

December 31, 2024

**Pennsylvania SERS 457(b)**



**Investment Measurement Service  
Quarterly Review**

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### December 31, 2024

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## The Recession Never Came, so Now What?

### ECONOMY

**2** Economists were convinced that a recession would hit the U.S. economy, but it never came. Instead, growth held up, and consumers became more confident. Now what? With mass deportations and tariffs potentially leading to inflation, the fate of the economy is uncertain.

## Inflation Worries Drag Most Indices Lower

### FIXED INCOME

**8** The Bloomberg US Aggregate Bond Index fell 3.1% due to the rise in interest rates, and credit spreads tightened. The yield curve steepened, with rates rising for Treasuries one year and longer. The U.S. dollar surged.

## Gains in 3Q24 but Lags Benchmarks

### PRIVATE CREDIT

**12** Private credit rose 2.0% in 3Q24, lagging two benchmarks. But over longer time periods it has held up well and performed better than either leveraged loans or high yield bonds. Fundraising for private debt was the strongest since 4Q23, with \$51 billion raised.

## Gains for 2024 but Concerns Over 2025

### INSTITUTIONAL INVESTORS

**4** Institutional investors saw gains over 2024, but struggled against a 60% stocks/40% bonds benchmark. The new administration was the focus of many discussions, and inflation, interest rates, and the Fed continued to dominate asset-allocation decisions.

## Valuations May Have Bottomed; REITs Fall

### REAL ESTATE/REAL ASSETS

**10** Valuations appear to have bottomed and now reflect higher borrowing costs. Income returns for private real estate were positive across sectors and regions. REITs fell, both in the U.S. and globally. Redemption queues are starting to decline.

## Strong Finish but Choppy Outlook

### HEDGE FUNDS/MACs

**13** Hedge funds finished strong to end the year; the median Callan Institutional Hedge Fund Peer Group rose 2.4%. Within the HFRI indices, the best-performing strategy was event-driven, which was up 2.1% as current M&A deals reacted positively to the new administration.

## U.S. Stocks Hit High After Volatility Spike

### EQUITY

**6** U.S. stocks ended up roughly 2% after a volatile quarter. Sector performance was mixed, while large cap stocks outperformed small cap, again. Tariffs threatened by the Trump administration weighed on global equity markets, with Europe one of the worst performers.

## Fundraising Back; Activity Struggles

### PRIVATE EQUITY

**11** Fundraising by dollar is nearing the highs of 2021. Buyout activity is flat, while venture capital activity is significantly depressed. Short-term performance continues to lag, but over longer time periods, private equity maintains a premium.

## Index Gains 5.6%; Turnover at Low

### DEFINED CONTRIBUTION

**15** The Callan DC Index™ gained 5.6% in 3Q24. Balances in the index rose entirely due to investment gains, as net flows were negative. Turnover as measured by the index hit its lowest level ever, while fixed income saw the most flows, outpacing even target date funds.

## Broad Market Quarterly Returns

**U.S. Equity**  
Russell 3000



**2.6%**

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



**-7.6%**

**U.S. Fixed Income**  
Bloomberg Agg



**-3.1%**

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



**-6.8%**

Sources: Bloomberg, FTSE Russell, MSCI

# The Recession Never Came, so Now What?

ECONOMY | Jay Kloepfer

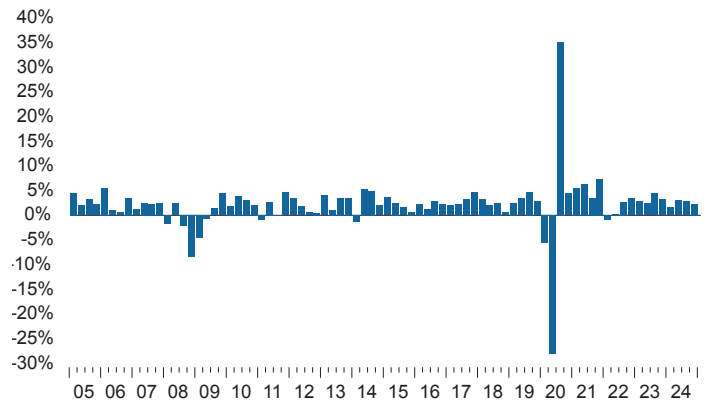
Economists and market prognosticators were all so sure that a recession was in the cards, if not in 2023, then surely in 2024. But one never came, and now we are left scratching our collective heads as to what is in store for the global economy. The U.S. economy showed a few signs of slowing during 2024, scattered across indicators like inventories and consumer debt levels, especially for autos, and exports and imports. In the end solid GDP growth persisted, and the job market proved resilient despite some head fakes during the year. The hurricanes in the Southeast took a bite out of consumer optimism and the job market in the fall, when new jobs fell precipitously in October to recessionary readings (below 50,000). But hiring came bouncing back in November and December, and the U.S. economy clocked consecutive months with greater than 200,000 new jobs, a level associated with continued economic expansion. The unemployment rate remains low at 4.1%. GDP grew 2.5% over the course of 2024, after a gain of 2.9% the previous year.

The Federal Reserve's process of rate hikes to tackle elevated inflation, in which the Fed Funds rate and mortgage rates and credit card and auto loan rates all rose dramatically within a very concentrated period of about six quarters, barely dented the U.S. economic growth engine. A tumultuous federal election year and spreading geopolitical turmoil around the globe has not hurt consumer confidence much. We can trace the consumer optimism in broad strokes to the strong, steady job market, and wages and salaries that have risen fast enough to finally outpace inflation, a reversal that took hold when the rate of inflation dropped sharply from its peak in 2022. Real average hourly earnings increased 1% over the course of 2024 (in other words, nominal wages outpaced inflation by 1%). Real wage growth has sustained confidence and boosted disposable income and spending.

The Fed signaled that it completed its mission to raise interest rates to fight inflation in mid-2024 and began cutting rates in September 2024. The Fed cut a total of 1% in 2024, and the current target range for the Fed Funds rate is 4.25%–4.50%. Longer term, the midpoint of the Fed's target for short rates is 3.0%,

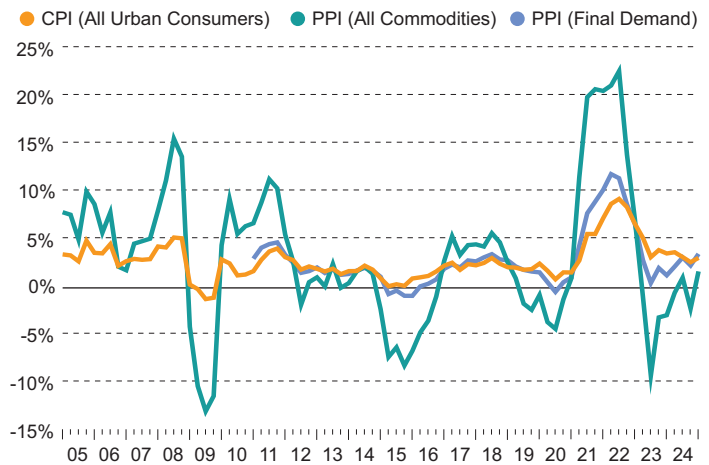
## Quarterly Real GDP Growth

(20 Years)



Source: Bureau of Economic Analysis

## Inflation Year-Over-Year



Source: Bureau of Labor Statistics

but the size of the range around this midpoint is unprecedented, 2.4% to 4%, suggesting a wide range of opinions at the Federal Open Market Committee (FOMC). The debt market is pricing in a halt to the Fed's rate cuts at 4%, suggesting belief that inflation and therefore short rates may have to settle in at levels higher than previously thought.

Despite the gains in real wages, the shadow of inflation still looms. The effects of this once-in-a-generation inflation spike will hang over companies and consumers for years. Inflation is a rate of increase in general prices; even if we hit the Federal Reserve's

articulated goal of 2% long term, it still means prices continue to rise, every year. More importantly, that 9% spike in inflation is now baked in. Prices are “permanently” higher, and they are continuing to rise, just at a lower rate. Simple daily indicators abound that remind households and companies and governments that everything is substantially more expensive. None are more prevalent than the cost of food, both at home and at restaurants: How much did I just pay for those eggs?

Strong GDP growth suggests little easing in tight labor markets; the prospect for continued inflationary pressure from the labor market is high. Getting inflation down to the Fed’s stated goal of 2% will take time and some discomfort. Squeezing out the last of excess inflation will require a period of below trend growth, a loosening of the labor market, and the pain of a rise in unemployment. In the face of this labor market tightness, deporting undocumented workers has the potential, most mainstream economists agree, to greatly restrict the supply of labor in agriculture across the country and could result in substantial upward pressure on the cost of food either from reduced supply (more likely) or increased wages to lure American workers to do these jobs (less likely). Other sectors including construction and services could see similar severe tightening in their supply of labor and upward pressure on prices.

The other part of the inflation shadow is the prospect of trade wars, namely the imposition of tariffs by the U.S., with potential retaliation from its trading partners. Within the complex web of global sourcing, assembly, and delivery of goods and services by U.S. companies, it is not clear what or who will be subject to a tariff. American automakers source parts, including computer chips, and assemble vehicles outside of the U.S. American tech companies make much of their hardware either entirely overseas or with

### The Long-Term View

Index	4Q24	Periods Ended 12/31/24			
		1 Yr	5 Yrs	10 Yrs	25 Yrs
<b>U.S. Equity</b>					
Russell 3000	2.6	23.8	13.9	12.5	7.8
S&P 500	2.4	25.0	14.5	13.1	7.7
Russell 2000	0.3	11.5	7.4	7.8	7.6
<b>Global ex-U.S. Equity</b>					
MSCI EAFE	-8.1	3.8	4.7	5.2	3.6
MSCI ACWI ex USA	-7.6	5.5	4.1	4.8	--
MSCI Emerging Markets	-8.0	7.5	1.7	3.6	--
MSCI ACWI ex USA Small Cap	-7.7	3.4	4.3	5.7	6.2
<b>Fixed Income</b>					
Bloomberg Agg	-3.1	1.3	-0.3	1.3	3.9
90-Day T-Bill	1.2	5.3	2.5	1.8	1.9
Bloomberg Long G/C	-7.4	-4.2	-3.3	1.0	5.4
Bloomberg GI Agg ex US	-6.8	-4.2	-3.4	-0.9	2.4
<b>Real Estate</b>					
NCREIF Property	0.9	0.4	3.1	5.7	7.6
FTSE Nareit Equity	-6.2	8.7	4.3	5.7	9.8
<b>Alternatives</b>					
Cambridge PE*	2.5	9.2	16.4	15.4	13.3
Cambridge Senior Debt*	3.3	10.2	7.9	7.3	4.6
HFRI Fund Weighted	1.5	9.8	7.0	5.3	5.6
Bloomberg Commodity	-0.4	5.4	6.8	1.3	2.1
<b>Inflation – CPI-U</b>	0.1	2.9	4.2	3.0	2.5

\*Data for most recent period lags. Data as of 3Q24.  
Sources: Bloomberg, Bureau of Economic Analysis, FTSE Russell, Hedge Fund Research, MSCI, NCREIF, Refinitiv/Cambridge, S&P Dow Jones Indices

components from overseas. Auto companies from Germany and Japan assemble autos in the U.S. How do we define an import car, exactly? Tariffs raise the prices to the end buyer, leading to more inflationary pressures. Spiraling prices may be the catalyst of the long-awaited recession, finally killing growth in the current economic cycle.

### Recent Quarterly Economic Indicators

	4Q24	3Q24	2Q24	1Q24	4Q23	3Q23
Employment Cost: Total Compensation Growth	3.8%	3.9%	4.1%	4.2%	4.2%	4.3%
Nonfarm Business: Productivity Growth	1.2%	2.3%	2.1%	0.7%	3.1%	3.8%
GDP Growth	2.3%	2.8%	3.0%	1.6%	3.2%	4.4%
Manufacturing Capacity Utilization	76.3%	76.7%	77.2%	77.1%	77.6%	78.1%
Consumer Sentiment Index (1966=100)	72.1	68.1	71.1	78.4	64.9	69.6

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

# Gains for 2024 but Concerns Over 2025

## INSTITUTIONAL INVESTORS

- Public defined benefit (DB) plans and nonprofits gained 10% over the last year, easily topping U.S. fixed income and global ex-U.S. stocks.
- Corporate plans, with their heavier allocations to bonds, only rose 6%.
- But extraordinary stock gains easily outpaced those returns, and all institutional investor types lagged a 60% S&P 500/40% Bloomberg Aggregate benchmark.
- Over 5-, 10-, and 20-year time periods, the same pattern held: public DB plans and nonprofits outpaced corporate plans, but all lagged the benchmark.
- The margin of that outperformance narrowed over time.

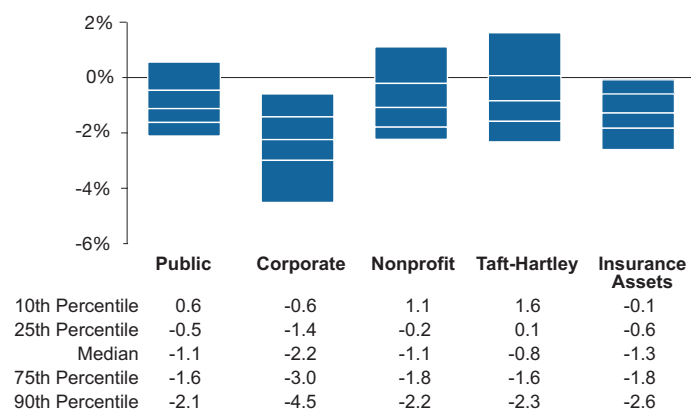
### Macroeconomic Issues

- Not surprisingly, the new administration was a major topic of discussions, with investors trying to understand its impact on inflation, trade, taxes, and deregulation.
- Global ex-U.S. markets continue to be a source of consternation, with their underperformance compared to U.S. equities a sore spot.
- At the same time, the excessive concentration within U.S. large cap stocks is a concern, as active managers struggle to outpace benchmarks.

### Public DB plans

- Asset-allocation decisions drive many conversations for these plans.
- Fixed income, especially its performance compared to other asset classes, has been a pain point. However, increased capital markets expectations for the asset class, especially compared to two years ago, has led some plans to reconsider bonds.
- Interest rates and the Fed's actions continue to be a top-of-mind issue.

### Quarterly Returns, Callan Database Groups (12/31/24)



Source: Callan

### Callan Database Median and Index Returns\* for Periods Ended 12/31/24

Database Group	Quarter	1 Year	3 Years	5 Years	10 Years	20 Years
Public Database	-1.1	10.0	3.0	7.2	7.3	6.9
Corporate Database	-2.2	6.0	-0.7	3.9	5.5	6.2
Nonprofit Database	-1.1	10.1	2.9	7.2	7.0	6.7
Taft-Hartley Database	-0.8	9.7	2.8	6.8	7.0	6.7
Insurance Assets Database	-1.3	6.4	1.5	3.4	4.1	4.5
All Institutional Investors	-1.3	9.4	2.5	6.6	6.7	6.7
Large (>\$1 billion)	-1.1	8.6	2.6	7.0	7.1	6.9
Medium (\$100mm - \$1bn)	-1.3	9.5	2.5	6.7	6.8	6.8
Small (<\$100 million)	-1.4	10.0	2.5	6.5	6.6	6.5
60% S&P 500/40% Bloomberg Agg	0.2	15.1	4.5	8.8	8.6	7.7

\*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.

**Corporate DB plans**

- Funded status improvements are leading plans to discuss changes to asset allocation to protect the gains, or to derisk, or to examine pension risk transfer.
- Allocation issues touch a range of asset classes, including hedge funds and growth assets.
- Investors ranked artificial intelligence as the most topical issue they are addressing, followed by geopolitical uncertainty.
- With the pandemic and related lockdowns firmly in the rear-view mirror for many, firm culture after COVID-19 was last in their rankings.

**DC plans**

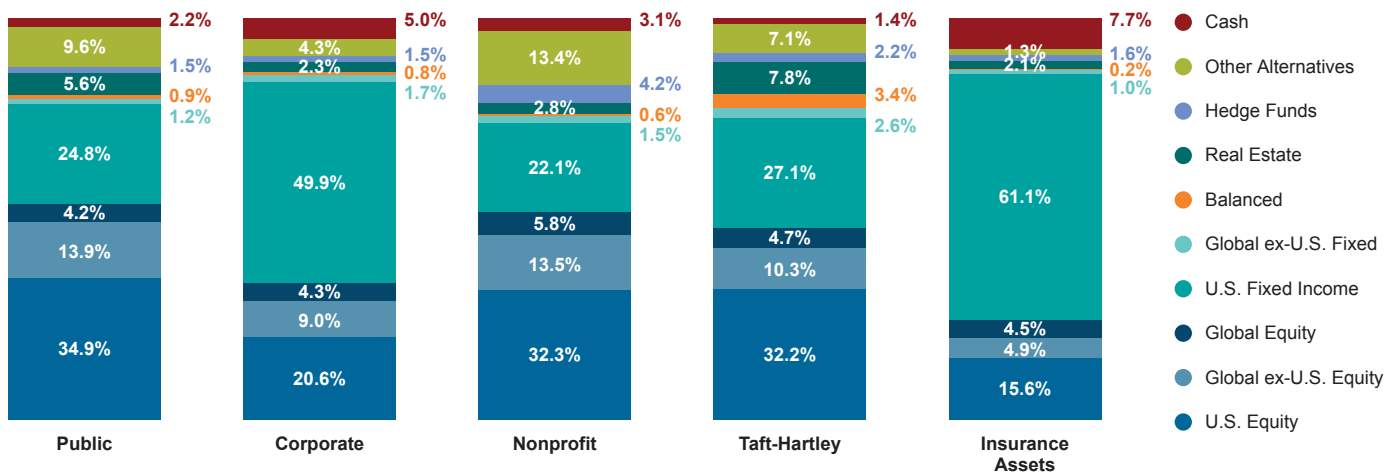
- Retirement income is still under discussion by sponsors, to help participants with the “decumulation” phase of their careers and post-career lives.

- Target date funds are attracting scrutiny. They are quite popular, but some plans wonder if they have the “right” ones.
- The implications of SECURE 2.0 and other regulatory changes are uncertain, but sponsors are trying to assess what if any changes they need to make in response.

**Nonprofits**

- These investors are also weighing critical asset-allocation decisions, including how much to allocate to alternative investments, what to do with fixed income, and whether to overweight U.S. equities vs. global ex-U.S. equities.
- Return enhancement is another area of focus, with a desire to assure the growth of the portfolio.
- Interest in diversity, equity, and inclusion continues to be low, even compared to other types of institutional investors, with only 6% of clients this quarter planning future action and 26% taking no steps to implement DEI policies.

**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

### U.S. market reaches record high after spike in volatility

- The U.S. equity market ended with the S&P 500 Index up over 2%. However, the quarter was marked by volatility, particularly during October and December.
- Negative returns in October were driven by investor anxiety around the U.S. presidential election, uncertainty with the Fed’s approach to interest rate cuts, and some misses to corporate earnings expectations. December returns, while initially buoyed by the Fed’s third consecutive rate cut, cooled after the Fed announced no additional rate cuts until the second half of 2025.
- Sector performance was mixed; only four (Communication Services, Consumer Discretionary, Financials, and Information Technology) posted gains.
- During 4Q24, large cap stocks outperformed small caps. Growth outperformed value across the market cap spectrum.

### Large caps continue to drive narrow markets

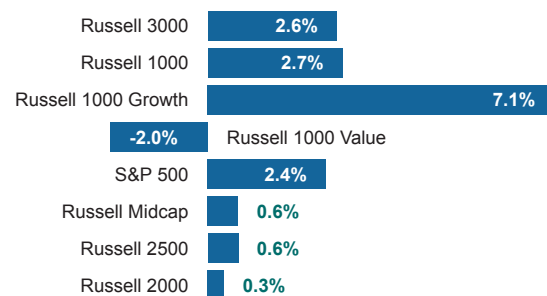
- Concentration and performance contribution of the Magnificent Seven stocks within the large cap benchmarks remain outsized relative to the aggregate of benchmark constituents. In 2024, the S&P 500’s return was 25%; the S&P 500 ex-Mag 7 return was 16%.
- For the second year in a row, less than 30% of S&P 500 stocks have outperformed the S&P 500 itself.

## Fundamentals critical to success of large caps

- In recent years, themes—like “work from home” stocks and AI—as well as momentum have been attributed to the prolonged success of the Magnificent Seven.
- However, Magnificent Seven valuations have been supported by strong earnings, low debt, and high cash levels. Consensus and forward-looking EPS growth expectations also remain high for large cap companies.

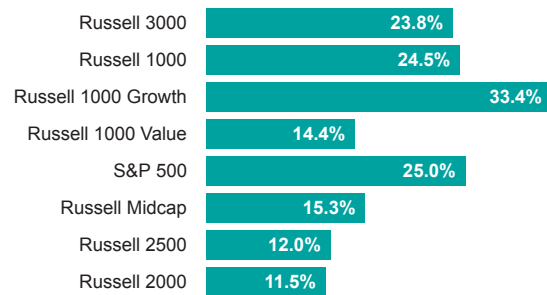
### U.S. Equity: Quarterly Returns

(12/31/24)



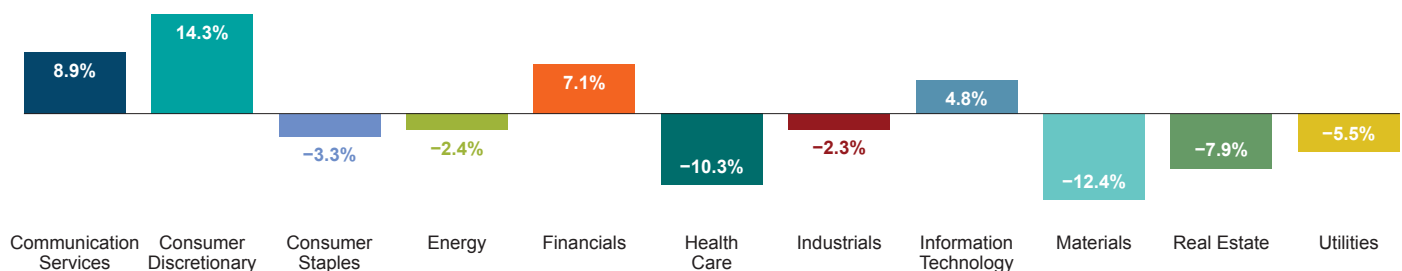
### U.S. Equity: One-Year Returns

(12/31/24)



Sources: FTSE Russell and S&P Dow Jones Indices

### Quarterly Performance of Industry Sectors (12/31/24)



Source: S&P Dow Jones Indices

## Global Equities

### Trump tariffs weigh on markets

- Global equity markets had a rough end to the year as proposed Trump tariffs weighed on Europe and China.
- Europe was one of the worst-performing regions, plagued by political uncertainty and continued economic woes.
- While still negative, Japan's decline over the quarter was stemmed by the approval of a new economic stimulus plan focused on issues such as wage stability and deflation.

### Emerging markets: China, India fall short

- Emerging markets declined on the heels of poor results out of China and India. Although Chinese stocks initially gained from the announced stimulus, they later declined due to expected tariffs. Economic growth in India fell short of expectations.

### Growth vs. value: Muted tech influence on growth

- In developed ex-U.S. markets, the influence of technology and AI is comparatively more muted, which makes the trend of growth stocks, especially those from the Magnificent Seven, outperforming value stocks less pronounced.

### U.S. dollar: Strength from beneficial effects of Trump

- The U.S. dollar shifted direction from the last quarter as expectations for interest rate cuts faded, along with the anticipated beneficial effects of the Trump administration on the U.S. economy; in total the U.S. Dollar Index rose over 7% during the quarter.

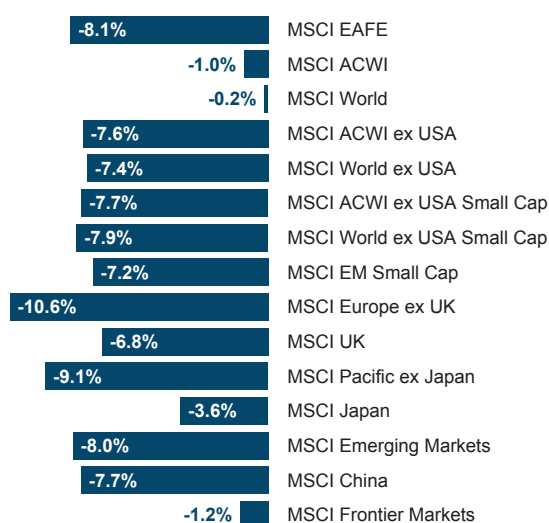
### Global equity market concentration continues higher

- The U.S. share of global market capitalization in global indices is at all-time highs as U.S. technology companies lead markets higher.
- Market capitalization-weighted global benchmarks are providing lower diversification benefits than historically at not only the country level but also the security level as the top five constituents of the MSCI ACWI Index currently comprise over 17% of the benchmark.

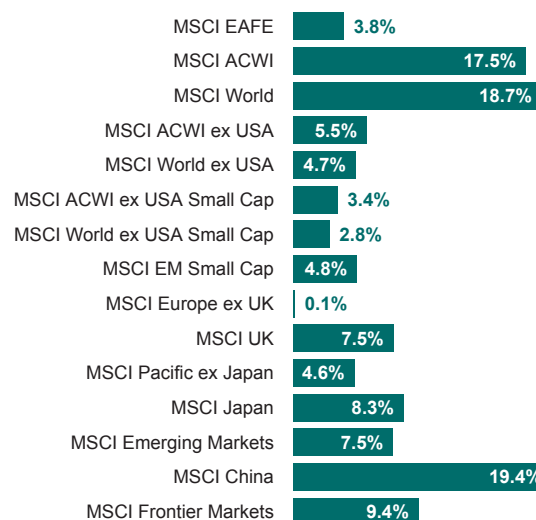
## U.S. dollar strength has been a headwind

- Recent U.S. dollar strength has been a notable headwind for non-U.S. equities as local currency revenues of companies continue to weaken against the U.S. dollar.
- Some contributing factors to U.S. dollar strength have been higher interest rate policy by the Federal Reserve compared to other central banks, U.S. economic and market strength, and recent rhetoric regarding potentially higher tariff rates on U.S. imports.

### Global ex-U.S. Equity: Quarterly Returns (U.S. Dollar, 12/31/24)



### Global ex-U.S. Equity: One-Year Returns (U.S. Dollar, 12/31/24)



Source: MSCI

# Fixed Income

## U.S. Fixed Income

### Inflation concerns resurface

- The Fed continued the rate cutting cycle, most recently in December, bringing the target range to 4.25%-4.50%.
- The yield curve steepened, with rates rising for Treasuries one year and longer. The 10-year rose 77 bps to 4.58%.
- Inflation concerns resurfaced, with the breakeven inflation rate rising by 19 bps to 2.30% over the course of the quarter.

### Performance drivers

- The Bloomberg US Aggregate Bond Index fell 3.1% due to the rise in rates.
- With the steepening yield curve, long government bonds fared the worst among sectors.
- Leveraged finance sectors (High yield: +0.2%, leveraged loans: +2.3%) were the only positive fixed income sectors as spreads tightened.

### Credit spreads tighten

- Corporate credit spreads across both investment grade and leveraged finance tightened, with both being “priced to perfection.”
- New issuance continued to be strong, with 2024 totals for both IG and HY outpacing 2023.

## Municipal Bonds

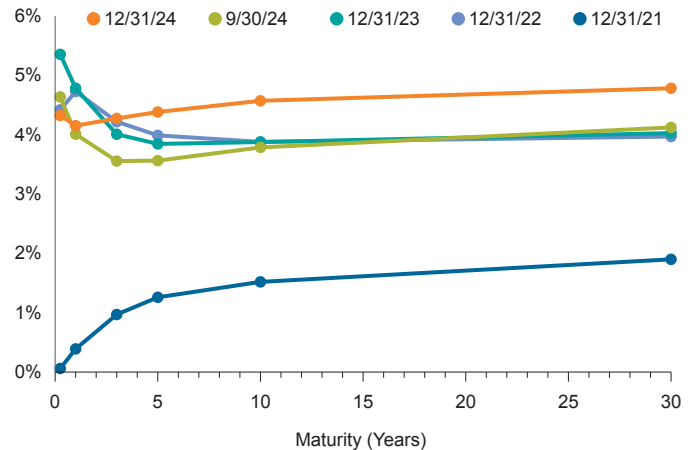
### Negative returns in 4Q

- The muni AAA-rated curve shifted upward across the curve and the curve steepened.
- The spreads between the AAA 2s/10s key rates (24 bps) ended the year slightly tighter than Treasuries (33 bps).

### Low dispersion across quality in 4Q and for the year

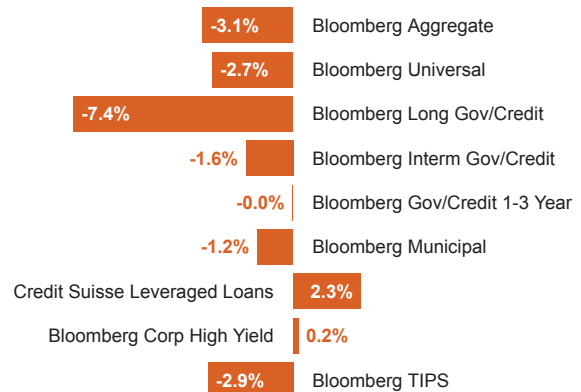
- AAA: -1.3%; +1.4%
- AA: -1.2%; +1.5%
- A: -1.2%; +1.5%
- BBB: -1.3%; +1.6%

## U.S. Treasury Yield Curves

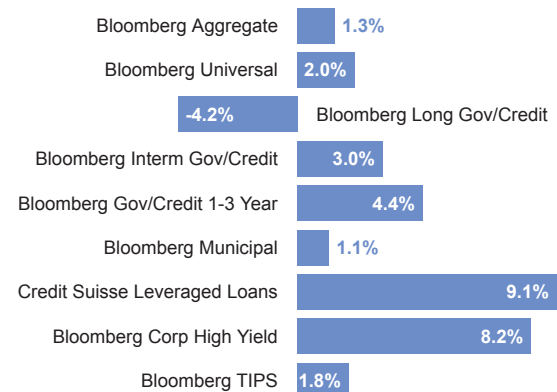


Source: Bloomberg

## U.S. Fixed Income: Quarterly Returns (12/31/24)



## U.S. Fixed Income: One-Year Returns (12/31/24)



Sources: Bloomberg and Credit Suisse

**Robust issuance through 4Q, demand softened slightly**

- Total issuance in 2024 was \$508 billion, beating the previous high of \$485 billion in 2020 and up 32% year over year.
- Demand absorbed issuance most of the quarter, but December exhibited three weeks of fund outflows, after 23 weeks of consecutive net inflows.

**Muni valuations vs. U.S. Treasuries remain rich**

- 10-year AAA muni/10-year U.S. Treasury yield ratio was rich relative to the 10-year median (67% now vs. 80% historical).

**Global Fixed Income**

**Political controversy dogs euro zone**

- The euro zone was marred with political controversy in 4Q, specifically in Germany and France.
- GDP growth in the euro zone rose modestly (+0.4%), while the ECB cut rates in December.
- Japan’s GDP grew 1.2% on the back of strong exports and a weaker yen.

**U.S. dollar surges**

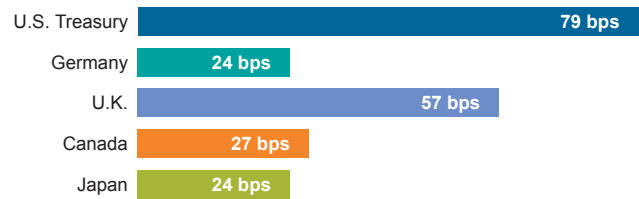
- The U.S. dollar rose 8% versus a basket of six developed market currencies.
- Global fixed income returns varied based on currency exposure, with the Bloomberg Global Aggregate ex US Hedged Index rising 0.7%, while the Bloomberg Global Aggregate ex US Unhedged Index fell by 6.8%.

**Emerging market debt faced similar challenges**

- Both EM local and hard currency bonds posted negative returns on the quarter, weighed down by the strength of the dollar and geopolitical risk. Hard currency spreads narrowed at the tail end of the quarter, partially offsetting an early quarter drawdown.
- Brazil increased its policy rate by 150 bps in 4Q, resulting in the Brazilian real depreciating by 13.4% versus the U.S. dollar.

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

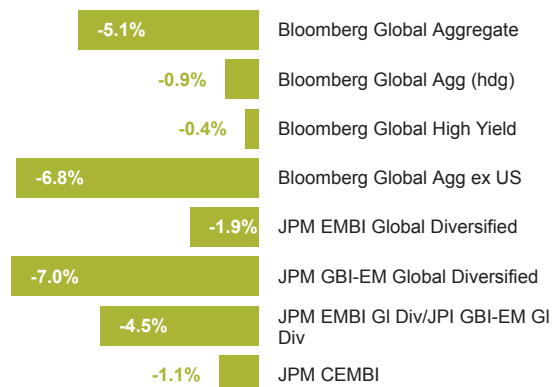
3Q24 to 4Q24



Source: Bloomberg

**Global Fixed Income: Quarterly Returns**

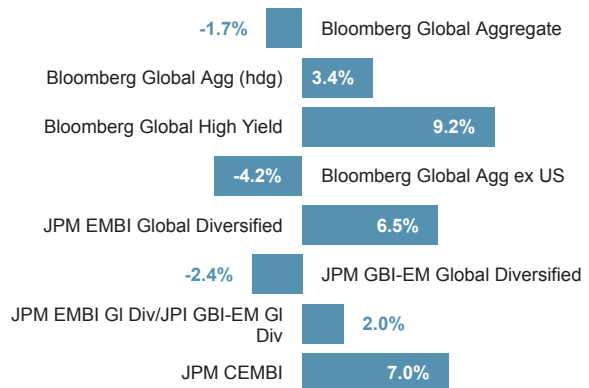
(12/31/24)



Sources: Bloomberg and JPMorgan Chase

**Global Fixed Income: One-Year Returns**

(12/31/24)



Sources: Bloomberg and JPMorgan Chase

# Valuations May Have Bottomed; REITs Fall

REAL ESTATE/REAL ASSETS | Munir Iman

## Valuations reflect higher interest rates

- Valuations appear to have bottomed and now reflect higher borrowing costs.
- Income returns were positive across sectors and regions.
- Property sectors were mixed; Office and Hotel experienced negative appreciation, and the remaining sectors had flat or positive appreciation.
- Return dispersion by manager within the ODCE Index was due to the composition of underlying portfolios.

## REITs fall and trade at a discount to NAV

- Global REITs underperformed in 4Q24, down 9.7% compared to a 0.2% decline for global equities (MSCI World).
- U.S. REITs fell 6.2% in 4Q24, in contrast with the S&P 500 Index, which rose 2.4%.
- Global REITs are trading at a discount to NAV (-7.0%).
- Historically, global REITs have traded at a 3.9% discount to NAV.

## Redemption queues are falling

- ODCE redemption queues are 16.4% of net asset value (NAV), with a median queue of 13.4%. This compares to the GFC, when queues peaked at approximately 15% of NAV.
- Outstanding redemption requests for most large ODCE funds are approximately 6% to 33% of NAV (one outlier at 56%).

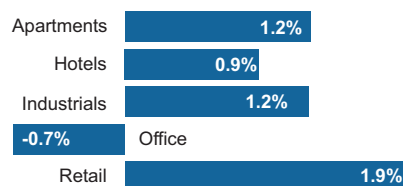
## Callan Database Median and Index Returns\* for Periods Ended 12/31/24

Private Real Assets	Quarter	Year to Date	1 Year	3 Years	5 Years	10 Years	20 Years
<b>Real Estate ODCE Style</b>	<b>0.7</b>	<b>-2.2</b>	<b>-2.2</b>	<b>-3.0</b>	<b>2.4</b>	<b>5.4</b>	<b>5.5</b>
NFI-ODCE (value-weighted, net)	1.0	-2.3	-2.3	-3.1	2.0	4.9	5.5
NCREIF Property	0.9	0.4	0.4	-0.8	3.1	5.7	7.0
NCREIF Farmland	-1.3	-1.0	-1.0	4.4	4.8	5.9	11.2
NCREIF Timberland	1.4	7.0	7.0	9.7	7.8	5.4	6.9
<b>Public Real Estate</b>							
<b>Global Real Estate Style</b>	<b>-9.3</b>	<b>2.7</b>	<b>2.7</b>	<b>-4.8</b>	<b>1.4</b>	<b>4.5</b>	<b>6.1</b>
FTSE EPRA Nareit Developed	-5.1	9.3	9.3	1.7	3.1	5.3	--
<b>Global ex-U.S. Real Estate Style</b>	<b>-15.8</b>	<b>-7.9</b>	<b>-7.9</b>	<b>-9.0</b>	<b>-3.9</b>	<b>3.1</b>	<b>--</b>
FTSE EPRA Nareit Dev ex US	-15.2	-8.4	-8.4	-9.7	-5.8	-0.2	--
<b>U.S. REIT Style</b>	<b>-6.6</b>	<b>8.0</b>	<b>8.0</b>	<b>-2.5</b>	<b>5.0</b>	<b>6.4</b>	<b>7.7</b>
FTSE EPRA Nareit Equity REITs	-6.2	8.7	8.7	-2.2	4.3	5.7	7.0

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

## Sector Quarterly Returns by Property Type

(12/31/24)



Source: NCREIF

- Redemption queues are now sharply decreasing after having peaked at 19.3% of NAV in 1Q24. This has been driven primarily by rescissions of redemption requests within a handful of managers with large queues. In certain cases, this has been due to loyalty fee programs being instituted.

## Pricing, transaction volumes increasing

- Transaction volume is increasing on a rolling four-quarter basis yet remains below five-year averages.
- In 4Q24, transaction volume increased on a quarter-over-quarter basis. Volume remains lower compared to 2022.
- The volatile rise in interest rates is the driving force behind the slowdown in transactions. Increasing transactions are driven by increasing confidence in multi-family and industrial values. Valuations have largely adjusted to increased borrowing costs.

# Fundraising Rebounds but Activity Struggles

PRIVATE EQUITY | Ashley Kahn

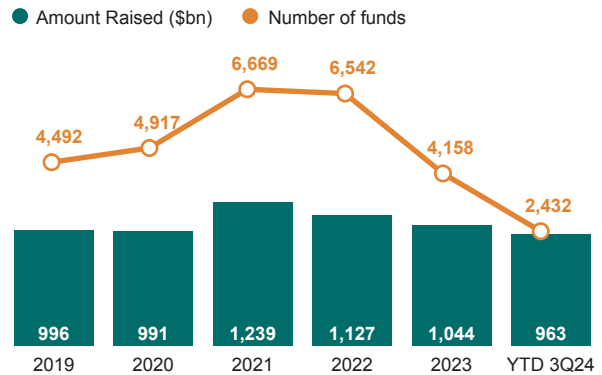
**Fundraising** ► By volume, 2024 fundraising has been creeping toward the highs of 2021 (only 3% off). And compared to the same time last year, volume is up by 7%. On the other hand, fundraising by count was down significantly: 23% fewer funds raised in YTD 3Q24 compared to the same time last year.

**Buyouts** ► Buyout activity in 2024 was essentially flat compared to 2023, by both count and volume. Buyout valuations have started to creep back up, although still off by about a turn from the highs of 2021. They exhibited a large uptick in 3Q24, reflecting the Fed’s first interest rate cut that quarter.

**Venture Capital and Growth Equity** ► Deal volume in 2024 was up from 2023 but still significantly depressed compared to the highs of 2021-22. Deal activity by count has declined each year, with the average deal size increasing. Early-stage valuations have reached record highs, up 28% from last year and 44% from 2021. This has been driven by today’s AI “supercycle,” with greater competition for AI startups pushing up valuations.

**Exits** ► Volume has remained significantly depressed through 3Q24, down 13% from last year and at 43% of 2021 levels.

## Annual Fundraising (9/30/24)



Source: Pitchbook

Exit count is also down by 14% from last year and at 67% of 2021 levels.

**Returns** ► Short-term performance continues to lag public equity (driven by the “Magnificent Seven”). Due to the smoothed nature of its returns, private equity doesn’t outperform when public equity is at record highs (it likewise doesn’t drop as sharply when public equity drops). By strategy type, venture capital and growth equity are still recovering after losses in 2022-23, while buyouts have proven to be much more resilient.

## Private Equity Performance (%) (Pooled Horizon IRRs through 9/30/24\*)

Strategy	Quarter	1 Year	3 Years	5 Years	10 Years	20 Years
All Venture	1.4	2.4	-5.3	14.9	14.8	12.2
Growth Equity	2.8	7.7	-0.5	13.9	13.2	13.5
All Buyouts	3.3	10.1	6.3	15.2	14.0	14.0
Mezzanine	3.0	10.4	9.1	11.7	10.9	11.4
Credit Opportunities	2.5	9.9	7.6	9.2	7.6	9.2
Control Distressed	0.9	3.3	6.7	13.3	10.8	11.2
<b>All Private Equity</b>	<b>2.7</b>	<b>7.9</b>	<b>2.8</b>	<b>14.4</b>	<b>13.4</b>	<b>13.1</b>

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.

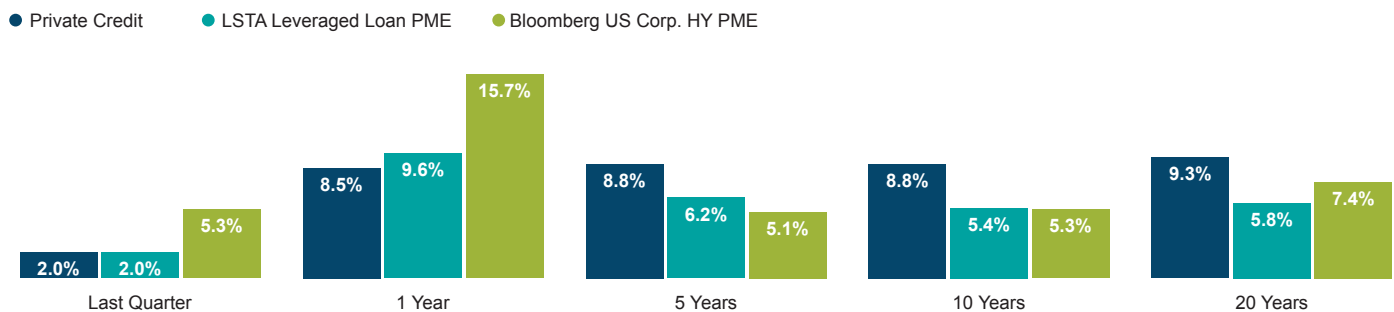
# Private Credit Gains in 3Q24 but Lags Benchmarks

## PRIVATE CREDIT | Cos Braswell

Private credit gained 2.0% in 3Q24, the most recent quarter available. That matched the LSTA Leveraged Loan PME Index but significantly trailed the Bloomberg US Corporate High Yield PME Index. Results over the trailing one year were roughly the same, but over 5-, 10-, and 20-year time periods private credit topped the two benchmarks.

- Private credit performance varies across sub-asset class and underlying return drivers. Higher-risk strategies have performed better than lower-risk strategies.
- Fundraising for private debt was the strongest since 4Q23, with \$51 billion raised.
- Direct lending was responsible for 76% of 3Q fundraising, with \$39 billion raised.
- While direct lending continues to dominate fundraises, we are noticing increased interest in specialty finance strategies for more mature PC portfolios.
- Private credit stayed in high demand among Callan clients, and a number of large DB plans are looking to increase their allocations from 2%–3% to 5%–10%.
- North American private debt AUM is expected to grow significantly, from \$1.01 trillion in 2024 to \$1.74 trillion in 2029, representing an annualized growth rate of 11%. European private debt AUM is projected to grow at a slower pace of 8%, reflecting resilience despite a more challenging economic environment.
- Fundraising in Europe is forecast to remain static, which could create upside potential as reduced competition for deals may improve investment opportunities.
- The private debt market is positioned to maintain strong growth, particularly in North America, while Europe’s steadier trajectory still offers attractive prospects in a less crowded landscape.

### Private Credit Performance (%) (Pooled Horizon IRRs through 9/30/24\*)



### Private Credit Performance (%) (Pooled Horizon IRRs by Strategy through 9/30/24\*)

Strategy	Quarter	1 Year	5 Years	10 Years	20 Years
Senior Debt	2.3	9.1	7.8	8.2	8.4
Subordinated	0.8	7.5	10.1	10.3	10.3
Credit Opportunities	1.6	8.1	8.8	8.7	9.4
<b>Total Private Credit</b>	<b>2.0</b>	<b>8.5</b>	<b>8.8</b>	<b>8.8</b>	<b>9.3</b>

Source: LSEG/Cambridge

\*Most recent data available at time of publication

# Strong Finish to the Year but Choppy Outlook Ahead

HEDGE FUNDS/MACs | Joe McGuane

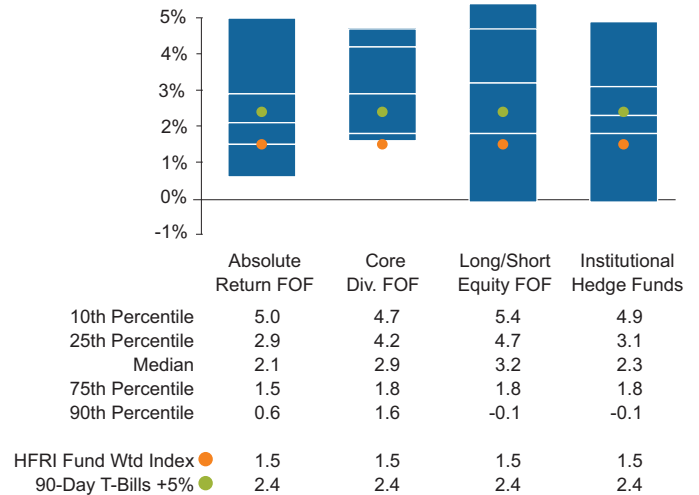
U.S. equity markets ended 4Q24 in positive territory, following the U.S. election, the Federal Reserve interest rate cut, and reports of strong economic data. Markets gave back some of that performance in December, as investors grew concerned about inflation and the potential slowdown in future rate cuts. Credit indices generated mixed returns during the quarter, with high yield outperforming investment grade bonds. The 10-year Treasury yield rose throughout the quarter and ended the year at 4.6%.

The S&P 500 gained 2.4%, with performance driven by earnings growth as rising rates caused the market's price-to-earnings ratio to modestly decline despite the Fed cutting interest rates 50 basis points. Index performance was led by Discretionary and Communication Services, which benefited from a better growth outlook, offset by declines in Materials, Health Care and REITs, due to a weaker China outlook and higher rates.

Hedge funds finished strong to end the year, and relative value strategies finished higher, as managers were able to profit off rising bond yields. Equity hedge strategies had strong

## Hedge Fund Style Group Returns

(12/31/24)



Sources: Callan, Credit Suisse, Federal Reserve

momentum, as managers profited on both the long and short side during the quarter as stock dispersion remained elevated. Event-driven managers soared in November, on the expectation of a strong M&A cycle in 2025. Macro strategies had a strong November, as managers were able to profit off rates moving higher in the final quarter of the year.

## Callan Peer Group Median and Index Returns\* for Periods Ended 12/31/24

Hedge Fund Universe	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years
Callan Institutional Hedge Fund Peer Group	2.3	9.7	6.7	7.3	6.7	7.0
Callan Fund-of-Funds Peer Group	2.9	10.7	4.8	6.1	4.7	5.1
Callan Absolute Return FOF Style	2.1	9.5	5.8	6.0	4.6	4.7
Callan Core Diversified FOF Style	2.9	10.9	4.7	6.4	4.7	5.1
Callan Long/Short Equity FOF Style	3.2	12.3	2.6	5.8	5.7	5.5
HFRI Fund Weighted Index	1.4	9.8	4.4	7.0	5.3	5.0
HFRI Fixed Convertible Arbitrage	1.4	10.9	4.8	6.9	5.7	5.5
HFRI Distressed/Restructuring	3.4	12.0	5.0	8.4	5.5	5.8
HFRI Emerging Markets	-0.4	9.2	1.0	4.5	4.3	3.4
HFRI Equity Market Neutral	2.4	10.5	5.8	4.8	3.7	3.3
HFRI Event-Driven	2.1	9.8	4.9	7.2	5.5	5.7
HFRI Relative Value	1.9	8.6	4.9	5.1	4.5	5.2
HFRI Macro	0.6	5.5	4.6	5.4	3.1	2.6
HFRI Equity Hedge	1.4	11.9	3.8	8.1	6.3	5.8
HFRI Multi-Strategy	5.0	13.7	4.3	7.0	4.2	4.2
HFRI Merger Arbitrage	1.7	5.6	4.5	5.8	5.0	4.4
90-Day T-Bill + 5%	2.4	10.3	8.9	7.5	6.8	6.2

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



Serving as a proxy for large, broadly diversified hedge funds with low-beta exposure to equity markets, the median manager in the Callan Institutional Hedge Fund Peer Group rose 2.3%. Within this style group of 50 peers, the average hedge credit manager gained 2.5%, driven by interest rate volatility in November following the U.S. election. Meanwhile, the average hedge equity manager added 2.1%, as managers were able to profit off elevated dispersion across sectors.

Within the HFRI indices the best-performing strategy was multi-strategy, which gained 5.0%, followed by distressed/restructuring, which took advantage of deal activity and was up 3.4%. Equity market neutral gained 2.4%.

Across the Callan Hedge FOF database, the median Callan Long-Short Equity FOF ended 3.2% higher, as managers profited off the dispersion across sectors. Meanwhile, the median Callan Core Diversified FOF ended 2.9% higher, as equity hedge and event-driven strategies drove performance for the quarter. The Callan Absolute Return FOF ended 2.1% higher, as an overweight to relative value strategies drove performance.

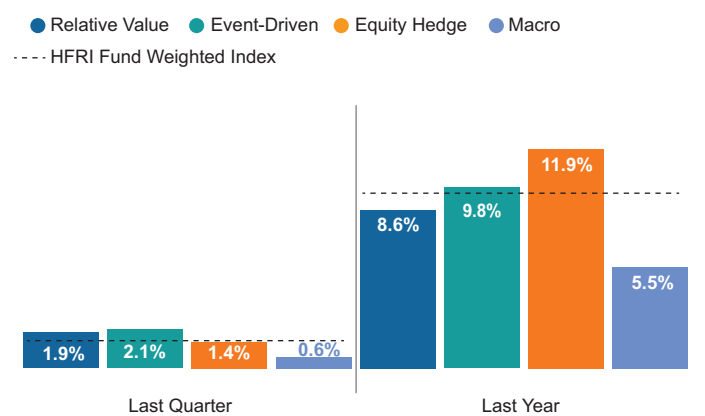
Since the Global Financial Crisis, liquid alternatives to hedge funds have become popular among investors due to their attractive risk-adjusted returns that are similarly uncorrelated

with traditional stock and bond investments but offered at a lower cost. Much of that interest is focused on rules-based, long-short strategies that isolate known risk premia such as value, momentum, and carry found across the various capital markets. These alternative risk premia are often embedded, to varying degrees, in hedge funds as well as other actively managed investment products.

Within Callan’s database of liquid alternative solutions, the Callan MAC Risk Parity peer group fell 3.6%, as fixed income and commodities were a drag on performance, while U.S. equities were able to offset some of that negative performance. The Callan Long Biased MAC peer group fell 2.7%, as negative performance from fixed income pushed the strategy into negative territory.

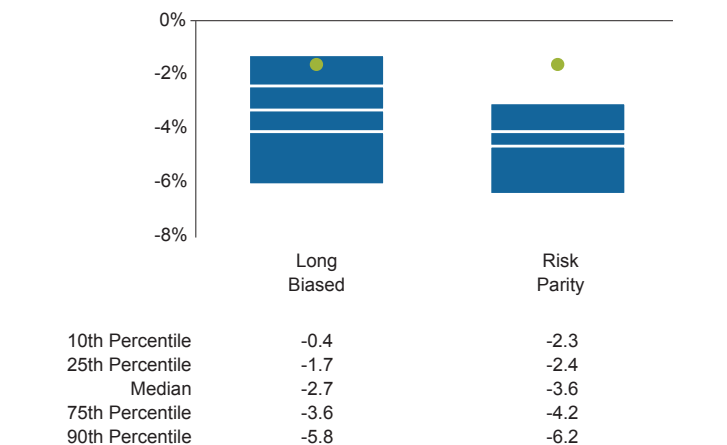
After a strong run for hedge funds in 2024, the market environment outlook appears to be choppy in 2025. While economic growth remains strong and recession probabilities seem low, market expectations remain high, valuations are at all-time highs in equities and spreads are tight in credit markets, leaving investors with limited margin for errors. With a new administration in the White House, change seems the most likely outcome, and uncertainty should be expected for market participants. In this environment, hedge funds should be able to profit off this dispersion.

### HFRI Hedge Fund-Weighted Strategy Returns (12/31/24)



Source: HFRI

### MAC Style Group Returns (12/31/24)



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

# Index Gains 5.6%; Turnover at All-Time Low

DEFINED CONTRIBUTION | [Scotty Lee](#)

## Performance: Index gains for fourth straight quarter

- The Callan DC Index™ gained 5.6% in 3Q24. The Age 45 Target Date Fund (analogous to the 2045 vintage) had a higher quarterly return (6.5%).

## Growth sources: Balances rise due to investment gains

- Balances within the DC Index rose by 4.7% after a 1.1% increase in the previous quarter. Investment gains (5.6%) were the sole driver of the gain as net flows (-0.9%) had a contrary effect.

## Turnover: Lowest since index inception

- Turnover (i.e., net transfer activity levels within DC plans) in the DC Index decreased to 0.02%, the lowest ever, from the previous quarter's measure of 0.17%.

## Net cash flow analysis: U.S. fixed income ousts TDFs

- Automatic features and their appeal to “do-it-for-me” investors typically result in target date funds (TDFs) receiving the largest net inflows in the DC Index. But in 3Q24, as turnover reached the lowest level since the DC Index inception, U.S. fixed income outpaced the asset allocation funds, earning 68.3% of quarterly net flows.

## Equity allocation: Exposure rises

- The Index's overall allocation to equity (74.0%) rose slightly from the previous quarter's level (73.7%).

## Asset allocation: Smid cap equity gains

- U.S. small/mid cap equity (7.1%) and target date funds (35.7%) were among the asset classes with the largest percentage increases in allocation, while stable value (6.1%) had the largest decrease in allocation from the previous quarter due to net outflows.

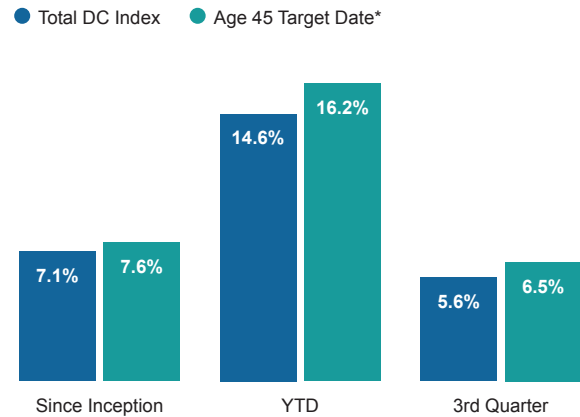
## Prevalence of asset class: Global equity funds rise

- The prevalence of global equity funds (18.6%) rose by 0.7 percentage points, matching the increase in the prevalence of emerging markets (18.6%), which also rose by 0.7 percentage points. Other notable movements included a 1.4 percentage point increase in the prevalence of U.S. small/mid cap equity offerings (94.3%).

*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.*

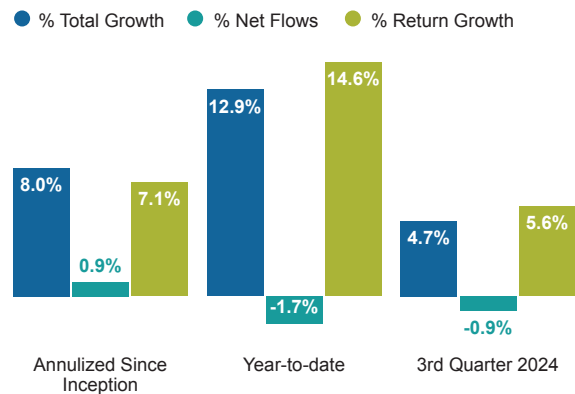
## Investment Performance

(9/30/24)



## Growth Sources

(9/30/24)



## Net Cash Flow Analysis 3Q24

(Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
U.S. Fixed Income	68.3%
High Yield Fixed Income	5.3%
U.S. Small/Mid Cap	-15.2%
U.S. Large Cap	-38.6%
<b>Total Turnover**</b>	<b>0.02%</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 2040 TDF to the 2045 TDF in June 2023.

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



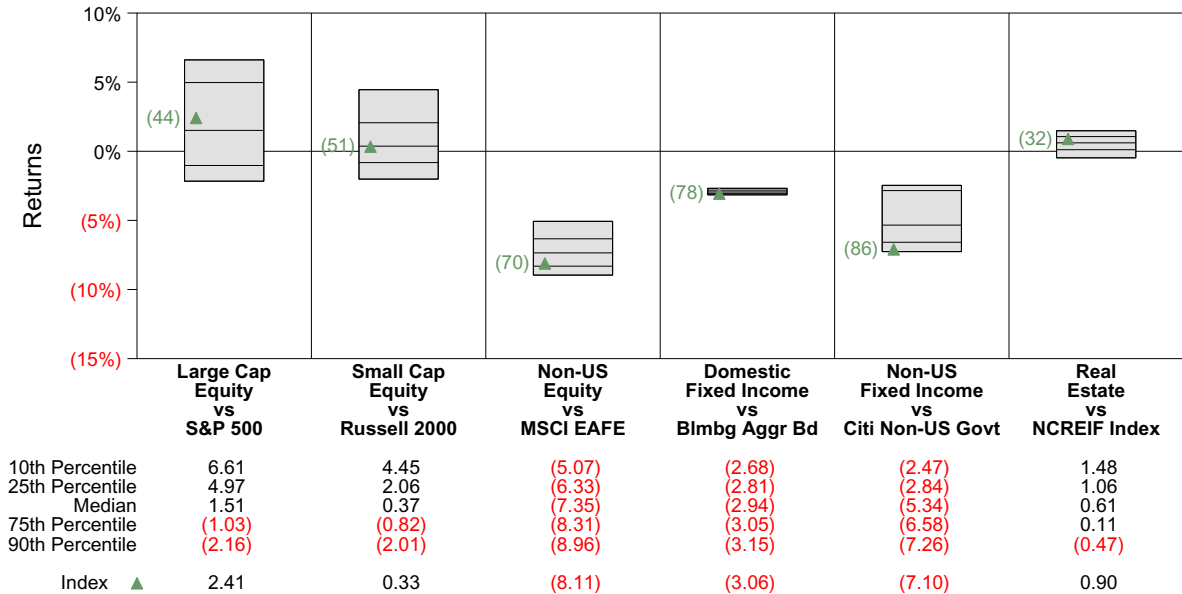
## Market Overview

### Active Management vs Index Returns

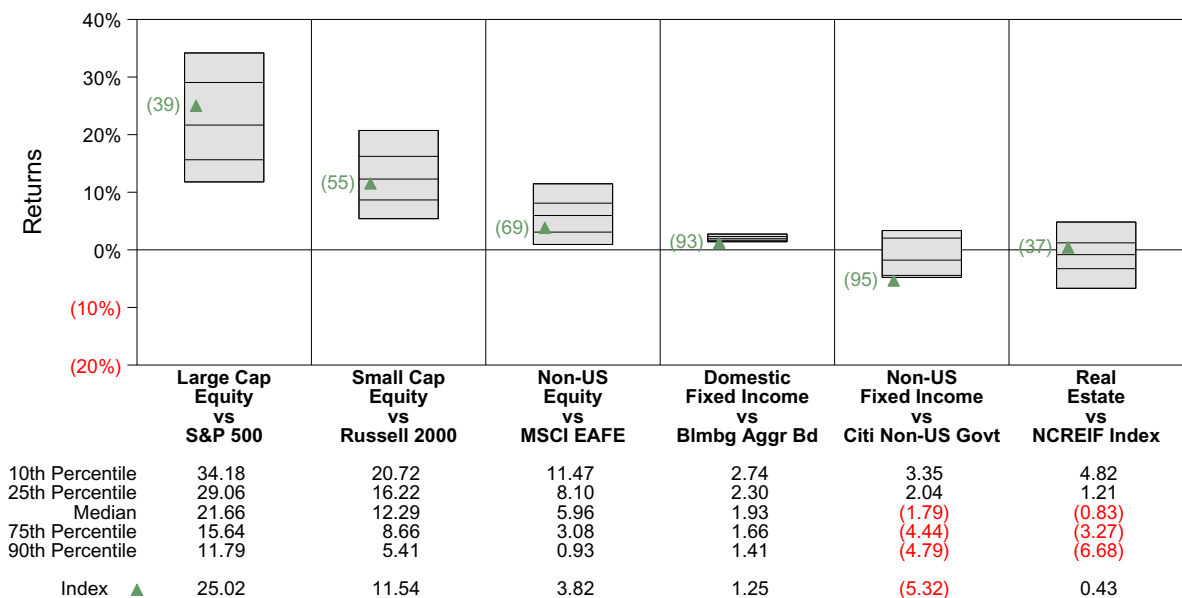
#### Market Overview

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 December 31, 2024



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

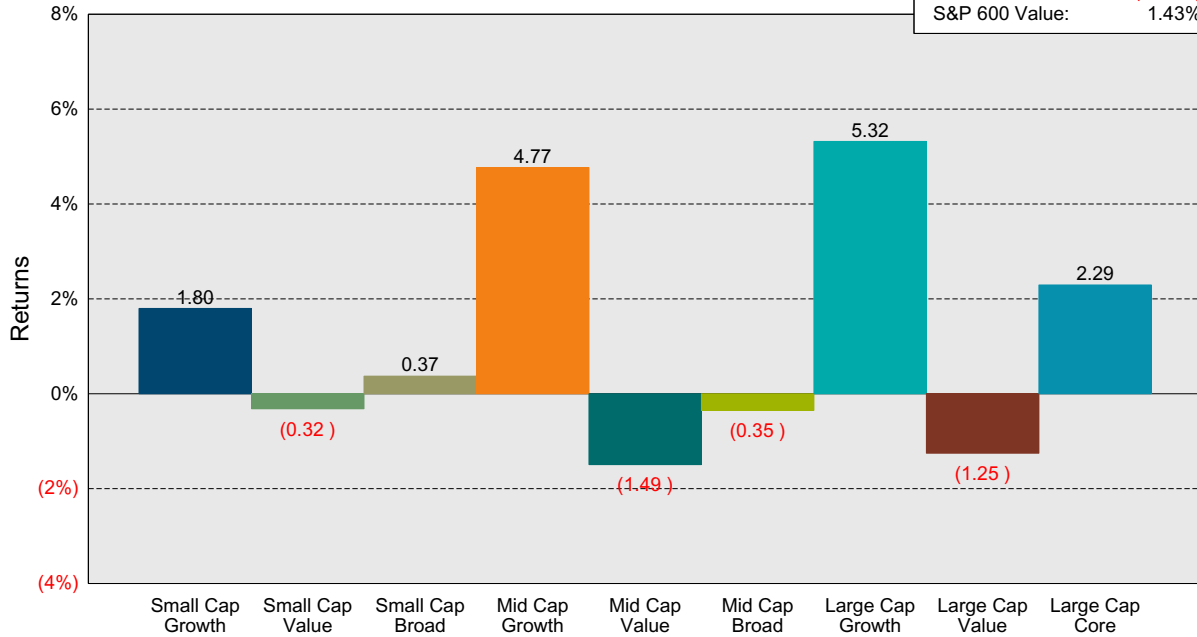


## Domestic Equity Active Management Overview

U.S. equities posted modest gains for the quarter with the S&P 500 advancing 2.4% and contributing to a robust 25.0% one-year return. Technology (+4.8%), Consumer Discretionary (+14.3%), and Communication Services (+8.9%) drove quarterly performance, bolstered by enthusiasm around AI and consumer demand. In contrast, defensive sectors such as Real Estate (-7.9%) and Utilities (-5.5%) faced challenges from rising rates. Growth stocks outperformed value, as seen in the Russell 1000 Growth Index (+7.1%) surpassing the Russell 1000 Value Index (-2.0%). Small-cap stocks, represented by the Russell 2000, were flat (+0.3%), with Growth (+1.7%) leading Value (-1.1%) for the quarter.

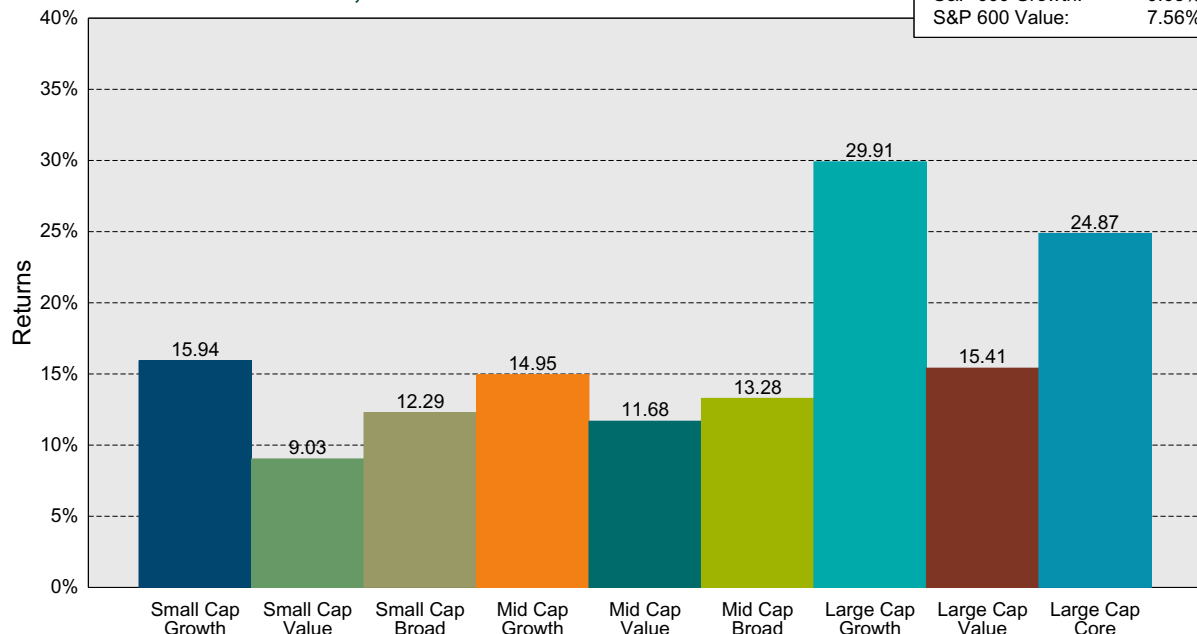
S&P 500:	2.41%
S&P 500 Growth:	6.17%
S&P 500 Value:	(2.67%)
S&P Mid Cap:	0.34%
S&P 600:	(0.58%)
S&P 600 Growth:	(2.62%)
S&P 600 Value:	1.43%

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



S&P 500:	25.02%
S&P 500 Growth:	36.07%
S&P 500 Value:	12.29%
S&P Mid Cap:	13.93%
S&P 600:	8.70%
S&P 600 Growth:	9.63%
S&P 600 Value:	7.56%

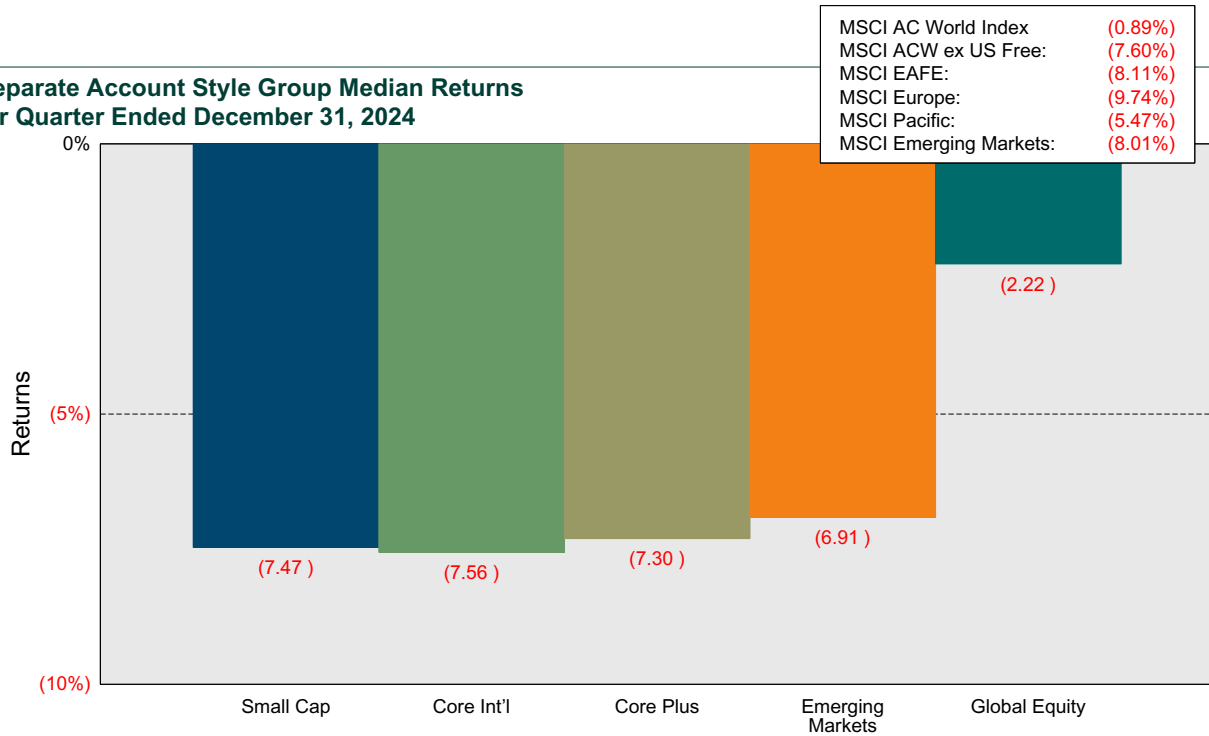
### Separate Account Style Group Median Returns for One Year Ended December 31, 2024



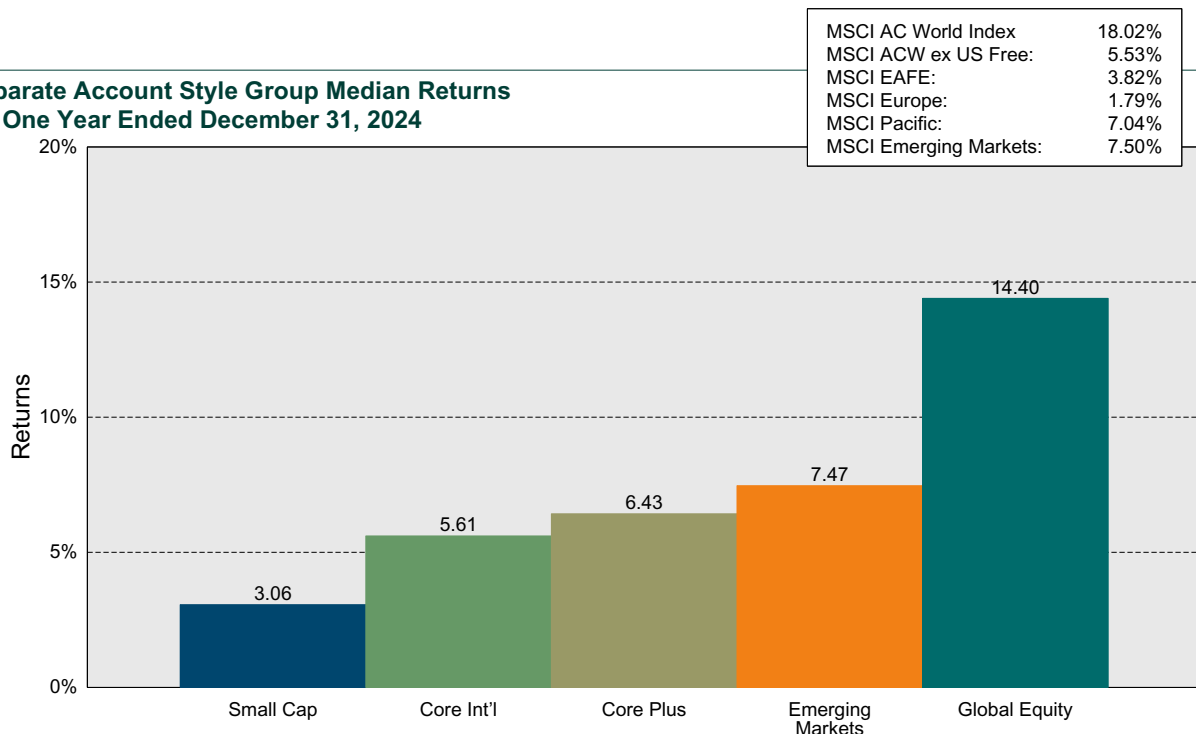
## International Equity Active Management Overview

Global ex-U.S. equities declined sharply for the quarter (MSCI ACWI ex-USA Index: -7.6%) due to the significant strengthening of the U.S. dollar against major currencies. Developed markets struggled broadly (MSCI EAFE Index: -8.1%) with Value (MSCI EAFE Value Index: -7.1%) outperforming Growth (MSCI EAFE Growth Index: -9.1%). Sector performance reflected the quarter's challenges with Materials (MSCI EAFE Materials: -17.8%), Health Care (MSCI EAFE Health Care: -14.1%), and Real Estate (MSCI EAFE Real Estate: -13.4%) leading the declines. Even the traditionally defensive sectors like Consumer Staples (MSCI EAFE Consumer Staples: -12.6%) and Utilities (MSCI EAFE Utilities: -12.8%) struggled. European equities were among the weakest performers as the MSCI Europe Index declined 9.7% led by steep losses in the Nordics (MSCI Nordic USD: -16.2%). Among developed markets, Japan (MSCI Japan Index: -3.6%) fared relatively better.

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



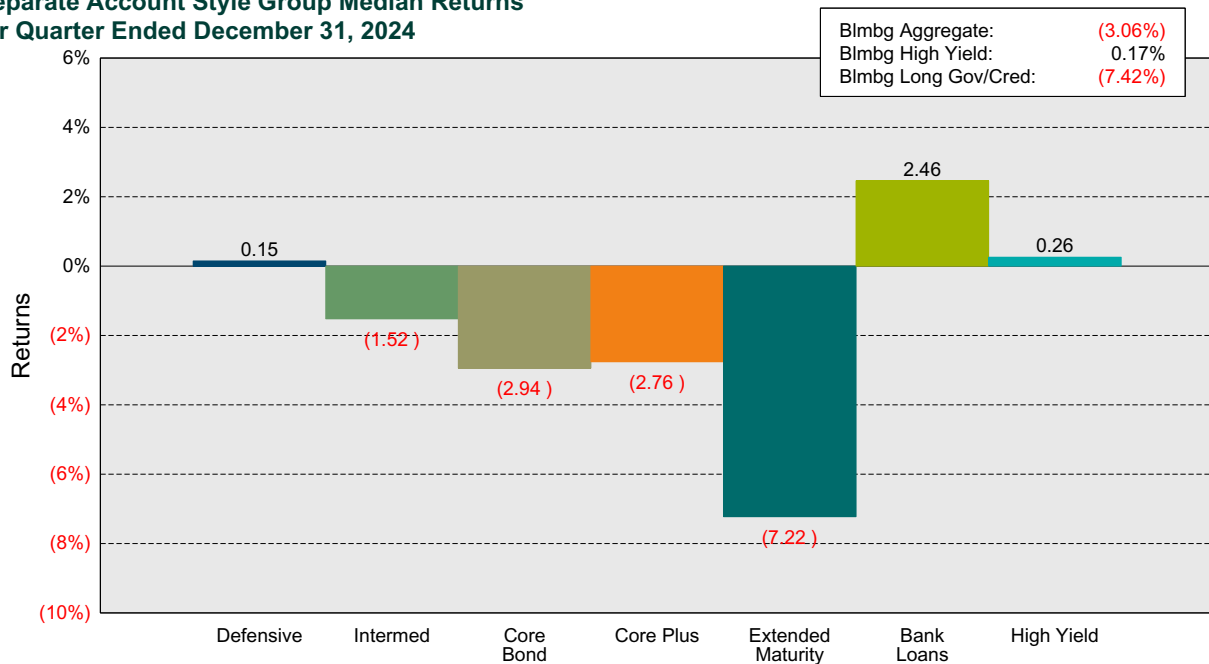
### Separate Account Style Group Median Returns for One Year Ended December 31, 2024



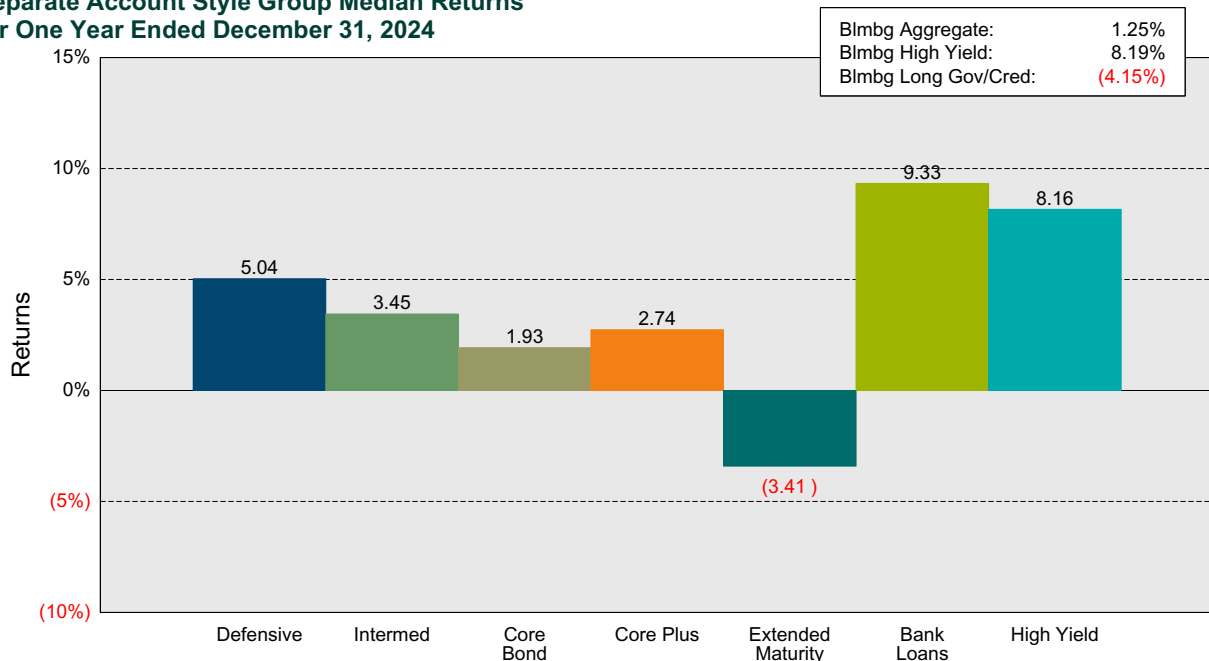
## Domestic Fixed Income Active Management Overview

The Bloomberg US Aggregate Bond Index declined 3.1% in the quarter, but closed out the year positive (+1.3). U.S. Treasury yields soared, and the yield curve (2s/10s) experienced a notable steepening in 4Q. The 10-year yield increased from 3.8% to 4.6% and the 2-year yield rose from 3.7% to 4.3% as investors priced in resilient economic data, persistent inflation concerns, and the anticipation of continued fiscal borrowing. Corporates outperformed U.S. Treasuries with excess returns of 82 bps while agency-backed mortgages, facing headwinds from increased rate volatility, underperformed (-13 bps). High yield corporates outperformed investment grade (Bloomberg High Yield Index: +0.2%) and were up 8.2% for the year. High yield spreads ground tighter and continued to trade through historical averages.

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



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



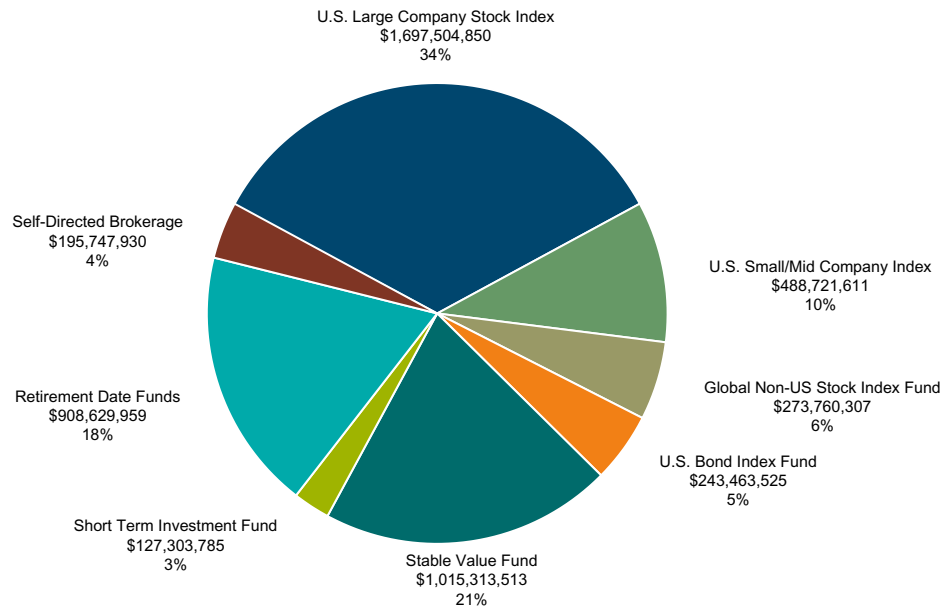




## Changes in Investment Fund Balances Period Ended December 31, 2024

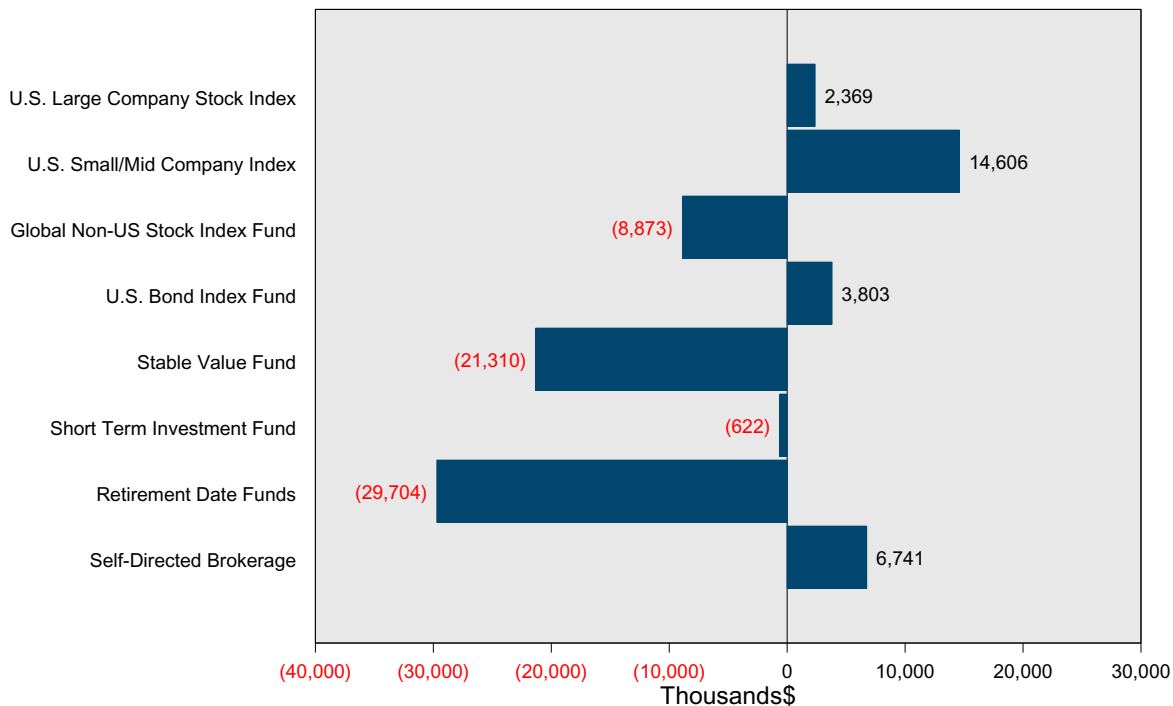
### Allocation Across Investment Options

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



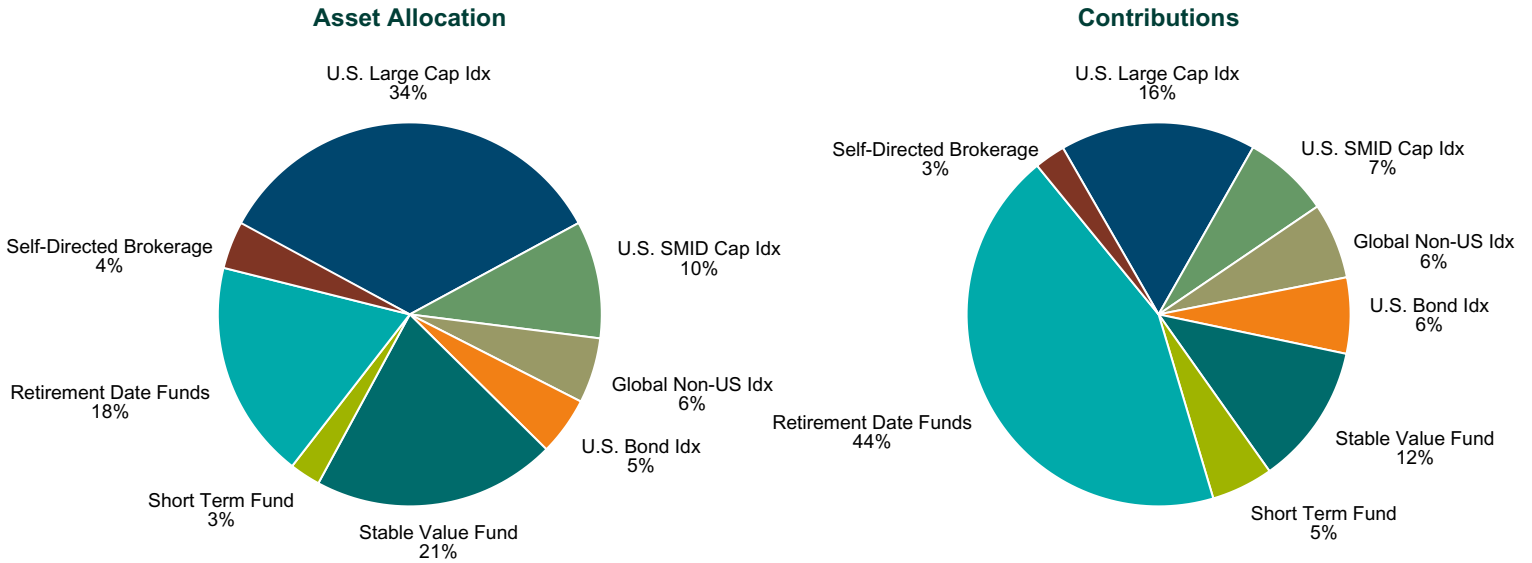
### Changes in Fund Values

The chart below shows the net change in fund values across the various investment options for the quarter ended December 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.

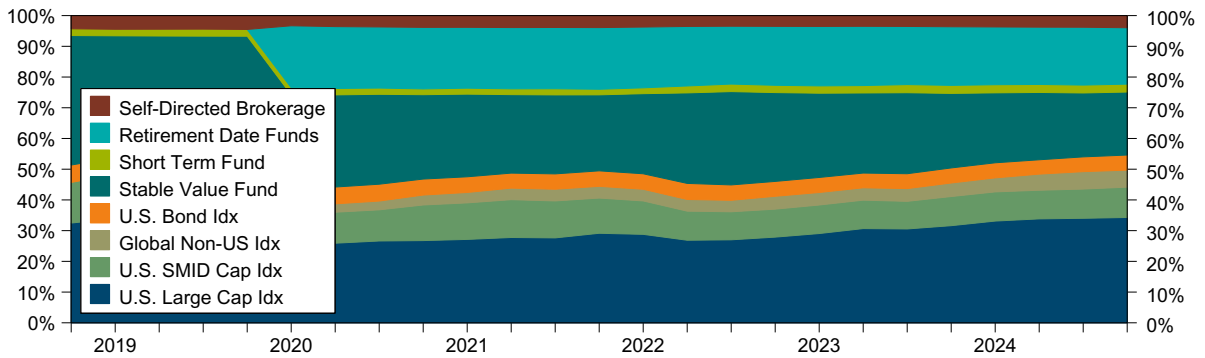


## Asset Allocation

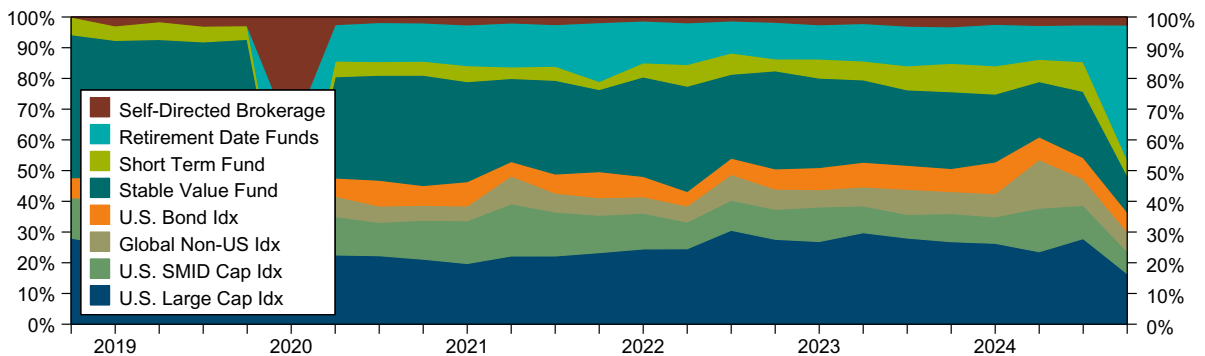
The charts below illustrate the historical asset allocation of the fund as well as the historical allocations of contributions to the fund. The pie charts on the top show the most recent allocations of both assets and contributions which include exchanges and transfers within the plan. The middle chart 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 December 31, 2024, with the distribution as of September 30, 2024. 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

	December 31, 2024			September 30, 2024		
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
<b>SERS Retirement Date Funds</b>	<b>\$908,629,959</b>	<b>18.35%</b>	<b>\$124,300,997</b>	<b>\$(154,005,045)</b>	<b>\$938,334,006</b>	<b>18.83%</b>
SERS Post Retirement Fund	331,972,246	6.71%	122,473,754	(6,880,061)	216,378,553	4.34%
SERS 2025 Retirement Fund	0	0.00%	(134,502,038)	(946,885)	135,448,923	2.72%
SERS 2030 Retirement Fund	144,071,196	2.91%	(1,244,638)	(3,365,761)	148,681,596	2.98%
SERS 2035 Retirement Fund	139,869,064	2.83%	208,269	(3,056,167)	142,716,962	2.86%
SERS 2040 Retirement Fund	98,962,860	2.00%	792,041	(1,995,060)	100,165,878	2.01%
SERS 2045 Retirement Fund	86,413,244	1.75%	(878,365)	(1,610,803)	88,902,411	1.78%
SERS 2050 Retirement Fund	63,294,908	1.28%	2,103,613	(1,003,707)	62,195,002	1.25%
SERS 2055 Retirement Fund	25,392,063	0.51%	219,334	(377,298)	25,550,027	0.51%
SERS 2060 Retirement Fund	11,417,924	0.23%	314,718	(170,173)	11,273,378	0.23%
SERS 2065 Retirement Fund	7,218,089	0.15%	293,818	(97,004)	7,021,276	0.14%
SERS 2070 Retirement Fund	18,365	0.00%	18,453	(88)	-	-
<b>SERS U.S. Equity</b>	<b>\$2,186,226,461</b>	<b>44.16%</b>	<b>\$(44,833,535)</b>	<b>\$61,808,835</b>	<b>\$2,169,251,161</b>	<b>43.53%</b>
SERS U.S. Large Company Index Fund	1,697,504,850	34.29%	(37,561,054)	39,930,430	1,695,135,474	34.02%
SERS U.S. SMID Company Index Fund	488,721,611	9.87%	(7,272,481)	21,878,406	474,115,687	9.51%
<b>SERS Non-U.S. Equity</b>	<b>\$273,760,307</b>	<b>5.53%</b>	<b>\$13,790,831</b>	<b>\$(22,663,766)</b>	<b>\$282,633,242</b>	<b>5.67%</b>
SERS Global Non-US Index Fund	273,760,307	5.53%	13,790,831	(22,663,766)	282,633,242	5.67%
<b>SERS Fixed Income</b>	<b>\$1,386,080,823</b>	<b>28.00%</b>	<b>\$(19,208,193)</b>	<b>\$1,079,520</b>	<b>\$1,404,209,496</b>	<b>28.18%</b>
SERS Short Term Investment Fund	127,303,785	2.57%	(2,064,612)	1,443,039	127,925,358	2.57%
SERS Stable Value Fund	1,015,313,513	20.51%	(28,568,239)	7,258,203	1,036,623,550	20.80%
SERS U.S. Bond Index Fund	243,463,525	4.92%	11,424,659	(7,621,722)	239,660,588	4.81%
<b>Self-Directed Brokerage Account</b>	<b>\$195,747,930</b>	<b>3.95%</b>	<b>\$5,002,846</b>	<b>\$1,737,816</b>	<b>\$189,007,268</b>	<b>3.79%</b>
<b>SERS 457(b) Total Fund</b>	<b>\$4,950,445,480</b>	<b>100.0%</b>	<b>\$79,052,947</b>	<b>\$(112,042,640)</b>	<b>\$4,983,435,173</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 December 31, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended December 31, 2024

	Last Quarter	Last 1 Year	Last 3 Years	Last 5 Years
<b>Net Performance</b>				
<b>Retirement Date Funds</b>				
SERS Post Retirement Fund	(2.24%)	7.08%	0.53%	4.00%
BlackRock Post Retirement Index	(2.23%)	7.08%	0.56%	4.00%
Callan Tgt Date Ret Inc	(1.91%)	6.88%	0.88%	3.70%
SERS 2030 Retirement Fund	(2.24%)	9.12%	1.56%	5.67%
BlackRock 2030 Index	(2.24%)	9.12%	1.58%	5.67%
Callan Target Date 2030	(1.86%)	9.77%	1.91%	6.17%
SERS 2035 Retirement Fund	(2.11%)	10.88%	2.42%	6.79%
BlackRock 2035 Index	(2.10%)	10.89%	2.43%	6.77%
Callan Target Date 2035	(1.88%)	11.31%	2.54%	7.08%
SERS 2040 Retirement Fund	(1.95%)	12.62%	3.26%	7.83%
BlackRock 2040 Index	(1.94%)	12.63%	3.25%	7.79%
Callan Target Date 2040	(1.76%)	12.80%	3.23%	7.95%
SERS 2045 Retirement Fund	(1.79%)	14.26%	4.07%	8.78%
BlackRock 2045 Index	(1.75%)	14.32%	4.05%	8.74%
Callan Target Date 2045	(1.71%)	13.86%	3.78%	8.63%
SERS 2050 Retirement Fund	(1.51%)	15.56%	4.65%	9.40%
BlackRock 2050 Index	(1.45%)	15.66%	4.64%	9.35%
Callan Target Date 2050	(1.60%)	14.27%	3.97%	8.84%
SERS 2055 Retirement Fund	(1.36%)	16.21%	4.90%	9.61%
BlackRock 2055 Index	(1.29%)	16.32%	4.89%	9.57%
Callan Target Date 2055	(1.59%)	14.49%	4.05%	8.98%
SERS 2060 Retirement Fund	(1.35%)	16.23%	4.91%	9.61%
BlackRock 2060 Index	(1.26%)	16.36%	4.91%	9.58%
Callan Target Date 2060	(1.60%)	14.40%	4.05%	9.02%
SERS 2065 Retirement Fund	(1.34%)	16.26%	4.92%	9.58%
BlackRock 2065 Index	(1.27%)	16.37%	4.91%	9.58%
Callan Target Date 2065	(1.62%)	14.71%	4.03%	9.05%
SERS 2070 Retirement Fund	(1.33%)	-	-	-
BlackRock 2070 Index	(1.27%)	-	-	-
Callan Target Date 2065	(1.62%)	14.71%	4.03%	9.05%

\*Target Date funds replaced risk-based funds in 1Q20.

## Investment Fund Returns

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

### Returns for Periods Ended December 31, 2024

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
<b>Net Performance</b>				
<b>Retirement Date Funds</b>				
SERS Post Retirement Fund	4.47%	4.61%	5.43%	-
BlackRock Post Retirement Index	4.47%	4.60%	5.41%	5.08%
Callan Tgt Date Ret Inc	3.97%	4.10%	4.76%	4.20%
SERS 2030 Retirement Fund	5.97%	6.32%	7.27%	-
BlackRock 2030 Index	5.95%	6.25%	7.22%	6.07%
Callan Target Date 2030	6.21%	6.59%	7.84%	6.23%
SERS 2035 Retirement Fund	6.90%	7.18%	7.99%	-
BlackRock 2035 Index	6.86%	7.08%	7.92%	6.52%
Callan Target Date 2035	6.90%	7.31%	8.46%	6.76%
SERS 2040 Retirement Fund	7.75%	7.95%	8.64%	-
BlackRock 2040 Index	7.69%	7.83%	8.54%	6.91%
Callan Target Date 2040	7.58%	7.89%	8.99%	7.12%
SERS 2045 Retirement Fund	8.50%	8.58%	9.18%	-
BlackRock 2045 Index	8.42%	8.45%	9.08%	7.24%
Callan Target Date 2045	8.09%	8.34%	9.17%	7.22%
SERS 2050 Retirement Fund	8.95%	8.94%	9.53%	-
BlackRock 2050 Index	8.88%	8.81%	9.43%	7.59%
Callan Target Date 2050	8.27%	8.50%	9.31%	-
SERS 2055 Retirement Fund	9.11%	9.04%	-	-
BlackRock 2055 Index	9.05%	8.92%	-	-
Callan Target Date 2055	8.35%	8.56%	9.70%	-
SERS 2060 Retirement Fund	9.11%	9.04%	-	-
BlackRock 2060 Index	9.05%	8.94%	-	-
Callan Target Date 2060	8.44%	8.80%	-	-

\*Funds not listed do not have longer term history.

\*Target Date funds replaced risk-based funds in 1Q20.

## Investment Fund Returns

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

### Returns for Periods Ended December 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	2.41%	25.00%	8.93%	14.53%
S&P 500 Index	2.41%	25.02%	8.94%	14.53%
Callan Lg Cap Broad MF	1.91%	23.41%	7.74%	13.59%
SERS U.S. SMID Company Index	4.66%	17.10%	2.75%	10.09%
Dow Jones US Completion	4.74%	16.89%	2.38%	9.77%
Callan SMID Broad MFs	(0.35%)	11.71%	1.49%	8.68%
<b>International Equity</b>				
SERS Global Non-US Index	(7.78%)	5.53%	0.99%	4.33%
MSCI ACWI ex US	(7.60%)	5.53%	0.82%	4.10%
Callan Non US Equity MFs	(7.92%)	4.41%	1.37%	4.50%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	1.17%	5.20%	3.92%	2.48%
3-month Treasury Bill	1.17%	5.25%	3.89%	2.46%
Callan Cash Database(1)	1.16%	5.40%	3.95%	2.60%
SERS Stable Value Fund	0.74%	2.94%	2.44%	2.26%
3-month Treasury Bill	1.17%	5.25%	3.89%	2.46%
Callan Stable Value SA	0.76%	2.92%	2.53%	2.38%
SERS U.S. Bond Index Fund	(3.07%)	1.25%	(2.38%)	(0.32%)
Blmbg Aggregate	(3.06%)	1.25%	(2.41%)	(0.33%)
Callan Core Bond MFs	(3.00%)	1.79%	(2.30%)	0.07%

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

\*The Global Non-U.S. Stock Index Fund replaced the International Company Stock Index Fund in 1Q20.

## Investment Fund Returns

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

	Returns for Periods Ended December 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	13.84%	13.11%	13.90%	10.39%
S&P 500 Index	13.83%	13.10%	13.88%	10.35%
Callan Lg Cap Broad MF	13.10%	12.19%	13.22%	10.02%
SERS U.S. SMID Company Index	9.43%	9.57%	11.98%	9.53%
Dow Jones US Completion	9.13%	9.30%	11.73%	9.29%
Callan SMID Broad MFs	8.46%	9.00%	11.18%	9.04%
<b>International Equity</b>				
SERS Global Non-US Index	3.78%	5.08%	4.88%	-
MSCI ACWI ex US	3.53%	4.80%	4.68%	4.97%
Callan Non US Equity MFs	3.92%	5.06%	5.46%	5.36%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	2.40%	1.86%	1.31%	1.79%
3-month Treasury Bill	2.35%	1.77%	1.20%	1.66%
Callan Cash Database(1)	2.53%	2.03%	1.46%	2.00%
SERS Stable Value Fund	2.31%	2.22%	2.49%	3.04%
3-month Treasury Bill	2.35%	1.77%	1.20%	1.66%
Callan Stable Value SA	2.41%	2.34%	2.47%	2.99%
SERS U.S. Bond Index Fund	0.97%	1.33%	2.34%	2.99%
Blmbg Aggregate	0.97%	1.35%	2.37%	3.01%
Callan Core Bond MFs	1.21%	1.60%	2.75%	3.26%

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

\*Funds not listed do not have longer term history.

\*The Global Non-U.S. Stock Index Fund replaced the International Company Stock Index Fund in 1Q20.

## 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.

	2024	2023	2022	2021	2020
<b>Net Performance</b>					
<b>Retirement Date Funds</b>					
SERS Post Retirement Fund	7.08%	11.13%	(14.63%)	6.95%	11.97%
BlackRock Post Retirement Index	7.08%	11.11%	(14.54%)	7.02%	11.80%
Callan Tgt Date Ret Inc	6.88%	10.56%	(12.88%)	6.22%	9.93%
SERS 2030 Retirement Fund	9.12%	14.24%	(15.97%)	11.43%	12.88%
BlackRock 2030 Index	9.12%	14.23%	(15.92%)	11.50%	12.72%
Callan Target Date 2030	9.77%	14.49%	(16.05%)	11.63%	13.22%
SERS 2035 Retirement Fund	10.88%	16.29%	(16.67%)	13.80%	13.58%
BlackRock 2035 Index	10.89%	16.29%	(16.67%)	13.85%	13.44%
Callan Target Date 2035	11.31%	16.38%	(16.79%)	13.92%	14.30%
SERS 2040 Retirement Fund	12.62%	18.30%	(17.35%)	15.96%	14.14%
BlackRock 2040 Index	12.63%	18.29%	(17.38%)	15.97%	13.98%
Callan Target Date 2040	12.80%	18.04%	(17.41%)	15.87%	14.83%
SERS 2045 Retirement Fund	14.26%	20.14%	(17.89%)	17.72%	14.83%
BlackRock 2045 Index	14.32%	20.12%	(17.96%)	17.70%	14.65%
Callan Target Date 2045	13.86%	19.29%	(17.94%)	16.89%	15.48%
SERS 2050 Retirement Fund	15.56%	21.25%	(18.20%)	18.67%	15.20%
BlackRock 2050 Index	15.66%	21.23%	(18.30%)	18.62%	15.07%
Callan Target Date 2050	14.27%	19.92%	(18.06%)	17.20%	15.65%
SERS 2055 Retirement Fund	16.21%	21.56%	(18.27%)	18.83%	15.32%
BlackRock 2055 Index	16.32%	21.56%	(18.38%)	18.81%	15.18%
Callan Target Date 2055	14.49%	20.05%	(18.19%)	17.28%	15.56%
SERS 2060 Retirement Fund	16.23%	21.57%	(18.28%)	18.82%	15.31%
BlackRock 2060 Index	16.36%	21.57%	(18.39%)	18.81%	15.19%
Callan Target Date 2060	14.40%	20.07%	(18.28%)	17.41%	15.92%
SERS 2065 Retirement Fund	16.26%	21.62%	(18.30%)	18.77%	15.15%
BlackRock 2065 Index	16.37%	21.59%	(18.40%)	18.80%	15.19%
Callan Target Date 2065	14.71%	20.24%	(18.60%)	17.54%	16.47%

\*Target Date funds replaced risk-based funds in 1Q20.



## 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.

	2024	2023	2022	2021	2020
<b>Net Performance</b>					
<b>Domestic Equity</b>					
SERS U.S. Large Company Index	25.00%	26.29%	(18.12%)	28.70%	18.43%
S&P 500 Index	25.02%	26.29%	(18.11%)	28.71%	18.40%
Callan Lg Cap Broad MF	23.41%	25.85%	(18.55%)	25.50%	18.47%
SERS U.S. SMID Company Index	17.10%	25.39%	(26.13%)	12.89%	32.03%
Dow Jones US Completion	16.89%	24.99%	(26.56%)	12.36%	32.17%
Callan SMID Broad MFs	11.71%	16.85%	(20.87%)	19.19%	22.70%
<b>International Equity</b>					
SERS Global Non-US Index	5.53%	16.07%	(15.92%)	7.97%	11.15%
MSCI ACWI ex US	5.53%	15.62%	(16.00%)	7.82%	10.65%
Callan Non US Equity MFs	4.41%	17.70%	(15.77%)	9.47%	11.12%
<b>Domestic Fixed Income</b>					
SERS Short Term Investment Fund	5.20%	5.00%	1.59%	0.07%	0.67%
3-month Treasury Bill	5.25%	5.01%	1.46%	0.05%	0.67%
Callan Cash Database(1)	5.40%	5.31%	0.84%	0.14%	1.46%
SERS Stable Value Fund	2.94%	2.66%	1.73%	1.64%	2.32%
3-month Treasury Bill	5.25%	5.01%	1.46%	0.05%	0.67%
Callan Stable Value SA	2.92%	2.71%	1.96%	1.84%	2.39%
SERS U.S. Bond Index Fund	1.25%	5.54%	(12.94%)	(1.65%)	7.56%
Bimbg Aggregate	1.25%	5.53%	(13.01%)	(1.54%)	7.51%
Callan Core Bond MFs	1.79%	5.96%	(13.48%)	(1.17%)	8.65%

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

\*The Global Non-U.S. Stock Index Fund replaced the International Company Stock Index Fund in 1Q20.

## Investment Fund Returns

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

### Returns for Periods Ended December 31, 2024

	Last Quarter	Last 1 Year	Last 3 Years	Last 5 Years
<b>Gross Performance</b>				
<b>Retirement Date Funds</b>				
SERS Post Retirement Fund	(2.23%)	7.15%	0.60%	4.07%
BlackRock Post Retirement Index	(2.23%)	7.08%	0.56%	4.00%
Callan Tgt Date Ret Inc	(1.91%)	6.88%	0.88%	3.70%
SERS 2030 Retirement Fund	(2.23%)	9.19%	1.63%	5.74%
BlackRock 2030 Index	(2.24%)	9.12%	1.58%	5.67%
Callan Target Date 2030	(1.86%)	9.77%	1.91%	6.17%
SERS 2035 Retirement Fund	(2.09%)	10.95%	2.49%	6.86%
BlackRock 2035 Index	(2.10%)	10.89%	2.43%	6.77%
Callan Target Date 2035	(1.88%)	11.31%	2.54%	7.08%
SERS 2040 Retirement Fund	(1.93%)	12.69%	3.33%	7.90%
BlackRock 2040 Index	(1.94%)	12.63%	3.25%	7.79%
Callan Target Date 2040	(1.76%)	12.80%	3.23%	7.95%
SERS 2045 Retirement Fund	(1.77%)	14.34%	4.14%	8.86%
BlackRock 2045 Index	(1.75%)	14.32%	4.05%	8.74%
Callan Target Date 2045	(1.71%)	13.86%	3.78%	8.63%
SERS 2050 Retirement Fund	(1.50%)	15.64%	4.72%	9.47%
BlackRock 2050 Index	(1.45%)	15.66%	4.64%	9.35%
Callan Target Date 2050	(1.60%)	14.27%	3.97%	8.84%
SERS 2055 Retirement Fund	(1.34%)	16.28%	4.97%	9.68%
BlackRock 2055 Index	(1.29%)	16.32%	4.89%	9.57%
Callan Target Date 2055	(1.59%)	14.49%	4.05%	8.98%
SERS 2060 Retirement Fund	(1.33%)	16.30%	4.98%	9.68%
BlackRock 2060 Index	(1.26%)	16.36%	4.91%	9.58%
Callan Target Date 2060	(1.60%)	14.40%	4.05%	9.02%
SERS 2065 Retirement Fund	(1.33%)	16.34%	5.00%	9.65%
BlackRock 2065 Index	(1.27%)	16.37%	4.91%	9.58%
Callan Target Date 2065	(1.62%)	14.71%	4.03%	9.05%
SERS 2070 Retirement Fund	(1.33%)	-	-	-
BlackRock 2070 Index	(1.27%)	-	-	-
Callan Target Date 2065	(1.62%)	14.71%	4.03%	9.05%

\*Target Date funds replaced risk-based funds in 1Q20.

## Investment Fund Returns

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

### Returns for Periods Ended December 31, 2024

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
<b>Gross Performance</b>				
<b>Retirement Date Funds</b>				
SERS Post Retirement Fund	4.54%	4.68%	5.50%	-
BlackRock Post Retirement Index	4.47%	4.60%	5.41%	5.08%
Callan Tgt Date Ret Inc	3.97%	4.10%	4.76%	4.20%
SERS 2030 Retirement Fund	6.04%	6.39%	7.35%	-
BlackRock 2030 Index	5.95%	6.25%	7.22%	6.07%
Callan Target Date 2030	6.21%	6.59%	7.84%	6.23%
SERS 2035 Retirement Fund	6.97%	7.25%	8.06%	-
BlackRock 2035 Index	6.86%	7.08%	7.92%	6.52%
Callan Target Date 2035	6.90%	7.31%	8.46%	6.76%
SERS 2040 Retirement Fund	7.82%	8.02%	8.71%	-
BlackRock 2040 Index	7.69%	7.83%	8.54%	6.91%
Callan Target Date 2040	7.58%	7.89%	8.99%	7.12%
SERS 2045 Retirement Fund	8.57%	8.65%	9.25%	-
BlackRock 2045 Index	8.42%	8.45%	9.08%	7.24%
Callan Target Date 2045	8.09%	8.34%	9.17%	7.22%
SERS 2050 Retirement Fund	9.03%	9.01%	9.61%	-
BlackRock 2050 Index	8.88%	8.81%	9.43%	7.59%
Callan Target Date 2050	8.27%	8.50%	9.31%	-
SERS 2055 Retirement Fund	9.18%	9.12%	-	-
BlackRock 2055 Index	9.05%	8.92%	-	-
Callan Target Date 2055	8.35%	8.56%	9.70%	-
SERS 2060 Retirement Fund	9.18%	9.11%	-	-
BlackRock 2060 Index	9.05%	8.94%	-	-
Callan Target Date 2060	8.44%	8.80%	-	-

\*Funds not listed do not have longer term history.

\*Target Date funds replaced risk-based funds in 1Q20.

## Investment Fund Returns

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

### Returns for Periods Ended December 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	2.41%	25.01%	8.94%	14.53%
S&P 500 Index	2.41%	25.02%	8.94%	14.53%
Callan Lg Cap Broad MF	1.91%	23.41%	7.74%	13.59%
SERS U.S. SMID Company Index	4.66%	17.11%	2.75%	10.09%
Dow Jones US Completion	4.74%	16.89%	2.38%	9.77%
Callan SMID Broad MFs	(0.35%)	11.71%	1.49%	8.68%
<b>International Equity</b>				
SERS Global Non-US Index	(7.77%)	5.55%	1.00%	4.34%
MSCI ACWI ex US	(7.60%)	5.53%	0.82%	4.10%
Callan Non US Equity MFs	(7.92%)	4.41%	1.37%	4.50%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	1.17%	5.20%	3.92%	2.48%
3-month Treasury Bill	1.17%	5.25%	3.89%	2.46%
Callan Cash Database(1)	1.16%	5.40%	3.95%	2.60%
SERS Stable Value Fund	0.75%	3.01%	2.50%	2.32%
3-month Treasury Bill	1.17%	5.25%	3.89%	2.46%
Callan Stable Value SA	0.76%	2.92%	2.53%	2.38%
SERS U.S. Bond Index Fund	(3.07%)	1.25%	(2.37%)	(0.31%)
Blmbg Aggregate	(3.06%)	1.25%	(2.41%)	(0.33%)
Callan Core Bond MFs	(3.00%)	1.79%	(2.30%)	0.07%

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

\*The Global Non-U.S. Stock Index Fund replaced the International Company Stock Index Fund in 1Q20.

## Investment Fund Returns

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

	Returns for Periods Ended December 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	13.84%	13.12%	13.90%	10.40%
S&P 500 Index	13.83%	13.10%	13.88%	10.35%
Callan Lg Cap Broad MF	13.10%	12.19%	13.22%	10.02%
SERS U.S. SMID Company Index	9.44%	9.57%	11.98%	9.54%
Dow Jones US Completion	9.13%	9.30%	11.73%	9.29%
Callan SMID Broad MFs	8.46%	9.00%	11.18%	9.04%
<b>International Equity</b>				
SERS Global Non-US Index	3.79%	5.10%	4.89%	-
MSCI ACWI ex US	3.53%	4.80%	4.68%	4.97%
Callan Non US Equity MFs	3.92%	5.06%	5.46%	5.36%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	2.40%	1.86%	1.31%	1.79%
3-month Treasury Bill	2.35%	1.77%	1.20%	1.66%
Callan Cash Database(1)	2.53%	2.03%	1.46%	2.00%
SERS Stable Value Fund	2.38%	2.37%	2.70%	3.25%
3-month Treasury Bill	2.35%	1.77%	1.20%	1.66%
Callan Stable Value SA	2.41%	2.34%	2.47%	2.99%
SERS U.S. Bond Index Fund	0.97%	1.34%	2.35%	2.99%
Blmbg Aggregate	0.97%	1.35%	2.37%	3.01%
Callan Core Bond MFs	1.21%	1.60%	2.75%	3.26%

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

\*Funds not listed do not have longer term history.

\*The Global Non-U.S. Stock Index Fund replaced the International Company Stock Index Fund in 1Q20.

## 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.

	2024	2023	2022	2021	2020
<b>Gross Performance</b>					
<b>Retirement Date Funds</b>					
SERS Post Retirement Fund	7.15%	11.21%	(14.57%)	7.03%	12.04%
BlackRock Post Retirement Index	7.08%	11.11%	(14.54%)	7.02%	11.80%
Callan Tgt Date Ret Inc	6.88%	10.56%	(12.88%)	6.22%	9.93%
SERS 2030 Retirement Fund	9.19%	14.32%	(15.91%)	11.50%	12.96%
BlackRock 2030 Index	9.12%	14.23%	(15.92%)	11.50%	12.72%
Callan Target Date 2030	9.77%	14.49%	(16.05%)	11.63%	13.22%
SERS 2035 Retirement Fund	10.95%	16.37%	(16.61%)	13.88%	13.65%
BlackRock 2035 Index	10.89%	16.29%	(16.67%)	13.85%	13.44%
Callan Target Date 2035	11.31%	16.38%	(16.79%)	13.92%	14.30%
SERS 2040 Retirement Fund	12.69%	18.38%	(17.29%)	16.04%	14.22%
BlackRock 2040 Index	12.63%	18.29%	(17.38%)	15.97%	13.98%
Callan Target Date 2040	12.80%	18.04%	(17.41%)	15.87%	14.83%
SERS 2045 Retirement Fund	14.34%	20.22%	(17.84%)	17.79%	14.90%
BlackRock 2045 Index	14.32%	20.12%	(17.96%)	17.70%	14.65%
Callan Target Date 2045	13.86%	19.29%	(17.94%)	16.89%	15.48%
SERS 2050 Retirement Fund	15.64%	21.33%	(18.15%)	18.75%	15.27%
BlackRock 2050 Index	15.66%	21.23%	(18.30%)	18.62%	15.07%
Callan Target Date 2050	14.27%	19.92%	(18.06%)	17.20%	15.65%
SERS 2055 Retirement Fund	16.28%	21.64%	(18.22%)	18.91%	15.40%
BlackRock 2055 Index	16.32%	21.56%	(18.38%)	18.81%	15.18%
Callan Target Date 2055	14.49%	20.05%	(18.19%)	17.28%	15.56%
SERS 2060 Retirement Fund	16.30%	21.65%	(18.23%)	18.90%	15.38%
BlackRock 2060 Index	16.36%	21.57%	(18.39%)	18.81%	15.19%
Callan Target Date 2060	14.40%	20.07%	(18.28%)	17.41%	15.92%
SERS 2065 Retirement Fund	16.34%	21.70%	(18.25%)	18.85%	15.22%
BlackRock 2065 Index	16.37%	21.59%	(18.40%)	18.80%	15.19%
Callan Target Date 2065	14.71%	20.24%	(18.60%)	17.54%	16.47%

\*Target Date funds replaced risk-based funds in 1Q20.

## 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.

	2024	2023	2022	2021	2020
<b>Gross Performance</b>					
<b>Domestic Equity</b>					
SERS U.S. Large Company Index	25.01%	26.29%	(18.11%)	28.71%	18.44%
S&P 500 Index	25.02%	26.29%	(18.11%)	28.71%	18.40%
Callan Lg Cap Broad MF	23.41%	25.85%	(18.55%)	25.50%	18.47%
SERS U.S. SMID Company Index	17.11%	25.40%	(26.12%)	12.90%	32.04%
Dow Jones US Completion	16.89%	24.99%	(26.56%)	12.36%	32.17%
Callan SMID Broad MFs	11.71%	16.85%	(20.87%)	19.19%	22.70%
<b>International Equity</b>					
SERS Global Non-US Index	5.55%	16.09%	(15.91%)	7.98%	11.17%
MSCI ACWI ex US	5.53%	15.62%	(16.00%)	7.82%	10.65%
Callan Non US Equity MFs	4.41%	17.70%	(15.77%)	9.47%	11.12%
<b>Domestic Fixed Income</b>					
SERS Short Term Investment Fund	5.20%	5.00%	1.59%	0.07%	0.67%
3-month Treasury Bill	5.25%	5.01%	1.46%	0.05%	0.67%
Callan Cash Database(1)	5.40%	5.31%	0.84%	0.14%	1.46%
SERS Stable Value Fund	3.01%	2.71%	1.79%	1.72%	2.38%
3-month Treasury Bill	5.25%	5.01%	1.46%	0.05%	0.67%
Callan Stable Value SA	2.92%	2.71%	1.96%	1.84%	2.39%
SERS U.S. Bond Index Fund	1.25%	5.54%	(12.93%)	(1.64%)	7.56%
Blmbg Aggregate	1.25%	5.53%	(13.01%)	(1.54%)	7.51%
Callan Core Bond MFs	1.79%	5.96%	(13.48%)	(1.17%)	8.65%

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

\*The Global Non-U.S. Stock Index Fund replaced the International Company Stock Index Fund in 1Q20.

**Pennsylvania SERS 457(b)**  
**Investment Manager Performance Monitoring Summary Report**  
**December 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>Retirement Date Funds</b>									
<b>SERS Post Retirement Fund</b> Callan Tgt Date Ret Inc	-2.2 77	7.1 37	0.5 63	4.0 29	4.5 18	4.6 16			0.07 75
BlackRock Post Retirement Index	-2.2 76	7.1 37	0.6 61	4.0 29	4.5 18	4.6 17			
<b>SERS 2030 Retirement Fund</b> Callan Target Date 2030	-2.2 73	9.1 75	1.6 71	5.7 74	6.0 60	6.3 68			0.07 68
BlackRock 2030 Index	-2.2 71	9.1 75	1.6 71	5.7 74	5.9 61	6.3 72			
<b>SERS 2035 Retirement Fund</b> Callan Target Date 2035	-2.1 68	10.9 61	2.4 58	6.8 72	6.9 52	7.2 60			0.07 74
BlackRock 2035 Index	-2.1 68	10.9 61	2.4 58	6.8 73	6.9 54	7.1 71			
<b>SERS 2040 Retirement Fund</b> Callan Target Date 2040	-1.9 69	12.6 56	3.3 47	7.8 59	7.8 40	7.9 46			0.07 71
BlackRock 2040 Index	-1.9 68	12.6 55	3.2 48	7.8 60	7.7 46	7.8 54			
<b>SERS 2045 Retirement Fund</b> Callan Target Date 2045	-1.8 58	14.3 34	4.1 24	8.8 33	8.5 27	8.6 30			0.07 74
BlackRock 2045 Index	-1.7 55	14.3 31	4.1 28	8.7 38	8.4 29	8.4 41			
<b>SERS 2050 Retirement Fund</b> Callan Target Date 2050	-1.5 44	15.6 11	4.7 11	9.4 15	9.0 14	8.9 18			0.07 71
BlackRock 2050 Index	-1.5 38	15.7 10	4.6 12	9.4 16	8.9 15	8.8 29			
<b>SERS 2055 Retirement Fund</b> Callan Target Date 2055	-1.4 31	16.2 9	4.9 10	9.6 9	9.1 8	9.0 16			0.07 74
BlackRock 2055 Index	-1.3 28	16.3 9	4.9 10	9.6 10	9.0 13	8.9 24			
<b>SERS 2060 Retirement Fund</b> Callan Target Date 2060	-1.3 36	16.2 11	4.9 13	9.6 15	9.1 14	9.0 22			0.07 72
BlackRock 2060 Index	-1.3 32	16.4 10	4.9 13	9.6 15	9.1 15	8.9 34			
<b>SERS 2065 Retirement Fund</b> Callan Target Date 2065	-1.3 29	16.3 10	4.9 13	9.6 20					0.07 76
BlackRock 2065 Index	-1.3 27	16.4 9	4.9 13	9.6 19					

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 457(b)**  
**Investment Manager Performance Monitoring Summary Report**  
**December 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 2070 Retirement Fund</b> Callan Target Date 2065 BlackRock 2070 Index	-1.3 29								0.07 76
<b>Domestic Equity</b>									
<b>SERS U.S. Large Company Index</b> Callan Lg Cap Broad MF S&P 500 Index	2.4 44	25.0 42	8.9 25	14.5 41	13.8 41	13.1 41			0.01 100
<b>SERS U.S. Small/Mid Company Index</b> Callan SMID Broad MFs Dow Jones US Completion	4.7 8	17.1 19	2.7 30	10.1 32	9.4 33	9.6 41			0.02 100
<b>International Equity</b>									
<b>SERS Global Non-U.S. Index Fund</b> Callan Non US Equity MFs MSCI ACWI ex US	-7.8 48	5.5 37	1.0 57	4.3 52	3.8 54	5.1 50			0.04 99
<b>Domestic Fixed Income</b>									
<b>SERS Short Term Investment Fund</b> Callan Cash Database 3-month Treasury Bill	1.2 49	5.2 86	3.9 53	2.5 73	2.4 79	1.9 76			0.00 100
<b>Comments:</b> Callan Cash Database includes STIF, enhanced cash, and money market funds.									
<b>SERS Stable Value Fund</b> Callan Stable Value SA 3-month Treasury Bill	0.7 70	2.9 44	2.4 65	2.3 63	2.3 63	2.2 70			0.25 70
<b>SERS U.S. Bond Index Fund</b> Callan Core Bond MFs Blmbg Aggregate	-3.1 67	1.3 85	-2.4 67	-0.3 93	1.0 88	1.3 90			0.01 100

Returns:  
■ above median  
■ third quartile  
■ fourth quartile

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

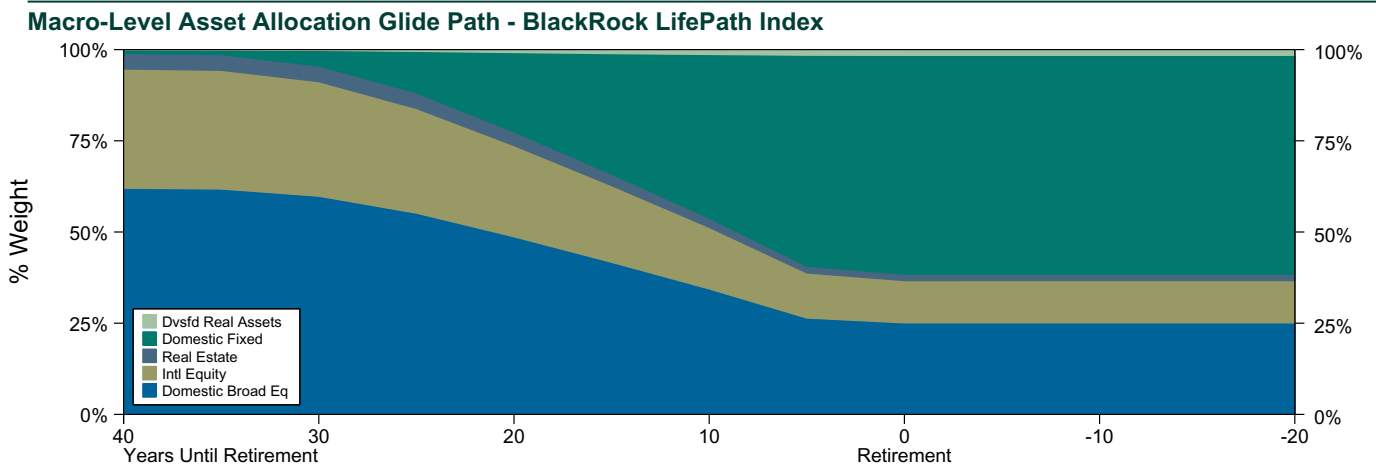
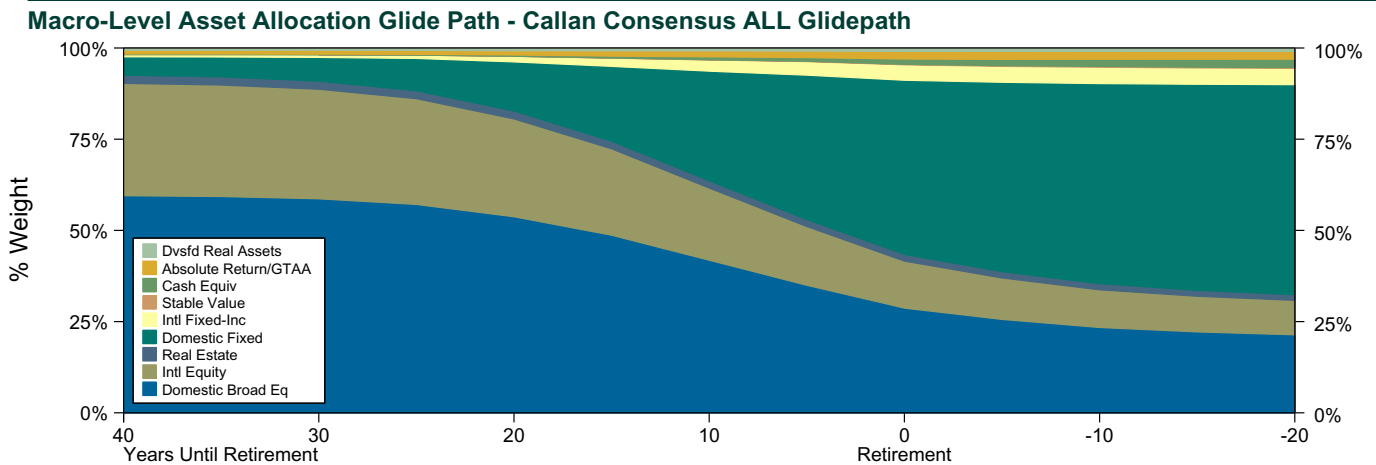
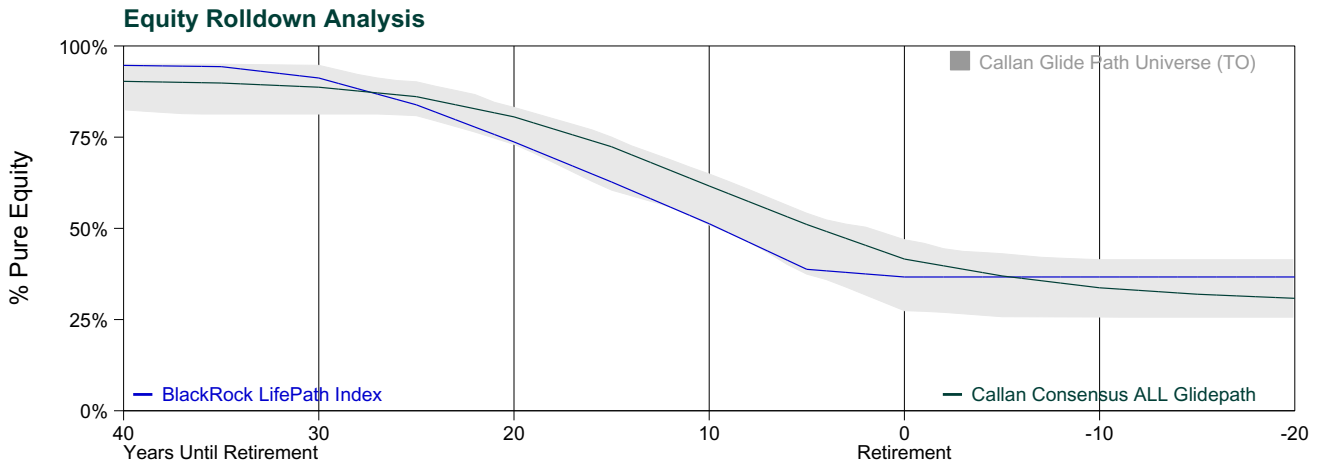
Risk Quadrant:  


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



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

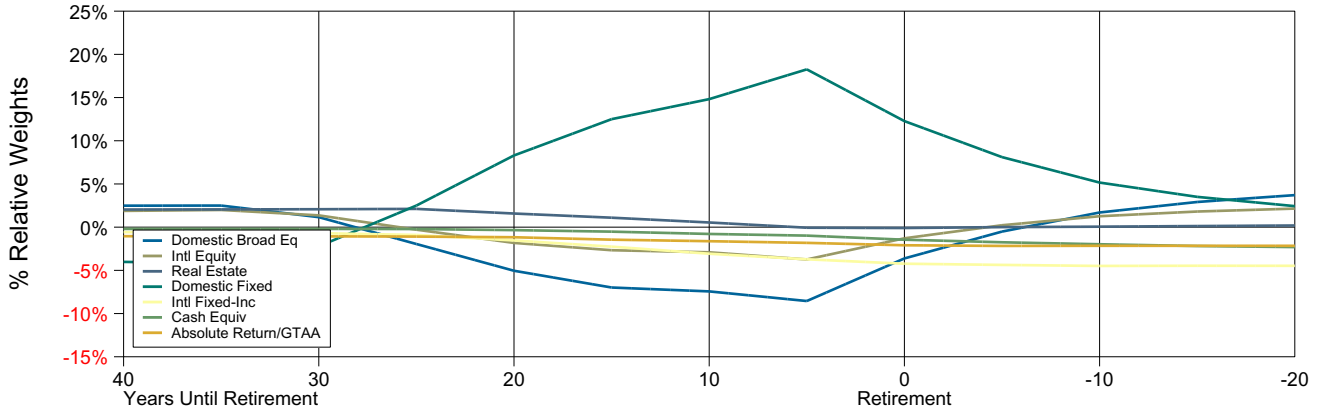
The following charts illustrate the asset allocation "glide path" underlying the relevant suite of target date funds. This analysis covers forty years of investor wealth accumulation up to retirement, as well as twenty years of wealth decumulation following retirement. The top chart shows the "pure" 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.



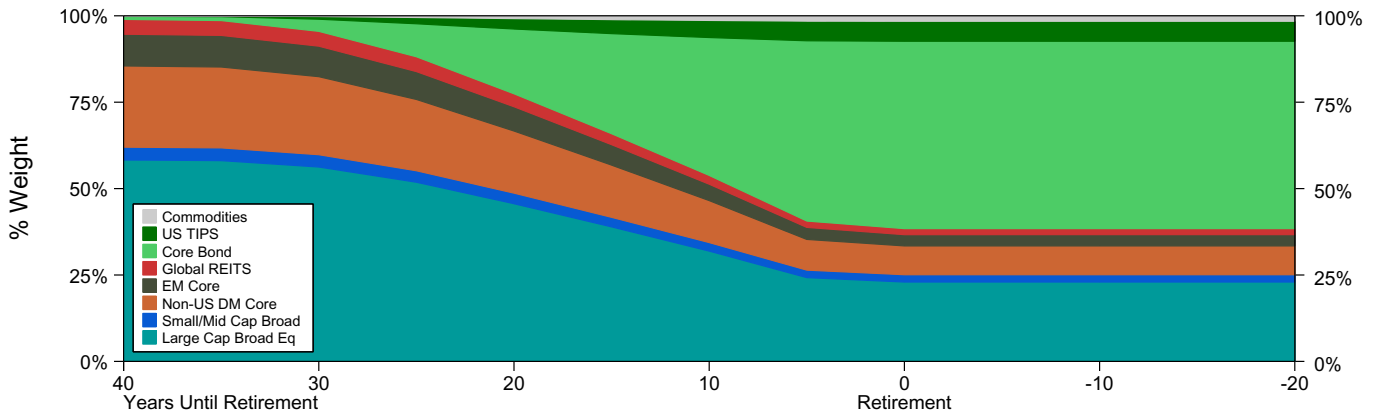
# BlackRock LifePath Index Target Date Glide Path Analysis as of December 31, 2024

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.

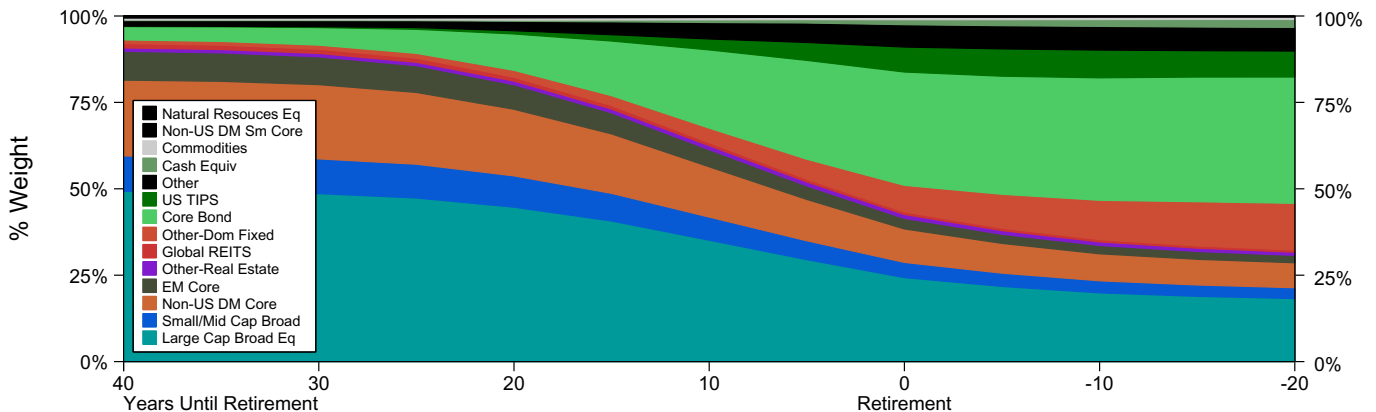
**Relative Macro Asset Allocation - BlackRock LifePath Index vs. Callan Consensus ALL Glidep**



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



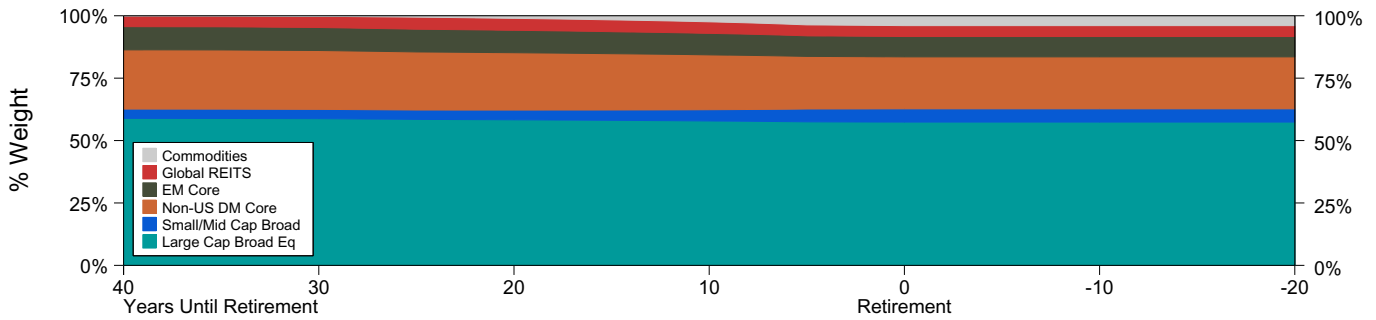
**Micro-Level Asset Allocation Glide Path - Callan Consensus ALL Glidepath**



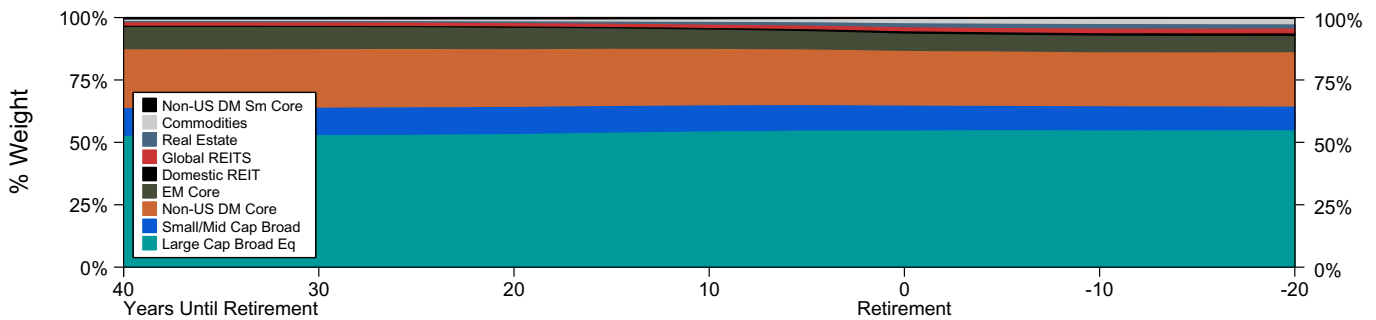
# BlackRock LifePath Index Target Date Glide Path Analysis as of December 31, 2024

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.

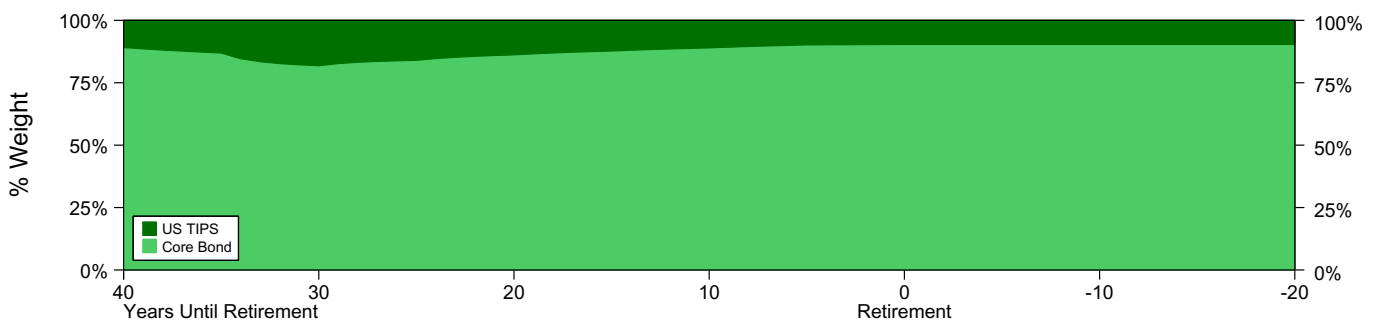
## Micro-Level Equity Allocation Glide Path - BlackRock LifePath Index



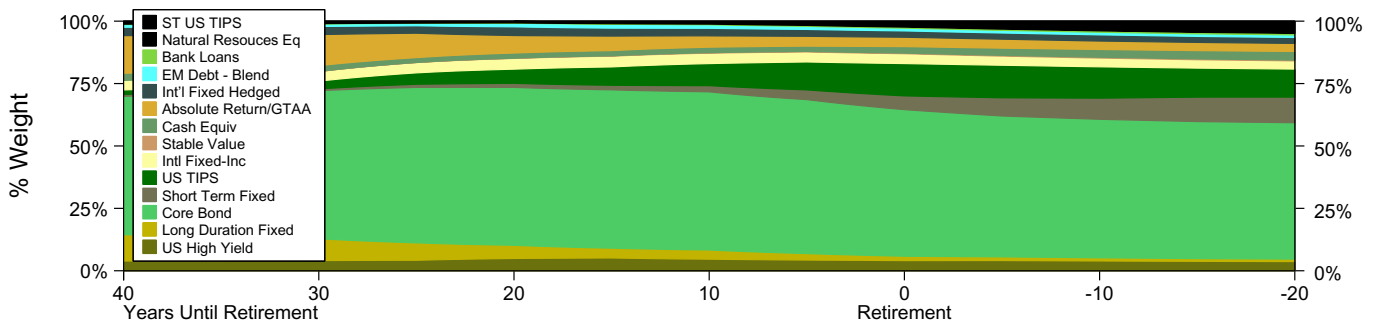
## Micro-Level Equity Asset Allocation Glide Path - Callan Consensus ALL Glidepath



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



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



# Pennsylvania SERS 457(b) - BlackRock LifePath Index Target Date Fund Family Analysis as of December 31, 2024

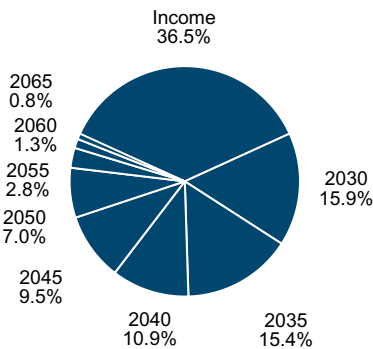
The following is an analysis of the client's suite of target date funds as an aggregated portfolio using actual proportions held by the client's participants. The upper-left pie chart shows the current client weights across target dates. The rest of the charts compare different attributes of the aggregated 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

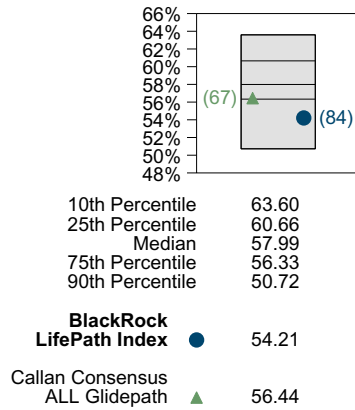
Passive and Non-Passive

Fee/Return Type: Gross

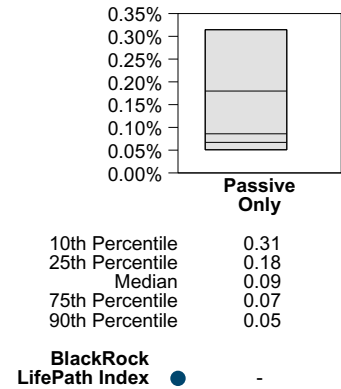
### Fund Family Allocation



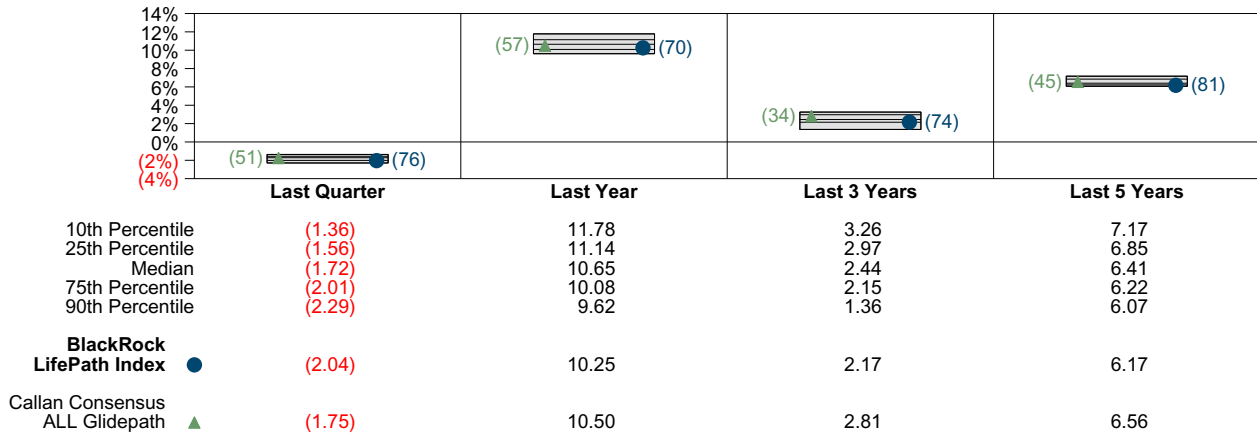
### Equity Exposure



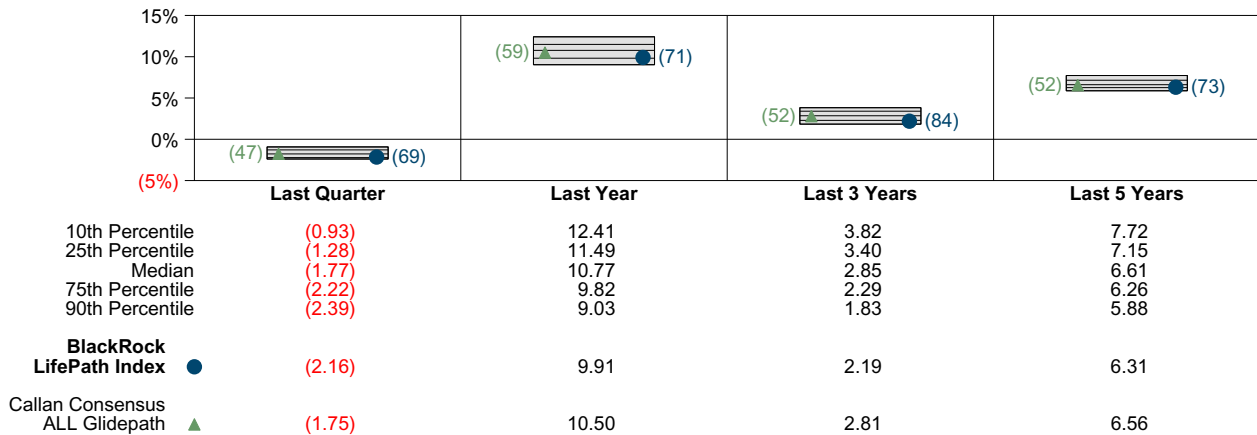
### Expense Ratio



### Target Date Family Performance vs Peer Families



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

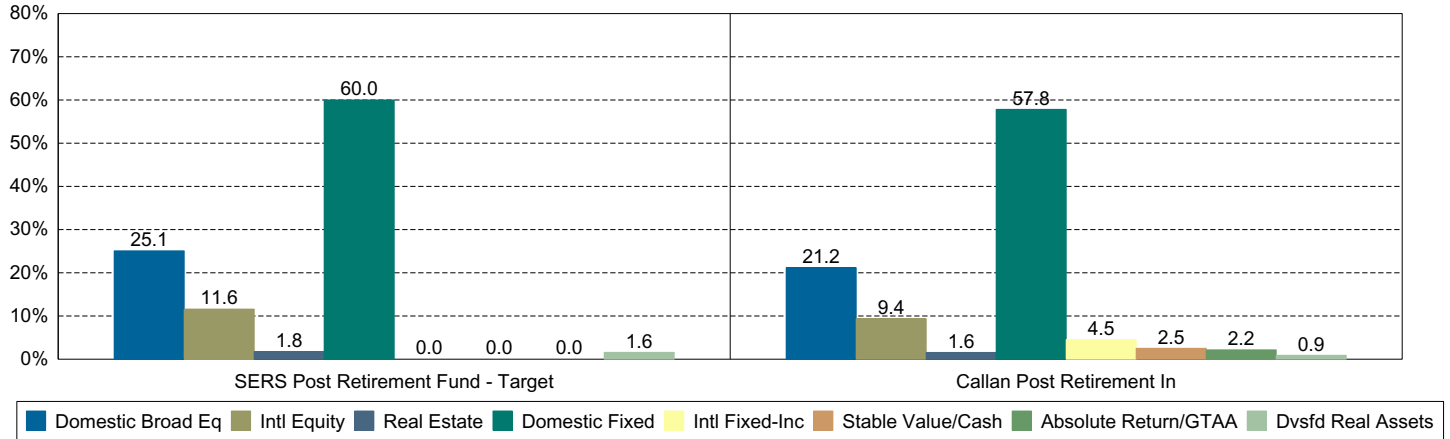


# SERS Post Retirement Fund

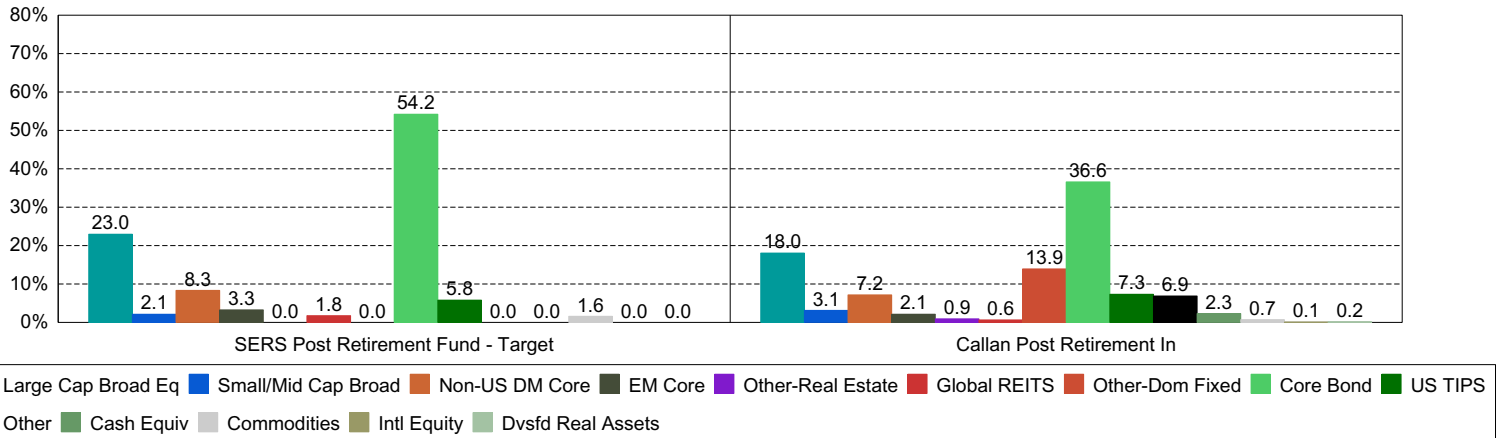
## Target Date Fund Asset Allocation as of December 31, 2024

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.

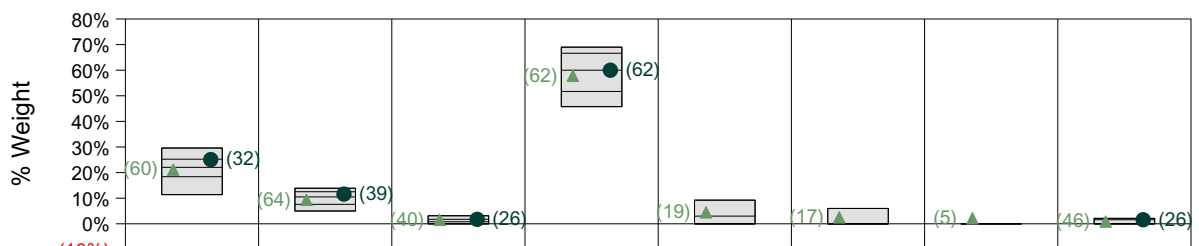
### Macro-Level Asset Allocation



### 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	22.05	10.50	0.80	60.00	0.00	0.00	0.00	0.00
75th Percentile	18.40	7.60	0.00	51.70	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	▲	21.17	9.37	1.56	57.83	4.49	2.16	0.90

# SERS Post Retirement Fund Period Ended December 31, 2024

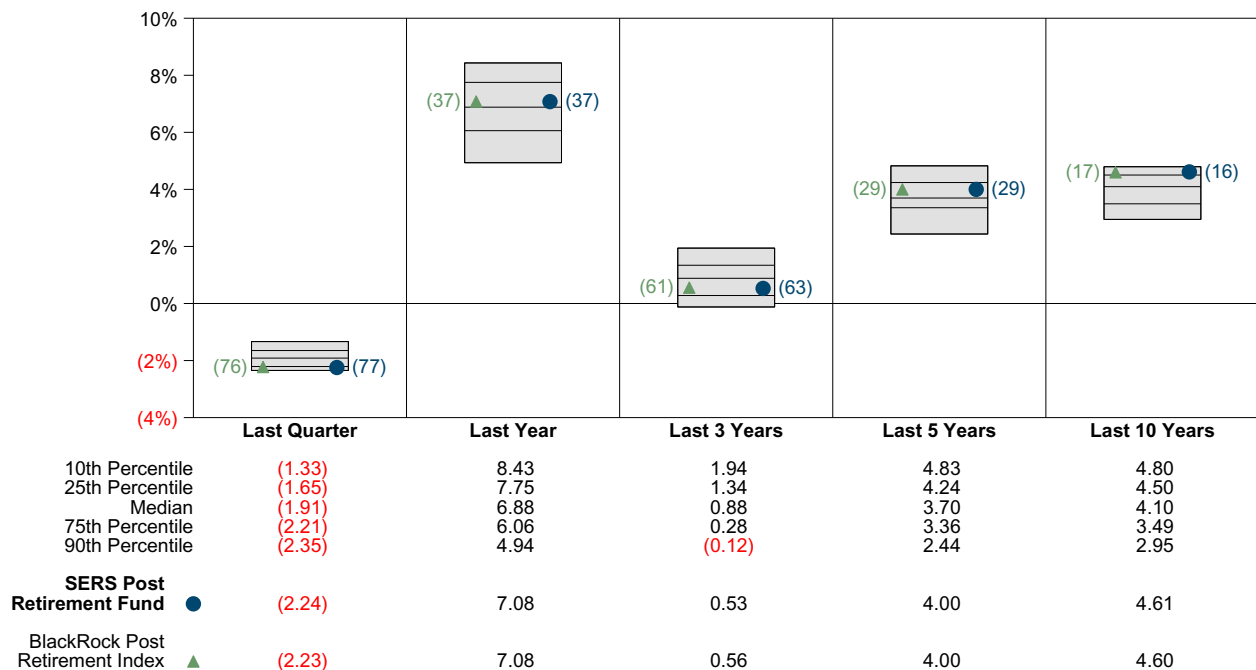
## Investment Philosophy

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. Target Date funds replaced risk-based funds in 1Q20.

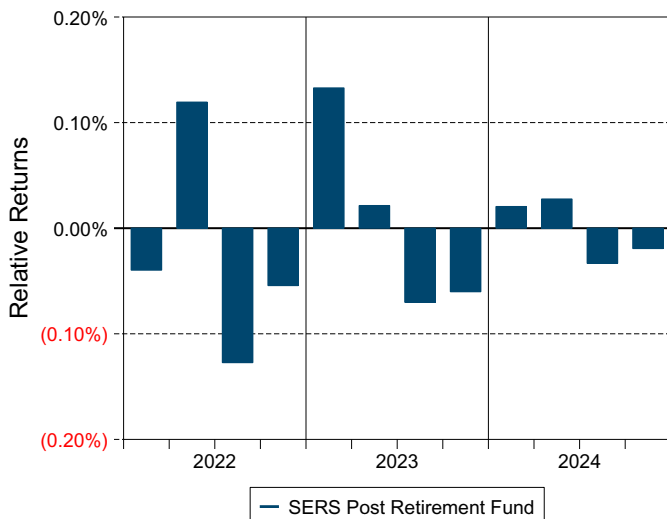
## Quarterly Summary and Highlights

- SERS Post Retirement Fund's portfolio posted a (2.24)% return for the quarter placing it in the 77 percentile of the Callan Target Date Retirement Income group for the quarter and in the 37 percentile for the last year.
- SERS Post Retirement Fund's portfolio underperformed the BlackRock Post Retirement Index by 0.02% for the quarter and underperformed the BlackRock Post Retirement Index for the year by 0.00%.

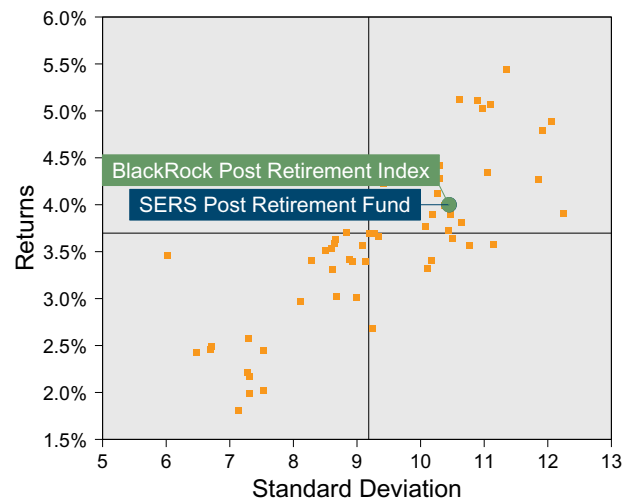
## Performance vs Callan Target Date Retirement Income (Net)



### Relative Returns vs BlackRock Post Retirement Index



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



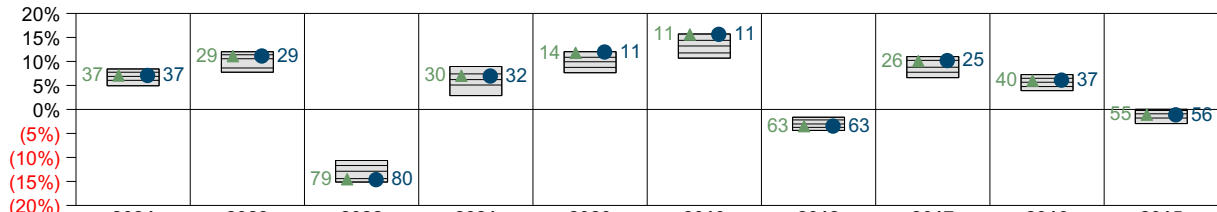


# SERS Post Retirement Fund Return Analysis Summary

## Return Analysis

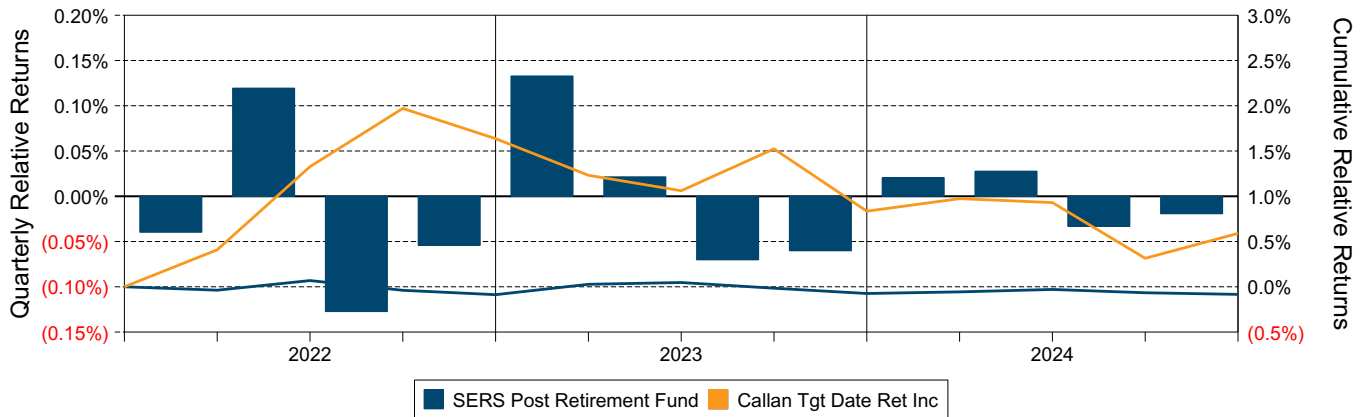
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate 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)

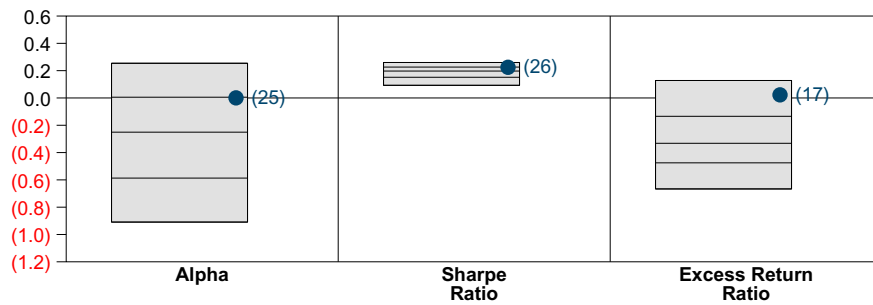


	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	8.43	12.02	(10.64)	8.95	12.03	15.72	(1.62)	11.01	7.26	0.03
25th Percentile	7.75	11.40	(11.68)	7.40	10.87	14.40	(2.19)	10.22	6.49	(0.21)
Median	6.88	10.56	(12.88)	6.22	9.93	13.22	(3.03)	8.80	5.67	(0.91)
75th Percentile	6.06	8.64	(14.41)	5.09	8.76	11.77	(3.73)	7.75	4.77	(1.79)
90th Percentile	4.94	7.75	(15.13)	2.88	7.65	10.68	(4.37)	6.62	3.92	(2.95)
<b>SERS Post Retirement Fund</b>	<b>7.08</b>	<b>11.13</b>	<b>(14.63)</b>	<b>6.95</b>	<b>11.97</b>	<b>15.65</b>	<b>(3.47)</b>	<b>10.18</b>	<b>6.10</b>	<b>(1.12)</b>
BlackRock Post Retirement Index	7.08	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 December 31, 2024

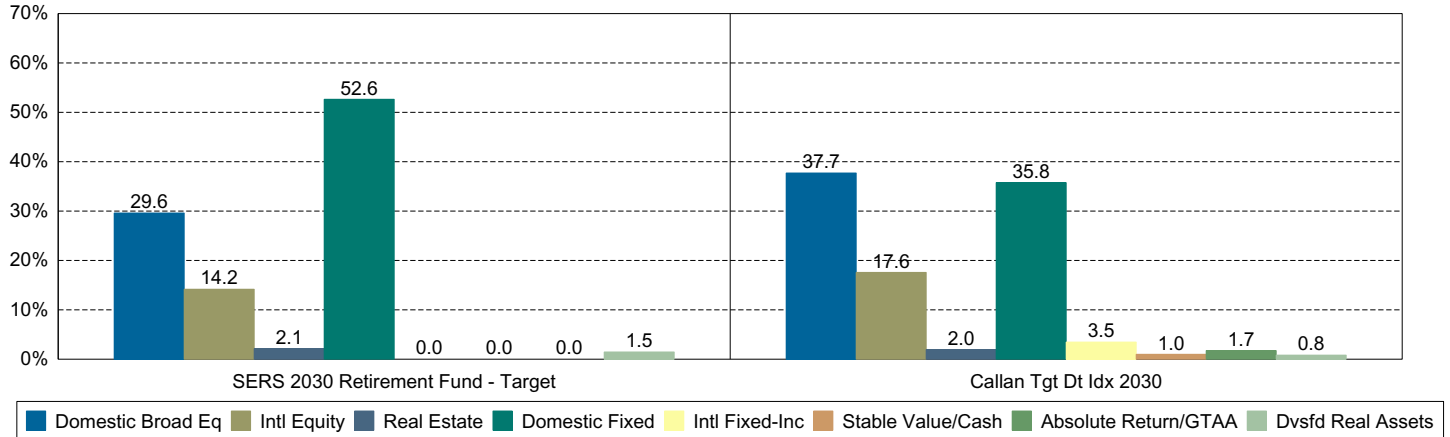


	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.25	0.26	0.13
25th Percentile	0.01	0.23	(0.13)
Median	(0.25)	0.20	(0.33)
75th Percentile	(0.59)	0.15	(0.48)
90th Percentile	(0.91)	0.09	(0.67)
<b>SERS Post Retirement Fund</b>	<b>0.00</b>	<b>0.22</b>	<b>0.02</b>

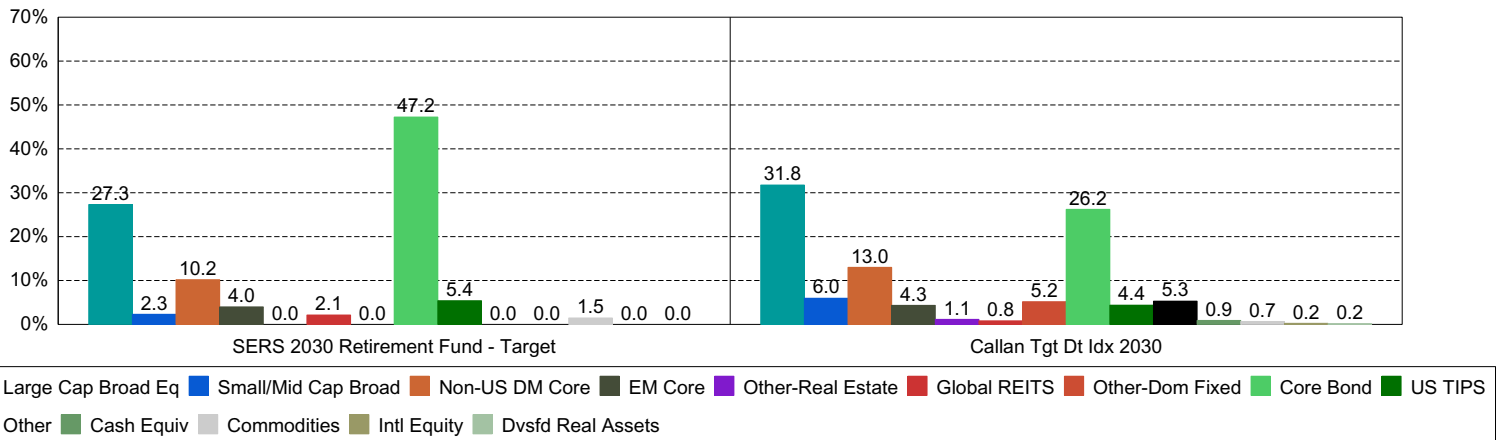
# SERS 2030 Retirement Fund Target Date Fund Asset Allocation as of December 31, 2024

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.

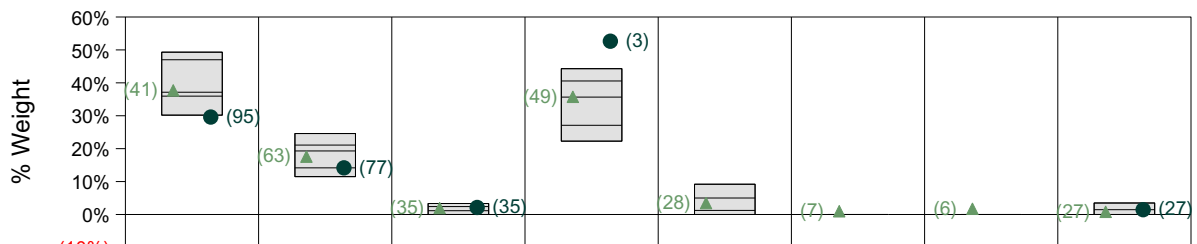
## Macro-Level Asset Allocation



## 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	44.30	9.19	0.00	0.00	3.49
25th Percentile	47.01	21.09	2.40	40.56	5.01	0.00	0.00	1.46
Median	37.14	19.31	1.15	35.66	1.24	0.00	0.00	0.00
75th Percentile	35.95	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	▲ 37.71	17.57	1.95	35.76	3.46	0.99	1.74	0.82

# SERS 2030 Retirement Fund

## Period Ended December 31, 2024

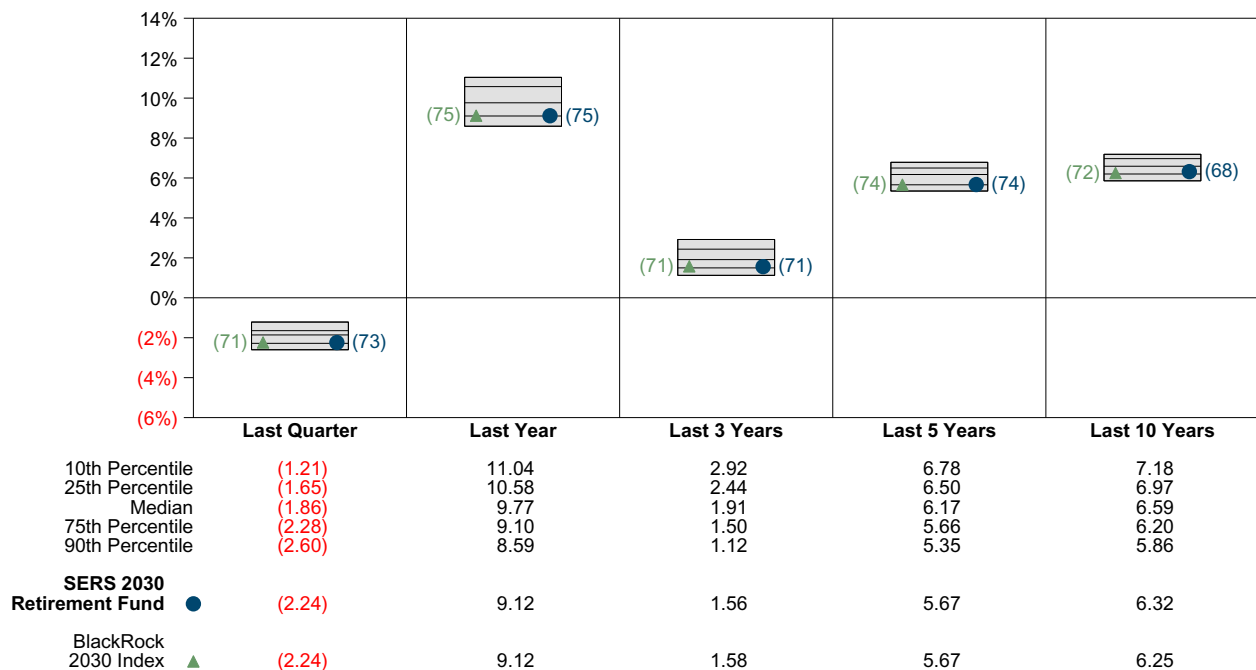
### Investment Philosophy

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. Target Date funds replaced risk-based funds in 1Q20.

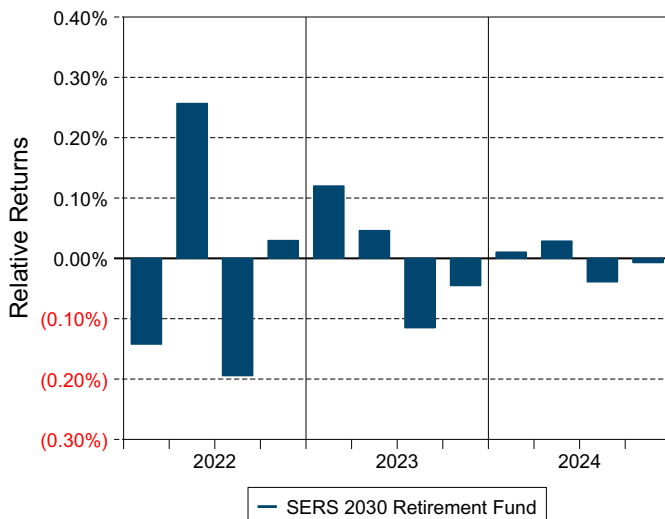
### Quarterly Summary and Highlights

- SERS 2030 Retirement Fund's portfolio posted a (2.24)% return for the quarter placing it in the 73 percentile of the Callan Target Date 2030 group for the quarter and in the 75 percentile for the last year.
- SERS 2030 Retirement Fund's portfolio underperformed the BlackRock 2030 Index by 0.01% for the quarter and underperformed the BlackRock 2030 Index for the year by 0.01%.

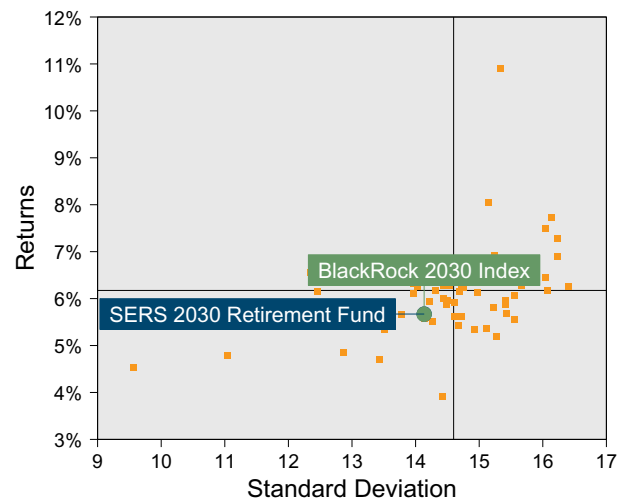
### Performance vs Callan Target Date 2030 (Net)



### Relative Return vs BlackRock 2030 Index



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

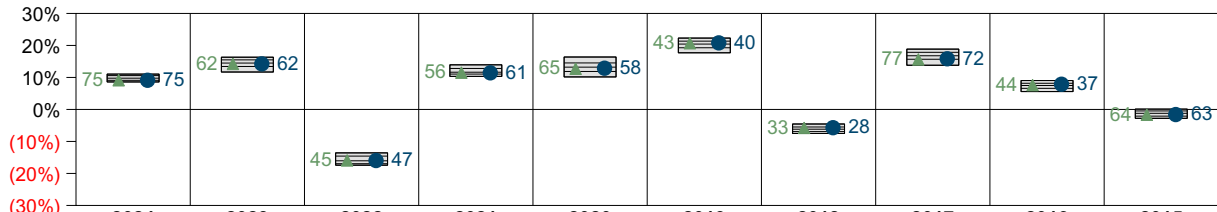


# SERS 2030 Retirement Fund Return Analysis Summary

## Return Analysis

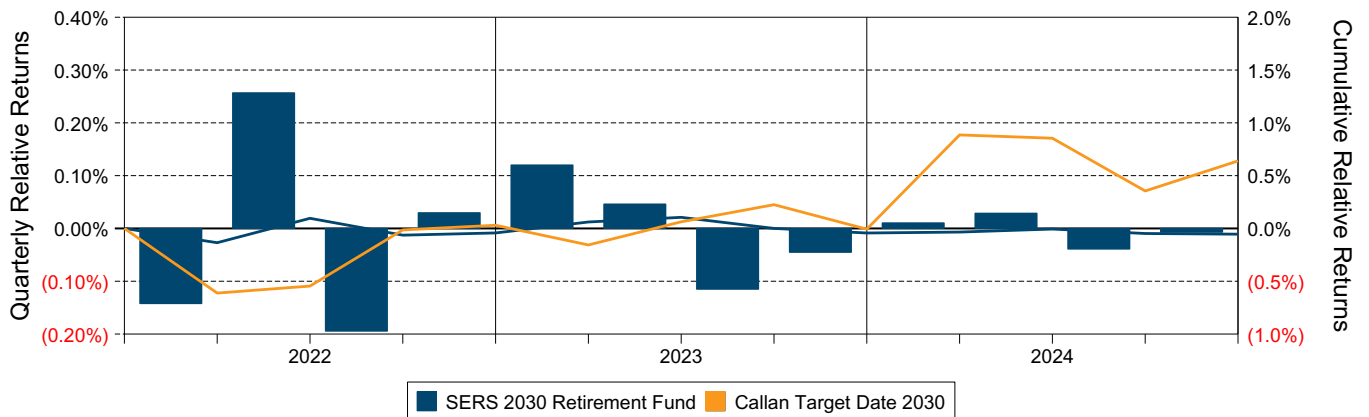
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate 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)

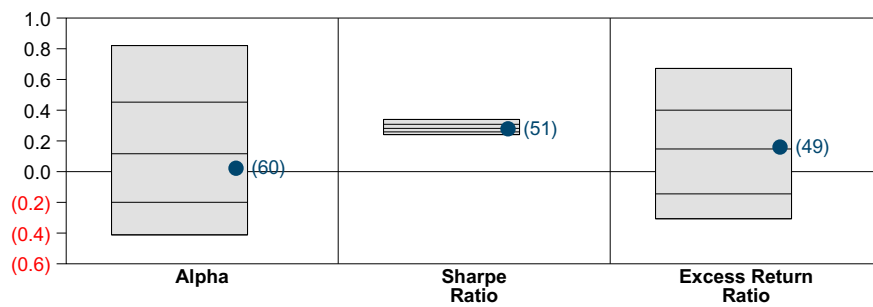


	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
<b>SERS 2030 Retirement Fund</b> ●	9.12	14.24	(15.97)	11.43	12.88	20.80	(5.71)	15.83	7.88	(1.60)
BlackRock 2030 Index ▲	9.12	14.23	(15.92)	11.50	12.72	20.70	(5.76)	15.64	7.61	(1.66)

### Cumulative and Quarterly Relative Returns vs BlackRock 2030 Index



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



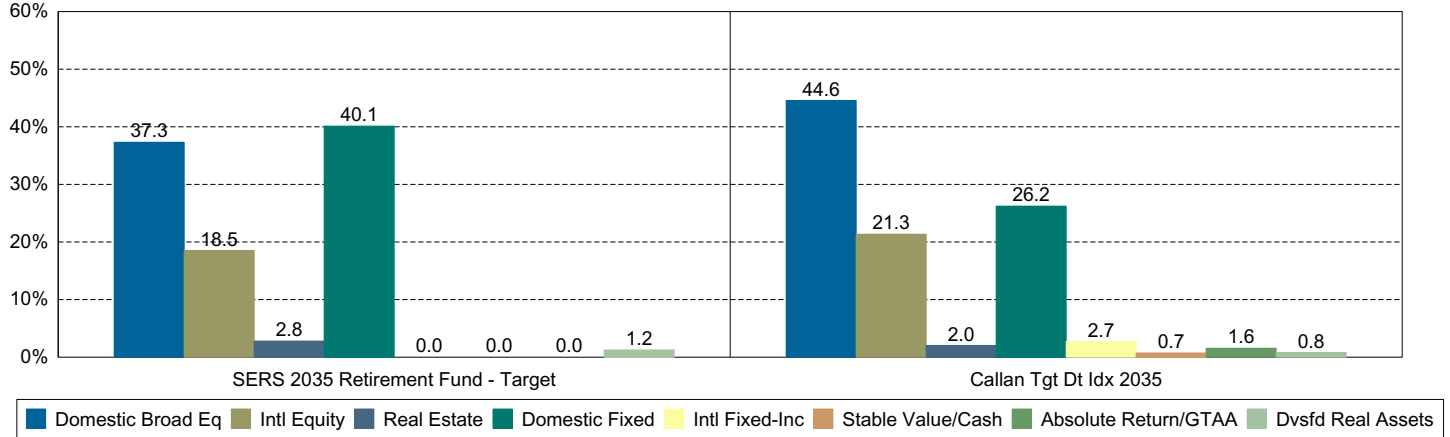
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.82	0.34	0.67
25th Percentile	0.45	0.31	0.40
Median	0.12	0.28	0.15
75th Percentile	(0.20)	0.26	(0.14)
90th Percentile	(0.41)	0.24	(0.31)
<b>SERS 2030 Retirement Fund</b> ●	0.02	0.28	0.16

# SERS 2035 Retirement Fund

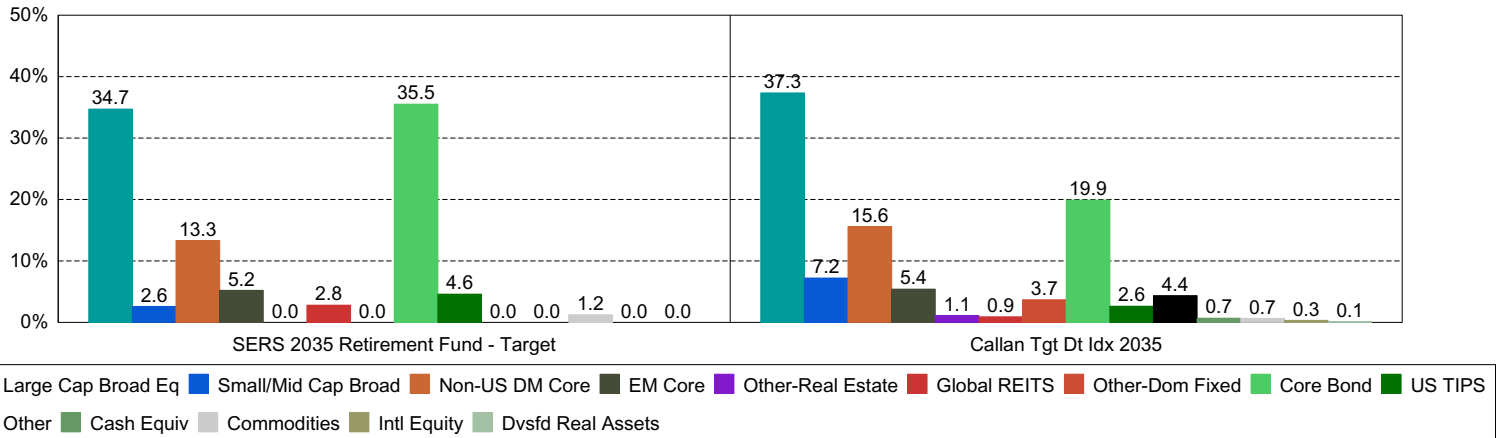
## Target Date Fund Asset Allocation as of December 31, 2024

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.

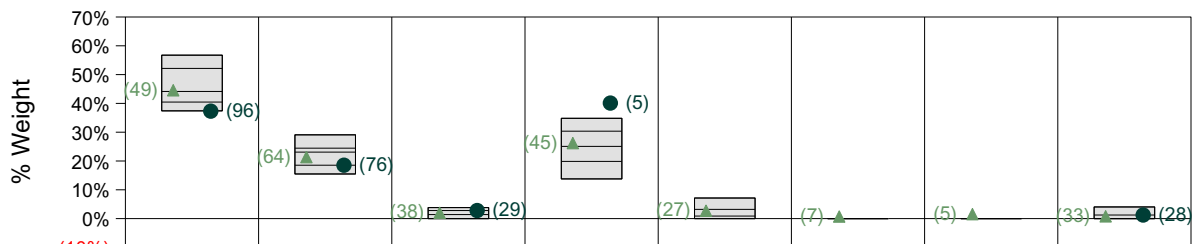
### Macro-Level Asset Allocation



### 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	7.14	0.00	0.00	4.05
25th Percentile	52.14	24.46	2.80	30.35	3.21	0.00	0.00	1.24
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	▲	44.56	21.35	2.04	26.22	2.75	0.73	1.55	0.79

# SERS 2035 Retirement Fund

## Period Ended December 31, 2024

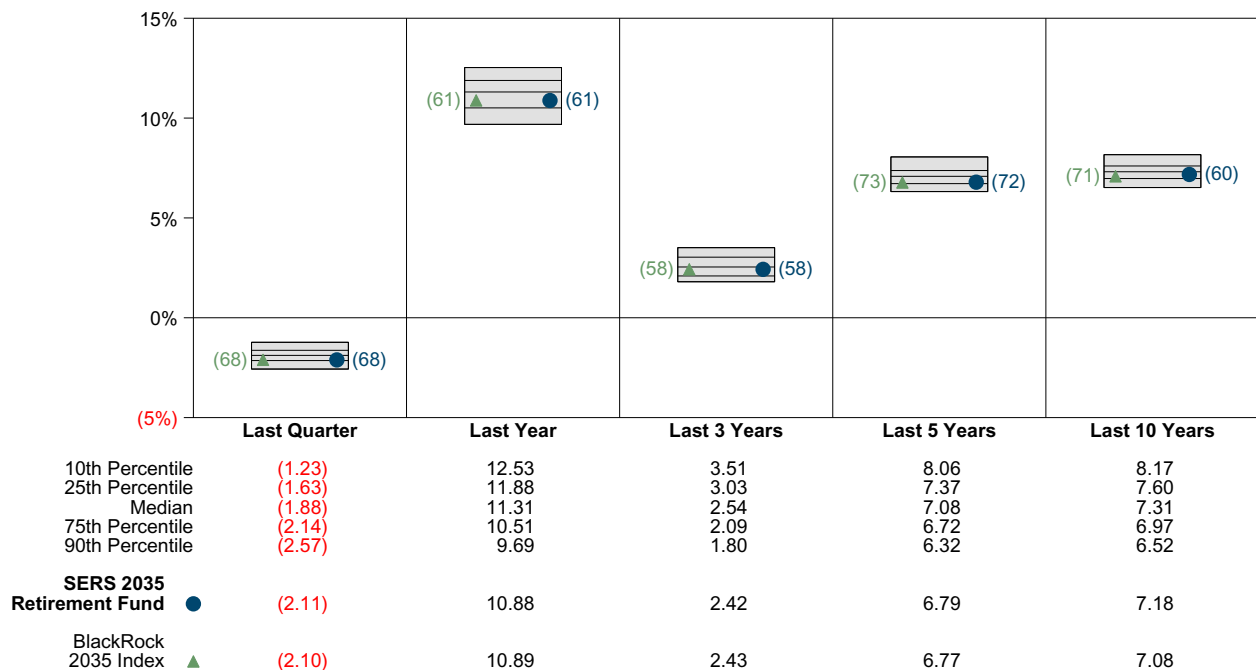
### Investment Philosophy

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. Target Date funds replaced risk-based funds in 1Q20.

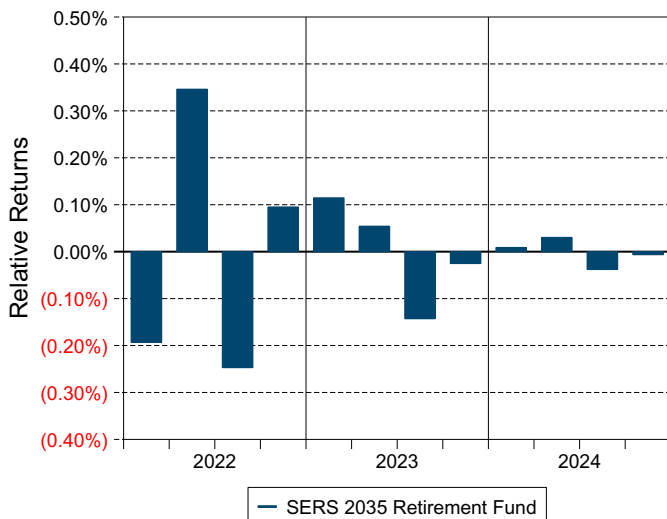
### Quarterly Summary and Highlights

- SERS 2035 Retirement Fund's portfolio posted a (2.11)% return for the quarter placing it in the 68 percentile of the Callan Target Date 2035 group for the quarter and in the 61 percentile for the last year.
- SERS 2035 Retirement Fund's portfolio underperformed the BlackRock 2035 Index by 0.01% for the quarter and underperformed the BlackRock 2035 Index for the year by 0.01%.

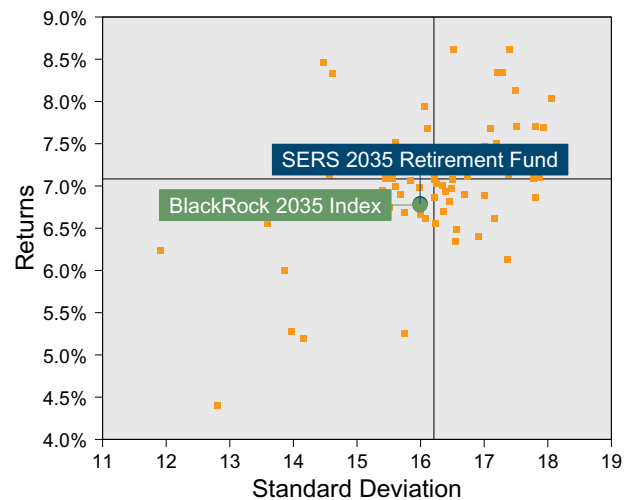
### Performance vs Callan Target Date 2035 (Net)



### Relative Return vs BlackRock 2035 Index



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

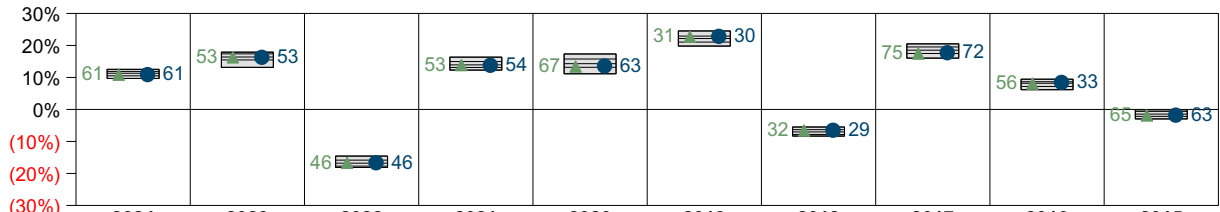


# SERS 2035 Retirement Fund Return Analysis Summary

## Return Analysis

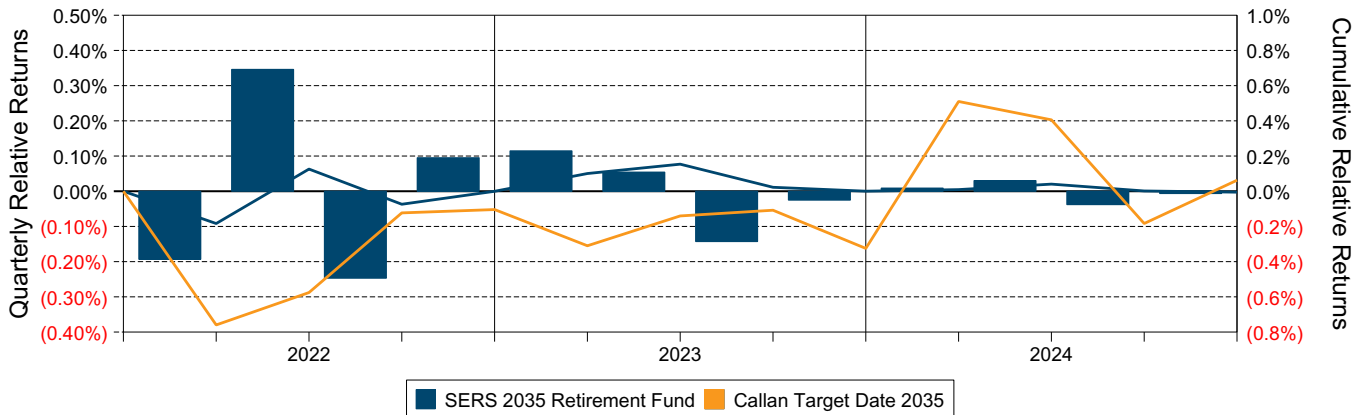
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate 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)

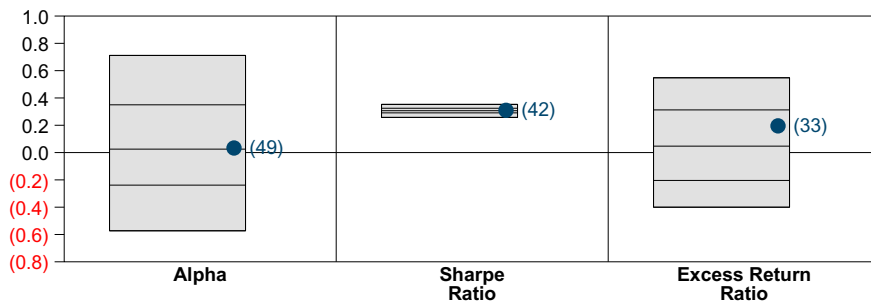


	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	12.53	17.90	(14.58)	16.34	17.33	24.52	(5.49)	20.49	9.45	(0.09)
25th Percentile	11.88	17.36	(15.84)	14.96	15.75	22.92	(6.32)	19.53	8.66	(0.61)
Median	11.31	16.38	(16.79)	13.92	14.30	22.16	(7.03)	18.51	8.18	(1.46)
75th Percentile	10.51	15.47	(17.72)	13.12	13.17	21.05	(7.82)	17.48	7.18	(2.17)
90th Percentile	9.69	13.15	(18.14)	12.30	11.14	19.80	(8.31)	16.04	6.17	(2.97)
<b>SERS 2035 Retirement Fund</b>	● 10.88	16.29	(16.67)	13.80	13.58	22.84	(6.50)	17.72	8.44	(1.78)
BlackRock 2035 Index	▲ 10.89	16.29	(16.67)	13.85	13.44	22.72	(6.58)	17.48	8.08	(1.86)

### Cumulative and Quarterly Relative Returns vs BlackRock 2035 Index



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



10th Percentile	0.71	0.35	0.55
25th Percentile	0.35	0.32	0.31
Median	0.03	0.31	0.05
75th Percentile	(0.24)	0.29	(0.20)
90th Percentile	(0.57)	0.26	(0.40)

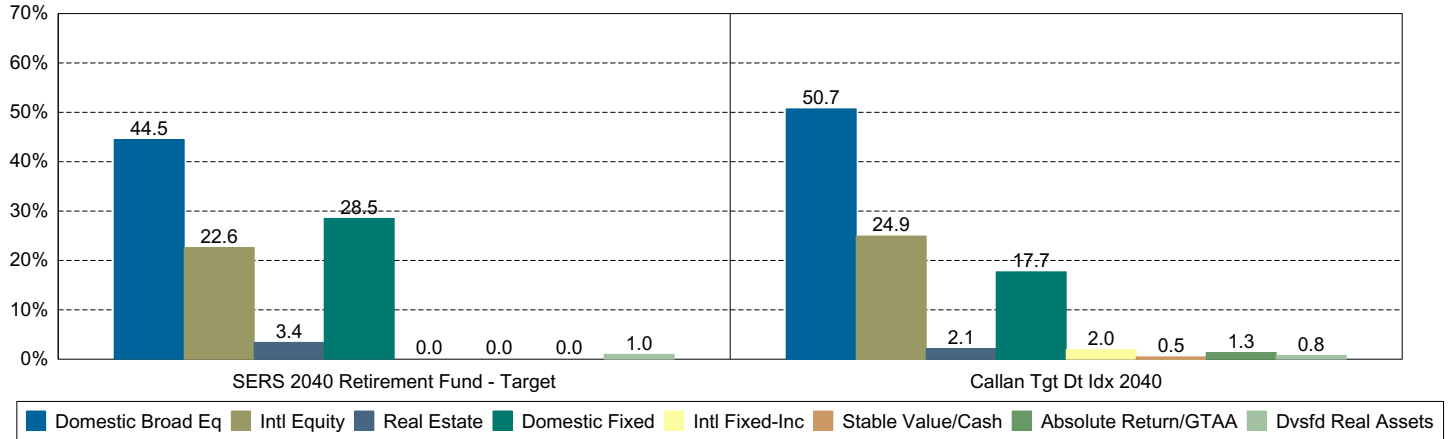
**SERS 2035 Retirement Fund** ● 0.03      0.31      0.20

# SERS 2040 Retirement Fund

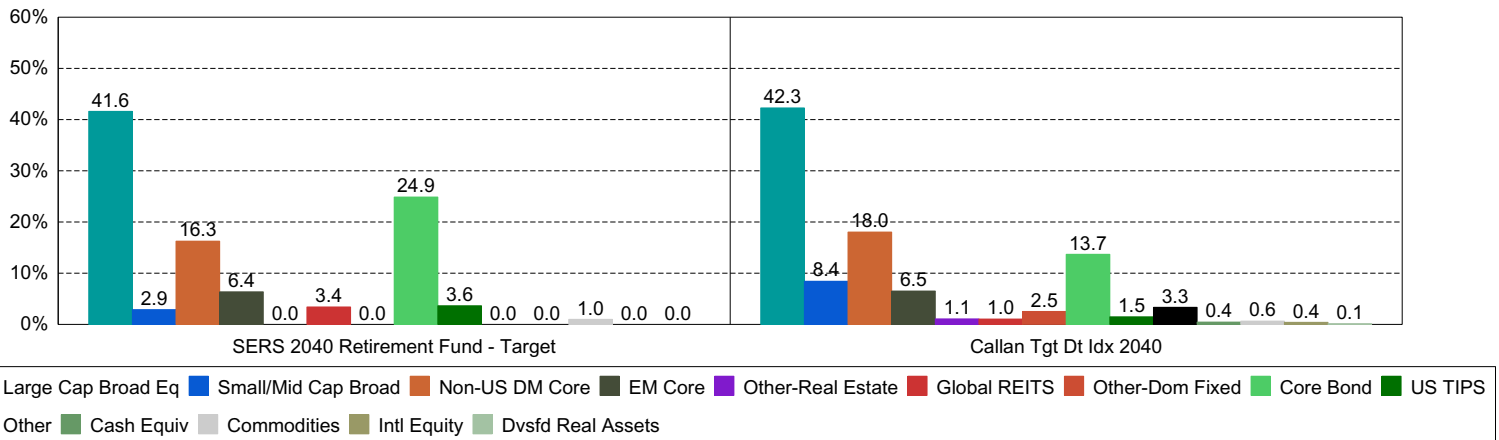
## Target Date Fund Asset Allocation as of December 31, 2024

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.

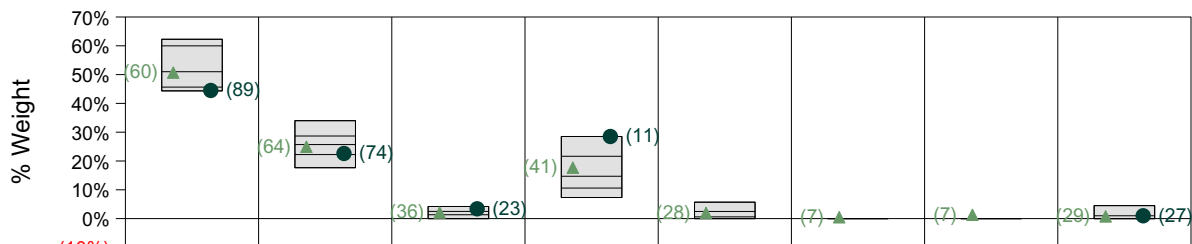
### Macro-Level Asset Allocation



### 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	5.70	0.00	0.00	4.51
25th Percentile	59.98	28.68	2.50	21.64	2.48	0.00	0.00	0.98
Median	51.00	25.71	1.34	14.70	0.60	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	44.34	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	▲	50.70	24.94	2.11	17.69	1.97	0.48	1.34



# SERS 2040 Retirement Fund

## Period Ended December 31, 2024

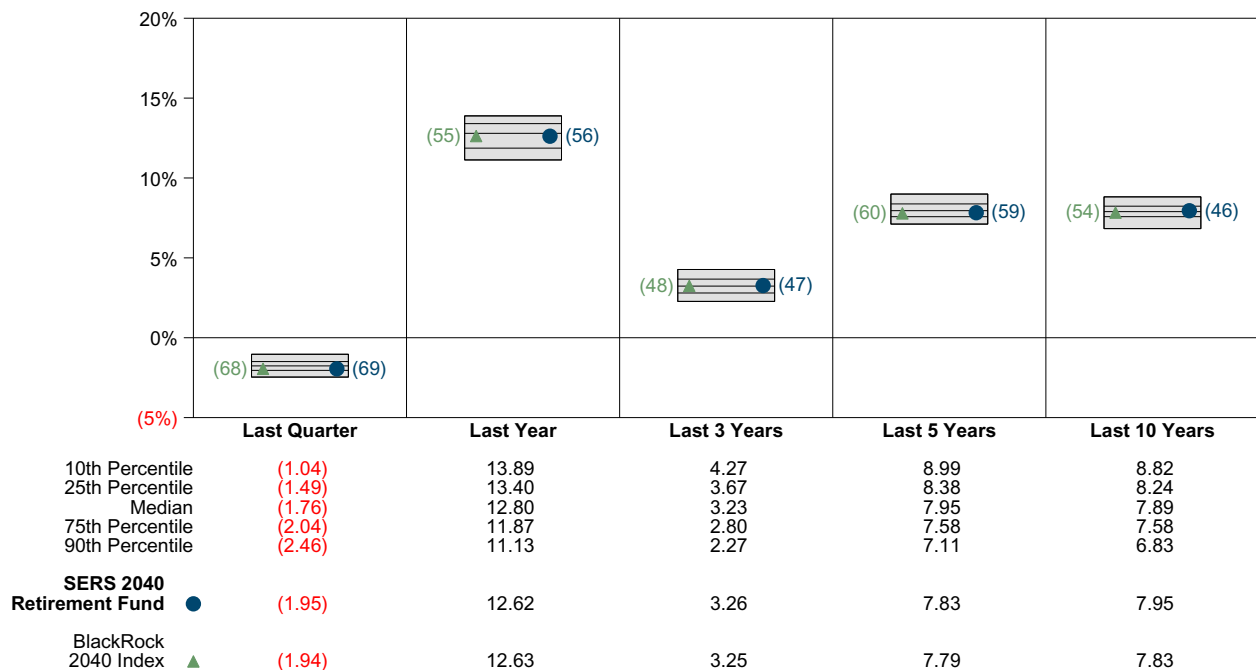
### Investment Philosophy

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. Target Date funds replaced risk-based funds in 1Q20.

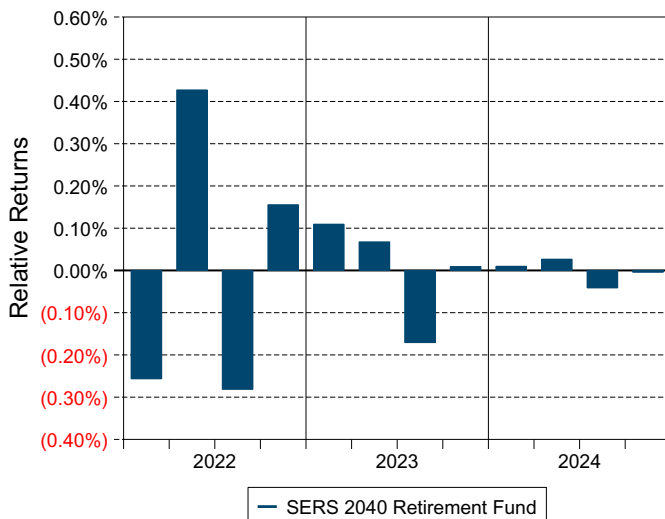
### Quarterly Summary and Highlights

- SERS 2040 Retirement Fund's portfolio posted a (1.95)% return for the quarter placing it in the 69 percentile of the Callan Target Date 2040 group for the quarter and in the 56 percentile for the last year.
- SERS 2040 Retirement Fund's portfolio underperformed the BlackRock 2040 Index by 0.00% for the quarter and underperformed the BlackRock 2040 Index for the year by 0.01%.

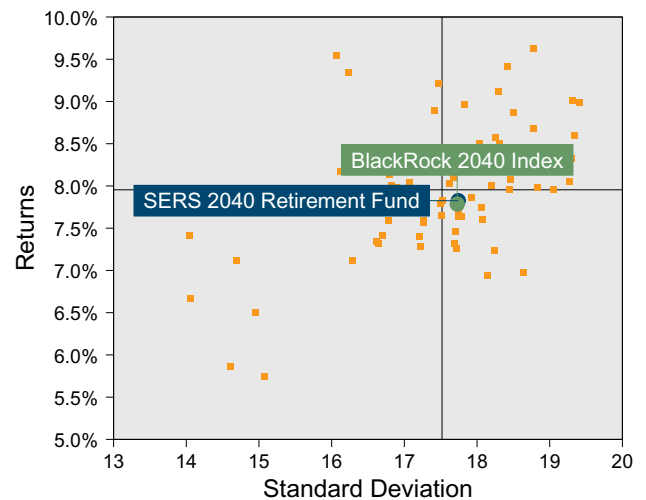
### Performance vs Callan Target Date 2040 (Net)



### Relative Return vs BlackRock 2040 Index



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

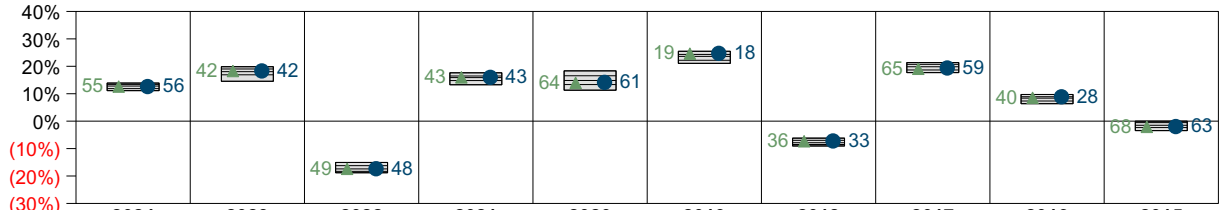


# SERS 2040 Retirement Fund Return Analysis Summary

## Return Analysis

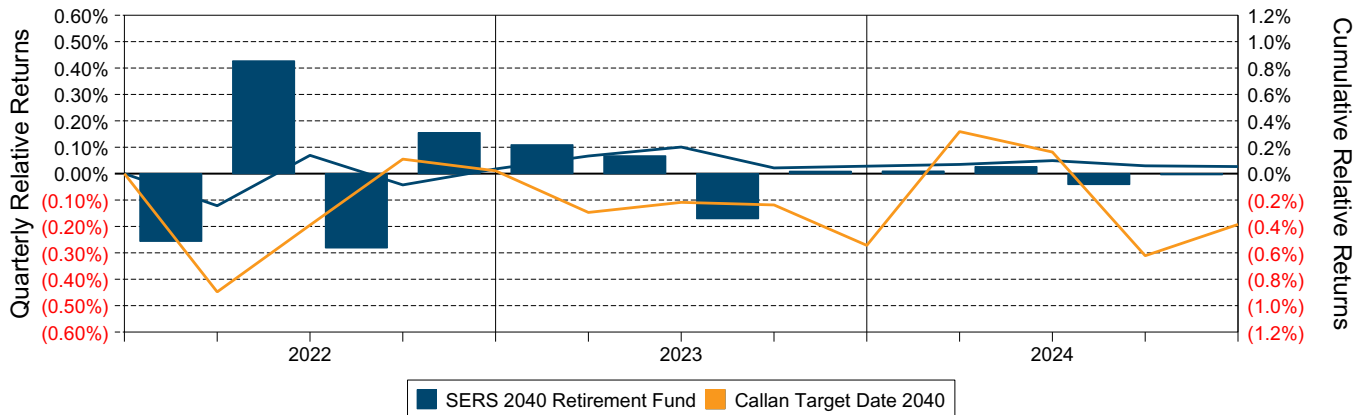
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate 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)

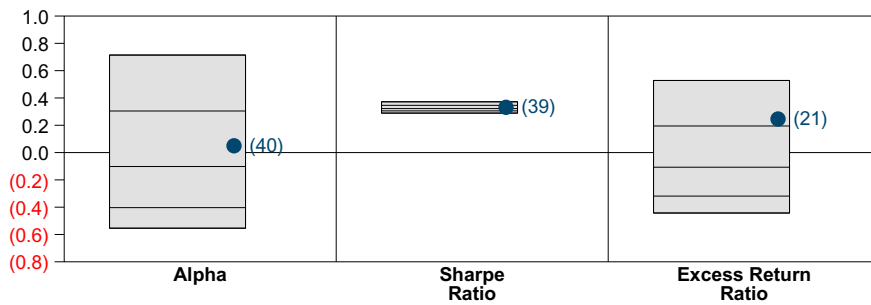


	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
<b>SERS 2040 Retirement Fund</b>	12.62	18.30	(17.35)	15.96	14.14	24.71	(7.22)	19.38	8.88	(1.98)
BlackRock 2040 Index	12.63	18.29	(17.38)	15.97	13.98	24.62	(7.33)	19.09	8.51	(2.08)

### Cumulative and Quarterly Relative Returns vs BlackRock 2040 Index



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

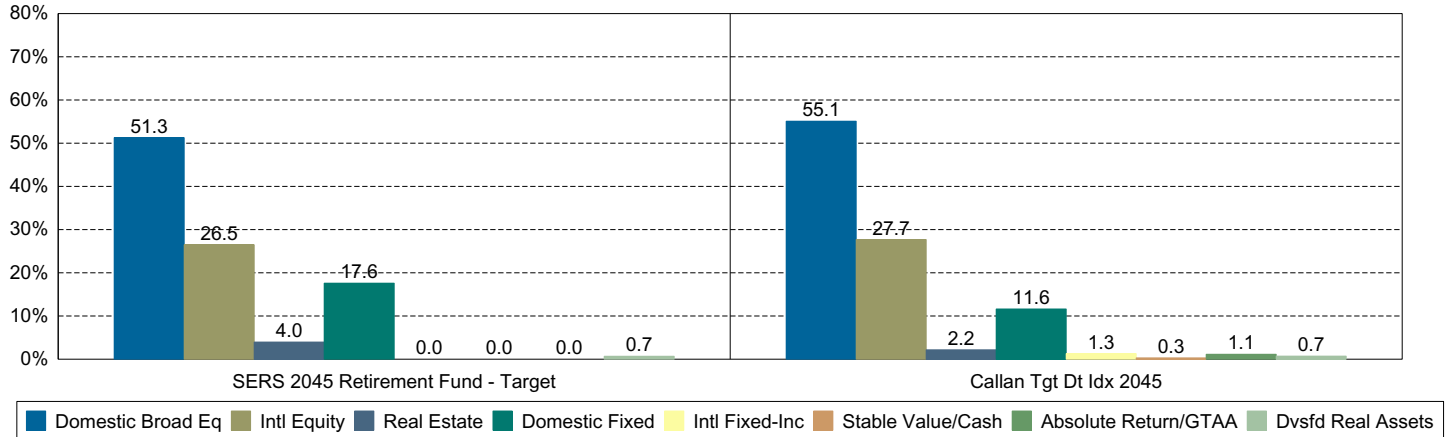


# SERS 2045 Retirement Fund

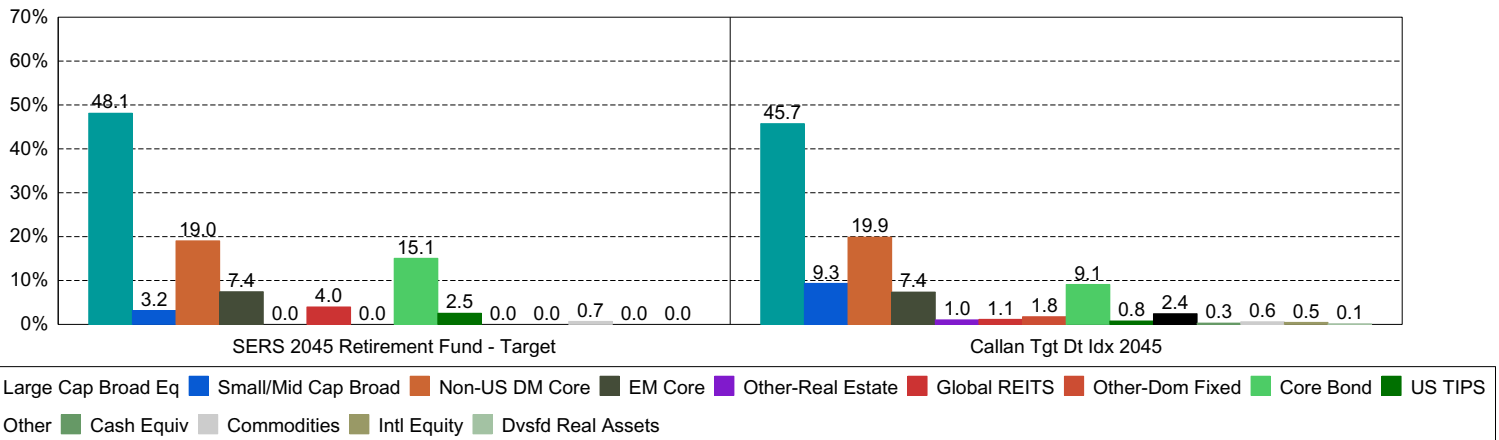
## Target Date Fund Asset Allocation as of December 31, 2024

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.

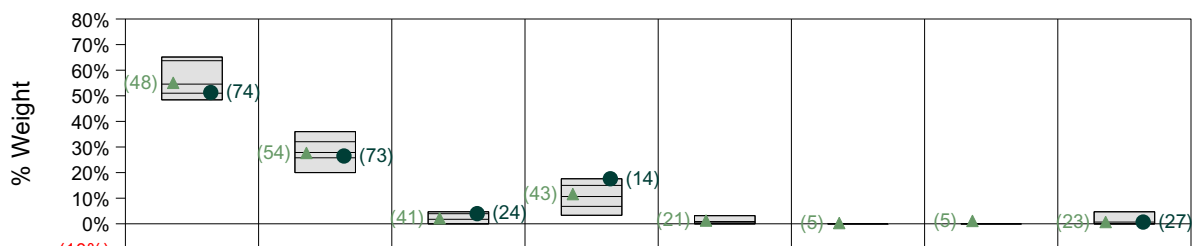
### Macro-Level Asset Allocation



### 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	3.18	0.00	0.00	4.70
25th Percentile	63.71	32.06	3.95	15.00	0.88	0.00	0.00	0.68
Median	54.56	27.85	1.76	10.66	0.37	0.00	0.00	0.00
75th Percentile	51.01	25.78	0.00	6.80	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
Callan Tgt Dt Idx 2045	▲	55.09	27.69	2.17	11.61	1.28	0.30	1.14

# SERS 2045 Retirement Fund

## Period Ended December 31, 2024

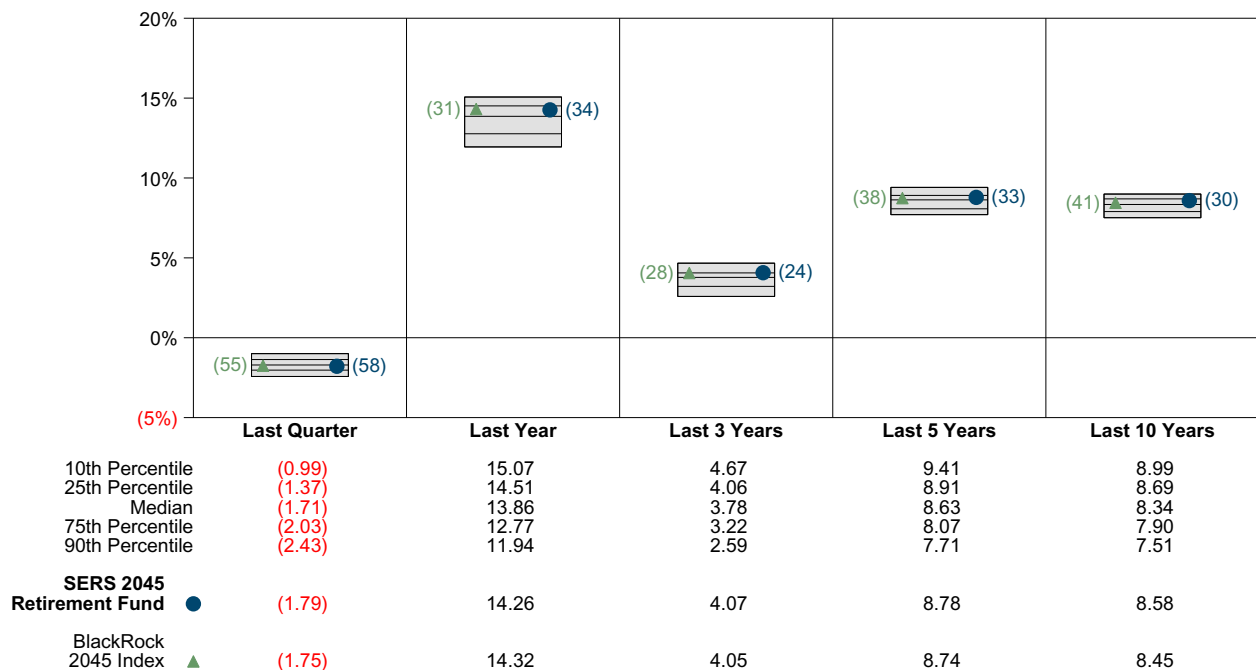
### Investment Philosophy

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. Target Date funds replaced risk-based funds in 1Q20.

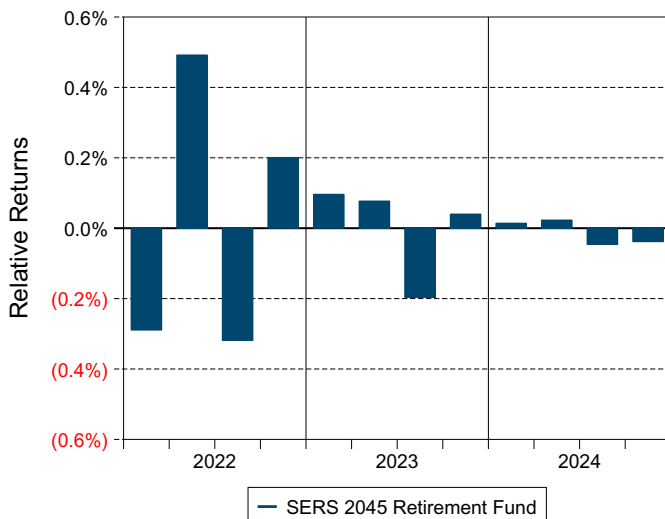
### Quarterly Summary and Highlights

- SERS 2045 Retirement Fund's portfolio posted a (1.79)% return for the quarter placing it in the 58 percentile of the Callan Target Date 2045 group for the quarter and in the 34 percentile for the last year.
- SERS 2045 Retirement Fund's portfolio underperformed the BlackRock 2045 Index by 0.04% for the quarter and underperformed the BlackRock 2045 Index for the year by 0.05%.

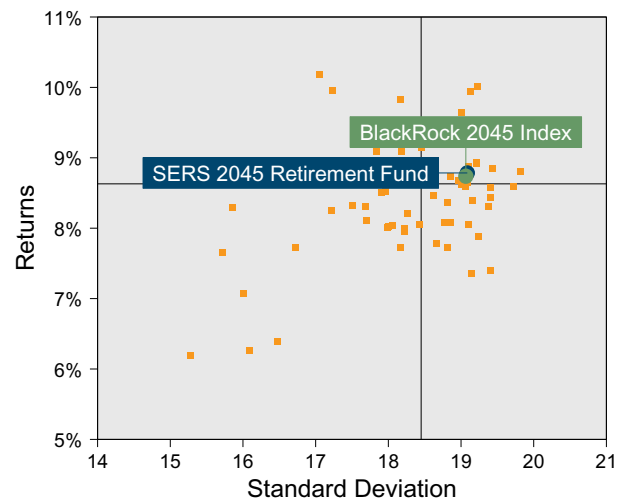
### Performance vs Callan Target Date 2045 (Net)



### Relative Return vs BlackRock 2045 Index



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

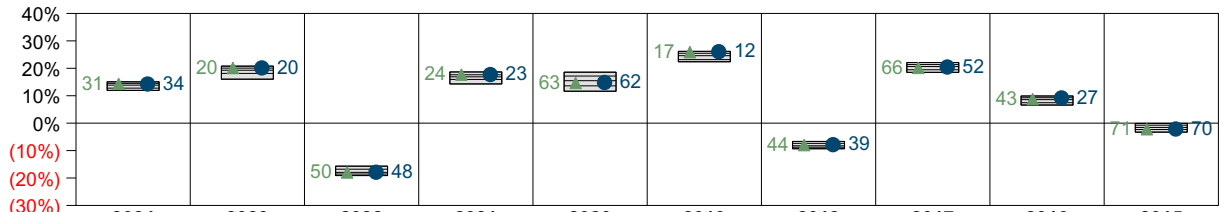


# SERS 2045 Retirement Fund Return Analysis Summary

## Return Analysis

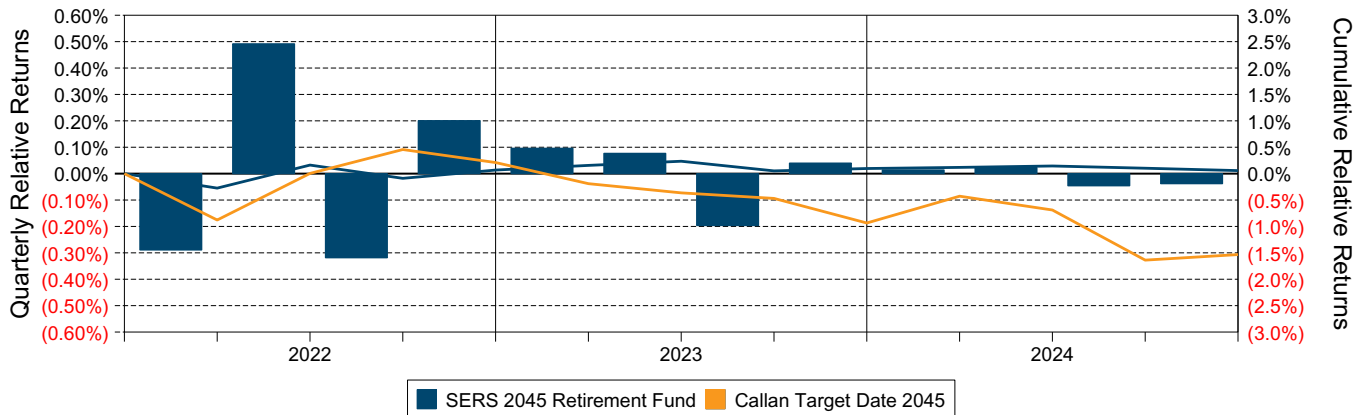
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate 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)

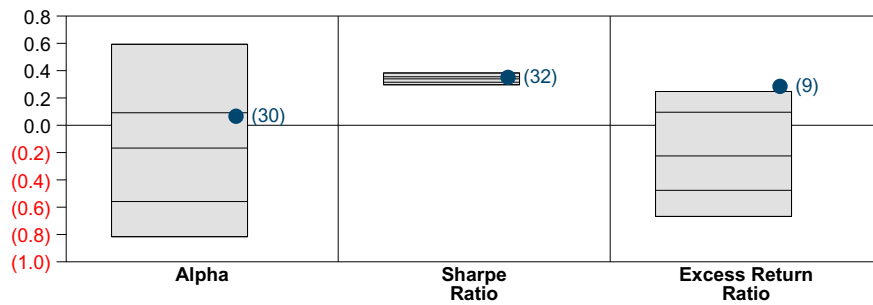


	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
<b>SERS 2045 Retirement Fund</b>	14.26	20.14	(17.89)	17.72	14.83	26.05	(7.85)	20.47	9.20	(2.13)
<b>LifePath Index 2045 CB</b>	14.32	20.12	(17.96)	17.70	14.65	25.90	(7.99)	20.15	8.77	(2.22)

### 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 December 31, 2024



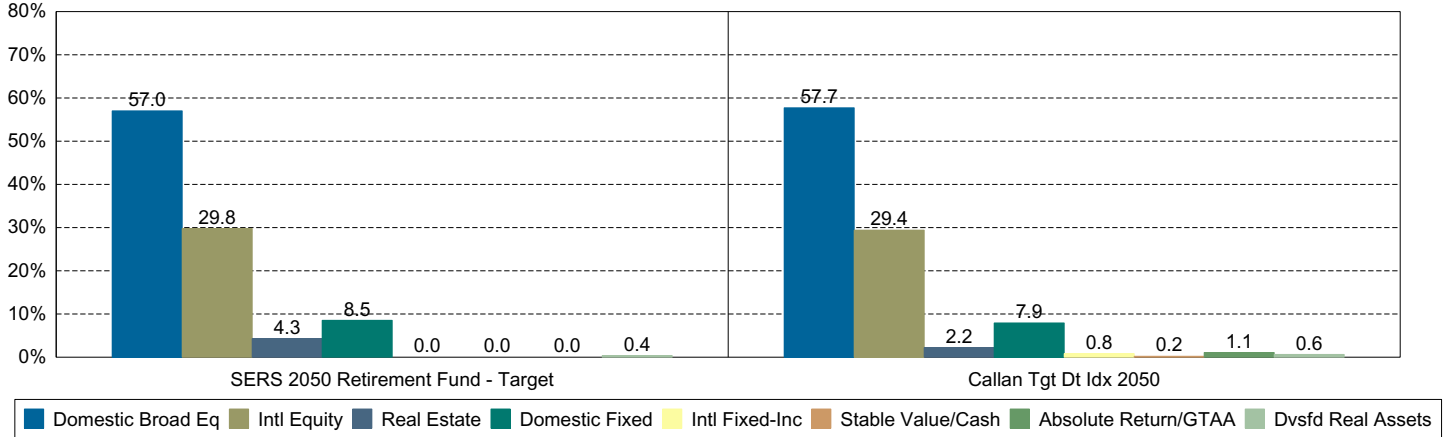
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.59	0.38	0.25
25th Percentile	0.09	0.36	0.10
Median	(0.17)	0.34	(0.22)
75th Percentile	(0.56)	0.32	(0.48)
90th Percentile	(0.82)	0.30	(0.67)
<b>SERS 2045 Retirement Fund</b>	0.07	0.35	0.28

# SERS 2050 Retirement Fund

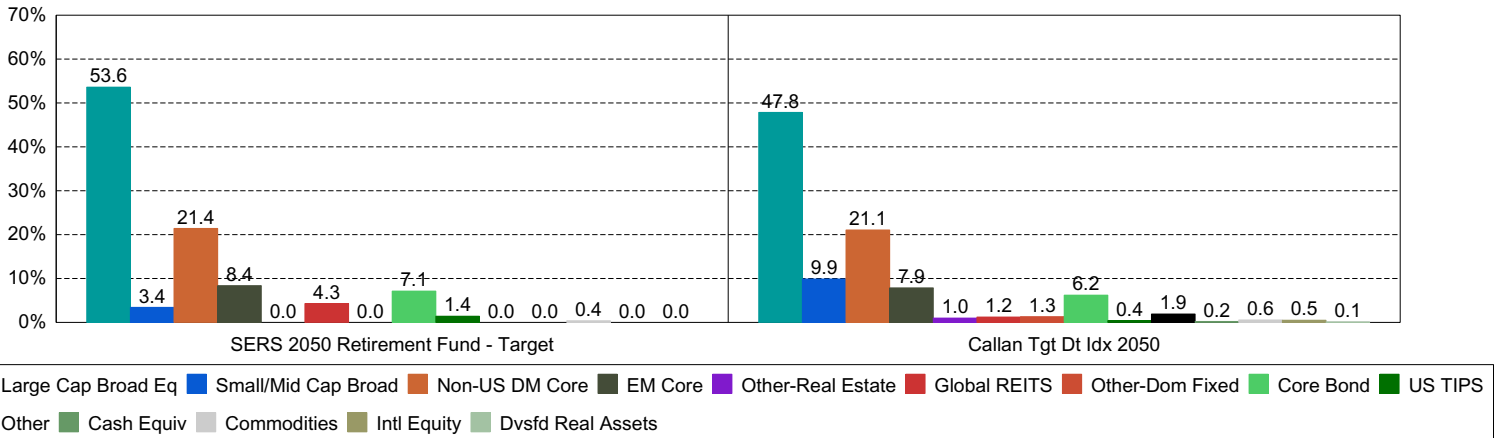
## Target Date Fund Asset Allocation as of December 31, 2024

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.

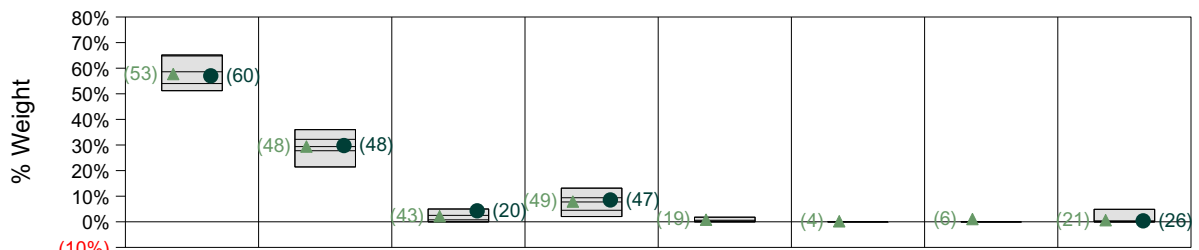
### Macro-Level Asset Allocation



### 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	1.80	0.00	0.00	4.87
25th Percentile	64.77	32.21	2.51	9.40	0.60	0.00	0.00	0.38
Median	58.60	29.38	0.77	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

	Domestic Broad Eq	Intl Equity	Real Estate	Domestic Fixed	Intl Fixed-Inc	Stable Value/Cash	Absolute Return/GTAA	Dvsfd Real Assets
<b>SERS 2050 Retirement Fund - Target</b>	● 57.02	29.78	4.29	8.53	-	-	-	0.38
Callan Tgt Dt Idx 2050	▲ 57.73	29.41	2.19	7.92	0.82	0.21	1.08	0.64

# SERS 2050 Retirement Fund

## Period Ended December 31, 2024

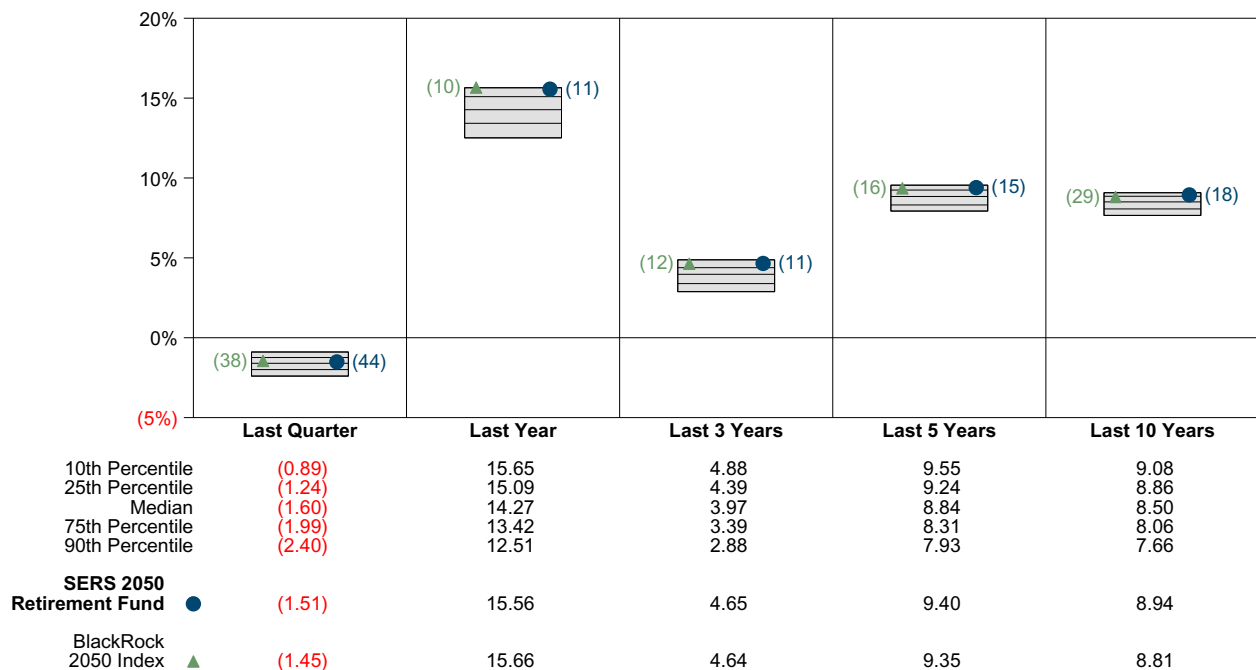
### Investment Philosophy

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. Target Date funds replaced risk-based funds in 1Q20.

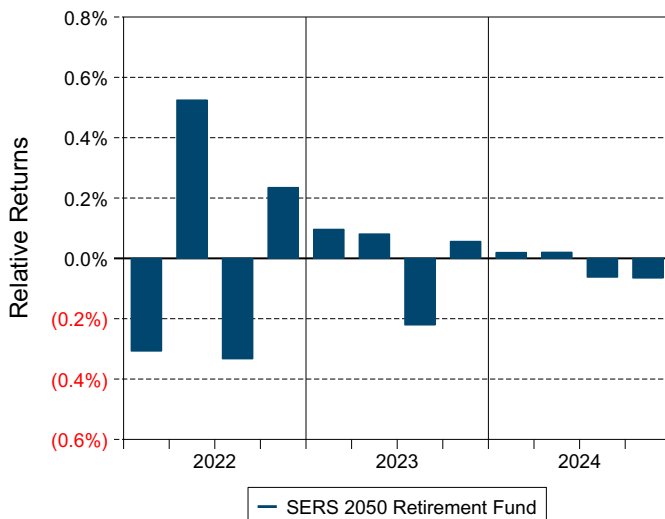
### Quarterly Summary and Highlights

- SERS 2050 Retirement Fund's portfolio posted a (1.51)% return for the quarter placing it in the 44 percentile of the Callan Target Date 2050 group for the quarter and in the 11 percentile for the last year.
- SERS 2050 Retirement Fund's portfolio underperformed the BlackRock 2050 Index by 0.06% for the quarter and underperformed the BlackRock 2050 Index for the year by 0.10%.

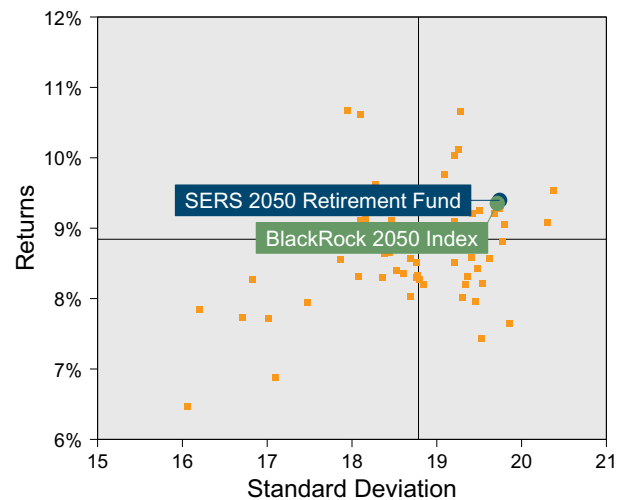
### Performance vs Callan Target Date 2050 (Net)



### Relative Return vs BlackRock 2050 Index



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

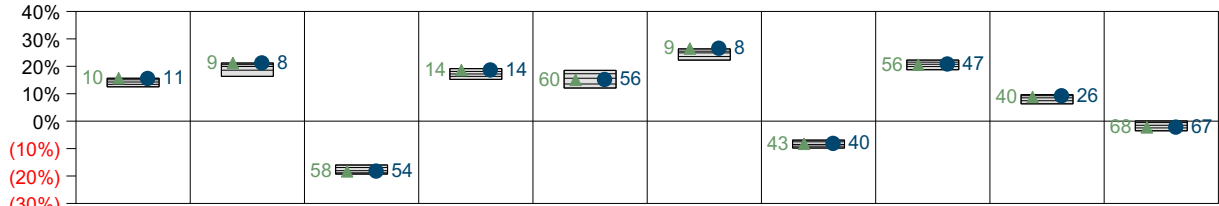


# SERS 2050 Retirement Fund Return Analysis Summary

## Return Analysis

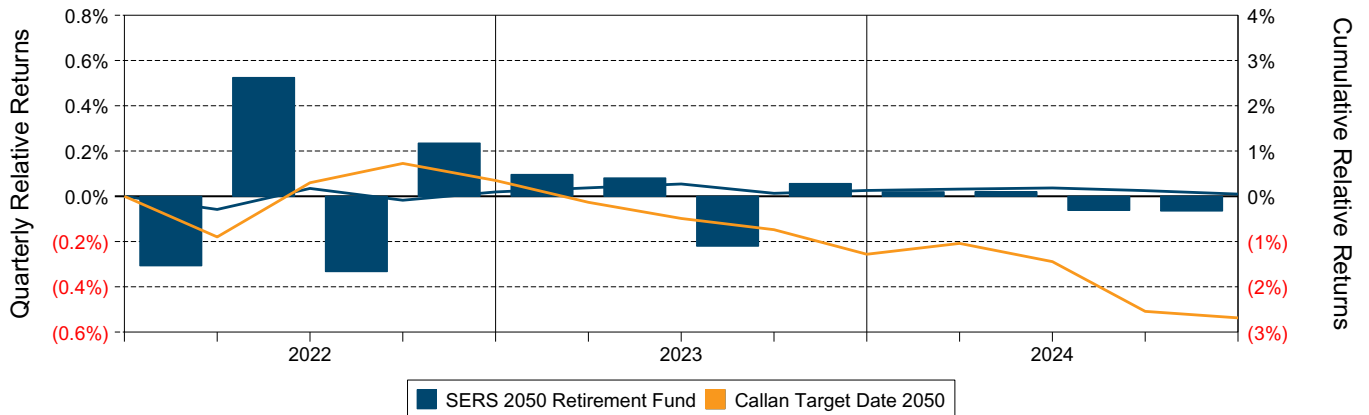
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate 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)

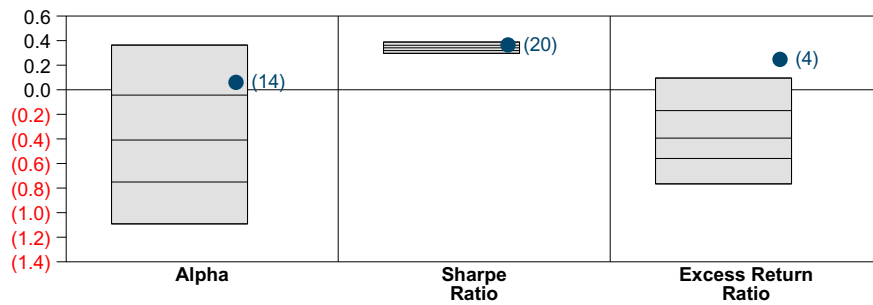


	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	15.65	21.18	(15.99)	19.15	18.53	26.34	(6.91)	22.27	9.65	0.05
25th Percentile	15.09	20.60	(16.91)	18.13	17.29	25.51	(7.53)	21.51	9.29	(0.52)
Median	14.27	19.92	(18.06)	17.20	15.65	24.89	(8.48)	20.74	8.50	(1.50)
75th Percentile	13.42	18.58	(18.84)	16.33	13.55	23.55	(9.11)	19.91	7.45	(2.47)
90th Percentile	12.51	16.33	(19.28)	15.23	12.08	22.26	(9.80)	18.75	6.32	(3.51)
<b>SERS 2050 Retirement Fund</b>	● 15.56	21.25	(18.20)	18.67	15.20	26.60	(8.11)	20.85	9.26	(2.17)
BlackRock 2050 Index	▲ 15.66	21.23	(18.30)	18.62	15.07	26.48	(8.26)	20.55	8.82	(2.26)

### Cumulative and Quarterly Relative Returns vs BlackRock 2050 Index



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



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.36	0.39	0.10
25th Percentile	(0.04)	0.36	(0.17)
Median	(0.41)	0.34	(0.39)
75th Percentile	(0.75)	0.32	(0.56)
90th Percentile	(1.09)	0.30	(0.77)
<b>SERS 2050 Retirement Fund</b>	● 0.06	0.36	0.25

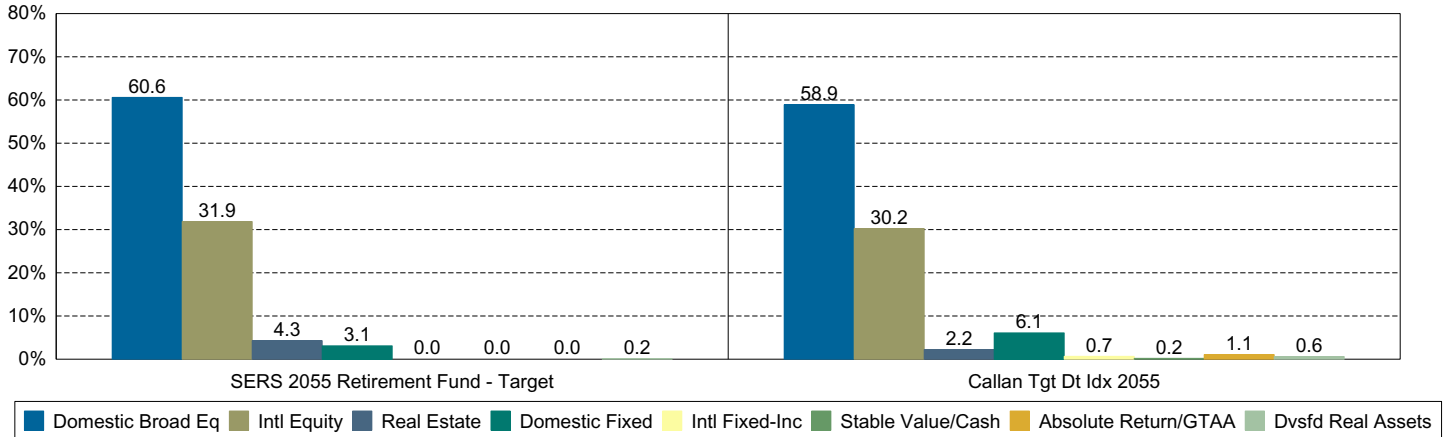


# SERS 2055 Retirement Fund

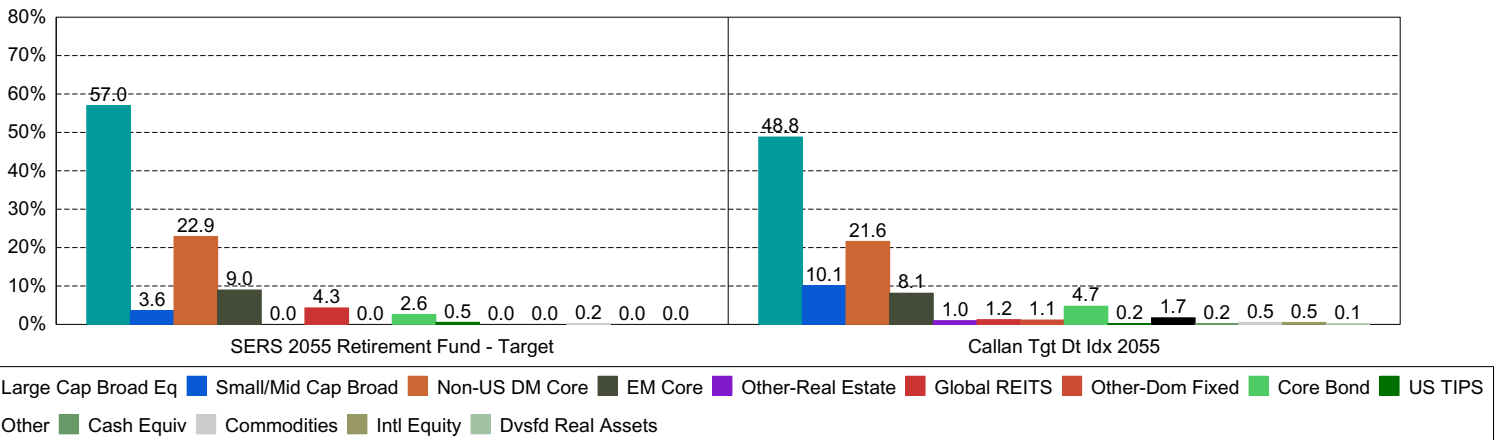
## Target Date Fund Asset Allocation as of December 31, 2024

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.

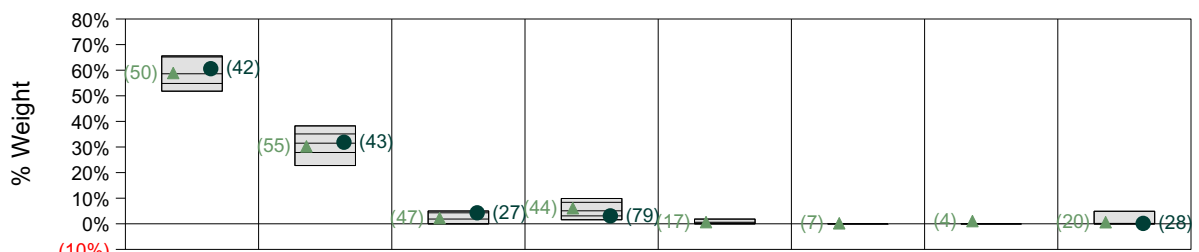
### Macro-Level Asset Allocation



### 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	65.57	38.25	5.00	9.88	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	5.07	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	▲	58.90	30.24	2.22	6.09	0.66	0.20	1.06	0.62

# SERS 2055 Retirement Fund

## Period Ended December 31, 2024

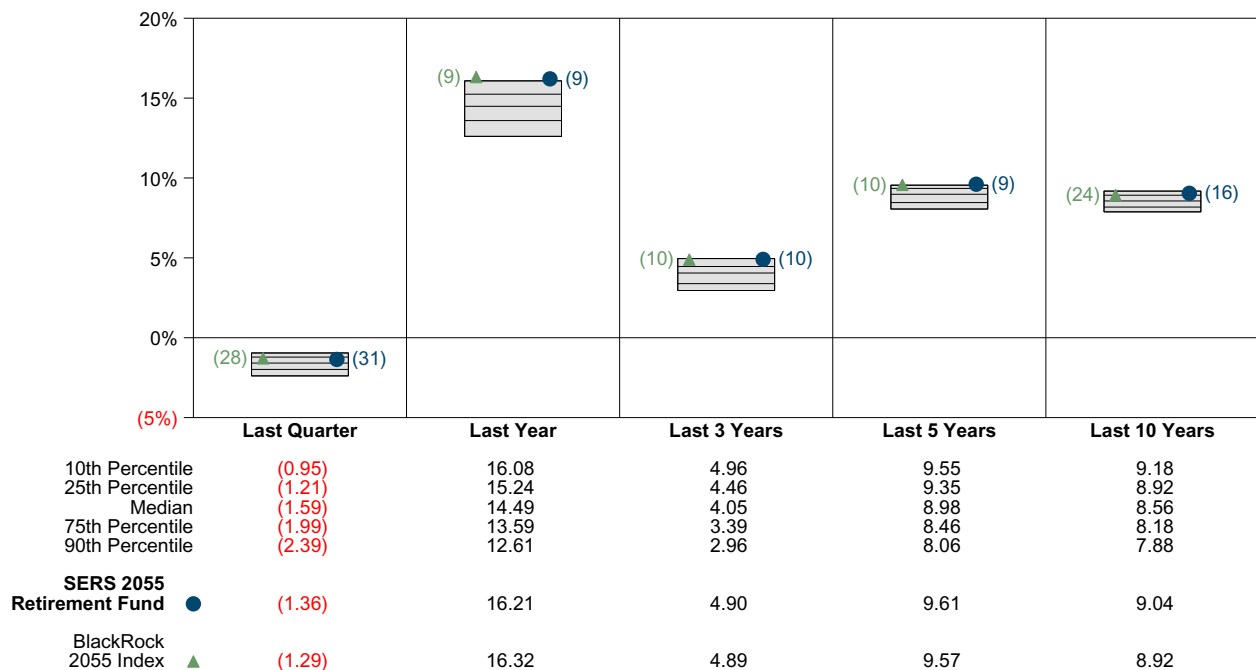
### Investment Philosophy

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. Target Date funds replaced risk-based funds in 1Q20.

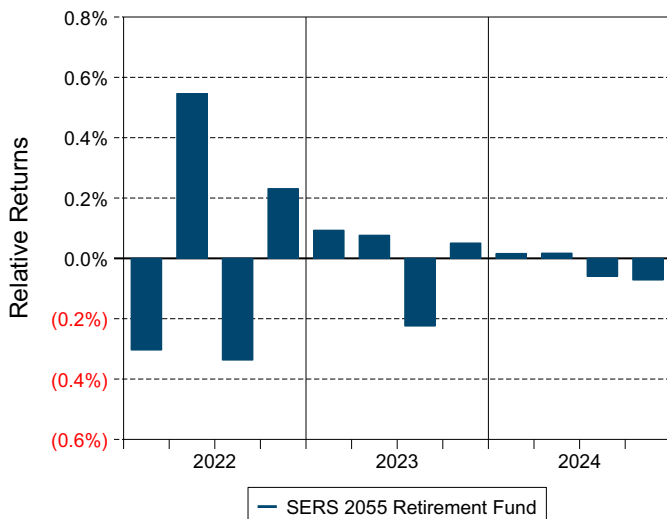
### Quarterly Summary and Highlights

- SERS 2055 Retirement Fund's portfolio posted a (1.36)% return for the quarter placing it in the 31 percentile of the Callan Target Date 2055 group for the quarter and in the 9 percentile for the last year.
- SERS 2055 Retirement Fund's portfolio underperformed the BlackRock 2055 Index by 0.07% for the quarter and underperformed the BlackRock 2055 Index for the year by 0.11%.

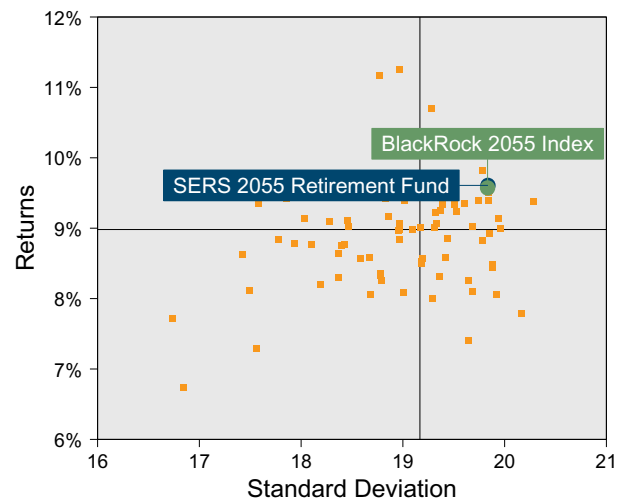
### Performance vs Callan Target Date 2055 (Net)



### Relative Return vs BlackRock 2055 Index



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

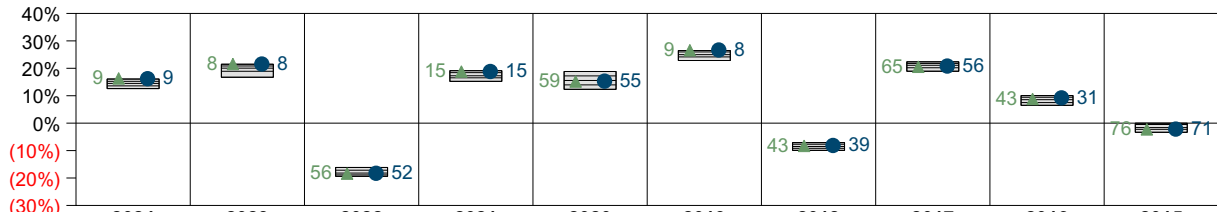


# SERS 2055 Retirement Fund Return Analysis Summary

## Return Analysis

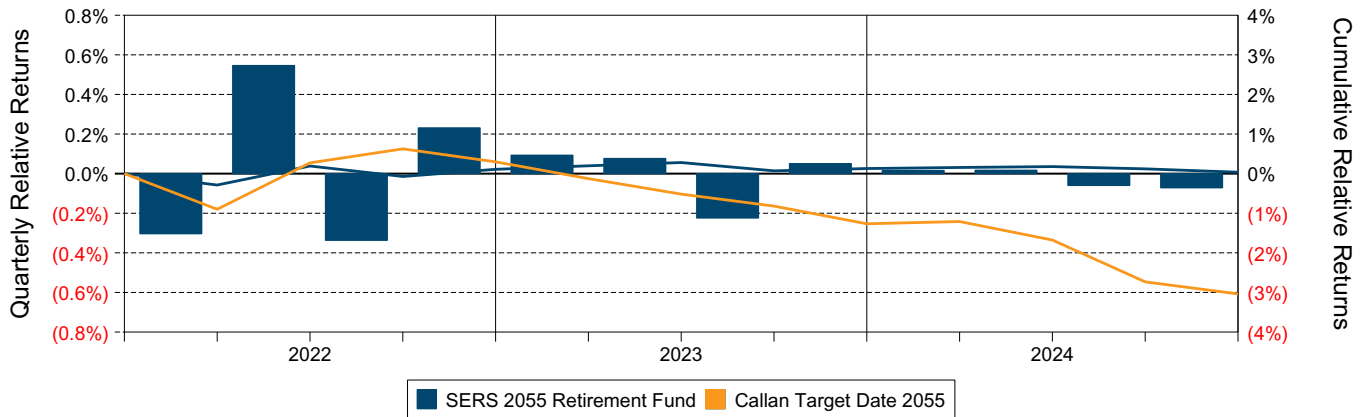
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate 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)

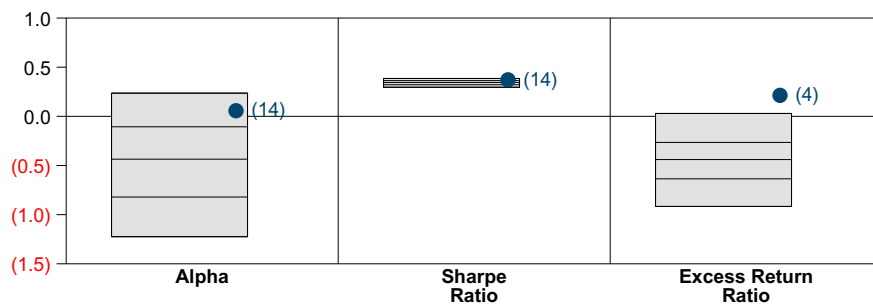


	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	16.08	21.48	(16.16)	19.13	18.84	26.48	(7.09)	22.36	10.05	(0.03)
25th Percentile	15.24	20.85	(17.15)	18.42	17.23	25.96	(7.69)	21.77	9.44	(0.49)
Median	14.49	20.05	(18.19)	17.28	15.56	24.97	(8.51)	21.10	8.56	(1.61)
75th Percentile	13.59	18.92	(18.87)	16.53	13.95	24.15	(9.18)	20.20	7.50	(2.25)
90th Percentile	12.61	16.74	(19.38)	15.24	12.33	22.84	(9.93)	18.92	6.49	(3.33)
<b>SERS 2055 Retirement Fund</b>	● 16.21	21.56	(18.27)	18.83	15.32	26.67	(8.13)	20.82	9.22	(2.17)
BlackRock 2055 Index	▲ 16.32	21.56	(18.38)	18.81	15.18	26.58	(8.28)	20.55	8.82	(2.26)

### Cumulative and Quarterly Relative Returns vs BlackRock 2055 Index



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



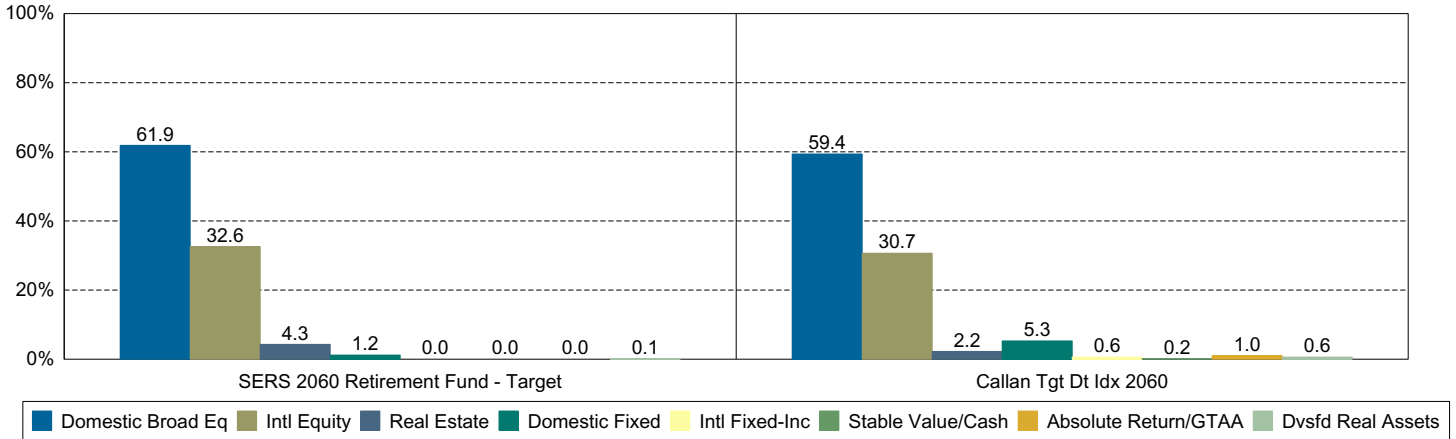
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.24	0.39	0.03
25th Percentile	(0.11)	0.36	(0.27)
Median	(0.44)	0.34	(0.44)
75th Percentile	(0.82)	0.32	(0.64)
90th Percentile	(1.22)	0.30	(0.92)
<b>SERS 2055 Retirement Fund</b>	● 0.06	0.37	0.21

# SERS 2060 Retirement Fund

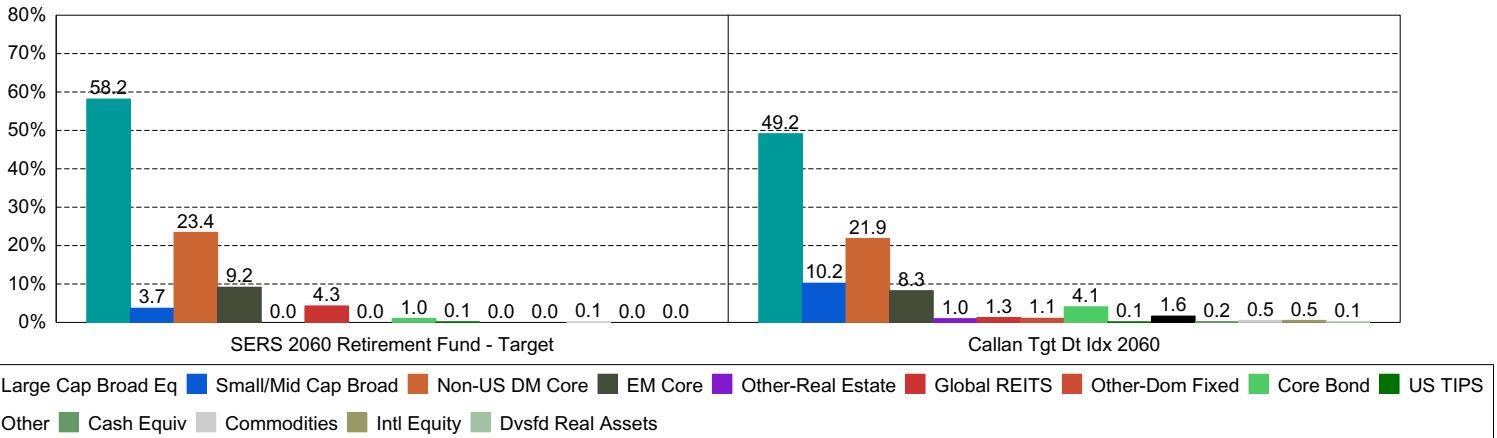
## Target Date Fund Asset Allocation as of December 31, 2024

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.

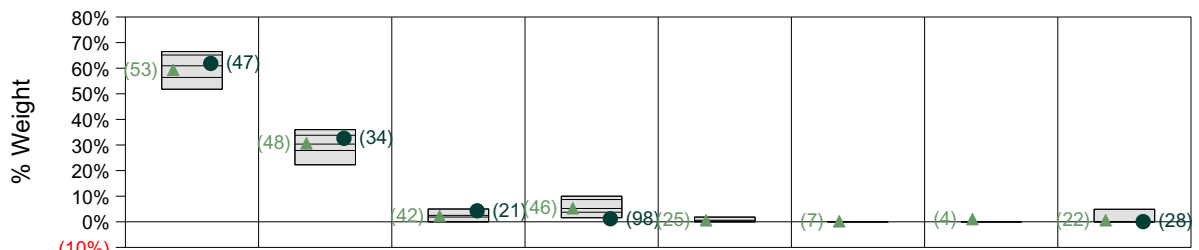
### Macro-Level Asset Allocation



### Micro-Level Asset Allocation



### Macro Asset Allocation Rankings vs. Callan Target Date 2060



	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	36.00	5.00	10.00	1.84	0.00	0.00	4.90
25th Percentile	65.15	33.80	2.51	8.70	0.60	0.00	0.00	0.06
Median	60.93	30.35	1.85	5.20	0.25	0.00	0.00	0.00
75th Percentile	56.40	27.85	0.00	3.74	0.00	0.00	0.00	0.00
90th Percentile	51.78	22.27	0.00	1.58	0.00	0.00	0.00	0.00
<b>SERS 2060 Retirement Fund - Target</b>	● 61.86	32.60	4.29	1.18	-	-	-	0.06
Callan Tgt Dt Idx 2060	▲ 59.37	30.65	2.24	5.29	0.60	0.20	1.05	0.61

# SERS 2060 Retirement Fund

## Period Ended December 31, 2024

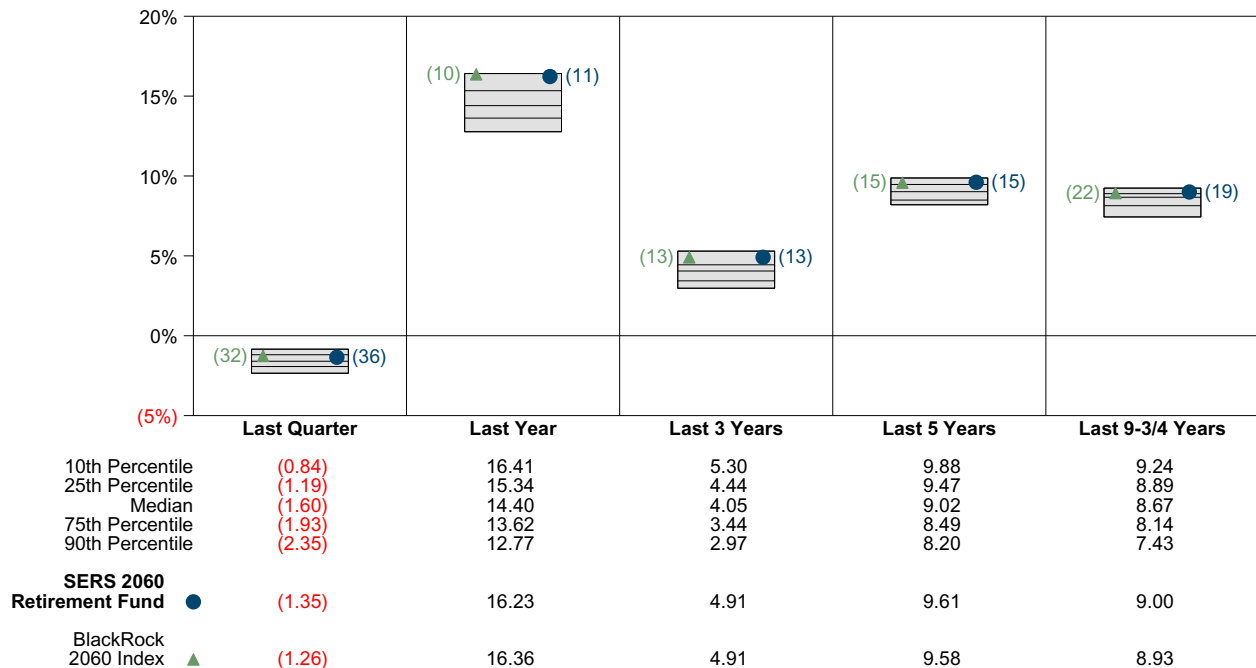
### Investment Philosophy

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. Target Date funds replaced risk-based funds in 1Q20.

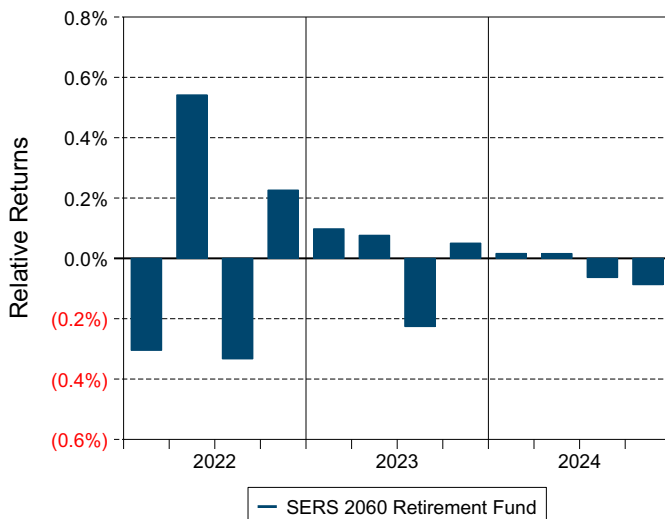
### Quarterly Summary and Highlights

- SERS 2060 Retirement Fund's portfolio posted a (1.35)% return for the quarter placing it in the 36 percentile of the Callan Target Date 2060 group for the quarter and in the 11 percentile for the last year.
- SERS 2060 Retirement Fund's portfolio underperformed the BlackRock 2060 Index by 0.09% for the quarter and underperformed the BlackRock 2060 Index for the year by 0.14%.

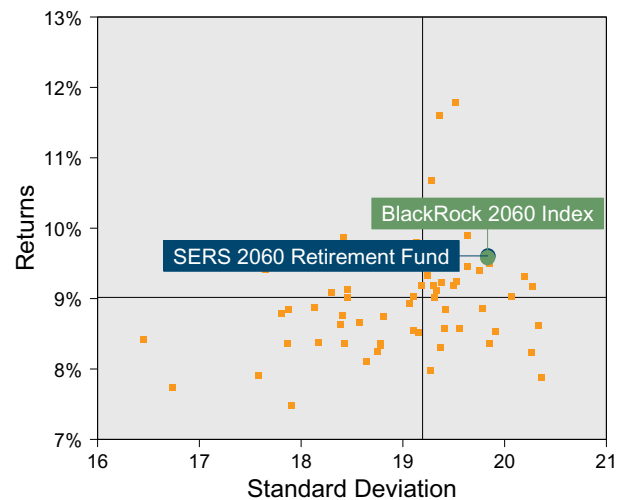
### Performance vs Callan Target Date 2060 (Net)



### Relative Return vs BlackRock 2060 Index



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

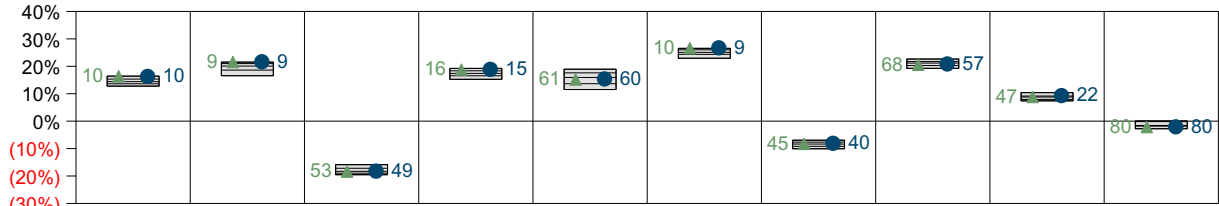


# SERS 2060 Retirement Fund Return Analysis Summary

## Return Analysis

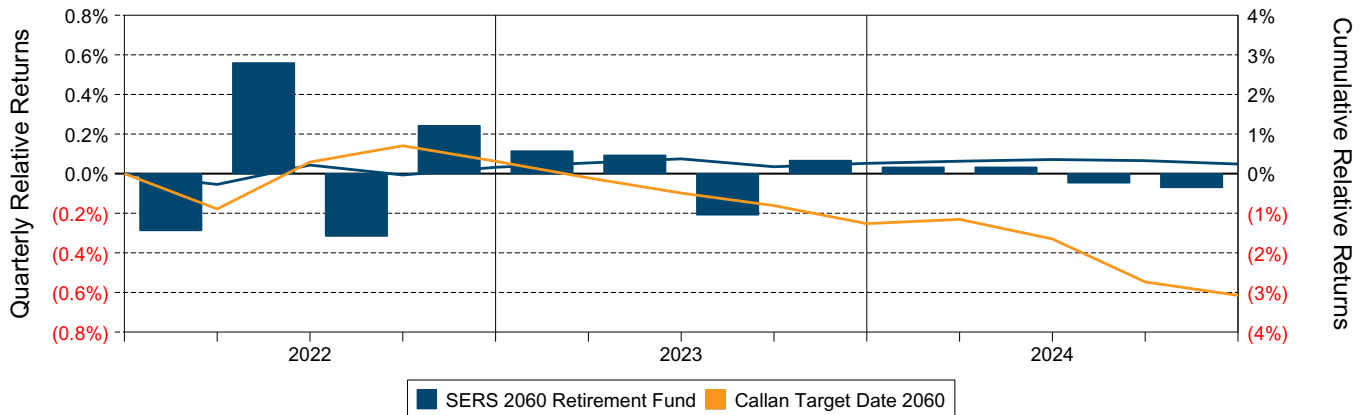
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate 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)

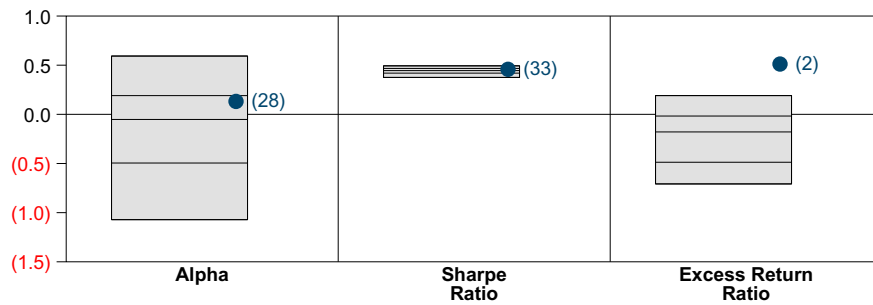


	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	16.41	21.51	(15.86)	19.23	18.95	26.54	(6.94)	22.65	10.39	0.06
25th Percentile	15.34	20.98	(17.18)	18.36	17.61	26.01	(7.66)	21.73	9.16	(0.17)
Median	14.40	20.07	(18.28)	17.41	15.92	25.08	(8.35)	21.17	8.80	(1.57)
75th Percentile	13.62	18.62	(18.97)	16.55	13.65	24.36	(9.18)	20.27	7.93	(1.83)
90th Percentile	12.77	16.57	(19.53)	15.25	11.54	22.93	(10.07)	19.24	7.40	(2.77)
<b>SERS 2060 Retirement Fund</b>	● 16.30	21.65	(18.23)	18.90	15.38	26.74	(8.08)	20.85	9.32	(2.07)
BlackRock 2060 Index	▲ 16.36	21.57	(18.39)	18.81	15.19	26.58	(8.28)	20.55	8.82	(2.16)

### Cumulative and Quarterly Relative Returns vs BlackRock 2060 Index



### Risk Adjusted Return Measures vs BlackRock 2060 Index Rankings Against Callan Target Date 2060 (Net) Nine and Three-Quarter Years Ended December 31, 2024



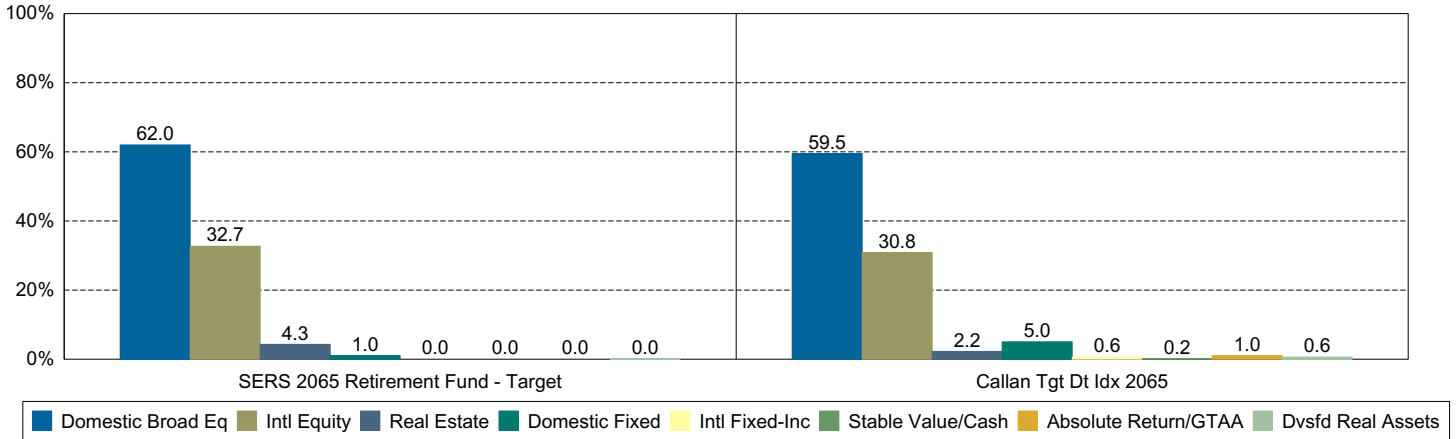
10th Percentile	0.59	0.49	0.19
25th Percentile	0.19	0.47	(0.02)
Median	(0.05)	0.45	(0.18)
75th Percentile	(0.50)	0.42	(0.49)
90th Percentile	(1.07)	0.38	(0.71)
<b>SERS 2060 Retirement Fund</b>	● 0.13	0.46	0.51

# SERS 2065 Retirement Fund

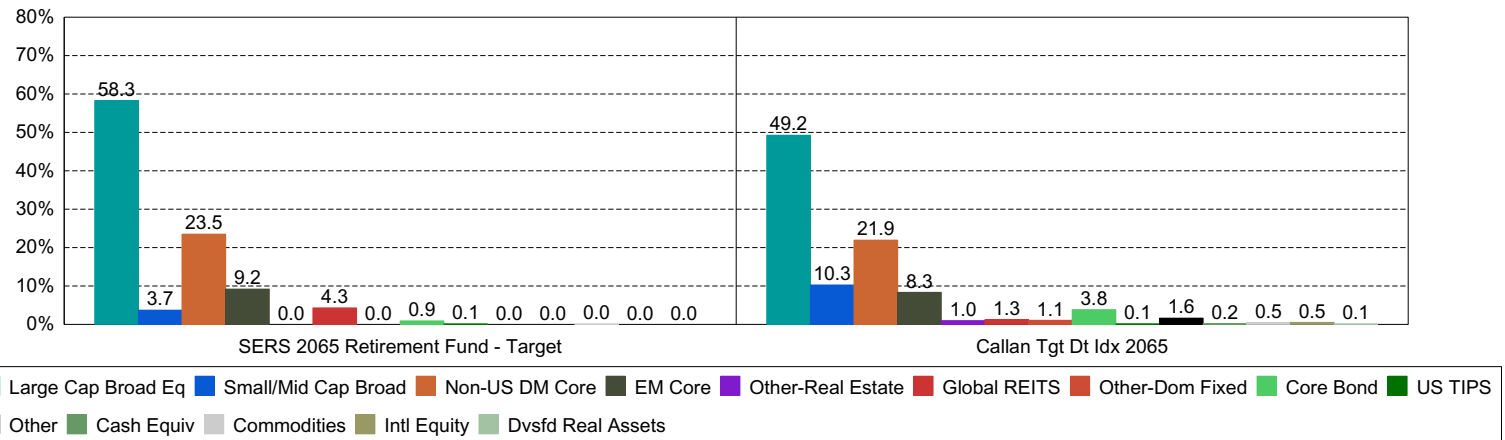
## Target Date Fund Asset Allocation as of December 31, 2024

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.

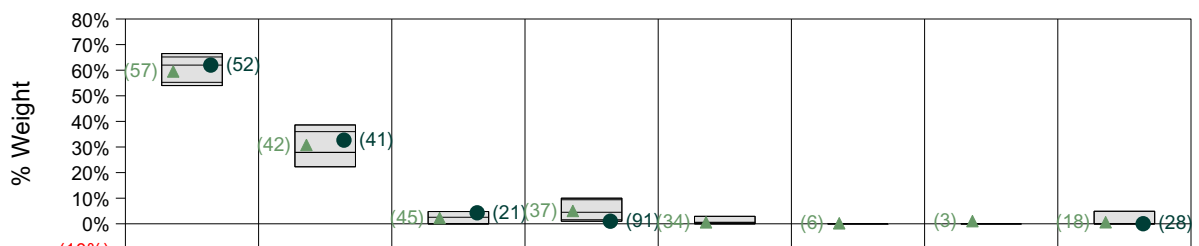
### Macro-Level Asset Allocation



### Micro-Level Asset Allocation



### Macro Asset Allocation Rankings vs. Callan Target Date 2065



	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	38.62	4.79	10.00	2.92	0.00	0.00	4.90
25th Percentile	65.17	36.00	2.55	9.40	0.60	0.00	0.00	0.03
Median	61.99	27.93	0.00	4.50	0.42	0.00	0.00	0.00
75th Percentile	55.26	27.85	0.00	1.58	0.00	0.00	0.00	0.00
90th Percentile	54.00	22.27	0.00	1.01	0.00	0.00	0.00	0.00
<b>SERS 2065 Retirement Fund - Target</b>	● 61.99	32.68	4.29	1.01	-	-	-	0.03
Callan Tgt Dt Idx 2065	▲ 59.50	30.80	2.25	5.03	0.57	0.20	1.05	0.60

# SERS 2065 Retirement Fund

## Period Ended December 31, 2024

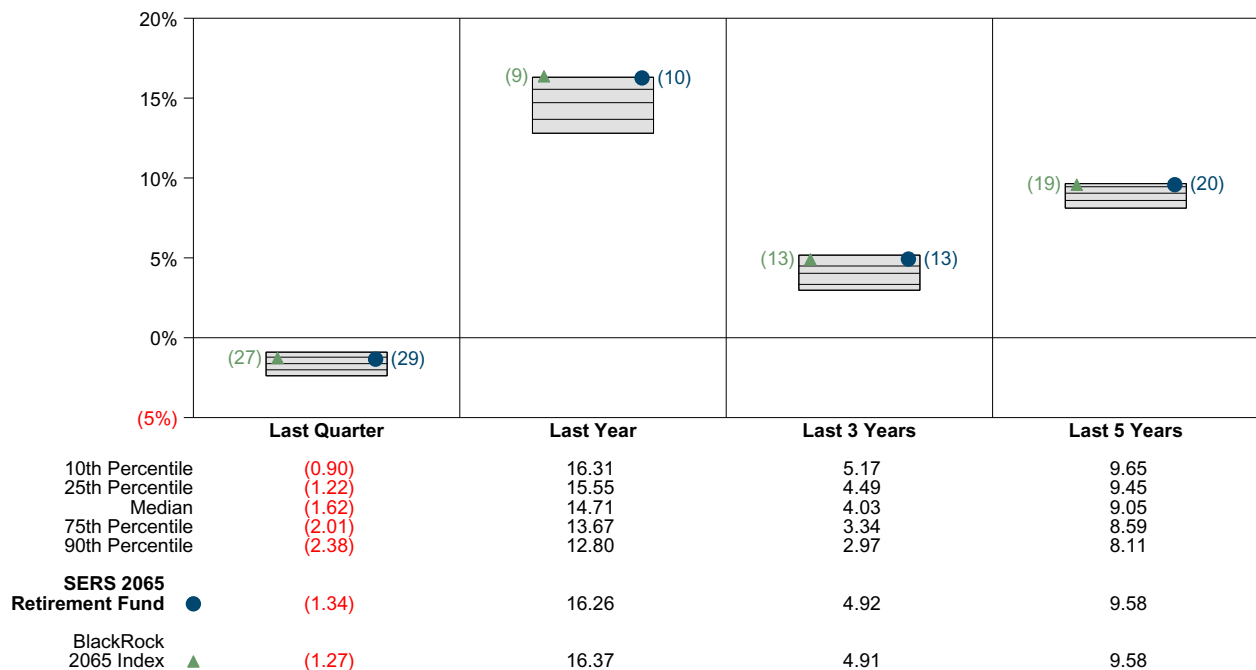
### Investment Philosophy

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. Target Date funds replaced risk-based funds in 1Q20.

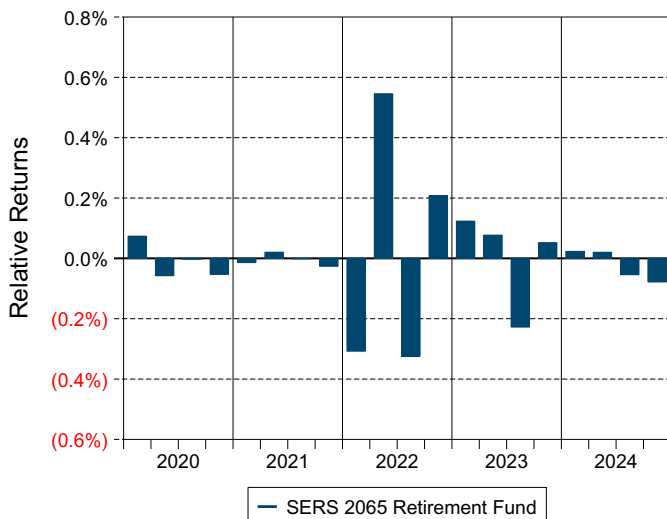
### Quarterly Summary and Highlights

- SERS 2065 Retirement Fund's portfolio posted a (1.34)% return for the quarter placing it in the 29 percentile of the Callan Target Date 2065 group for the quarter and in the 10 percentile for the last year.
- SERS 2065 Retirement Fund's portfolio underperformed the BlackRock 2065 Index by 0.08% for the quarter and underperformed the BlackRock 2065 Index for the year by 0.10%.

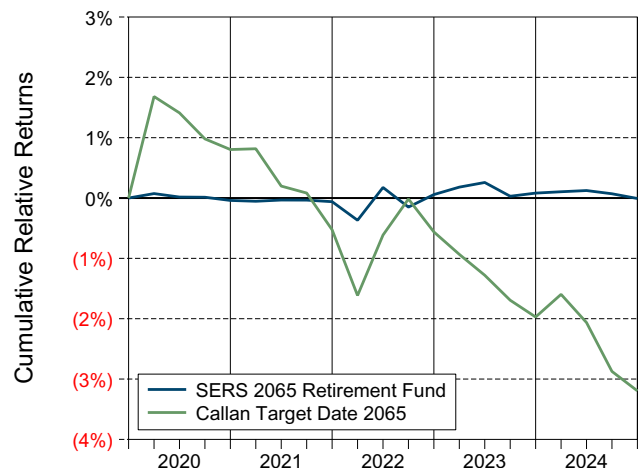
### Performance vs Callan Target Date 2065 (Net)



### Relative Return vs BlackRock 2065 Index



### Cumulative Returns vs BlackRock 2065 Index



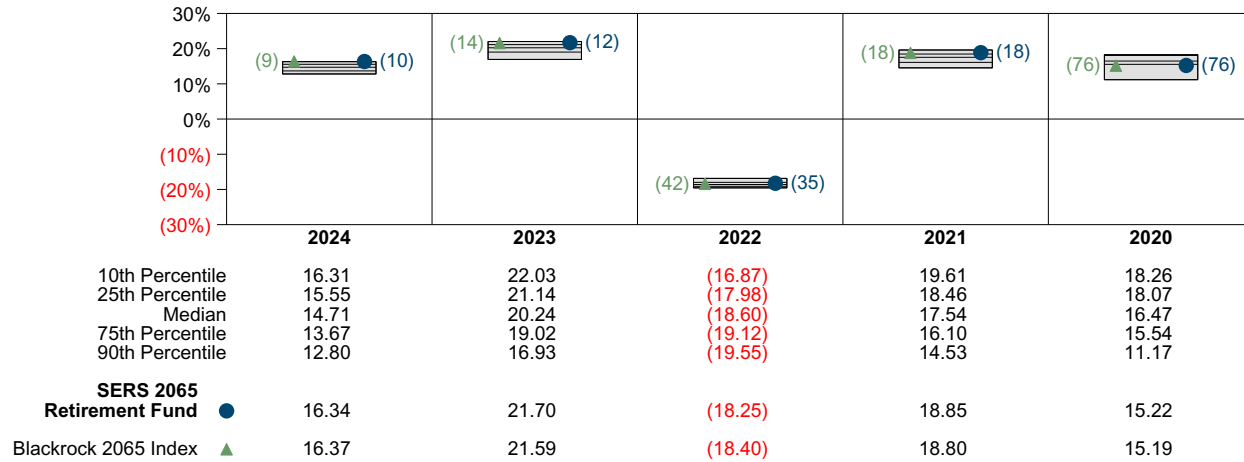


# SERS 2065 Retirement Fund Return Analysis Summary

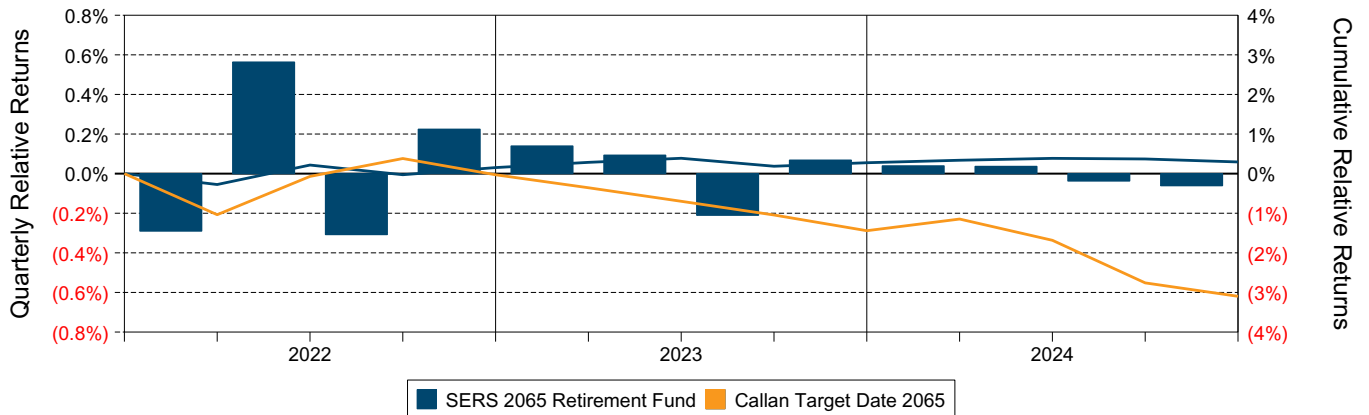
## Return Analysis

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.

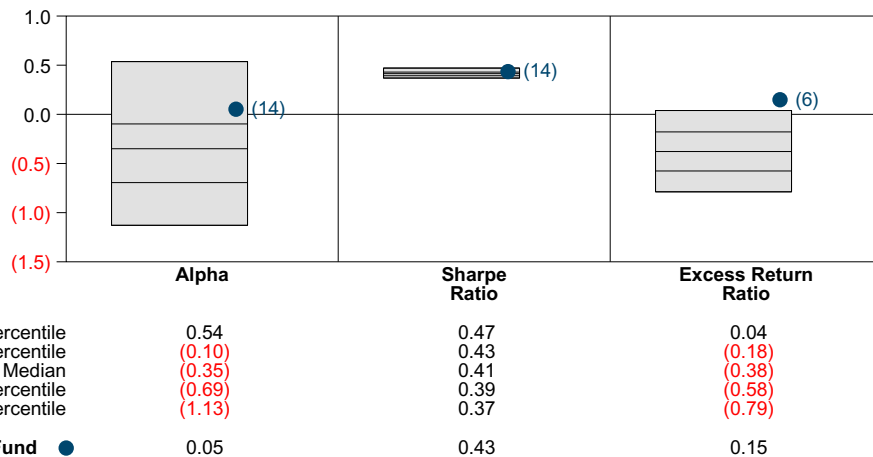
### Performance vs Callan Target Date 2065 (Net)



### Cumulative and Quarterly Relative Returns vs Blackrock 2065 Index



### Risk Adjusted Return Measures vs Blackrock 2065 Index Rankings Against Callan Target Date 2065 (Net) Five and One-Quarter Years Ended December 31, 2024



# SERS 2070 Retirement Fund

## Period Ended December 31, 2024

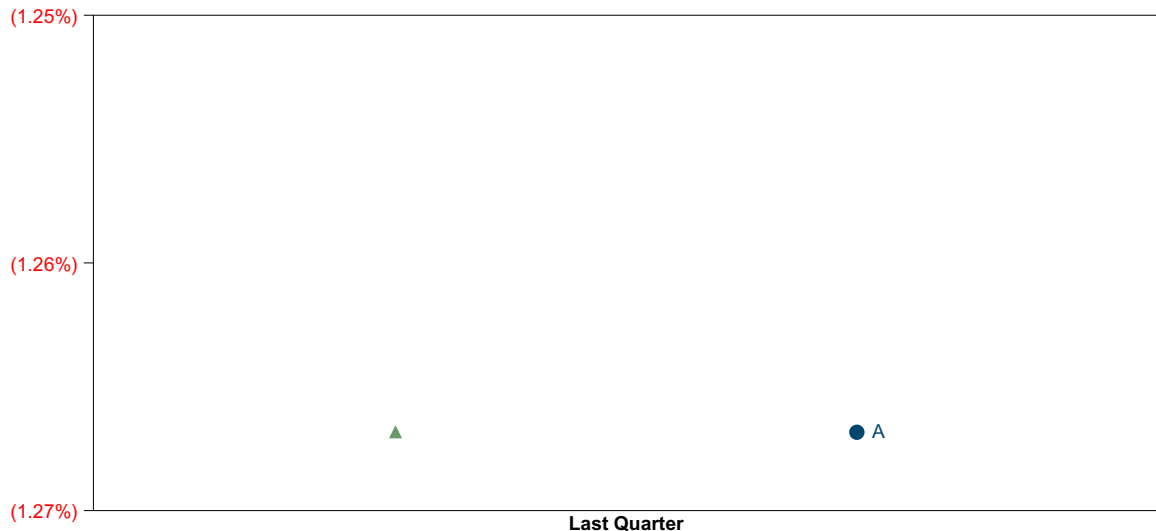
### Investment Philosophy

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. Target Date funds replaced risk-based funds in 1Q20.

### Quarterly Summary and Highlights

- SERS 2070 Retirement Fund's portfolio underperformed the BlackRock 2070 Index by 0.00% for the quarter.

### Performance vs Callan Target Date 2070 (Net)



10th Percentile  
25th Percentile  
Median  
75th Percentile  
90th Percentile

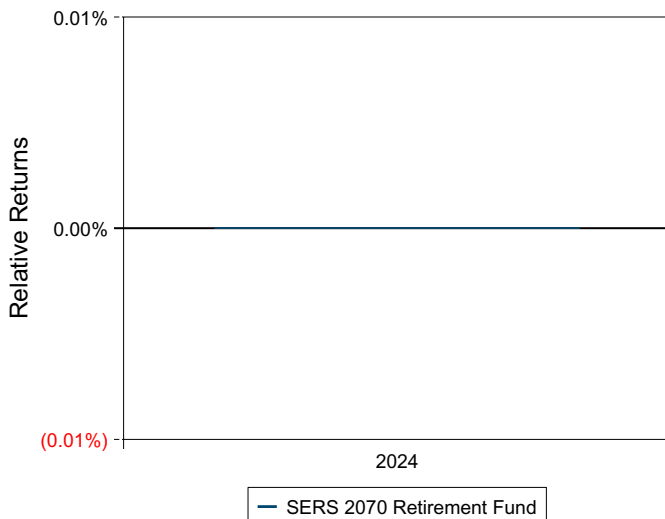
SERS 2070 Retirement Fund ●  
BlackRock 2070 Index ▲

Last Quarter

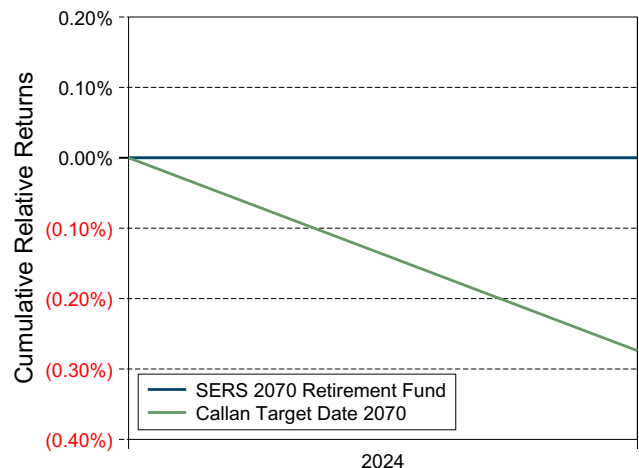
(1.27)

(1.27)

### Relative Return vs BlackRock 2070 Index



### Cumulative Returns vs BlackRock 2070 Index





# SERS U.S. Large Company Index Fund

## Period Ended December 31, 2024

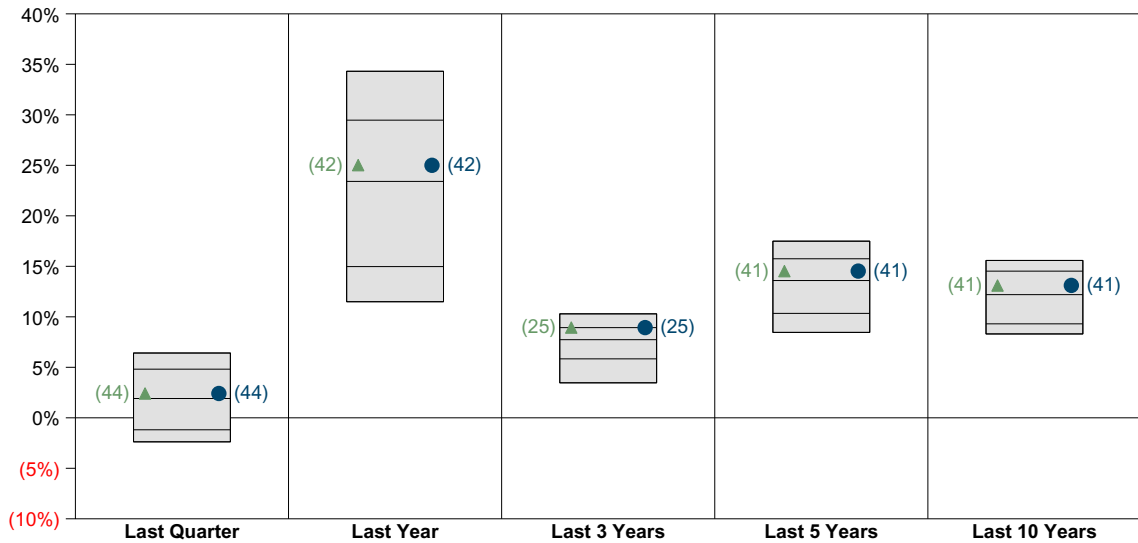
### Investment Philosophy

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 Fund's portfolio posted a 2.41% return for the quarter placing it in the 44 percentile of the Callan Large Cap Broad Equity Mut Funds group for the quarter and in the 42 percentile for the last year.
- SERS U.S. Large Company Index Fund's portfolio underperformed the S&P 500 Index by 0.00% for the quarter and underperformed the S&P 500 Index for the year by 0.02%.

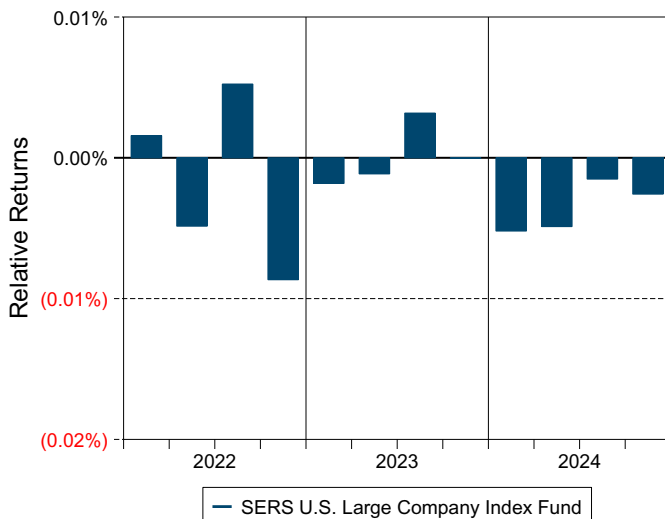
### Performance vs Callan Large Cap Broad Equity Mut Funds (Institutional Net)



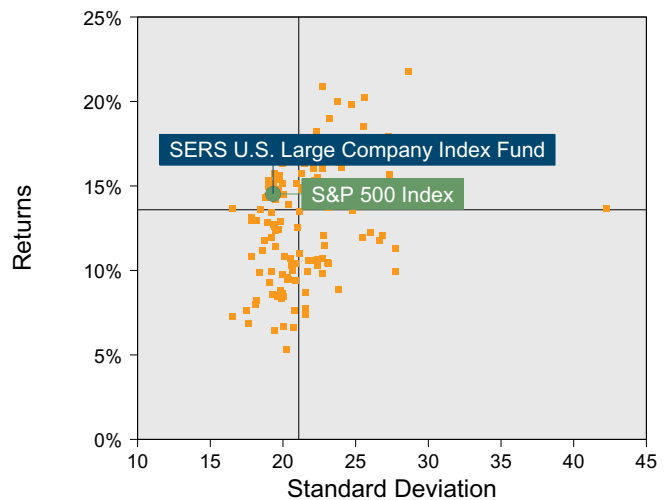
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	6.42	34.31	10.30	17.49	15.58
25th Percentile	4.82	29.47	8.93	15.75	14.52
Median	1.91	23.41	7.74	13.59	12.19
75th Percentile	(1.19)	14.97	5.84	10.34	9.30
90th Percentile	(2.38)	11.49	3.46	8.46	8.30

SERS U.S. Large Company Index Fund	●	2.41	25.00	8.93	14.53	13.11
S&P 500 Index	▲	2.41	25.02	8.94	14.53	13.10

### Relative Return vs S&P 500 Index



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

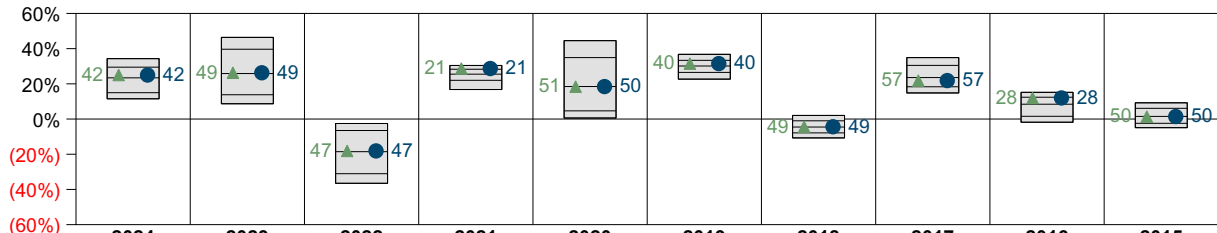


# SERS U.S. Large Company Index Fund Return Analysis Summary

## 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.

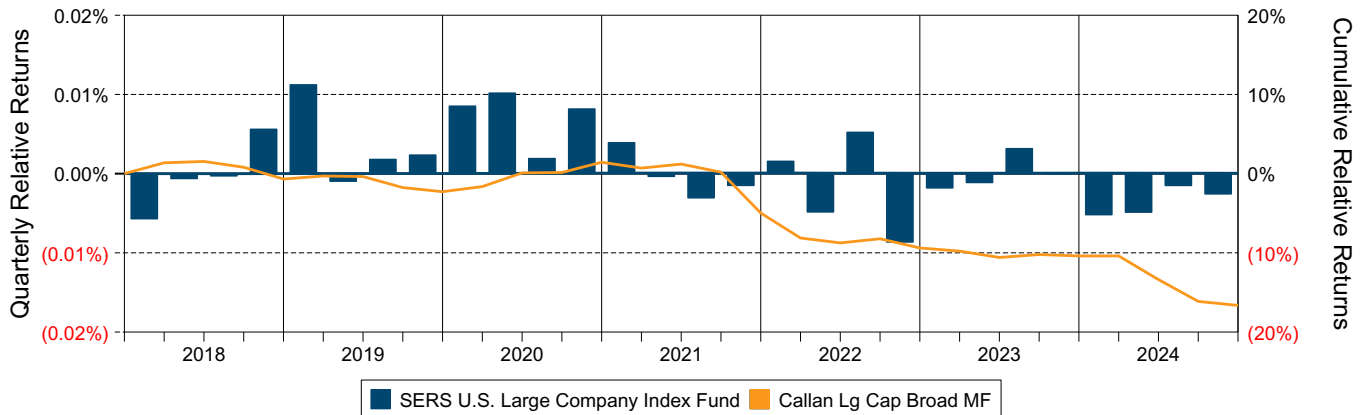
### Performance vs Callan Large Cap Broad Equity Mut Funds (Institutional Net)



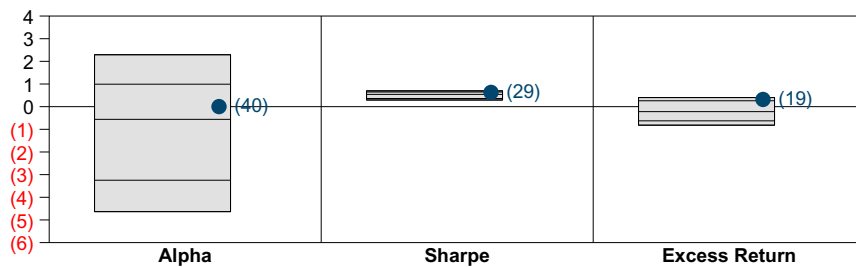
	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	34.31	46.39	(2.53)	30.44	44.54	36.76	2.05	34.91	15.17	9.23
25th Percentile	29.47	39.67	(6.52)	28.29	34.90	33.34	(1.00)	30.48	12.39	6.09
Median	23.41	25.85	(18.55)	25.50	18.47	30.14	(4.54)	23.56	8.43	1.50
75th Percentile	14.97	13.80	(31.06)	22.00	4.64	26.51	(7.86)	18.33	1.56	(2.42)
90th Percentile	11.49	8.68	(36.52)	16.77	0.58	22.66	(10.72)	14.82	(1.82)	(4.91)

	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
<b>SERS U.S. Large Company Index Fund</b>	25.00	26.29	(18.12)	28.70	18.43	31.51	(4.39)	21.84	11.98	1.40
S&P 500 Index	25.02	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 December 31, 2024



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	2.29	0.70	0.40
25th Percentile	0.99	0.65	0.26
Median	(0.56)	0.54	(0.22)
75th Percentile	(3.25)	0.36	(0.63)
90th Percentile	(4.63)	0.29	(0.82)

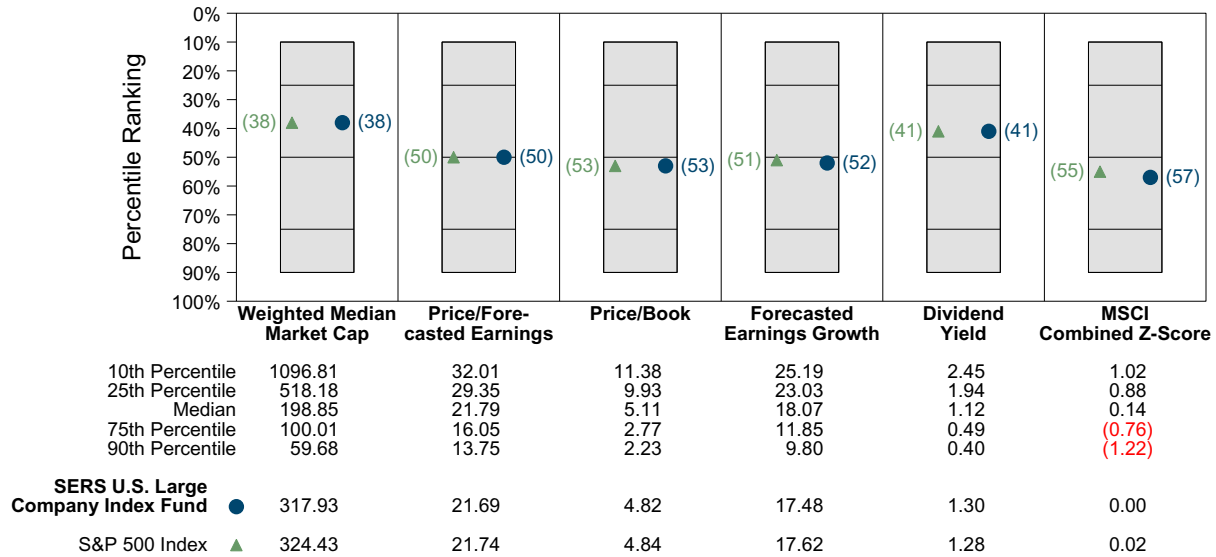
<b>SERS U.S. Large Company Index Fund</b>	0.00	0.63	0.32
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# SERS U.S. Large Company Index Fund Equity Characteristics Analysis Summary

## Portfolio Characteristics

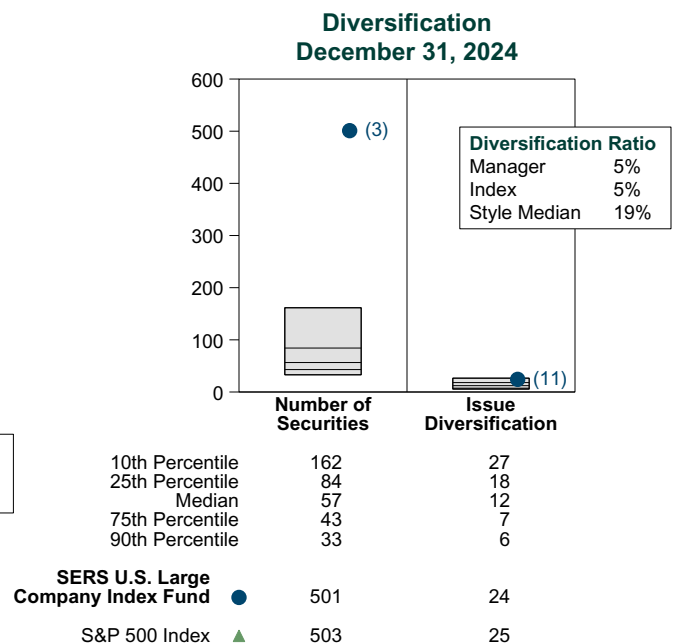
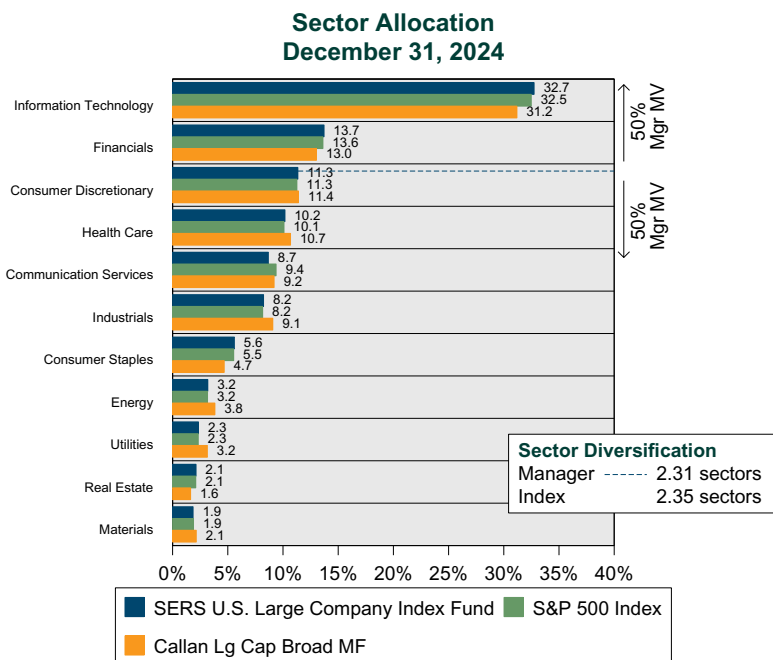
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Broad Equity Mut Funds as of December 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 Fund Top 10 Portfolio Holdings Characteristics as of December 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
Apple Inc	Information Technology	\$129,848,289	7.6%	7.59%	3785.30	32.84	0.40%	14.20%
Nvidia Corp	Information Technology	\$112,999,535	6.7%	10.59%	3288.76	31.20	0.03%	62.21%
Microsoft Corp	Information Technology	\$107,499,631	6.3%	(1.85)%	3133.80	30.11	0.79%	13.44%
Amazon.Com	Consumer Discretionary	\$70,429,074	4.1%	17.74%	2306.89	35.44	0.00%	32.90%
Meta Platforms Inc	Communication Services	\$43,785,116	2.6%	2.37%	1276.41	23.10	0.34%	14.70%
Tesla Mtrs Inc	Consumer Discretionary	\$38,688,093	2.3%	54.36%	1296.35	124.11	0.00%	2.62%
Alphabet Inc Cl A	Communication Services	\$37,942,152	2.2%	14.27%	1106.08	21.13	0.42%	21.91%
Broadcom Ltd Shs	Information Technology	\$37,144,471	2.2%	34.74%	1086.71	35.73	1.02%	17.60%
Alphabet Inc Cl C	Communication Services	\$31,090,750	1.8%	14.03%	1053.89	21.32	0.42%	21.91%
Berkshire Hathaway Inc Del Cl B New	Financials	\$28,500,497	1.7%	(1.52)%	602.16	22.51	0.00%	19.29%

### 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
Palantir Technologies Inc Cl A	Information Technology	\$5,329,145	0.3%	103.31%	164.92	159.89	0.00%	60.65%
United Cont'l Hldgs Inc	Industrials	\$1,097,854	0.1%	70.17%	31.93	7.81	0.00%	12.40%
Tesla Mtrs Inc	Consumer Discretionary	\$38,688,093	2.3%	54.36%	1296.35	124.11	0.00%	2.62%
Axon Enterprise Inc	Industrials	\$1,467,252	0.1%	48.73%	45.32	94.73	0.00%	24.35%
Lululemon Athletica Inc	Consumer Discretionary	\$1,465,524	0.1%	40.93%	44.61	25.36	0.00%	8.94%
Tapestry Inc	Consumer Discretionary	\$513,848	0.0%	39.84%	15.22	13.45	2.14%	7.20%
Carnival Corp	Consumer Discretionary	\$901,801	0.1%	34.85%	28.76	14.07	0.00%	(15.72)%
Broadcom Ltd Shs	Information Technology	\$37,144,471	2.2%	34.74%	1086.71	35.73	1.02%	17.60%
Apollo Global Mgmt Inc	Financials	\$2,517,905	0.1%	32.60%	94.06	19.31	1.12%	15.30%
Synchrony Finl	Financials	\$868,123	0.1%	30.90%	25.31	9.46	1.54%	18.60%

### 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
Celanese Corp Del Com Ser A	Materials	\$262,235	0.0%	(48.81)%	7.57	7.48	4.05%	11.60%
Enphase Energy Inc	Information Technology	\$324,055	0.0%	(39.23)%	9.28	18.82	0.00%	10.20%
Moderna Inc	Health Care	\$488,366	0.0%	(37.78)%	16.00	(4.65)	0.00%	(76.72)%
Monolithic Pwr Sys Inc	Information Technology	\$991,379	0.1%	(35.86)%	28.86	35.90	0.85%	31.23%
Aes Corp	Utilities	\$317,064	0.0%	(35.09)%	9.15	6.27	5.47%	9.10%
Regeneron Pharmaceutical	Health Care	\$2,557,666	0.2%	(32.24)%	76.98	15.80	0.00%	(3.90)%
Newmont Mining Hldg	Materials	\$1,437,970	0.1%	(29.95)%	42.37	9.40	2.69%	24.90%
First Solar Inc	Information Technology	\$647,494	0.0%	(29.35)%	18.87	8.46	0.00%	53.70%
Anthem Inc	Health Care	\$2,942,157	0.2%	(28.76)%	85.56	10.66	1.77%	12.05%
Microchip Technology	Information Technology	\$1,060,240	0.1%	(28.08)%	30.80	25.74	3.17%	(23.10)%

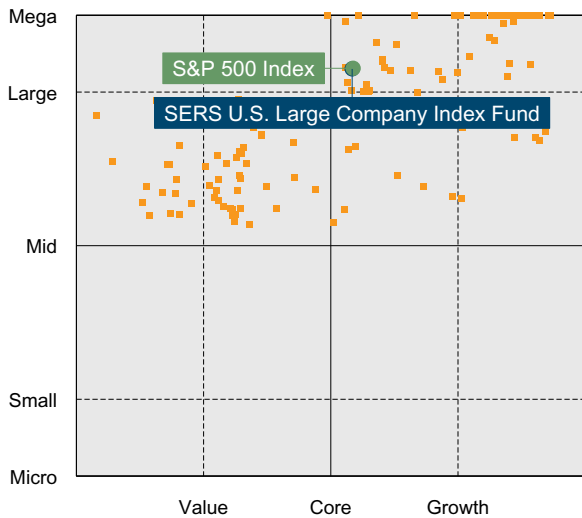
# Historical Holdings Based Style Analysis

## SERS U.S. Large Company Index Fund

### For Three Years Ended December 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.

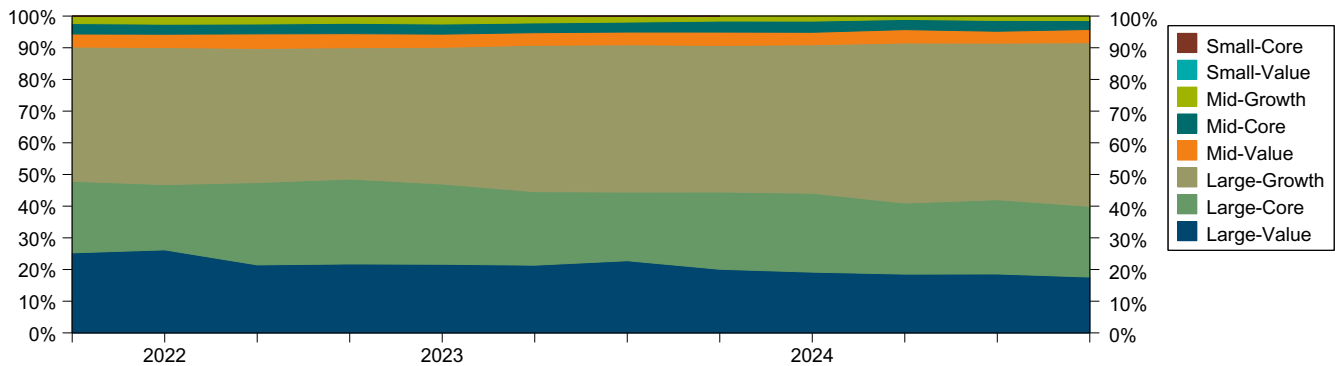
**Average Style Map vs Callan Lg Cap Broad MF Holdings for Three Years Ended December 31, 2024**



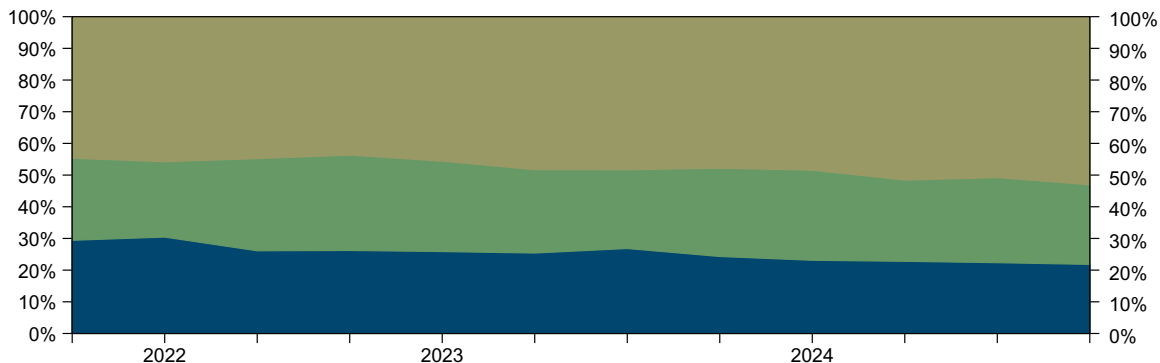
**Average Style Exposure Matrix Holdings for Three Years Ended December 31, 2024**

	Value	Core	Growth	Total
Large	21.2% (97)	23.6% (93)	45.8% (83)	<b>90.7% (273)</b>
Mid	4.1% (104)	3.2% (79)	1.9% (42)	<b>9.3% (225)</b>
Small	0.0% (2)	0.0% (1)	0.0% (0)	<b>0.0% (3)</b>
Micro	0.0% (0)	0.0% (0)	0.0% (0)	<b>0.0% (0)</b>
<b>Total</b>	<b>25.4% (203)</b>	<b>26.9% (173)</b>	<b>47.7% (125)</b>	<b>100.0% (501)</b>

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



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





# SERS U.S. SMID Company Stock Idx Period Ended December 31, 2024

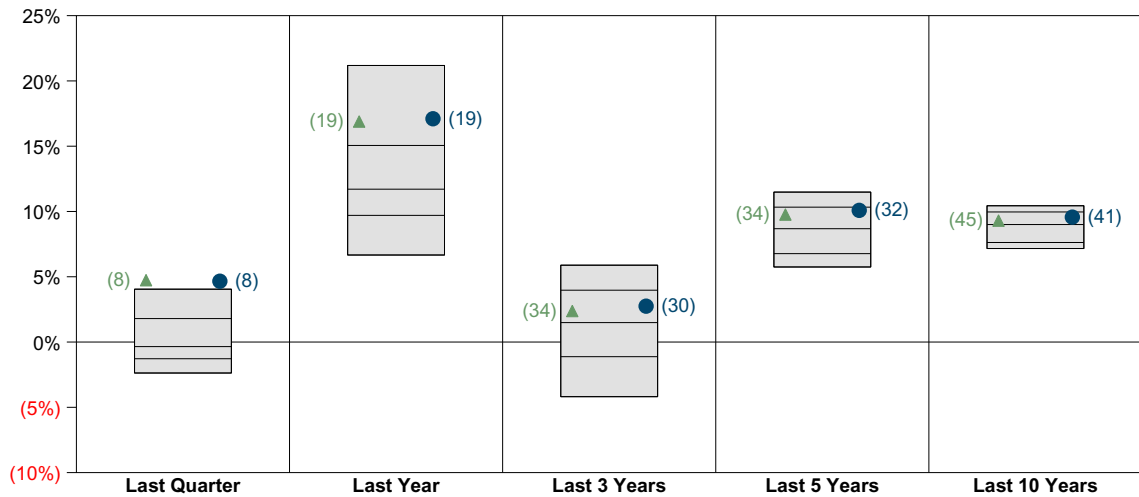
## Investment Philosophy

The U.S. Small/Mid Company Stock Index Fund seeks to match the performance and overall characteristics of the Dow Jones U.S. Completion Total Stock Market Index in a risk-controlled, cost-effective manner. The Fund's approach to quality indexing aims to minimize tracking error, manage transaction costs and replicate the majority of the index and sample from the remaining smaller securities. This fund is managed by Mellon Capital Management.

## Quarterly Summary and Highlights

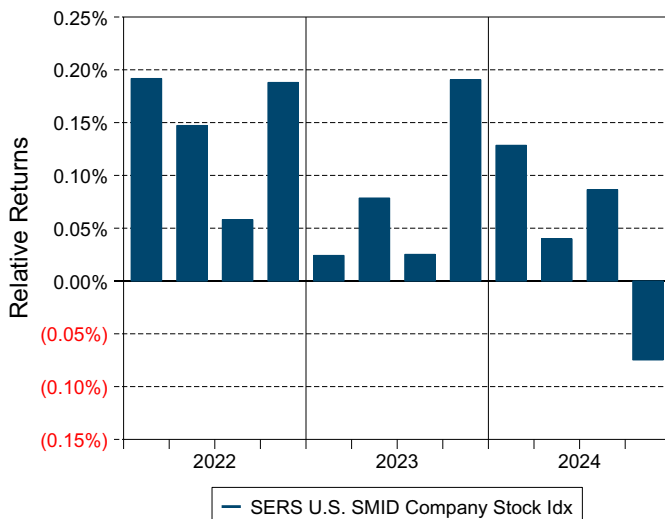
- SERS U.S. SMID Company Stock Idx's portfolio posted a 4.66% return for the quarter placing it in the 8 percentile of the Callan Small/MidCap Broad Mutual Funds group for the quarter and in the 19 percentile for the last year.
- SERS U.S. SMID Company Stock Idx's portfolio underperformed the Dow Jones US Completion by 0.08% for the quarter and outperformed the Dow Jones US Completion for the year by 0.21%.

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

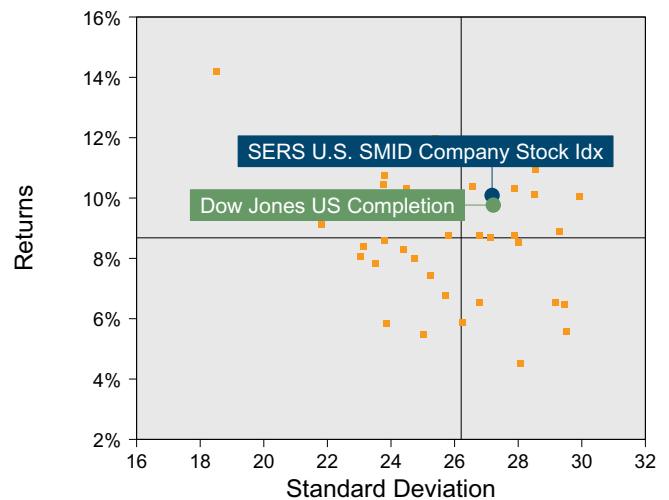


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	4.05	21.18	5.89	11.49	10.44
25th Percentile	1.80	15.06	3.97	10.33	9.96
Median	(0.35)	11.71	1.49	8.68	9.00
75th Percentile	(1.28)	9.70	(1.12)	6.77	7.62
90th Percentile	(2.37)	6.67	(4.18)	5.75	7.16
<b>SERS U.S. SMID Company Stock Idx</b> ●	4.66	17.10	2.75	10.09	9.57
Dow Jones US Completion ▲	4.74	16.89	2.38	9.77	9.30

## Relative Return vs Dow Jones US Completion



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

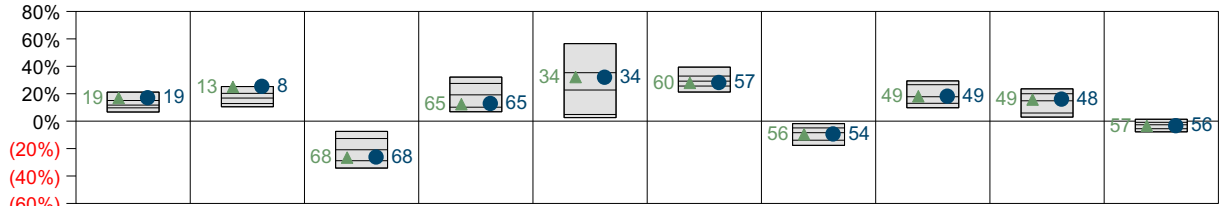


# SERS U.S. SMID Company Stock Idx Return Analysis Summary

## Return Analysis

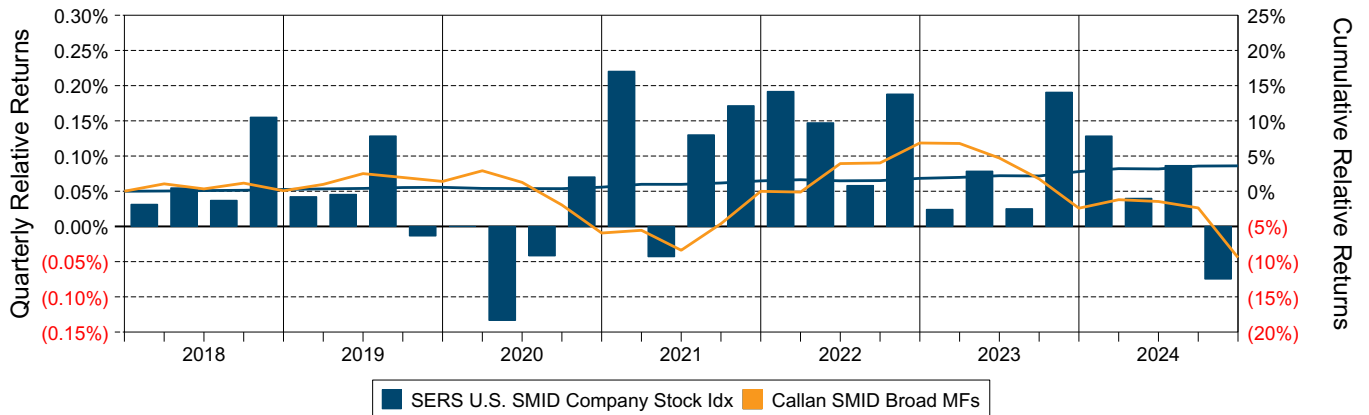
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate 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)

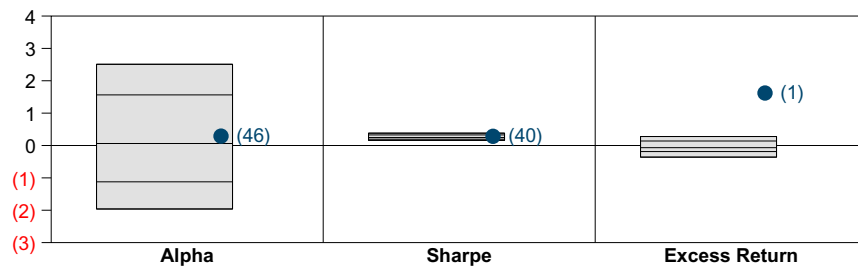


	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	21.18	25.23	(7.46)	32.13	56.54	39.40	(1.80)	29.36	23.55	1.39
25th Percentile	15.06	20.26	(12.67)	27.51	35.34	32.88	(4.93)	26.59	20.00	(0.85)
Median	11.71	16.85	(20.87)	19.19	22.70	29.17	(8.41)	17.80	14.84	(2.63)
75th Percentile	9.70	12.84	(28.86)	10.18	4.86	25.60	(13.90)	13.02	5.94	(5.51)
90th Percentile	6.67	10.48	(34.22)	6.84	2.58	21.21	(17.64)	9.76	2.95	(7.80)
<b>SERS U.S. SMID Company Stock Idx</b>	● 17.10	25.39	(26.13)	12.89	32.03	28.20	(9.32)	18.21	16.08	(3.31)
Dow Jones US Completion	▲ 16.89	24.99	(26.56)	12.36	32.17	27.94	(9.57)	18.12	15.75	(3.42)

### 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 December 31, 2024



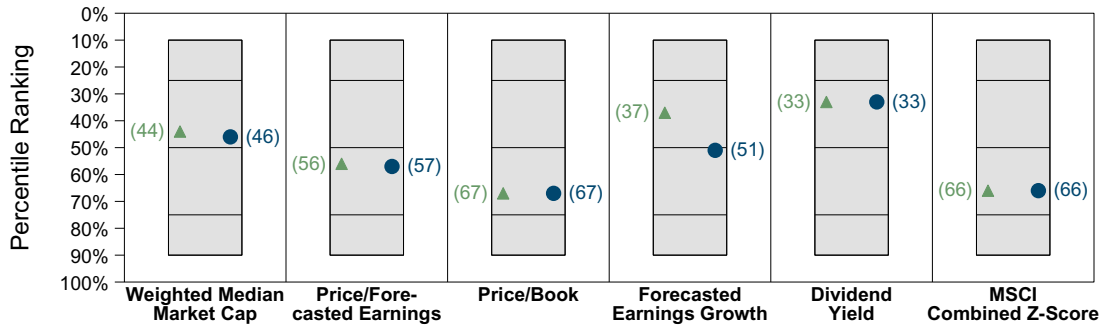
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	2.51	0.38	0.28
25th Percentile	1.56	0.33	0.14
Median	0.06	0.25	(0.07)
75th Percentile	(1.12)	0.20	(0.19)
90th Percentile	(1.96)	0.16	(0.36)
<b>SERS U.S. SMID Company Stock Idx</b>	● 0.29	0.28	1.62

# SERS U.S. SMID Company Idx 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 Small/MidCap Broad Mutual Funds as of December 31, 2024

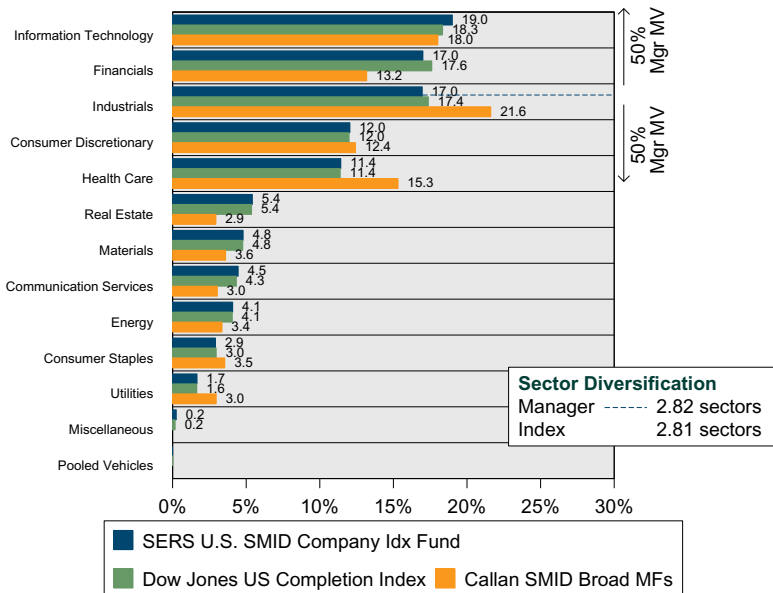


	Weighted Median Market Cap	Price/Forecasted Earnings	Price/Book	Forecasted Earnings Growth	Dividend Yield	MSCI Combined Z-Score
10th Percentile	14.31	36.80	6.05	24.31	2.20	0.79
25th Percentile	9.92	29.53	5.33	21.79	1.59	0.68
Median	7.26	25.14	4.07	18.41	0.51	0.42
75th Percentile	6.44	13.33	1.91	11.80	0.38	(0.71)
90th Percentile	2.95	12.56	1.55	9.43	0.25	(0.97)
<b>SERS U.S. SMID Company Idx Fund</b> ●	7.41	22.24	2.50	17.89	1.16	0.03
Dow Jones US Completion Index ▲	7.67	22.39	2.53	19.26	1.16	0.03

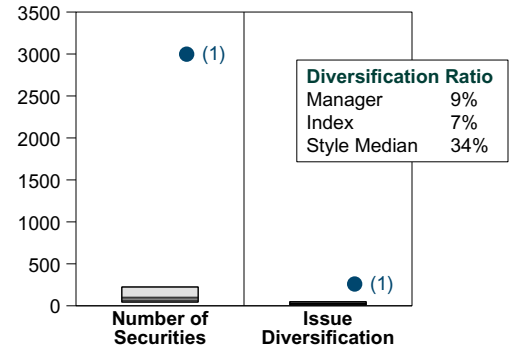
## Sector Weights

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.

### Sector Allocation December 31, 2024



### Diversification December 31, 2024



	Number of Securities	Issue Diversification
10th Percentile	224	49
25th Percentile	102	35
Median	82	27
75th Percentile	60	19
90th Percentile	45	11
<b>SERS U.S. SMID Company Idx Fund</b> ●	2998	259
Dow Jones US Completion Index ▲	3492	258

## SERS U.S. SMID Company Idx Fund Top 10 Portfolio Holdings Characteristics as of December 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
Marvell Technology Group Ltd	Information Technology	\$6,401,272	1.3%	53.27%	95.57	41.71	0.22%	26.30%
Applovin Corp	Information Technology	\$4,659,428	1.0%	148.05%	96.72	54.47	0.00%	115.30%
Crh Plc Ord	Materials	\$4,202,628	0.9%	0.11%	62.71	15.14	1.52%	14.58%
Doordash Inc Cl A Com Usd0.00001 Cla	Consumer Discretionary	\$3,754,687	0.8%	17.53%	65.25	85.89	0.00%	49.50%
Microstrategy	Information Technology	\$3,704,327	0.8%	71.78%	65.40	13.02	0.00%	83.31%
The Trade Desk Inc Com Cl A	Communication Services	\$3,535,711	0.7%	7.19%	52.85	61.09	0.00%	26.35%
Snowflake Inc Cl A	Information Technology	\$3,462,520	0.7%	34.45%	50.97	164.62	0.00%	10.90%
Cheniere Energy Inc	Energy	\$3,225,615	0.7%	19.77%	48.21	19.00	0.93%	(27.80)%
Square Inc Cl A	Financials	\$3,181,897	0.7%	26.61%	47.57	18.68	0.00%	47.00%
Flutter Entertainment Plc Shs	Consumer Discretionary	\$3,073,183	0.6%	17.89%	46.20	28.76	0.00%	59.70%

### 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
Quantum Computing Inc	Information Technology	\$76,807	0.0%	2053.72%	1.99	(78.81)	0.00%	-
Rigetti Computing Inc Common Stock	Information Technology	\$161,302	0.0%	1848.67%	3.70	(44.49)	0.00%	-
Quantum Corp	Information Technology	\$15,138	0.0%	1492.23%	0.26	(19.64)	0.00%	(25.17)%
Kulr Technology Group Inc	Industrials	\$36,500	0.0%	1136.49%	0.85	(52.99)	0.00%	-
Ocean Pwr Technologies Inc	Utilities	\$20,111	0.0%	837.50%	0.15	(2.19)	0.00%	-
Dpcm Cap Inc Com	Information Technology	\$95,516	0.0%	754.96%	2.07	(28.09)	0.00%	-
Microvast Holdings Inc	Industrials	\$30,237	0.0%	733.12%	0.67	20.70	0.00%	-
Sarcos Techn and Robotics Co	Industrials	\$7,015	0.0%	584.12%	0.37	(16.25)	0.00%	-
Scholar Rock Hldg Corp	Health Care	\$216,848	0.0%	439.59%	4.05	(19.40)	0.00%	-
Red Cat Hldgs Inc	Information Technology	\$46,042	0.0%	405.91%	1.03	(139.67)	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
Neonode Inc Com Par	Information Technology	\$11,998	0.0%	-	0.14	(17.89)	0.00%	18.70%
Eterna Therapeutics Inc	Consumer Discretionary	\$84	0.0%	-	0.02	(0.04)	0.00%	-
Xwell Inc	Information Technology	\$3,886	0.0%	-	0.01	(0.72)	0.00%	-
Aptevo Therapeutics Inc	Health Care	\$3	0.0%	-	0.00	(0.02)	0.00%	-
Greenlane Hldgs Inc Cl A New	Consumer Discretionary	\$5	0.0%	-	0.00	(0.14)	0.00%	-
Canoo Inc Cl A	Consumer Discretionary	\$541	0.0%	(93.02)%	0.02	(0.05)	0.00%	-
Homology Medicines Inc	Health Care	\$1,786	0.0%	(92.32)%	0.04	(0.83)	0.00%	-
Cassava Sciences Inc	Health Care	\$7,214	0.0%	(92.00)%	0.11	(5.43)	0.00%	58.11%
Applied Therapeutics Inc	Health Care	\$5,349	0.0%	(89.93)%	0.10	(1.70)	0.00%	-
Syros Pharmaceuticals Inc	Health Care	\$257	0.0%	(88.98)%	0.01	(0.10)	0.00%	-

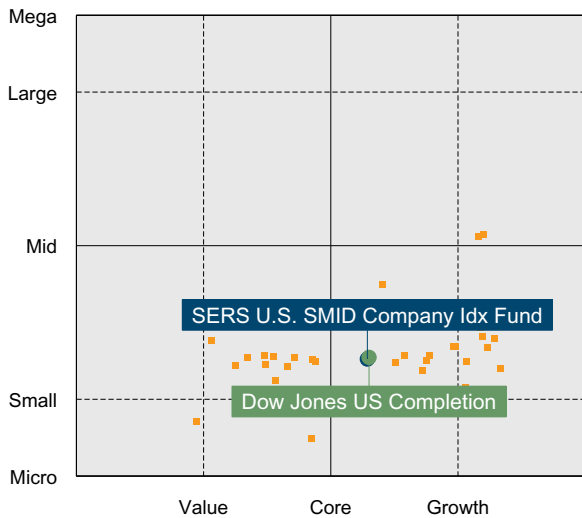
# Historical Holdings Based Style Analysis

## SERS U.S. SMID Company Idx Fund

### For Three Years Ended December 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.

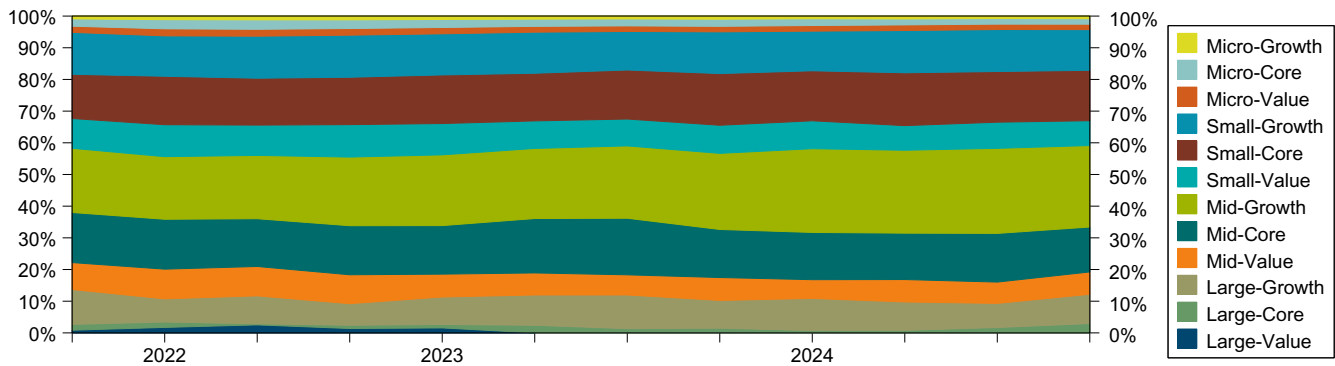
**Average Style Map vs Callan SMID Broad MFs Holdings for Three Years Ended December 31, 2024**



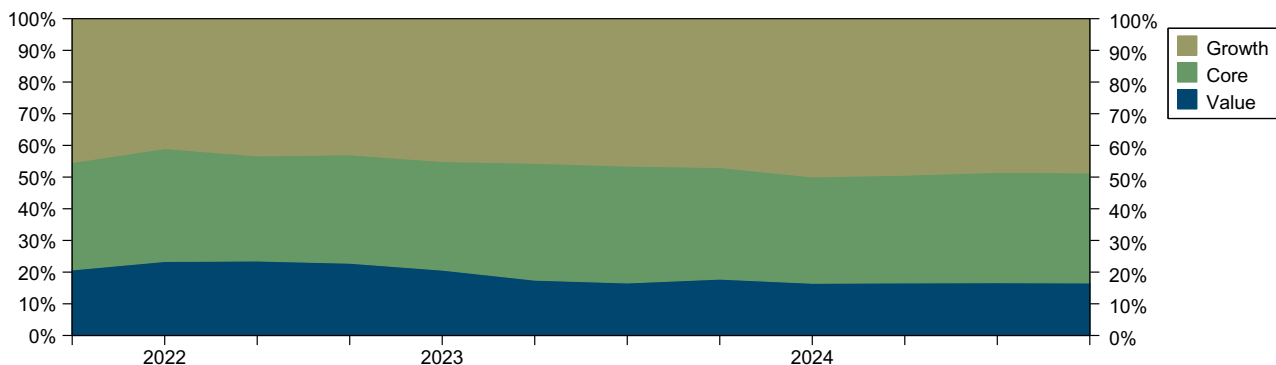
**Average Style Exposure Matrix Holdings for Three Years Ended December 31, 2024**

	0.7% (1)	1.4% (2)	9.0% (15)	11.1% (18)
Large	0.7% (1)	1.8% (3)	9.1% (15)	11.7% (19)
Mid	7.6% (63)	15.6% (131)	23.2% (170)	46.3% (364)
Small	9.0% (279)	15.5% (521)	13.0% (375)	37.4% (1175)
Micro	1.9% (523)	2.3% (762)	1.0% (257)	5.2% (1542)
	1.8% (652)	2.4% (1093)	1.0% (327)	5.2% (2072)
<b>Total</b>	<b>19.1% (866)</b>	<b>34.8% (1416)</b>	<b>46.1% (817)</b>	<b>100.0% (3099)</b>
	<b>18.9% (995)</b>	<b>35.0% (1753)</b>	<b>46.2% (892)</b>	<b>100.0% (3640)</b>
	Value	Core	Growth	Total

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



### SERS U.S. SMID Company Idx Fund Historical Style Only Exposures





# SERS Global Non-U.S. Index Fund

## Period Ended December 31, 2024

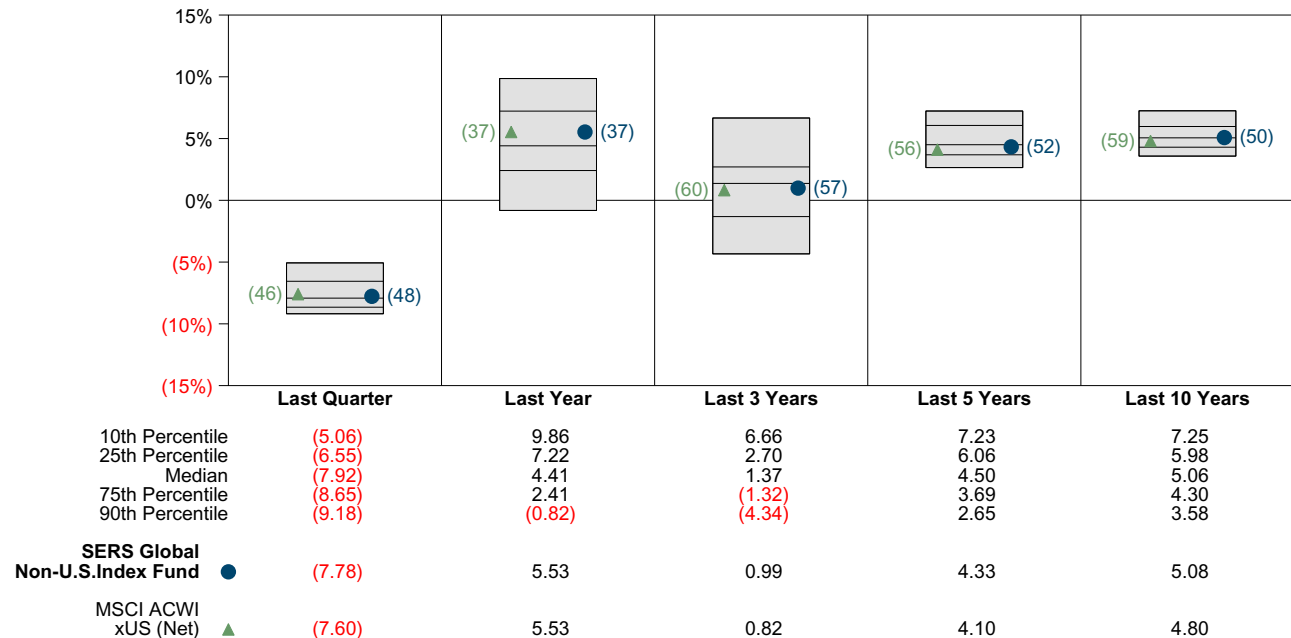
### Investment Philosophy

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. The Global Non-U.S. Stock Index Fund replaced the International Company Stock Index Fund in 1Q20.

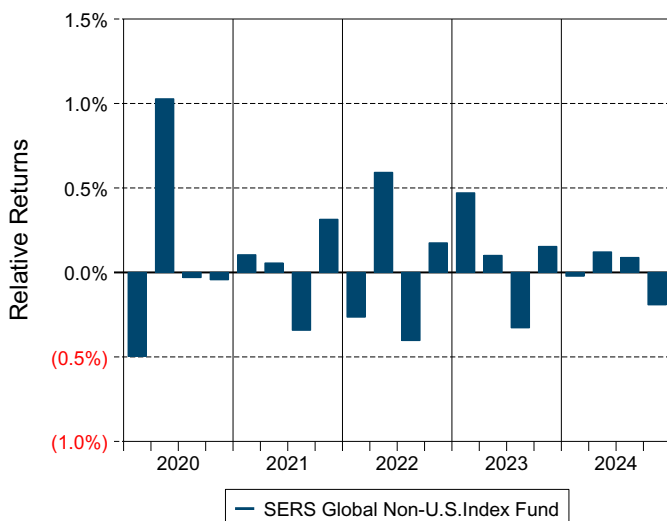
### Quarterly Summary and Highlights

- SERS Global Non-U.S. Index Fund's portfolio posted a (7.78)% return for the quarter placing it in the 48 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 37 percentile for the last year.
- SERS Global Non-U.S. Index Fund's portfolio underperformed the MSCI ACWI xUS (Net) by 0.18% for the quarter and underperformed the MSCI ACWI xUS (Net) for the year by 0.00%.

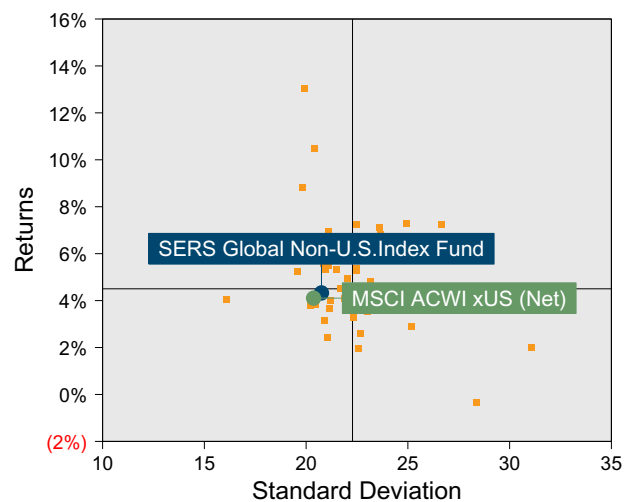
### Performance vs Callan Non US Equity Mutual Funds (Institutional Net)



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



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

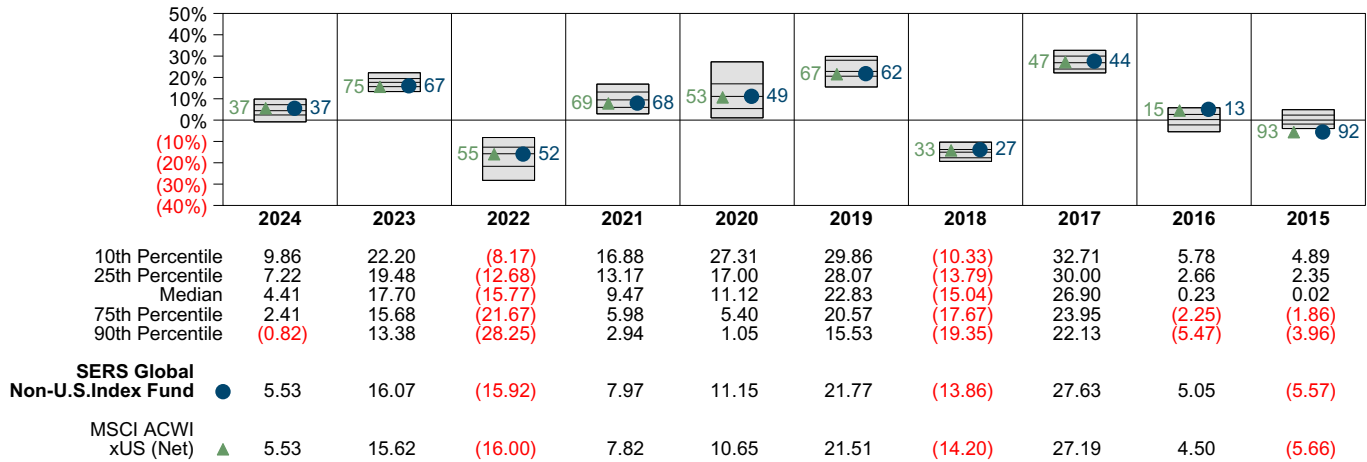


# SERS Global Non-U.S.Index Fund Return Analysis Summary

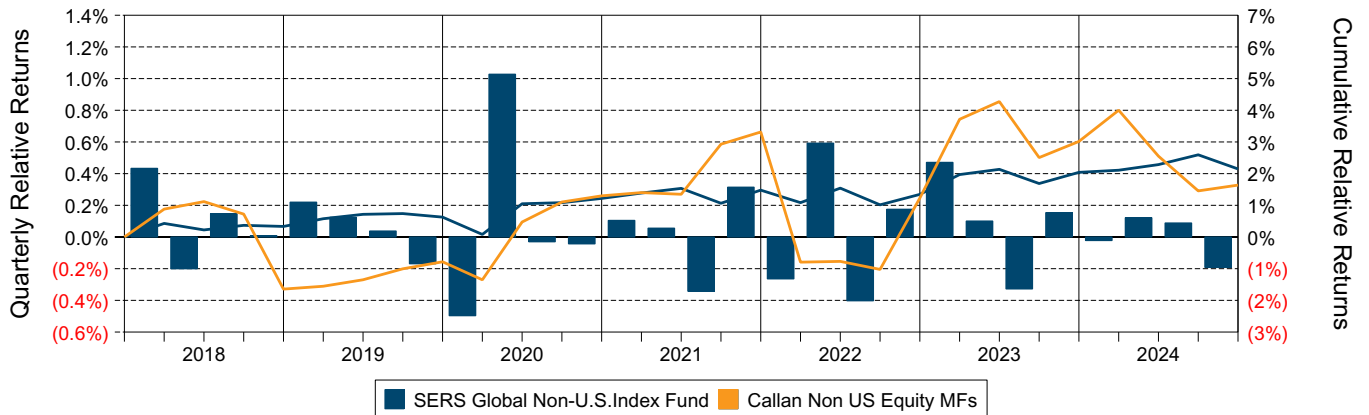
## Return Analysis

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.

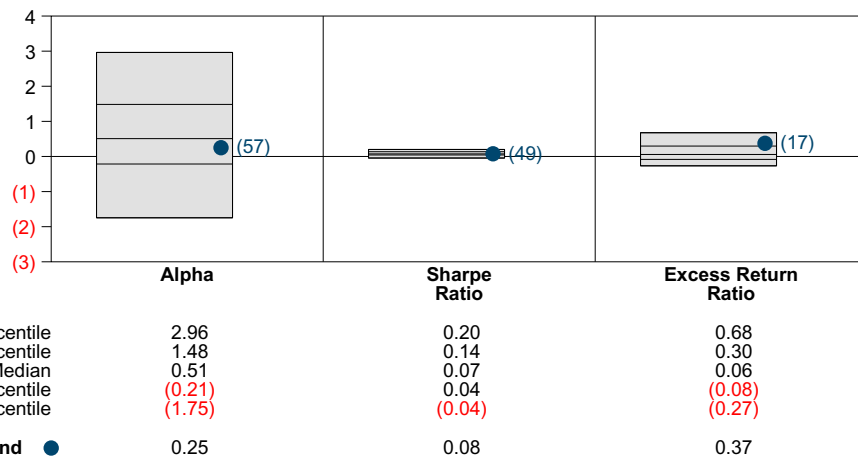
### Performance vs Callan Non US Equity Mutual Funds (Institutional Net)



### 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 December 31, 2024



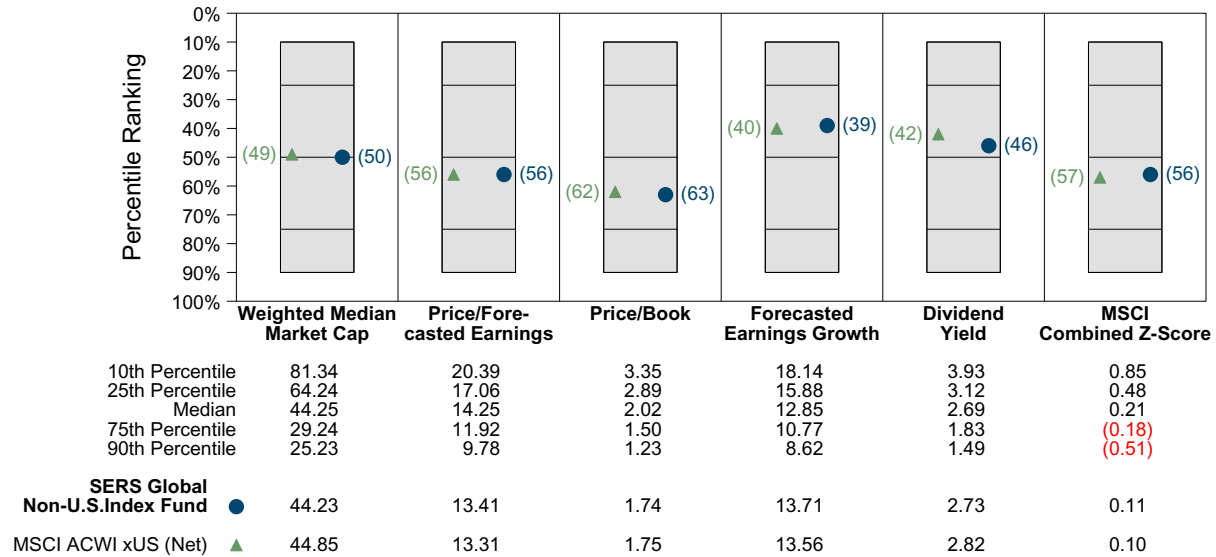


# SERS Global Non-U.S.Index Fund Equity Characteristics Analysis Summary

## Portfolio Characteristics

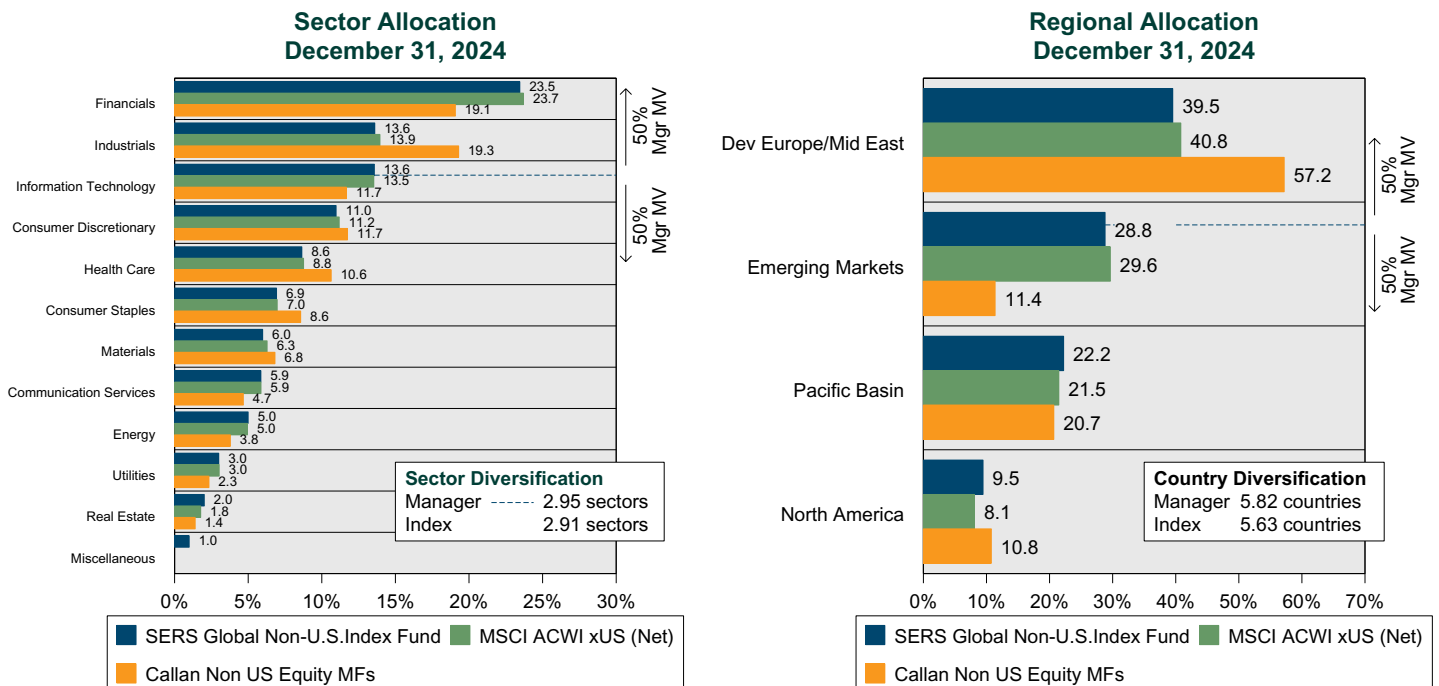
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Non US Equity Mutual Funds as of December 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.



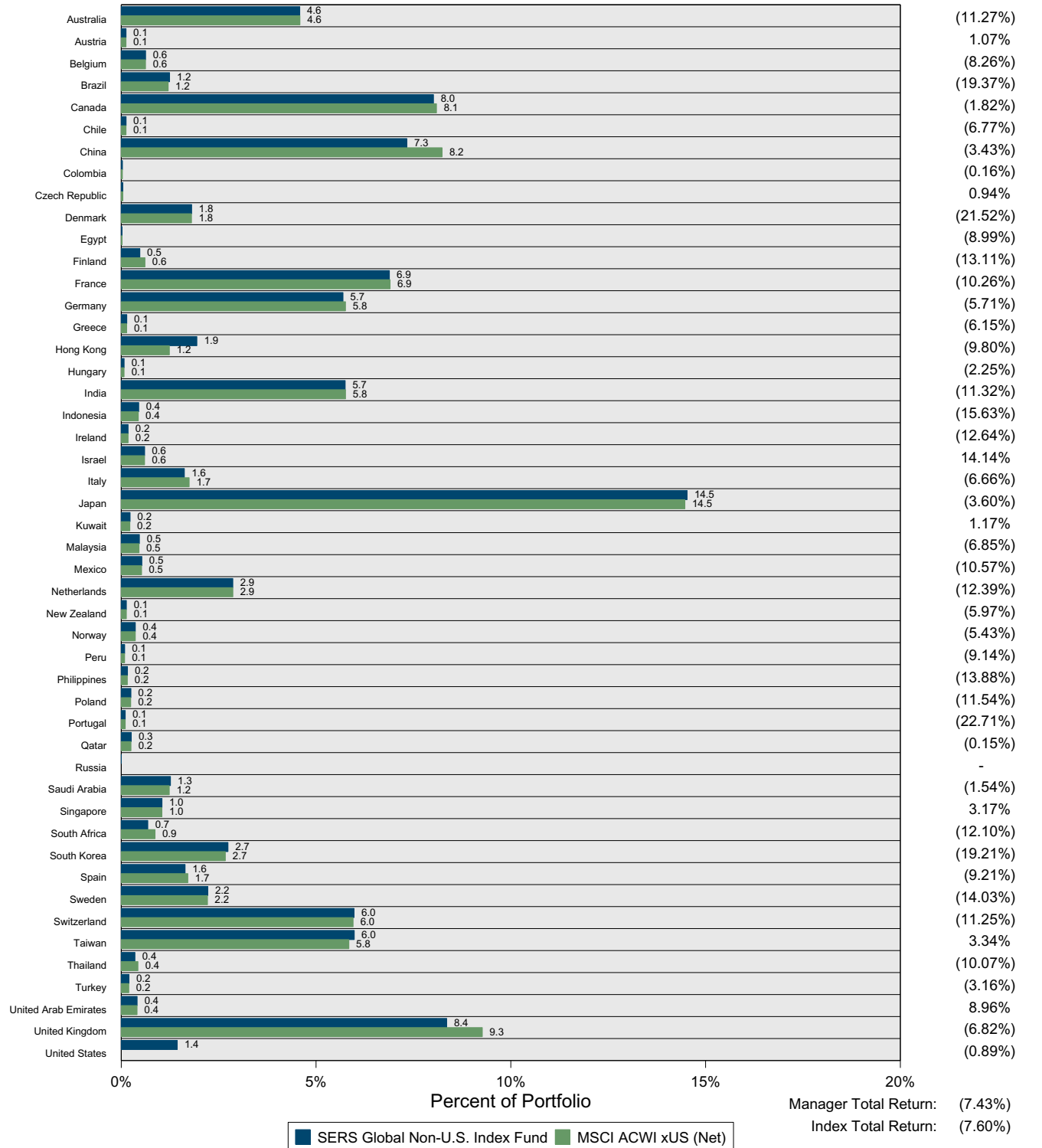
# Country Allocation

## 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 December 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 December 31, 2024



## SERS Global Non-U.S. Index Fund Top 10 Portfolio Holdings Characteristics as of December 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	\$8,670,188	3.2%	8.84%	850.33	18.45	1.49%	29.51%
Tencent Holdings Limited Shs Par Hkd	Communication Services	\$3,728,698	1.4%	(10.59)%	495.21	15.31	0.82%	25.95%
Asml Holding N V Asml Rev Stk Spl	Information Technology	\$2,946,566	1.1%	(15.35)%	280.82	28.32	0.92%	8.50%
Novo-Nordisk A S Almindelig Aktie	Health Care	\$2,928,968	1.1%	(26.42)%	293.84	22.20	1.59%	22.45%
Sap Se Shs	Information Technology	\$2,680,960	1.0%	7.35%	300.47	38.32	0.87%	12.05%
Nestle S A Shs Nom New	Consumer Staples	\$2,271,430	0.8%	(17.96)%	216.48	16.44	4.01%	(0.60)%
Toyota Motor Corp	Consumer Discretionary	\$2,156,417	0.8%	14.26%	316.18	9.93	2.70%	(1.40)%
Astrazeneca Plc Ord	Health Care	\$2,132,560	0.8%	(15.66)%	203.25	14.34	2.23%	12.00%
Roche Hldgs Ag Basel Div Rts Ctf	Health Care	\$2,078,296	0.8%	(12.11)%	198.07	12.42	3.76%	5.47%
Novartis	Health Care	\$2,024,086	0.7%	(15.01)%	214.34	12.08	3.72%	11.44%

### 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
Zhejiang Lsh.Auto Parts 'a'	Industrials	\$778	0.0%	83.78%	14.11	187.14	0.49%	51.06%
Haitong Securities Co. 'h'	Financials	\$26,422	0.0%	80.03%	3.01	22.62	5.59%	(23.92)%
Pop Mart International Group	Consumer Discretionary	\$65,976	0.0%	60.50%	15.50	31.97	0.38%	65.30%
Alchip Technologies	Information Technology	\$84,857	0.0%	60.31%	8.06	36.96	0.68%	52.71%
Wise Plc	Financials	\$91,154	0.0%	48.22%	13.68	30.69	0.00%	(0.70)%
Accelink Techs.'a'	Information Technology	\$1,556	0.0%	47.97%	5.67	42.31	0.46%	(2.40)%
Wiwynn Corporation	Information Technology	\$94,895	0.0%	47.47%	14.85	18.17	1.60%	27.90%
Emaar Properties	Real Estate	\$247,982	0.1%	47.36%	30.92	8.91	3.89%	13.80%
Xiaomi Corp	Information Technology	\$728,010	0.3%	46.17%	91.39	29.22	0.00%	8.96%
Global E Online	Consumer Discretionary	\$54,947	0.0%	44.81%	9.11	208.93	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
Ecopro Materials	Industrials	\$8,430	0.0%	(56.67)%	3.12	(109.83)	0.00%	-
Hapvida Partp.E Invms.On	Health Care	\$19,522	0.0%	(50.85)%	2.72	9.00	1.96%	(3.80)%
Posco Refractories	Industrials	\$31,929	0.0%	(49.51)%	7.48	74.37	0.18%	87.90%
Korea Kumho Petrochem.	Materials	\$9,664	0.0%	(49.03)%	1.68	5.37	3.20%	5.00%
Honam Petrochemical	Materials	\$8,247	0.0%	(47.67)%	1.74	31.54	4.60%	(21.12)%
Ecopro Bm	Industrials	\$39,177	0.0%	(47.09)%	7.30	266.61	0.00%	65.02%
Adani Green Energy Ltd	Utilities	\$26,124	0.0%	(46.46)%	19.26	52.87	0.00%	-
Cosan On	Energy	\$19,161	0.0%	(45.01)%	2.47	3.76	5.53%	3.00%
Posdata Company	Information Technology	\$7,361	0.0%	(44.43)%	1.97	36.82	0.52%	6.00%
Merdeka Copper Gold	Materials	\$10,335	0.0%	(44.14)%	2.46	50.00	0.04%	-

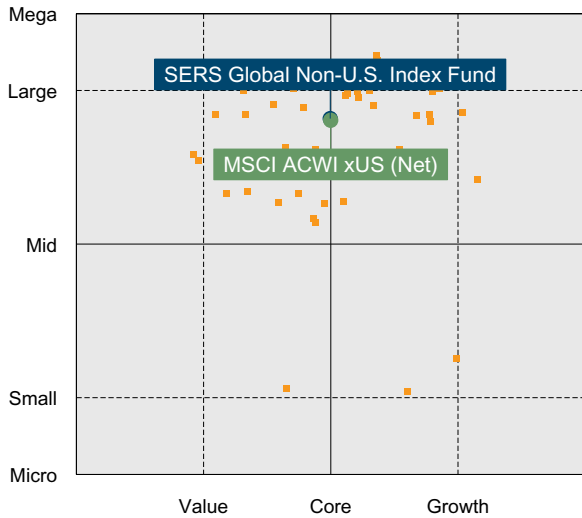
# Historical Holdings Based Style Analysis

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

### For Three Years Ended December 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.

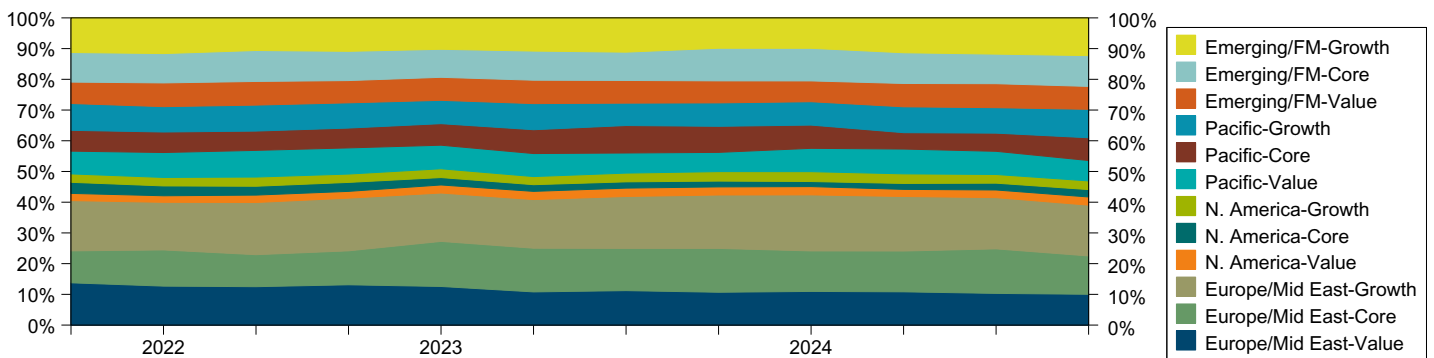
**Average Style Map vs Callan Non US Equity MFs Holdings for Three Years Ended December 31, 2024**



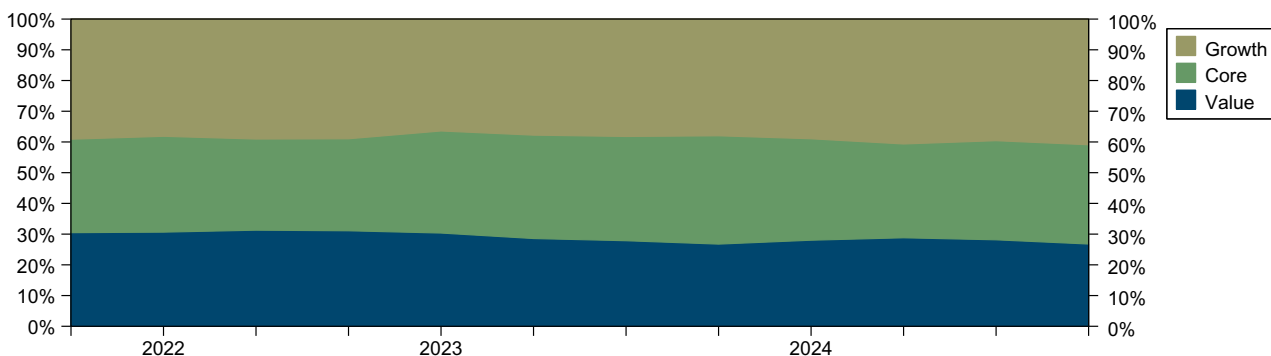
**Average Style Exposure Matrix Holdings for Three Years Ended December 31, 2024**

	Value	Core	Growth	Total
Europe/ Mid East	11.6% (146)	12.8% (132)	16.8% (136)	41.2% (414)
	11.5% (153)	12.4% (134)	16.8% (146)	40.6% (433)
N. America	2.5% (26)	2.4% (24)	2.9% (33)	7.8% (83)
	2.6% (27)	2.3% (25)	2.9% (35)	7.9% (87)
Pacific	7.5% (129)	7.1% (103)	8.2% (110)	22.8% (342)
	7.5% (130)	7.2% (103)	8.0% (110)	22.8% (343)
Emerging/ FM	7.4% (380)	9.8% (387)	11.0% (422)	28.2% (1189)
	7.4% (405)	10.0% (422)	11.3% (474)	28.7% (1301)
<b>Total</b>	<b>29.1% (681)</b>	<b>32.1% (646)</b>	<b>38.8% (701)</b>	<b>100.0% (2028)</b>
	29.1% (715)	31.9% (684)	39.0% (765)	100.0% (2164)

**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 December 31, 2024

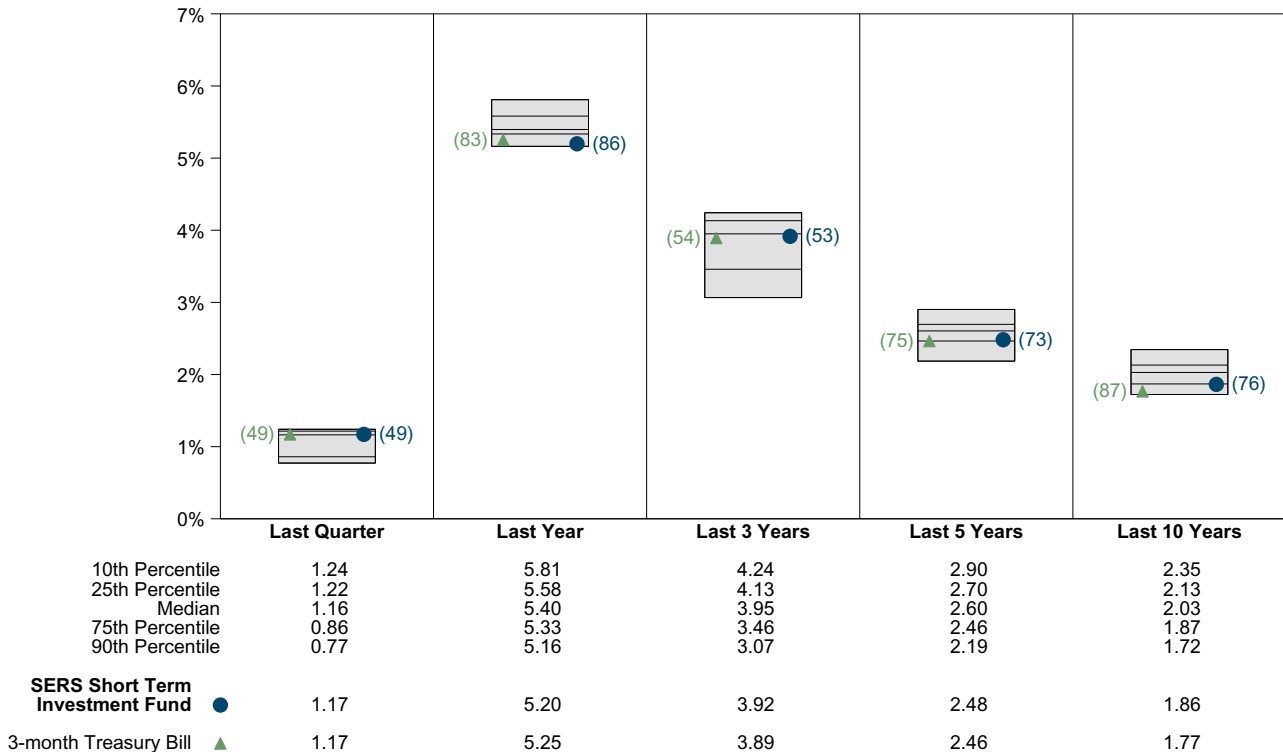
### Investment Philosophy

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: a group that contains STIF, enhanced cash, and money market funds.

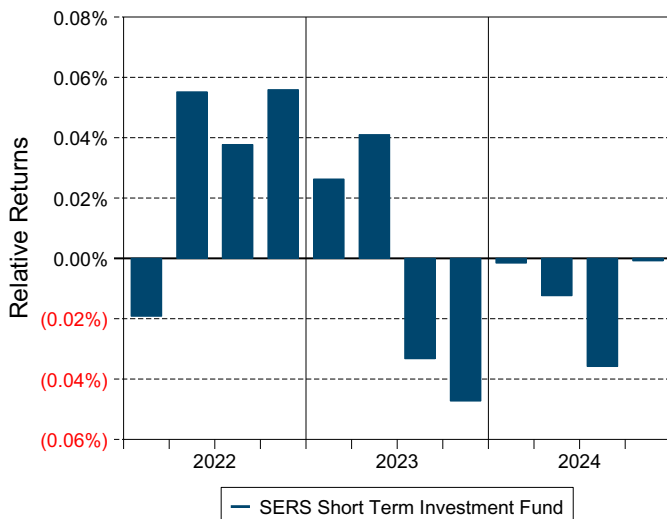
### Quarterly Summary and Highlights

- SERS Short Term Investment Fund's portfolio posted a 1.17% return for the quarter placing it in the 49 percentile of the Callan Cash Database group for the quarter and in the 86 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 0.05%.

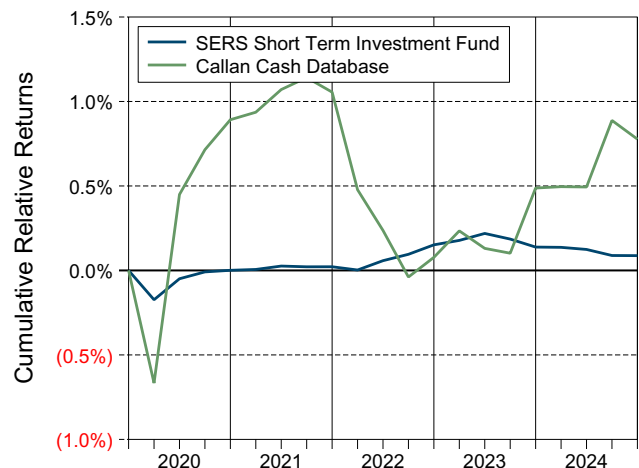
### Performance vs Callan Cash Database (Gross)



### Relative Return vs 3-month Treasury Bill



### Cumulative Returns vs 3-month Treasury Bill

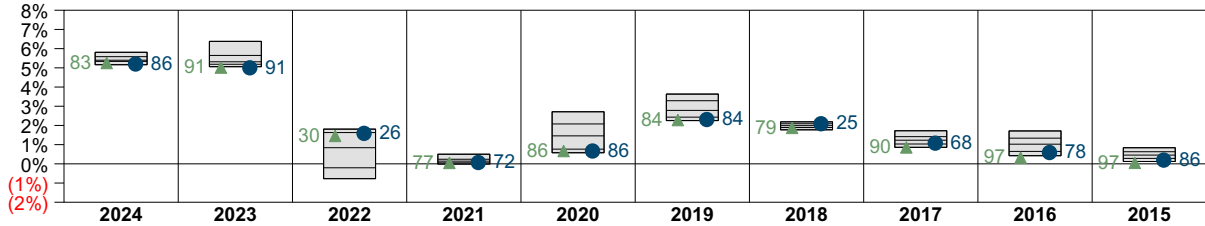


# SERS Short Term Investment Fund Return Analysis Summary

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

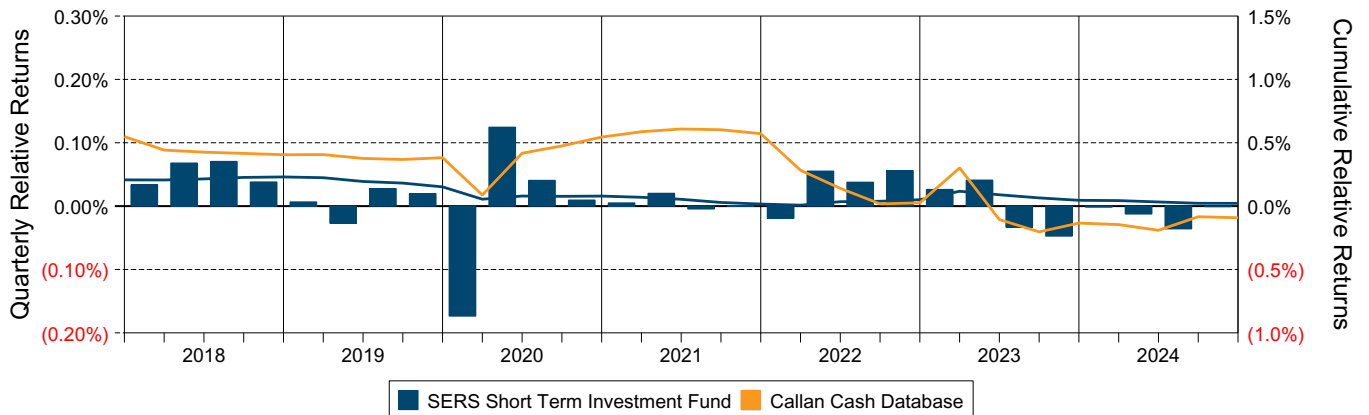
## Performance vs Callan Cash Database (Gross)



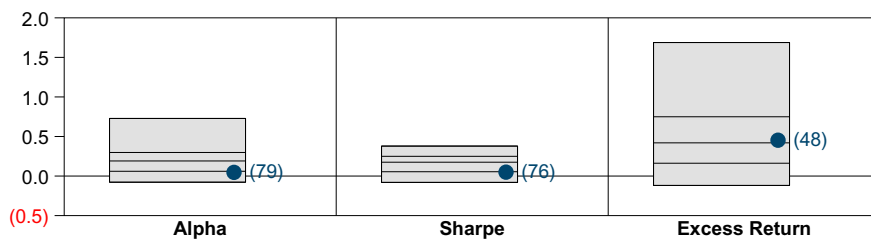
### SERS Short Term Investment Fund

3-month Treasury Bill

## 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 December 31, 2024



# SERS Stable Value Fund

## Period Ended December 31, 2024

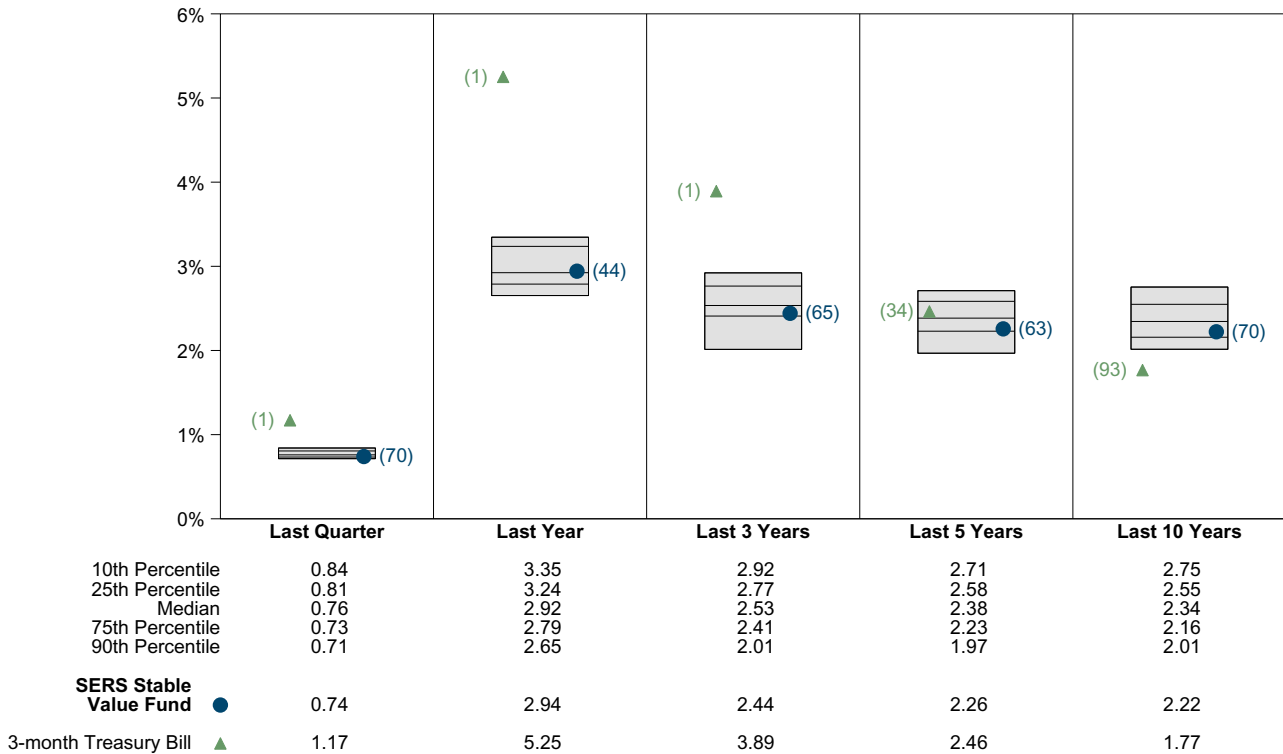
### Investment Philosophy

The Stable Value Fund seeks to provide safety of principal and a stable yield consistent with that of a high-quality blend of short and intermediate fixed income securities, with the flexibility to move to cash equivalents to preserve principal. This fund is managed by Invesco.

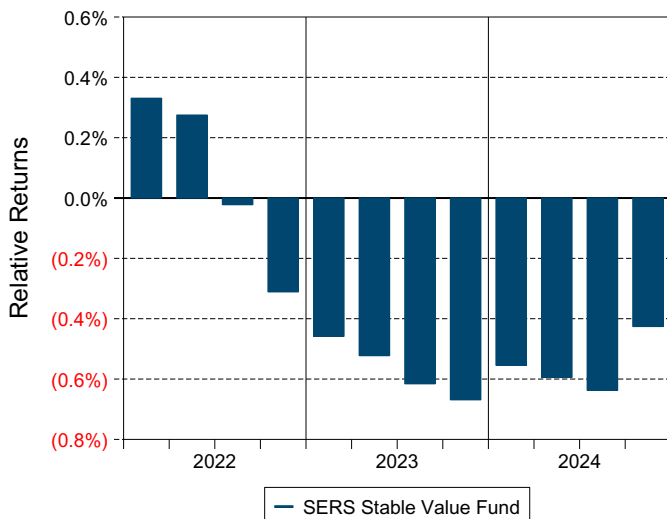
### Quarterly Summary and Highlights

- SERS Stable Value Fund's portfolio posted a 0.74% return for the quarter placing it in the 70 percentile of the Callan Stable Value SA group for the quarter and in the 44 percentile for the last year.
- SERS Stable Value Fund's portfolio underperformed the 3-month Treasury Bill by 0.43% for the quarter and underperformed the 3-month Treasury Bill for the year by 2.31%.

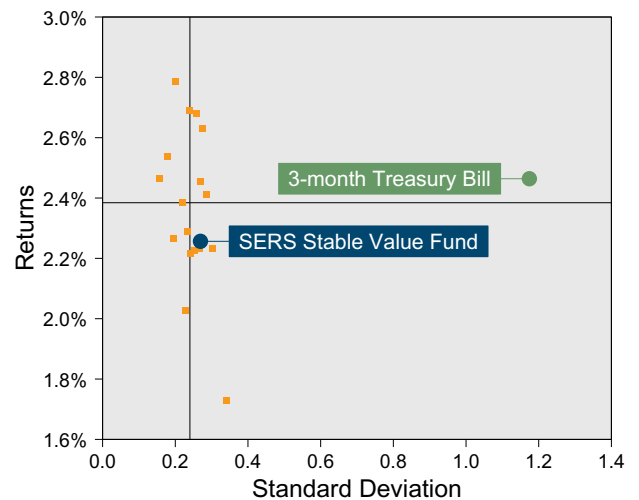
### Performance vs Callan Stable Value SA (Gross)



### Relative Return vs 3-month Treasury Bill



### Callan Stable Value SA (Gross) Annualized Five Year Risk vs Return



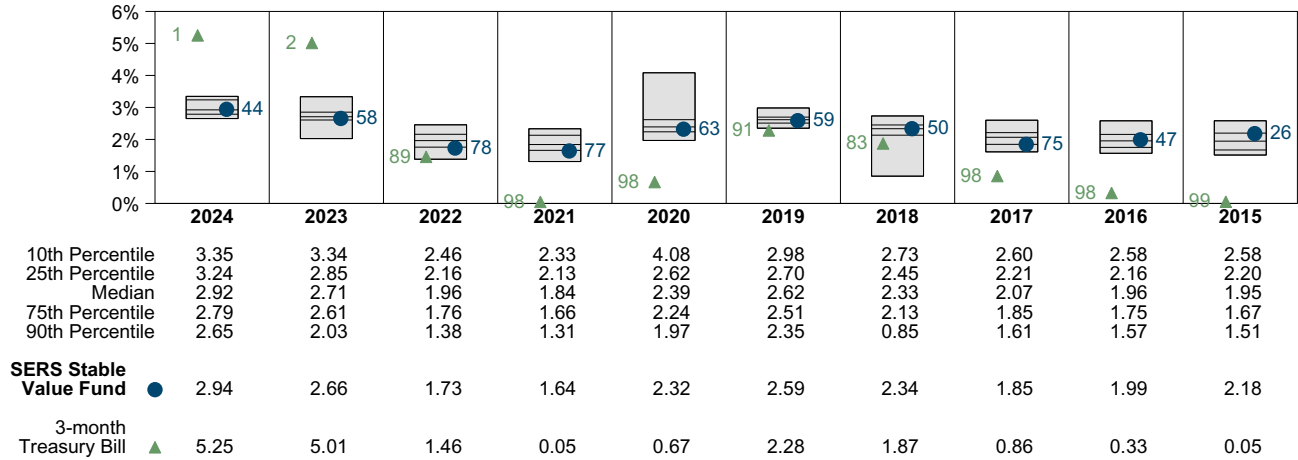


# SERS Stable Value Fund Return Analysis Summary

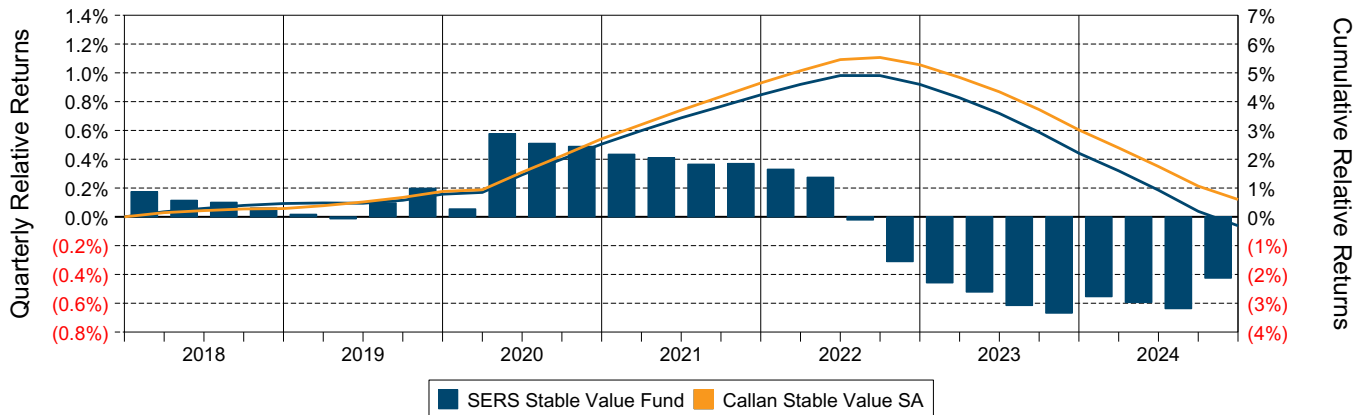
## Return Analysis

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.

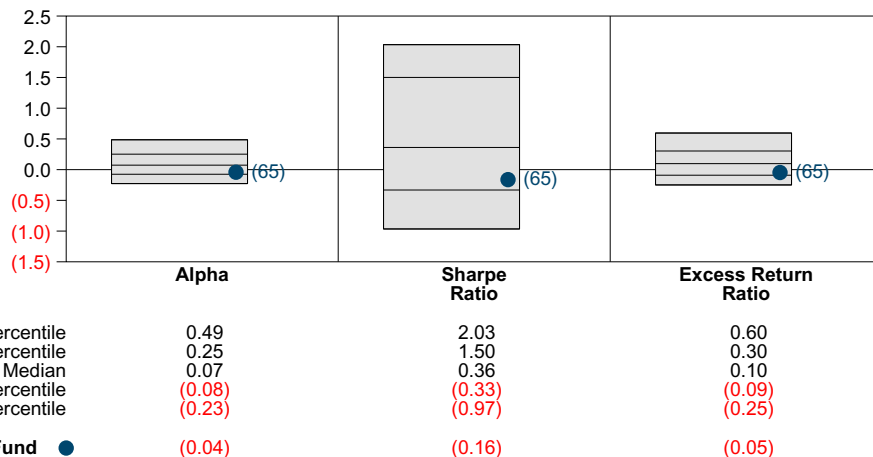
### Performance vs Callan Stable Value SA (Gross)



### Cumulative and Quarterly Relative Returns vs 3-month Treasury Bill



### Risk Adjusted Return Measures vs 3-month Treasury Bill Rankings Against Callan Stable Value SA (Gross) Seven Years Ended December 31, 2024



# SERS U.S. Bond Index Fund

## Period Ended December 31, 2024

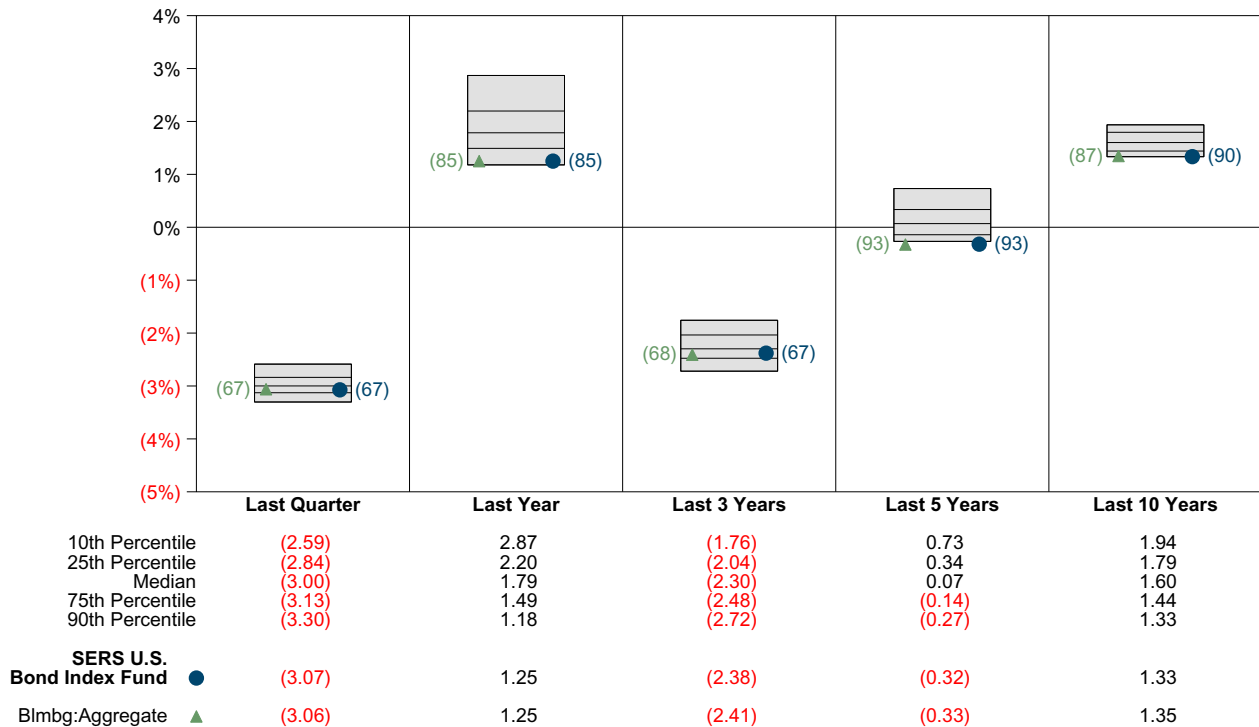
### Investment Philosophy

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.

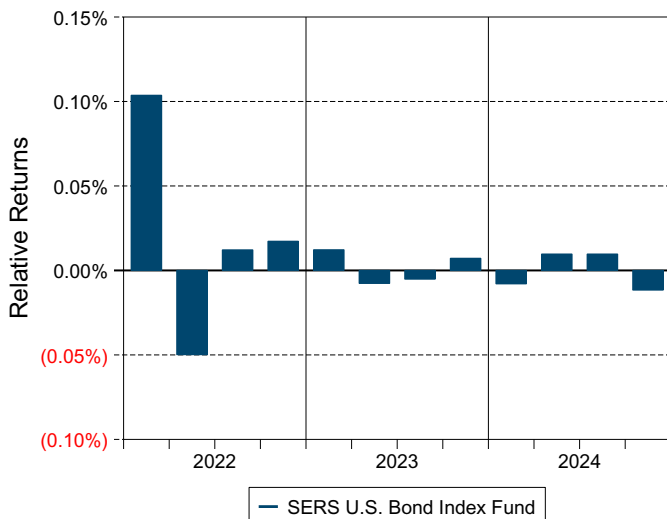
### Quarterly Summary and Highlights

- SERS U.S. Bond Index Fund's portfolio posted a (3.07)% return for the quarter placing it in the 67 percentile of the Callan Core Bond Mutual Funds group for the quarter and in the 85 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 0.00%.

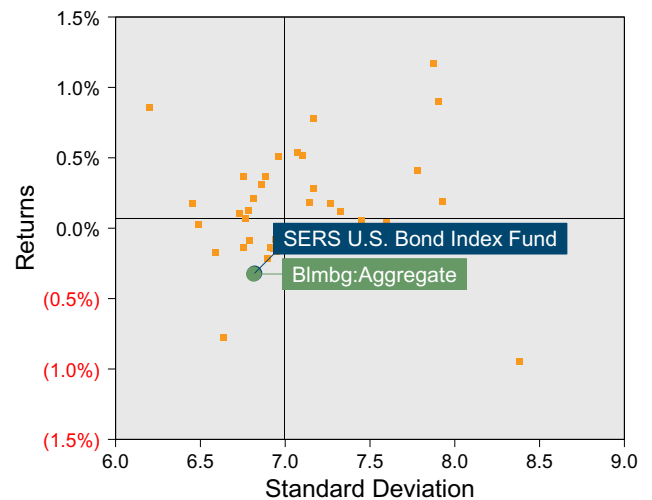
### Performance vs Callan Core Bond Mutual Funds (Institutional Net)



### Relative Return vs Blmbg:Aggregate



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

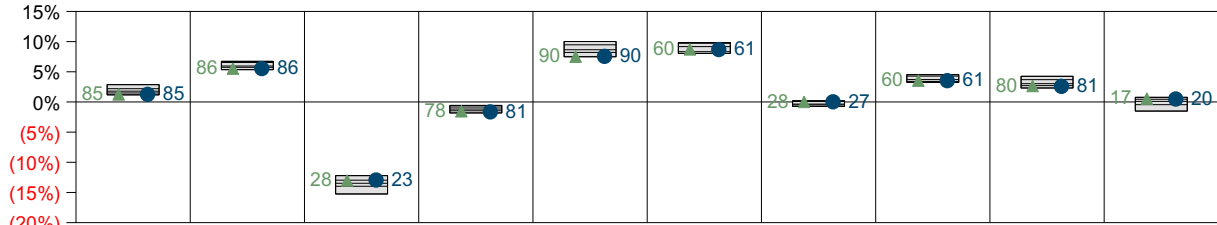


# SERS U.S. Bond Index Fund Return Analysis Summary

## 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.

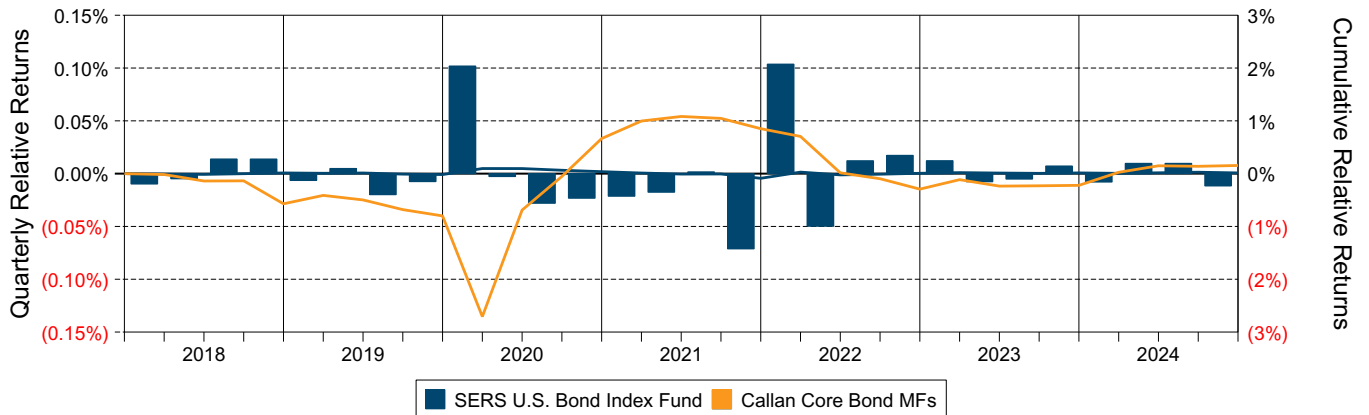
### Performance vs Callan Core Bond Mutual Funds (Institutional Net)



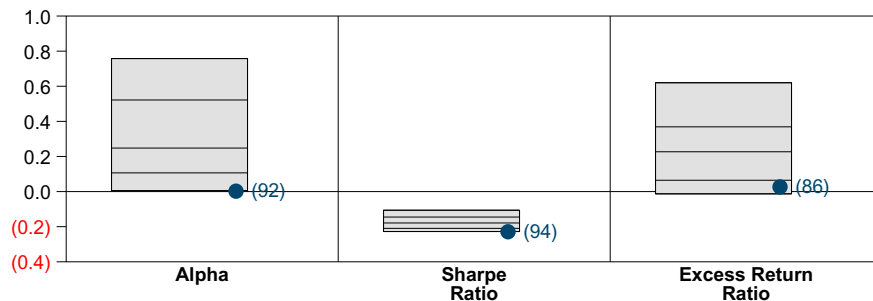
	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	2.87	6.73	(12.21)	(0.57)	10.01	9.85	0.20	4.52	4.25	0.77
25th Percentile	2.20	6.54	(12.96)	(0.84)	9.47	9.72	0.09	4.28	3.70	0.45
Median	1.79	5.96	(13.48)	(1.17)	8.65	9.17	(0.35)	3.71	3.03	0.10
75th Percentile	1.49	5.74	(13.97)	(1.46)	8.21	8.33	(0.49)	3.40	2.71	(0.45)
90th Percentile	1.18	5.35	(15.25)	(1.82)	7.49	8.04	(0.73)	3.25	2.31	(1.52)

SERS U.S. Bond Index Fund	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
●	1.25	5.54	(12.94)	(1.65)	7.56	8.69	0.02	3.53	2.59	0.49
Blmbg:Aggregate ▲	1.25	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 December 31, 2024



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.76	(0.11)	0.62
25th Percentile	0.52	(0.15)	0.37
Median	0.25	(0.18)	0.23
75th Percentile	0.11	(0.21)	0.06
90th Percentile	0.00	(0.23)	(0.01)
SERS U.S. Bond Index Fund ●	0.00	(0.23)	0.03

# SERS U.S. Bond Index Fund

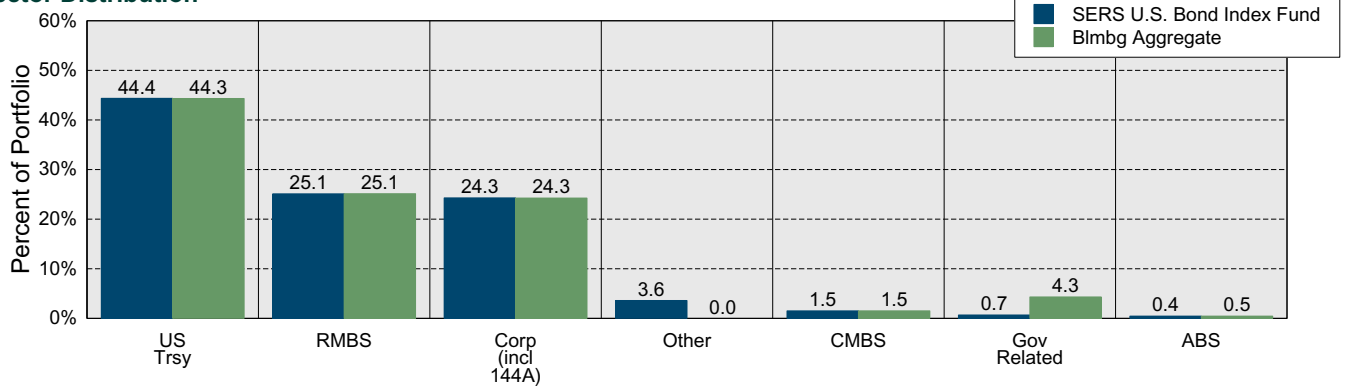
## Portfolio Characteristics Summary

### As of December 31, 2024

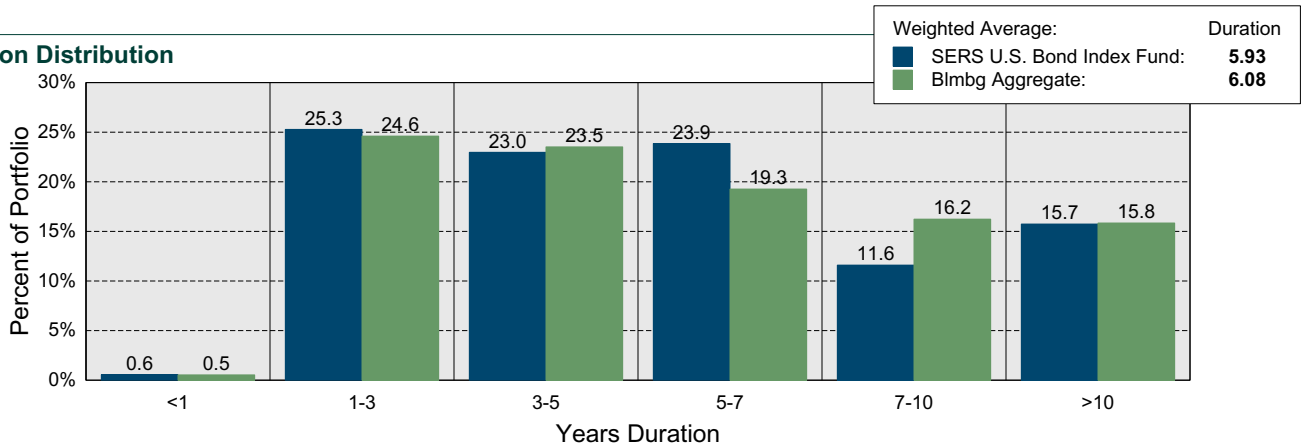
#### Portfolio Structure Comparison

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.

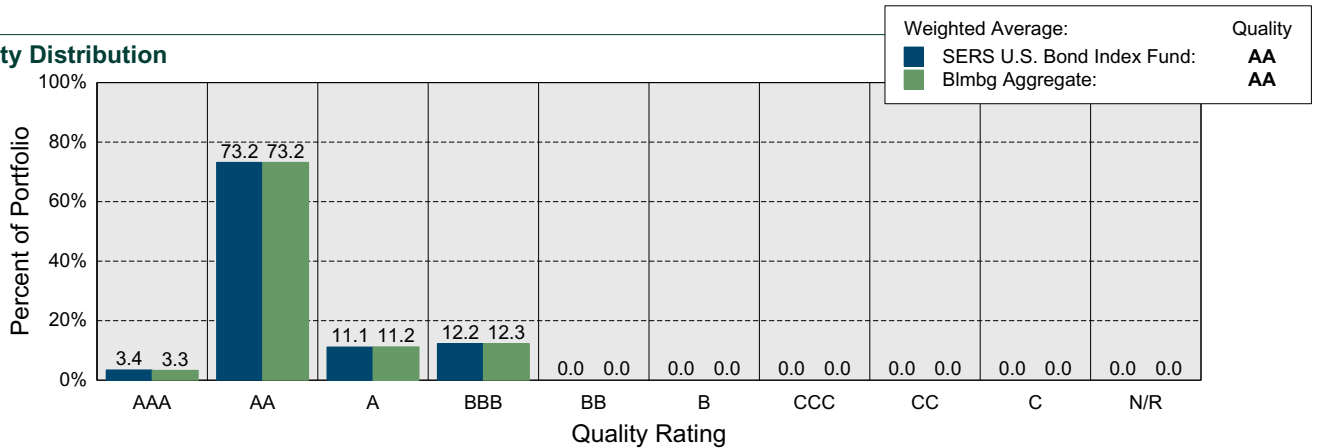
#### Sector Distribution



#### Duration Distribution



#### Quality Distribution



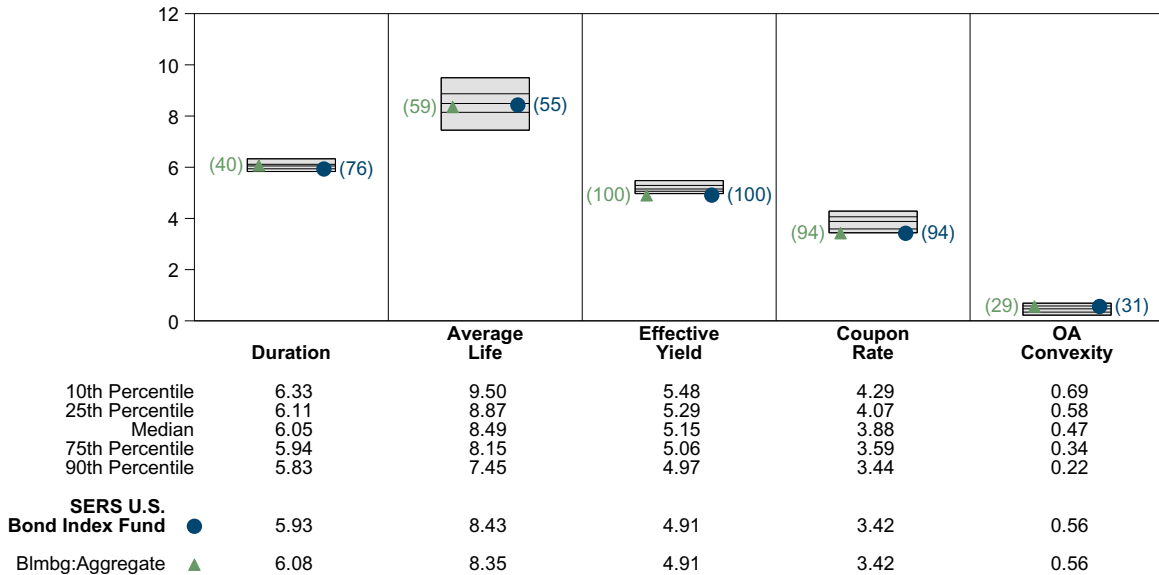
# SERS U.S. Bond Index Fund

## Bond Characteristics Analysis Summary

### Portfolio Characteristics

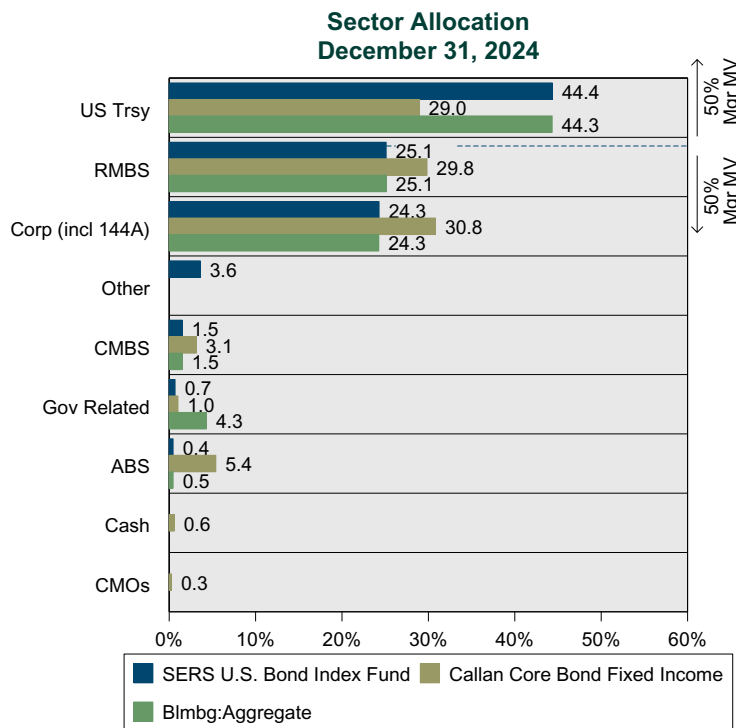
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

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

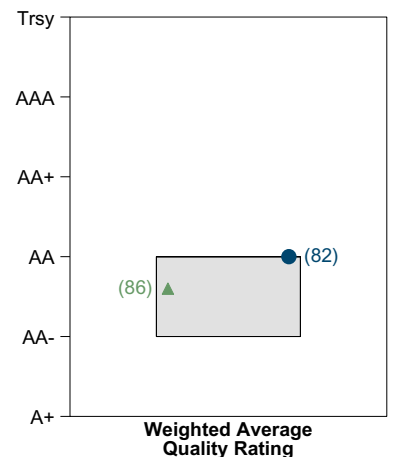


### Sector Allocation and Quality Ratings

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



10th Percentile AA  
 25th Percentile AA  
 Median AA  
 75th Percentile AA  
 90th Percentile AA-

**SERS U.S. Bond Index Fund** ● AA  
 Blmbg:Aggregate ▲ AA



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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.



## List of Callan’s Investment Manager Clients

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