Fund	10.05%	-	-	-
BlackRock 2060 Index	9.89%	-	-	-
Callan Target Date 2060	9.49%	8.52%	-	-

\*Funds not shown do not have longer term historical performance.

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended March 31, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2024

	Last Quarter	Last 1 Year	Last 3 Years	Last 5 Years
<b>Gross Performance</b>				
<b>Domestic Equity</b>				
SERS U.S. Large Company Index Fund	10.55%	29.88%	11.49%	15.06%
S&P 500 Index	10.56%	29.88%	11.49%	15.05%
Callan Lg Cap Broad MF	11.25%	31.41%	9.95%	14.09%
SERS U.S. All Company Index Fund	9.92%	29.20%	9.73%	14.28%
Russell 3000 Index	10.02%	29.29%	9.78%	14.34%
Callan Multi Cap Brd MF	9.93%	27.32%	8.44%	12.45%
SERS U.S. SMID Company Idx Fund	7.09%	26.87%	1.23%	10.32%
Dow Jones US Completion	6.95%	26.33%	0.79%	9.97%
Callan SMID Broad MFs	7.60%	21.45%	3.27%	10.02%
<b>International Equity</b>				
SERS Global Non-U.S. Index Fund	4.67%	13.17%	2.12%	6.20%
MSCI ACWI ex US	4.69%	13.26%	1.94%	5.97%
Callan Non US Equity MFs	5.29%	13.33%	3.34%	6.95%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	1.29%	5.20%	2.63%	2.05%
3-month Treasury Bill	1.29%	5.24%	2.58%	2.02%
Callan Cash Database(1)	1.34%	5.47%	2.66%	2.19%
SERS U.S. Short Term Bond Idx Fund	0.41%	3.45%	0.23%	1.35%
Blmbg Gov/Cred 1-3 Yr	0.42%	3.49%	0.25%	1.36%
Callan Short US Govt MFs	0.55%	3.11%	(0.44%)	0.88%
SERS U.S. TIPS Index Fund	(0.08%)	0.46%	(0.52%)	2.49%
Blmbg US TIPS	(0.08%)	0.45%	(0.53%)	2.49%
Callan TIPS MFs	0.02%	0.26%	(0.70%)	2.39%
SERS U.S. Bond Index Fund	(0.78%)	1.69%	(2.45%)	0.37%
Blmbg Aggregate	(0.78%)	1.70%	(2.46%)	0.36%
Callan Core Bond MFs	(0.48%)	2.25%	(2.42%)	0.70%

(1) Callan Cash Database includes STIF, enhanced cash, and money market funds.

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended March 31, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2024

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
<b>Gross Performance</b>				
<b>Domestic Equity</b>				
SERS U.S. Large Company Index Fund	14.10%	12.98%	15.65%	10.20%
S&P 500 Index	14.09%	12.96%	15.63%	10.15%
Callan Lg Cap Broad MF	13.72%	12.12%	15.01%	10.08%
SERS U.S. All Company Index Fund	13.39%	12.30%	-	-
Russell 3000 Index	13.45%	12.33%	15.44%	10.07%
Callan Multi Cap Brd MF	11.67%	10.28%	13.97%	9.31%
SERS U.S. SMID Company Idx Fund	9.95%	9.12%	14.48%	9.66%
Dow Jones US Completion	9.65%	8.83%	14.19%	9.40%
Callan SMID Broad MFs	9.56%	8.64%	14.03%	9.43%
<b>International Equity</b>				
SERS Global Non-U.S. Index Fund	6.15%	4.50%	8.08%	-
MSCI ACWI ex US	5.88%	4.25%	7.88%	5.68%
Callan Non US Equity MFs	6.50%	4.65%	8.47%	6.07%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	1.97%	1.49%	1.08%	1.65%
3-month Treasury Bill	1.90%	1.38%	0.96%	1.52%
Callan Cash Database(1)	2.11%	1.64%	1.24%	1.87%
Blmbg Gov/Cred 1-3 Yr	1.43%	1.29%	1.51%	2.05%
Callan Short US Govt MFs	1.06%	0.96%	1.14%	1.88%
Blmbg US TIPS	2.29%	2.21%	3.10%	3.36%
Callan TIPS MFs	2.19%	2.06%	2.97%	3.13%
SERS U.S. Bond Index Fund	1.06%	1.54%	2.55%	2.97%
Blmbg Aggregate	1.06%	1.54%	2.62%	2.99%
Callan Core Bond MFs	1.32%	1.73%	3.29%	3.22%

(1) Callan Cash Database includes STIF, enhanced cash, and money market funds.

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

	12/2023- 3/2024	2023	2022	2021	2020
<b>Gross Performance</b>					
<b>Target Date Funds</b>					
SERS Post Retirement Fund	2.51%	11.21%	(14.57%)	7.03%	12.04%
BlackRock Post Retirement Index	2.47%	11.11%	(14.54%)	7.02%	11.80%
Callan Tgt Date Ret Inc	2.62%	10.56%	(12.88%)	6.31%	10.02%
SERS 2025 Retirement Fund	2.73%	12.08%	(15.17%)	9.06%	12.26%
BlackRock 2025 Index	2.69%	11.94%	(15.17%)	9.07%	12.01%
Callan Target Date 2025	3.70%	12.84%	(15.14%)	10.04%	12.58%
SERS 2030 Retirement Fund	3.74%	14.32%	(15.91%)	11.50%	12.96%
BlackRock 2030 Index	3.72%	14.23%	(15.92%)	11.50%	12.72%
Callan Target Date 2030	4.55%	14.51%	(16.04%)	11.63%	13.23%
SERS 2035 Retirement Fund	4.73%	16.37%	(16.61%)	13.88%	13.65%
BlackRock 2035 Index	4.70%	16.29%	(16.67%)	13.85%	13.44%
Callan Target Date 2035	5.47%	16.37%	(16.79%)	13.92%	14.28%
SERS 2040 Retirement Fund	5.69%	18.38%	(17.29%)	16.04%	14.22%
BlackRock 2040 Index	5.66%	18.29%	(17.38%)	15.97%	13.98%
Callan Target Date 2040	6.45%	17.98%	(17.40%)	15.85%	14.91%
SERS 2045 Retirement Fund	6.58%	20.22%	(17.84%)	17.79%	14.90%
BlackRock 2045 Index	6.55%	20.12%	(17.96%)	17.70%	14.65%
Callan Target Date 2045	6.96%	19.17%	(17.94%)	16.83%	15.52%
SERS 2050 Retirement Fund	7.23%	21.33%	(18.15%)	18.75%	15.27%
BlackRock 2050 Index	7.19%	21.23%	(18.30%)	18.62%	15.07%
Callan Target Date 2050	7.26%	19.89%	(18.09%)	17.17%	15.73%
SERS 2055 Retirement Fund	7.52%	21.64%	(18.22%)	18.91%	15.40%
BlackRock 2055 Index	7.49%	21.56%	(18.38%)	18.81%	15.18%
Callan Target Date 2055	7.48%	20.02%	(18.21%)	17.27%	15.83%
SERS 2060 Retirement Fund	7.52%	21.65%	(18.23%)	18.90%	15.38%
BlackRock 2060 Index	7.49%	21.57%	(18.39%)	18.81%	15.19%
Callan Target Date 2060	7.50%	19.96%	(18.27%)	17.41%	15.90%
SERS 2065 Retirement Fund	7.53%	21.70%	(18.25%)	18.85%	15.22%
BlackRock 2065 Index	7.49%	21.59%	(18.40%)	18.80%	15.19%
Callan Target Date 2065	7.62%	20.24%	(18.61%)	17.54%	16.47%

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

	12/2023- 3/2024	2023	2022	2021	2020
<b>Gross Performance</b>					
<b>Domestic Equity</b>					
SERS U.S. Large Company Index Fund	10.55%	26.29%	(18.11%)	28.71%	18.44%
S&P 500 Index	10.56%	26.29%	(18.11%)	28.71%	18.40%
Callan Lg Cap Broad MF	11.25%	25.85%	(18.55%)	25.50%	18.47%
SERS U.S. All Company Index Fund	9.92%	25.96%	(19.23%)	25.62%	21.20%
Russell 3000 Index	10.02%	25.96%	(19.21%)	25.66%	20.89%
Callan Multi Cap Brd MF	9.93%	22.01%	(18.29%)	24.17%	17.19%
SERS U.S. SMID Company Idx Fund	7.09%	25.40%	(26.12%)	12.90%	32.04%
Dow Jones US Completion	6.95%	24.99%	(26.56%)	12.36%	32.17%
Callan SMID Broad MFs	7.60%	16.85%	(20.87%)	19.19%	22.70%
<b>International Equity</b>					
SERS Global Non-U.S. Index Fund	4.67%	16.09%	(15.91%)	7.98%	11.17%
MSCI ACWI ex US	4.69%	15.62%	(16.00%)	7.82%	10.65%
Callan Non US Equity MFs	5.29%	17.70%	(15.77%)	9.47%	11.12%
<b>Domestic Fixed Income</b>					
SERS Short Term Investment Fund	1.29%	5.00%	1.59%	0.07%	0.67%
3-month Treasury Bill	1.29%	5.01%	1.46%	0.05%	0.67%
Callan Cash Database(1)	1.34%	5.31%	1.16%	0.13%	1.06%
SERS U.S. Short Term Bond Idx Fund	0.41%	4.60%	(3.68%)	(0.51%)	3.37%
Blmbg Gov/Cred 1-3 Yr	0.42%	4.61%	(3.69%)	(0.47%)	3.33%
Callan Short US Govt MFs	0.55%	4.17%	(5.07%)	(1.07%)	3.57%
SERS U.S. TIPS Index Fund	(0.08%)	3.91%	(11.76%)	5.88%	11.00%
Blmbg US TIPS	(0.08%)	3.90%	(11.85%)	5.96%	10.99%
Callan TIPS MFs	0.02%	3.75%	(11.89%)	5.50%	10.84%
SERS U.S. Bond Index Fund	(0.78%)	5.54%	(12.93%)	(1.64%)	7.56%
Blmbg Aggregate	(0.78%)	5.53%	(13.01%)	(1.54%)	7.51%
Callan Core Bond MFs	(0.48%)	5.98%	(13.48%)	(1.17%)	8.65%

(1) Callan Cash Database includes STIF, enhanced cash, and money market funds.

**Pennsylvania SERS 401(a)**  
**Investment Manager Performance Monitoring Summary Report**  
**March 31, 2024**

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	10 Year Return	5 Year Return Consistency	5 Year Risk Quadrant	Expense Ratio
<b>Net of Fee Performance</b>									
<b>Target Date Funds</b>									
<b>SERS Post Retirement Fund</b> Callan Tgt Date Ret Inc	2.5 54	9.1 46	1.2 59	4.8 22	4.9 18	4.5 18			0.08 68
BlackRock Post Retirement Index	2.5 55	9.2 44	1.2 57	4.8 22	4.8 18	4.5 18			
<b>SERS 2025 Retirement Fund</b> Callan Target Date 2025	2.7 90	9.9 84	1.6 85	5.5 75	5.7 73	5.3 74			0.08 68
BlackRock 2025 Index	2.7 91	9.9 83	1.7 84	5.4 75	5.7 75	5.3 77			
<b>SERS 2030 Retirement Fund</b> Callan Target Date 2030	3.7 91	12.6 80	2.8 70	6.7 73	6.8 67	6.2 73			0.08 61
BlackRock 2030 Index	3.7 91	12.7 79	2.8 68	6.7 73	6.7 69	6.1 75			
<b>SERS 2035 Retirement Fund</b> Callan Target Date 2035	4.7 85	15.2 77	3.8 57	7.8 69	7.8 56	7.0 68			0.08 68
BlackRock 2035 Index	4.7 85	15.3 74	3.9 56	7.8 70	7.7 63	6.9 76			
<b>SERS 2040 Retirement Fund</b> Callan Target Date 2040	5.7 79	17.7 68	4.8 47	8.9 58	8.7 43	7.7 55			0.08 64
BlackRock 2040 Index	5.7 79	17.8 65	4.8 48	8.8 59	8.6 50	7.6 64			
<b>SERS 2045 Retirement Fund</b> Callan Target Date 2045	6.6 63	20.1 45	5.7 25	9.8 35	9.5 29	8.3 39			0.08 68
BlackRock 2045 Index	6.5 64	20.2 44	5.7 28	9.7 42	9.4 36	8.1 51			
<b>SERS 2050 Retirement Fund</b> Callan Target Date 2050	7.2 51	21.7 29	6.3 14	10.3 24	9.9 18	8.6 28			0.08 64
BlackRock 2050 Index	7.2 53	21.8 29	6.2 17	10.3 27	9.8 24	8.4 40			
<b>SERS 2055 Retirement Fund</b> Callan Target Date 2055	7.5 43	22.3 23	6.5 9	10.5 17	10.0 14	8.6 31			0.08 68
BlackRock 2055 Index	7.5 47	22.4 22	6.4 10	10.4 21	9.9 22	8.5 38			
<b>SERS 2060 Retirement Fund</b> Callan Target Date 2060	7.5 49	22.3 25	6.5 12	10.5 23	10.0 17				0.08 70
BlackRock 2060 Index	7.5 51	22.4 24	6.4 13	10.4 29	9.9 27				

Returns:  
■ above median  
■ third quartile  
■ fourth quartile

Return Consistency:  
■ above median  
■ third quartile  
■ fourth quartile

Risk Quadrant:  


Expense Ratio:  
■ below median  
■ second quartile  
■ first quartile



**Pennsylvania SERS 401(a)**  
**Investment Manager Performance Monitoring Summary Report**  
**March 31, 2024**

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	10 Year Return	5 Year Return Consistency	5 Year Risk Quadrant	Expense Ratio
<b>SERS 2065 Retirement Fund</b> Callan Target Date 2065	7.5 59	22.3 32	6.5 14						0.08 47
BlackRock 2065 Index	7.5 62	22.4 30	6.4 17						
<b>Domestic Equity</b>									
<b>SERS U.S. Large Company Stock Index Fund</b> Callan Lg Cap Broad MF	10.6 60	29.9 54	11.5 26	15.1 40	14.1 46	13.0 40			0.02 100
S&P 500 Index	10.6 60	29.9 54	11.5 26	15.0 40	14.1 46	13.0 41			
<b>SERS U.S. All Company Index Fund</b> Callan Multi Cap Brd MF	9.9 50	29.2 43	9.7 35	14.3 31	13.4 32	12.3 24			0.03 99
Russell 3000 Index	10.0 48	29.3 42	9.8 35	14.3 30	13.4 31	12.3 23			
<b>U.S. Small/Mid Company Stock Index Fund</b> Callan SMID Broad MFs	7.1 59	26.9 8	1.2 63	10.3 43	9.9 48	9.1 40			0.03 100
Dow Jones US Completion	7.0 67	26.3 8	0.8 65	10.0 50	9.6 50	8.8 45			
<b>International Equity</b>									
<b>SERS Global Non-U.S. Index Fund</b> Callan Non US Equity MFs	4.7 67	13.1 56	2.1 67	6.2 70	6.1 57	4.5 55			0.05 99
MSCI ACWI ex US	4.7 64	13.3 55	1.9 69	6.0 73	5.9 61	4.3 61			
<b>Domestic Fixed Income</b>									
<b>SERS Short Term Investment Fund</b> Callan Cash Database	1.3 59	5.2 72	2.6 53	2.1 79	2.0 71	1.5 73			0.00 100
3-month Treasury Bill	1.3 58	5.2 71	2.6 55	2.0 80	1.9 84	1.4 89			
<b>Comments:</b> Callan Cash Database includes STIF, enhanced cash, and money market funds.									
<b>SERS U.S. Short Term Bond Idx Fund</b> Callan Short US Govt MFs	0.4 55	3.4 42	0.2 28	1.3 17					0.02 99
Blmbg Gov/Cred 1-3 Yr	0.4 55	3.5 41	0.2 24	1.4 15	1.4 12	1.3 16			
<b>SERS U.S. TIPS Index Fund</b> Callan TIPS MFs	-0.1 65	0.5 43	-0.5 29	2.5 39					0.02 99
Blmbg US TIPS	-0.1 67	0.5 43	-0.5 29	2.5 39	2.3 36	2.2 27			

Returns:  
 above median  
 third quartile  
 fourth quartile

Return Consistency:  
 above median  
 third quartile  
 fourth quartile

Risk Quadrant:

Expense Ratio:  
 below median  
 second quartile  
 first quartile

**Pennsylvania SERS 401(a)**  
**Investment Manager Performance Monitoring Summary Report**  
**March 31, 2024**

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	10 Year Return	5 Year Return Consistency	5 Year Risk Quadrant	Expense Ratio
<b>SERS U.S. Bond Index Fund</b>	-0.8 89	1.7 75	-2.5 59	0.4 90	1.1 83	1.5 80			0.02 100
Callan Core Bond MFs									
Blmbg Aggregate	-0.8 88	1.7 75	-2.5 58	0.4 89	1.1 82	1.5 79			

Returns:  
 above median  
 third quartile  
 fourth quartile

Return Consistency:  
 above median  
 third quartile  
 fourth quartile

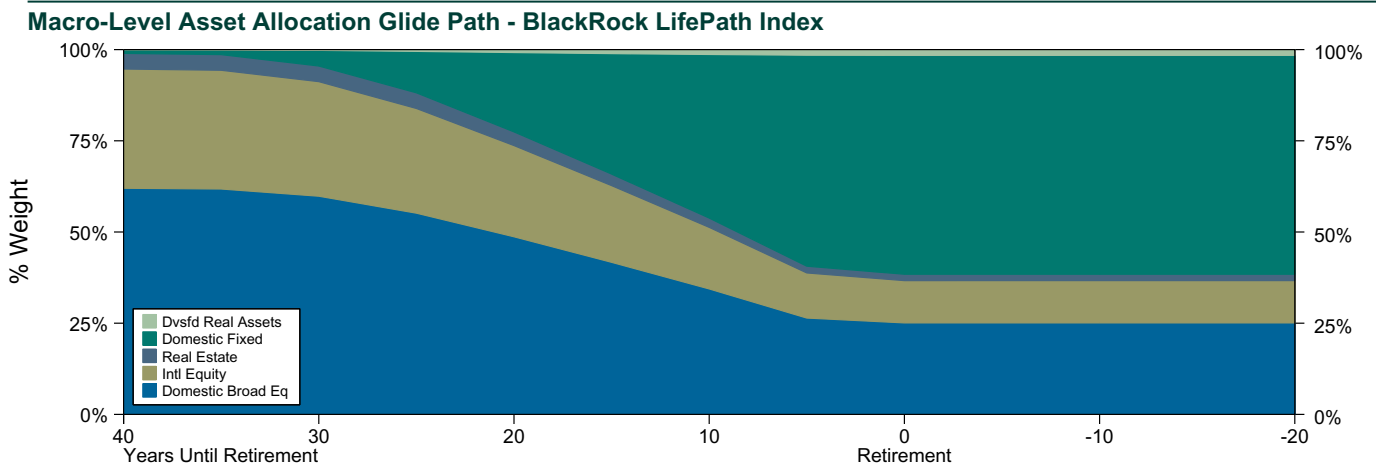
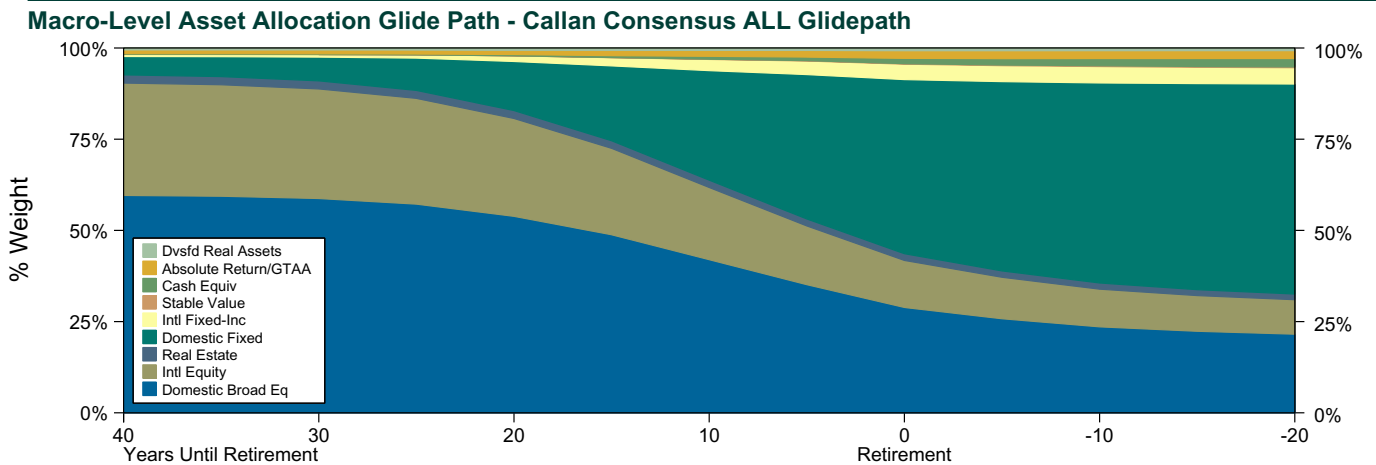
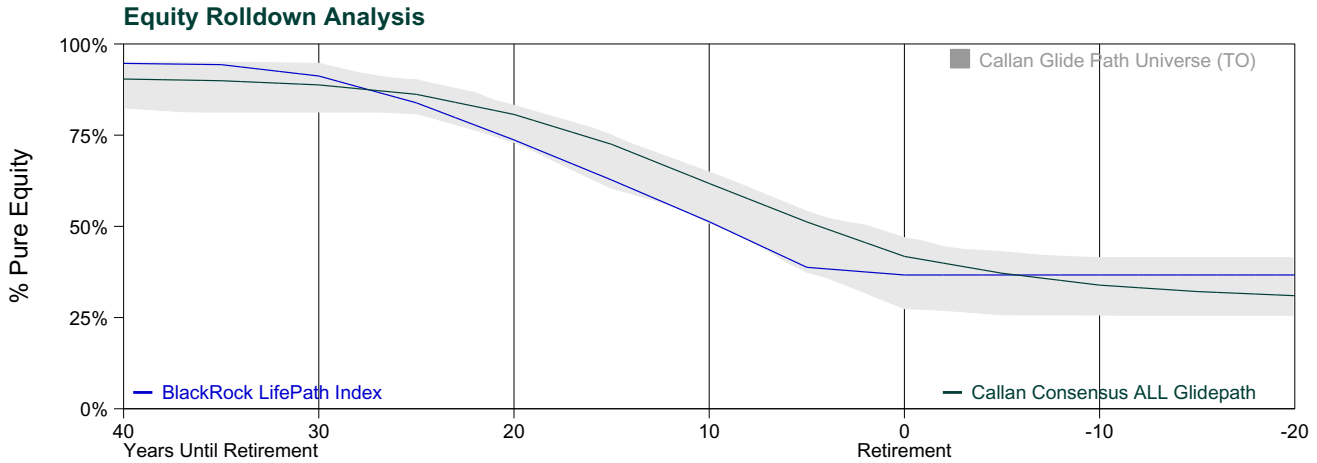
Risk Quadrant:

Expense Ratio:  
 below median  
 second quartile  
 first quartile



# Callan Consensus ALL Glidepath Target Date Glide Path Analysis as of March 31, 2024

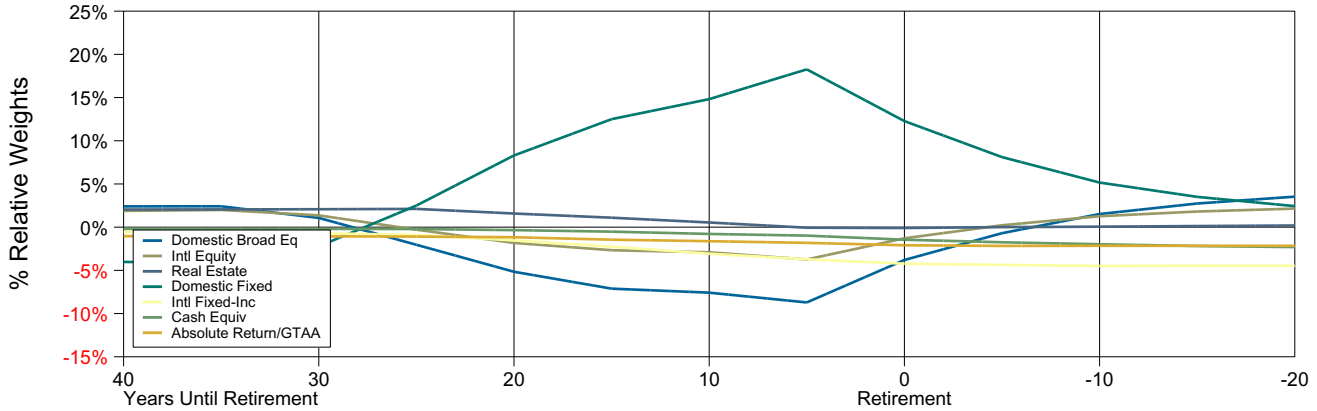
The following charts illustrate the asset allocation "glide path" underlying the relevant suite of target date funds. This analysis covers forty years of investor wealth accumulation up to retirement, as well as twenty years of wealth decumulation following retirement. The top chart shows the "pure" equity exposure (public equities excluding REITs) versus the peer group and index. The subsequent charts show more asset allocation detail at the high "macro" level.



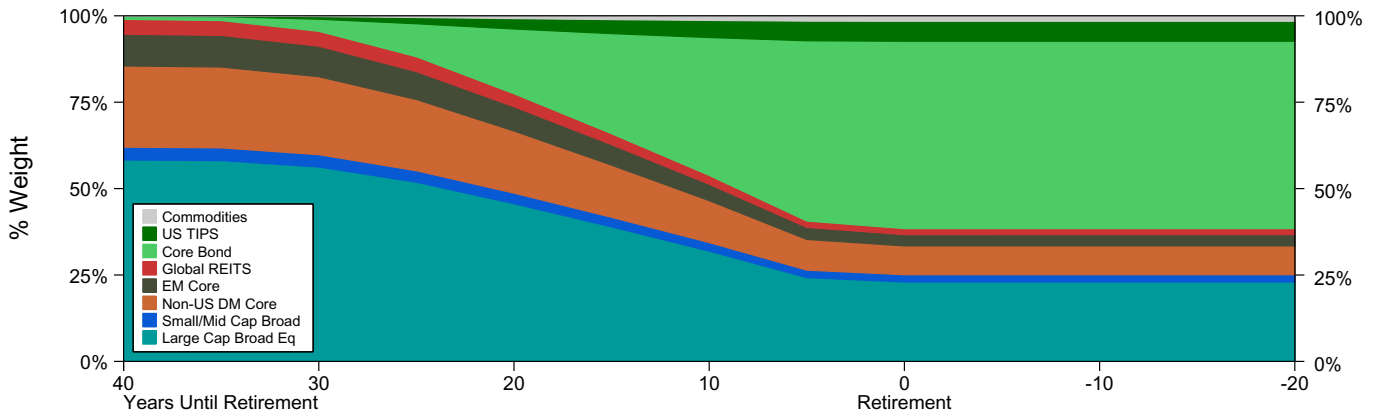
# BlackRock LifePath Index Target Date Glide Path Analysis as of March 31, 2024

The following charts illustrate the asset allocation "glide path" underlying the relevant suite of target date funds. This analysis covers forty years of investor wealth accumulation up to retirement, as well as twenty years of wealth decumulation following retirement. The top chart highlights any significant "macro-level" differences between the manager's asset allocation glide path and that of the glide path index. The bottom two charts illustrate the asset allocation glide paths of both the manager and index at the more detailed "micro" level.

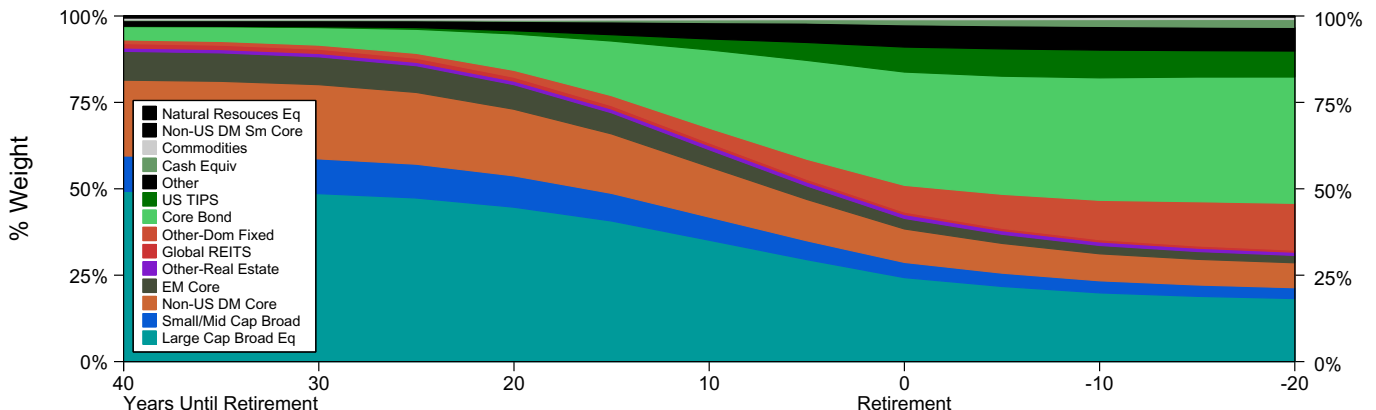
**Relative Macro Asset Allocation - BlackRock LifePath Index vs. Callan Consensus ALL Glidep**



**Micro-Level Asset Allocation Glide Path - BlackRock LifePath Index**



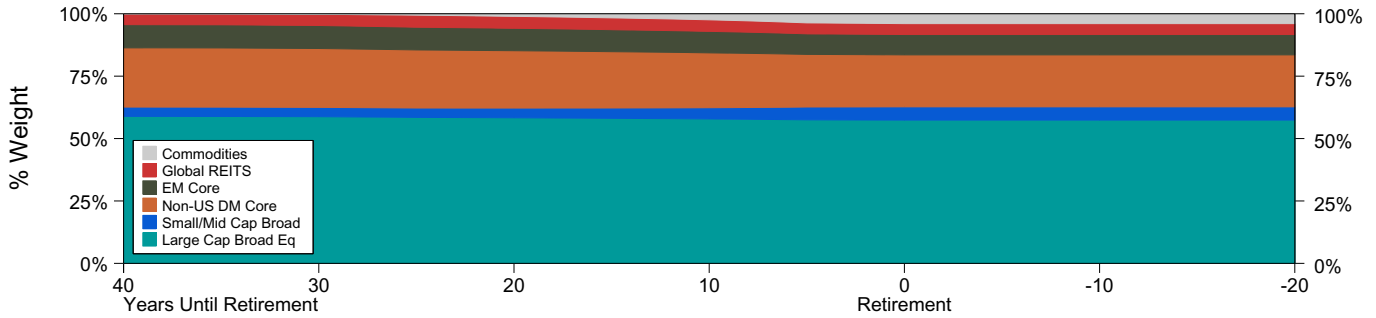
**Micro-Level Asset Allocation Glide Path - Callan Consensus ALL Glidepath**



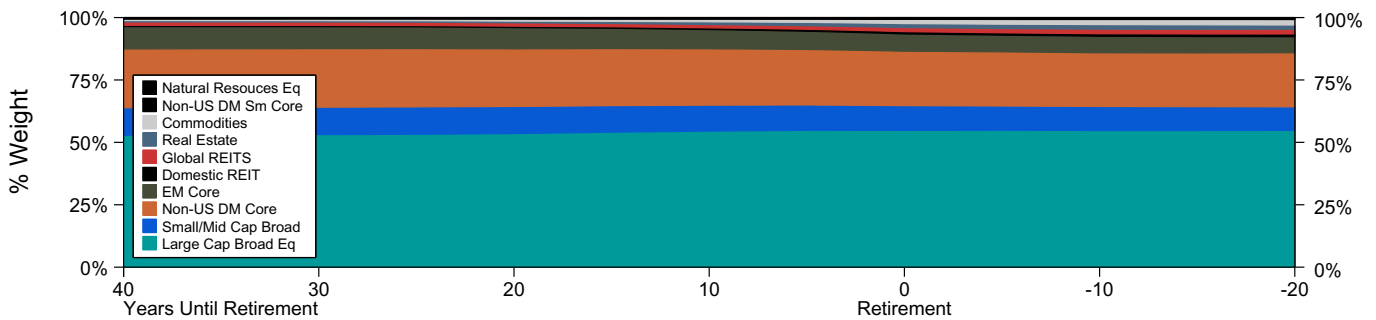
# BlackRock LifePath Index Target Date Glide Path Analysis as of March 31, 2024

The first two charts below illustrate the detailed composition over time of the "risky", or "growth" portion of the glide paths for both the manager and index, defined to be all public equity and real estate asset classes. These charts highlight both the levels of diversification and aggressiveness within the wealth creation portion of the glide paths. The last two charts serve a similar purpose but focus on the composition over time of the remaining wealth preservation portion (non-equity) of the manager and index glide paths.

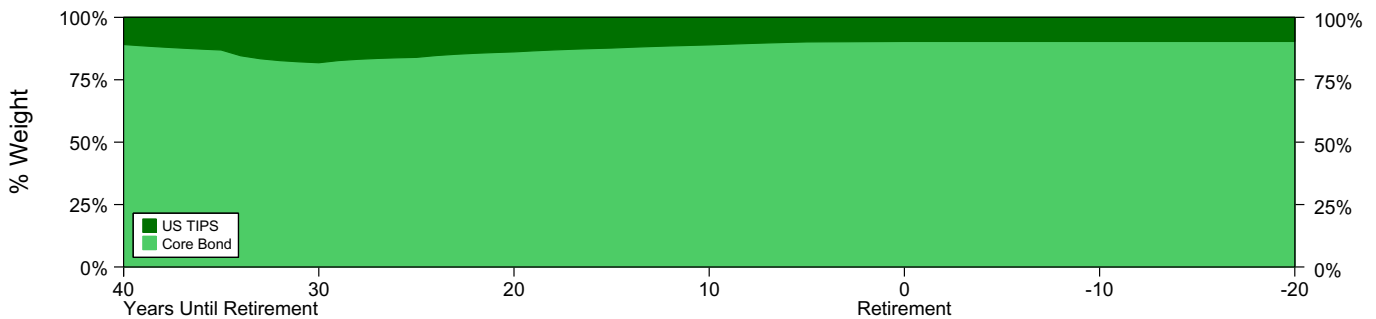
## Micro-Level Equity Allocation Glide Path - BlackRock LifePath Index



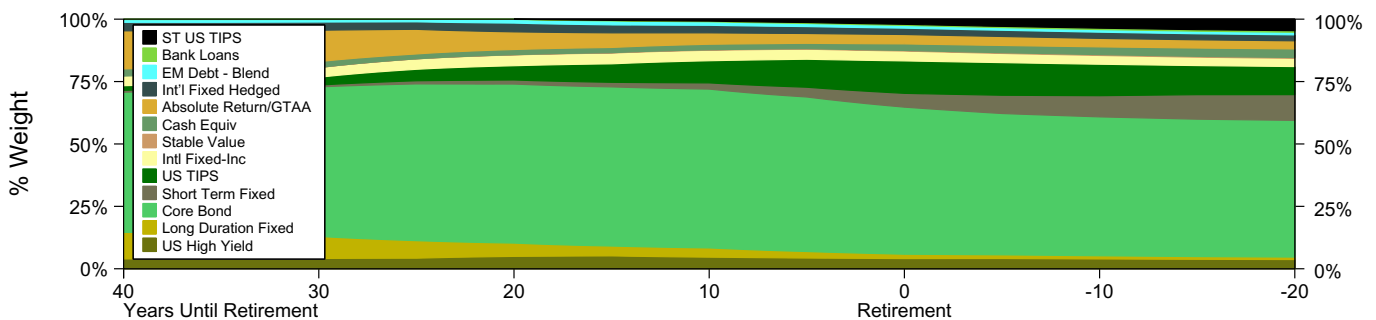
## Micro-Level Equity Asset Allocation Glide Path - Callan Consensus ALL Glidepath



## Micro-Level Non-Equity Allocation Glide Path - BlackRock LifePath Index



## Micro-Level Non-Equity Asset Allocation Glide Path - Callan Consensus ALL Glidep



# Pennsylvania SERS 401(a) - BlackRock LifePath Index Target Date Fund Family Analysis as of March 31, 2024

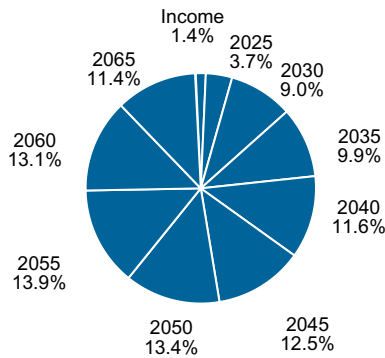
The following is an analysis of the client's suite of target date funds as an aggregated portfolio using actual proportions held by the client's participants. The upper-left pie chart shows the current client weights across target dates. The rest of the charts compare different attributes of the aggregated client target date portfolio to a peer group of target date fund families, as well as target date indices, by mimicking the client target date weights using these alternatives. The first two charts evaluate the aggregate client equity exposure and expense ratio via target date funds. The last two charts analyze aggregate client target date performance on both an actual return basis as well as a "glide path return" basis (simulated returns using each funds' asset allocation "glide path" weights and index returns).

Glidepath Peer Group: ALL

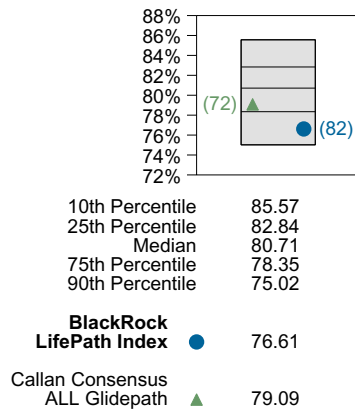
Passive and Non-Passive

Fee/Return Type: Gross

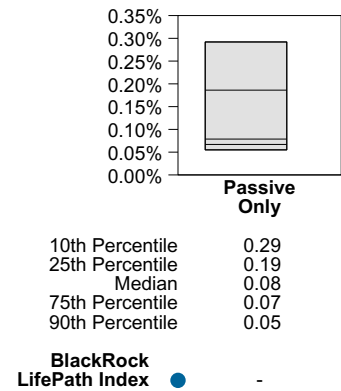
### Fund Family Allocation



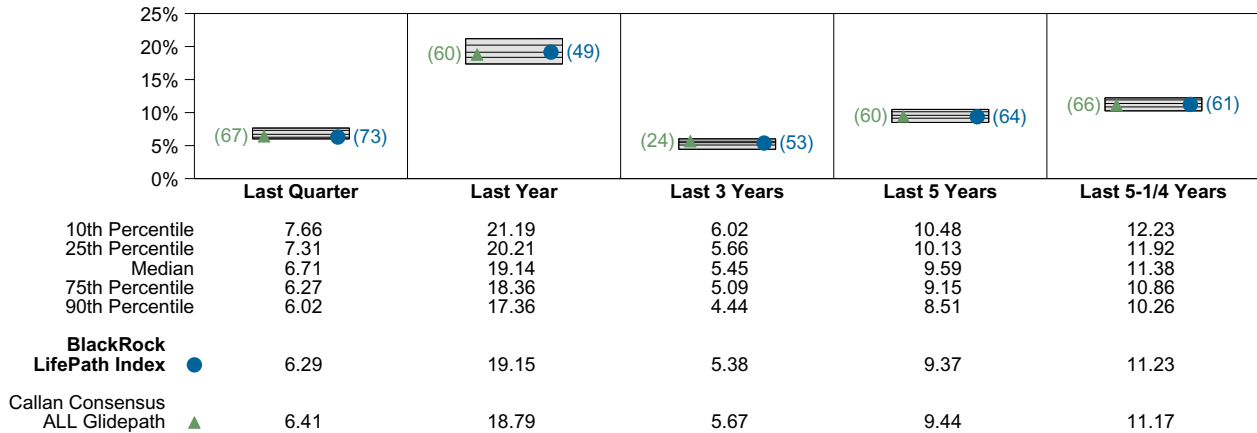
### Equity Exposure



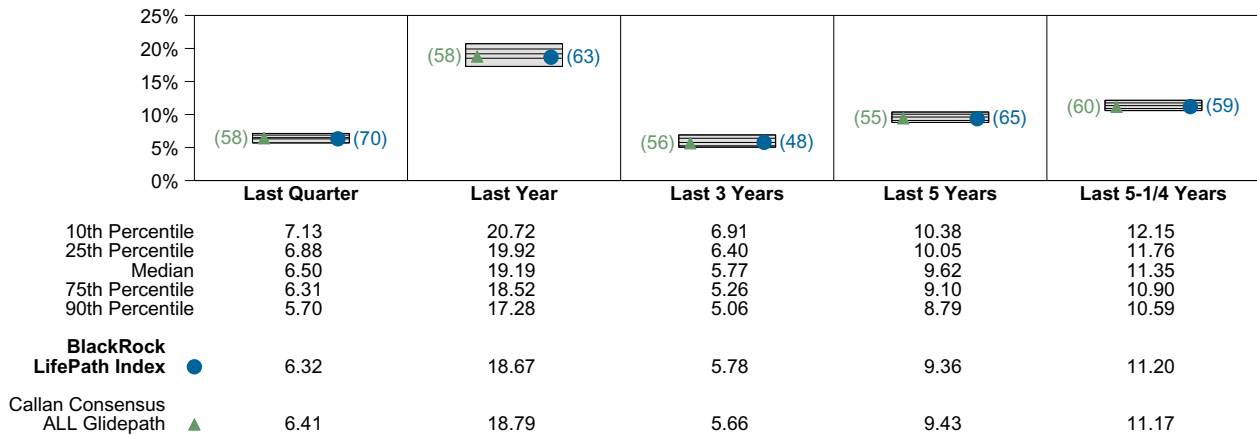
### Expense Ratio



### Target Date Family Performance vs Peer Families



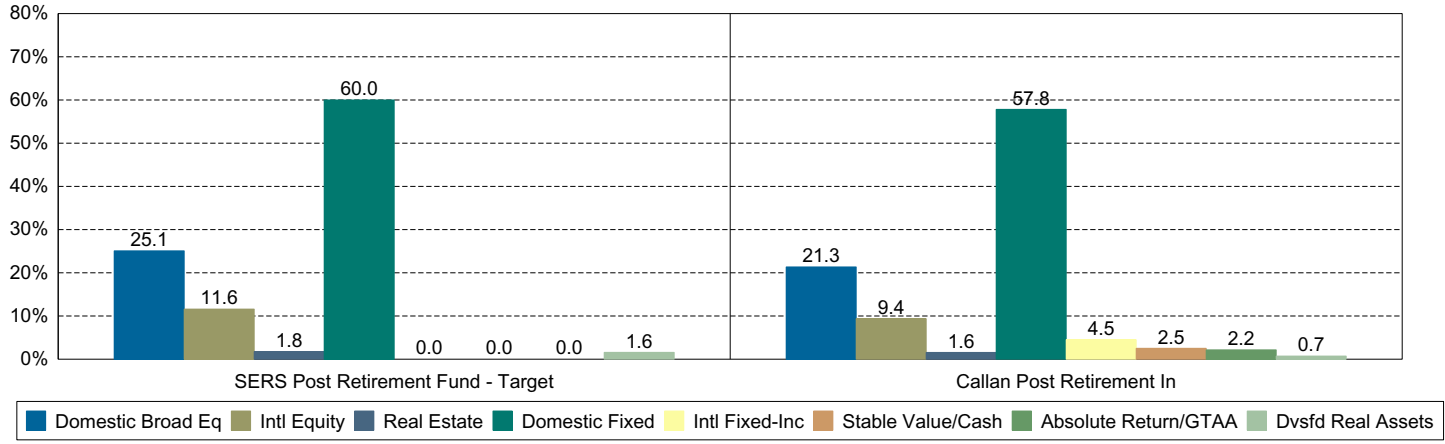
### Target Date Family Glide Path Returns vs Peer Families



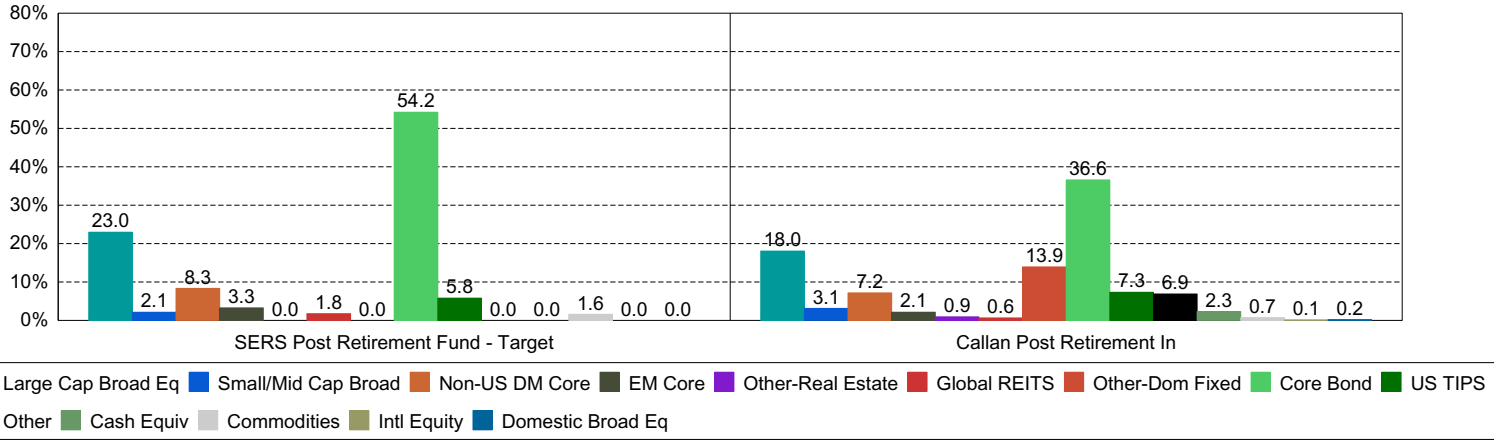
# SERS Post Retirement Fund Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.

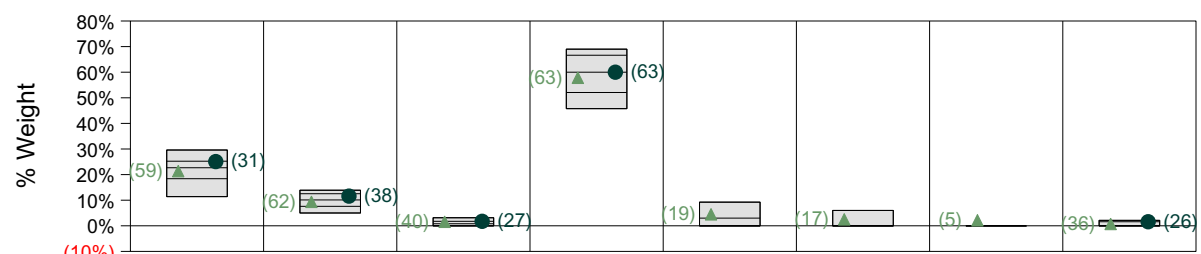
## Macro-Level Asset Allocation



## Micro-Level Asset Allocation



## Macro Asset Allocation Rankings vs. Callan Target Date Retirement Income



	Domestic Broad Eq	Intl Equity	Real Estate	Domestic Fixed	Intl Fixed-Inc	Stable Value/Cash	Absolute Return/GTAA	Dvsfd Real Assets
10th Percentile	29.61	13.90	3.15	69.00	9.24	6.00	0.00	2.13
25th Percentile	25.23	12.53	1.75	66.62	3.00	0.00	0.00	1.58
Median	22.67	10.10	0.80	60.00	0.00	0.00	0.00	0.00
75th Percentile	18.40	7.60	0.00	52.08	0.00	0.00	0.00	0.00
90th Percentile	11.40	5.00	0.00	45.76	0.00	0.00	0.00	0.00
<b>SERS Post Retirement Fund - Target</b>	● 25.08	11.59	1.75	60.00	-	-	-	1.58
Callan Post Retirement In	▲ 21.35	9.37	1.56	57.83	4.49	2.52	2.16	0.72



# SERS Post Retirement Fund Period Ended March 31, 2024

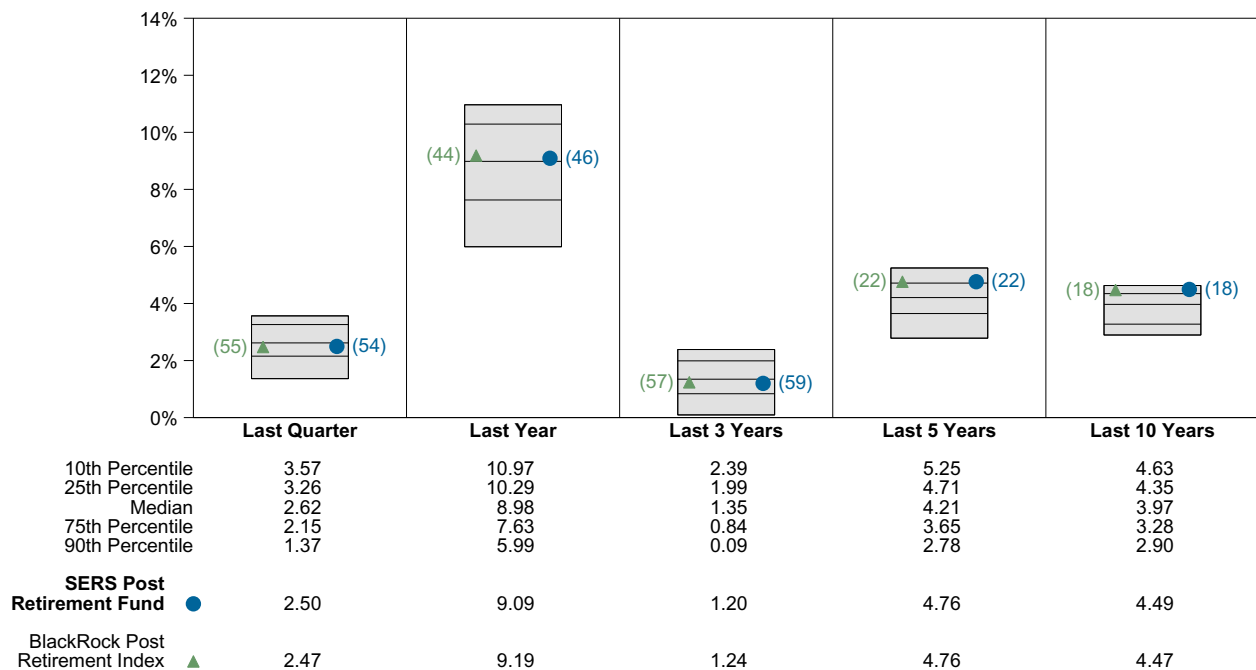
## Investment Philosophy

The BlackRock LifePath(R) Index Retirement Fund (the "Fund") seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. The Fund will be diversified across global asset classes, with allocations changing over the investment horizon to become more heavily oriented toward debt and debt-like securities, on the premise that individuals investing for retirement desire to reduce investment risk in their retirement accounts as their retirement date approaches.

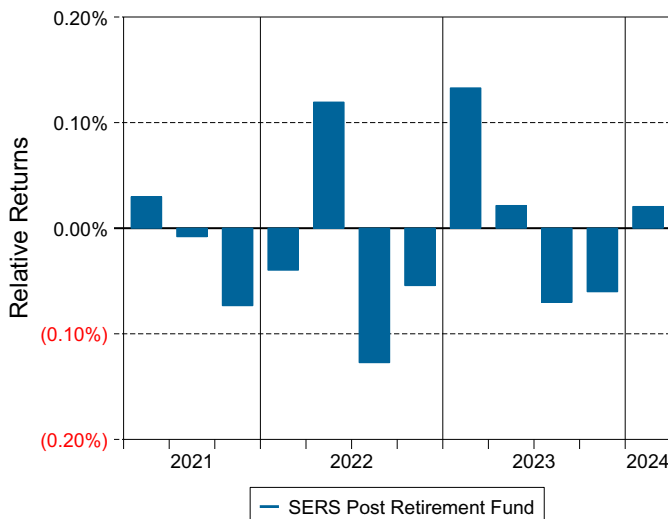
## Quarterly Summary and Highlights

- SERS Post Retirement Fund's portfolio posted a 2.50% return for the quarter placing it in the 54 percentile of the Callan Target Date Retirement Income group for the quarter and in the 46 percentile for the last year.
- SERS Post Retirement Fund's portfolio outperformed the BlackRock Post Retirement Index by 0.02% for the quarter and underperformed the BlackRock Post Retirement Index for the year by 0.10%.

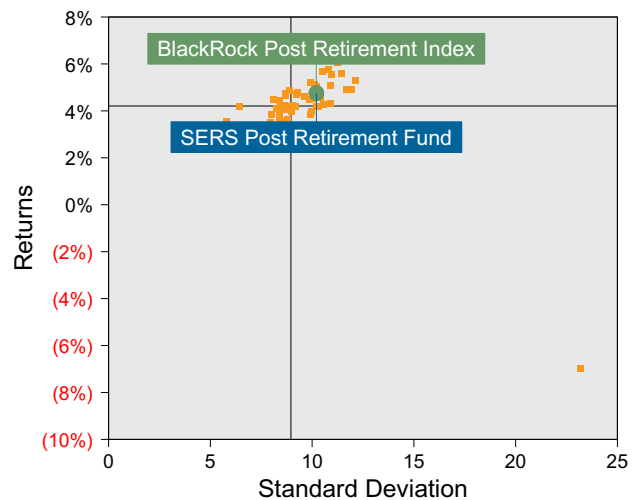
## Performance vs Callan Target Date Retirement Income (Net)



## Relative Returns vs BlackRock Post Retirement Index



## Callan Target Date Retirement Income (Net) Annualized Five Year Risk vs Return

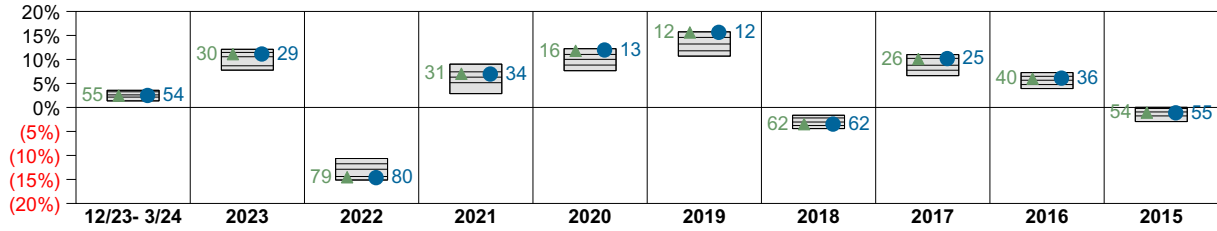


# SERS Post Retirement Fund Return Analysis Summary

## Return Analysis

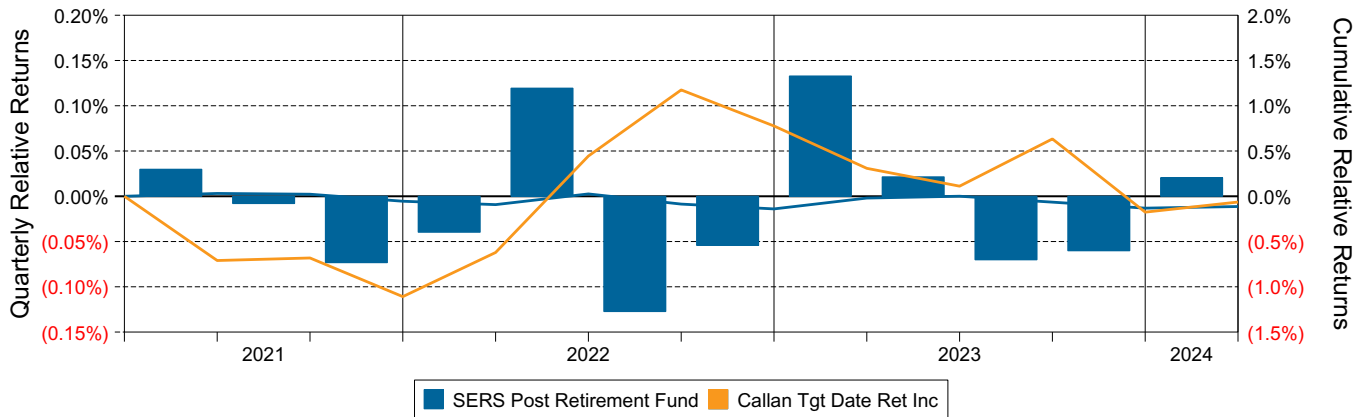
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

### Performance vs Callan Target Date Retirement Income (Net)

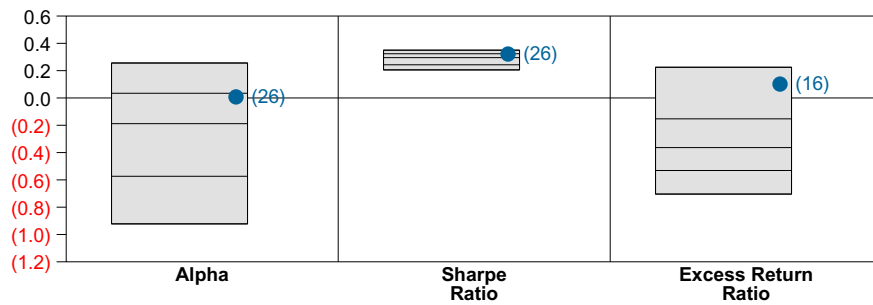


10th Percentile	3.57	12.11	(10.64)	9.02	12.24	15.75	(1.63)	11.01	7.26	0.02	
25th Percentile	3.26	11.46	(11.74)	7.42	11.04	14.59	(2.19)	10.22	6.48	(0.22)	
Median	2.62	10.56	(12.88)	6.31	10.02	13.21	(3.04)	8.80	5.67	(0.94)	
75th Percentile	2.15	8.68	(14.39)	5.16	8.83	11.79	(3.77)	7.75	4.77	(1.77)	
90th Percentile	1.37	7.77	(15.12)	2.88	7.66	10.69	(4.41)	6.62	3.93	(2.94)	
<b>SERS Post Retirement Fund</b>	●	2.50	11.13	(14.63)	6.95	11.97	15.65	(3.47)	10.18	6.10	(1.12)
<b>BlackRock Post Retirement Index</b>	▲	2.47	11.11	(14.54)	7.02	11.80	15.63	(3.48)	10.10	6.01	(1.07)

### Cumulative and Quarterly Relative Returns vs BlackRock Post Retirement Index



### Risk Adjusted Return Measures vs BlackRock Post Retirement Index Rankings Against Callan Target Date Retirement Income (Net) Seven Years Ended March 31, 2024

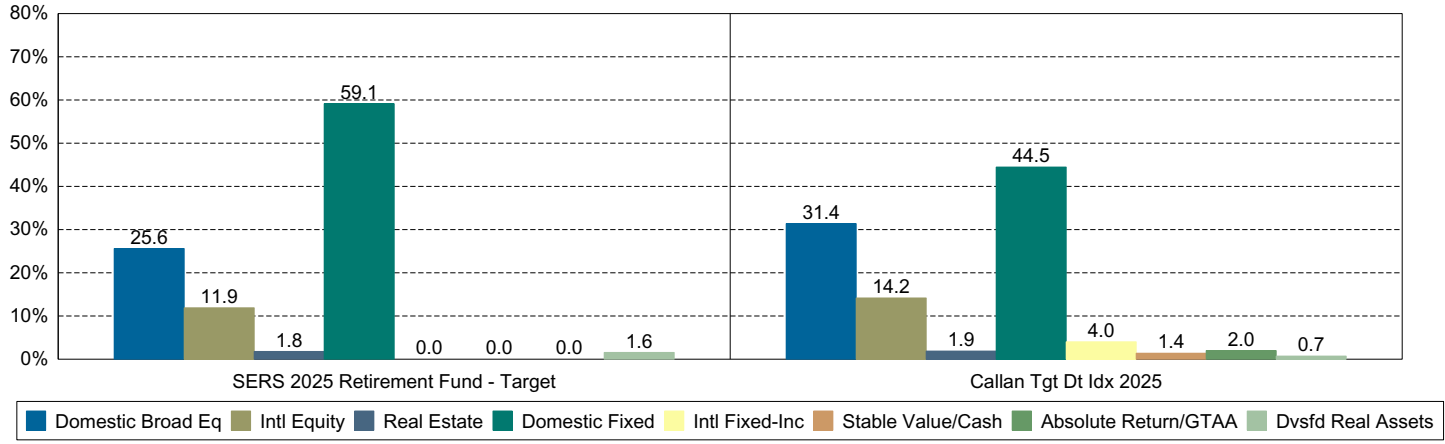


10th Percentile	0.26	0.35	0.22	
25th Percentile	0.03	0.32	(0.15)	
Median	(0.19)	0.30	(0.36)	
75th Percentile	(0.57)	0.24	(0.53)	
90th Percentile	(0.92)	0.21	(0.70)	
<b>SERS Post Retirement Fund</b>	●	0.01	0.32	0.10

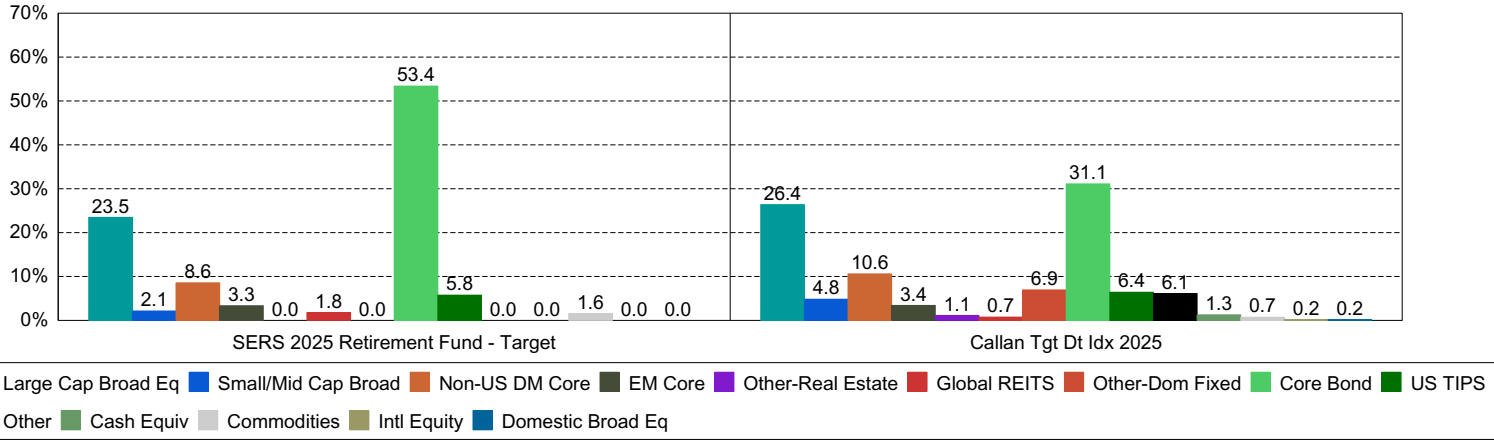
# SERS 2025 Retirement Fund Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.

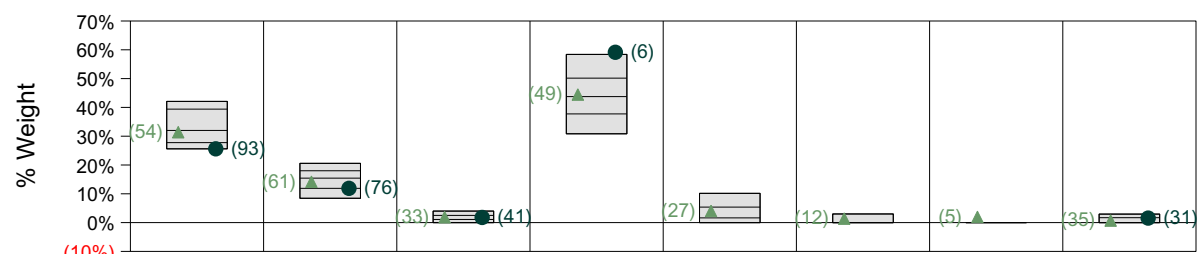
## Macro-Level Asset Allocation



## Micro-Level Asset Allocation



## Macro Asset Allocation Rankings vs. Callan Target Date 2025



	Domestic Broad Eq	Intl Equity	Real Estate	Domestic Fixed	Intl Fixed-Inc	Stable Value/Cash	Absolute Return/GTAA	Dvsfd Real Assets
10th Percentile	42.08	20.58	4.00	58.40	10.16	3.00	0.00	2.95
25th Percentile	39.40	18.00	2.50	50.16	5.38	0.00	0.00	1.70
Median	32.00	15.43	1.09	43.75	1.64	0.00	0.00	0.00
75th Percentile	27.77	11.90	0.00	37.74	0.00	0.00	0.00	0.00
90th Percentile	25.61	8.44	0.00	30.84	0.00	0.00	0.00	0.00
<b>SERS 2025 Retirement Fund - Target</b>	● 25.61	11.90	1.79	59.14	-	-	-	1.56
Callan Tgt Dt Idx 2025	▲ 31.38	14.17	1.87	44.47	4.03	1.39	1.98	0.72

# SERS 2025 Retirement Fund Period Ended March 31, 2024

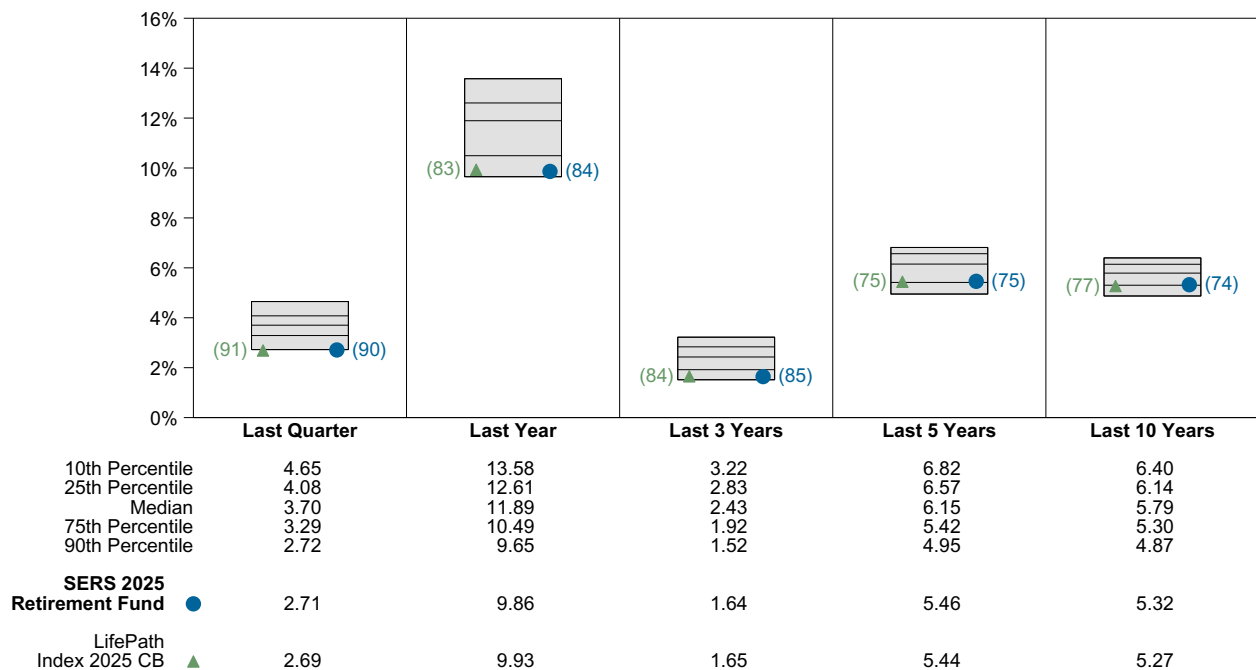
## Investment Philosophy

The BlackRock LifePath(R) Index 2025 Fund (the "Fund") seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. The Fund will be diversified across global asset classes, with allocations changing over the investment horizon to become more heavily oriented toward debt and debt-like securities, on the premise that individuals investing for retirement desire to reduce investment risk in their retirement accounts as their retirement date approaches.

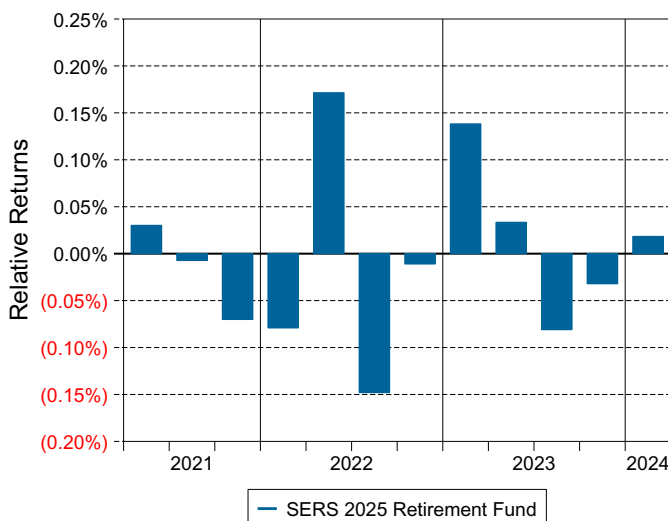
## Quarterly Summary and Highlights

- SERS 2025 Retirement Fund's portfolio posted a 2.71% return for the quarter placing it in the 90 percentile of the Callan Target Date 2025 group for the quarter and in the 84 percentile for the last year.
- SERS 2025 Retirement Fund's portfolio outperformed the LifePath Index 2025 CB by 0.02% for the quarter and underperformed the LifePath Index 2025 CB for the year by 0.07%.

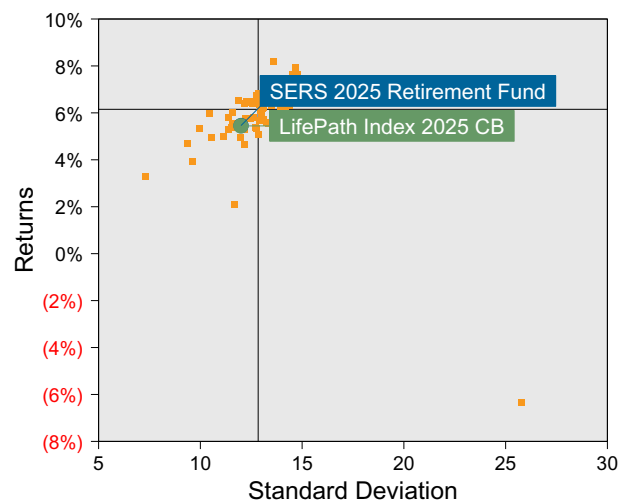
## Performance vs Callan Target Date 2025 (Net)



## Relative Return vs LifePath Index 2025 CB



## Callan Target Date 2025 (Net) Annualized Five Year Risk vs Return

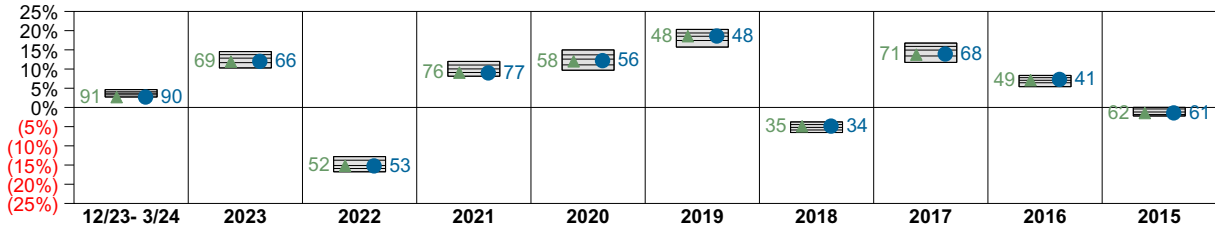


# SERS 2025 Retirement Fund Return Analysis Summary

## Return Analysis

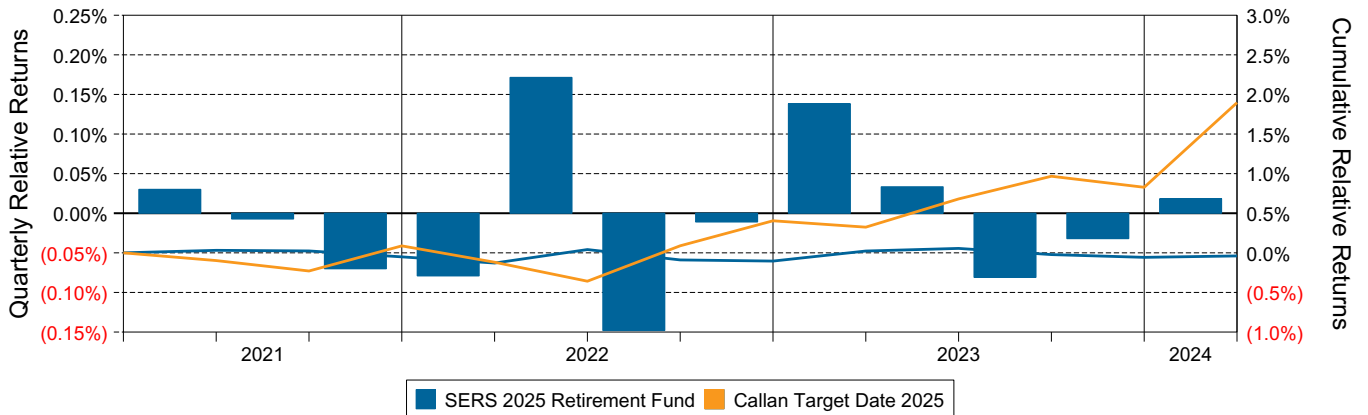
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

### Performance vs Callan Target Date 2025 (Net)

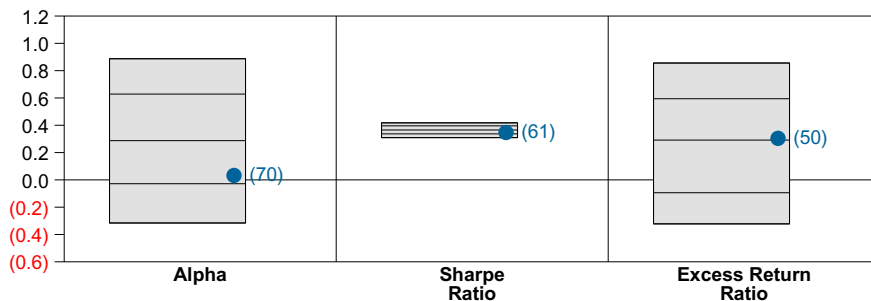


	12/23- 3/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	4.65	14.55	(12.80)	11.99	14.98	20.32	(3.77)	16.77	8.34	0.02
25th Percentile	4.08	13.75	(13.74)	11.04	13.70	19.39	(4.46)	15.90	7.76	(0.39)
Median	3.70	12.84	(15.14)	10.04	12.58	18.53	(5.20)	14.94	7.07	(1.19)
75th Percentile	3.29	11.67	(15.90)	9.10	11.08	17.43	(5.87)	13.41	6.43	(1.85)
90th Percentile	2.72	10.29	(16.76)	8.13	9.69	15.71	(6.53)	11.73	5.41	(2.22)
<b>SERS 2025 Retirement Fund</b>	● 2.71	12.00	(15.23)	8.99	12.19	18.60	(4.86)	13.91	7.30	(1.43)
LifePath Index 2025 CB	▲ 2.69	11.94	(15.17)	9.07	12.01	18.56	(4.90)	13.75	7.10	(1.45)

### Cumulative and Quarterly Relative Returns vs LifePath Index 2025 CB



### Risk Adjusted Return Measures vs LifePath Index 2025 CB Rankings Against Callan Target Date 2025 (Net) Seven Years Ended March 31, 2024

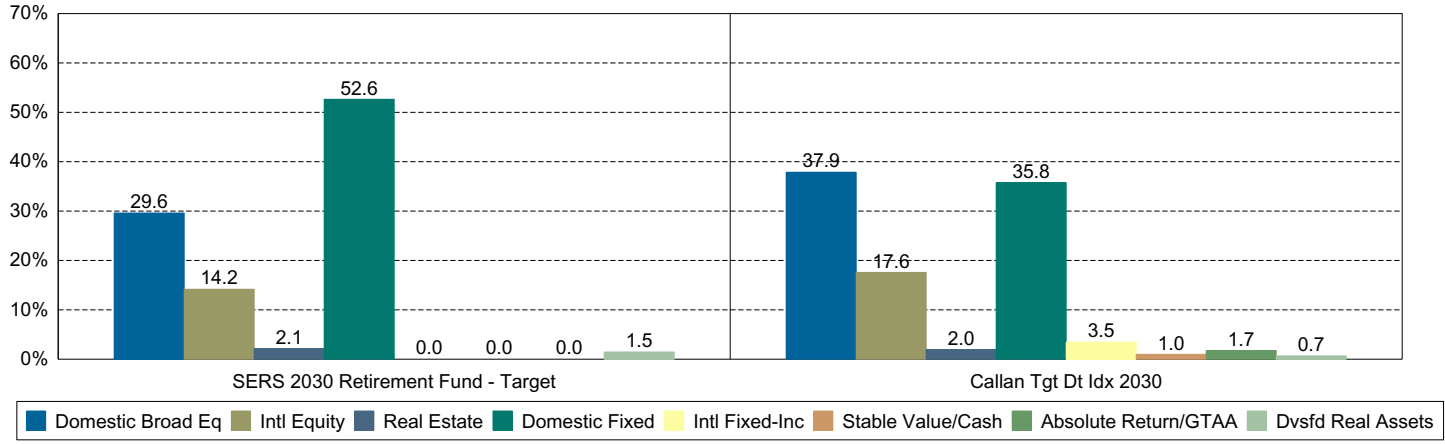


	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.89	0.42	0.86
25th Percentile	0.63	0.40	0.59
Median	0.29	0.37	0.29
75th Percentile	(0.03)	0.34	(0.09)
90th Percentile	(0.32)	0.31	(0.32)
<b>SERS 2025 Retirement Fund</b>	● 0.03	0.35	0.30

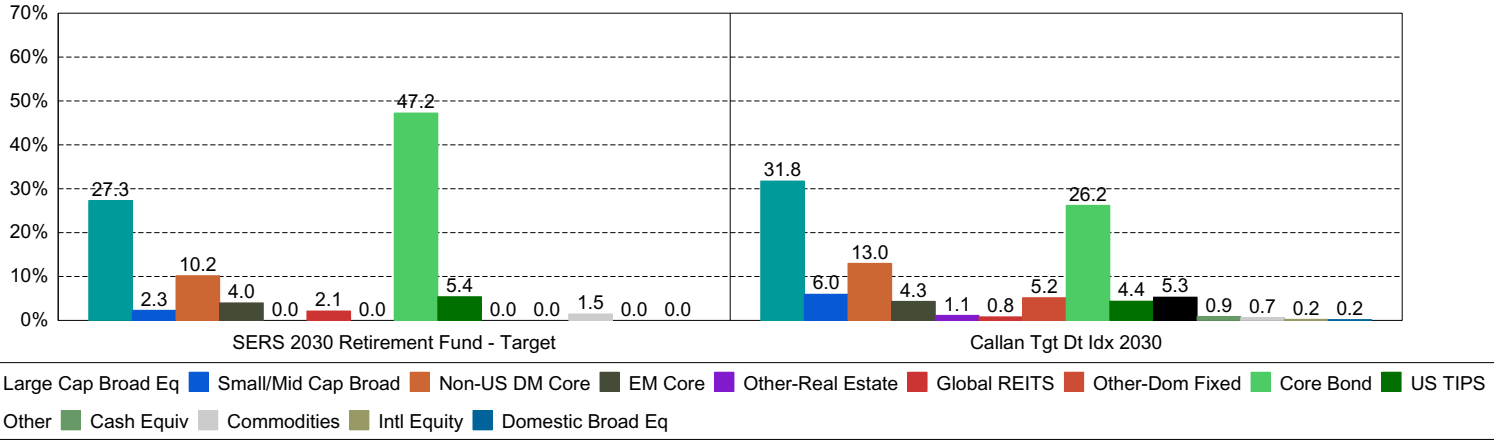
# SERS 2030 Retirement Fund Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.

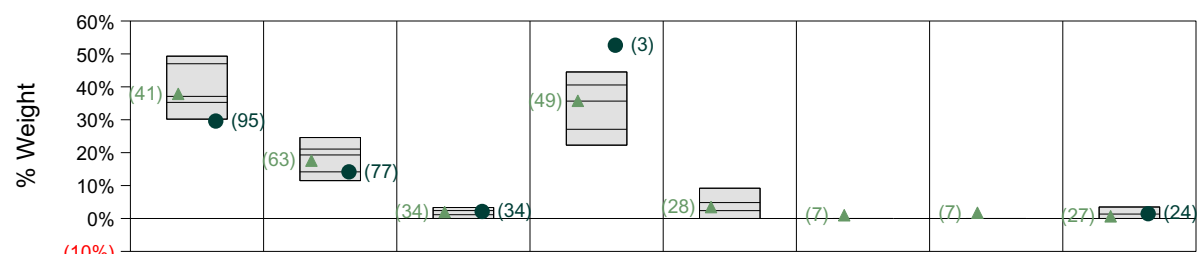
## Macro-Level Asset Allocation



## Micro-Level Asset Allocation



## Macro Asset Allocation Rankings vs. Callan Target Date 2030



	Domestic Broad Eq	Intl Equity	Real Estate	Domestic Fixed	Intl Fixed-Inc	Stable Value/Cash	Absolute Return/GTAA	Dvsfd Real Assets
10th Percentile	49.31	24.59	3.33	44.52	9.19	0.00	0.00	3.49
25th Percentile	47.01	21.09	2.40	40.56	4.83	0.00	0.00	1.34
Median	37.10	19.31	1.15	35.66	2.38	0.00	0.00	0.00
75th Percentile	35.27	14.17	0.00	27.10	0.00	0.00	0.00	0.00
90th Percentile	30.18	11.50	0.00	22.28	0.00	0.00	0.00	0.00
<b>SERS 2030 Retirement Fund - Target</b>	● 29.60	14.17	2.13	52.64	-	-	-	1.46
Callan Tgt Dt Idx 2030	▲ 37.86	17.57	1.95	35.76	3.46	0.99	1.74	0.66

# SERS 2030 Retirement Fund Period Ended March 31, 2024

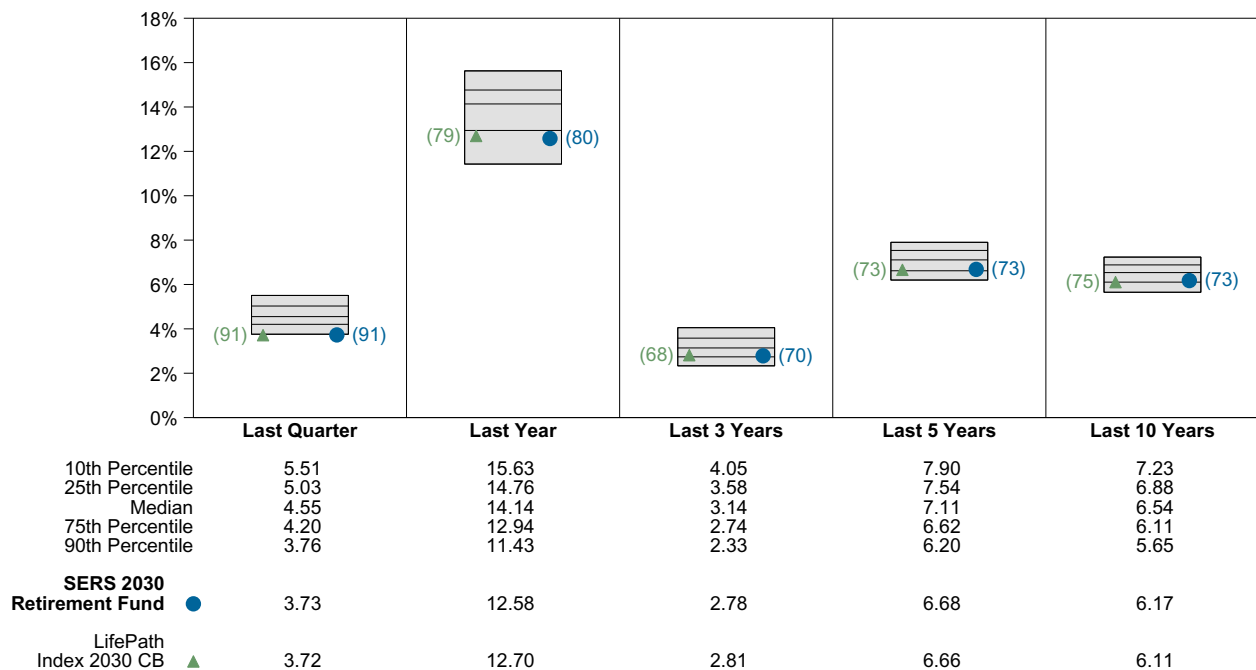
## Investment Philosophy

The BlackRock LifePath(R) Index 2030 Fund (the "Fund") seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. The Fund will be diversified across global asset classes, with allocations changing over the investment horizon to become more heavily oriented toward debt and debt-like securities, on the premise that individuals investing for retirement desire to reduce investment risk in their retirement accounts as their retirement date approaches.

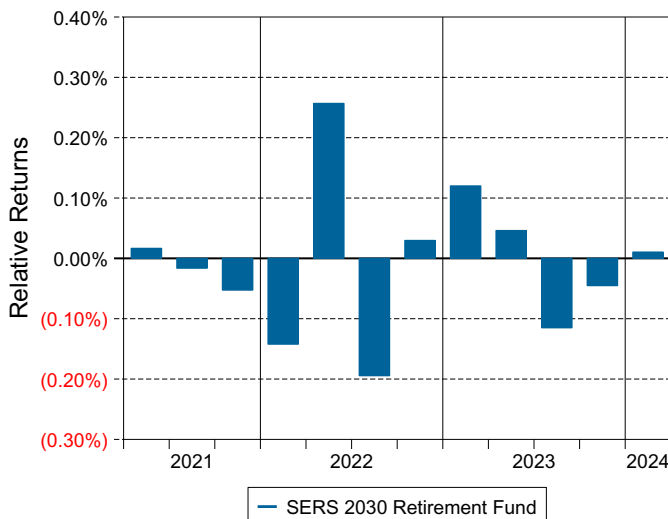
## Quarterly Summary and Highlights

- SERS 2030 Retirement Fund's portfolio posted a 3.73% return for the quarter placing it in the 91 percentile of the Callan Target Date 2030 group for the quarter and in the 80 percentile for the last year.
- SERS 2030 Retirement Fund's portfolio outperformed the LifePath Index 2030 CB by 0.01% for the quarter and underperformed the LifePath Index 2030 CB for the year by 0.12%.

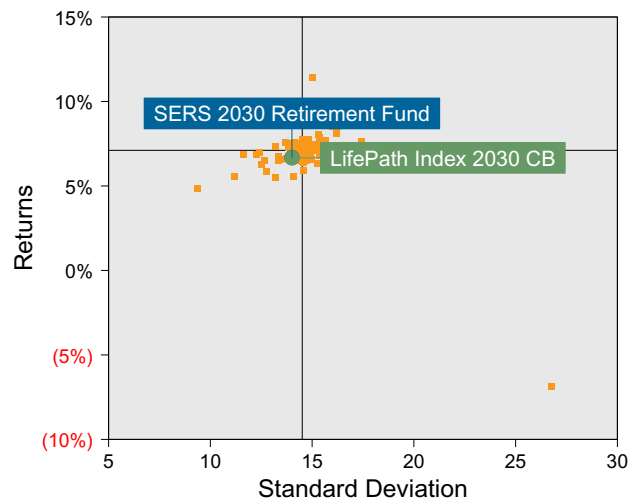
## Performance vs Callan Target Date 2030 (Net)



## Relative Return vs LifePath Index 2030 CB



## Callan Target Date 2030 (Net) Annualized Five Year Risk vs Return

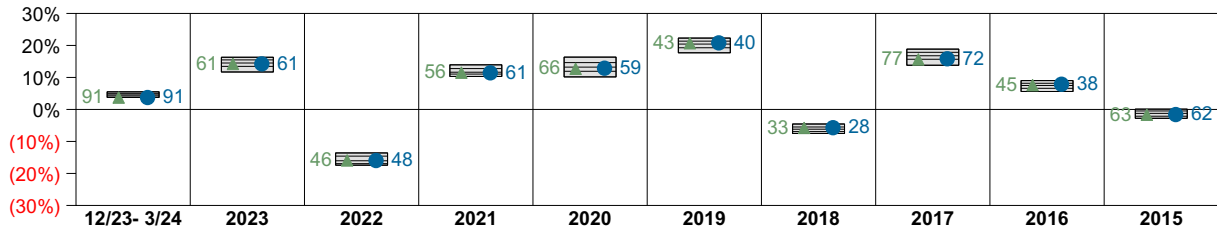


# SERS 2030 Retirement Fund Return Analysis Summary

## Return Analysis

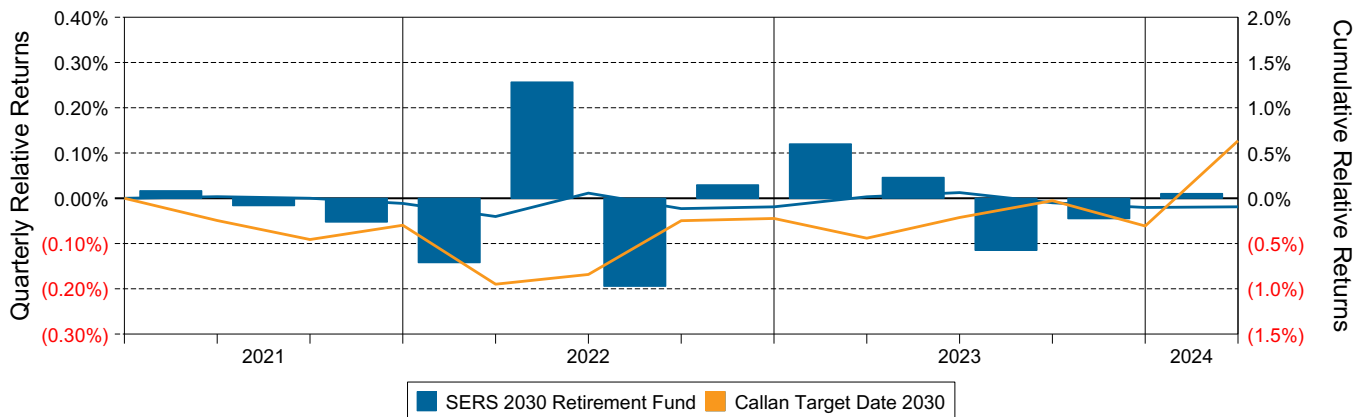
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

### Performance vs Callan Target Date 2030 (Net)

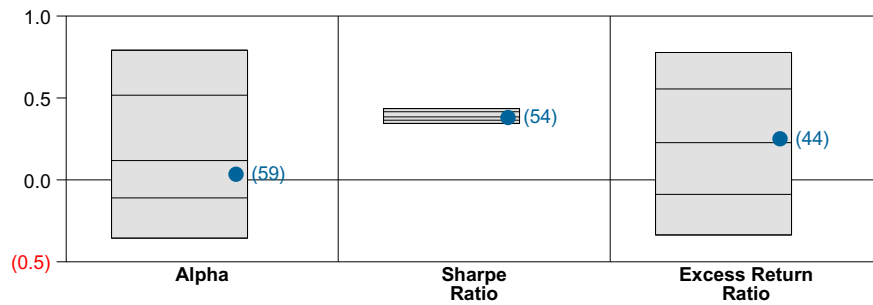


	12/23- 3/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	5.51	16.31	(13.59)	13.94	16.35	22.30	(4.55)	18.85	9.02	0.09
25th Percentile	5.03	15.48	(14.60)	12.77	14.64	21.34	(5.48)	17.85	8.17	(0.48)
Median	4.55	14.51	(16.04)	11.63	13.23	20.43	(6.17)	16.77	7.49	(1.22)
75th Percentile	4.20	13.46	(16.94)	11.05	11.92	19.28	(6.93)	15.68	6.60	(2.12)
90th Percentile	3.76	11.70	(17.42)	10.31	10.16	17.70	(7.50)	13.81	5.61	(2.77)
<b>SERS 2030 Retirement Fund</b>	● 3.73	14.24	(15.97)	11.43	12.88	20.80	(5.71)	15.83	7.88	(1.60)
LifePath Index 2030 CB	▲ 3.72	14.23	(15.92)	11.50	12.72	20.70	(5.76)	15.64	7.61	(1.66)

### Cumulative and Quarterly Relative Returns vs LifePath Index 2030 CB



### Risk Adjusted Return Measures vs LifePath Index 2030 CB Rankings Against Callan Target Date 2030 (Net) Seven Years Ended March 31, 2024



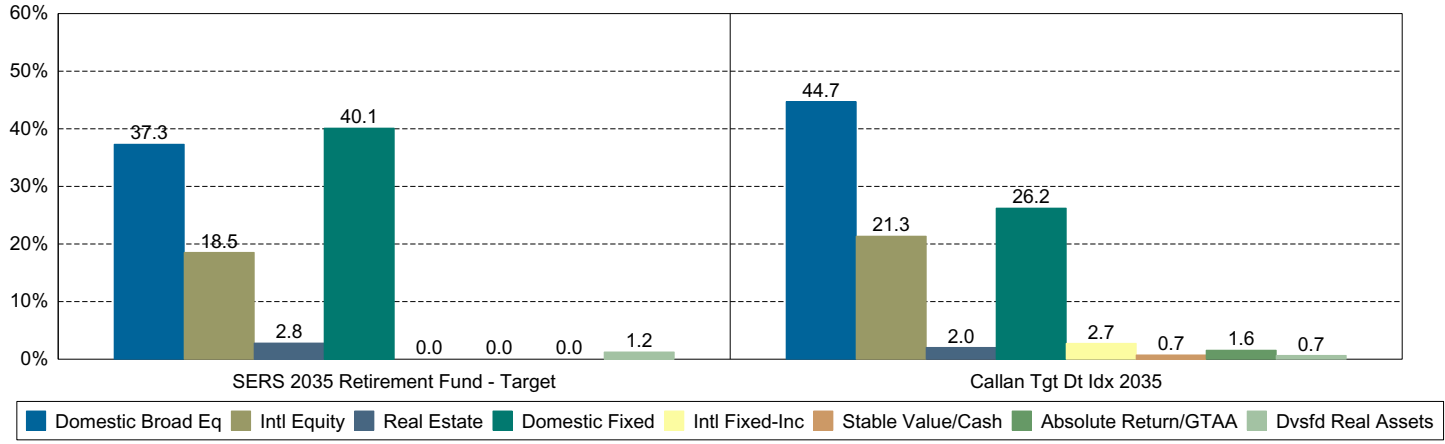
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.79	0.44	0.78
25th Percentile	0.52	0.42	0.56
Median	0.12	0.38	0.23
75th Percentile	(0.11)	0.36	(0.09)
90th Percentile	(0.36)	0.34	(0.34)
<b>SERS 2030 Retirement Fund</b>	● 0.03	0.38	0.25



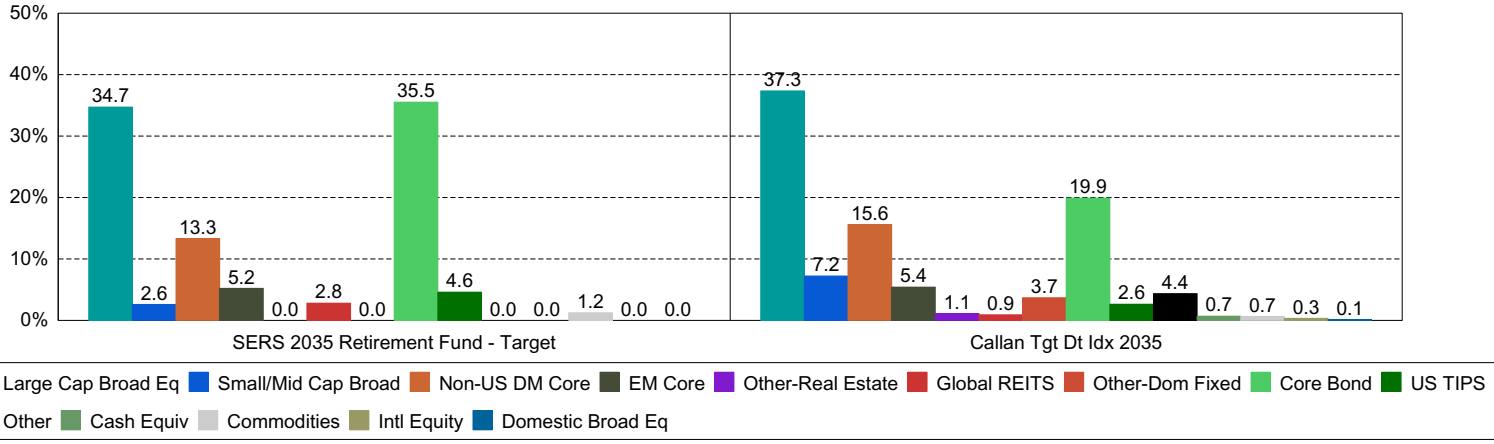
# SERS 2035 Retirement Fund Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.

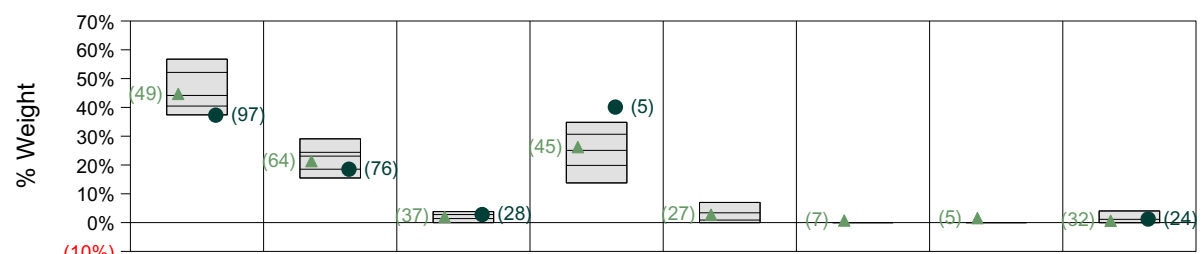
## Macro-Level Asset Allocation



## Micro-Level Asset Allocation



## Macro Asset Allocation Rankings vs. Callan Target Date 2035



	Domestic Broad Eq	Intl Equity	Real Estate	Domestic Fixed	Intl Fixed-Inc	Stable Value/Cash	Absolute Return/GTAA	Dvsfd Real Assets
10th Percentile	56.75	29.08	3.83	34.83	7.00	0.00	0.00	4.05
25th Percentile	52.14	24.40	2.80	30.67	3.40	0.00	0.00	1.13
Median	44.15	23.08	1.40	25.07	0.88	0.00	0.00	0.00
75th Percentile	40.46	18.54	0.00	19.86	0.00	0.00	0.00	0.00
90th Percentile	37.41	15.49	0.00	13.78	0.00	0.00	0.00	0.00
<b>SERS 2035 Retirement Fund - Target</b>	● 37.31	18.54	2.80	40.11	-	-	-	1.24
Callan Tgt Dt Idx 2035	▲ 44.70	21.35	2.04	26.22	2.75	0.73	1.55	0.65

# SERS 2035 Retirement Fund Period Ended March 31, 2024

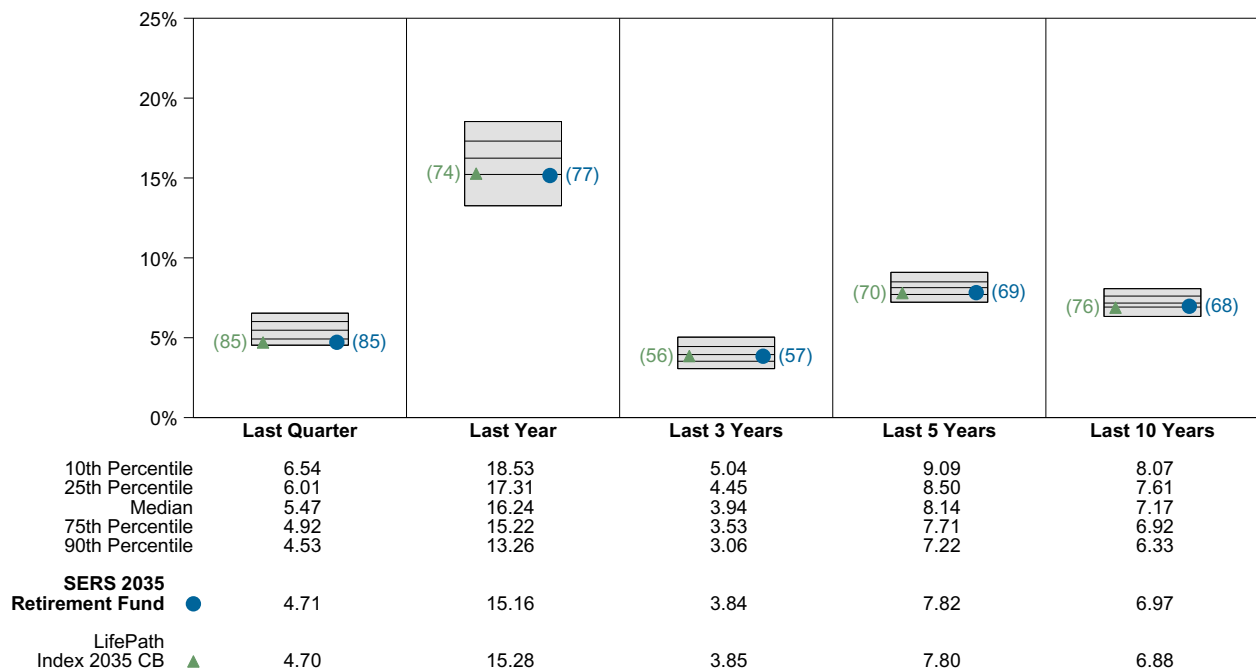
## Investment Philosophy

The BlackRock LifePath(R) Index 2035 Fund (the "Fund") seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. The Fund will be diversified across global asset classes, with allocations changing over the investment horizon to become more heavily oriented toward debt and debt-like securities, on the premise that individuals investing for retirement desire to reduce investment risk in their retirement accounts as their retirement date approaches.

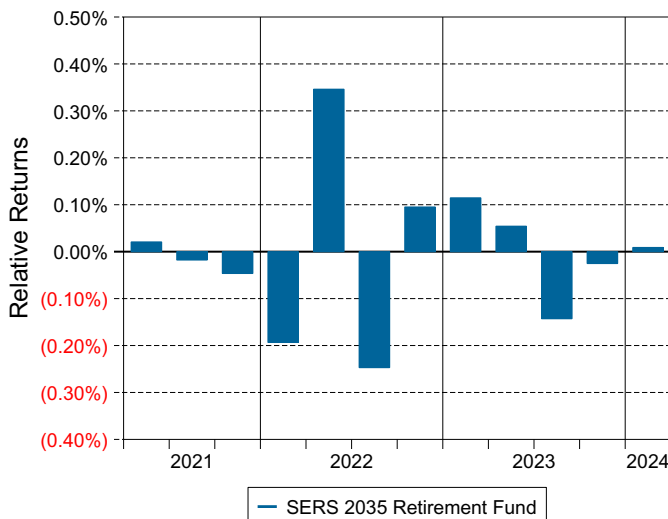
## Quarterly Summary and Highlights

- SERS 2035 Retirement Fund's portfolio posted a 4.71% return for the quarter placing it in the 85 percentile of the Callan Target Date 2035 group for the quarter and in the 77 percentile for the last year.
- SERS 2035 Retirement Fund's portfolio outperformed the LifePath Index 2035 CB by 0.01% for the quarter and underperformed the LifePath Index 2035 CB for the year by 0.12%.

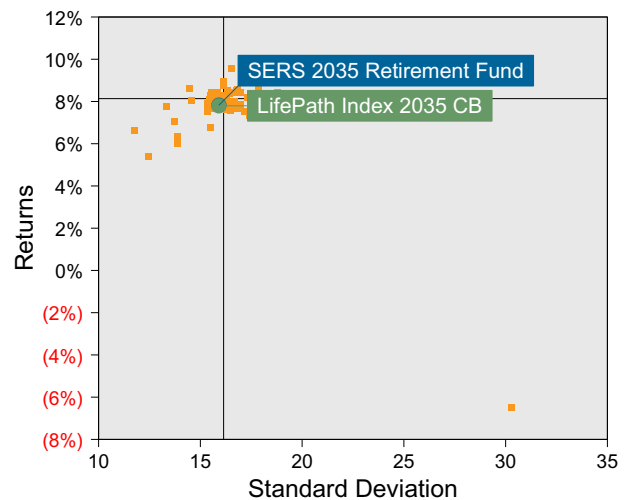
## Performance vs Callan Target Date 2035 (Net)



## Relative Return vs LifePath Index 2035 CB



## Callan Target Date 2035 (Net) Annualized Five Year Risk vs Return

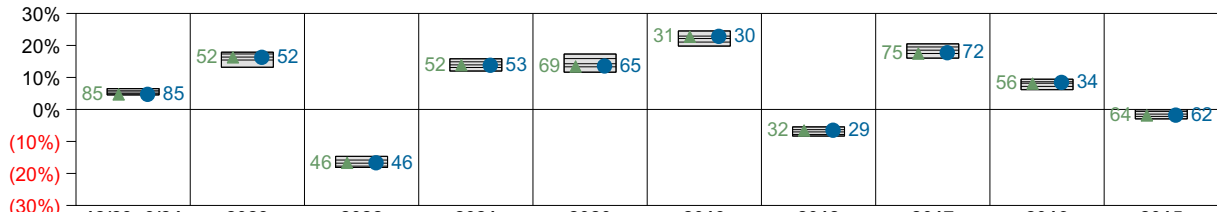


# SERS 2035 Retirement Fund Return Analysis Summary

## Return Analysis

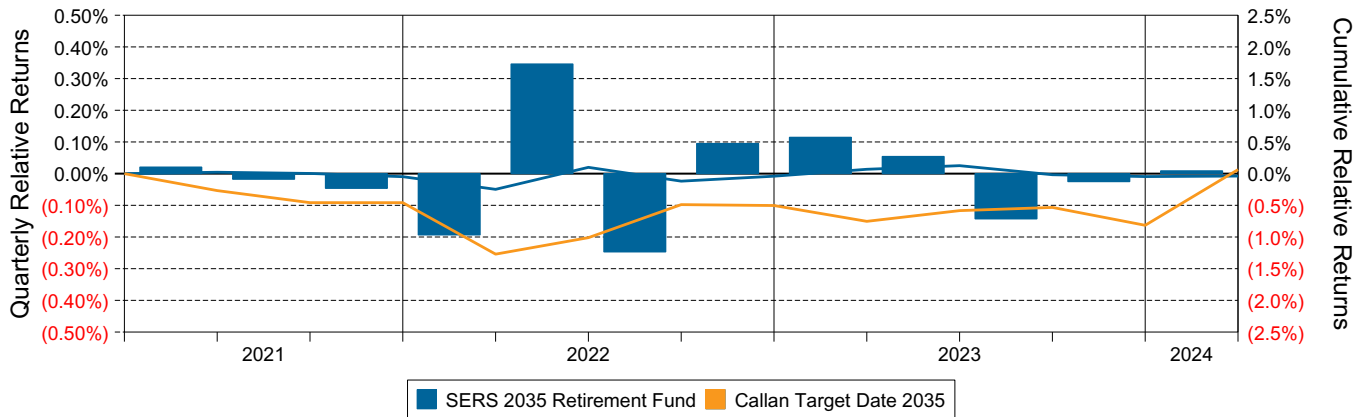
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

### Performance vs Callan Target Date 2035 (Net)

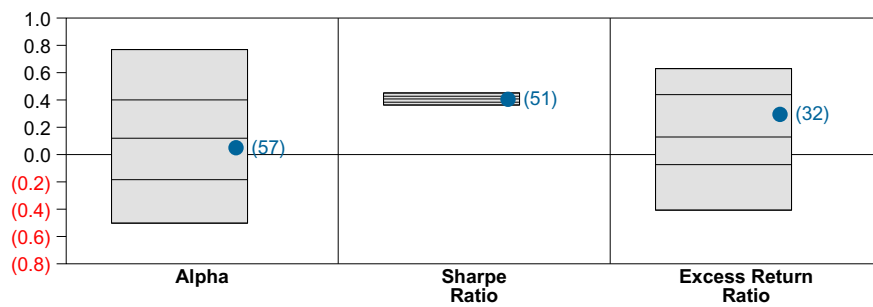


	12/23- 3/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	6.54	17.89	(14.66)	15.82	17.32	24.52	(5.46)	20.49	9.45	(0.09)
25th Percentile	6.01	17.33	(15.82)	14.88	15.89	22.92	(6.32)	19.53	8.65	(0.61)
Median	5.47	16.37	(16.79)	13.92	14.28	22.16	(7.03)	18.51	8.19	(1.46)
75th Percentile	4.92	15.45	(17.71)	13.11	13.31	21.05	(7.82)	17.48	7.20	(2.17)
90th Percentile	4.53	13.18	(18.13)	12.00	11.64	19.80	(8.31)	16.04	6.17	(2.95)
<b>SERS 2035 Retirement Fund</b>	4.71	16.29	(16.67)	13.80	13.58	22.84	(6.50)	17.72	8.44	(1.78)
LifePath Index 2035 CB	4.70	16.29	(16.67)	13.85	13.44	22.72	(6.58)	17.48	8.08	(1.86)

### Cumulative and Quarterly Relative Returns vs LifePath Index 2035 CB



### Risk Adjusted Return Measures vs LifePath Index 2035 CB Rankings Against Callan Target Date 2035 (Net) Seven Years Ended March 31, 2024



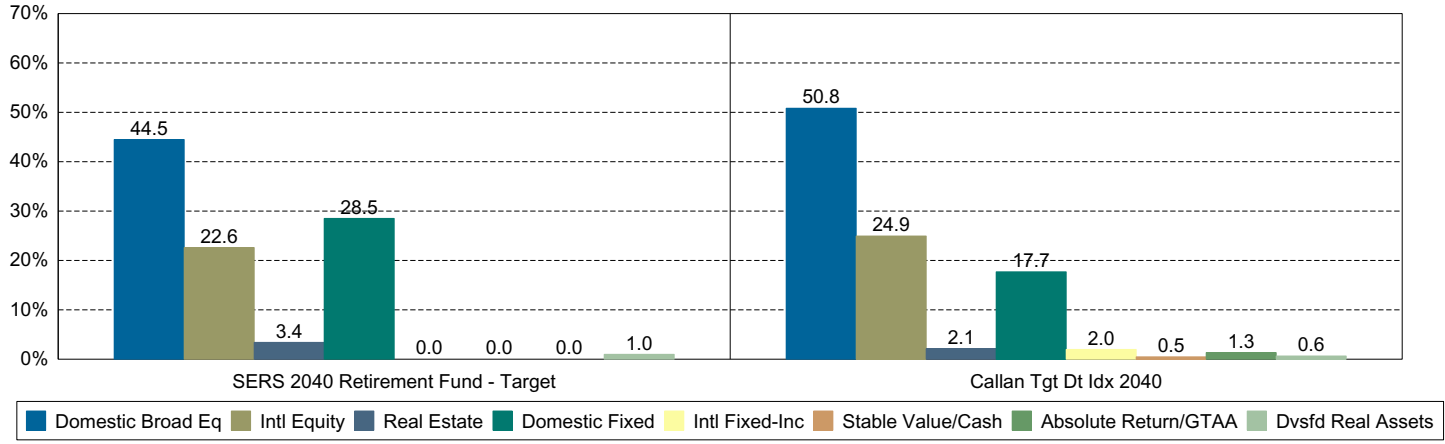
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.77	0.45	0.63
25th Percentile	0.40	0.43	0.44
Median	0.12	0.41	0.13
75th Percentile	(0.18)	0.38	(0.07)
90th Percentile	(0.50)	0.36	(0.41)
<b>SERS 2035 Retirement Fund</b>	0.05	0.40	0.29

# SERS 2040 Retirement Fund

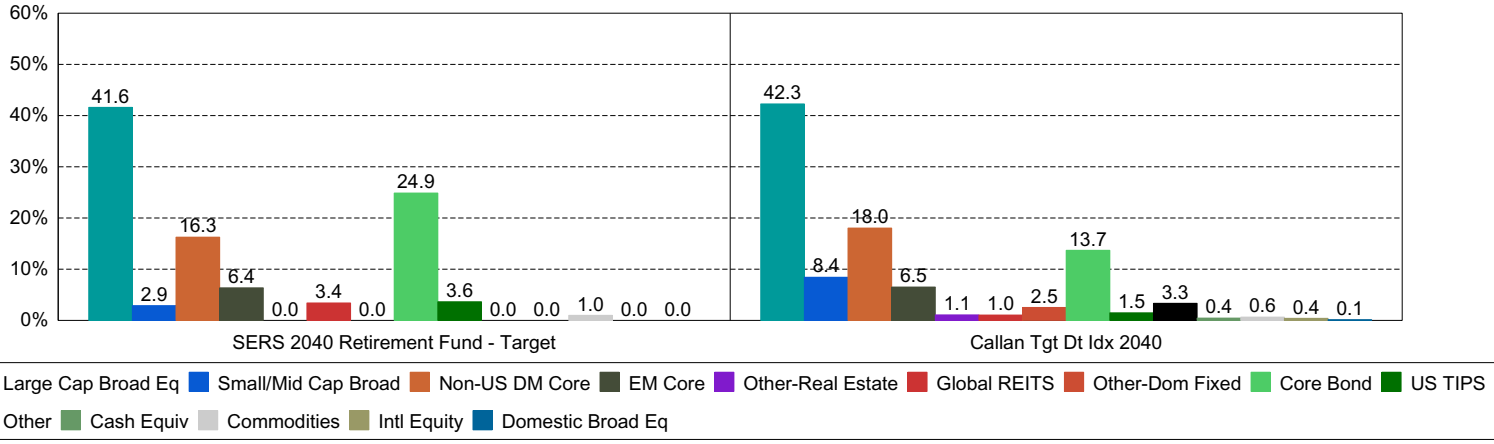
## Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.

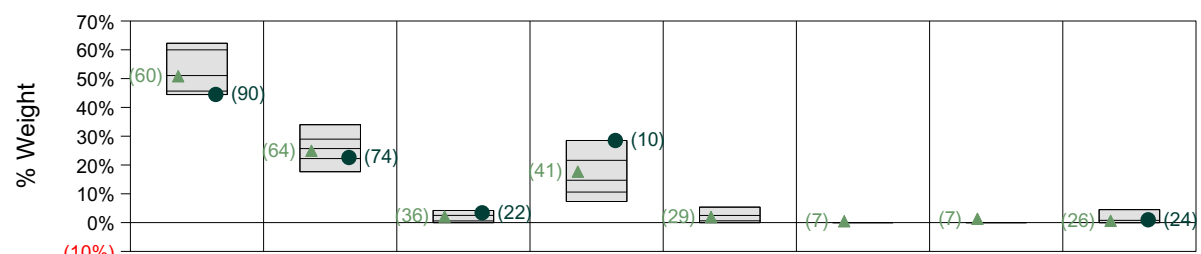
### Macro-Level Asset Allocation



### Micro-Level Asset Allocation



### Macro Asset Allocation Rankings vs. Callan Target Date 2040



	Domestic Broad Eq	Intl Equity	Real Estate	Domestic Fixed	Intl Fixed-Inc	Stable Value/Cash	Absolute Return/GTAA	Dvsfd Real Assets
10th Percentile	62.27	34.00	4.20	28.51	5.37	0.00	0.00	4.51
25th Percentile	59.98	28.98	2.50	21.62	2.48	0.00	0.00	0.78
Median	51.06	25.71	0.58	14.70	0.62	0.00	0.00	0.00
75th Percentile	45.65	22.23	0.00	10.60	0.00	0.00	0.00	0.00
90th Percentile	44.46	17.66	0.00	7.32	0.00	0.00	0.00	0.00
<b>SERS 2040 Retirement Fund - Target</b>	● 44.49	22.61	3.40	28.51	-	-	-	0.98
Callan Tgt Dt Idx 2040	▲ 50.82	24.94	2.11	17.69	1.97	0.48	1.34	0.64

# SERS 2040 Retirement Fund Period Ended March 31, 2024

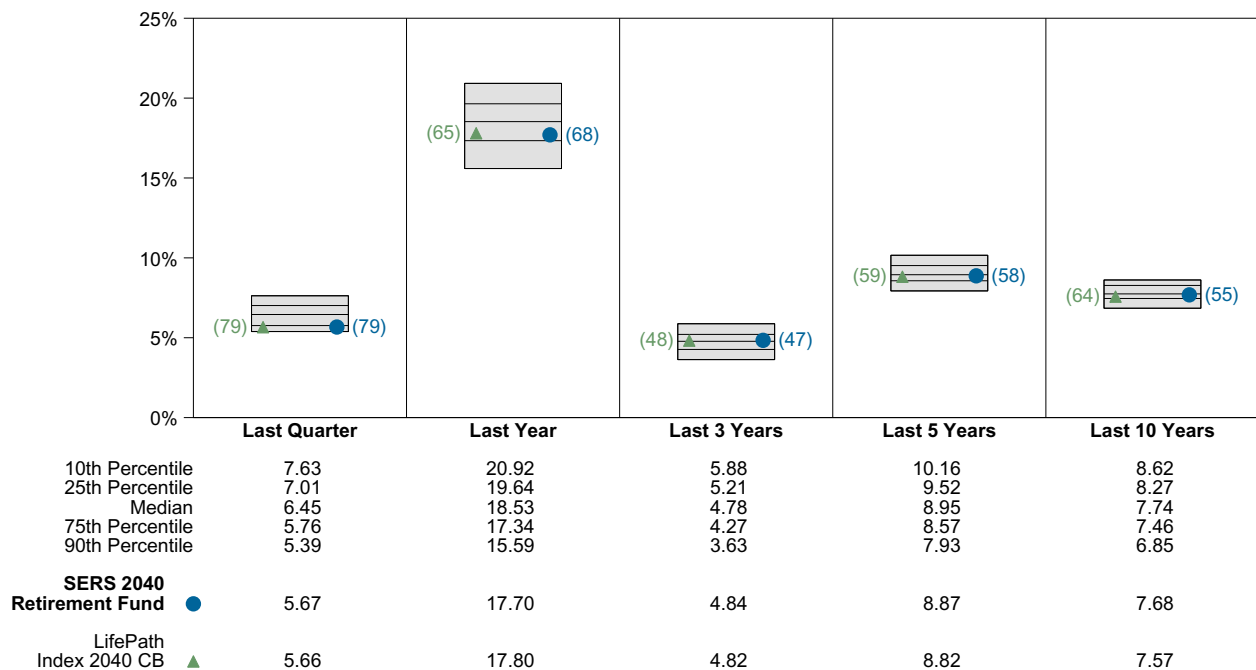
## Investment Philosophy

The BlackRock LifePath(R) Index 2040 Fund (the "Fund") seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. The Fund will be diversified across global asset classes, with allocations changing over the investment horizon to become more heavily oriented toward debt and debt-like securities, on the premise that individuals investing for retirement desire to reduce investment risk in their retirement accounts as their retirement date approaches.

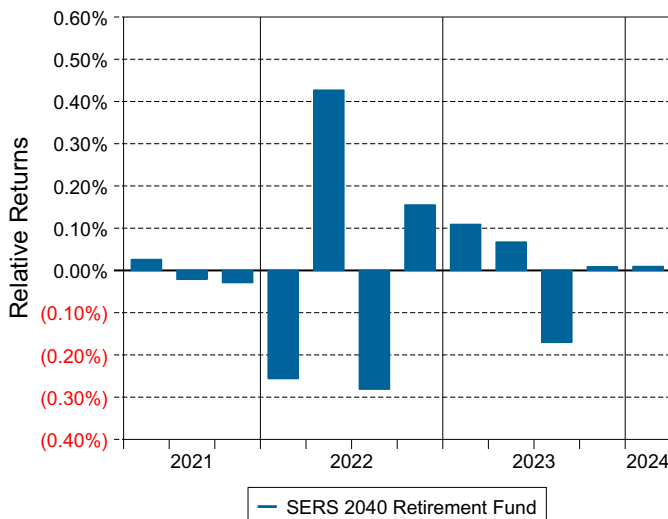
## Quarterly Summary and Highlights

- SERS 2040 Retirement Fund's portfolio posted a 5.67% return for the quarter placing it in the 79 percentile of the Callan Target Date 2040 group for the quarter and in the 68 percentile for the last year.
- SERS 2040 Retirement Fund's portfolio outperformed the LifePath Index 2040 CB by 0.01% for the quarter and underperformed the LifePath Index 2040 CB for the year by 0.10%.

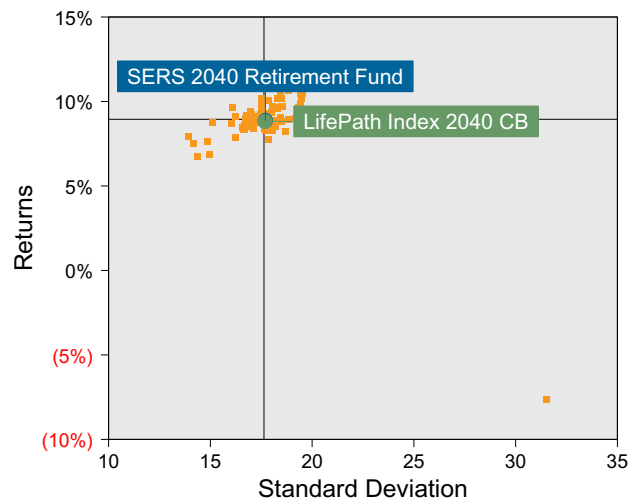
## Performance vs Callan Target Date 2040 (Net)



## Relative Return vs LifePath Index 2040 CB



## Callan Target Date 2040 (Net) Annualized Five Year Risk vs Return

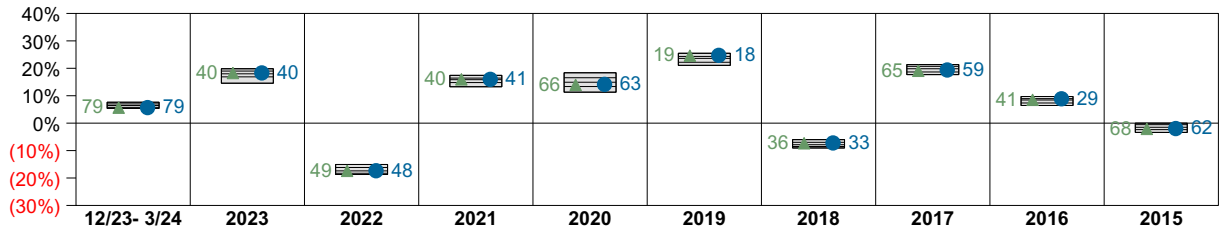


# SERS 2040 Retirement Fund Return Analysis Summary

## Return Analysis

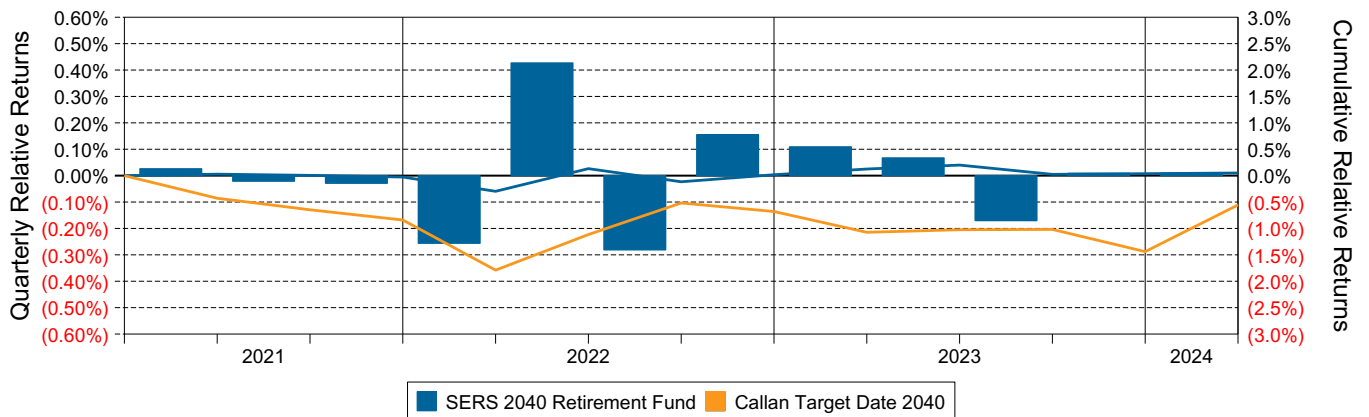
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

### Performance vs Callan Target Date 2040 (Net)

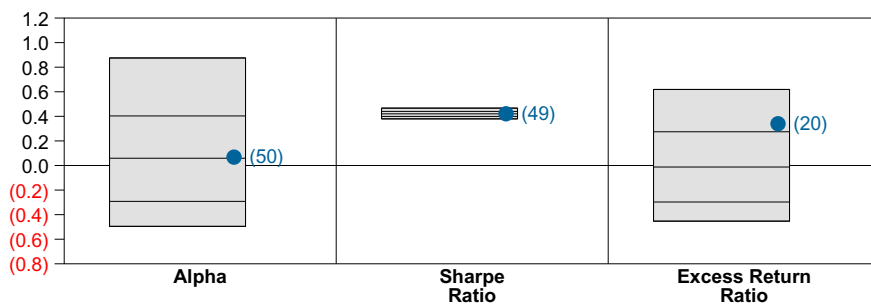


	12/23- 3/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	7.63	19.84	(15.07)	17.43	18.37	25.47	(6.01)	21.35	9.71	(0.03)
25th Percentile	7.01	18.99	(16.16)	16.42	16.56	24.33	(6.99)	20.71	8.93	(0.55)
Median	6.45	17.98	(17.40)	15.85	14.91	23.62	(7.87)	19.84	8.44	(1.51)
75th Percentile	5.76	16.88	(18.28)	14.80	13.35	22.20	(8.52)	18.66	7.35	(2.36)
90th Percentile	5.39	14.56	(18.72)	13.27	11.29	21.07	(9.05)	17.70	6.44	(3.38)
<b>SERS 2040 Retirement Fund</b>	5.67	18.30	(17.35)	15.96	14.14	24.71	(7.22)	19.38	8.88	(1.98)
LifePath Index 2040 CB	5.66	18.29	(17.38)	15.97	13.98	24.62	(7.33)	19.09	8.51	(2.08)

### Cumulative and Quarterly Relative Returns vs LifePath Index 2040 CB



### Risk Adjusted Return Measures vs LifePath Index 2040 CB Rankings Against Callan Target Date 2040 (Net) Seven Years Ended March 31, 2024

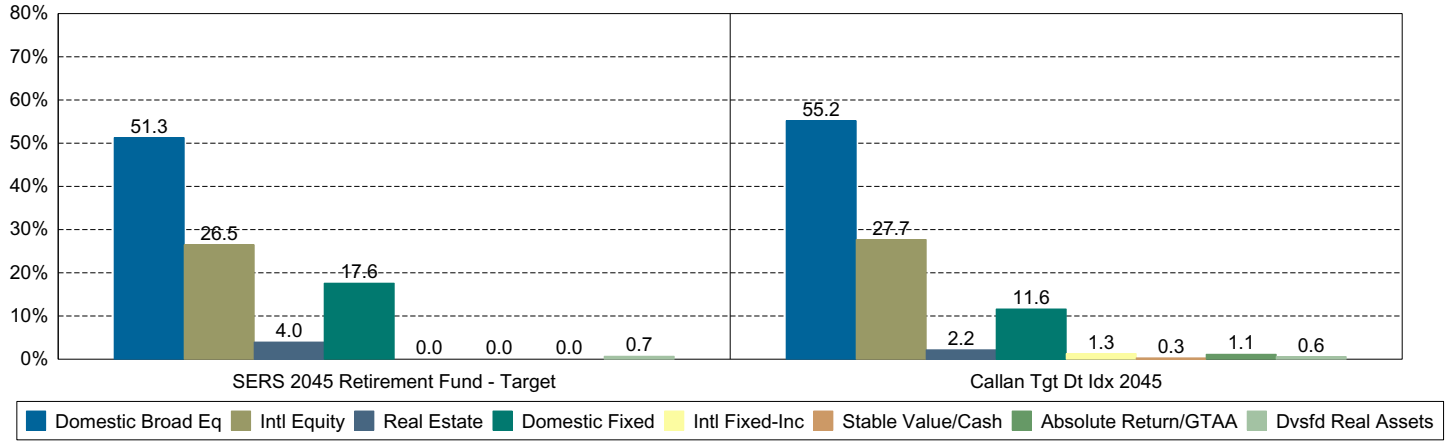


	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.88	0.47	0.62
25th Percentile	0.40	0.44	0.27
Median	0.06	0.42	(0.01)
75th Percentile	(0.29)	0.40	(0.30)
90th Percentile	(0.50)	0.38	(0.45)
<b>SERS 2040 Retirement Fund</b>	0.07	0.42	0.34

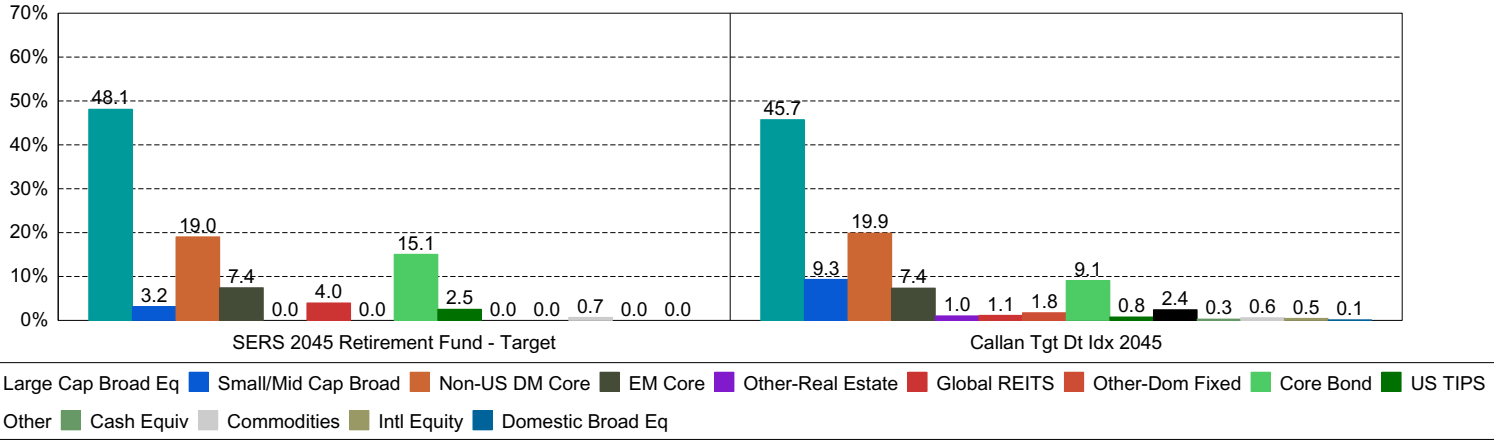
# SERS 2045 Retirement Fund Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.

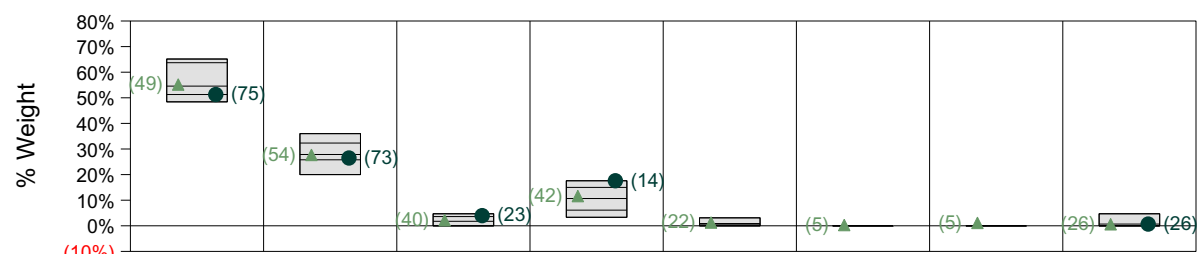
## Macro-Level Asset Allocation



## Micro-Level Asset Allocation



## Macro Asset Allocation Rankings vs. Callan Target Date 2045



	Domestic Broad Eq	Intl Equity	Real Estate	Domestic Fixed	Intl Fixed-Inc	Stable Value/Cash	Absolute Return/GTAA	Dvsfd Real Assets
10th Percentile	65.15	36.00	4.70	17.59	3.12	0.00	0.00	4.70
25th Percentile	63.71	32.32	3.60	15.00	0.88	0.00	0.00	0.68
Median	54.56	27.85	1.76	10.65	0.37	0.00	0.00	0.00
75th Percentile	51.28	25.78	0.00	6.12	0.00	0.00	0.00	0.00
90th Percentile	48.42	20.00	0.00	3.32	0.00	0.00	0.00	0.00
<b>SERS 2045 Retirement Fund - Target</b>	51.28	26.48	3.97	17.59	-	-	-	0.68
<b>Callan Tgt Dt Idx 2045</b>	55.19	27.69	2.17	11.61	1.28	0.30	1.14	0.60

# SERS 2045 Retirement Fund Period Ended March 31, 2024

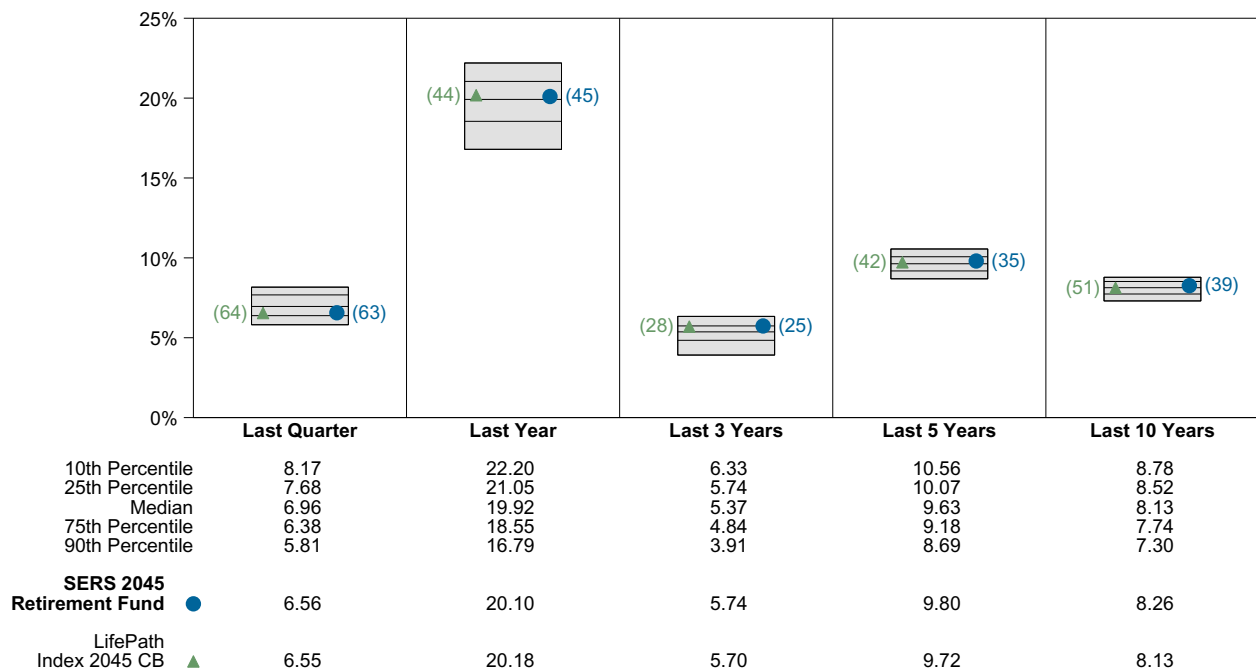
## Investment Philosophy

The BlackRock LifePath(R) Index 2045 Fund (the "Fund") seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. The Fund will be diversified across global asset classes, with allocations changing over the investment horizon to become more heavily oriented toward debt and debt-like securities, on the premise that individuals investing for retirement desire to reduce investment risk in their retirement accounts as their retirement date approaches.

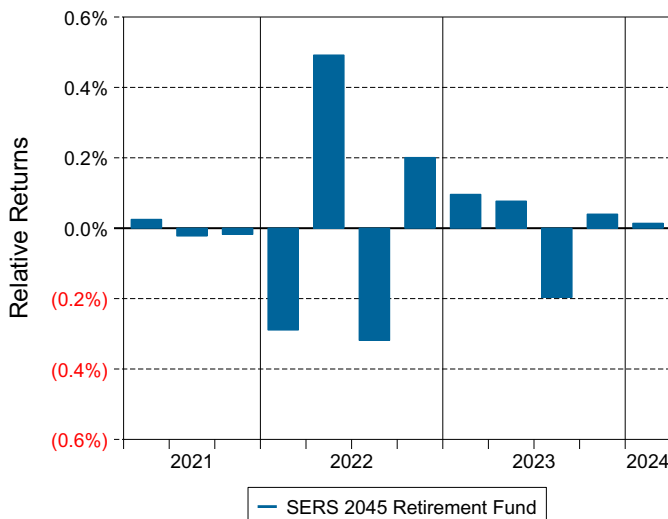
## Quarterly Summary and Highlights

- SERS 2045 Retirement Fund's portfolio posted a 6.56% return for the quarter placing it in the 63 percentile of the Callan Target Date 2045 group for the quarter and in the 45 percentile for the last year.
- SERS 2045 Retirement Fund's portfolio outperformed the LifePath Index 2045 CB by 0.01% for the quarter and underperformed the LifePath Index 2045 CB for the year by 0.08%.

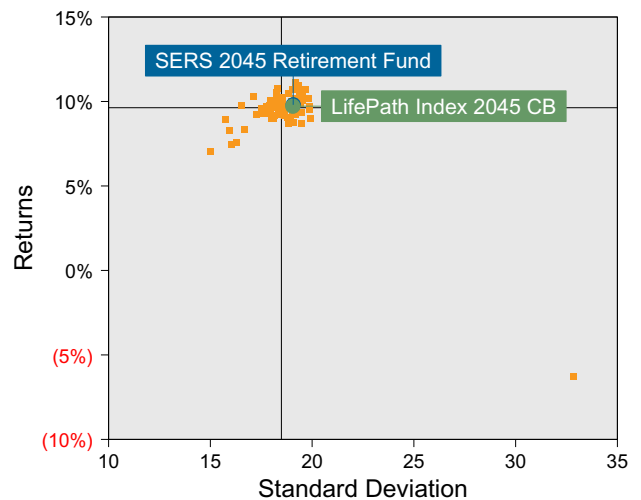
## Performance vs Callan Target Date 2045 (Net)



## Relative Return vs LifePath Index 2045 CB



## Callan Target Date 2045 (Net) Annualized Five Year Risk vs Return



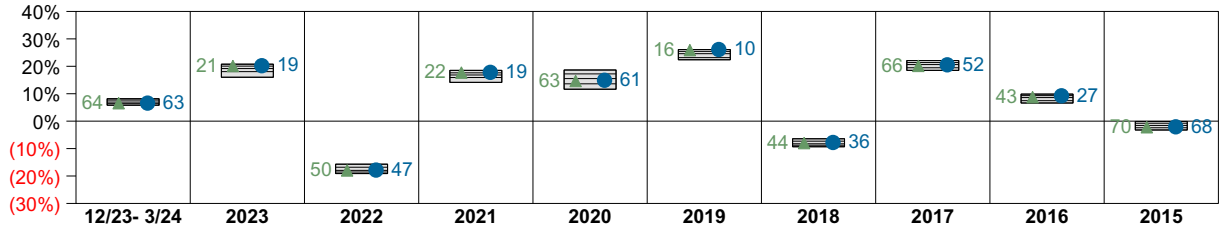


# SERS 2045 Retirement Fund Return Analysis Summary

## Return Analysis

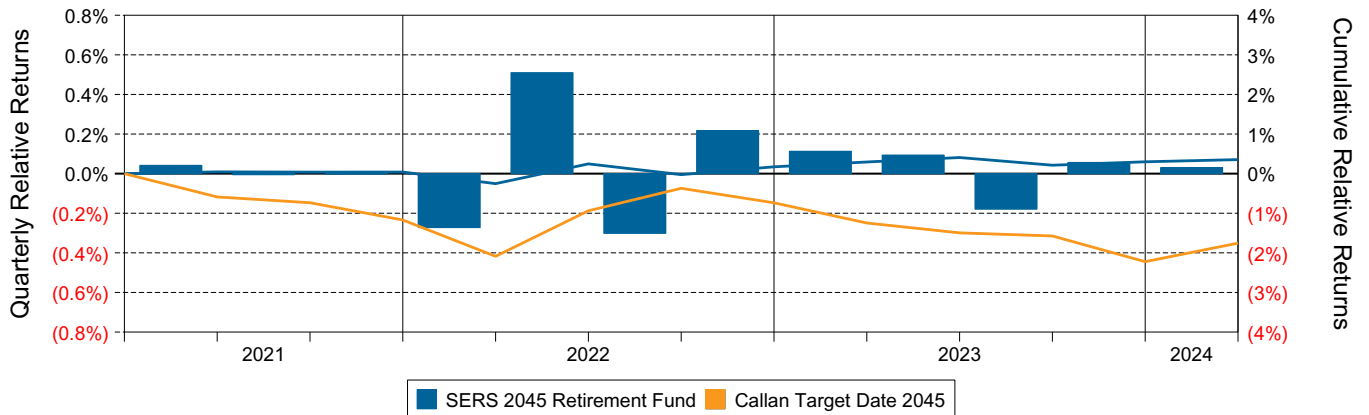
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

### Performance vs Callan Target Date 2045 (Net)

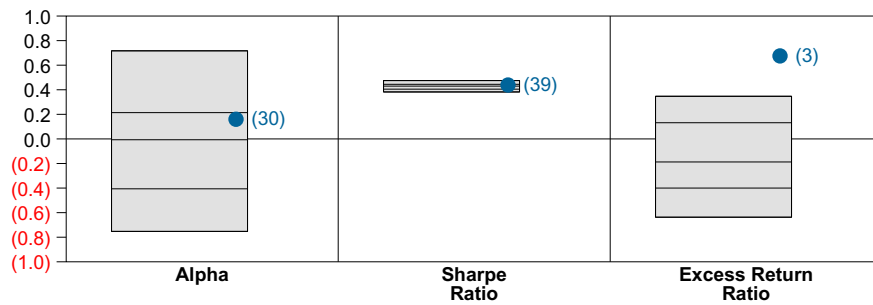


	12/23- 3/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
<b>SERS 2045 Retirement Fund</b>	6.58	20.22	(17.84)	17.79	14.90	26.12	(7.78)	20.54	9.25	(2.07)
LifePath Index 2045 CB	6.55	20.12	(17.96)	17.70	14.65	25.90	(7.99)	20.15	8.77	(2.22)

### Cumulative and Quarterly Relative Returns vs LifePath Index 2045 CB



### Risk Adjusted Return Measures vs LifePath Index 2045 CB Rankings Against Callan Target Date 2045 (Net) Seven Years Ended March 31, 2024



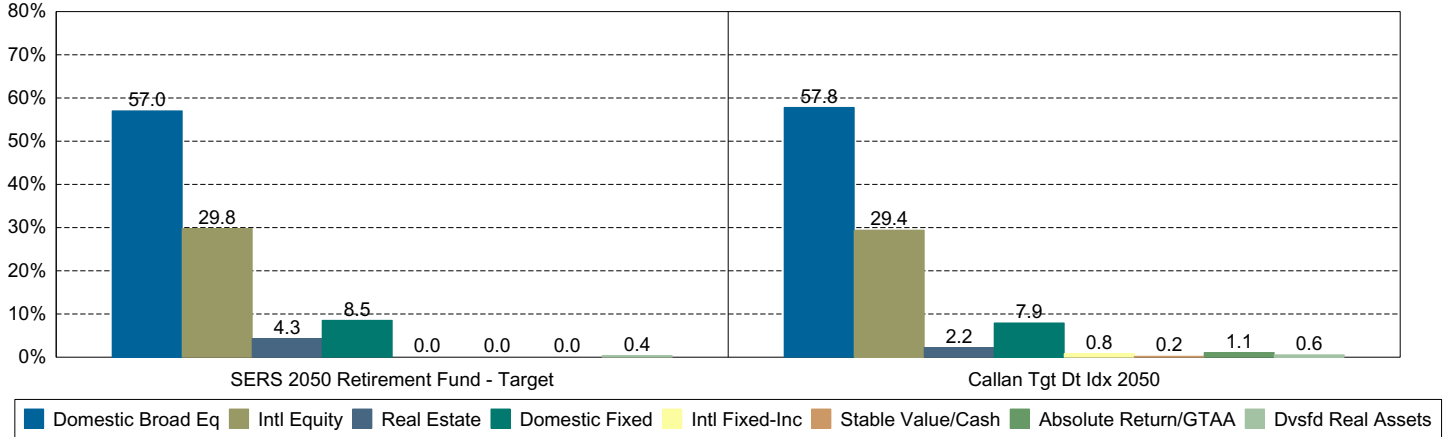
10th Percentile	0.72	0.47	0.35
25th Percentile	0.21	0.44	0.13
Median	(0.01)	0.43	(0.19)
75th Percentile	(0.41)	0.40	(0.40)
90th Percentile	(0.75)	0.38	(0.64)
<b>SERS 2045 Retirement Fund</b>	0.16	0.44	0.68

# SERS 2050 Retirement Fund

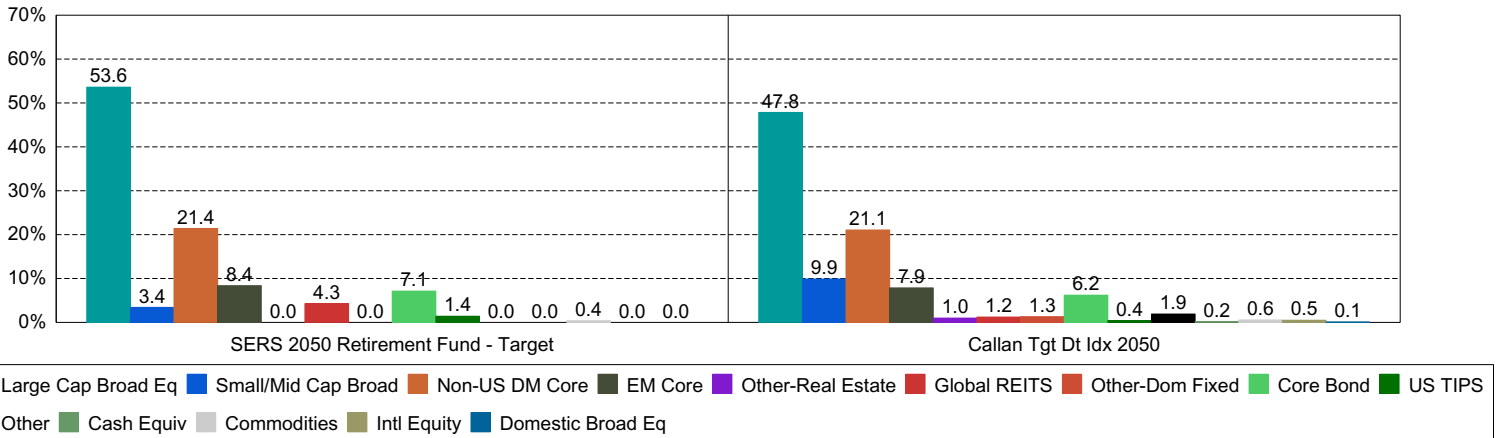
## Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.

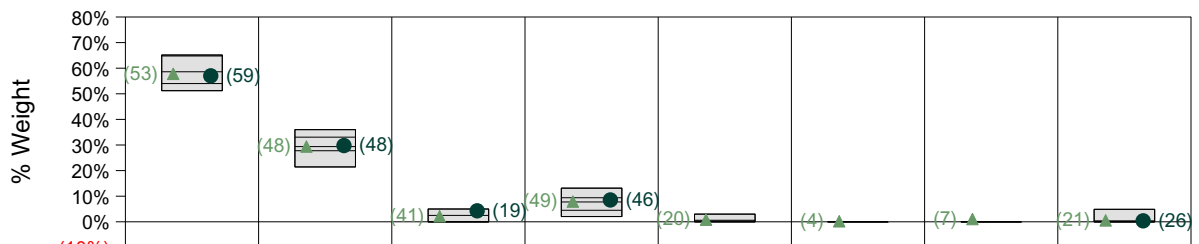
### Macro-Level Asset Allocation



### Micro-Level Asset Allocation



### Macro Asset Allocation Rankings vs. Callan Target Date 2050



	Domestic Broad Eq	Intl Equity	Real Estate	Domestic Fixed	Intl Fixed-Inc	Stable Value/Cash	Absolute Return/GTAA	Dvsfd Real Assets
10th Percentile	65.15	36.00	5.00	13.15	3.00	0.00	0.00	4.87
25th Percentile	64.77	33.06	2.50	9.40	0.60	0.00	0.00	0.38
Median	58.60	29.38	0.00	7.75	0.25	0.00	0.00	0.00
75th Percentile	54.00	27.76	0.00	4.50	0.00	0.00	0.00	0.00
90th Percentile	51.22	21.43	0.00	2.05	0.00	0.00	0.00	0.00

<b>SERS 2050 Retirement Fund - Target</b>	●	57.02	29.78	4.29	8.53	-	-	0.38
Callan Tgt Dt Idx 2050	▲	57.81	29.41	2.19	7.92	0.82	1.08	0.55

# SERS 2050 Retirement Fund Period Ended March 31, 2024

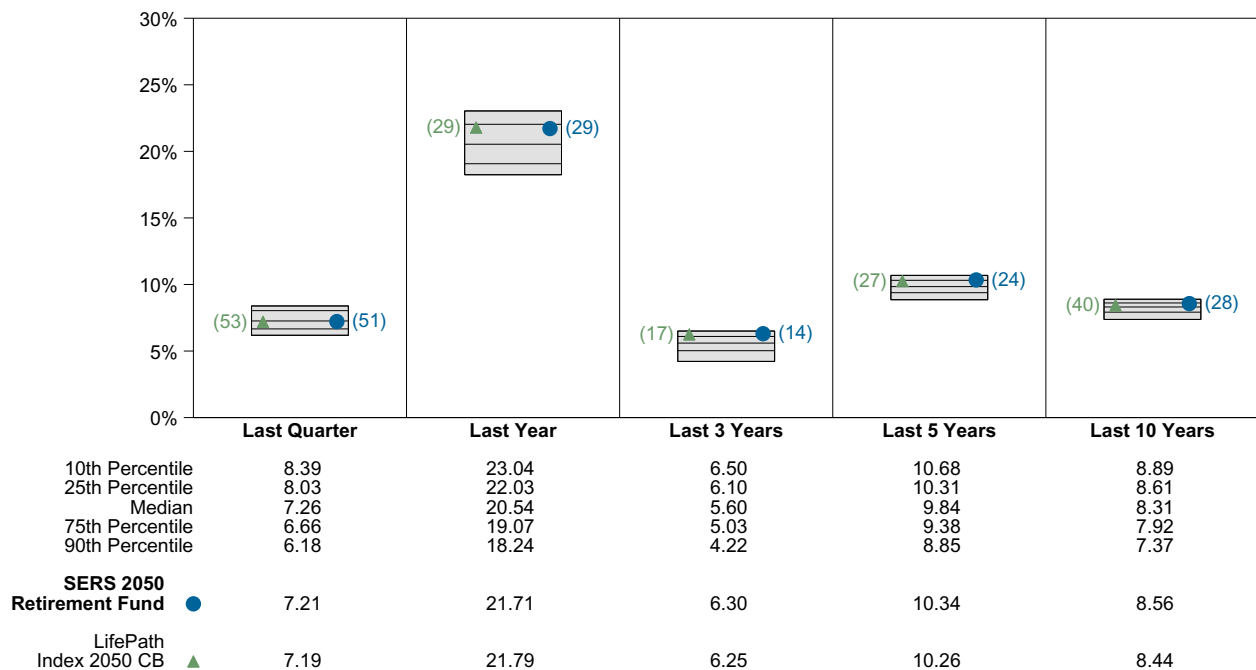
## Investment Philosophy

The BlackRock LifePath(R) Index 2050 Fund (the "Fund") seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. The Fund will be diversified across global asset classes, with allocations changing over the investment horizon to become more heavily oriented toward debt and debt-like securities, on the premise that individuals investing for retirement desire to reduce investment risk in their retirement accounts as their retirement date approaches.

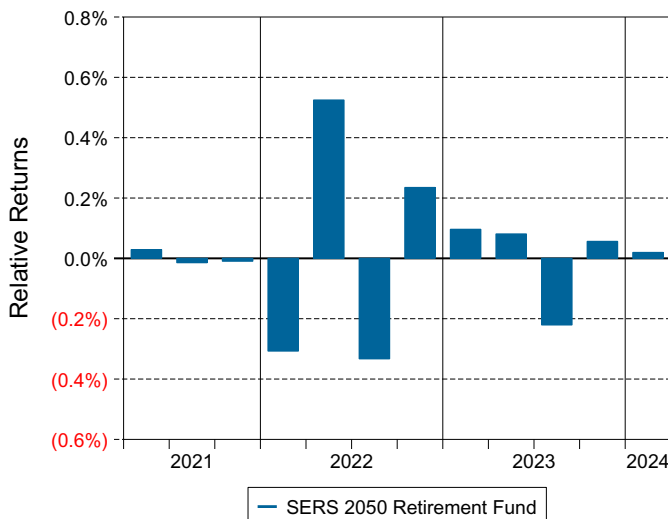
## Quarterly Summary and Highlights

- SERS 2050 Retirement Fund's portfolio posted a 7.21% return for the quarter placing it in the 51 percentile of the Callan Target Date 2050 group for the quarter and in the 29 percentile for the last year.
- SERS 2050 Retirement Fund's portfolio outperformed the LifePath Index 2050 CB by 0.02% for the quarter and underperformed the LifePath Index 2050 CB for the year by 0.08%.

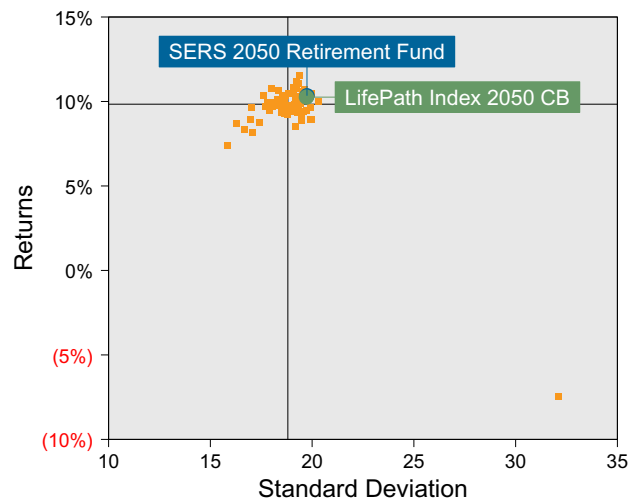
## Performance vs Callan Target Date 2050 (Net)



## Relative Return vs LifePath Index 2050 CB



## Callan Target Date 2050 (Net) Annualized Five Year Risk vs Return

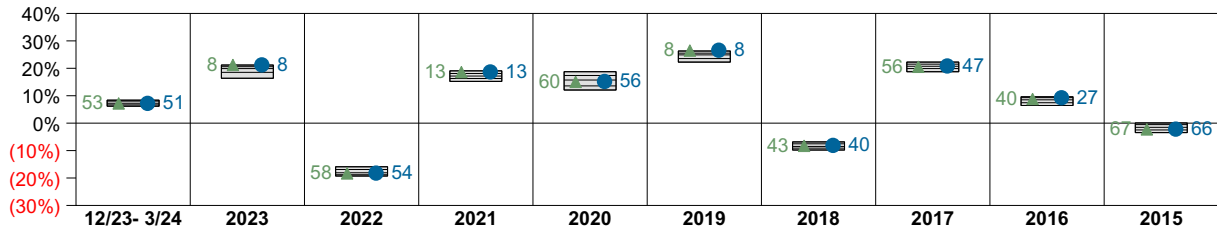


# SERS 2050 Retirement Fund Return Analysis Summary

## Return Analysis

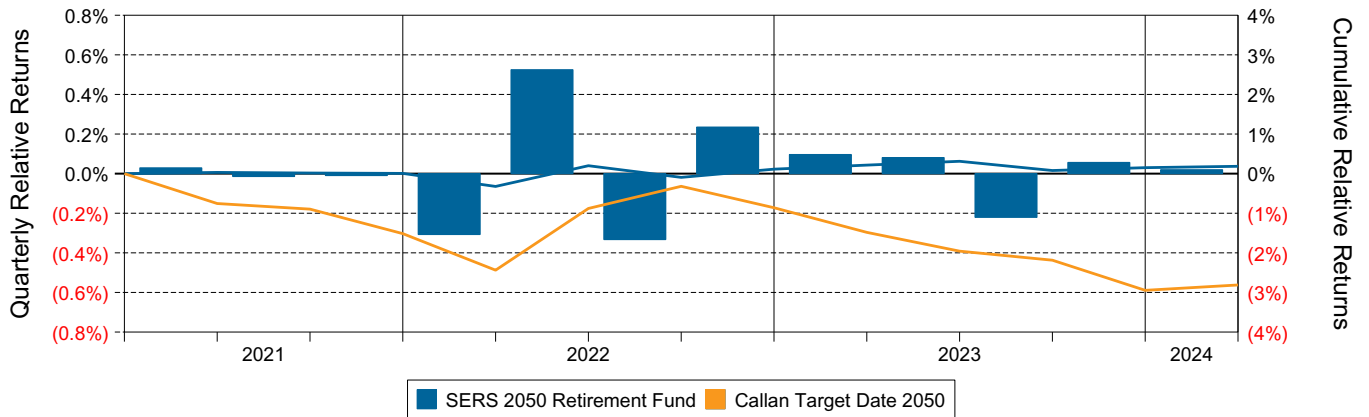
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

### Performance vs Callan Target Date 2050 (Net)

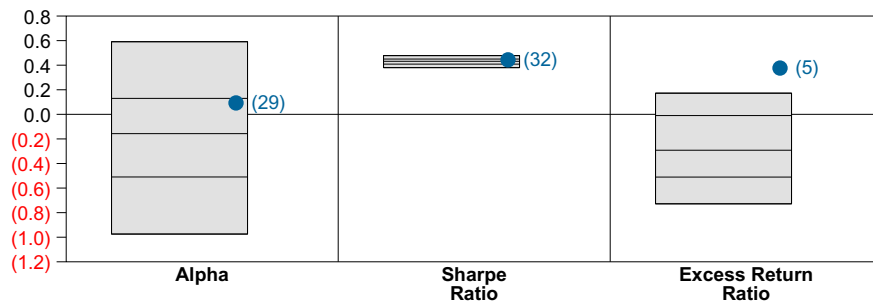


10th Percentile	8.39	21.18	(15.90)	19.07	18.76	26.30	(6.84)	22.27	9.60	0.05
25th Percentile	8.03	20.59	(16.89)	18.10	17.38	25.51	(7.53)	21.51	9.29	(0.54)
Median	7.26	19.89	(18.09)	17.17	15.73	24.89	(8.48)	20.74	8.51	(1.53)
75th Percentile	6.66	18.52	(18.80)	16.27	13.59	23.55	(9.11)	19.91	7.45	(2.48)
90th Percentile	6.18	16.36	(19.28)	15.23	12.08	22.26	(9.80)	18.75	6.44	(3.45)
<b>SERS 2050 Retirement Fund</b>	● 7.21	21.25	(18.20)	18.67	15.20	26.60	(8.11)	20.85	9.26	(2.17)
LifePath Index 2050 CB	▲ 7.19	21.23	(18.30)	18.62	15.07	26.48	(8.26)	20.55	8.82	(2.26)

### Cumulative and Quarterly Relative Returns vs LifePath Index 2050 CB



### Risk Adjusted Return Measures vs LifePath Index 2050 CB Rankings Against Callan Target Date 2050 (Net) Seven Years Ended March 31, 2024

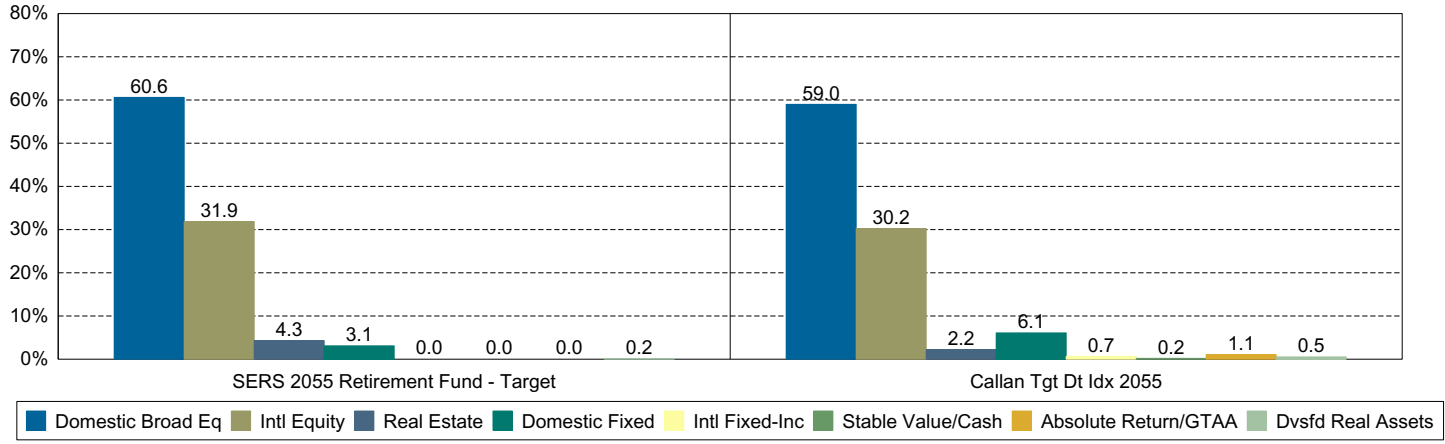


10th Percentile	0.59	0.48	0.17
25th Percentile	0.13	0.45	(0.01)
Median	(0.16)	0.43	(0.29)
75th Percentile	(0.51)	0.41	(0.51)
90th Percentile	(0.97)	0.38	(0.73)
<b>SERS 2050 Retirement Fund</b>	● 0.09	0.44	0.38

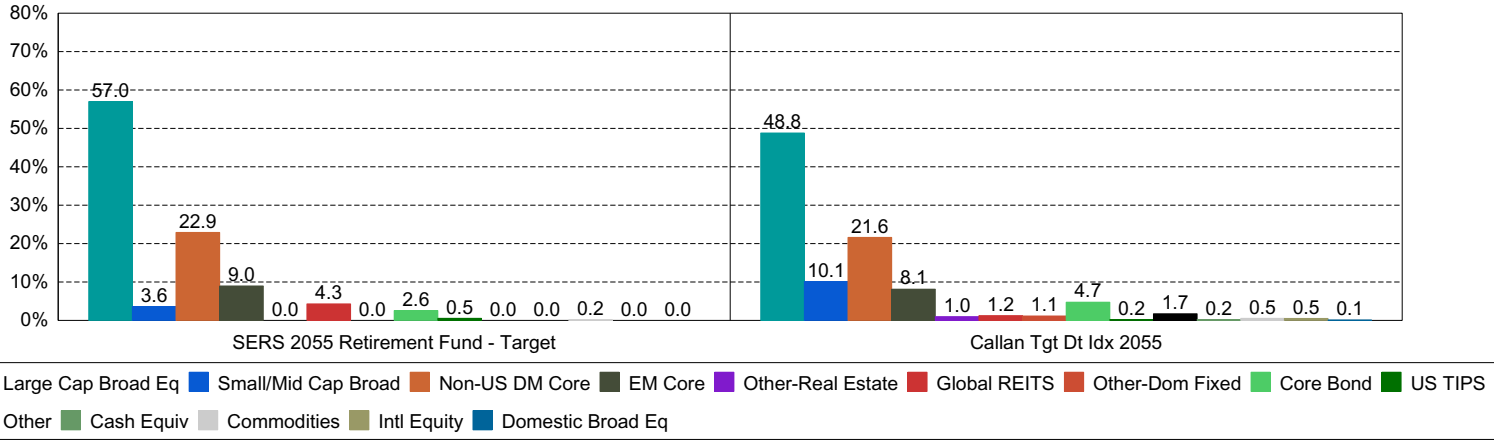
# SERS 2055 Retirement Fund Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.

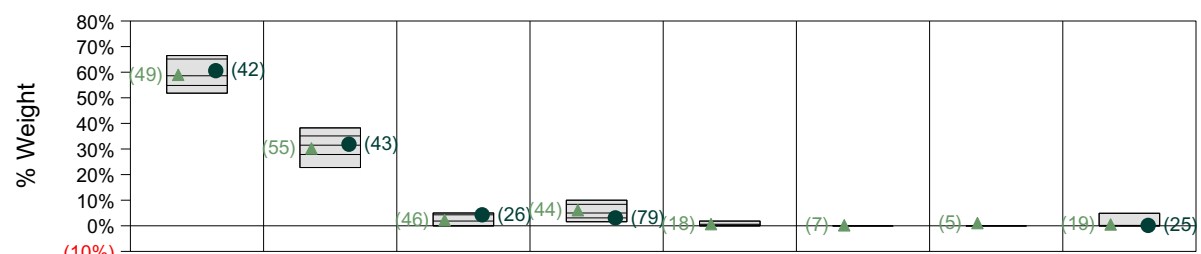
## Macro-Level Asset Allocation



## Micro-Level Asset Allocation



## Macro Asset Allocation Rankings vs. Callan Target Date 2055



	Domestic Broad Eq	Intl Equity	Real Estate	Domestic Fixed	Intl Fixed-Inc	Stable Value/Cash	Absolute Return/GTAA	Dvsfd Real Assets
10th Percentile	66.50	38.25	5.00	10.00	1.84	0.00	0.00	4.90
25th Percentile	65.15	35.10	4.29	8.39	0.60	0.00	0.00	0.16
Median	58.60	31.49	1.85	5.00	0.25	0.00	0.00	0.00
75th Percentile	54.82	27.85	0.00	3.09	0.00	0.00	0.00	0.00
90th Percentile	51.80	22.76	0.00	1.58	0.00	0.00	0.00	0.00
<b>SERS 2055 Retirement Fund - Target</b>	● 60.60	31.86	4.29	3.09	-	-	-	0.16
Callan Tgt Dt Idx 2055	▲ 58.99	30.24	2.22	6.09	0.66	0.20	1.06	0.53

# SERS 2055 Retirement Fund Period Ended March 31, 2024

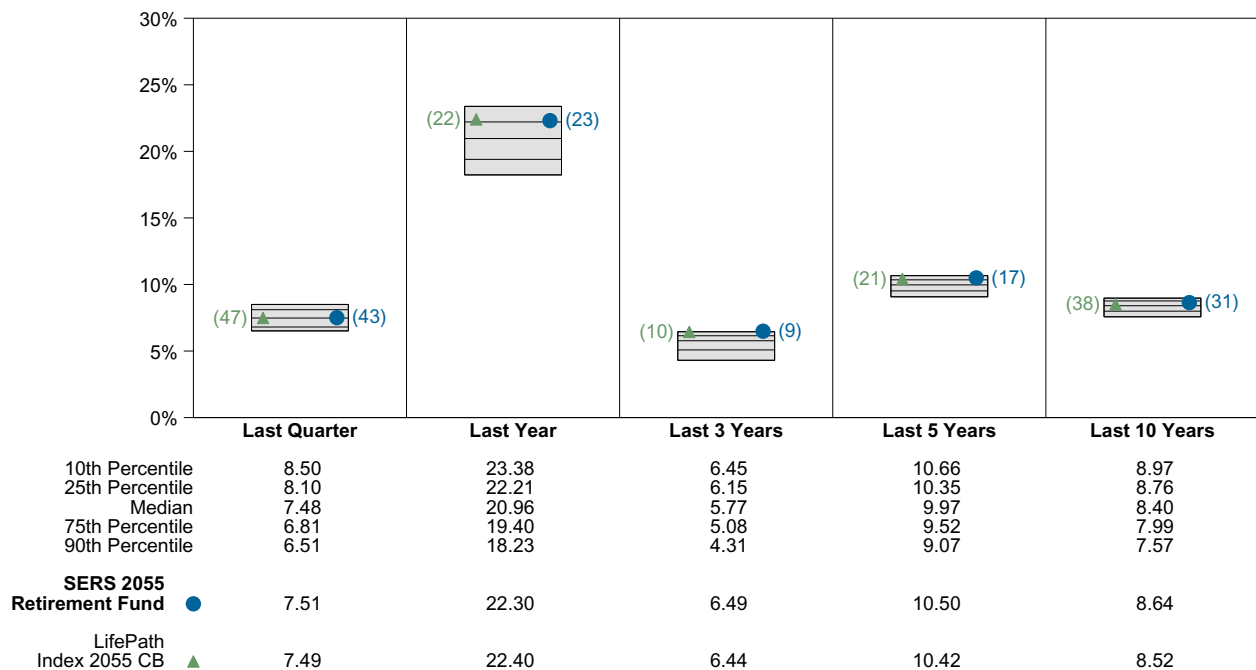
## Investment Philosophy

The BlackRock LifePath(R) Index 2055 Fund (the "Fund") seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. The Fund will be diversified across global asset classes, with allocations changing over the investment horizon to become more heavily oriented toward debt and debt-like securities, on the premise that individuals investing for retirement desire to reduce investment risk in their retirement accounts as their retirement date approaches.

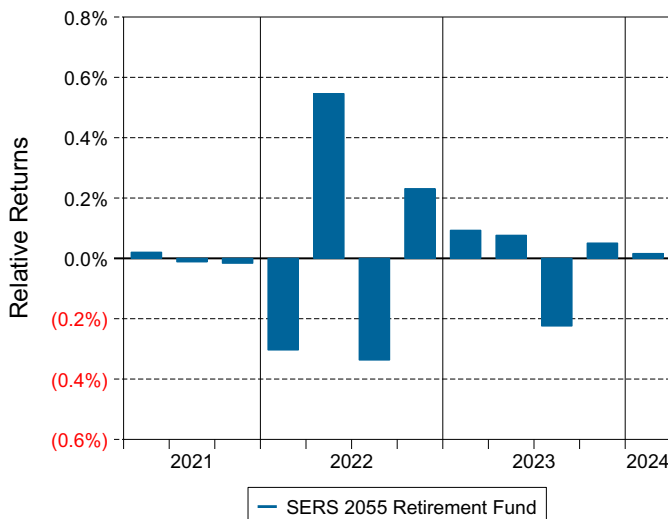
## Quarterly Summary and Highlights

- SERS 2055 Retirement Fund's portfolio posted a 7.51% return for the quarter placing it in the 43 percentile of the Callan Target Date 2055 group for the quarter and in the 23 percentile for the last year.
- SERS 2055 Retirement Fund's portfolio outperformed the LifePath Index 2055 CB by 0.02% for the quarter and underperformed the LifePath Index 2055 CB for the year by 0.10%.

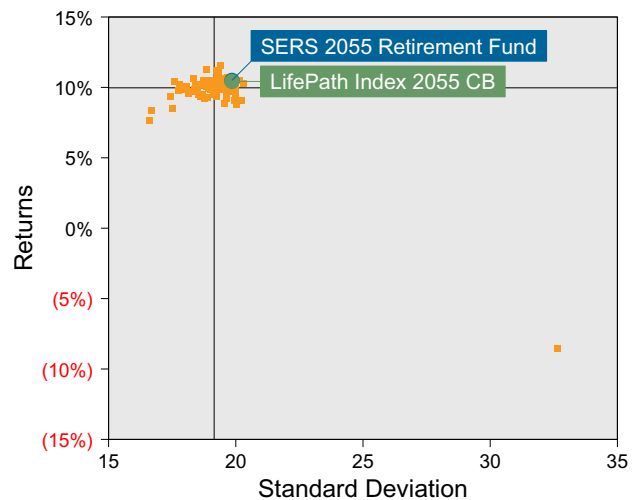
## Performance vs Callan Target Date 2055 (Net)



## Relative Return vs LifePath Index 2055 CB



## Callan Target Date 2055 (Net) Annualized Five Year Risk vs Return

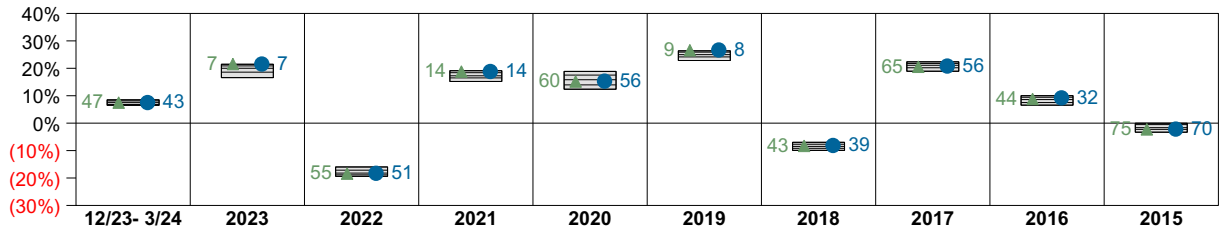


# SERS 2055 Retirement Fund Return Analysis Summary

## Return Analysis

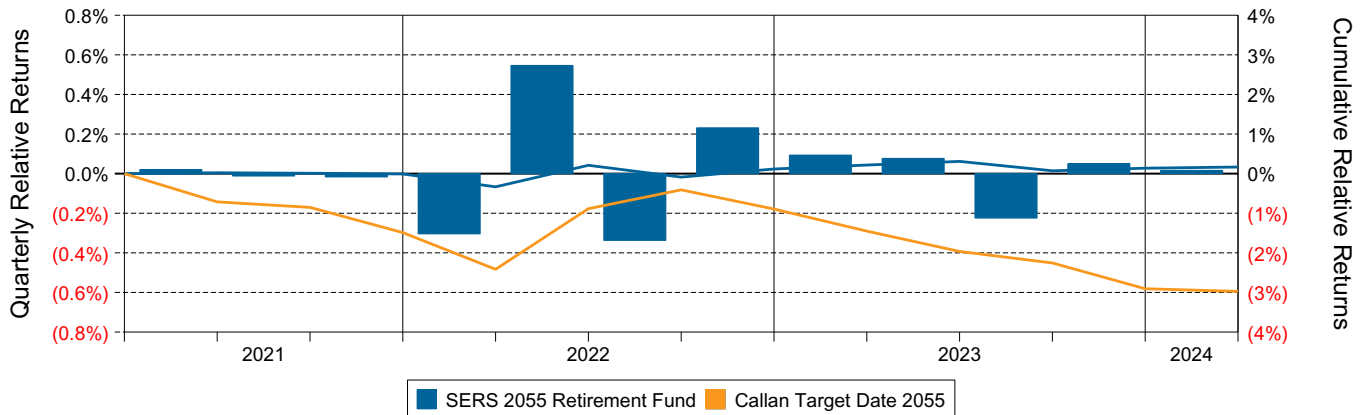
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

### Performance vs Callan Target Date 2055 (Net)

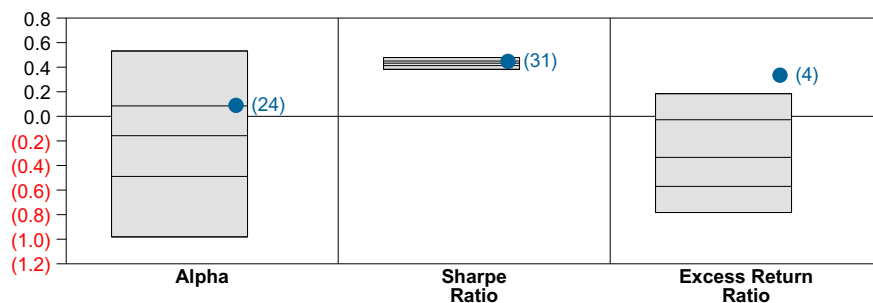


	12/23- 3/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	8.50	21.47	(15.97)	19.12	18.86	26.37	(6.99)	22.36	10.01	(0.05)
25th Percentile	8.10	20.87	(17.15)	18.40	17.52	25.90	(7.69)	21.77	9.44	(0.53)
Median	7.48	20.02	(18.21)	17.27	15.83	24.97	(8.47)	21.10	8.60	(1.64)
75th Percentile	6.81	18.60	(18.85)	16.50	13.95	24.15	(9.18)	20.20	7.51	(2.26)
90th Percentile	6.51	16.60	(19.38)	15.20	12.37	22.84	(9.93)	18.92	6.55	(3.30)
<b>SERS 2055 Retirement Fund</b>	● 7.51	21.56	(18.27)	18.83	15.32	26.67	(8.13)	20.82	9.22	(2.17)
LifePath Index 2055 CB	▲ 7.49	21.56	(18.38)	18.81	15.18	26.58	(8.28)	20.55	8.82	(2.26)

### Cumulative and Quarterly Relative Returns vs LifePath Index 2055 CB



### Risk Adjusted Return Measures vs LifePath Index 2055 CB Rankings Against Callan Target Date 2055 (Net) Seven Years Ended March 31, 2024



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.53	0.48	0.18
25th Percentile	0.08	0.45	(0.03)
Median	(0.16)	0.43	(0.33)
75th Percentile	(0.49)	0.41	(0.57)
90th Percentile	(0.98)	0.38	(0.78)
<b>SERS 2055 Retirement Fund</b>	● 0.09	0.45	0.33

# SERS 2060 Retirement Fund Period Ended March 31, 2024

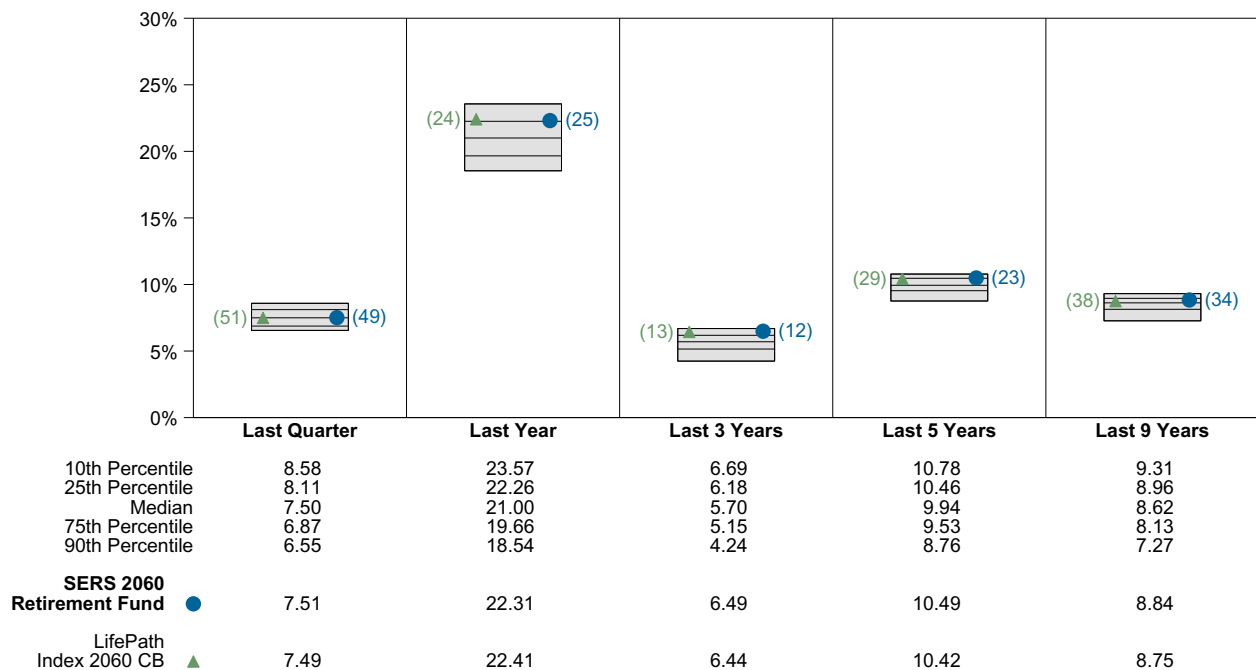
## Investment Philosophy

The BlackRock LifePath(R) Index 2060 Fund (the "Fund") seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. The Fund will be diversified across global asset classes, with allocations changing over the investment horizon to become more heavily oriented toward debt and debt-like securities, on the premise that individuals investing for retirement desire to reduce investment risk in their retirement accounts as their retirement date approaches.

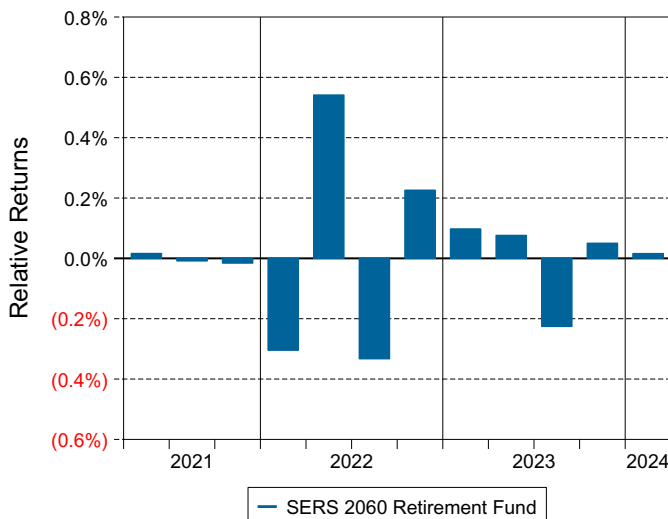
## Quarterly Summary and Highlights

- SERS 2060 Retirement Fund's portfolio posted a 7.51% return for the quarter placing it in the 49 percentile of the Callan Target Date 2060 group for the quarter and in the 25 percentile for the last year.
- SERS 2060 Retirement Fund's portfolio outperformed the LifePath Index 2060 CB by 0.02% for the quarter and underperformed the LifePath Index 2060 CB for the year by 0.10%.

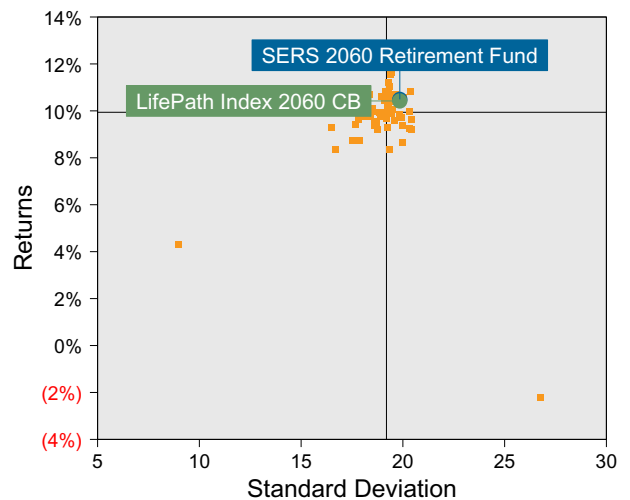
## Performance vs Callan Target Date 2060 (Net)



## Relative Return vs LifePath Index 2060 CB



## Callan Target Date 2060 (Net) Annualized Five Year Risk vs Return



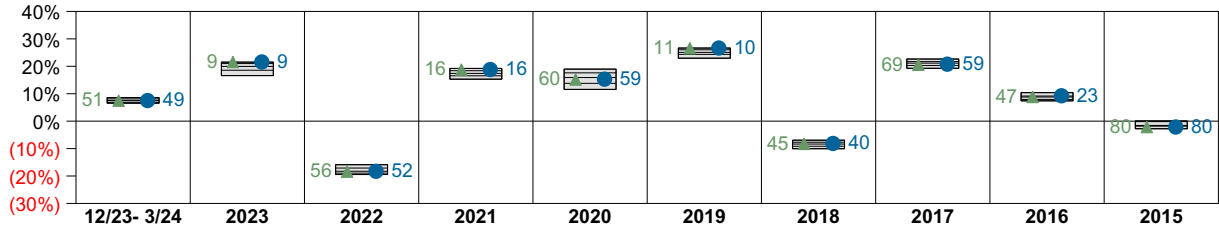


# SERS 2060 Retirement Fund Return Analysis Summary

## Return Analysis

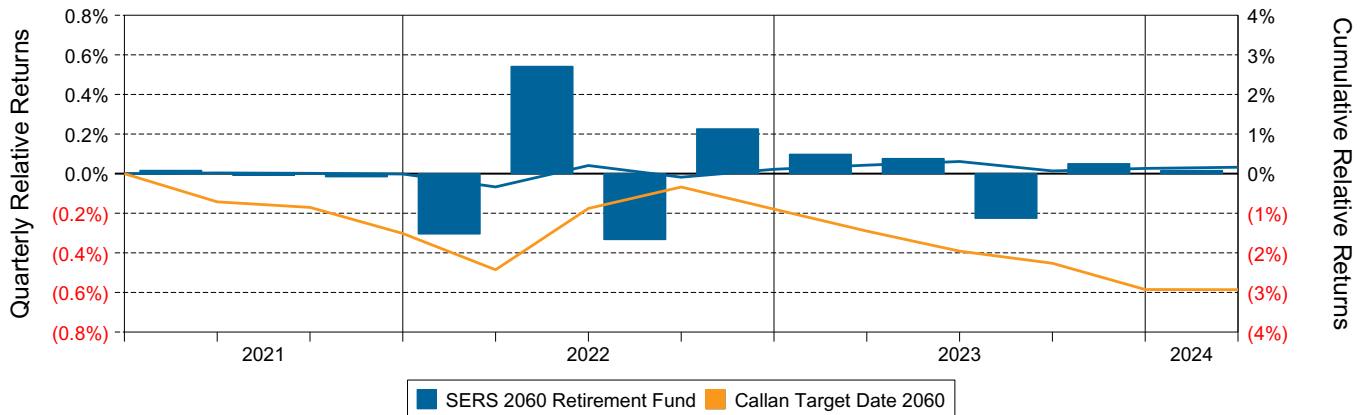
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

### Performance vs Callan Target Date 2060 (Net)

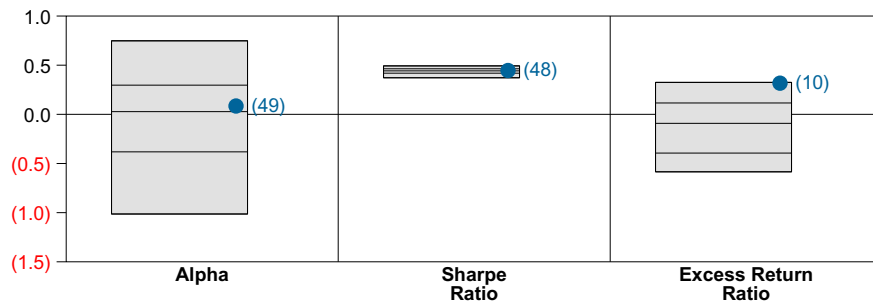


	12/23- 3/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
<b>SERS 2060 Retirement Fund</b>	7.51	21.57	(18.28)	18.82	15.31	26.66	(8.14)	20.77	9.25	(2.14)
LifePath Index 2060 CB	7.49	21.57	(18.39)	18.81	15.19	26.58	(8.28)	20.55	8.82	(2.16)

### Cumulative and Quarterly Relative Returns vs LifePath Index 2060 CB



### Risk Adjusted Return Measures vs LifePath Index 2060 CB Rankings Against Callan Target Date 2060 (Net) Nine Years Ended March 31, 2024



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.75	0.49	0.33
25th Percentile	0.30	0.46	0.12
Median	0.03	0.44	(0.09)
75th Percentile	(0.38)	0.42	(0.39)
90th Percentile	(1.01)	0.37	(0.58)
<b>SERS 2060 Retirement Fund</b>	0.08	0.45	0.32

# SERS 2065 Retirement Fund Period Ended March 31, 2024

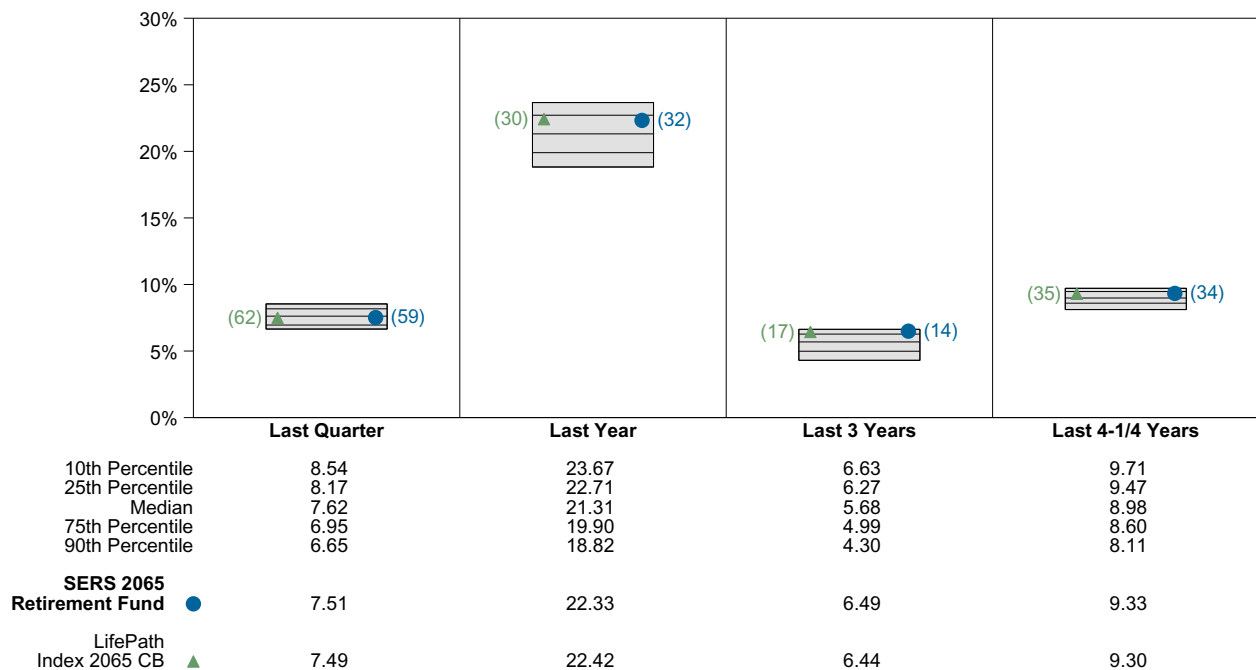
## Investment Philosophy

The BlackRock LifePath(R) Index 2065 Fund (the "Fund") seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. The Fund will be diversified across global asset classes, with allocations changing over the investment horizon to become more heavily oriented toward debt and debt-like securities, on the premise that individuals investing for retirement desire to reduce investment risk in their retirement accounts as their retirement date approaches.

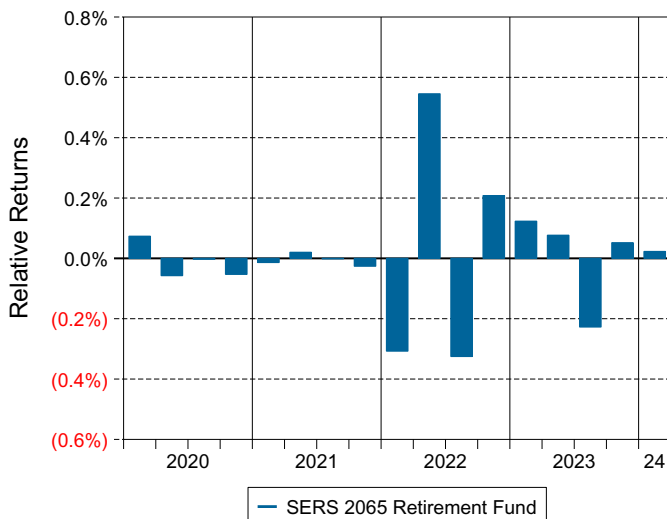
## Quarterly Summary and Highlights

- SERS 2065 Retirement Fund's portfolio posted a 7.51% return for the quarter placing it in the 59 percentile of the Callan Target Date 2065 group for the quarter and in the 32 percentile for the last year.
- SERS 2065 Retirement Fund's portfolio outperformed the LifePath Index 2065 CB by 0.02% for the quarter and underperformed the LifePath Index 2065 CB for the year by 0.09%.

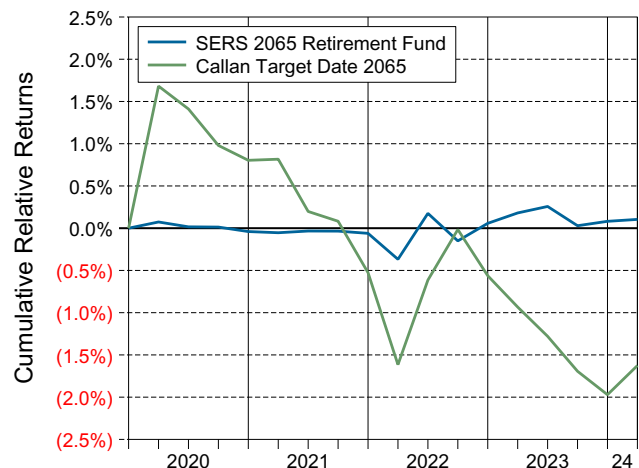
## Performance vs Callan Target Date 2065 (Net)



## Relative Return vs LifePath Index 2065 CB



## Cumulative Returns vs LifePath Index 2065 CB





# SERS U.S. Large Company Index Period Ended March 31, 2024

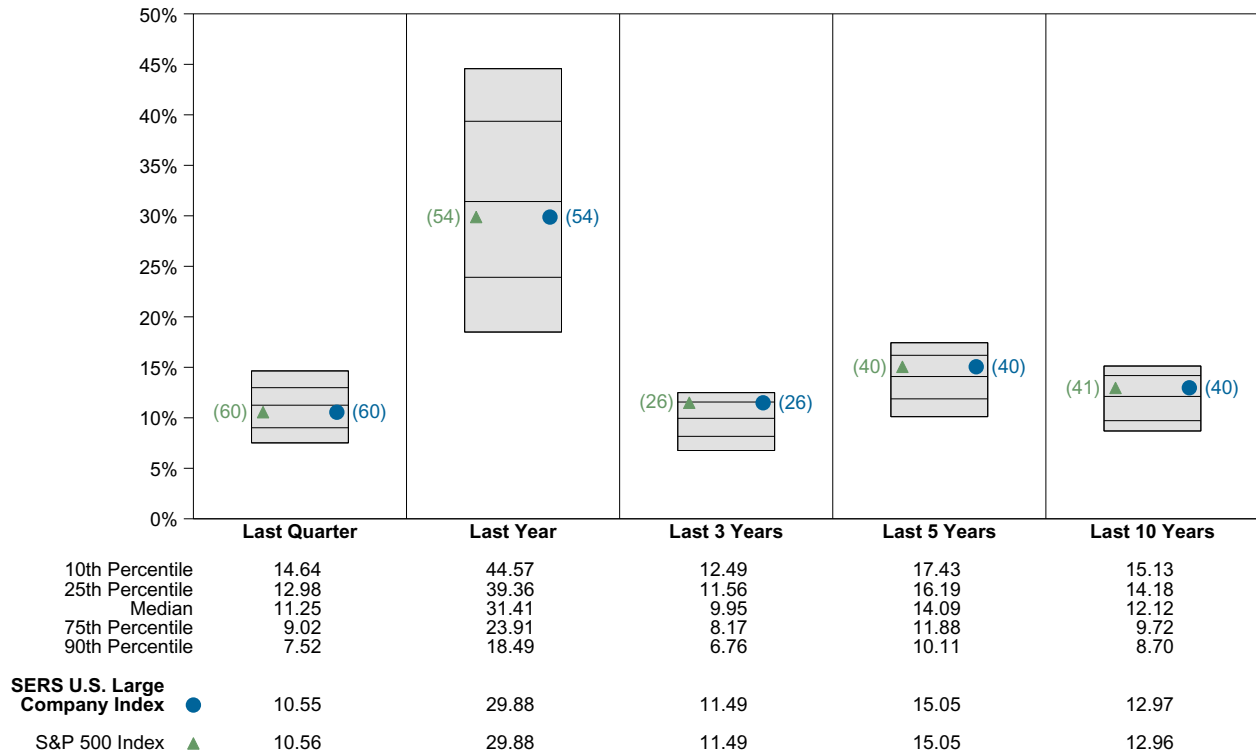
## Investment Philosophy

The strategy seeks to replicate the performance and characteristics of the S&P 500 Index with minimal tracking error. Mellon Capital uses full replication to construct the portfolio, holding each security in the index in its proportionate weight. This fund is managed by Mellon Capital Management.

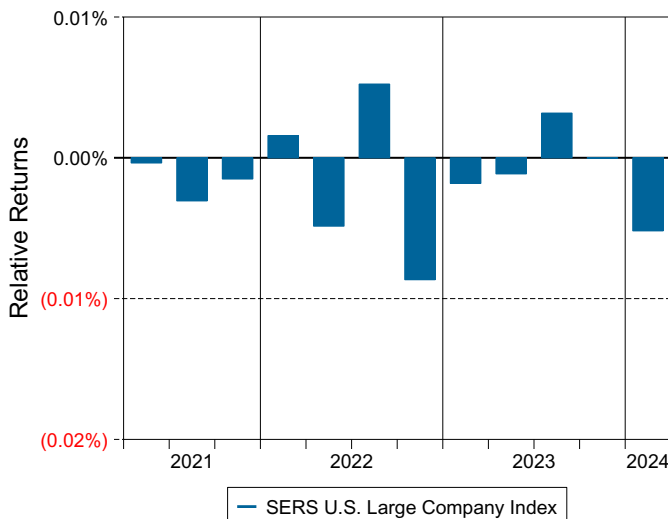
## Quarterly Summary and Highlights

- SERS U.S. Large Company Index's portfolio posted a 10.55% return for the quarter placing it in the 60 percentile of the Callan Large Cap Broad Equity Mut Funds group for the quarter and in the 54 percentile for the last year.
- SERS U.S. Large Company Index's portfolio underperformed the S&P 500 Index by 0.01% for the quarter and underperformed the S&P 500 Index for the year by 0.00%.

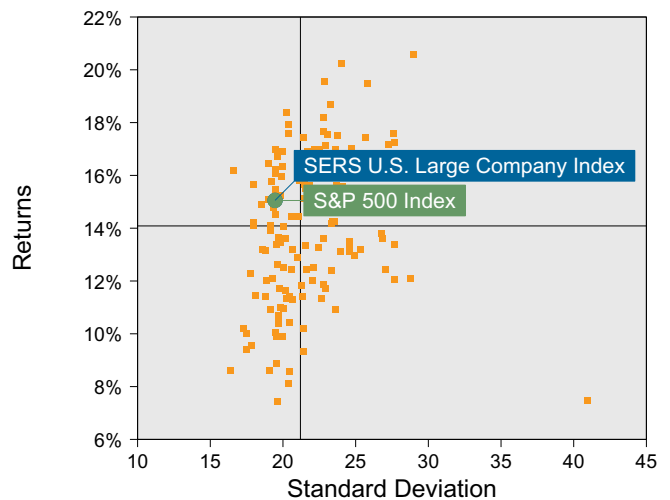
## Performance vs Callan Large Cap Broad Equity Mut Funds (Institutional Net)



## Relative Return vs S&P 500 Index



## Callan Large Cap Broad Equity Mut Funds (Institutional Net) Annualized Five Year Risk vs Return

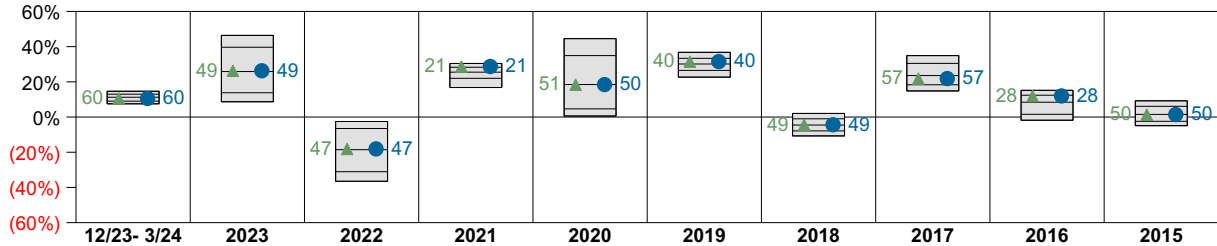


# SERS U.S. Large Company Index Return Analysis Summary

## Return Analysis

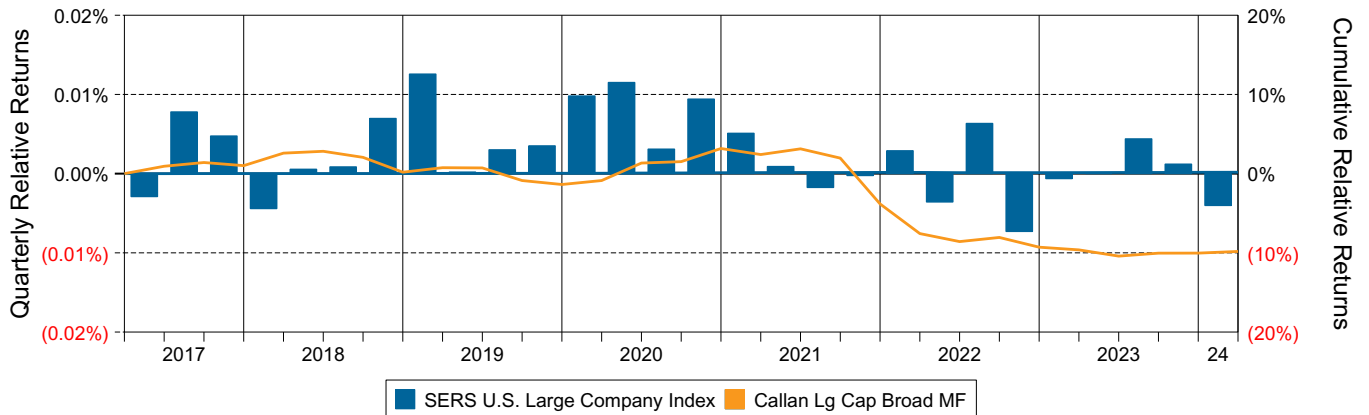
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

### Performance vs Callan Large Cap Broad Equity Mut Funds (Institutional Net)

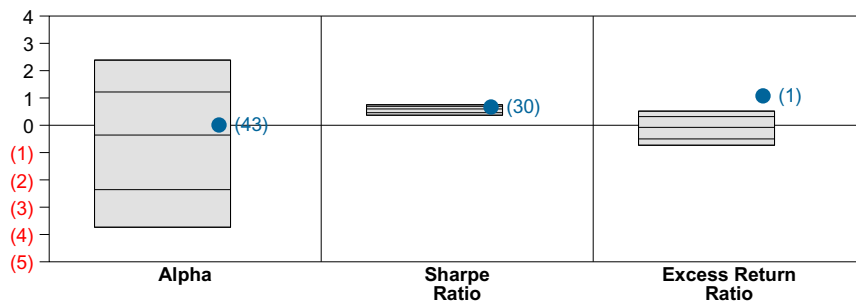


	12/23- 3/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	14.64	46.39	(2.53)	30.44	44.54	36.76	2.05	34.91	15.17	9.23
25th Percentile	12.98	39.67	(6.52)	28.29	34.90	33.34	(1.00)	30.48	12.39	6.09
Median	11.25	25.85	(18.55)	25.50	18.47	30.14	(4.54)	23.56	8.43	1.50
75th Percentile	9.02	13.80	(31.06)	22.00	4.64	26.51	(7.86)	18.33	1.56	(2.42)
90th Percentile	7.52	8.68	(36.52)	16.77	0.58	22.66	(10.72)	14.82	(1.82)	(4.91)
<b>SERS U.S. Large Company Index</b>	● 10.55	26.29	(18.11)	28.71	18.44	31.51	(4.38)	21.85	11.99	1.41
S&P 500 Index	▲ 10.56	26.29	(18.11)	28.71	18.40	31.49	(4.38)	21.83	11.96	1.38

### Cumulative and Quarterly Relative Returns vs S&P 500 Index



### Risk Adjusted Return Measures vs S&P 500 Index Rankings Against Callan Large Cap Broad Equity Mut Funds (Institutional Net) Seven Years Ended March 31, 2024



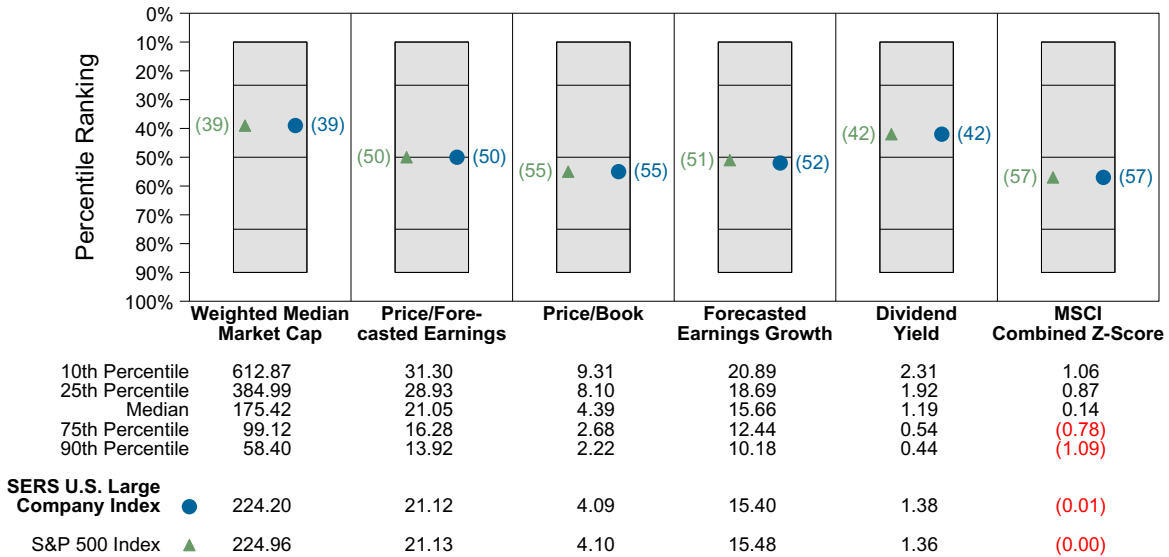
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	2.39	0.75	0.52
25th Percentile	1.22	0.69	0.32
Median	(0.36)	0.60	(0.08)
75th Percentile	(2.36)	0.46	(0.50)
90th Percentile	(3.73)	0.37	(0.73)
<b>SERS U.S. Large Company Index</b>	● 0.01	0.67	1.08

# SERS U.S. Large Company Index Equity Characteristics Analysis Summary

## Portfolio Characteristics

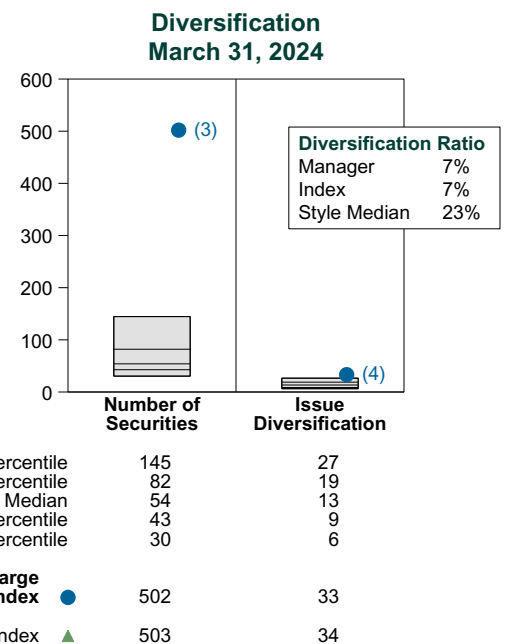
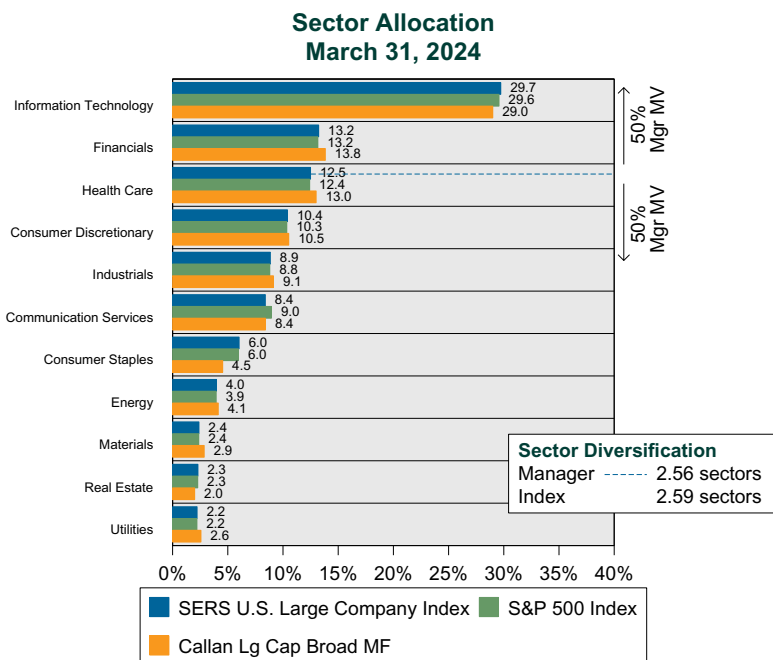
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Broad Equity Mut Funds as of March 31, 2024



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.



## SERS U.S. Large Company Index Top 10 Portfolio Holdings Characteristics as of March 31, 2024

### 10 Largest Holdings

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Microsoft Corp	Information Technology	\$622,693	7.1%	12.09%	3126.13	32.52	0.71%	17.08%
Apple Inc	Information Technology	\$495,836	5.7%	(10.82)%	2647.97	24.99	0.56%	11.00%
Nvidia Corp	Information Technology	\$444,539	5.1%	82.46%	2258.90	35.53	0.02%	37.90%
Amazon.Com	Consumer Discretionary	\$328,410	3.8%	18.72%	1873.67	41.05	0.00%	10.21%
Meta Platforms Inc	Communication Services	\$212,809	2.4%	37.33%	1068.30	23.35	0.41%	26.00%
Alphabet Inc Cl A	Communication Services	\$177,178	2.0%	8.05%	889.43	21.35	0.00%	19.30%
Berkshire Hathaway Inc Del Cl B New	Financials	\$152,413	1.7%	17.91%	551.22	22.45	0.00%	13.69%
Alphabet Inc Cl C	Communication Services	\$149,645	1.7%	8.04%	863.47	21.59	0.00%	19.30%
Lilly (Eli) & Co	Health Care	\$123,578	1.4%	33.69%	739.66	55.89	0.67%	49.75%
Broadcom Ltd Shs	Information Technology	\$116,186	1.3%	19.23%	614.22	25.94	1.58%	14.40%

### 10 Best Performers

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Super Micro Computer Inc	Information Technology	\$9,798	0.1%	255.32%	59.14	35.26	0.00%	48.20%
Nvidia Corp	Information Technology	\$444,539	5.1%	82.46%	2258.90	35.53	0.02%	37.90%
Constellation Energy Stock	Utilities	\$11,758	0.1%	58.45%	58.25	24.52	0.76%	-
Deckers Outdoor Corp	Consumer Discretionary	\$4,802	0.1%	40.82%	24.16	31.13	0.00%	19.00%
Micron Technology Inc	Information Technology	\$25,935	0.3%	38.28%	130.55	25.05	0.39%	(2.62)%
General Electric Co	Industrials	\$38,055	0.4%	37.53%	191.90	35.20	0.18%	37.33%
Meta Platforms Inc	Communication Services	\$212,809	2.4%	37.33%	1068.30	23.35	0.41%	26.00%
Marathon Pete Corp	Energy	\$14,746	0.2%	36.50%	72.61	12.42	1.64%	(9.00)%
Disney Walt Co Com Disney	Communication Services	\$44,710	0.5%	35.52%	224.45	24.16	0.49%	18.53%
Lilly (Eli) & Co	Health Care	\$123,578	1.4%	33.69%	739.66	55.89	0.67%	49.75%

### 10 Worst Performers

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Tesla Mtrs Inc	Consumer Discretionary	\$97,027	1.1%	(29.25)%	559.85	55.45	0.00%	15.30%
Boeing Co	Industrials	\$22,032	0.3%	(25.96)%	117.75	173.40	0.00%	252.20%
Charter Communications Inc N Cl A	Communication Services	\$5,724	0.1%	(25.23)%	46.87	8.30	0.00%	12.70%
Marketaxess Hldgs Inc	Financials	\$1,660	0.0%	(24.88)%	8.31	29.19	1.35%	9.28%
Lululemon Athletica Inc	Consumer Discretionary	\$8,941	0.1%	(24.74)%	47.23	27.12	0.00%	12.30%
Humana	Health Care	\$8,474	0.1%	(24.07)%	41.80	18.84	1.02%	4.90%
Warner Bros Discovery Inc	Communication Services	\$3,843	0.0%	(23.29)%	21.30	(28.81)	0.00%	(19.16)%
Insulet Corp	Health Care	\$2,419	0.0%	(21.01)%	11.99	53.76	0.00%	18.10%
Viacomcbs Inc Cl B	Communication Services	\$1,145	0.0%	(20.07)%	7.20	10.14	1.70%	43.40%
Vf Corp	Consumer Discretionary	\$977	0.0%	(17.95)%	5.96	11.27	2.35%	0.90%

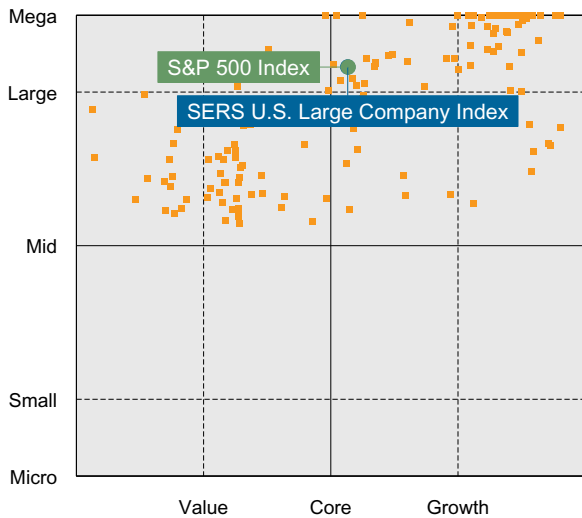
# Historical Holdings Based Style Analysis

## SERS U.S. Large Company Index

### For Three Years Ended March 31, 2024

This page analyzes the historical investment style of a portfolio utilizing a detailed holdings-based style analysis to determine average actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization segments are dictated by capitalization decile breakpoints. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the average historical market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the average historical portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The next two style exposure charts illustrate the actual quarterly cap/style and style only segment exposures of the portfolio through history.

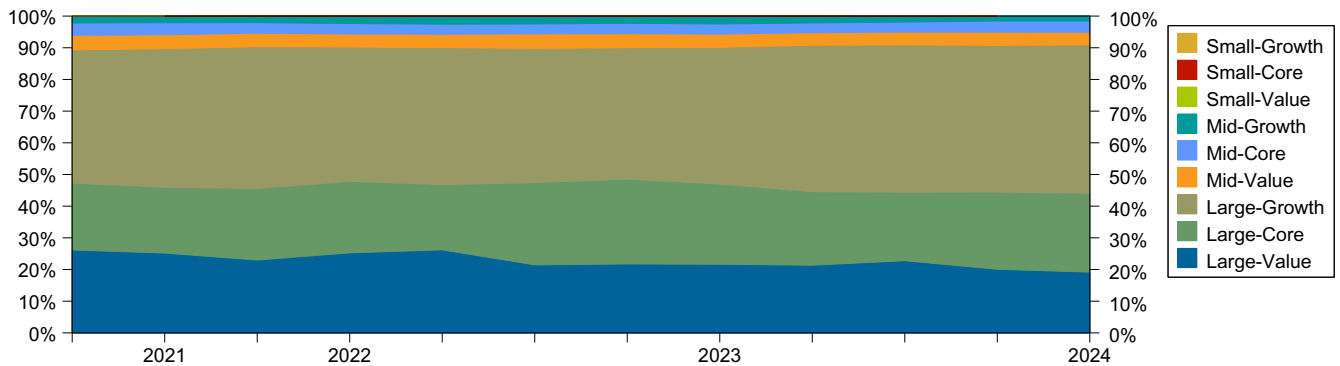
**Average Style Map vs Callan Lg Cap Broad MF Holdings for Three Years Ended March 31, 2024**



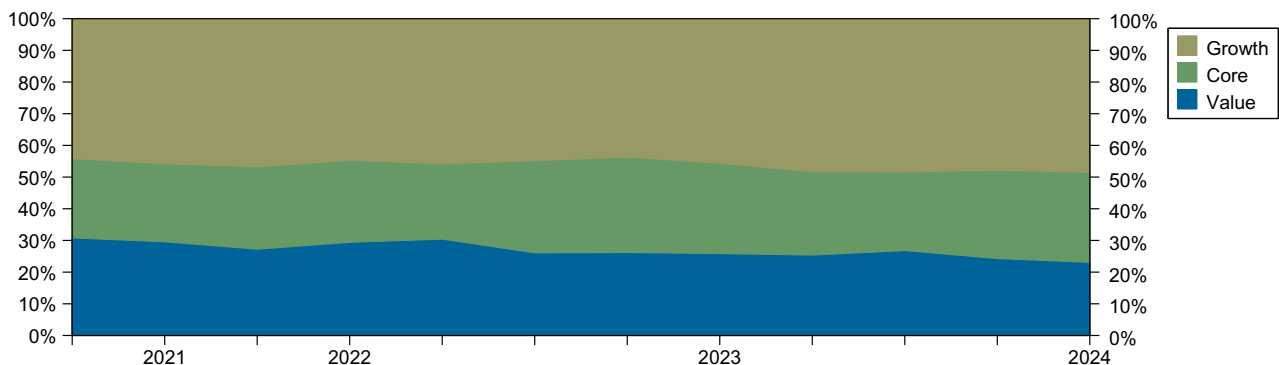
**Average Style Exposure Matrix Holdings for Three Years Ended March 31, 2024**

	Value	Core	Growth	Total
Large	22.8% (98)	23.3% (92)	44.1% (84)	<b>90.3% (274)</b>
Mid	4.2% (103)	3.4% (78)	2.1% (44)	<b>9.7% (225)</b>
Small	0.0% (3)	0.0% (2)	0.0% (0)	<b>0.0% (5)</b>
Micro	0.0% (0)	0.0% (0)	0.0% (0)	<b>0.0% (0)</b>
<b>Total</b>	<b>27.1% (204)</b>	<b>26.7% (172)</b>	<b>46.2% (128)</b>	<b>100.0% (504)</b>

**SERS U.S. Large Company Index Historical Cap/Style Exposures**



**SERS U.S. Large Company Index Historical Style Only Exposures**





# SERS U.S. All Company Index Fund

## Period Ended March 31, 2024

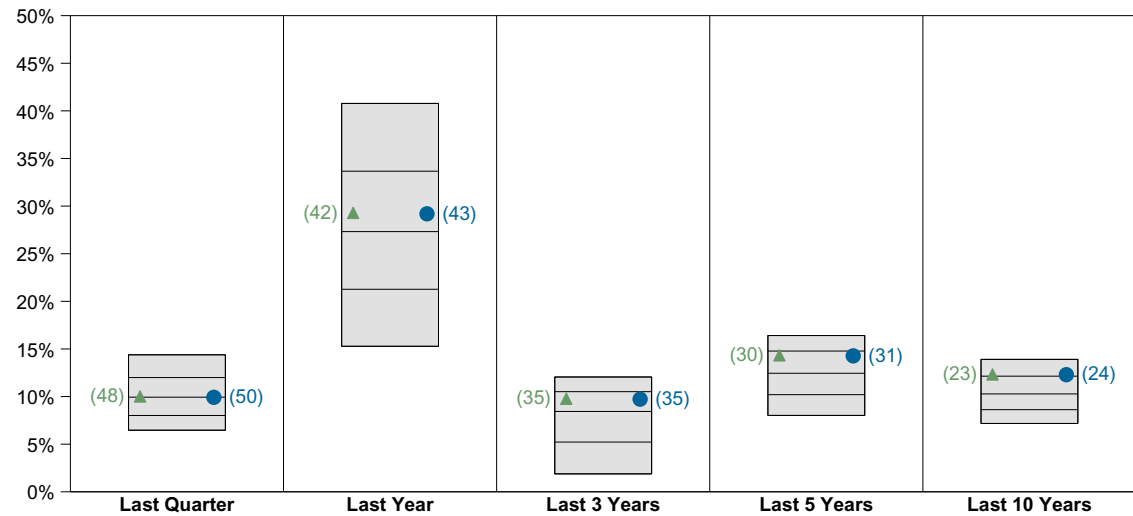
### Investment Philosophy

The U.S. All Company Stock Index Fund's Investment objective is to track the performance of the Russell 3000 index. In meeting this objective, the Fund may invest in securities and a combination of other collective funds that together are designed to track the performance of the Index. The Fund will principally invest in other affiliated bank collective funds and equity securities, including common stock of U.S. companies. This fund is managed by Mellon Capital Management.

### Quarterly Summary and Highlights

- SERS U.S. All Company Index Fund's portfolio posted a 9.92% return for the quarter placing it in the 50 percentile of the Callan Multi Cap Broad Mutual Funds group for the quarter and in the 43 percentile for the last year.
- SERS U.S. All Company Index Fund's portfolio underperformed the Russell 3000 Index by 0.10% for the quarter and underperformed the Russell 3000 Index for the year by 0.10%.

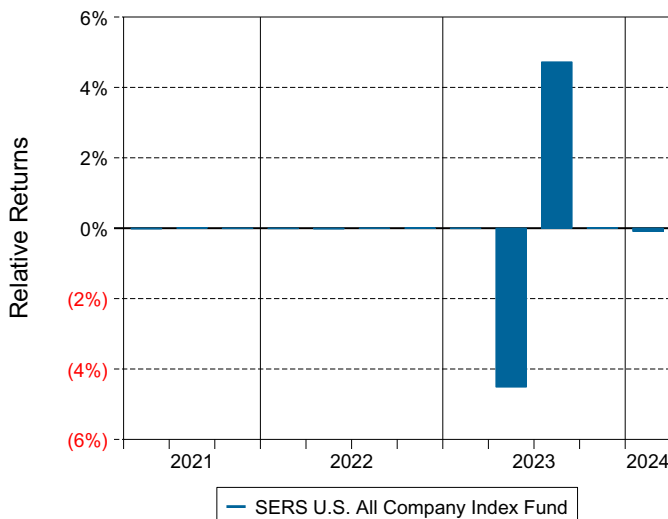
### Performance vs Callan Multi Cap Broad Mutual Funds (Institutional Net)



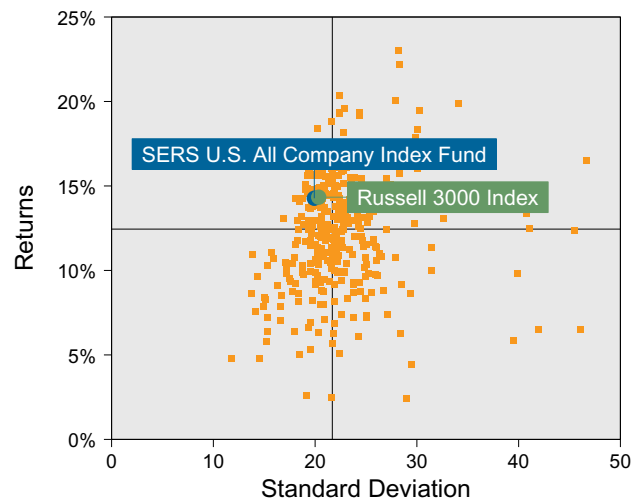
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	14.39	40.78	12.05	16.41	13.91
25th Percentile	12.00	33.66	10.52	14.78	12.14
Median	9.93	27.32	8.44	12.45	10.28
75th Percentile	8.01	21.27	5.22	10.20	8.63
90th Percentile	6.46	15.28	1.88	8.02	7.17

		Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
<b>SERS U.S. All Company Index Fund</b>	●	9.92	29.19	9.73	14.27	12.30
Russell 3000 Index	▲	10.02	29.29	9.78	14.34	12.33

### Relative Return vs Russell 3000 Index



### Callan Multi Cap Broad Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return

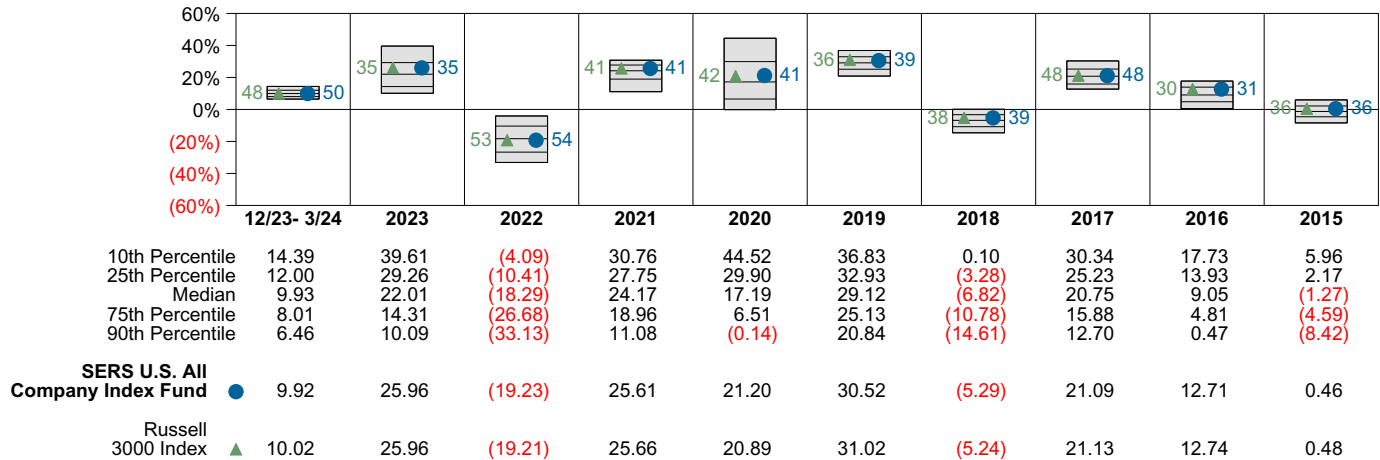


# SERS U.S. All Company Index Fund Return Analysis Summary

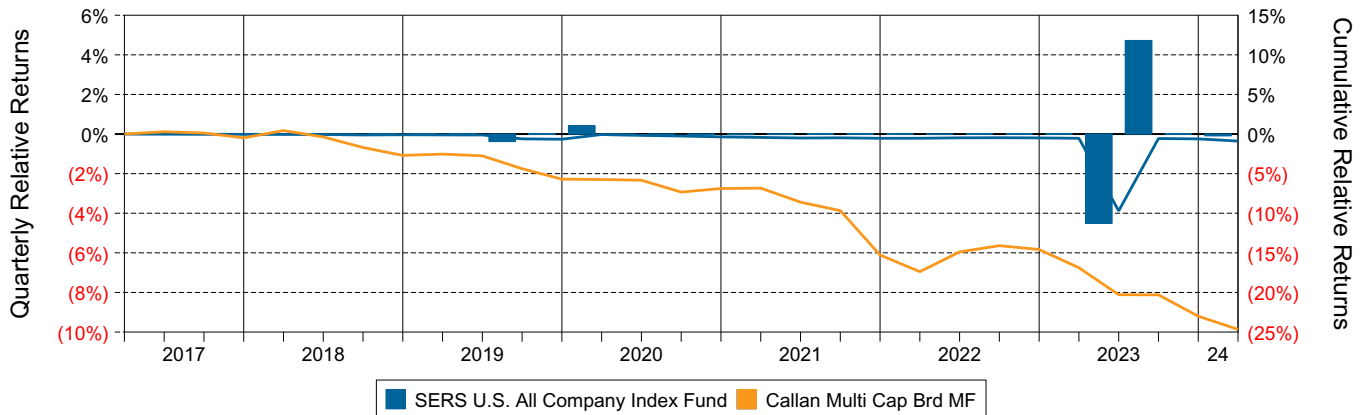
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

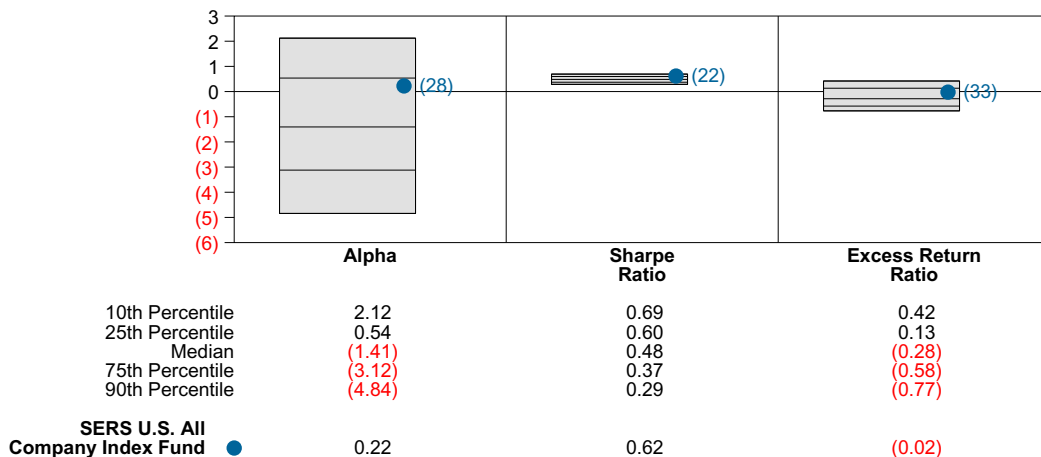
### Performance vs Callan Multi Cap Broad Mutual Funds (Institutional Net)



### Cumulative and Quarterly Relative Returns vs Russell 3000 Index



### Risk Adjusted Return Measures vs Russell 3000 Index Rankings Against Callan Multi Cap Broad Mutual Funds (Institutional Net) Seven Years Ended March 31, 2024

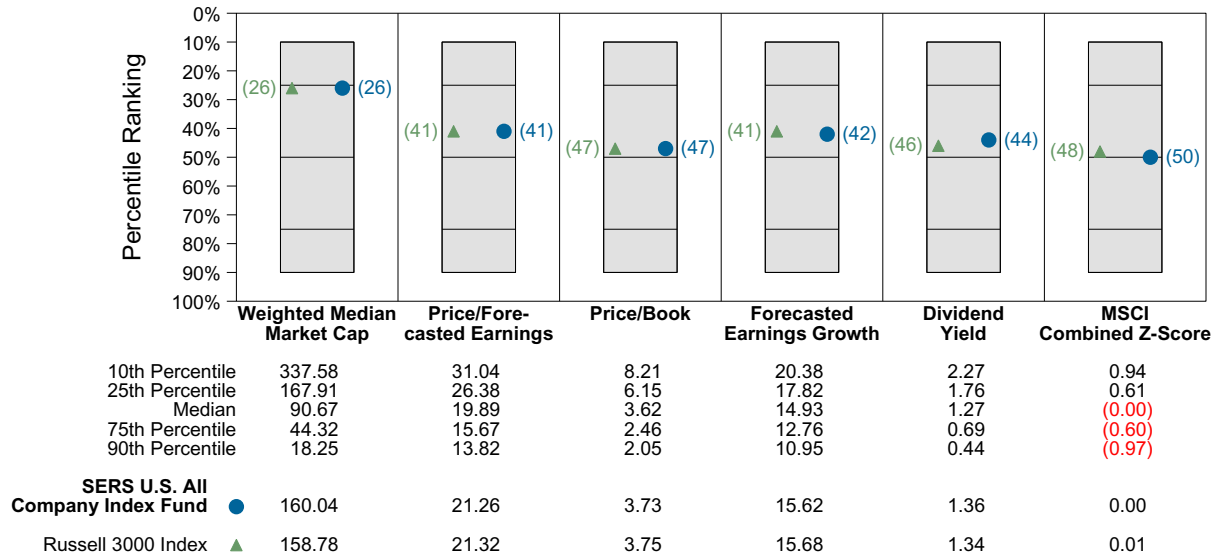


# SERS U.S. All Company Index Fund Equity Characteristics Analysis Summary

## Portfolio Characteristics

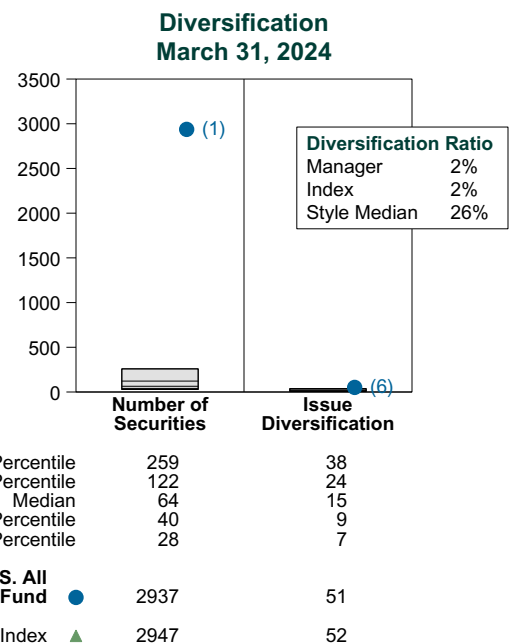
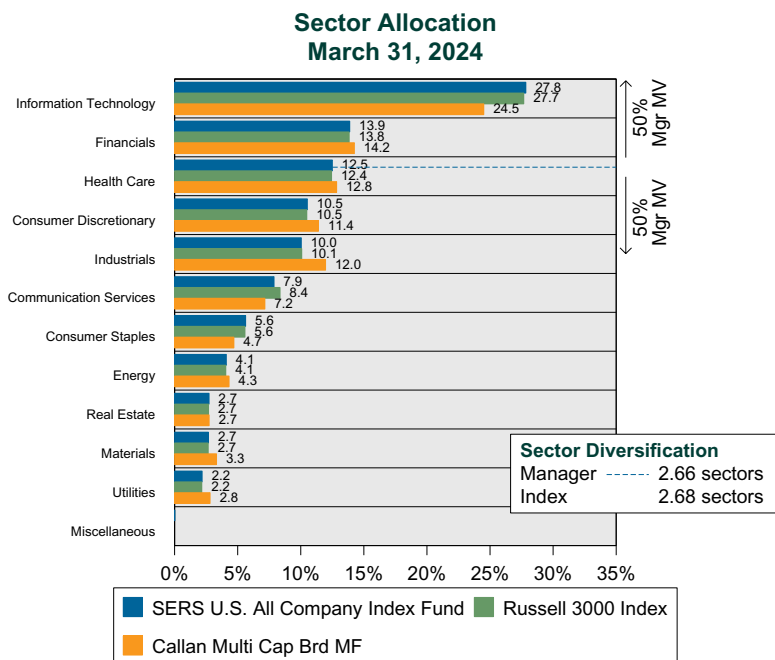
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Multi Cap Broad Mutual Funds as of March 31, 2024



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.



## SERS U.S. All Company Index Fund Top 10 Portfolio Holdings Characteristics as of March 31, 2024

### 10 Largest Holdings

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Microsoft Corp	Information Technology	\$170,272	6.2%	12.09%	3126.13	32.52	0.71%	17.08%
Apple Inc	Information Technology	\$135,925	5.0%	(10.82)%	2647.97	24.99	0.56%	11.00%
Nvidia Corp	Information Technology	\$116,770	4.3%	82.46%	2258.90	35.53	0.02%	37.90%
Amazon.Com	Consumer Discretionary	\$88,296	3.2%	18.72%	1873.67	41.05	0.00%	10.21%
Meta Platforms Inc	Communication Services	\$58,370	2.1%	37.33%	1068.30	23.35	0.41%	26.00%
Alphabet Inc Cl A	Communication Services	\$48,819	1.8%	8.05%	889.43	21.35	0.00%	19.30%
Berkshire Hathaway Inc Del Cl B New	Financials	\$41,867	1.5%	17.91%	551.22	22.45	0.00%	13.69%
Alphabet Inc Cl C	Communication Services	\$41,495	1.5%	8.04%	863.47	21.59	0.00%	19.30%
Lilly (Eli) & Co	Health Care	\$35,747	1.3%	33.69%	739.66	55.89	0.67%	49.75%
JPMorgan Chase & Co	Financials	\$31,418	1.1%	18.48%	576.99	12.50	2.30%	1.20%

### 10 Best Performers

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Viking Therapeutics Inc	Health Care	\$451	0.0%	340.63%	8.94	(67.21)	0.00%	-
Longboard Pharmaceuticals	Health Care	\$28	0.0%	258.20%	0.73	(10.07)	0.00%	-
Super Micro Computer Inc	Information Technology	\$2,757	0.1%	255.32%	59.14	35.26	0.00%	48.20%
Janux Therapeutics	Health Care	\$35	0.0%	250.95%	1.95	(26.00)	0.00%	-
Arcutis Biotherapeutics	Health Care	\$42	0.0%	206.75%	1.14	(4.41)	0.00%	-
Veritone Inc	Information Technology	\$8	0.0%	190.54%	0.20	(17.89)	0.00%	-
Avidity Biosciences Inc	Health Care	\$102	0.0%	182.02%	2.42	(7.78)	0.00%	-
Vera Therapeutics A	Health Care	\$92	0.0%	180.36%	2.35	(19.59)	0.00%	-
Soundhound Ai A	Information Technology	\$43	0.0%	177.75%	1.61	(21.34)	0.00%	-
Microstrategy	Information Technology	\$1,359	0.0%	169.87%	25.58	2563.25	0.00%	107.62%

### 10 Worst Performers

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Amylyx Pharmaceuticals Inc Common St	Health Care	\$8	0.0%	(80.70)%	0.19	(2.55)	0.00%	-
Bakkt Holdings Inc Com Cl A	Financials	\$2	0.0%	(79.37)%	0.07	(1.78)	0.00%	-
Ww Intl Inc	Consumer Discretionary	\$6	0.0%	(78.87)%	0.15	108.82	0.00%	(22.00)%
Irobot Corp	Consumer Discretionary	\$13	0.0%	(77.36)%	0.24	(2.84)	0.00%	4.64%
Liveperson Inc	Information Technology	\$4	0.0%	(73.68)%	0.09	(1.31)	0.00%	15.00%
Office Ppty Income Tr Com Shs Ben I	Real Estate	\$5	0.0%	(72.06)%	0.10	(0.96)	1.96%	(18.35)%
Spirit Airline Inc	Industrials	\$29	0.0%	(69.59)%	0.53	(2.07)	0.00%	(46.81)%
2u Inc	Consumer Discretionary	\$2	0.0%	(68.30)%	0.03	(2.31)	0.00%	15.00%
New York Cmnty Bancorp Inc	Financials	\$126	0.0%	(68.18)%	2.57	32.20	6.21%	15.75%
Caremax Inc Com Cl A	Health Care	\$1	0.0%	(67.79)%	0.02	(0.41)	0.00%	-

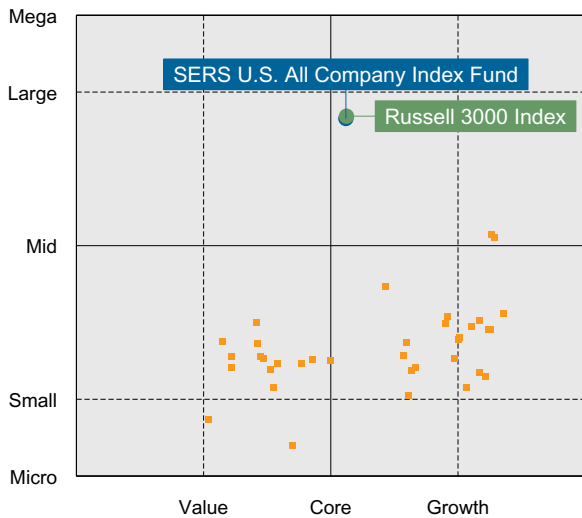
# Historical Holdings Based Style Analysis

## SERS U.S. All Company Index Fund

### For Five and 1/2 Years Ended March 31, 2024

This page analyzes the historical investment style of a portfolio utilizing a detailed holdings-based style analysis to determine average actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization segments are dictated by capitalization decile breakpoints. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the average historical market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the average historical portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The next two style exposure charts illustrate the actual quarterly cap/style and style only segment exposures of the portfolio through history.

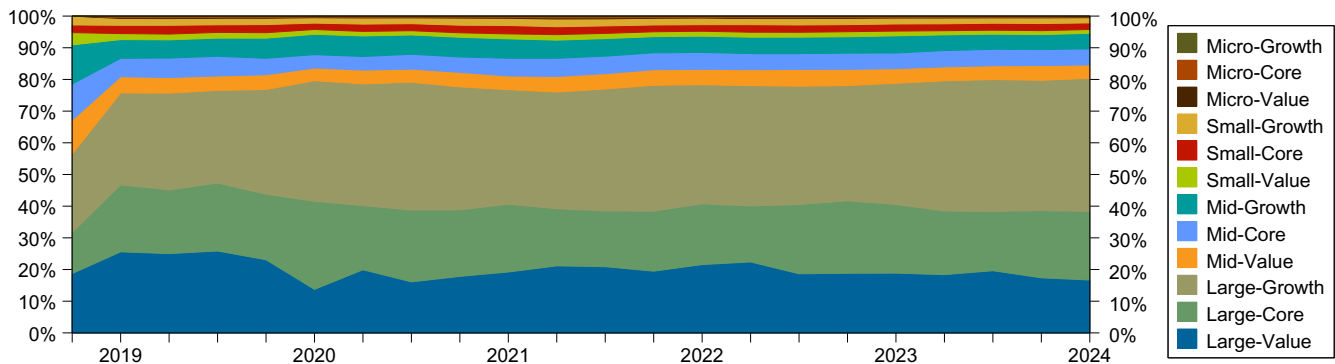
**Average Style Map vs Callan SMID Broad MFs Holdings for Five and 1/2 Years Ended March 31, 2024**



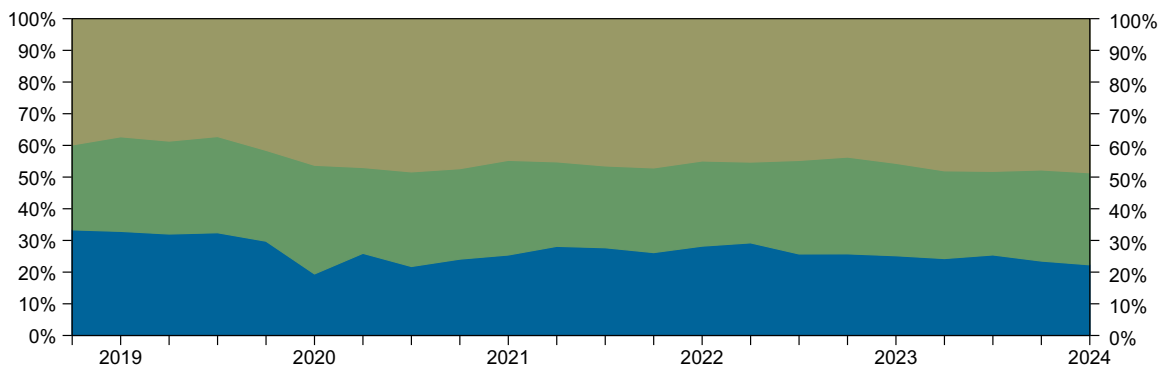
**Average Style Exposure Matrix Holdings for Five and 1/2 Years Ended March 31, 2024**

	Value	Core	Growth	Total
Large	19.9% (95)	20.4% (95)	36.7% (100)	77.0% (290)
	20.2% (98)	20.8% (96)	37.0% (103)	78.0% (297)
Mid	4.9% (165)	5.5% (206)	5.9% (219)	16.3% (590)
	4.6% (165)	5.2% (208)	5.6% (222)	15.5% (595)
Small	1.6% (295)	2.3% (487)	2.0% (370)	6.0% (1152)
	1.5% (304)	2.3% (502)	2.0% (383)	5.9% (1189)
Micro	0.2% (297)	0.3% (392)	0.1% (159)	0.6% (848)
	0.2% (310)	0.3% (414)	0.1% (168)	0.7% (892)
Total	26.8% (852)	28.5% (1180)	44.7% (848)	100.0% (2880)
	26.6% (877)	28.6% (1220)	44.8% (876)	100.0% (2973)

**SERS U.S. All Company Index Fund Historical Cap/Style Exposures**



**SERS U.S. All Company Index Fund Historical Style Only Exposures**



# SERS U.S. SMID Company Index Period Ended March 31, 2024

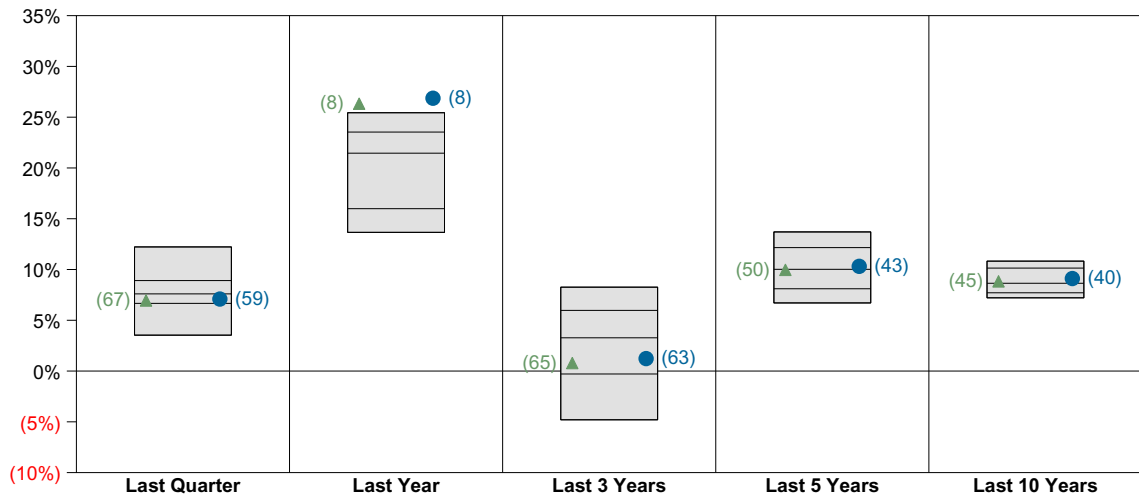
## Investment Philosophy

The objective of the U.S. Small/Mid Company Stock Index Fund is to track the performance of the Dow Jones U.S. Completion Total Stock Market Index. In meeting this objective, the Fund may invest in securities, exchange-traded/mutual funds and a combination of other collective funds that together are designed to track the performance of the Dow Jones U.S. Completion Total Stock Market Index. This fund is managed by Mellon Capital Management.

## Quarterly Summary and Highlights

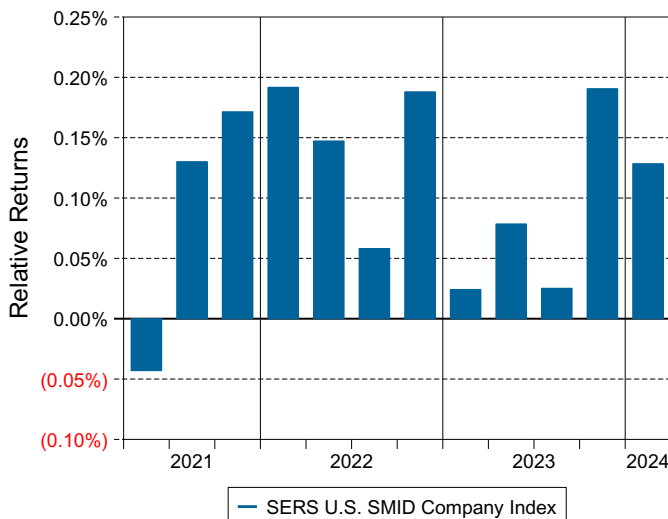
- SERS U.S. SMID Company Index's portfolio posted a 7.09% return for the quarter placing it in the 59 percentile of the Callan Small/MidCap Broad Mutual Funds group for the quarter and in the 8 percentile for the last year.
- SERS U.S. SMID Company Index's portfolio outperformed the Dow Jones US Completion by 0.14% for the quarter and outperformed the Dow Jones US Completion for the year by 0.53%.

## Performance vs Callan Small/MidCap Broad Mutual Funds (Institutional Net)

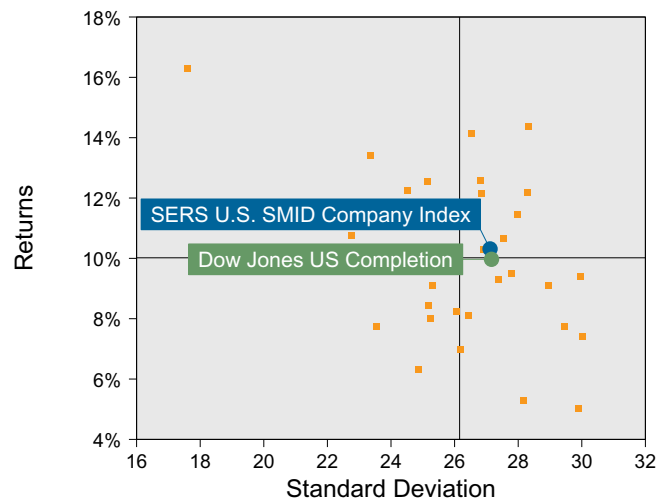


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	12.23	25.44	8.26	13.70	10.82
25th Percentile	8.91	23.54	5.97	12.16	10.14
Median	7.60	21.45	3.27	10.02	8.64
75th Percentile	6.66	15.99	(0.29)	8.10	7.71
90th Percentile	3.53	13.66	(4.80)	6.71	7.21
<b>SERS U.S. SMID Company Index</b>	<b>7.09</b>	<b>26.87</b>	<b>1.23</b>	<b>10.31</b>	<b>9.11</b>
Dow Jones US Completion	6.95	26.33	0.79	9.97	8.83

## Relative Return vs Dow Jones US Completion



## Callan Small/MidCap Broad Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return

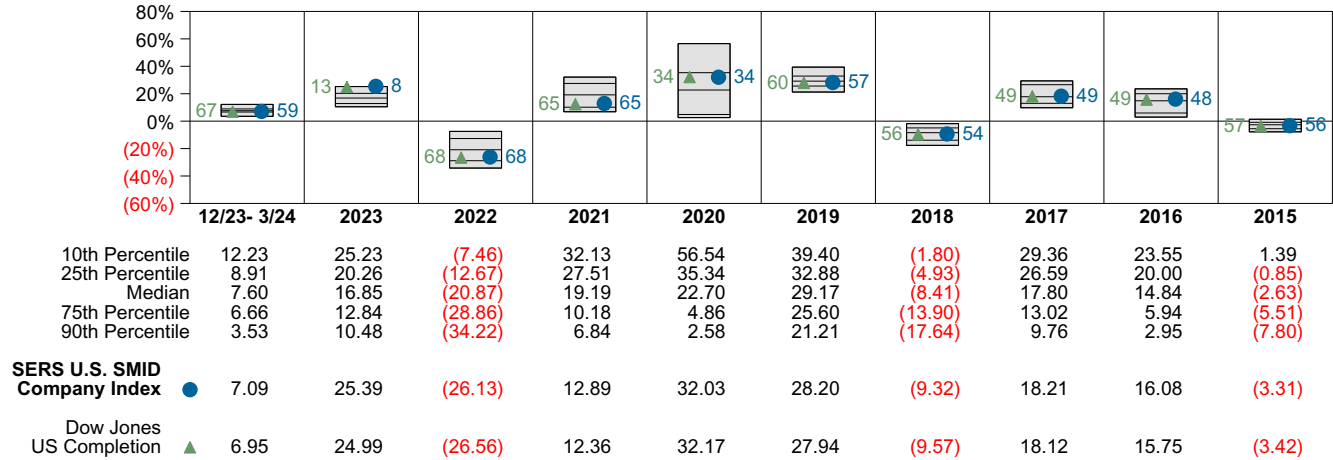


# SERS U.S. SMID Company Index Return Analysis Summary

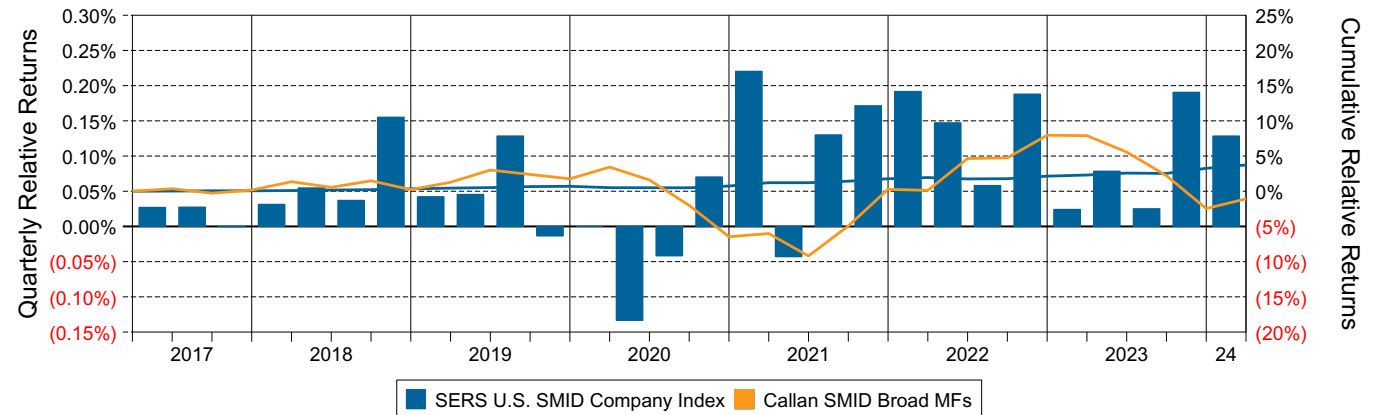
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

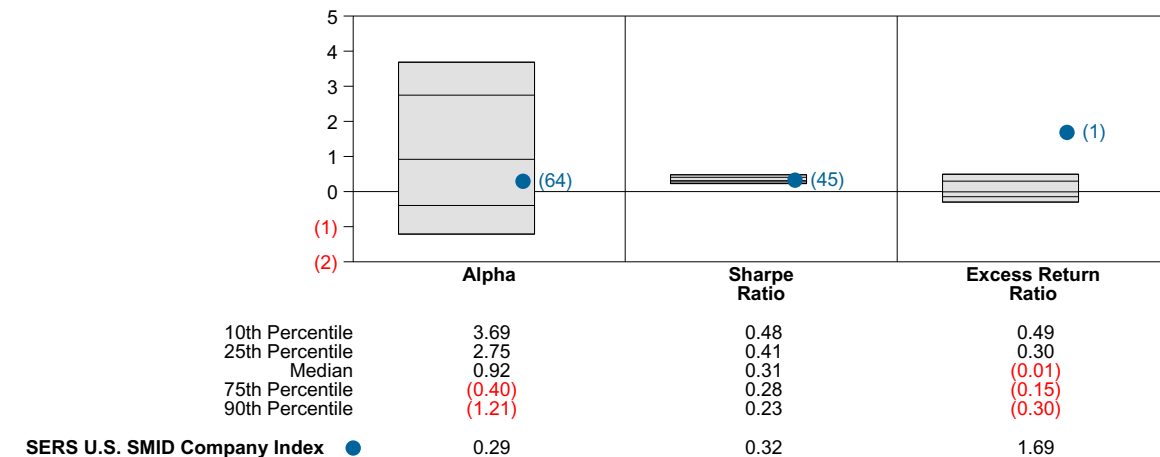
### Performance vs Callan Small/MidCap Broad Mutual Funds (Institutional Net)



### Cumulative and Quarterly Relative Returns vs Dow Jones US Completion



### Risk Adjusted Return Measures vs Dow Jones US Completion Rankings Against Callan Small/MidCap Broad Mutual Funds (Institutional Net) Seven Years Ended March 31, 2024

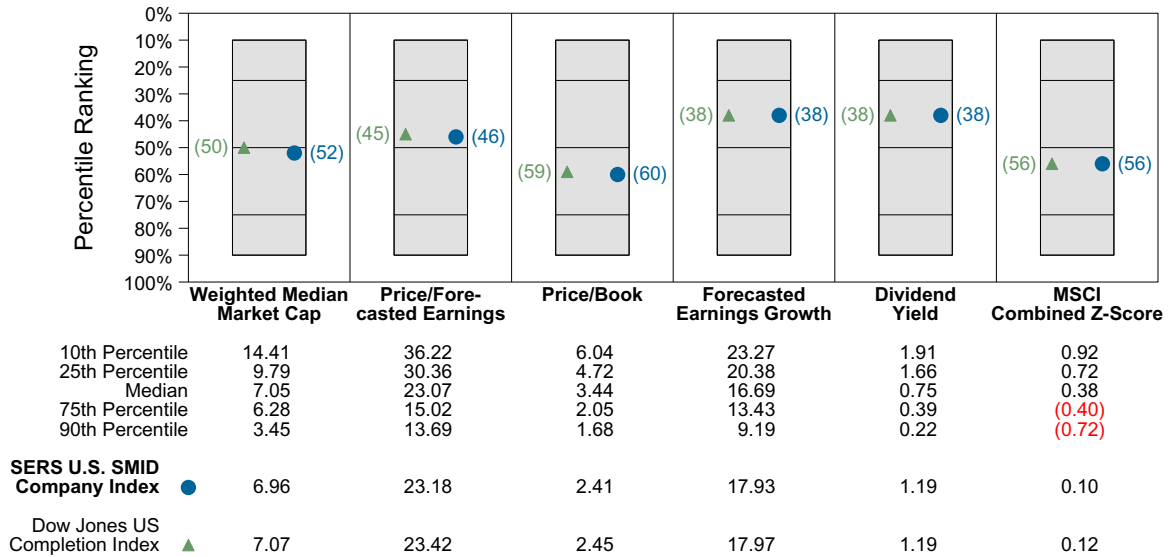


# SERS U.S. SMID Company Index Equity Characteristics Analysis Summary

## Portfolio Characteristics

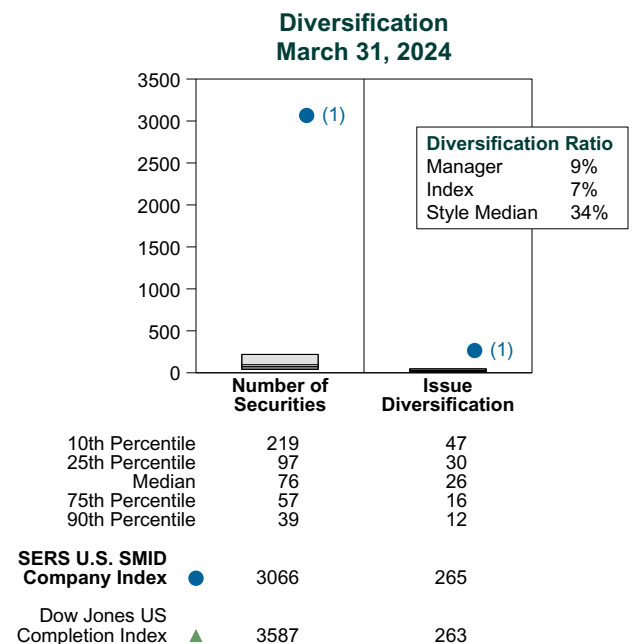
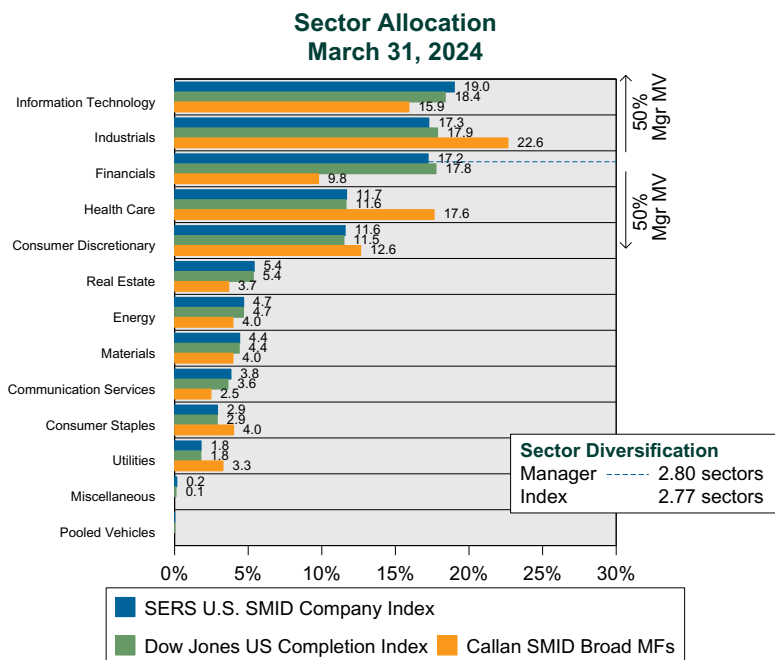
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Small/MidCap Broad Mutual Funds as of March 31, 2024



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.





## SERS U.S. SMID Company Index Top 10 Portfolio Holdings Characteristics as of March 31, 2024

### 10 Largest Holdings

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
CrowdStrike Hldgs Inc Cl A	Information Technology	\$30,953	1.1%	25.56%	73.54	78.63	0.00%	31.78%
Kkr & Co Inc Cl A	Financials	\$28,316	1.0%	21.61%	89.01	19.19	0.66%	25.01%
Marvell Technology Group Ltd	Information Technology	\$25,990	0.9%	17.65%	61.38	45.00	0.34%	20.00%
Workday Inc Cl A	Information Technology	\$24,179	0.8%	(1.20)%	57.55	39.71	0.00%	20.46%
Snowflake Inc Cl A	Information Technology	\$22,627	0.8%	(18.80)%	54.01	155.38	0.00%	18.05%
Apollo Global Mgmt Inc	Financials	\$20,824	0.7%	21.13%	63.89	13.84	1.53%	17.75%
Square Inc Cl A	Financials	\$19,859	0.7%	9.35%	46.96	23.78	0.00%	52.00%
Palantir Technologies Inc Cl A	Information Technology	\$18,802	0.6%	34.01%	48.57	65.74	0.00%	85.19%
Doordash Inc Cl A Com Usd0.00001 Cla	Consumer Discretionary	\$17,802	0.6%	39.27%	51.89	279.92	0.00%	-
The Trade Desk Inc Com Cl A	Communication Services	\$16,513	0.6%	21.48%	38.90	56.44	0.00%	38.67%

### 10 Best Performers

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Elevation Oncology	Health Care	\$79	0.0%	855.28%	0.25	(5.95)	0.00%	-
Corbus Pharmaceuticals Hldgs	Health Care	\$196	0.0%	549.74%	0.41	(7.57)	0.00%	-
Landos Biopharma Inc	Health Care	\$15	0.0%	486.51%	0.07	(9.95)	0.00%	-
Root Inc Cl A New	Financials	\$206	0.0%	482.84%	0.59	(6.80)	0.00%	-
Uphealth Inc	Health Care	\$16	0.0%	345.83%	0.02	(0.47)	0.00%	-
Dave Inc Class A Com New	Information Technology	\$97	0.0%	343.45%	0.40	(12.86)	0.00%	-
Viking Therapeutics Inc	Health Care	\$3,710	0.1%	340.63%	8.94	(67.21)	0.00%	-
Vincera Pharma Inc	Health Care	\$35	0.0%	328.84%	0.11	(6.10)	0.00%	-
Sezzle Inc	Miscellaneous Inc	\$154	0.0%	311.73%	0.48	-	0.00%	-
Jasper Therapeutics Inc	Health Care	\$180	0.0%	272.35%	0.44	(6.15)	0.00%	-

### 10 Worst Performers

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Celsion Corp Com New 2022	Health Care	\$12	0.0%	-	0.02	(1.70)	0.00%	-
Soligenix Inc	Health Care	\$5	0.0%	-	0.01	(0.77)	0.00%	-
Ontrak Inc	Health Care	\$2	0.0%	-	0.01	(1.75)	0.00%	-
Xwell Inc	Consumer Discretionary	\$28	0.0%	-	0.01	(0.45)	0.00%	-
T2 Biosystems Inc	Health Care	\$4	0.0%	-	0.02	(0.47)	0.00%	-
Faraday Futre Intlgt Elctr I Com Cl	Consumer Discretionary	\$1	0.0%	-	0.00	(0.01)	0.00%	-
Ault Alliance Inc	Industrials	\$0	0.0%	(97.37)%	0.01	(0.00)	0.00%	103.71%
Movella Holdings Inc	Information Technology	\$1	0.0%	(90.25)%	0.00	3.12	0.00%	-
Sintx Technologies Inc	Health Care	\$0	0.0%	(86.84)%	0.00	(0.03)	0.00%	-
Biosig Tech Inc	Health Care	\$3	0.0%	(86.15)%	0.01	(0.44)	0.00%	-

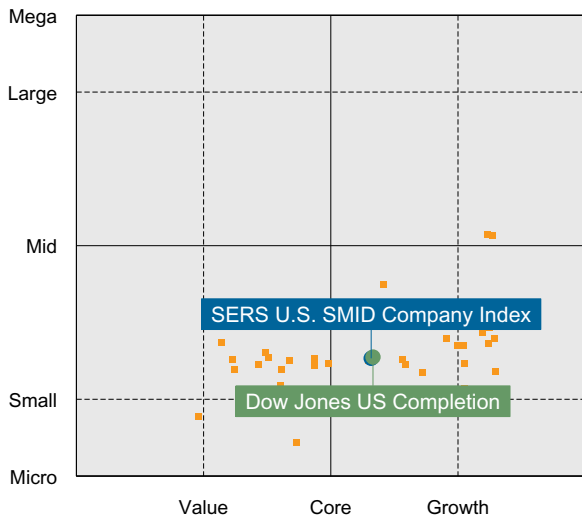
# Historical Holdings Based Style Analysis

## SERS U.S. SMID Company Index

### For Three Years Ended March 31, 2024

This page analyzes the historical investment style of a portfolio utilizing a detailed holdings-based style analysis to determine average actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization segments are dictated by capitalization decile breakpoints. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the average historical market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the average historical portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The next two style exposure charts illustrate the actual quarterly cap/style and style only segment exposures of the portfolio through history.

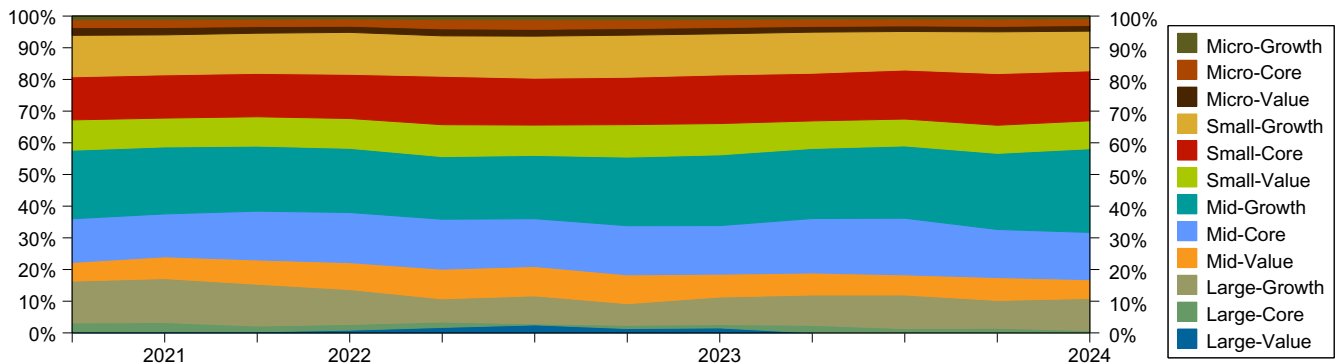
**Average Style Map vs Callan SMID Broad MFs Holdings for Three Years Ended March 31, 2024**



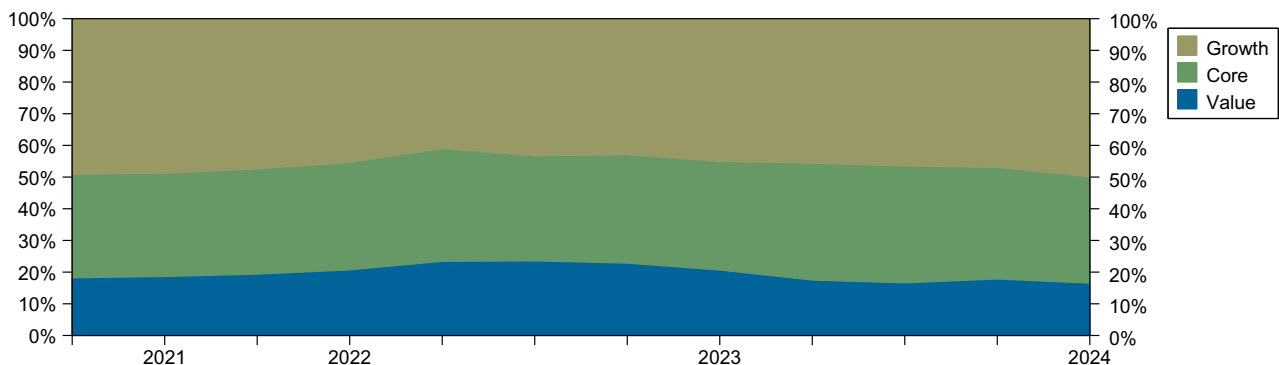
**Average Style Exposure Matrix Holdings for Three Years Ended March 31, 2024**

	Value	Core	Growth	Total
Large	0.7% (1)	1.6% (3)	10.2% (17)	12.5% (21)
	0.8% (2)	1.9% (4)	10.3% (18)	13.0% (24)
Mid	7.5% (65)	15.4% (137)	21.9% (167)	44.9% (369)
	7.5% (65)	15.4% (138)	21.9% (169)	44.8% (372)
Small	9.3% (287)	14.8% (524)	12.9% (380)	37.1% (1191)
	9.2% (288)	14.7% (528)	12.8% (383)	36.7% (1199)
Micro	2.0% (553)	2.5% (747)	1.0% (243)	5.5% (1543)
	2.0% (703)	2.5% (1057)	1.0% (301)	5.5% (2061)
<b>Total</b>	<b>19.6% (906)</b>	<b>34.4% (1411)</b>	<b>46.0% (807)</b>	<b>100.0% (3124)</b>
	19.4% (1058)	34.5% (1727)	46.1% (871)	100.0% (3656)

### SERS U.S. SMID Company Index Historical Cap/Style Exposures



### SERS U.S. SMID Company Index Historical Style Only Exposures





# SERS Global Non-U.S. Index Fund

## Period Ended March 31, 2024

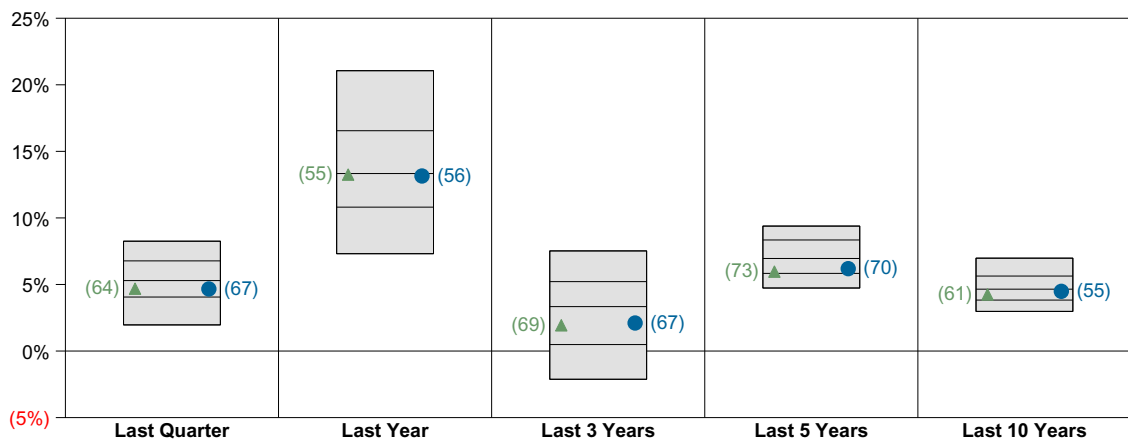
### Investment Philosophy

The Global Non-U.S. Stock Index Fund seeks to track the performance of the MSCI All Country World Index (ACWI) ex-U.S. Index. In meeting this objective, the assets of the Fund may be invested in securities, and a combination of other collective funds that are designed to track the performance of such Index. The Fund will principally invest in a combination of other affiliated bank collective funds, equity securities and derivatives, including common stock of foreign companies, depository receipts, financial futures and over-the-counter derivatives that represent developed and emerging market equity securities. This fund is managed by Mellon Capital Management.

### Quarterly Summary and Highlights

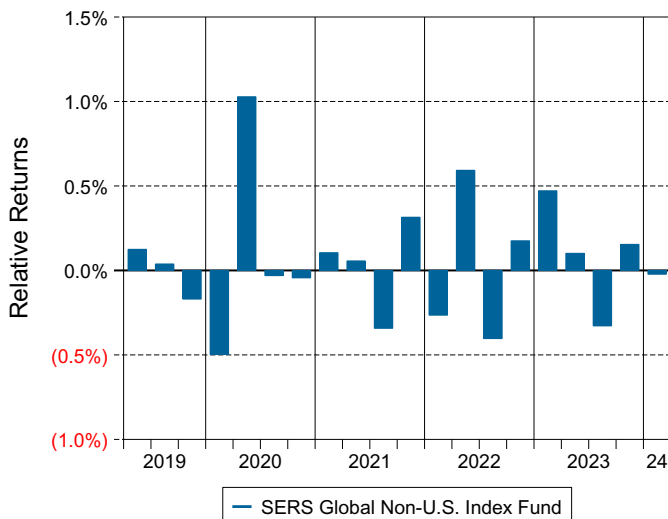
- SERS Global Non-U.S. Index Fund's portfolio posted a 4.66% return for the quarter placing it in the 67 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 56 percentile for the last year.
- SERS Global Non-U.S. Index Fund's portfolio underperformed the MSCI ACWI xUS (Net) by 0.02% for the quarter and underperformed the MSCI ACWI xUS (Net) for the year by 0.11%.

### Performance vs Callan Non US Equity Mutual Funds (Institutional Net)

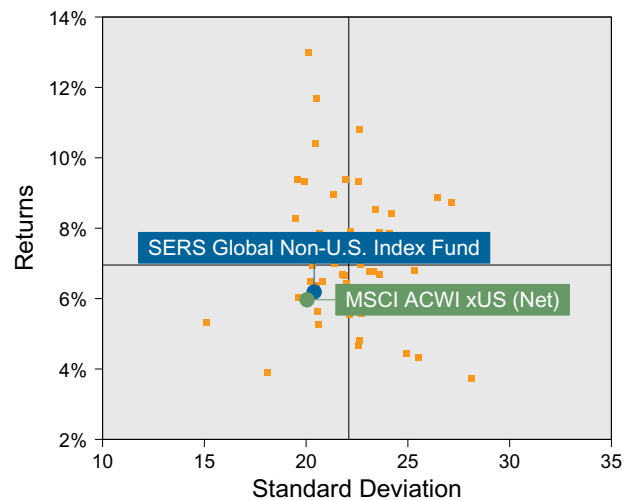


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	8.25	21.06	7.52	9.39	6.98
25th Percentile	6.77	16.55	5.21	8.34	5.63
Median	5.29	13.33	3.34	6.95	4.65
75th Percentile	4.06	10.81	0.49	5.83	3.83
90th Percentile	1.96	7.31	(2.12)	4.73	2.98
<b>SERS Global Non-U.S. Index Fund</b>	4.66	13.15	2.10	6.19	4.48
<b>MSCI ACWI xUS (Net)</b>	4.69	13.26	1.94	5.97	4.25

### Relative Return vs MSCI ACWI xUS (Net)



### Callan Non US Equity Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return

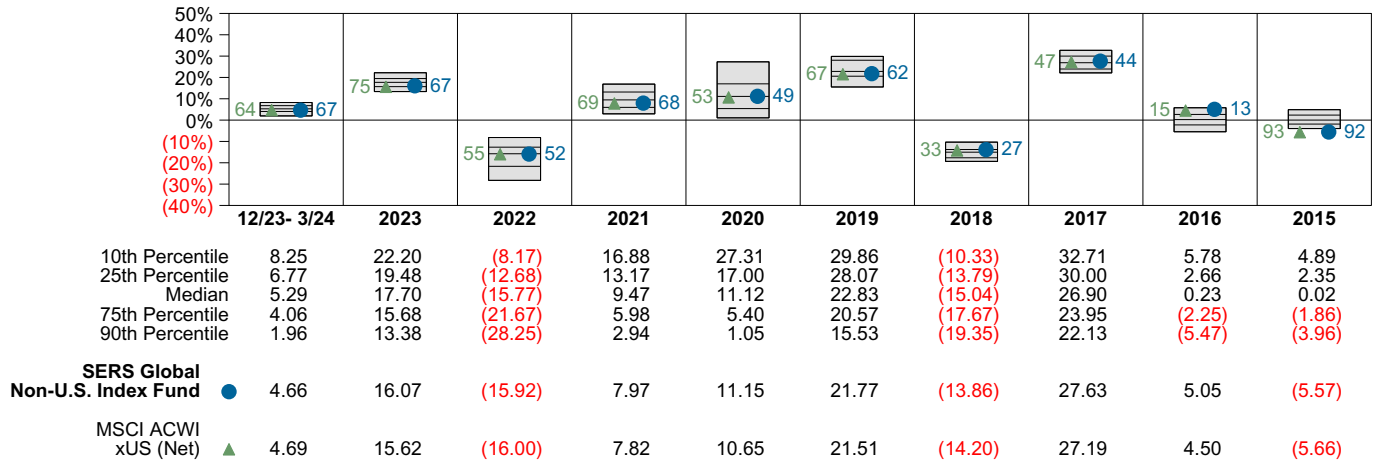


# SERS Global Non-U.S. Index Fund Return Analysis Summary

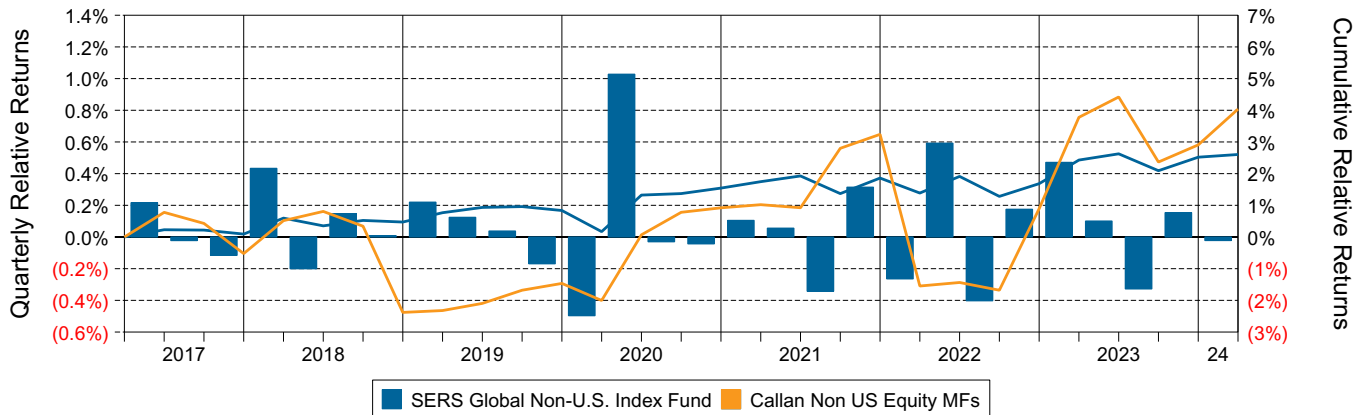
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

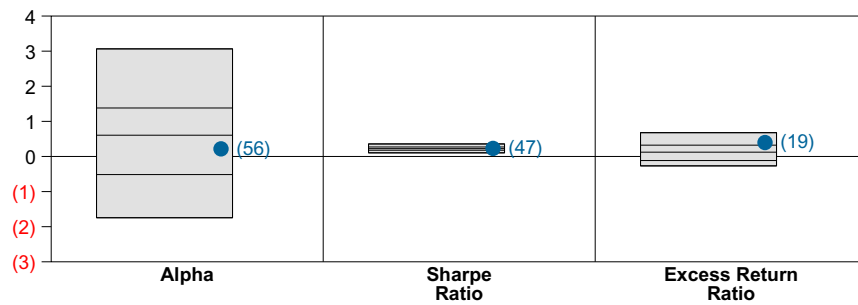
### Performance vs Callan Non US Equity Mutual Funds (Institutional Net)



### Cumulative and Quarterly Relative Returns vs MSCI ACWI xUS (Net)



### Risk Adjusted Return Measures vs MSCI ACWI xUS (Net) Rankings Against Callan Non US Equity Mutual Funds (Institutional Net) Seven Years Ended March 31, 2024



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	3.07	0.36	0.68
25th Percentile	1.38	0.27	0.32
Median	0.61	0.22	0.12
75th Percentile	(0.52)	0.18	(0.12)
90th Percentile	(1.74)	0.10	(0.27)

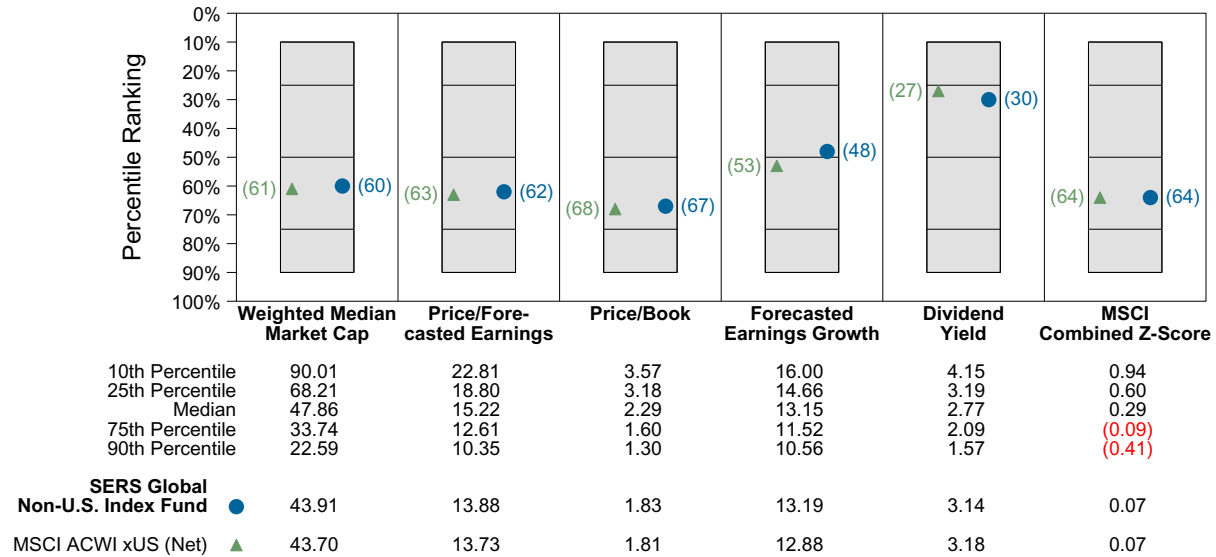
<b>SERS Global Non-U.S. Index Fund</b>	0.22	0.23	0.40
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# SERS Global Non-U.S. Index Fund Equity Characteristics Analysis Summary

## Portfolio Characteristics

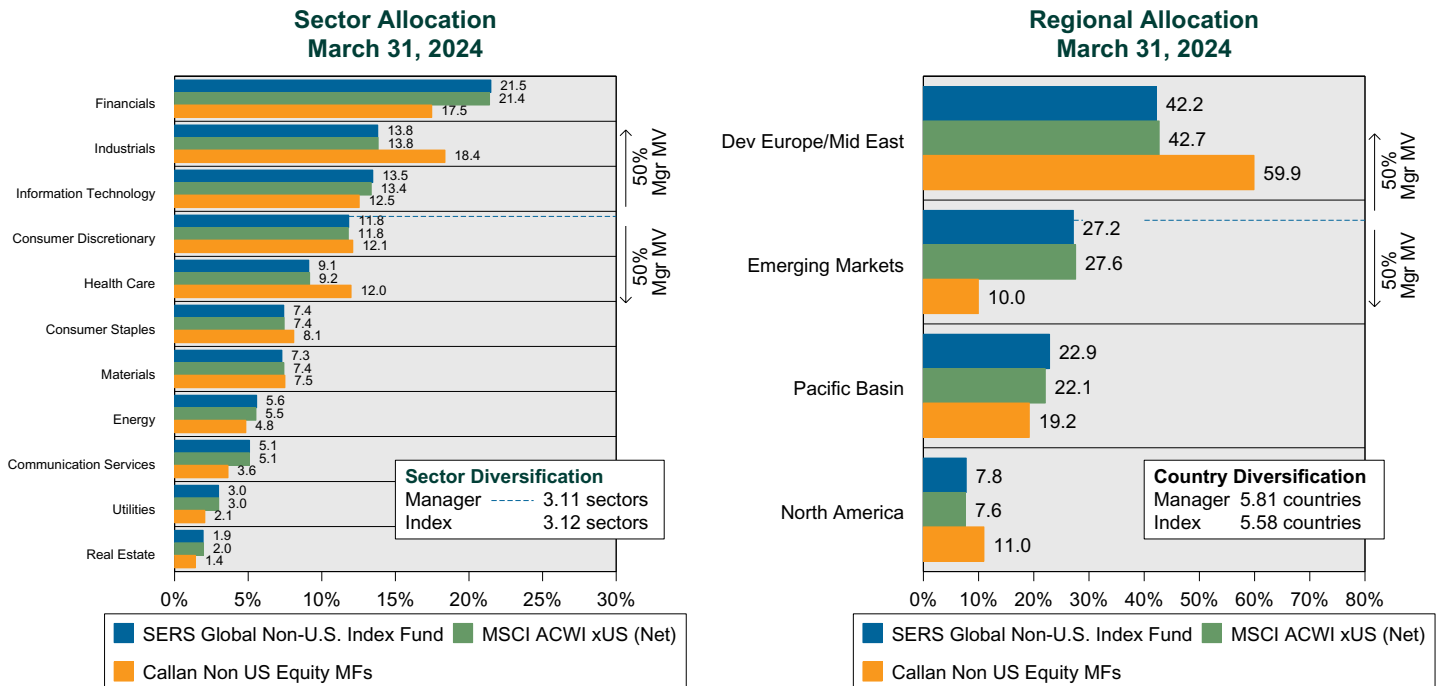
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Non US Equity Mutual Funds as of March 31, 2024



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares the manager's geographical region weights with those of the benchmark as well as the median region weights of the peer group.



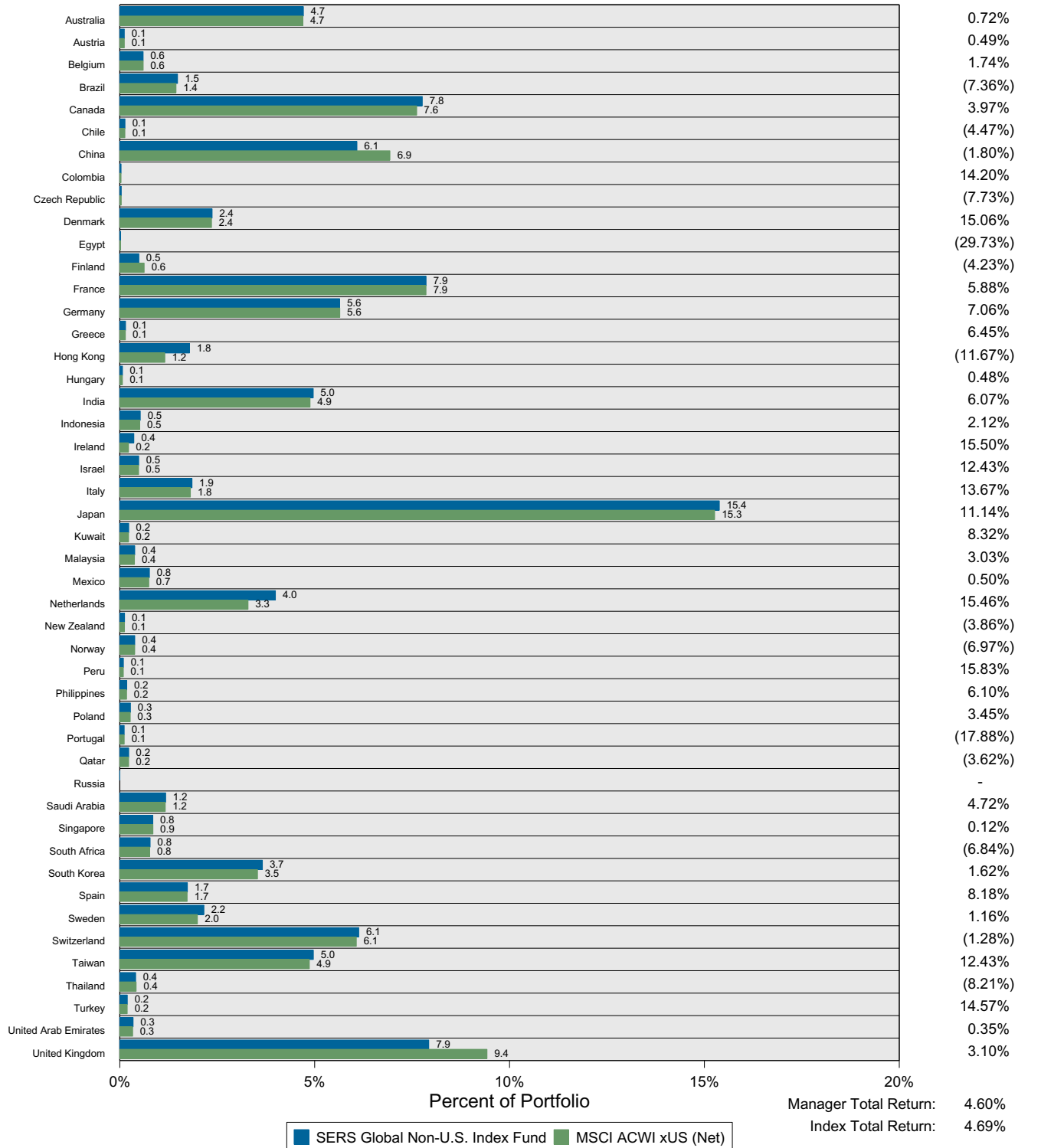
# Country Allocation

## SERS Global Non-U.S. Index Fund VS MSCI ACWI xUS (Net)

### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of March 31, 2024. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.

### Country Weights as of March 31, 2024



## SERS Global Non-U.S. Index Fund Top 10 Portfolio Holdings Characteristics as of March 31, 2024

### 10 Largest Holdings

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Taiwan Semicond Manufac Co L Shs	Information Technology	\$108,695	2.3%	26.55%	631.29	19.14	1.67%	11.74%
Asml Holding N V Asml Rev Stk Spl	Information Technology	\$68,730	1.5%	28.18%	385.04	41.98	0.68%	19.60%
Samsung Electronics Co Ltd Ord	Information Technology	\$53,343	1.2%	0.88%	365.39	16.40	1.75%	54.00%
Nestle S A Shs Nom New	Consumer Staples	\$50,245	1.1%	(8.24)%	283.84	18.82	3.13%	6.10%
Toyota Motor Corp	Consumer Discretionary	\$47,443	1.0%	36.36%	408.78	11.08	1.71%	29.00%
Tencent Holdings Limited Shs Par Hkd	Communication Services	\$46,344	1.0%	1.48%	367.29	14.15	0.79%	20.87%
Lvmh Moet Hennessy Lou Vuittd Ord	Consumer Discretionary	\$43,997	1.0%	11.11%	451.47	25.20	1.56%	7.03%
Astrazeneca Plc Ord	Health Care	\$37,237	0.8%	1.37%	209.11	16.04	2.15%	10.30%
Sap Se Shs	Information Technology	\$36,014	0.8%	26.43%	239.51	34.25	1.22%	22.20%
Novartis	Health Care	\$35,167	0.8%	(0.19)%	212.43	13.43	3.78%	8.20%

### 10 Best Performers

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Hanmi Semiconductor	Information Technology	\$796	0.0%	108.16%	9.67	98.33	0.31%	(11.16)%
Kukje Precision	Health Care	\$1,642	0.0%	107.28%	10.22	(72.82)	0.00%	-
Rheinmetall Ag Ord	Industrials	\$4,318	0.1%	76.47%	24.46	22.57	1.10%	37.90%
Mitsubishi Heavy Industries Shs	Industrials	\$5,478	0.1%	64.69%	32.29	19.10	1.10%	30.56%
Samsung Techwin Co	Industrials	\$985	0.0%	59.41%	7.69	16.79	0.88%	5.00%
Fuji Electric Co Ltd Shs	Industrials	\$1,591	0.0%	57.32%	10.11	19.54	1.17%	12.00%
China Molybdenum 'a'	Materials	\$53	0.0%	56.92%	20.34	16.91	1.02%	31.65%
Screen Hldgs Co Ltd Shs New	Information Technology	\$1,882	0.0%	56.32%	13.40	26.00	1.01%	16.40%
Cummins India (Kirloskar	Industrials	\$914	0.0%	53.78%	9.99	50.35	1.03%	28.67%
Disco Corp	Information Technology	\$6,164	0.1%	52.79%	40.95	51.31	0.45%	14.40%

### 10 Worst Performers

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Wuxi Apptec H	Health Care	\$296	0.0%	(54.20)%	1.83	9.17	259.39%	14.95%
Nio Inc Ads	Consumer Discretionary	\$1,101	0.0%	(51.34)%	8.69	(4.29)	0.00%	-
Grifols Sa Barcelona Acciones Por De	Health Care	\$454	0.0%	(47.25)%	3.84	8.53	6.33%	2.43%
Sunny Optical Tchnlg Grp Lt Shs	Information Technology	\$656	0.0%	(44.70)%	5.60	19.19	0.55%	(18.95)%
Xpeng Inc Class A	Consumer Discretionary	\$855	0.0%	(44.48)%	6.31	(7.34)	0.00%	-
Guangdong Investment Ltd Shs	Utilities	\$239	0.0%	(42.16)%	2.80	5.63	926.64%	5.22%
China Medical System Hldgs L Shs	Health Care	\$249	0.0%	(41.75)%	2.58	5.36	7.28%	14.84%
Eastern Tobacco	Consumer Staples	\$98	0.0%	(41.74)%	1.19	6.21	14.65%	36.49%
Ocado Group Plc W/I	Consumer Staples	\$573	0.0%	(40.54)%	4.76	(12.29)	0.00%	23.60%
Country Garden Hldgs Co Ltd	Real Estate	\$138	0.0%	(39.01)%	1.73	(1.09)	0.00%	10.00%



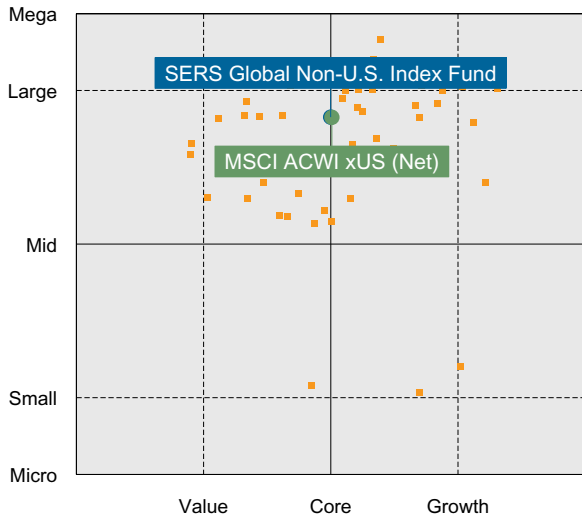
# Historical Holdings Based Style Analysis

## SERS Global Non-U.S. Index Fund

### For Three Years Ended March 31, 2024

This page analyzes the historical investment style of a portfolio utilizing a detailed holdings-based style analysis to determine average actual exposures to various region and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the average historical market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the average historical portfolio and index weights and stock counts (in parentheses) in each region/style segment of the market. The next two style exposure charts illustrate the actual quarterly region/style and style only segment exposures of the portfolio through history.

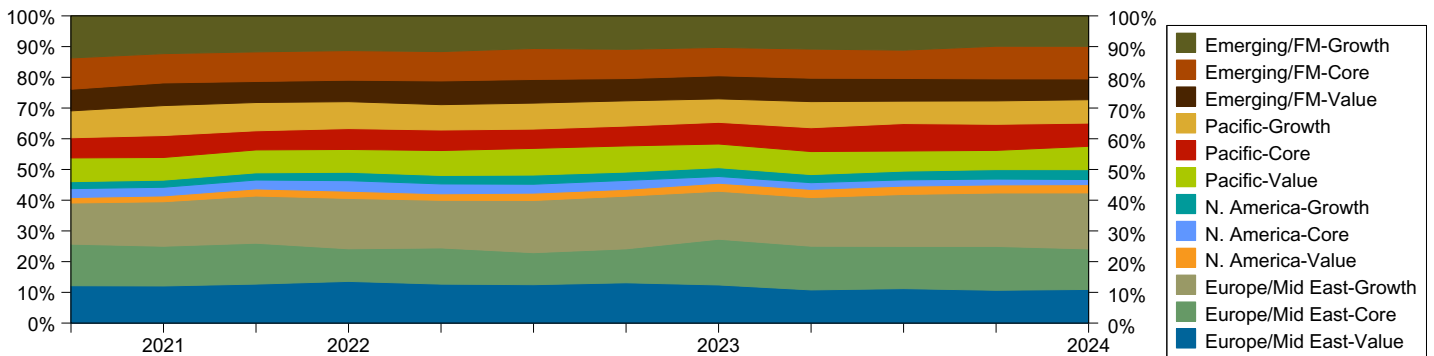
**Average Style Map vs Callan Non US Equity MFs Holdings for Three Years Ended March 31, 2024**



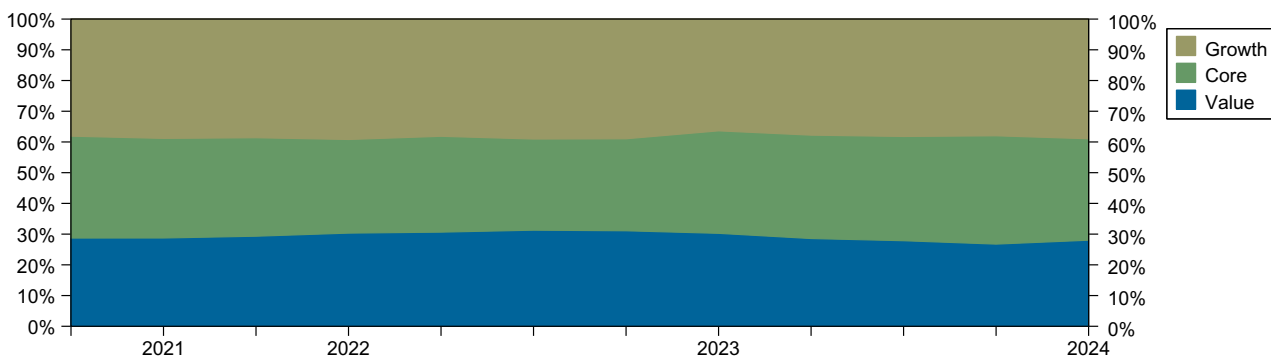
**Average Style Exposure Matrix Holdings for Three Years Ended March 31, 2024**

	Value	Core	Growth	Total
Europe/ Mid East	12.1% (144)	12.8% (128)	16.1% (142)	41.0% (414)
	12.0% (153)	12.3% (129)	16.4% (156)	40.7% (438)
N. America	2.4% (26)	2.6% (27)	2.7% (31)	7.7% (84)
	2.5% (28)	2.5% (28)	2.7% (34)	7.8% (90)
Pacific	7.6% (134)	7.2% (113)	8.3% (118)	23.1% (365)
	7.5% (135)	7.2% (113)	8.1% (118)	22.7% (366)
Emerging/ FM	7.3% (400)	9.8% (392)	11.2% (420)	28.2% (1212)
	7.3% (429)	10.0% (432)	11.5% (471)	28.8% (1332)
<b>Total</b>	<b>29.3% (704)</b>	<b>32.3% (660)</b>	<b>38.4% (711)</b>	<b>100.0% (2075)</b>
	29.3% (745)	32.0% (702)	38.7% (779)	100.0% (2226)

**SERS Global Non-U.S. Index Fund Historical Region/Style Exposures**



**SERS Global Non-U.S. Index Fund Historical Style Only Exposures**





# SERS Short Term Investment Fund

## Period Ended March 31, 2024

### Investment Philosophy

The Short Term Investment Fund seeks to achieve the highest current income consistent with maintaining liquidity and safety of principal. This fund is managed by the Pennsylvania State Treasurer. It is compared against the Callan Cash Database, which includes STIF, enhanced cash, and money market funds.

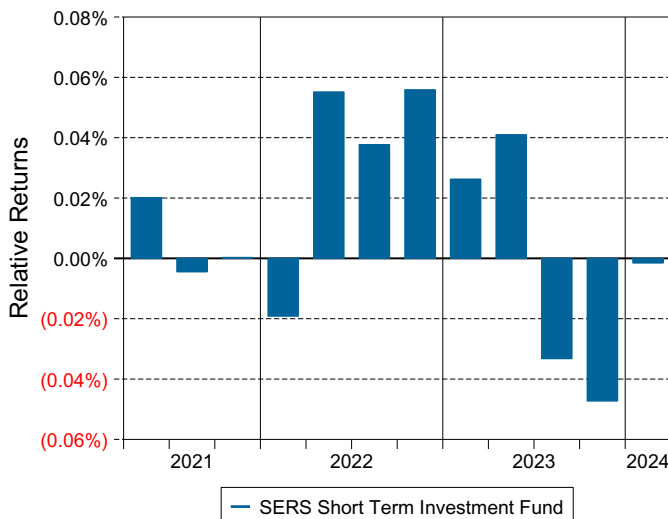
### Quarterly Summary and Highlights

- SERS Short Term Investment Fund's portfolio posted a 1.29% return for the quarter placing it in the 59 percentile of the Callan Cash Database group for the quarter and in the 72 percentile for the last year.
- SERS Short Term Investment Fund's portfolio underperformed the 3-month Treasury Bill by 0.00% for the quarter and underperformed the 3-month Treasury Bill for the year by 0.04%.

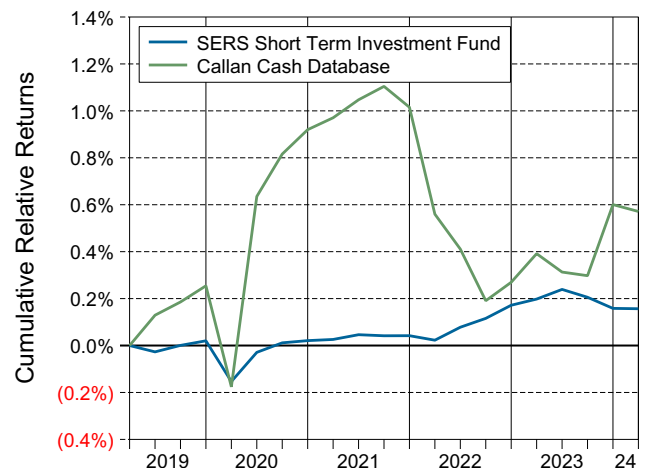
### Performance vs Callan Cash Database (Gross)



### Relative Return vs 3-month Treasury Bill



### Cumulative Returns vs 3-month Treasury Bill

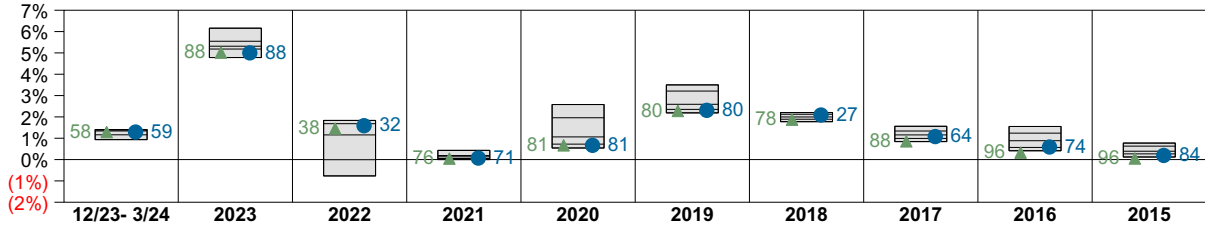


# SERS Short Term Investment Fund Return Analysis Summary

## Return Analysis

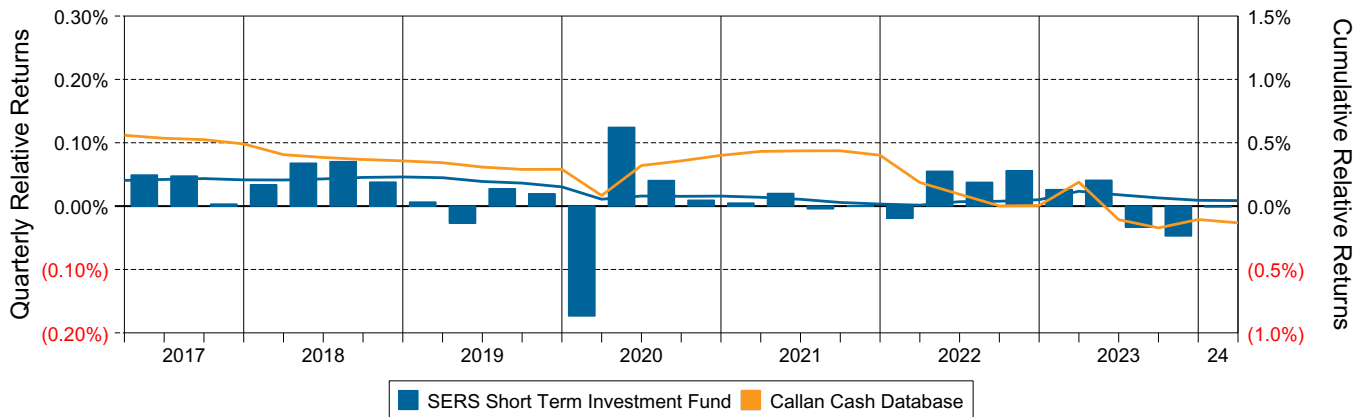
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and 12 quarter rolling manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures. Callan Cash Database includes STIF, enhanced cash, and money market funds.

## Performance vs Callan Cash Database (Gross)

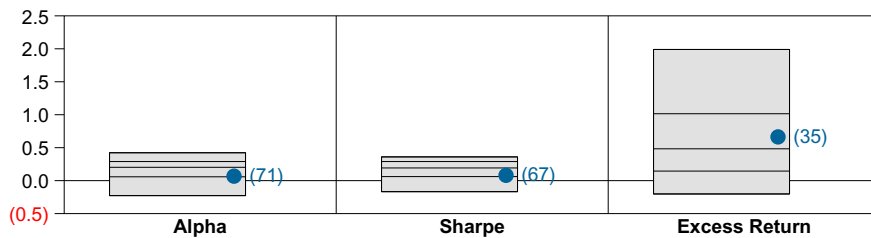


SERS Short Term Investment Fund	12/23- 3/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
●	1.29	5.00	1.59	0.07	0.67	2.31	2.09	1.08	0.59	0.19
3-month Treasury Bill ▲	1.29	5.01	1.46	0.05	0.67	2.28	1.87	0.86	0.33	0.05

## Rolling 12 Quarter and Quarterly Relative Returns vs 3-month Treasury Bill



## Risk Adjusted Return Measures vs 3-month Treasury Bill Rankings Against Callan Cash Database (Gross) Seven Years Ended March 31, 2024



SERS Short Term Investment Fund	Alpha	Sharpe Ratio	Excess Return Ratio
●	0.07	0.08	0.66

# SERS U.S. Short Term Bond Idx Fund

## Period Ended March 31, 2024

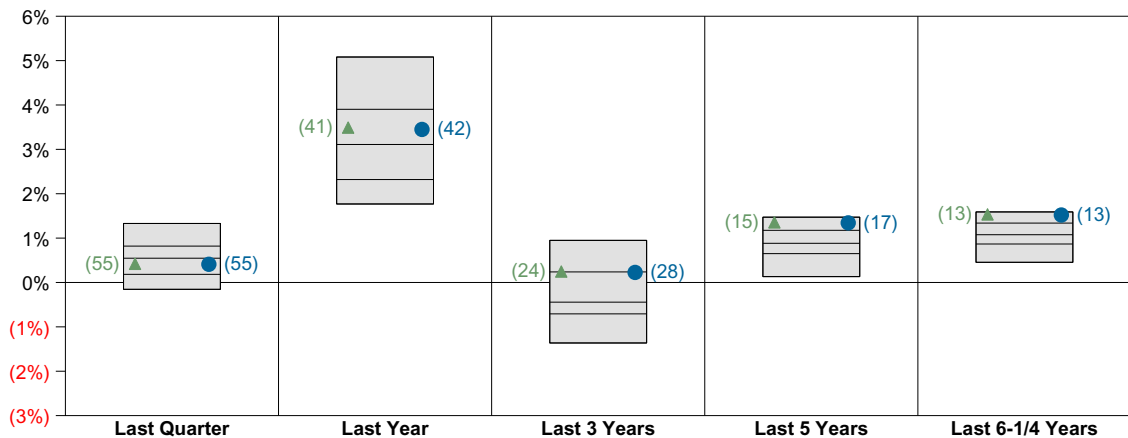
### Investment Philosophy

The Fund's investment objective is to seek to track the performance of the Bloomberg Barclays U.S. 1-3 Year Government/Credit Index ("Index"). In meeting this objective, the Fund may invest in securities (including those issued through private placements) and a combination of other collective funds that together are designed to track the performance of the Index. The Fund will principally invest in other affiliated bank collective funds, debt securities of U.S. corporations and the U.S. government, its agencies and instrumentalities, including mortgage-related and asset-backed securities. This fund is managed by Mellon Capital Management.

### Quarterly Summary and Highlights

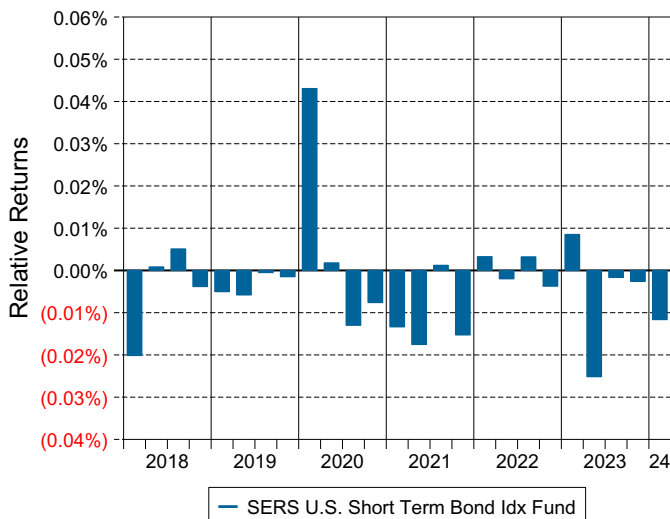
- SERS U.S. Short Term Bond Idx Fund's portfolio posted a 0.41% return for the quarter placing it in the 55th percentile of the Callan Short US Gov Bond Mut Funds group for the quarter and in the 42nd percentile for the last year.
- SERS U.S. Short Term Bond Idx Fund's portfolio underperformed the Blmbg Gov/Cred 1-3 Yr by 0.01% for the quarter and underperformed the Blmbg Gov/Cred 1-3 Yr for the year by 0.04%.

### Performance vs Callan Short US Gov Bond Mut Funds (Institutional Net)

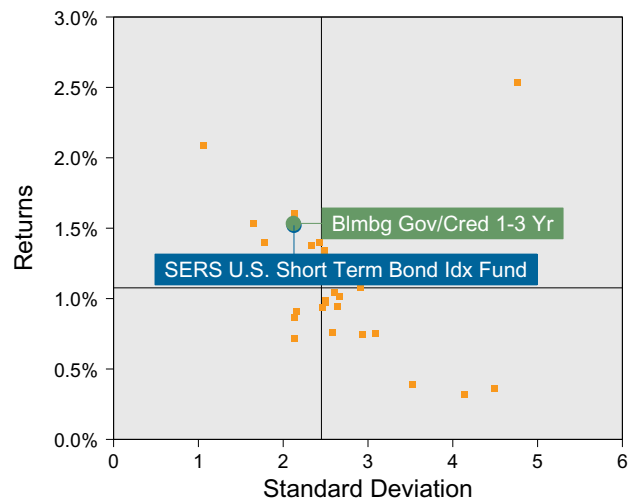


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 6-1/4 Years
10th Percentile	1.33	5.08	0.95	1.47	1.59
25th Percentile	0.82	3.90	0.24	1.18	1.34
Median	0.55	3.11	(0.44)	0.88	1.08
75th Percentile	0.18	2.32	(0.71)	0.65	0.87
90th Percentile	(0.15)	1.77	(1.36)	0.13	0.45
<b>SERS U.S. Short Term Bond Idx Fund</b>	0.41	3.45	0.23	1.34	1.52
Blmbg Gov/Cred 1-3 Yr	0.42	3.49	0.25	1.36	1.53

### Relative Return vs Blmbg Gov/Cred 1-3 Yr



### Callan Short US Gov Bond Mut Funds (Institutional Net) Annualized Six and One-Quarter Year Risk vs Return



# SERS U.S. Short Term Bond Idx Fund

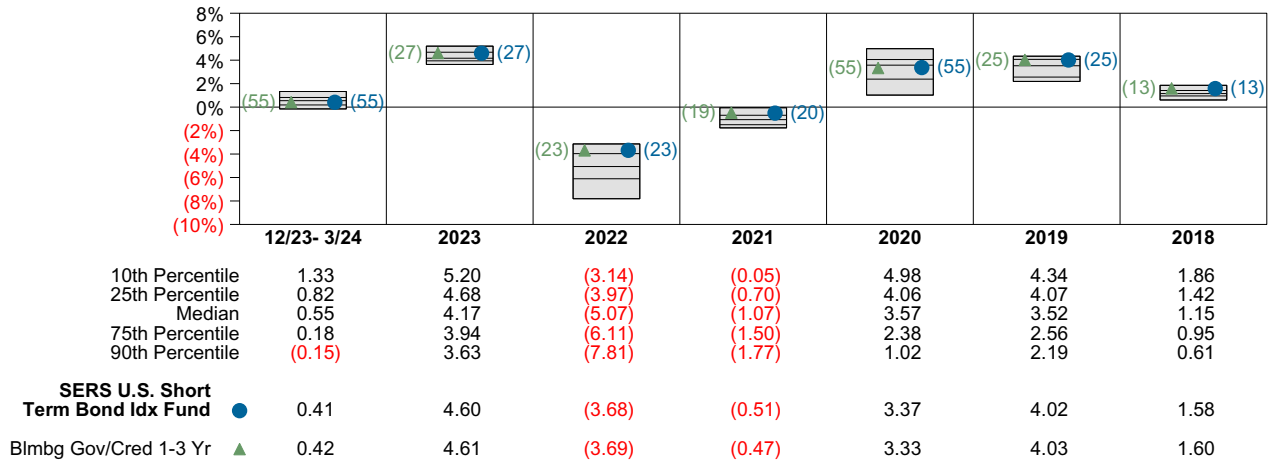
## Return Analysis Summary

### Return Analysis

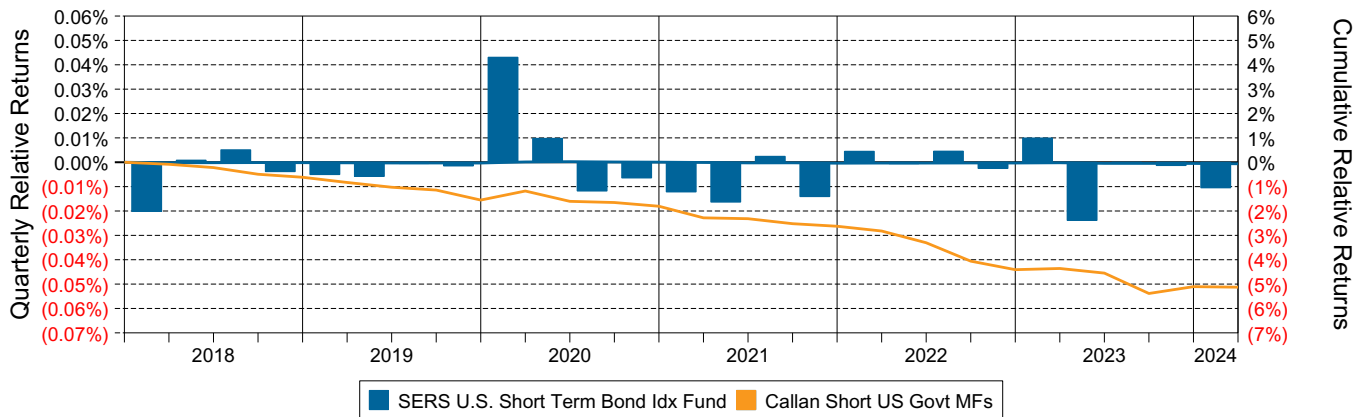
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

Callan Cash Database includes STIF, enhanced cash, and money market funds.

### Performance vs Callan Short US Gov Bond Mut Funds (Institutional Net)



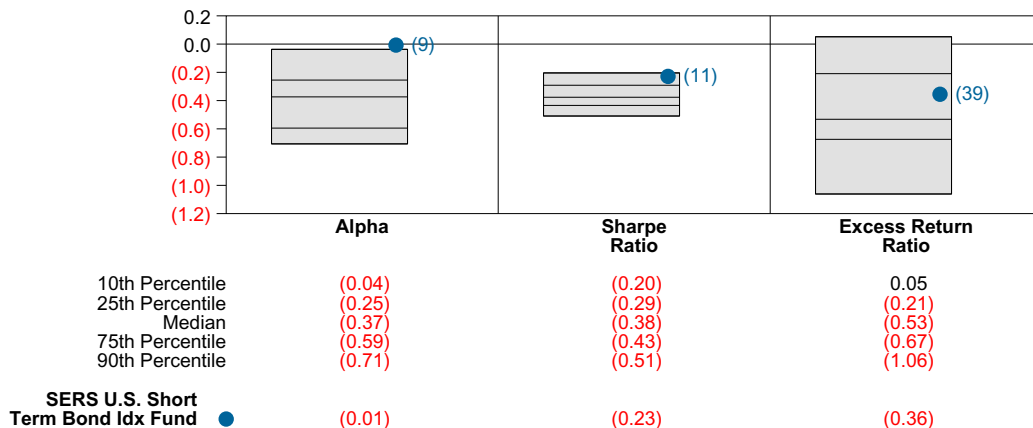
### Cumulative and Quarterly Relative Returns vs Blmbg Gov/Cred 1-3 Yr



### Risk Adjusted Return Measures vs Blmbg Gov/Cred 1-3 Yr

#### Rankings Against Callan Short US Gov Bond Mut Funds (Institutional Net)

#### Six and One-Quarter Years Ended March 31, 2024



# SERS U.S. Short Term Bond Idx Fund

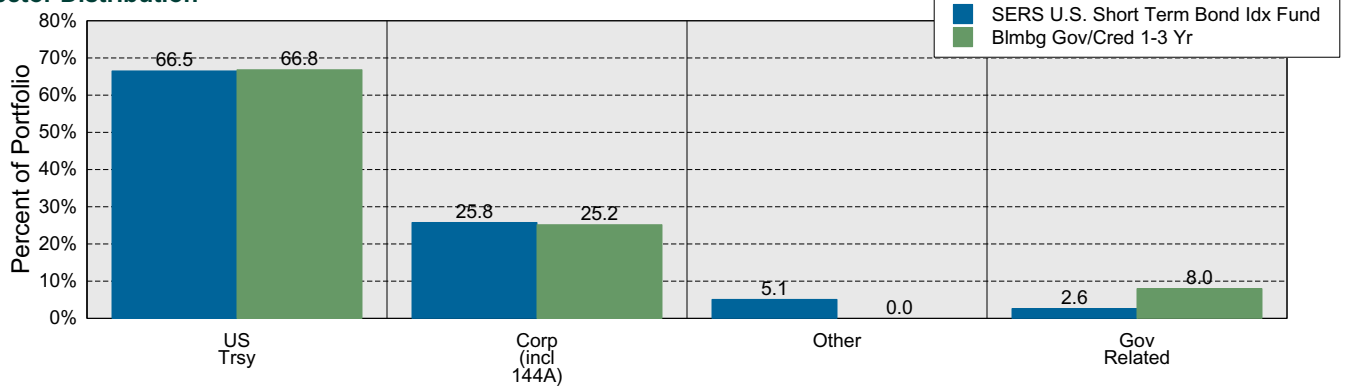
## Portfolio Characteristics Summary

### As of March 31, 2024

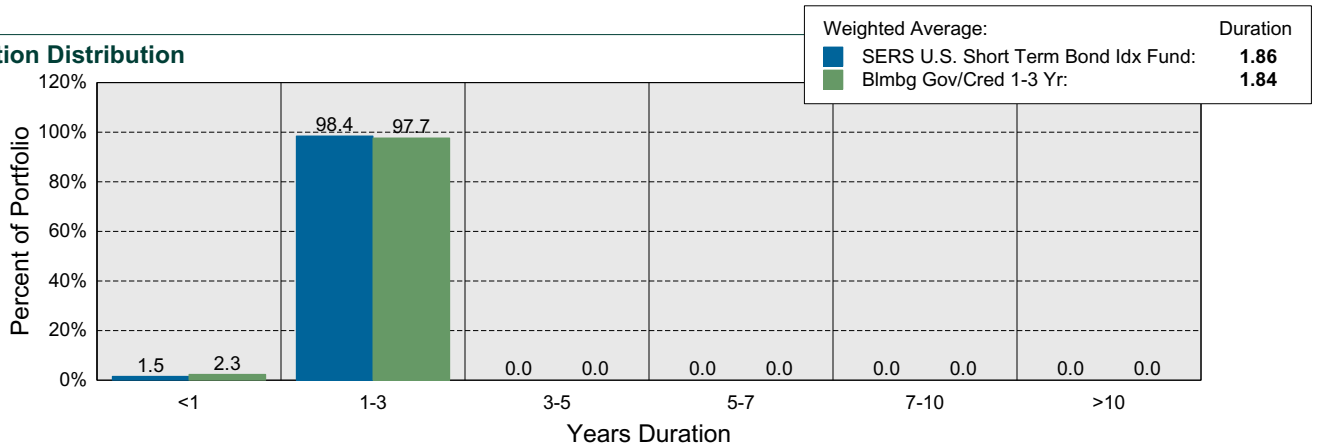
#### Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

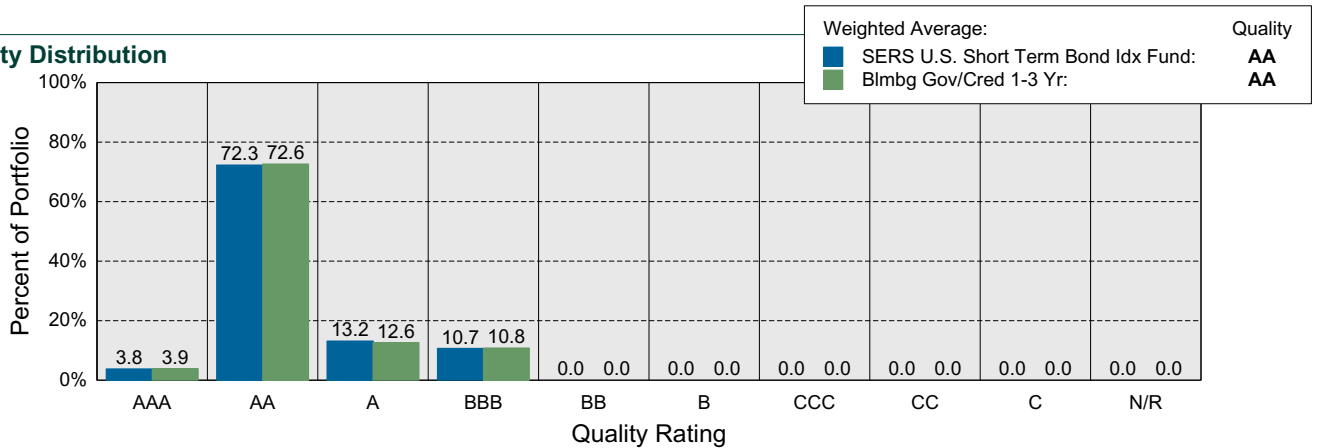
#### Sector Distribution



#### Duration Distribution



#### Quality Distribution



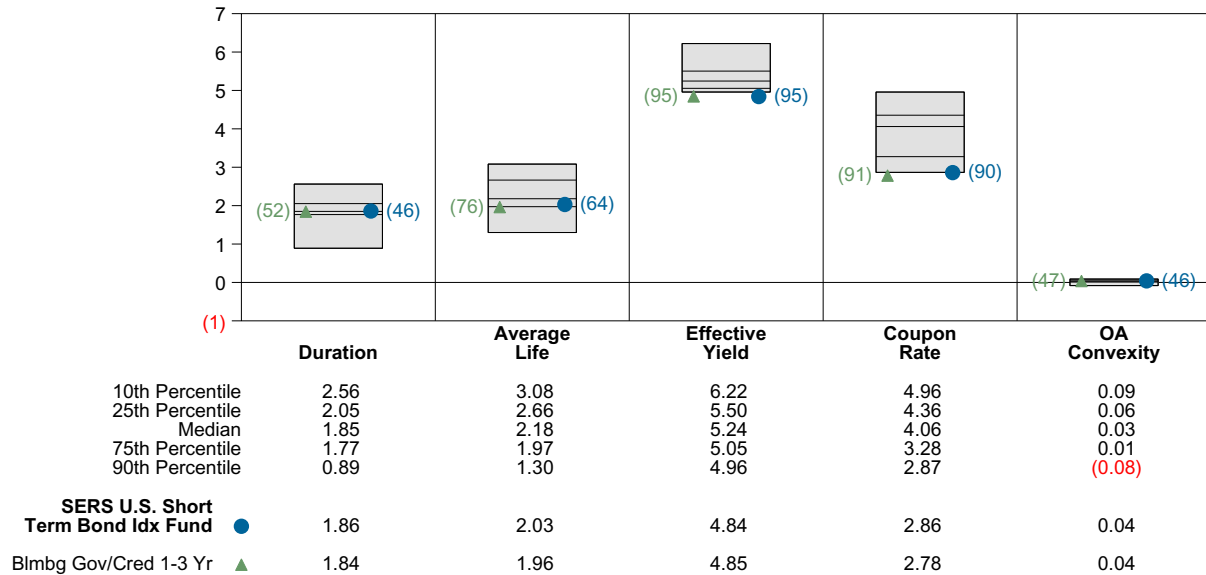
# SERS U.S. Short Term Bond Idx Fund

## Bond Characteristics Analysis Summary

### Portfolio Characteristics

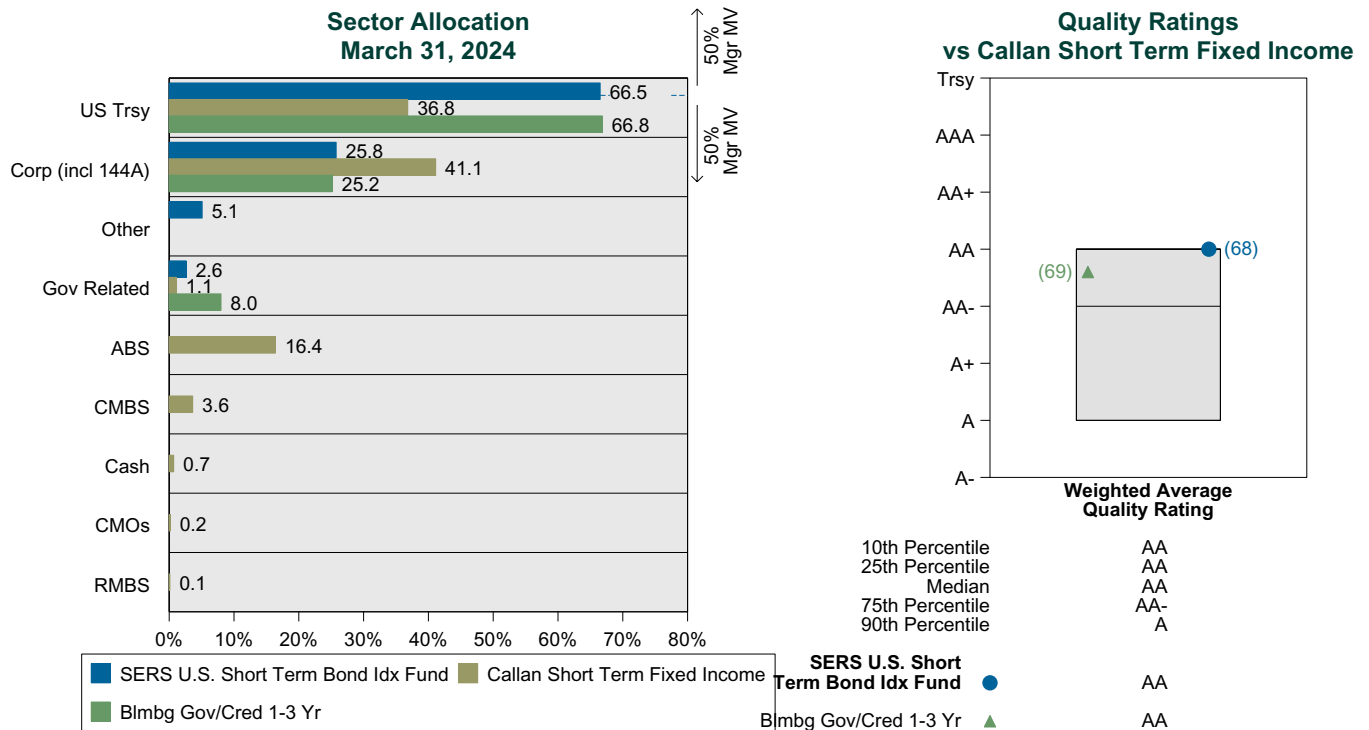
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

### Fixed Income Portfolio Characteristics Rankings Against Callan Short Term Fixed Income as of March 31, 2024



### Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.





# SERS U.S. TIPS Index Fund

## Period Ended March 31, 2024

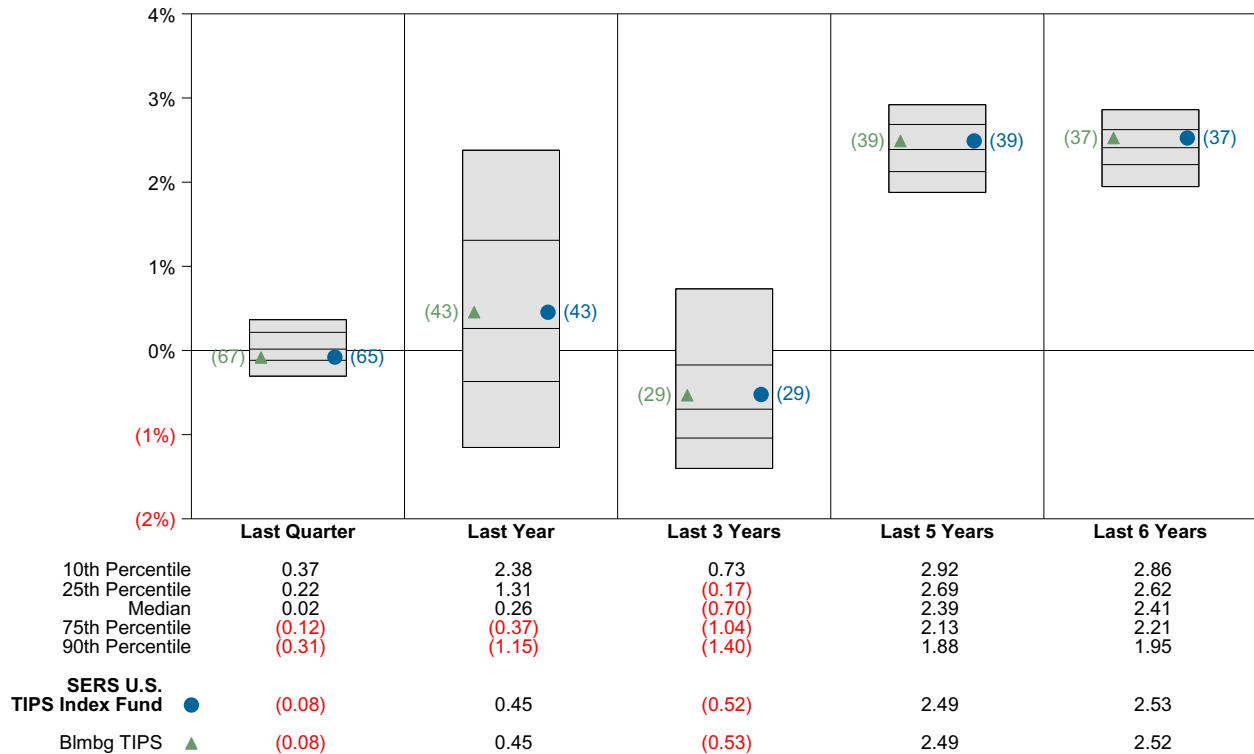
### Investment Philosophy

The objective of the U.S. Treasury Inflation Protected Security Index Fund is to track the performance of the U.S. inflation-linked government bond market (otherwise known as Treasury Inflation Protected Securities, or "TIPS"). This fund is managed by Mellon Capital Management.

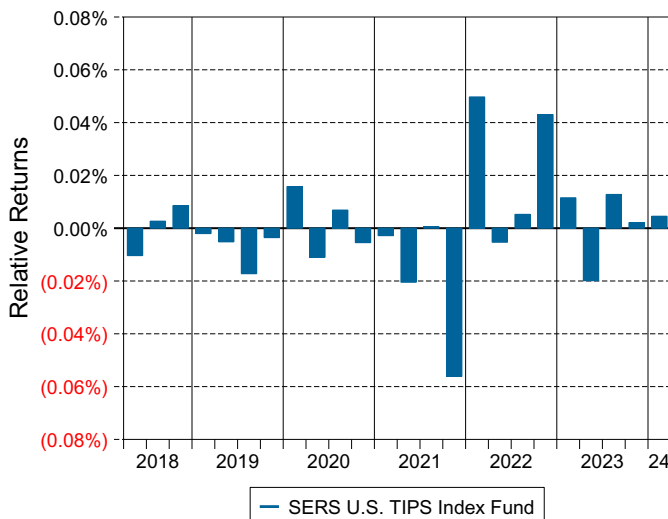
### Quarterly Summary and Highlights

- SERS U.S. TIPS Index Fund's portfolio posted a (0.08)% return for the quarter placing it in the 65 percentile of the Callan Treas Infl Prot Securities MFs group for the quarter and in the 43 percentile for the last year.
- SERS U.S. TIPS Index Fund's portfolio outperformed the Blmbg TIPS by 0.00% for the quarter and underperformed the Blmbg TIPS for the year by 0.00%.

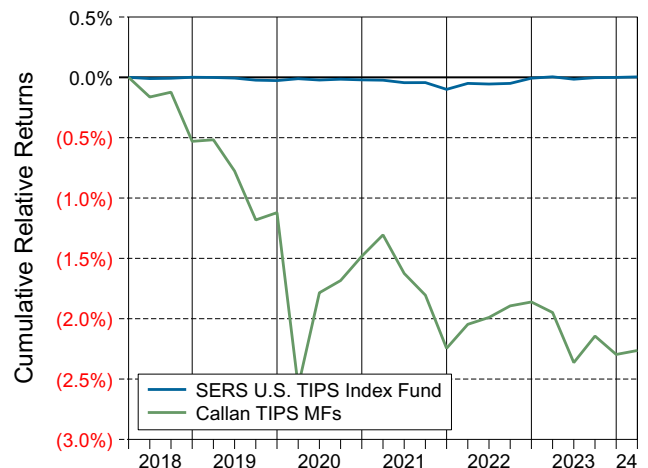
### Performance vs Callan Treas Infl Prot Securities MFs (Institutional Net)



### Relative Return vs Blmbg TIPS



### Cumulative Returns vs Blmbg TIPS

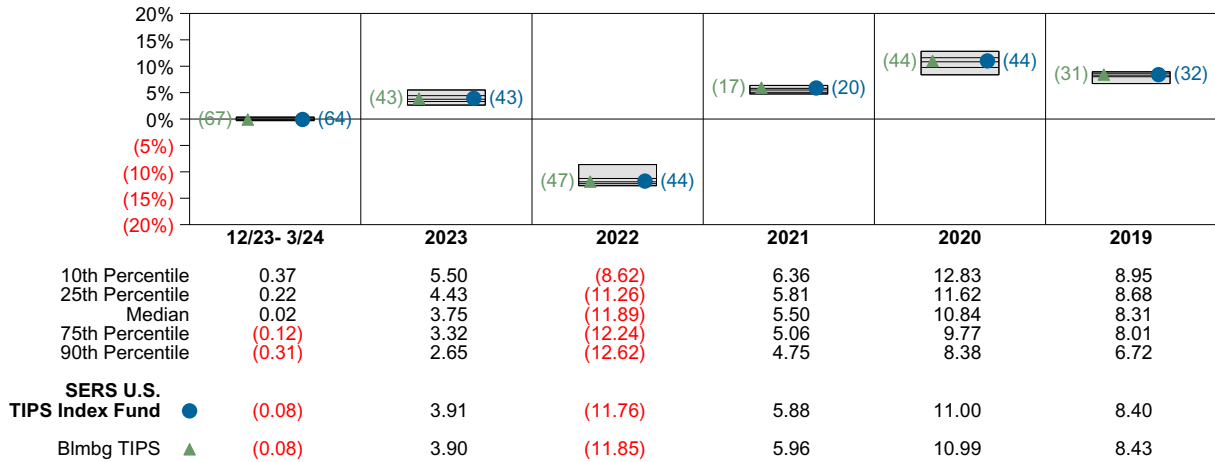


# SERS U.S. TIPS Index Fund Return Analysis Summary

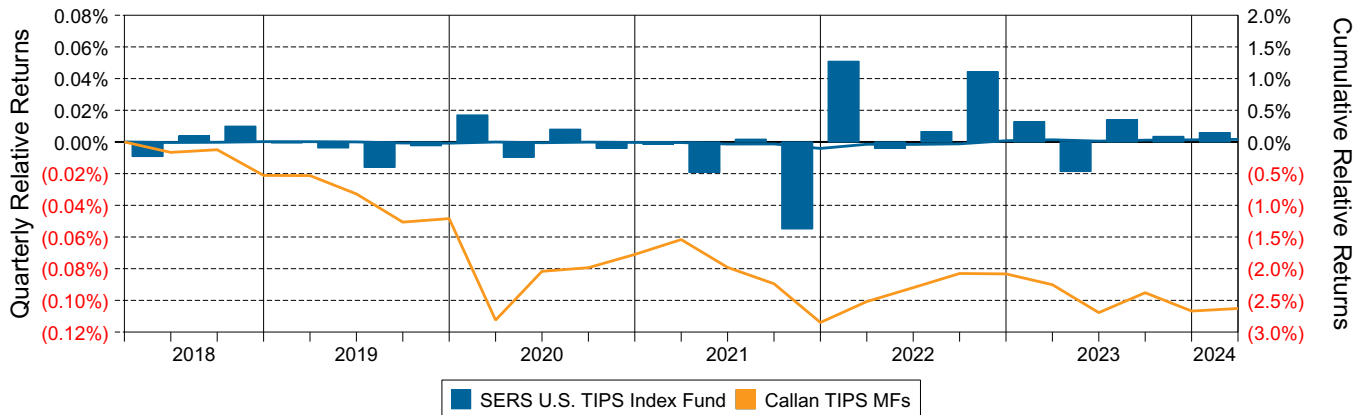
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

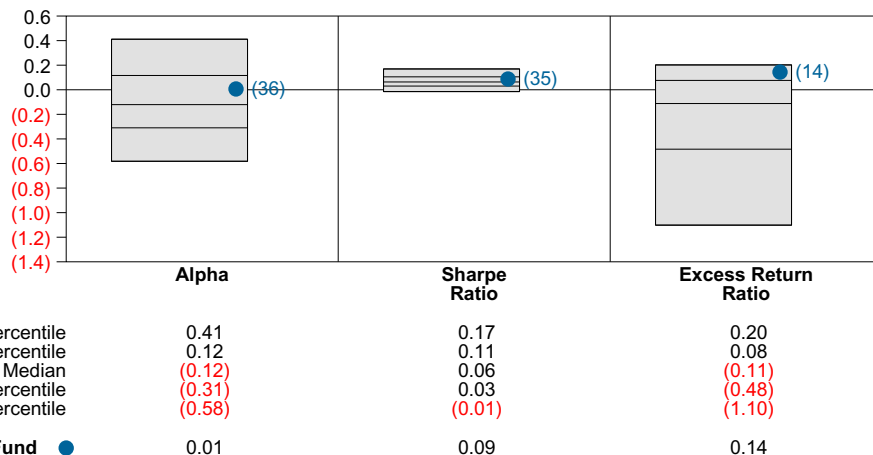
### Performance vs Callan Treas Infl Prot Securities MFs (Institutional Net)



### Cumulative and Quarterly Relative Returns vs Blmbg TIPS



### Risk Adjusted Return Measures vs Blmbg TIPS Rankings Against Callan Treas Infl Prot Securities MFs (Institutional Net) Six Years Ended March 31, 2024



# SERS U.S. TIPS Index Fund

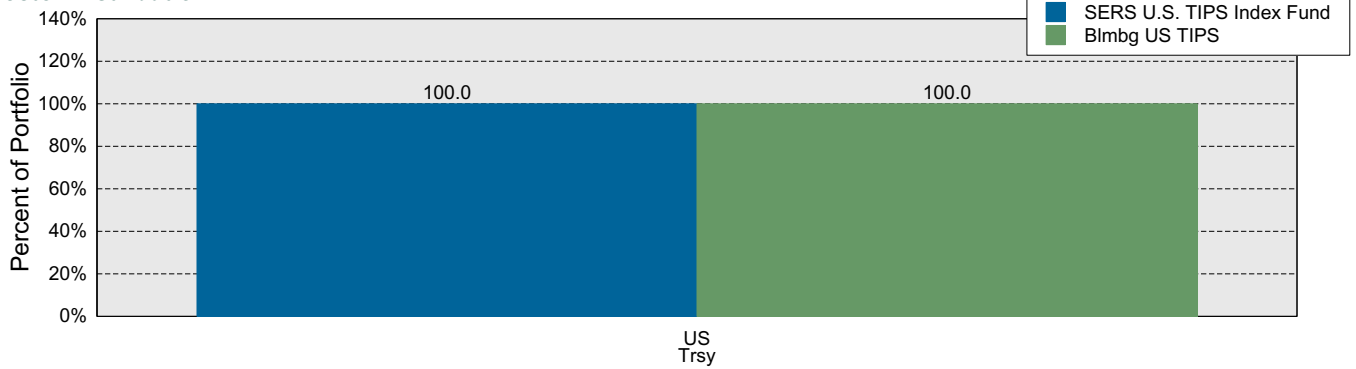
## Portfolio Characteristics Summary

### As of March 31, 2024

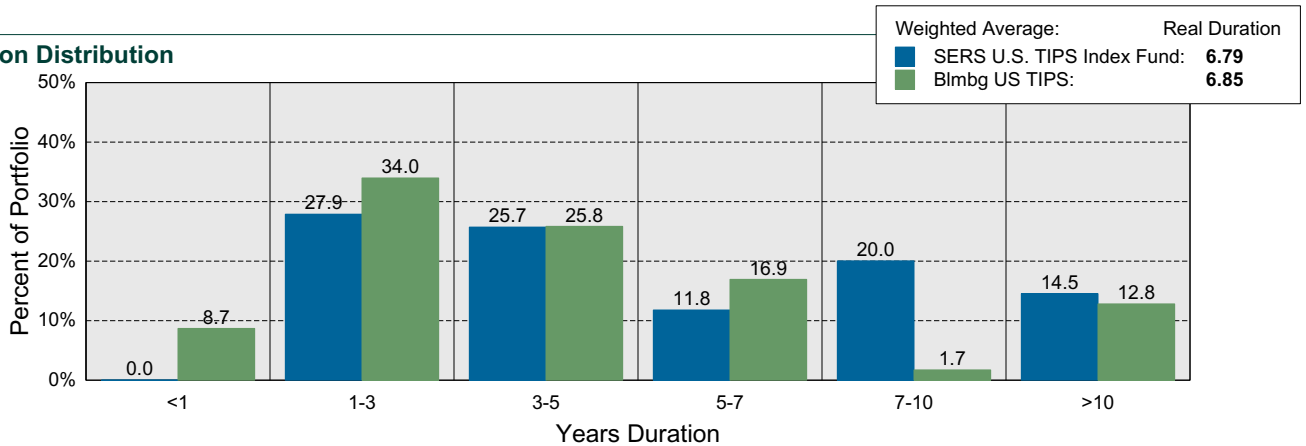
#### Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

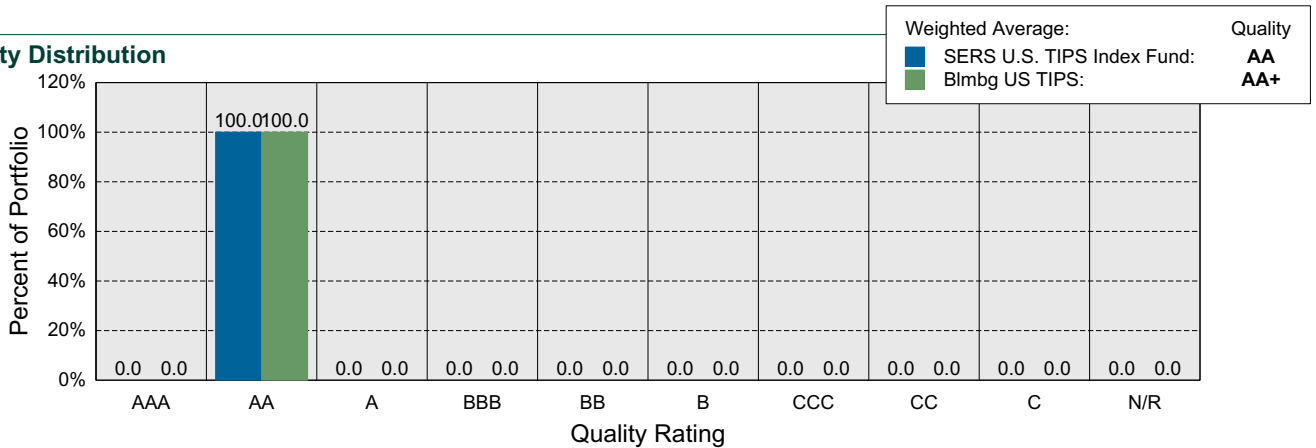
#### Sector Distribution



#### Duration Distribution



#### Quality Distribution

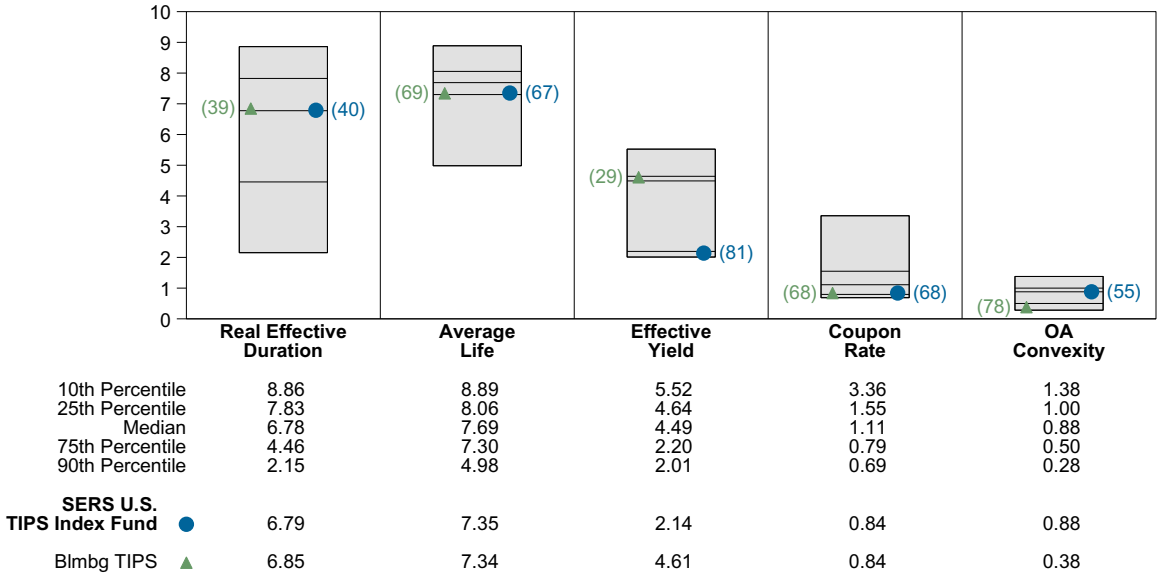


# SERS U.S. TIPS Index Fund Bond Characteristics Analysis Summary

## Portfolio Characteristics

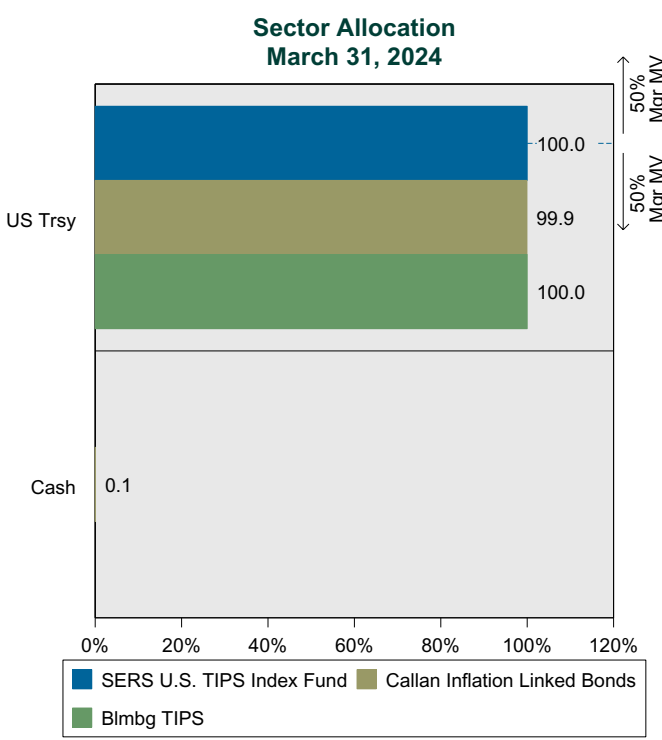
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of March 31, 2024

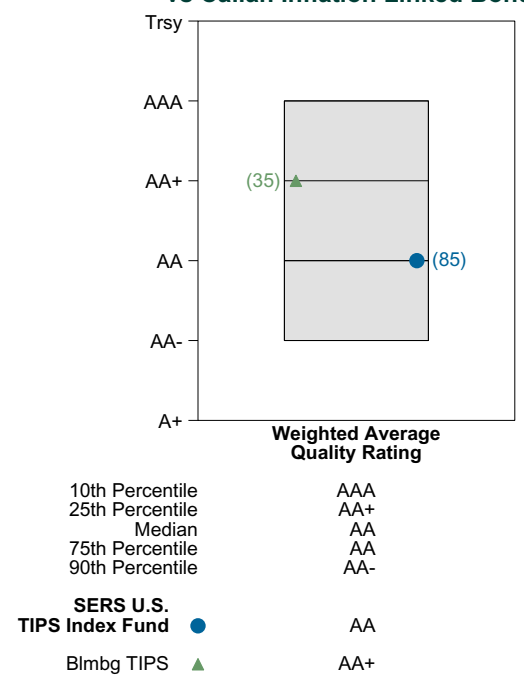


## Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.



### Quality Ratings vs Callan Inflation Linked Bonds



# SERS U.S. Bond Index Fund

## Period Ended March 31, 2024

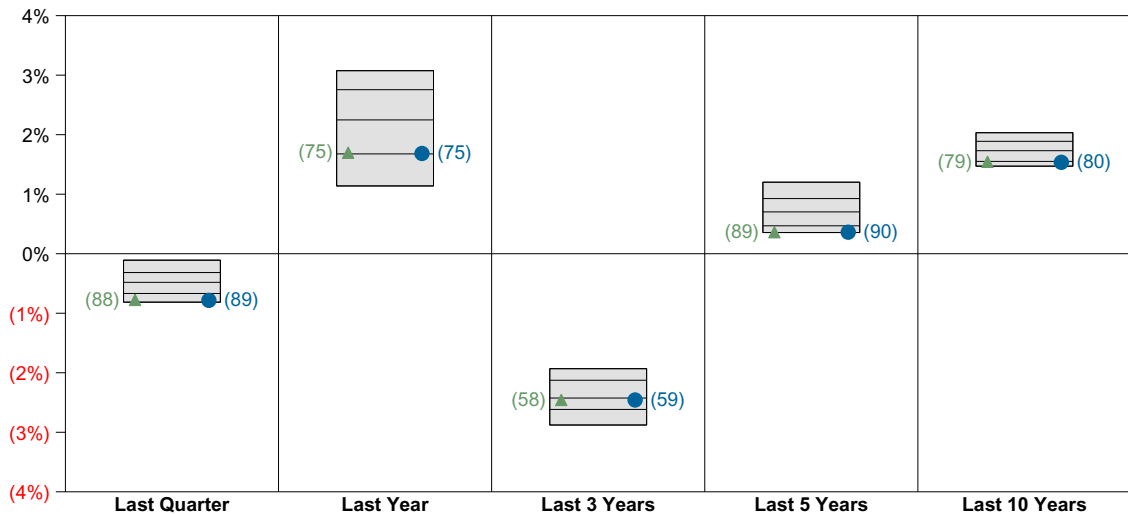
### Investment Philosophy

The objective of the Fund is to track the performance of the Bloomberg US Aggregate Bond Index. In meeting this objective, the Fund may invest in securities (including those issued through private placements) and a combination of other collective funds that together are designed to track the performance of the Bloomberg US Aggregate Bond Index. This fund is managed by Mellon Capital Management.

### Quarterly Summary and Highlights

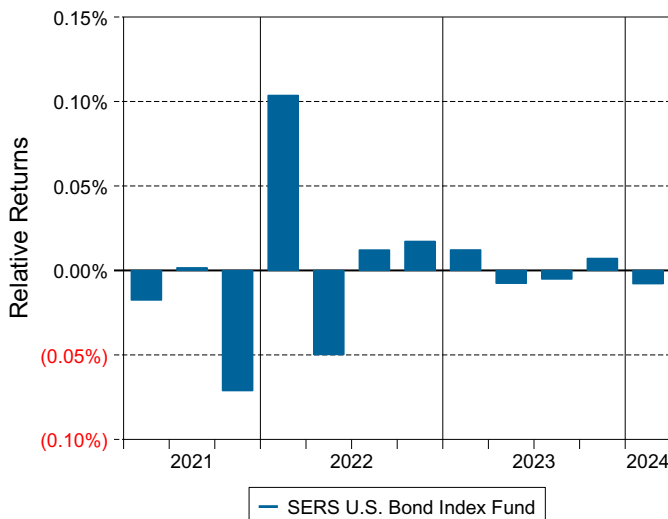
- SERS U.S. Bond Index Fund's portfolio posted a (0.78)% return for the quarter placing it in the 89 percentile of the Callan Core Bond Mutual Funds group for the quarter and in the 75 percentile for the last year.
- SERS U.S. Bond Index Fund's portfolio underperformed the Blmbg:Aggregate by 0.01% for the quarter and underperformed the Blmbg:Aggregate for the year by 0.01%.

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

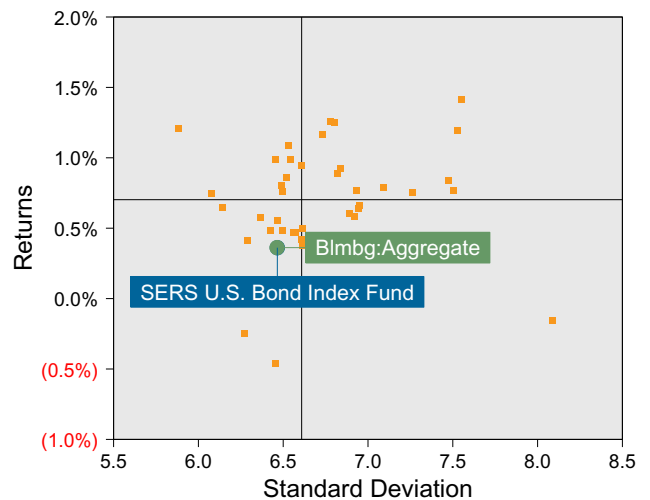


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	(0.11)	3.08	(1.93)	1.20	2.03
25th Percentile	(0.32)	2.76	(2.13)	0.93	1.89
Median	(0.48)	2.25	(2.42)	0.70	1.73
75th Percentile	(0.67)	1.68	(2.62)	0.47	1.55
90th Percentile	(0.81)	1.14	(2.88)	0.36	1.47
<b>SERS U.S. Bond Index Fund</b>	<b>(0.78)</b>	<b>1.68</b>	<b>(2.46)</b>	<b>0.36</b>	<b>1.54</b>
Blmbg:Aggregate	(0.78)	1.70	(2.46)	0.36	1.54

### Relative Return vs Blmbg:Aggregate



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

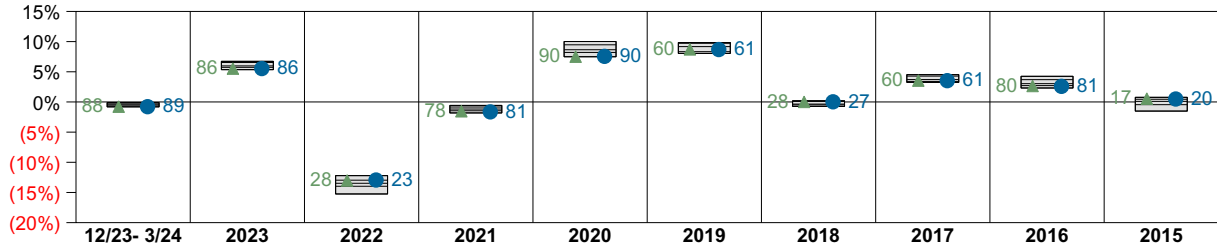


# SERS U.S. Bond Index Fund Return Analysis Summary

## Return Analysis

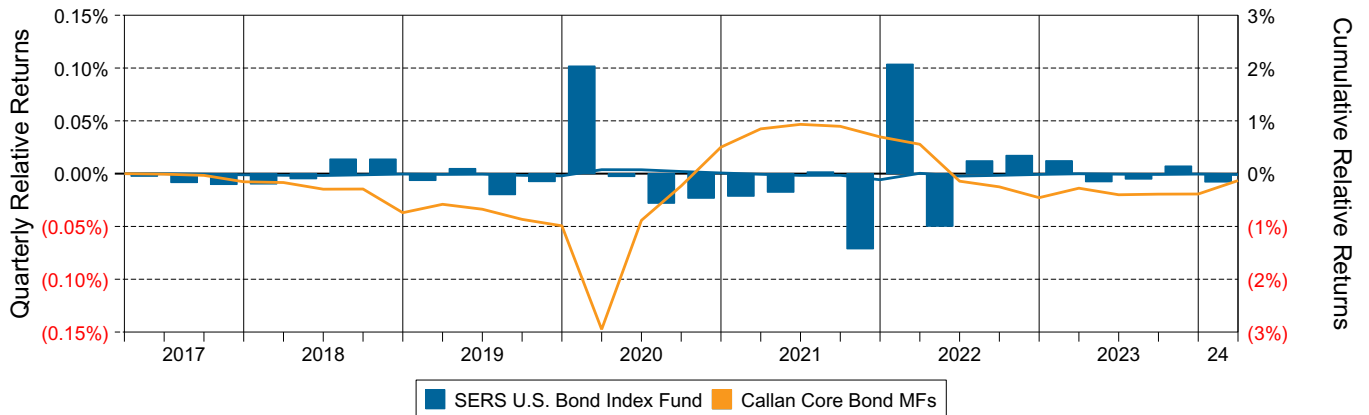
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

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

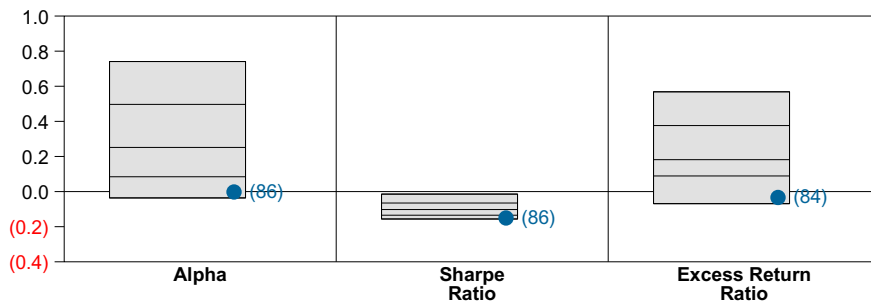


	12/23- 3/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	(0.11)	6.73	(12.21)	(0.57)	10.01	9.85	0.20	4.52	4.25	0.77
25th Percentile	(0.32)	6.54	(12.96)	(0.84)	9.47	9.72	0.09	4.28	3.70	0.45
Median	(0.48)	5.98	(13.48)	(1.17)	8.65	9.17	(0.35)	3.71	3.03	0.10
75th Percentile	(0.67)	5.74	(13.97)	(1.46)	8.21	8.33	(0.49)	3.40	2.71	(0.45)
90th Percentile	(0.81)	5.35	(15.25)	(1.82)	7.49	8.04	(0.73)	3.25	2.31	(1.52)
<b>SERS U.S. Bond Index Fund</b>	● (0.78)	5.54	(12.94)	(1.65)	7.56	8.69	0.02	3.53	2.59	0.49
Blmbg:Aggregate	▲ (0.78)	5.53	(13.01)	(1.54)	7.51	8.72	0.01	3.54	2.65	0.55

### Cumulative and Quarterly Relative Returns vs Blmbg:Aggregate



### Risk Adjusted Return Measures vs Blmbg:Aggregate Rankings Against Callan Core Bond Mutual Funds (Institutional Net) Seven Years Ended March 31, 2024



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.74	(0.01)	0.57
25th Percentile	0.50	(0.07)	0.38
Median	0.25	(0.10)	0.18
75th Percentile	0.08	(0.13)	0.09
90th Percentile	(0.04)	(0.16)	(0.07)
<b>SERS U.S. Bond Index Fund</b>	● (0.00)	(0.15)	(0.03)

# SERS U.S. Bond Index Fund

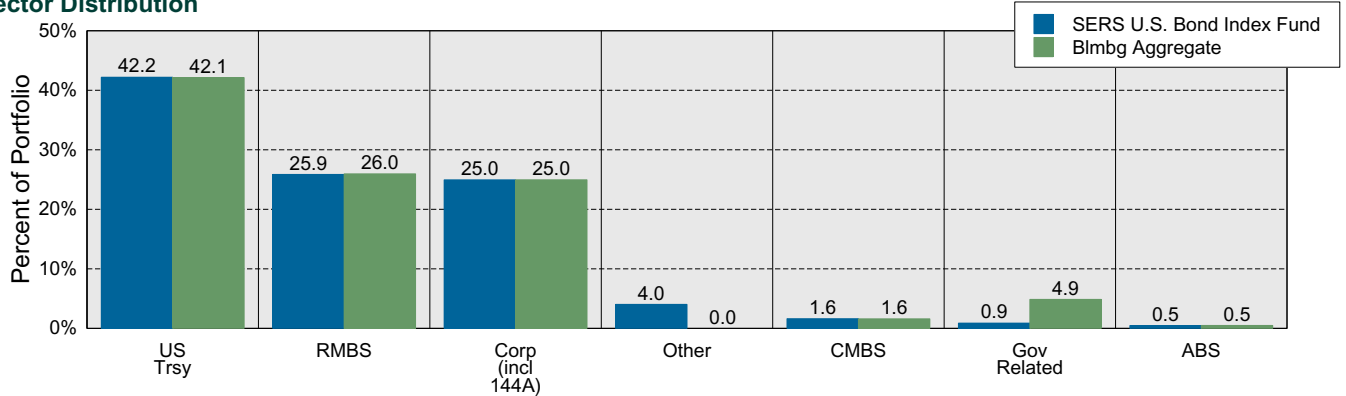
## Portfolio Characteristics Summary

### As of March 31, 2024

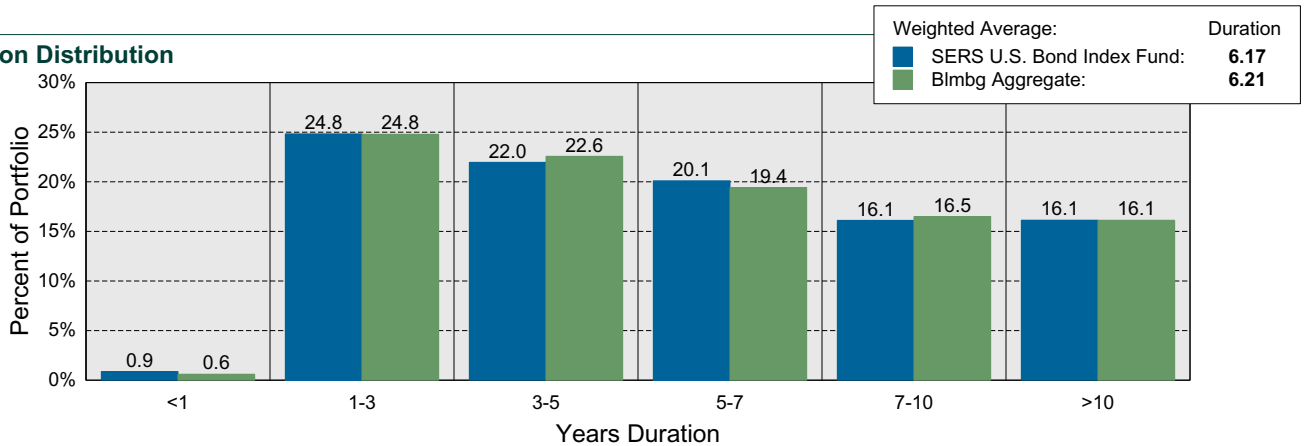
#### Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

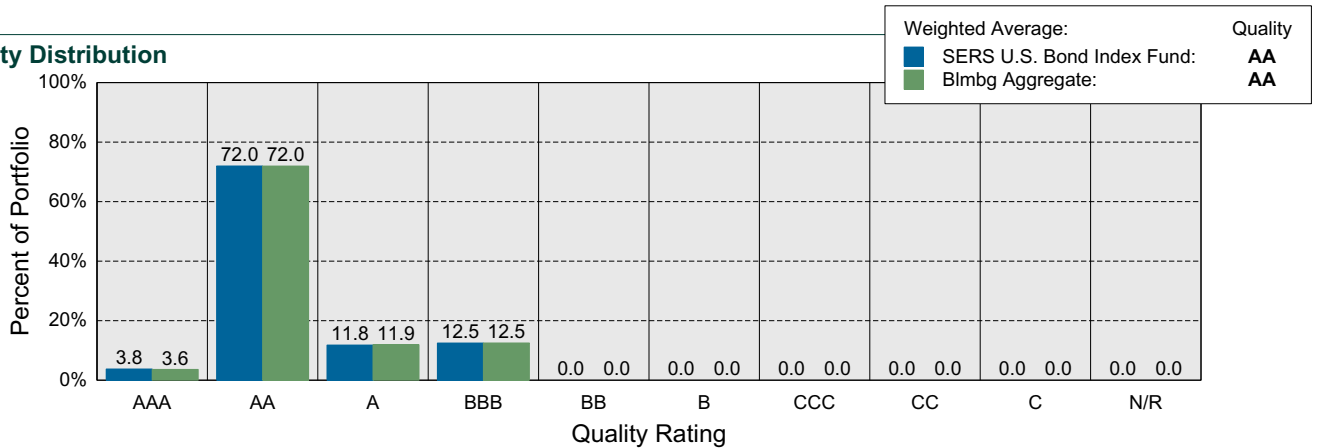
#### Sector Distribution



#### Duration Distribution



#### Quality Distribution



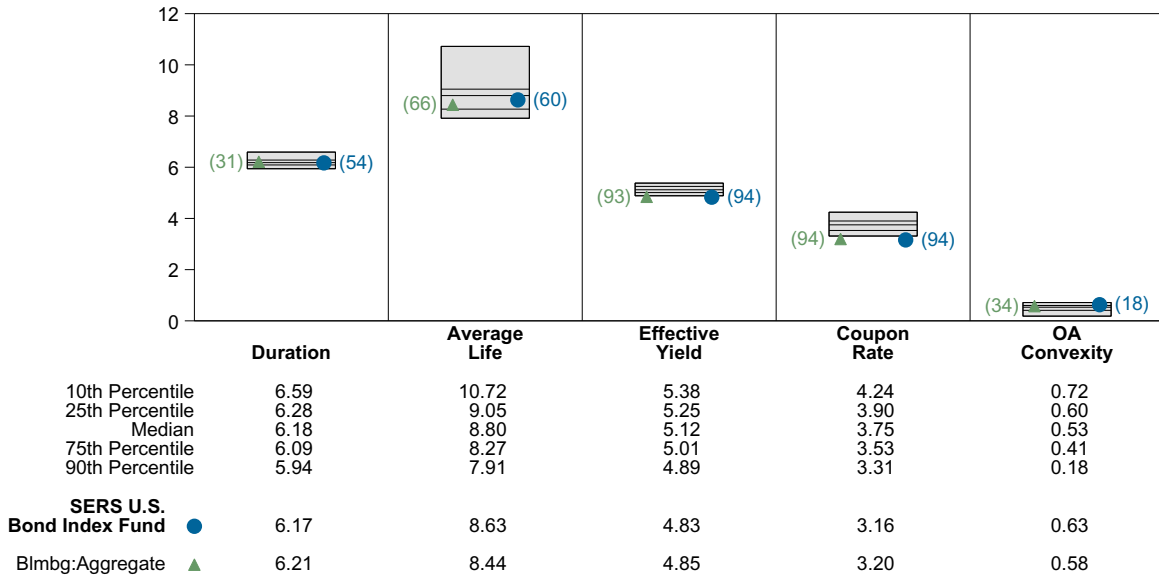
# SERS U.S. Bond Index Fund

## Bond Characteristics Analysis Summary

### Portfolio Characteristics

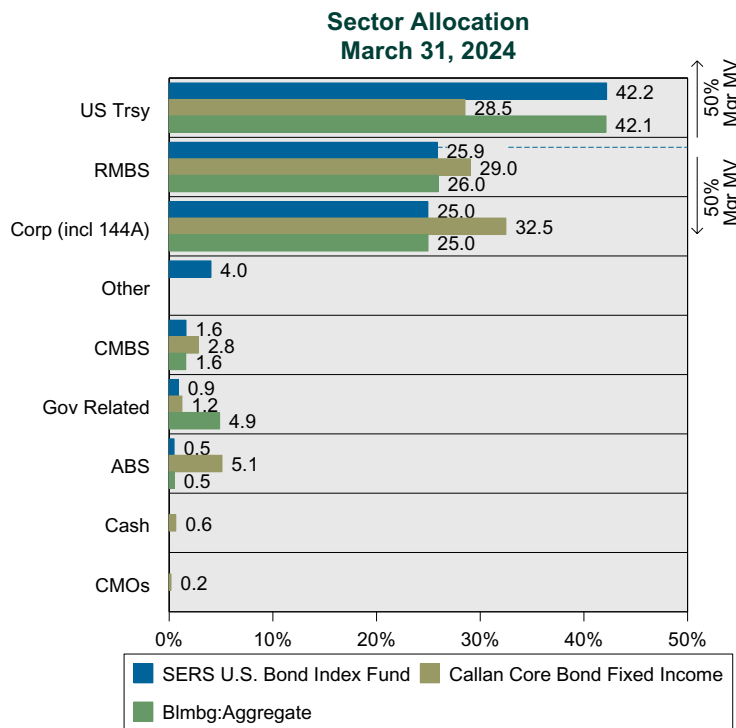
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

### Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of March 31, 2024

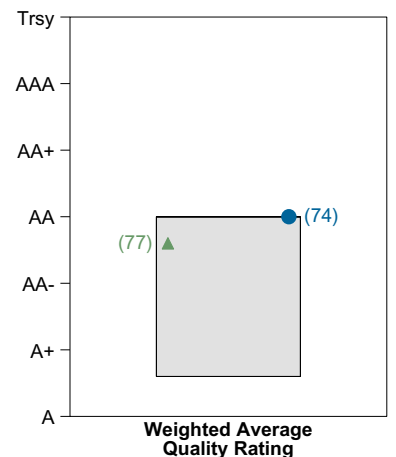


### Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.



#### Quality Ratings vs Callan Core Bond Fixed Income







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## Equity Market Indicators

The market indicators included in this report are regarded as measures of equity or fixed income performance results. The returns shown reflect both income and capital appreciation.

**S&P 500 Index** Measures performance of top 500 companies in leading industries of U.S. economy. The index covers approximately 80% of available market capitalization.

## Fixed Income Market Indicators

**3-month Treasury Bill** Provides a measure of riskless return. The rate of return is the average interest rate available on the beginning of each month for a Treasury Bill maturing in ninety days.

**Bloomberg Aggregate** Represents securities that are SEC-registered, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities.

## International Equity Market Indicators

**MSCI EAFE (Net)** Is composed of approximately 1000 equity securities representing the stock exchanges of Europe, Australia, New Zealand and the Far East. The index is capitalization-weighted and is expressed in terms of U.S. dollars.

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## Callan Databases

In order to provide comparative investment results for use in evaluating a fund's performance, Callan gathers rate of return data from investment managers. These data are then grouped by type of assets managed and by the type of investment manager. Except for mutual funds, the results are for tax-exempt fund assets. The databases, excluding mutual funds, represent investment managers who handle over 80% of all tax-exempt fund assets.

### Equity Funds

Equity funds concentrate their investments in common stocks and convertible securities. The funds included maintain well-diversified portfolios.

**Middle Capitalization** - Mutual Funds who invest primarily in mid-range companies with market capitalizations between core equity companies and small capitalization companies. The average market capitalization is approximately \$7 billion. Invests in securities with greater volatility than the broader market as measured by the risk statistics Beta and Standard Deviation. The Middle Capitalization Style Group consists of the Middle Capitalization Growth Equity and the Middle Capitalization Value Equity Style Groups.

### Fixed Income Funds

Fixed Income funds concentrate their investments in bonds, preferred stocks, and money market securities. The funds included maintain well-diversified portfolios.

**Core Bond** - Mutual Funds that construct portfolios to approximate the investment results of the Bloomberg Barclays Capital Government/Credit Bond Index or the Bloomberg Barclays Capital Aggregate Bond Index with a modest amount of variability in duration around the index. The objective is to achieve value added from sector and/or issue selection.

### Balanced Funds

Balanced funds diversify their investments among common stocks, bonds, preferred stocks and money market securities. The funds included maintain well-diversified equity and fixed income portfolios.

**Mutual Fund Balanced Funds** - The Mutual Fund Balanced Fund Database consists of open-end mutual fund balanced products.

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## Risk/Reward Statistics

The risk statistics used in this report examine performance characteristics of a manager or a portfolio relative to a benchmark (market indicator) which assumes to represent overall movements in the asset class being considered. The main unit of analysis is the excess return, which is the portfolio return minus the return on a risk free asset (3 month T-Bill).

**Alpha** measures a portfolio's return in excess of the market return adjusted for risk. It is a measure of the manager's contribution to performance with reference to security selection. A positive alpha indicates that a portfolio was positively rewarded for the residual risk which was taken for that level of market exposure.

**Beta** measures the sensitivity of rates of portfolio returns to movements in the market index. A portfolio's beta measures the expected change in return per 1% change in the return on the market. If a beta of a portfolio is 1.5, a 1 percent increase in the return on the market will result, on average, in a 1.5 percent increase in the return on the portfolio. The converse would also be true.

**Downside Risk** stems from the desire to differentiate between "good risk" (upside volatility) and "bad risk" (downside volatility). Whereas standard deviation punishes both upside and downside volatility, downside risk measures only the standard deviation of returns below the target. Returns above the target are assigned a deviation of zero. Both the frequency and magnitude of underperformance affect the amount of downside risk.

**Excess Return Ratio** is a measure of risk adjusted relative return. This ratio captures the amount of active management performance (value added relative to an index) per unit of active management risk (tracking error against the index.) It is calculated by dividing the manager's annualized cumulative excess return relative to the index by the standard deviation of the individual quarterly excess returns. The Excess Return Ratio can be interpreted as the manager's active risk/reward tradeoff for diverging from the index when the index is mandated to be the "riskless" market position.

**Information Ratio** measures the manager's market risk-adjusted excess return per unit of residual risk relative to a benchmark. It is computed by dividing alpha by the residual risk over a given time period. Assuming all other factors being equal, managers with lower residual risk achieve higher values in the information ratio. Managers with higher information ratios will add value relative to the benchmark more reliably and consistently.

**R-Squared** indicates the extent to which the variability of the portfolio returns are explained by market action. It can also be thought of as measuring the diversification relative to the appropriate benchmark. An r-squared value of .75 indicates that 75% of the fluctuation in a portfolio return is explained by market action. An r-squared of 1.0 indicates that a portfolio's returns are entirely related to the market and it is not influenced by other factors. An r-squared of zero indicates that no relationship exists between the portfolio's return and the market.

**Relative Standard Deviation** is a simple measure of a manager's risk (volatility) relative to a benchmark. It is calculated by dividing the manager's standard deviation of returns by the benchmark's standard deviation of returns. A relative standard deviation of 1.20, for example, means the manager has exhibited 20% more risk than the benchmark over that time period. A ratio of .80 would imply 20% less risk. This ratio is especially useful when analyzing the risk of investment grade fixed-income products where actual historical durations are not available. By using this relative risk measure over rolling time periods one can illustrate the "implied" historical duration patterns of the portfolio versus the benchmark.

**Residual Portfolio Risk** is the unsystematic risk of a fund, the portion of the total risk unique to the fund (manager) itself and not related to the overall market. This reflects the "bets" which the manager places in that particular asset market. These bets may reflect emphasis in particular sectors, maturities (for bonds), or other issue specific factors which the manager considers a good investment opportunity. Diversification of the portfolio will reduce or eliminate the residual risk of that portfolio.

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## Risk/Reward Statistics

**Rising Declining Periods** refer to the sub-asset class cycles vis-a-vis the broader asset class. This is determined by evaluating the cumulative relative sub-asset class index performance to that of the broader asset class index. For example, to determine the Growth Style cycle, the S&P 500 Growth Index (sub-asset class) performance is compared to that of the S&P 500 Index (broader asset class).

**Sharpe Ratio** is a commonly used measure of risk-adjusted return. It is calculated by subtracting the "risk-free" return (usually 3 Month Treasury Bill) from the portfolio return and dividing the resulting "excess return" by the portfolio's risk level (standard deviation). The result is a measure of return gained per unit of risk taken.

**Sortino Ratio** is a downside risk-adjusted measure of value-added. It measures excess return over a benchmark divided by downside risk. The natural appeal is that it identifies value-added per unit of truly bad risk. The danger of interpretation, however, lies in these two areas: (1) the statistical significance of the denominator, and (2) its reliance on the persistence of skewness in return distributions.

**Standard Deviation** is a statistical measure of portfolio risk. It reflects the average deviation of the observations from their sample mean. Standard deviation is used as an estimate of risk since it measures how wide the range of returns typically is. The wider the typical range of returns, the higher the standard deviation of returns, and the higher the portfolio risk. If returns are normally distributed (ie. has a bell shaped curve distribution) then approximately 2/3 of the returns would occur within plus or minus one standard deviation from the sample mean.

**Total Portfolio Risk** is a measure of the volatility of the quarterly excess returns of an asset. Total risk is composed of two measures of risk: market (non-diversifiable or systematic) risk and residual (diversifiable or unsystematic) risk. The purpose of portfolio diversification is to reduce the residual risk of the portfolio.

**Tracking Error** is a statistical measure of a portfolio's risk relative to an index. It reflects the standard deviation of a portfolio's individual quarterly or monthly returns from the index's returns. Typically, the lower the Tracking Error, the more "index-like" the portfolio.

**Treynor Ratio** represents the portfolio's average excess return over a specified period divided by the beta relative to its benchmark over that same period. This measure reflects the reward over the risk-free rate relative to the systematic risk assumed.

Note: Alpha, Total Risk, and Residual Risk are annualized.



## Quarterly Highlights

The Callan Institute provides research to update clients on the latest industry trends, carefully structured educational programs to enhance the knowledge of industry professionals, and events to enhance dialogue among investing 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

[2024-2033 Capital Markets Assumptions](#) | View our interactive webpage and charticle outlining our 10-year assumptions. Our white paper and associated webinar also detail the process involved in creating our assumptions and the reasoning behind them.

[Callan Periodic Table of Investment Returns: Year-end 2023](#) | The Periodic Table of Investment Returns depicts annual returns for key asset classes, ranked from best to worst performance for each calendar year.

[Rental Housing Primer: 1Q24 RAR](#) | Callan's Aaron Quach provides analysis of the key subsectors within the rental housing sector.

[STAR Report Executive Summary: Year-End 2023](#) | The Style, Trend, Analysis & Research (STAR) report provides in-depth analysis of asset flows across public strategies and discussion of alternatives.

### Webinar Replays

[Research Café: ESG Interview Series](#) | This session features Tom Shingler, Callan ESG practice leader, interviewing Chris Fidler, from the Codes & Standards team at the CFA Institute.

### Blog Highlights

[SEC Releases Final Climate Disclosure Rule](#) | The objective for these rules is to aid investors in making reliable comparisons of companies by providing transparency into the potential financial effects of climate-related risks.

[A Strong Finish to 2023 Bodes Well for Hedge Funds in 2024](#) | Hedge funds finished off 2023 on a strong note with the HFRI Fund Weighted Composite ending 8.1% higher and the Callan Institutional Hedge Fund Peer Group gaining 7.5%.

[The Magnificent Seven and Large Cap Portfolios](#) | The Seven's presence, both in weight and attribution, affected just about every investment managers' large cap portfolio.

### Quarterly Updates

[Private Equity Update, 4Q23](#) | A high-level summary of private equity activity in the quarter through all the investment stages

[Active vs. Passive Charts, 4Q23](#) | A comparison of active managers alongside relevant benchmarks over the long term

[Market Pulse, 4Q23](#) | 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, 4Q23](#) | 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, 4Q23](#) | Commentary on developments for hedge funds and multi-asset class (MAC) strategies

[Real Assets Update, 4Q23](#) | A summary of market activity for real assets and private real estate during the quarter

[Private Credit Update, 4Q23](#) | A review of performance and fundraising activity for private credit during the quarter

[Callan Target Date Index™, 4Q23](#) | Tracks the performance and asset allocation of available target date mutual funds and CITs

[Callan DC Index™, 4Q23](#) | Provides underlying fund performance, asset allocation, and cash flows of more than 100 large defined contribution plans representing approximately \$400 billion in assets.

## Events

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

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

### June Regional Workshops

**June 25, 2024 – Atlanta**

**June 27, 2024 – San Francisco**

**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

**4,845**

Total attendees of the "Callan College" since 1994

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## 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

**June 11-12, 2024 – Chicago**

This program familiarizes institutional investor trustees and staff and asset management advisers with basic investment theory, terminology, and practices. This course is designed for individuals with less than two years of experience with asset-management oversight and/or support responsibilities.

### Alternative Investments

**Aug. 21-22, 2024 – Virtual**

Alternative investments like private equity, hedge funds, and real estate can play a key role in any portfolio. In our "Callan College" on Alternatives, you will learn about the importance of allocations to alternatives, and how to consider integrating, evaluating, and monitoring them.

Our virtual sessions are held over two to three days with virtual modules of 2.5-3 hours, while in-person sessions run either a full day or one-and-a-half days. 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](https://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

Confidential – For Callan Client Use Only

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.

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