

September 30, 2024

**Pennsylvania SERS 457(b)**



**Investment Measurement Service  
Quarterly Review**

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## Table of Contents

### September 30, 2024

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<b>Capital Markets Review</b>	
Capital Markets Overview	2
<b>Active Management Overview</b>	19
<b>Plan Assets and Performance</b>	24
<b>Risk-Based Funds</b>	
Post Retirement Date Fund	47
2025 Retirement Date Fund	50
2030 Retirement Date Fund	53
2035 Retirement Date Fund	56
2040 Retirement Date Fund	59
2045 Retirement Date Fund	62
2050 Retirement Date Fund	65
2055 Retirement Date Fund	68
2060 Retirement Date Fund	71
2065 Retirement Date Fund	73
<b>Domestic Equity</b>	
U.S. Large Company Stock Index Fund	75
U.S. Small/Mid Company Stock Index Fund	80
<b>International Equity</b>	
Global Non-U.S. Index Fund	86
<b>Domestic Fixed Income</b>	
Short Term Investment Fund	93
Stable Value Fund	95
U.S. Bond Index Fund	97
<b>Definitions</b>	
Market Indicators	102
Database Groups	103
Risk/Reward Statistics	105
<b>Disclosures</b>	106



## Strong U.S. Economy Refuses to Cooperate

### ECONOMY

**2** GDP rose 2.8% in 3Q24 after an equally robust 2Q figure. Job creation has clearly slowed, but the unemployment rate is still low. Overall, economic growth is solid, yet a downbeat mood is pervasive, in seeming defiance of these sunny economic reports.

## Rate Cut Spurs Rally With More Expected

### FIXED INCOME

**8** After the Fed cut rates 50 bps, fixed income rallied. The Fed “dot plot” expects two more cuts by year-end. The Aggregate had its second-best quarter in nearly 30 years. Global bonds also did well, and the U.S. dollar weakened against major currencies.

## Managers Outperform Leveraged Loans

### PRIVATE CREDIT

**12** Private credit gained 1.8% in 2Q24. Fundraising, by number of funds, is off historical levels but capital raised is in line with the last few years. Interest in the asset class by institutional investors has stayed strong, especially by public DB plans.

## Strong Year for Gains; Still Lag Benchmark

### INSTITUTIONAL INVESTORS

**4** All institutional investor types saw strong gains over the trailing one year ended 3Q24 but still lag a 60% stocks/40% bonds benchmark. Gains over longer time periods also lagged the benchmark. For institutional investors, their main focus now is on the Fed, after its first rate cut.

## Funds See Gains and REITs Top Equities

### REAL ESTATE/REAL ASSETS

**10** After eight consecutive quarters of negative returns, valuations have adjusted to reflect higher borrowing costs. Income returns were positive across sectors and regions in 3Q24, with Hotels the top performer. All property sectors saw flat or positive appreciation, except for Office.

## High Beta Managers Have Strong Quarter

### HEDGE FUNDS/MACs

**13** In 3Q, hedge funds had another strong performance, as strategies with higher beta to equity markets saw gains. Equity hedge strategies led returns, driven by generalist managers and those with a focus on health care. Multi-asset class (MAC) strategies also saw gains.

## Record High in U.S. And Big Global Gains

### EQUITY

**6** The U.S. equity markets hit a record high after a disappointing start to 3Q24. But narrow leadership (the Magnificent Seven) continues to be an issue. Global markets outpaced U.S. markets, and global ex-U.S. markets did well as tech stocks in the U.S. faced pressure.

## Fewer Funds but More Fundraising

### PRIVATE EQUITY

**11** The number of funds raised is significantly down, but the amount raised is higher than comparable periods in 2022 and 2023. Other activity has been similar to trends in 2023. Public equity outperformed private equity in the quarter, but not over longer time periods.

## Index Gains Slow in 2Q24; Balances Up

### DEFINED CONTRIBUTION

**15** The Callan DC Index rose 1.7% in 2Q24. Balances also rose, with investment gains the driver of the growth. U.S. large cap equity saw the largest percentage increases in allocation, while stable value had the largest decrease in allocation due to net outflows.

## Broad Market Quarterly Returns

### U.S. Equity Russell 3000



**6.2%**

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



**8.1%**

### U.S. Fixed Income Bloomberg Agg



**5.2%**

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



**8.5%**

Sources: Bloomberg, FTSE Russell, MSCI

# Strong U.S. Economy Refuses to Cooperate

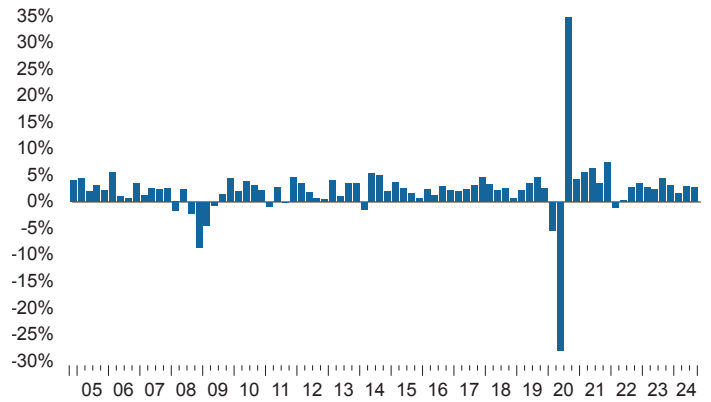
ECONOMY | Jay Kloepfer

Growth in the U.S. economy continues to defy a steady drumbeat of negative perception. Real GDP clocked a 2.8% rate of growth in 3Q24, after an equally robust 3.0% rate in 2Q. The rate of job creation has clearly slowed from that of 2022 and 2023, but September saw a monthly gain of 254,000, and the U.S. economy has averaged 200,000 new jobs per month so far this year. The rule of thumb in economics is that a rate of monthly job creation at or above 200,000 means the economy is expanding. The unemployment rate is still low at 4.1%, and weekly claims for unemployment benefits have dropped over the five months ending in September. So overall economic growth is solid, far stronger than expected at the start of the year, the job market is robust, and incomes and wages have risen substantially. Yet a downbeat mood is pervasive, in seeming defiance of these sunny economic reports.

Inflation has eased, but it doesn't feel like it to households and businesses alike. The cumulative impact on the cost of living from a generational spike in inflation looms large and is likely the chief culprit in the overall "bummer mood," to use the technical term, in the economy. The annual rate of inflation may have come back to 2.4% in September, but it is still positive, which means prices are still rising, just less quickly. Even if inflation goes to zero, prices will remain elevated; we'd need deflation to bring prices down. Deflation is kryptonite to economic policy. For businesses and government, the cost of goods and labor are now at substantially higher levels than four years ago. For households, higher wages help offset the higher costs of goods, services, and shelter, which is good. Average hourly earnings rose 20% between September 2020 and September 2024. However, the cost of new homes, rent, utilities, and groceries rose faster than wages over this period. Auto and home insurance are the new thorns in the consumer's side; the price index for auto insurance rose 16.3% year-over-year in September. The 2.4% rise in CPI in September was held down by a 15.3% drop in gasoline prices and similar declines in other energy-related sectors. Note that utility prices did not benefit from this drop in fuel prices over the past year, as they rose 3.4%.

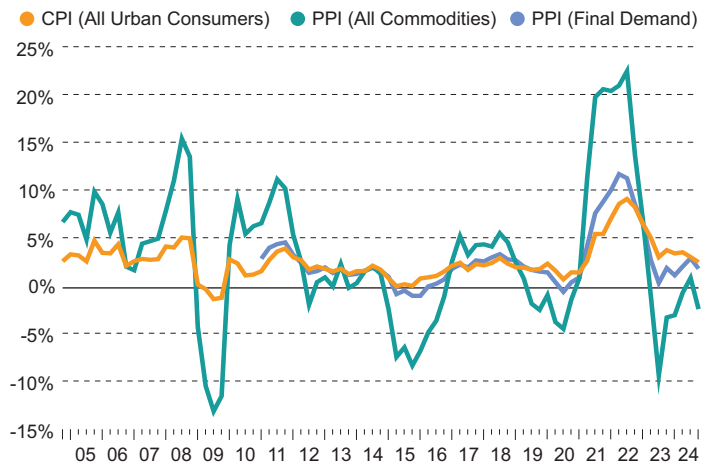
## Quarterly Real GDP Growth

(20 Years)



Source: Bureau of Economic Analysis

## Inflation Year-Over-Year



Source: Bureau of Labor Statistics

Digging through some of the details in the economic reports, the main driver of the strong 3Q GDP was consumer spending, spurred in large part by the strong job market. The leading categories of spending on services were health care (think outpatient services), hospitality, and accommodation; these are highly discretionary expenditures. Within goods, prescription drugs led non-durable goods, while motor vehicles and parts led durable goods spending. Business spending on equipment and intellectual property continued a long run of positive growth, likely driven in

part by the frenzy around AI. However, one of the main detractors to growth in 3Q24 was a reduction in inventory investment, the fifth negative quarter for inventory since the start of 2023. The steady drumbeat of a coming recession and Fed rate cuts may be to blame for spooking inventory investment. Finally, the housing market contracted for the second consecutive quarter, with “contraction” defined as a decline in residential housing investment. Housing prices remain elevated due to an unusual combination of high interest rates and limited supply. High rates would normally soften demand and push down prices, but the supply of homes for sale is limited, as existing homeowners choose to stay in their homes rather than face the higher cost of a new mortgage.

The Fed stepped up and cut interest rates 50 bps in September, only to now face the reality of a stronger economy than expected. The concern for some market participants is that the Fed move will spur exuberance in spending, and goose the stock market further, and this exuberance will potentially trigger a return of inflationary pressures, or at the least, slow the progress on bringing inflation down and keeping it there. The market sentiment on rate changes has been so far ahead of itself these past two years; it has become an unreliable narrator. If rates remain high for a while longer, that scenario suggests continuing economic growth—a good thing, right? If rates start to tail down, that scenario is often an indicator of growing economic problems. The challenge for Fed policy is that no elected official wants higher interest rates, at least not on their watch, and this is an election year.

### The Long-Term View

Index	3Q24	Periods Ended 9/30/24			
		1 Yr	5 Yrs	10 Yrs	25 Yrs
<b>U.S. Equity</b>					
Russell 3000	6.2	35.2	15.3	12.8	8.4
S&P 500	5.9	36.4	16.0	13.4	8.2
Russell 2000	9.3	26.8	9.4	8.8	8.3
<b>Global ex-U.S. Equity</b>					
MSCI EAFE	7.3	24.8	8.2	5.7	4.6
MSCI ACWI ex USA	8.1	25.4	7.6	5.2	--
MSCI Emerging Markets	8.7	26.1	5.7	4.0	--
MSCI ACWI ex USA Small Cap	8.9	23.3	8.2	6.1	6.8
<b>Fixed Income</b>					
Bloomberg Agg	5.2	11.6	0.3	1.8	4.1
90-Day T-Bill	1.4	5.5	2.3	1.6	1.9
Bloomberg Long G/C	8.0	17.2	-2.0	2.3	5.6
Bloomberg GI Agg ex US	8.5	12.3	-1.9	-0.5	2.6
<b>Real Estate</b>					
NCREIF Property	0.8	-3.5	3.3	5.9	7.7
FTSE Nareit Equity	16.1	34.7	5.5	7.8	10.1
<b>Alternatives</b>					
Cambridge PE*	1.0	4.6	13.8	13.1	12.7
Cambridge Senior Debt*	1.2	7.5	6.9	6.8	4.3
HFRI Fund Weighted	2.9	12.7	7.4	5.1	6.1
Bloomberg Commodity	0.7	1.0	7.8	0.0	2.2
<b>Inflation – CPI-U</b>	0.4	2.4	4.2	2.9	2.6

\*Data for most recent period lags. Data as of 2Q24.  
Sources: Bloomberg, Bureau of Economic Analysis, FTSE Russell, Hedge Fund Research, MSCI, NCREIF, Refinitiv/Cambridge, S&P Dow Jones Indices

### Recent Quarterly Economic Indicators

	3Q24	2Q24	1Q24	4Q23	3Q23	2Q23
Employment Cost: Total Compensation Growth	3.9%	4.1%	4.2%	4.2%	4.3%	4.5%
Nonfarm Business: Productivity Growth	2.2%	2.1%	0.7%	3.1%	3.8%	3.7%
GDP Growth	2.8%	3.0%	1.6%	3.2%	4.4%	2.4%
Manufacturing Capacity Utilization	76.8%	77.2%	77.1%	77.6%	78.1%	78.4%
Consumer Sentiment Index (1966=100)	68.1	71.1	78.4	64.9	69.6	62.3

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

# Strong Year for Gains but Still Lag Benchmark

## INSTITUTIONAL INVESTORS

- All institutional investor types saw extremely strong gains over the trailing one year ending 3Q24, counterbalanced by much weaker gains over the last three years.
- Despite that, they still continued to significantly lag stocks and a 60% stocks/40% bonds benchmark over shorter time frames.
- Nonprofits did best over the trailing one year, followed closely by corporate and public defined benefit (DB) plans, with Taft-Hartley plans lagging behind.
- Gains over the last 10 and 20 years significantly lagged the 60% stocks/40% bonds benchmark.
- For institutional investors, their primary focus now is on the Fed.
- After its first rate cut in over four years, are more cuts on the table?
- It is “much closer” to its 2% target, Fed Chair Jerome Powell said.

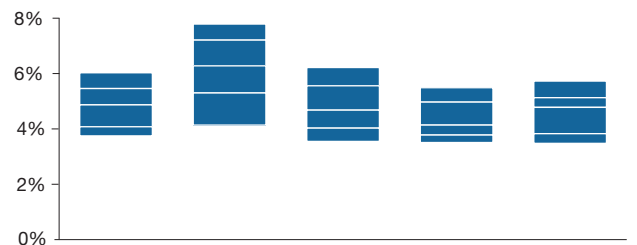
### Public defined benefit (DB) plans

- Return enhancement and risk mitigation are the most significant concerns.
- Interest in private real estate has taken some twists and turns. It was low four years ago, then took two consecutive

big jumps in our exclusive survey of Callan clients, dropped back down, and then spiked again.

- In a sharp reversal, there was a jump in the share of clients planning to increase global ex-U.S. equity allocations after a big share said they planned to cut allocations in 1Q24, according to our survey.
- There was almost no interest in changing allocations to other public markets asset classes, either increasing allocations or decreasing them.

### Quarterly Returns, Callan Database Groups (9/30/24)



	Public	Corporate	Nonprofit	Taft-Hartley	Insurance Assets
10th Percentile	6.0	7.8	6.2	5.5	5.7
25th Percentile	5.5	7.2	5.6	5.0	5.1
Median	4.9	6.3	4.7	4.1	4.8
75th Percentile	4.1	5.3	4.0	3.8	3.8
90th Percentile	3.8	4.1	3.6	3.5	3.5

Source: Callan

### Callan Database Median and Index Returns\* for Periods Ended 9/30/24

Database Group	Quarter	1 Year	3 Years	5 Years	10 Years	20 Years
Public Database	4.9	19.4	4.7	8.5	7.5	7.4
Corporate Database	6.3	19.6	1.1	5.4	6.0	6.7
Nonprofit Database	4.7	19.9	4.6	8.5	7.1	7.2
Taft-Hartley Database	4.1	17.6	4.3	8.0	7.3	7.0
Insurance Assets Database	4.8	14.0	2.6	4.4	4.3	4.6
All Institutional Investors	5.0	19.4	4.1	7.9	7.1	7.1
Large (>\$1 billion)	4.6	17.5	4.1	8.3	7.4	7.3
Medium (\$100mm - \$1bn)	4.9	19.5	4.2	8.0	7.1	7.2
Small (<\$100 million)	5.2	20.6	4.1	7.8	6.8	6.8
60% S&P 500/40% Bloomberg Agg	5.6	26.1	6.6	9.9	8.9	8.0

\*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**

- Pension risk transfer (PRT) is now the top issue, according to our survey.
- In 3Q21, we started asking consultants about corporate DB plans with a focus on three key areas: funded status, funded basis, and plan goals.
- For the first time, PRT was the top goal of corporate DB plans.
- Closing the funding gap, which had typically been the top goal, was No. 2 in 3Q24.
- The share of plans with a funded status above 100% has held fairly steady, with more than 4 of 10 plans at that level. And the vast majority of plans have a funded status above 91%.
- Funded basis has also held fairly steady, with every client this quarter citing projected benefit obligation (PBO).

**Defined contribution (DC) plans**

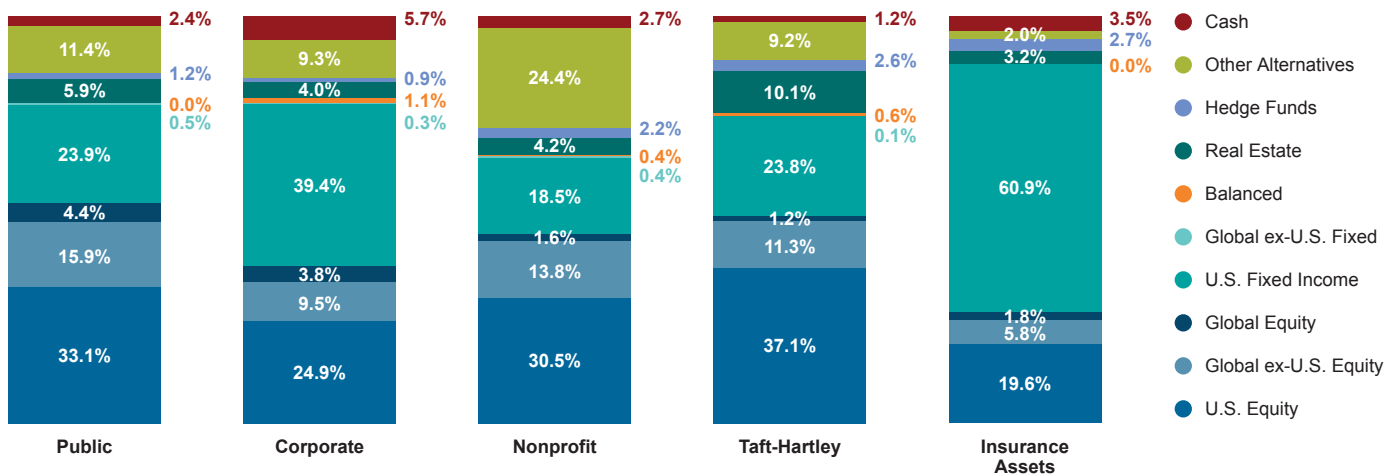
- Roughly 10% have a private real estate or real assets product in the target date fund, according to our survey.
- Fees remain the top issue for DC plans, as they have been for years.

- The percentage of clients with a private real estate or real assets product has held steady since 3Q21.
- Before that, nearly a fifth of plans on a consistent basis had such a product.
- Another issue coming to the forefront for many DC plan sponsors is retirement income.

**Nonprofits**

- They have little interest in changes to alternative asset allocations, our survey found.
- Nonprofit clients indicated they planned no or only small adjustments for every alternative asset class in 3Q24.
- The percentage of clients that planned to increase private equity fell to 0% from 11% in 1Q24.
- At the same time, the share planning to cut hedge fund allocations also fell, to 3% from 15%.
- Interest in adding to private real estate allocations also dropped after holding relatively steady since 1Q22 and hit the lowest level since 3Q21.

**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 had a disappointing start to 3Q24 as the S&P 500 Index dropped in July.
- But the market rallied in the last months of 3Q to end the quarter at a record high.
- All sectors within the S&P 500 posted positive returns over the quarter except for the Energy sector. As a result of the Fed's rate cut decision, the bond proxy sectors (Real Estate and Utilities) performed the best.
- During 3Q, value outperformed growth across the market cap spectrum. Small cap stocks outperformed large cap stocks.
- Narrow leadership continues to be an issue for U.S. stocks. YTD, the "Magnificent Seven" stock returns accounted for 45% of the returns of the S&P 500 Index.

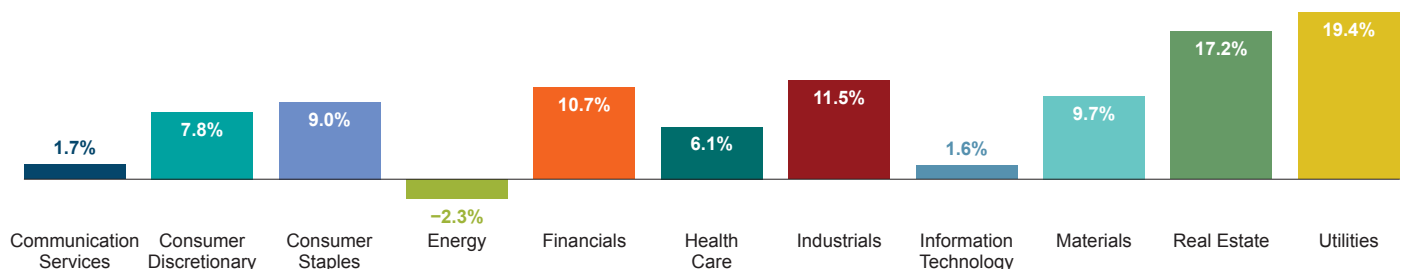
### Top performers have broadened out

- The "Magnificent Seven" stocks experienced increased volatility and mixed results in 3Q. Four of these stocks underperformed the S&P 500 Index.
- Better earnings growth expectations for the market relative to the "Magnificent Seven" could result in broader market leadership.
- Although the long-term trend may have reversed in the last quarter, a large percentage of S&P 500 Index returns since 2021 are attributable to the "Magnificent Seven."

### Small cap valuations

- Small cap relative valuations are historically low across numerous forward and trailing valuation multiples.

### Quarterly Performance of Industry Sectors (9/30/24)



Source: S&P Dow Jones Indices

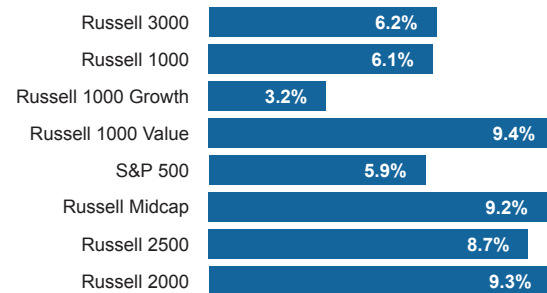
- Small cap continues to trade at large discounts relative to large cap.
- This may be indicative of an attractive entry point for increased allocation.

## Global Equities

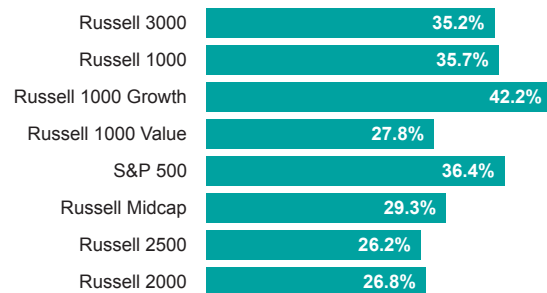
### Global ex-U.S. markets outpace U.S. as technology lags

- Global equity markets rose while central banks began easing monetary policy and cutting interest rates.

### U.S. Equity: Quarterly Returns (9/30/24)



### U.S. Equity: One-Year Returns (9/30/24)



Sources: FTSE Russell and S&P Dow Jones Indices

- Market gains broadened to include more value stocks and previously underperforming sectors.
- Global ex-U.S. markets outpaced U.S. markets as the technology sector, a large portion of the U.S. market, faced pressure from AI spending scrutiny.
- Emerging markets outperformed developed markets with Asia being the strongest region within emerging markets.

### Emerging markets

- China led a sharp rally higher in emerging markets after the Chinese government announced extensive stimulus measures aimed at tackling weakening economic activity, deflation, and its deteriorating property market.

### Growth vs. value

- Generally, value-oriented sectors led markets higher as the technology sector hindered growth concerns. One exception was China, as stimulus announcements boosted beaten-down Chinese tech companies.

### U.S. dollar strength

- The U.S. Dollar Index (DXY) declined over 3Q amid a much-anticipated rate cut by the U.S. Federal Reserve.

### Quality growth managers struggle

- While outperforming in 2022, global quality growth managers have struggled since 2023, as high-growth names, often viewed as low-quality, have driven much of the market.

### High growth rewarded last 18 months

- While high-growth managers were punished in 2022, they performed exceptionally well in 2023 and 2024.
- Still, on a three-year basis, quality growth managers have tended to outperform high-growth managers but still struggle against the ACWI index.

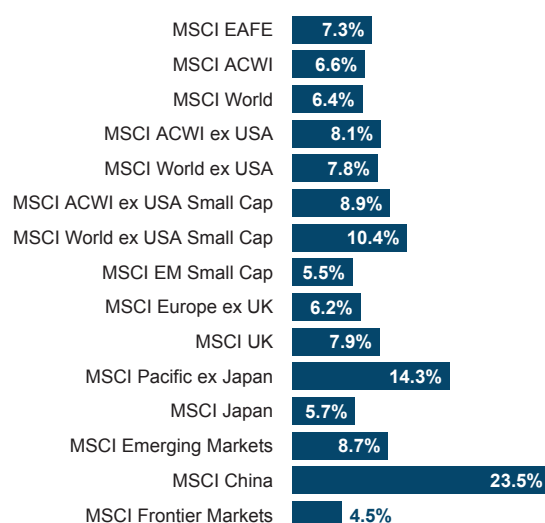
### China's stimulus: what and why

- On Sept. 24, 2024, China announced a broad economic stimulus package. This is likely due to declining consumer sentiment and investor pressure.

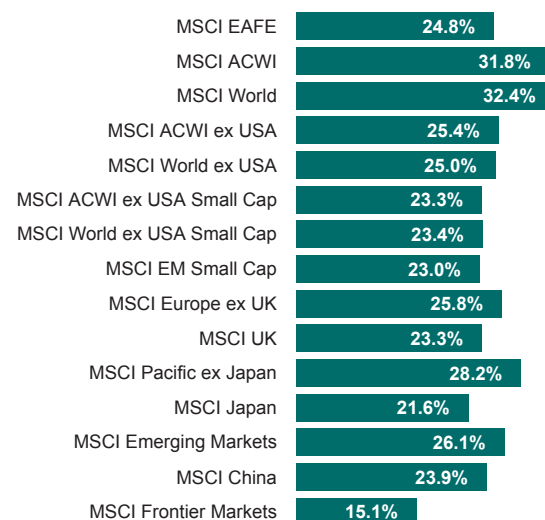
### Results

- Stock markets initially rallied between 10%-30%, moving into YTD gain territory. Valuations are still at 10-year lows.
- China has the worst pass-through from GDP growth to earnings and investor returns since 2010. While the stimulus may assist with GDP growth, it may not correlate to better stock performance.

### Global ex-U.S. Equity: Quarterly Returns (U.S. Dollar, 9/30/24)



### Global ex-U.S. Equity: One-Year Returns (U.S. Dollar, 9/30/24)



Source: MSCI

# Fixed Income

## U.S. Fixed Income

### Rate cut spurs market rally

- The Fed lowered rates for the first time since 2020, reducing its overnight target by 50 bps; Fed “dot plot” indicates two more cuts by year-end.
- U.S. Treasuries fell across the curve; 10-year Treasury yield declined to 3.81% from 4.36% at the beginning of the quarter.
- The yield curve took a step toward normalization with the 2s/10s ending positive, though rates at the front-end remain elevated vs. intermediate- and long-term.

### Performance and drivers

- The Bloomberg US Aggregate Index gained 5.2%, the second-best quarter in nearly 30 years, led by the rally in rates.
- Investment grade corporates and all securitized sectors outperformed U.S. Treasuries on a duration-adjusted basis.
- High yield corporate excess returns (+1.7%) outpaced investment grade corporate excess returns (+0.8%).

### Valuations

- Despite significant widening in late July, both IG and HY spreads ended tighter over the quarter.
- HY defaults declined to 1.8%, while bank loans rose to 3.1%, widening the gap between them to the highest since 2014.
- New issuance continued to be strong, adding \$424 billion in IG and \$78 billion in HY debt.

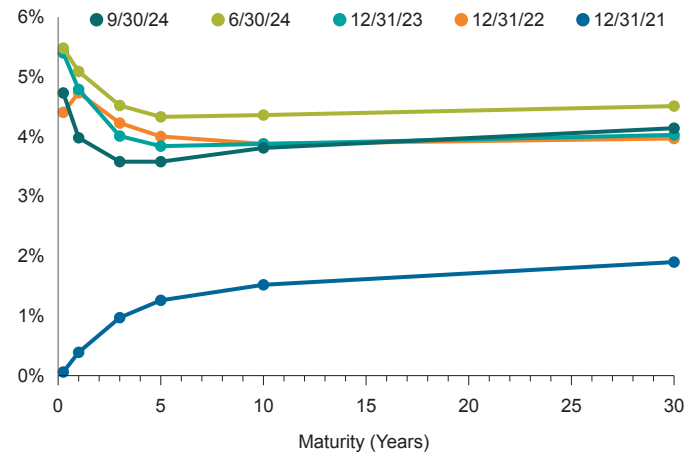
### Munis posted gains but underperformed U.S. Treasuries

- Bloomberg Municipal Bond Index (+2.7%) vs. Bloomberg US Treasury Index (+4.7%)

### AAA-rated muni yield curve normalized

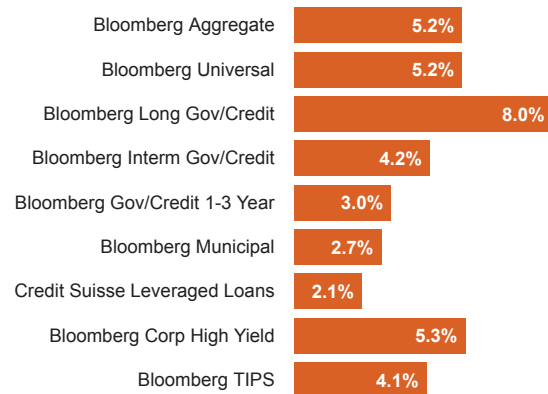
- 2-year and 10-year AAA rates fell by 77 bps and 23 bps, respectively; spread now +24 bps
- Maximum inversion of -50 bps was April 2024.
- Followed path of U.S. Treasury yield curve, which also normalized during the quarter (2-year vs 10-year)

## U.S. Treasury Yield Curves

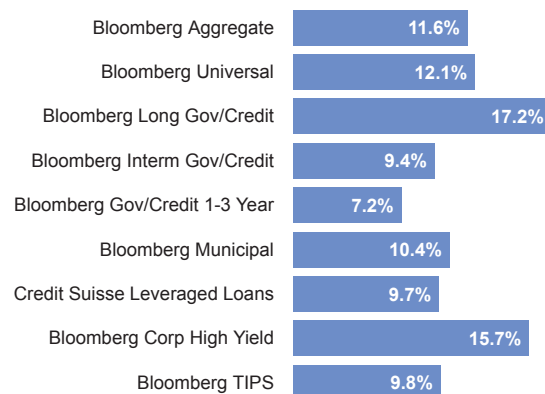


Source: Bloomberg

## U.S. Fixed Income: Quarterly Returns (9/30/24)



## U.S. Fixed Income: One-Year Returns (9/30/24)



Sources: Bloomberg and Credit Suisse

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

- 10-year AAA Muni/10-year U.S. Treasury yield ratio rich relative to 10-year median (69% now vs. 85% historical)
- Need for increased infrastructure spending could benefit municipal bond issuance in years to come

**Corporate new debt issuance remains robust**

- Investment-grade corporate issuers continued the surge of new debt, issuing \$424 billion in 3Q, bringing the total YTD to more than \$1.3 trillion, already more than 7 of the last 10 years. At the current pace, new issuance will surpass \$1.7 trillion by year-end, the second-highest total on record.
- High yield new issuance was also robust, with approximately \$78 billion issued over the quarter. This brings the total issuance YTD to nearly \$250 billion, more than each of the last two calendar years.

**Global Fixed Income**

**Macro environment**

- Developed market rates declined as growth and inflation expectations moved lower.
- Several central banks cut rates over the quarter while the Bank of Japan unexpectedly raised its target to 0.25%, its highest rate since 2008.

**U.S. dollar weakens**

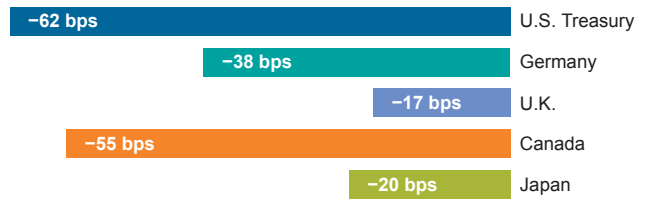
- The U.S. dollar weakened relative to major currencies, reversing the trend from the first half of the year and enhancing returns for unhedged investors.
- Within the U.S. Dollar Index (DXY), Japanese yen saw the largest relative gain, rising 12% vs. the U.S. dollar.

**Emerging market debt posts strong quarter**

- EM central banks broadly continued their easing policies, though Brazil raised its rate and signaled future hikes.
- The rally in EM currencies enhanced returns for EM debt, with the JPM GBI-EM Global Diversified Index gaining 9.0%.

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

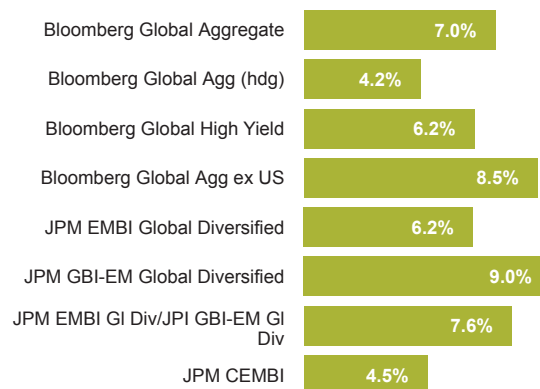
2Q24 to 3Q24



Source: Bloomberg

**Global Fixed Income: Quarterly Returns**

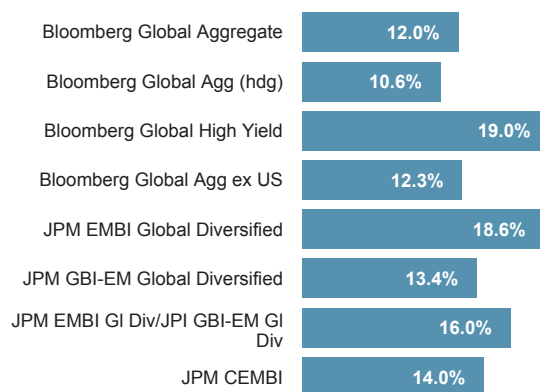
(9/30/24)



Sources: Bloomberg and JPMorgan Chase

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

(9/30/24)



Sources: Bloomberg and JPMorgan Chase

# Funds See Gains and REITs Top Equities

REAL ESTATE/REAL ASSETS | Munir Iman

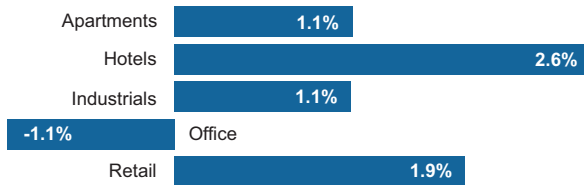
## Valuations reflect higher interest rates

- After eight consecutive quarters of negative returns, valuations have adjusted to reflect higher borrowing costs.
- Income returns were positive across sectors and regions in 3Q24, with Hotels the top performer.
- All property sectors experienced flat or positive appreciation, except for Office, which dropped 2.5%.

## REITs top equities

- Global REITs outperformed in 3Q24, up 16.1% compared to a 6.4% increase for global equities (MSCI World).
- U.S. REITs gained 16.0% in 3Q24, in contrast with the S&P 500 Index, which rose 5.9%.
- REITs are trading at a premium to NAV (+2.0%) for the first time since January 2022.
- Historically, global REITS have traded at a -3.8% discount to NAV.

## Sector Quarterly Returns by Property Type (9/30/24)



Source: NCREIF

## Callan Database Median and Index Returns\* for Periods Ended 9/30/24

Private Real Assets	Quarter	Year to Date	1 Year	3 Years	5 Years	10 Years	20 Years
<b>Real Estate ODCE Style</b>	<b>0.1</b>	<b>-2.8</b>	<b>-8.0</b>	<b>-0.6</b>	<b>2.4</b>	<b>5.6</b>	<b>5.6</b>
NFI-ODCE (value-weighted, net)	0.0	-3.2	-8.0	-1.0	2.1	5.2	5.7
NCREIF Property	0.8	-0.5	-3.5	0.9	3.3	5.9	7.2
NCREIF Farmland	-0.2	0.3	2.6	6.2	5.6	6.7	12.0
NCREIF Timberland	1.5	5.4	10.0	10.9	7.5	5.9	7.1
<b>Public Real Estate</b>							
<b>Global Real Estate Style</b>	<b>15.9</b>	<b>13.2</b>	<b>31.1</b>	<b>2.0</b>	<b>4.0</b>	<b>6.4</b>	<b>7.5</b>
FTSE EPRA Nareit Developed	13.9	15.2	28.2	6.1	4.8	6.3	--
<b>Global ex-U.S. Real Estate Style</b>	<b>16.1</b>	<b>10.8</b>	<b>29.7</b>	<b>-2.1</b>	<b>2.1</b>	<b>5.0</b>	<b>--</b>
FTSE EPRA Nareit Dev ex US	16.8	8.0	24.1	-4.0	-1.6	1.6	--
<b>U.S. REIT Style</b>	<b>15.9</b>	<b>15.3</b>	<b>33.7</b>	<b>4.3</b>	<b>6.4</b>	<b>8.4</b>	<b>8.9</b>
FTSE EPRA Nareit Equity REITs	16.1	15.9	34.7	5.1	5.5	7.8	8.1

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

## Over \$250 billion in dry powder

- ODCE redemption queues are approximately 18.9% of net asset value, with a median queue of 15.0%. This compares to the GFC when queues peaked at approximately 15% of net asset value (NAV).
- Outstanding redemption requests for most large ODCE funds are approximately 6% to 33% of NAV (with one outlier at 56%).
- For a large proportion of funds, these redemptions are partial redemptions, due to portfolio rebalancing and liquidity needs. For a smaller underperforming subset, redemption requests are full redemptions indicative of manager termination.

## Pricing, transaction volumes on the rise

- Transaction volume is increasing on a rolling four-quarter basis yet remains below five-year averages.
- In 3Q24, transaction volume increased slightly on a quarter-over-quarter basis. Transaction volume remains significantly lower compared to 2022.
- The rise in interest rates is the driving force behind the slowdown in transactions. Increasing transactions are driven by rising confidence in multi-family and industrial values. Valuations have largely adjusted to higher borrowing costs.

# Fewer Funds but More Fundraising

PRIVATE EQUITY | Ashley Kahn

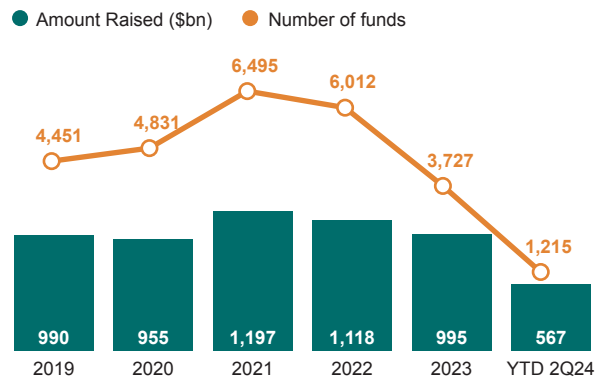
**Fundraising** ► The first half of 2024 showed mixed signals in terms of fundraising. The number of funds raised is significantly down from years prior, but the amount raised actually exceeds the first halves of both 2022 and 2023. As was the case in 2023, capital continues to concentrate with larger funds. Small venture capital funds, which historically make up a large portion of the number of funds raised, have experienced the greatest challenges fundraising today.

**Buyouts** ► Buyout activity levels in 2024 are similar to 2023, which represents a return to the pre-pandemic activity levels of 2019. In hindsight, 2021-22 appear to be the exceptional years, characterized by exuberance in deal activity, while 2023-24 are much closer to historical levels.

**Venture Capital and Growth Equity** ► The first half of 2024 represents a continuation of the slower pace of activity in 2023, although managers are generally more optimistic about making new investments. This year has seen a notable recovery in late-stage valuations. Companies able to raise follow-on financing typically do so at an up round. Similarly, early-stage valuations in 2024 rose by 25% from the prior year.

**Exits** ► The first half of 2024 represents a continuation of the slower pace of exits in 2023, although managers are generally more optimistic about seeking an exit this year. Both

## Annual Fundraising (6/30/24)



Source: Pitchbook

IPOs and M&A exits are down in 1H24 compared to 1H23 by roughly 10%. Persistent buyer-seller valuation gaps continue to dampen exit activity, and the interest rate cut is not yet reflected in the 2Q24 data.

**Returns** ► Public equity's exceptional performance in the first half of the year (led by the "Magnificent Seven" technology stocks) has left private equity in its wake. Private equity returns are not as volatile as the public markets, and private equity doesn't typically outperform when public equity is at record highs (it likewise doesn't drop as sharply when public equity drops). Over the long term, private equity consistently outperforms public equity by 1%-3%.

## Private Equity Performance (%) (Pooled Horizon IRRs through 6/30/24\*)

Strategy	Quarter	1 Year	3 Years	5 Years	10 Years	20 Years
All Venture	-0.8%	-1.3%	-3.2%	14.7%	15.0%	12.4%
Growth Equity	1.4%	4.1%	0.2%	13.4%	13.0%	13.4%
All Buyouts	1.4%	6.6%	6.8%	14.8%	13.3%	14.0%
Mezzanine	2.3%	9.4%	9.3%	11.2%	10.9%	11.3%
Credit Opportunities	1.8%	8.5%	7.6%	8.5%	7.2%	9.2%
Control Distressed	0.6%	2.8%	9.0%	13.4%	10.7%	11.3%
<b>All Private Equity</b>	<b>1.0%</b>	<b>4.6%</b>	<b>3.8%</b>	<b>14.0%</b>	<b>13.0%</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.

# Outperformed Leveraged Loans over 5, 10, and 20 Years

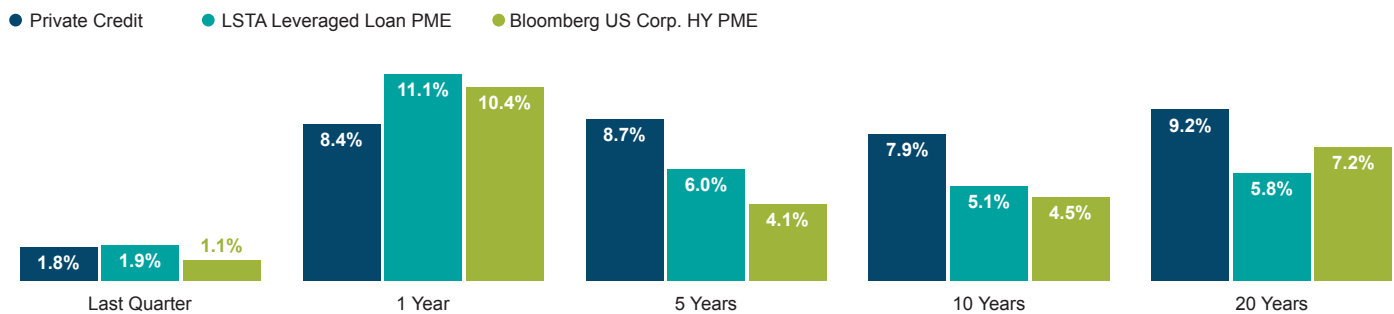
PRIVATE CREDIT | Cos Braswell and Daniel Brown

Private credit gained 1.8% in 2Q24, the most recent quarter available, roughly even with a leveraged loan index and above a high yield index. Over longer time periods it has handily outperformed both indices. Fundraising, by number of funds, is off historical levels but capital raised is in line with the last few years. Interest in the asset class by institutional investors has stayed strong.

- Private credit performance varies across sub-asset class and underlying return drivers. Over the past 10 years the asset class has generated a net IRR of 7.9% as of 2Q24, outperforming leveraged loans. Higher-risk strategies have performed better than lower-risk strategies.
- The number of funds closed in 2Q24 was the lowest we’ve seen in years; however, aggregate capital raised is in line with the last few years and outpaced historical quarters.
- 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%.
- Private credit AUM stood at over \$1.5 trillion at the end of 2023, with Preqin forecasting the asset class could grow to over \$2.5 trillion by 2028. Private credit AUM growth is expected to remain steady across geographies. While CAGR grew at about 17.5% from 2016 to 2022, CAGR is forecasted at 11.1% from 2024 to 2028.
- About 90% of investors expect either to maintain or increase their allocation in the next year.
- Direct lending is expected to grow steadily through 2028 as investors increase their private credit allocations. Distressed exposure should grow a bit more slowly with other strategies such as specialty finance and other niche diversifiers growing more quickly.

## Private Credit Performance (%) (Pooled Horizon IRRs through 6/30/24\*)



## Private Credit Performance (%) (Pooled Horizon IRRs by Strategy through 6/30/24\*)

Strategy	Quarter	1 Year	5 Years	10 Years	20 Years
Senior Debt	1.2	7.5	7.1	7.1	7.3
Subordinated	2.3	9.4	11.2	10.9	11.2
Credit Opportunities	1.8	8.5	8.5	7.2	9.0
<b>Total Private Credit</b>	<b>1.8</b>	<b>8.4</b>	<b>8.7</b>	<b>7.9</b>	<b>9.2</b>

Source: LSEG/Cambridge

\*Most recent data available at time of publication

# Higher Beta Hedge Fund Strategies Have a Strong Quarter

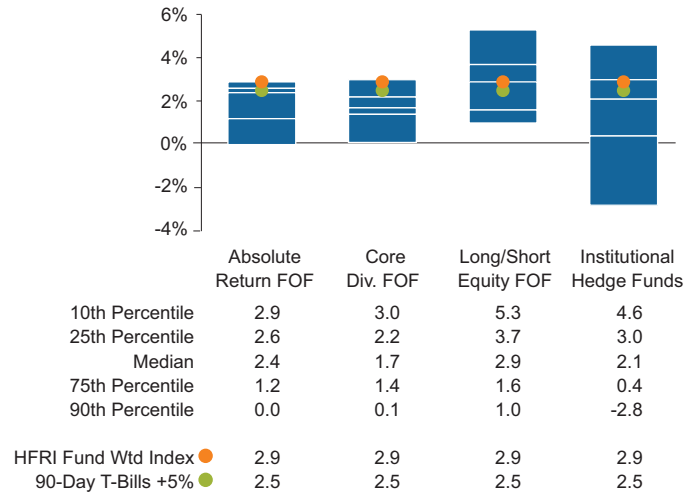
HEDGE FUNDS/MACs | Joe McGuane

The market backdrop served as a strong tailwind for most hedge fund strategies in 3Q24. U.S. equity markets ended a volatile quarter higher, driven by strong corporate earnings and the Federal Reserve's larger-than-expected interest rate cut in September. Credit indices saw gains across the board, with investment grade and high yield bond indices outperforming levered loans. Emerging, European, and Asian markets were mixed. Within emerging markets, China outperformed its peers due to improved investor sentiment following the government's announcement of a monetary stimulus package.

In 3Q, hedge funds had another strong performance, as strategies with higher beta to equity markets saw gains. Equity hedge strategies led returns, driven by generalist managers and those with a focus on health care. Relative value strategies were positive, as performance was driven by fundamental and systematic equity relative value. Event-driven strategies also had a strong quarter, as a focus on deep value companies and mergers drove performance. Macro strategies ended slightly lower, as gains from long positions in U.S., European, and U.K.

## Hedge Fund Style Group Returns

(9/30/24)



Sources: Callan, Credit Suisse, Federal Reserve

rates, fixed income relative value trading in the U.S., and long gold were offset by losses from shorting Japanese rates, long positions in the U.S. dollar, and going long Japanese equities.

## Callan Peer Group Median and Index Returns\* for Periods Ended 9/30/24

Hedge Fund Universe	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years
Callan Institutional Hedge Fund Peer Group	2.1	9.4	5.9	7.5	6.7	7.3
Callan Fund-of-Funds Peer Group	1.9	10.3	4.3	6.2	4.6	5.0
Callan Absolute Return FOF Style	2.4	9.6	5.4	6.1	4.5	4.9
Callan Core Diversified FOF Style	1.7	10.3	4.4	6.3	4.1	4.9
Callan Long/Short Equity FOF Style	2.9	13.6	1.9	6.5	5.7	5.7
HFRI Fund Weighted Index	2.9	12.7	4.0	7.4	5.1	5.1
HFRI Fixed Convertible Arbitrage	3.6	10.9	4.9	7.1	5.5	5.7
HFRI Distressed/Restructuring	3.6	13.1	4.1	7.7	4.7	5.9
HFRI Emerging Markets	4.7	14.9	1.0	5.6	4.0	3.8
HFRI Equity Market Neutral	1.5	9.8	5.2	4.4	3.6	3.2
HFRI Event-Driven	4.6	13.4	4.5	7.4	5.1	5.8
HFRI Relative Value	2.6	9.4	4.3	5.1	4.2	5.3
HFRI Macro	-0.6	3.9	4.3	5.2	3.2	2.6
HFRI Equity Hedge	4.0	17.4	3.6	9.0	6.1	5.9
HFRI Multi-Strategy	4.7	13.5	2.2	6.5	3.6	4.1
HFRI Merger Arbitrage	3.5	7.5	4.4	6.0	4.9	4.4
90-Day T-Bill + 5%	2.6	10.5	8.5	7.3	6.6	6.1

\*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 Callan Institutional Hedge Fund Peer Group member rose 2.1%. Within this style group of 50 peers, the average hedge credit manager gained 2.9%, driven by interest rate volatility. Meanwhile, the average hedge equity manager added 0.3%, as those focused on health care, utilities, and real estate drove performance. The median Callan Institutional hedge rates manager rose 2.9%, largely driven by relative value fixed income trades.

Within the HFRI indices, the best-performing strategy in 3Q24 was event-driven, which was up 4.6%, as managers were able to profit off their positioning to out-of-favor equities. Equity hedge strategies gained 4.0%, as managers benefited from dispersion in utilities, health care, and real estate. Relative value strategies were up 2.6% due to the Fed lowering interest rates. Macro strategies were down 0.6%, as a weakening dollar offset gains from rates positioning during the quarter.

Across the Callan Hedge FOF database, the median Callan Long-Short Equity FOF ended 2.9% higher, as managers with a more generalist approach were able to profit off dispersion across sectors. Meanwhile, the median Callan Core Diversified FOF gained 1.7%, as equity and event-driven strategies drove performance. The median Callan Absolute Return FOF gained 2.4%, as a higher allocation to relative value strategies drove performance.

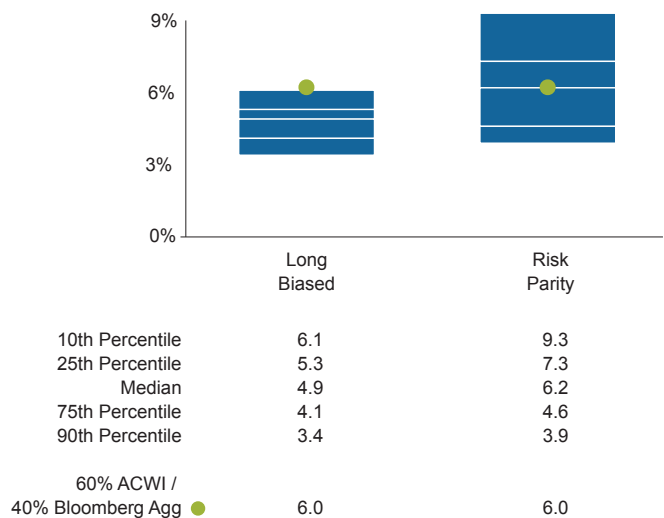
Since the Global Financial Crisis, liquid alternatives to hedge funds have become popular among investors for their attractive risk-adjusted returns that are similarly uncorrelated with traditional stock and bond investments but offered at a lower cost.

Within Callan's database of liquid alternative solutions, the median Callan MAC Long Biased manager rose 4.9%, as the strong equity rally pushed performance higher. The Callan MAC Risk Parity peer group rose 6.2%, as equities and fixed income positioning drove performance.

If consensus expectations are met for a sustained stable growth and low inflation environment, markets can continue to

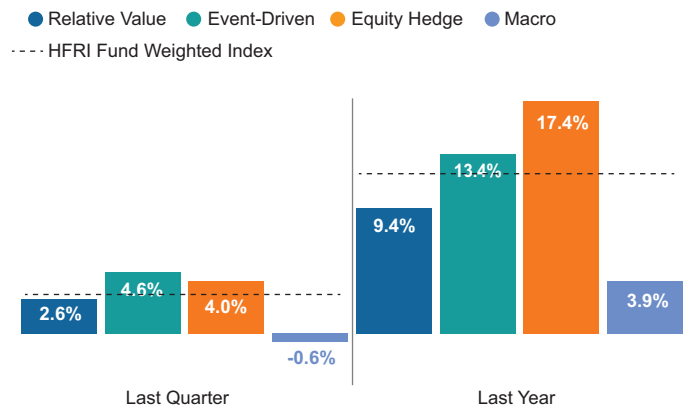
grind higher, and corporate profit margins and balance sheets for the largest companies can remain healthy. With markets priced close to perfection, one bad data point can cause markets to sell off. Against this current backdrop, Callan is focused on managers with the skill to generate alpha both on the long and short side across equities, fixed income, rates, currencies, and commodities.

### MAC Style Group Returns (9/30/24)



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

### HFRI Hedge Fund-Weighted Strategy Returns (9/30/24)



Source: HFRI

# Index Gains Slow in 2Q24

DEFINED CONTRIBUTION | [Scotty Lee](#)

## Performance: Index gains slow in 2Q24

- The Callan DC Index™ gained 1.68% in 2Q24, which brought the Index’s trailing one-year gain to 15.3%. The Age 45 Target Date Fund (analogous to the 2045 vintage) had a higher quarterly return (1.74%).

## Growth Sources: Balances rise due to investment gains

- Balances within the DC Index rose by 1.1% after a 6.6% increase in the previous quarter. Investment gains (1.7%) were the driver of the gain, while net flows (-0.6%) had a contrary effect.

## Turnover: Net transfers fall

- Turnover (i.e., net transfer activity levels within DC plans) in the DC Index decreased to 0.17% from the previous quarter’s measure of 0.44%. The Index’s historical average (0.54%) remained steady.

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

- Target date funds (TDFs) garnered 75.8% of quarterly net flows. Within equities, investors withdrew assets from U.S. large cap equity (-32.6%) and U.S. small/mid-cap equity (-18.7%). Notably, stable value (-29.6%) saw relatively large outflows for the seventh consecutive quarter.

## Equity Allocation: Exposure rises

- The Index’s overall allocation to equity (73.7%) rose slightly from the previous quarter’s level (73.5%).

## Asset Allocation: Fixed income exposure falls

- U.S. large cap equity (28.5%) and target date funds (35.6%) were among the asset classes with the largest percentage increases in allocation, while stable value (6.4%) had the largest decrease in allocation from the previous quarter due to net outflows.

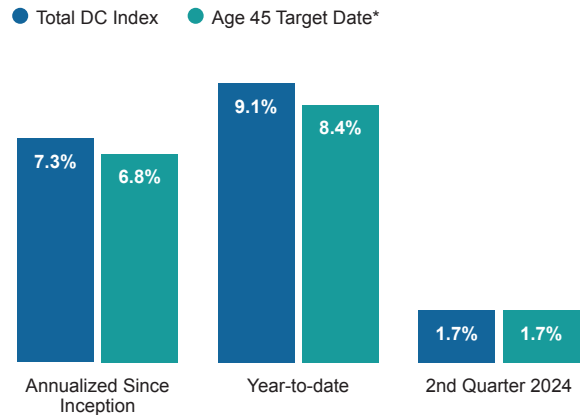
## Prevalence of Asset Class: Global equity funds fall

- The prevalence of global equity funds (17.9%) fell by 2.1 percentage points along with a decrease in the prevalence of emerging markets (17.9%) by 1.4 percentage points.

*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.*

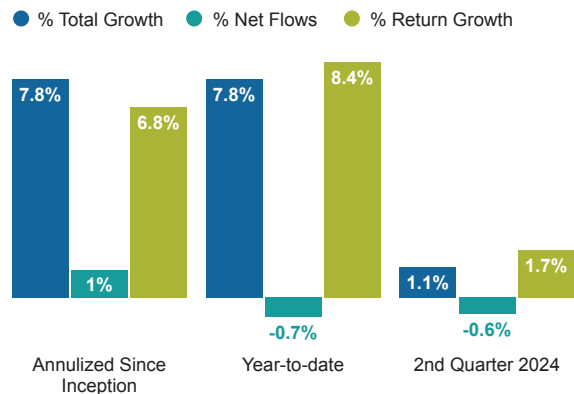
## Investment Performance

(6/30/24)



## Growth Sources

(6/30/24)



## Net Cash Flow Analysis 2Q24

(Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Target Date Funds	75.9%
Brokerage Window	12.4%
Stable Value	-29.6%
U.S. Large Cap	-32.6%
<b>Total Turnover**</b>	<b>0.2%</b>

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

Source: Callan DC Index

Note: DC Index inception date is January 2006.

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

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

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The *Capital Markets Review* is a quarterly macroeconomic indicator newsletter that provides thoughtful insights on the economy and recent performance in the equity, fixed income, alternatives, real estate, and other capital markets.

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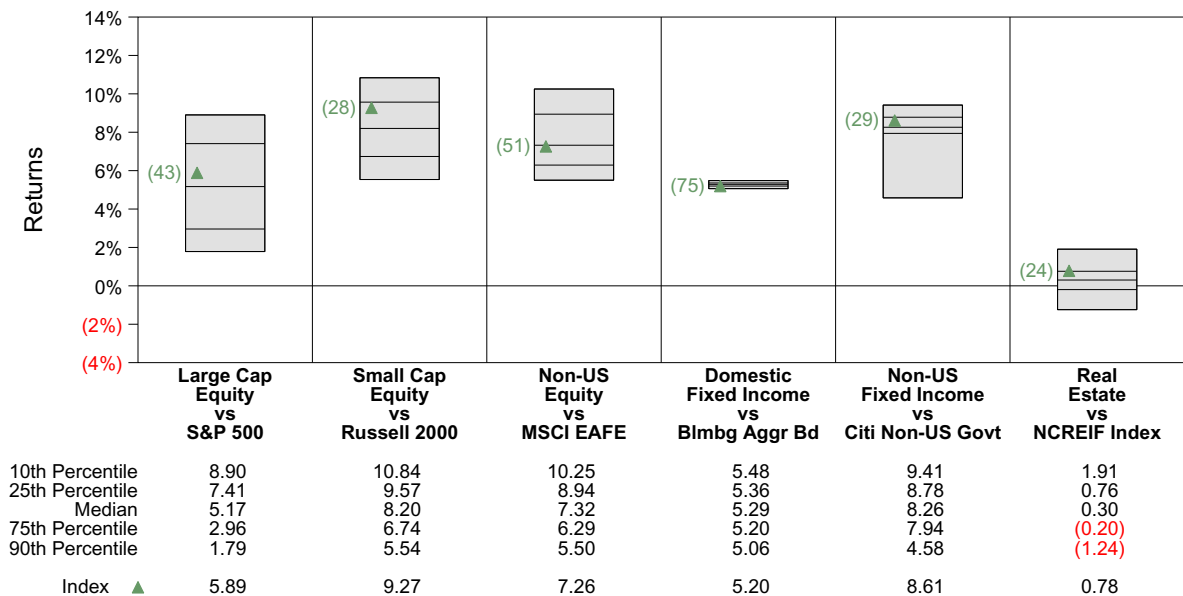
## Market Overview

### Active Management vs Index Returns

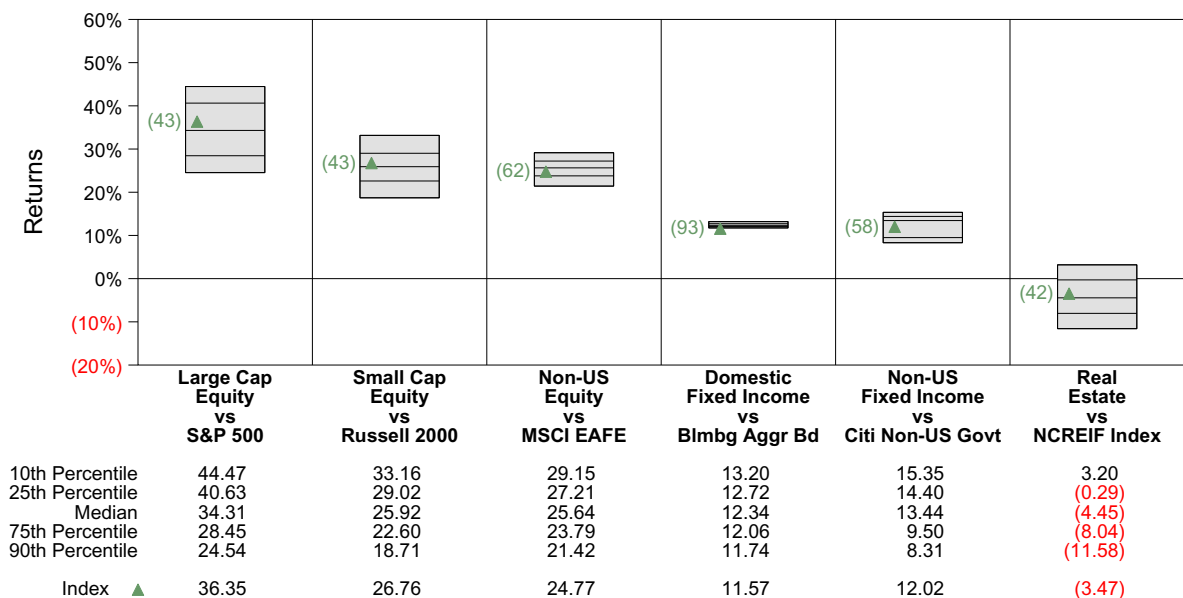
#### Market Overview

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

#### Range of Separate Account Manager Returns by Asset Class One Quarter Ended September 30, 2024



#### Range of Separate Account Manager Returns by Asset Class One Year Ended September 30, 2024

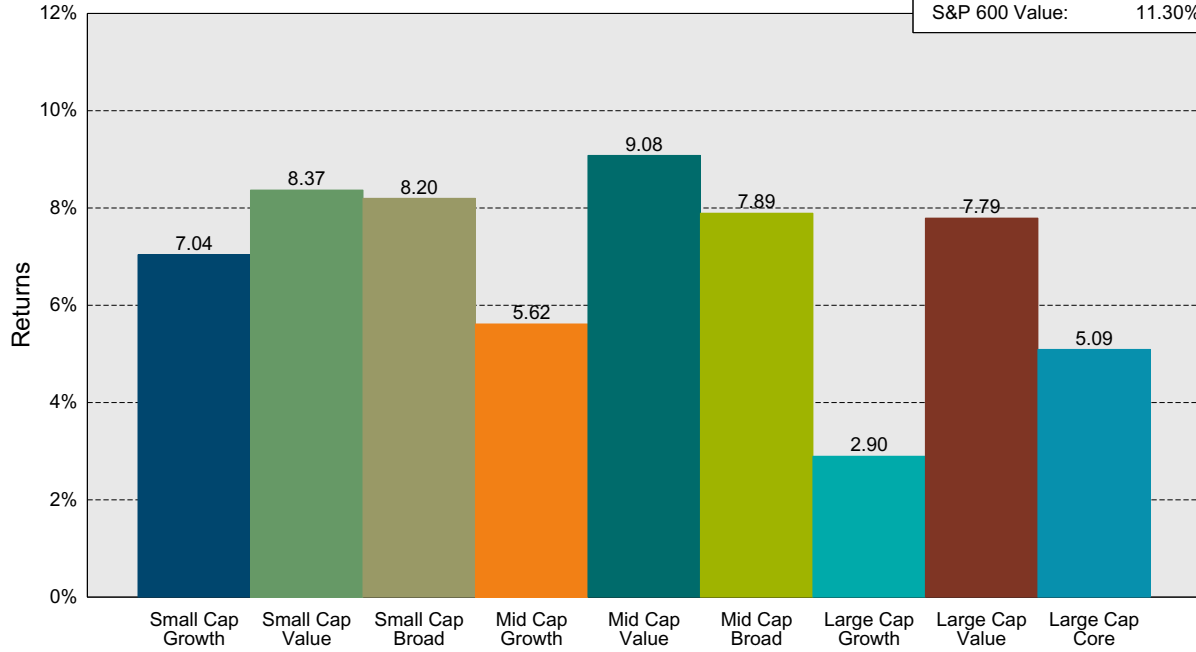


## Domestic Equity Active Management Overview

U.S. stocks posted solid returns in 3Q, extending the strong performance for the year. The S&P 500 Index gained 5.9%, outperforming the tech-heavy Nasdaq Composite, which returned 2.1%. Within the S&P 500 Index, Utilities (+19.4%) and Real Estate (+17.2%) led the sectors while Energy (-2.3%), Technology (+1.6%), and Communication Services (+1.7%) were the worst performers. Small cap stocks outperformed large cap stocks (Russell 2000: +9.3% vs. Russell 1000: +6.1%). Value beat growth (Russell 3000 Value: +9.5% vs. Russell 3000 Growth: +3.4%), but growth remained ahead year-to-date.

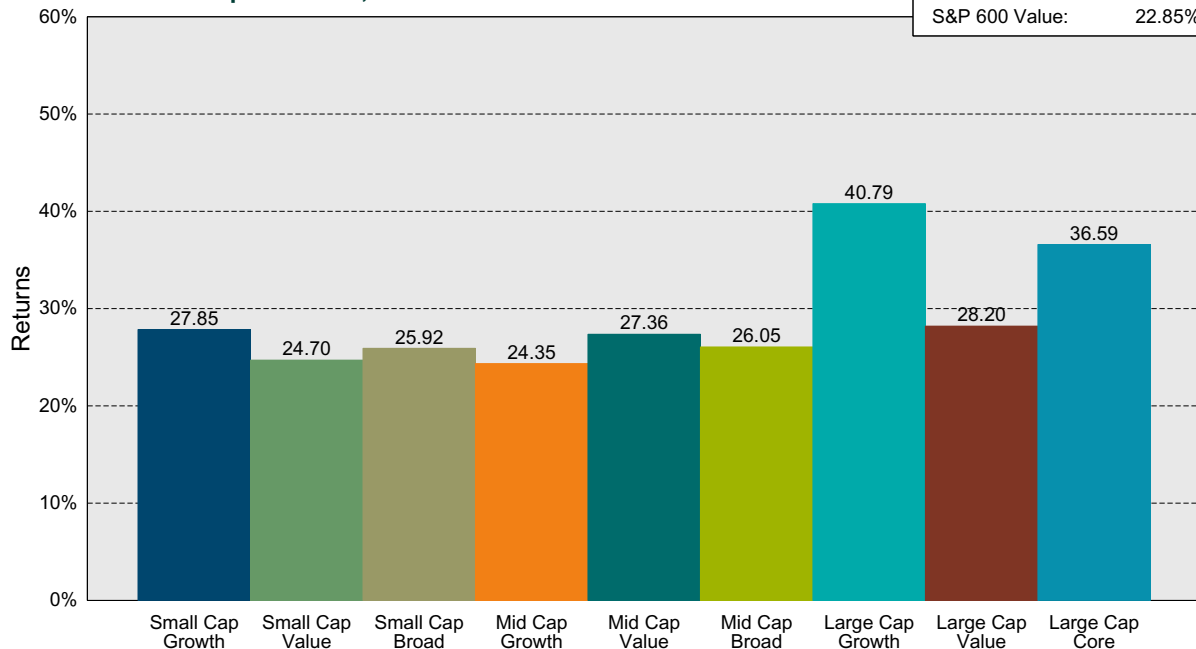
S&P 500:	5.89%
S&P 500 Growth:	3.72%
S&P 500 Value:	9.05%
S&P Mid Cap:	6.94%
S&P 600:	10.13%
S&P 600 Growth:	8.97%
S&P 600 Value:	11.30%

### Separate Account Style Group Median Returns for Quarter Ended September 30, 2024



S&P 500:	36.35%
S&P 500 Growth:	41.10%
S&P 500 Value:	31.09%
S&P Mid Cap:	26.79%
S&P 600:	25.86%
S&P 600 Growth:	28.65%
S&P 600 Value:	22.85%

### Separate Account Style Group Median Returns for One Year Ended September 30, 2024

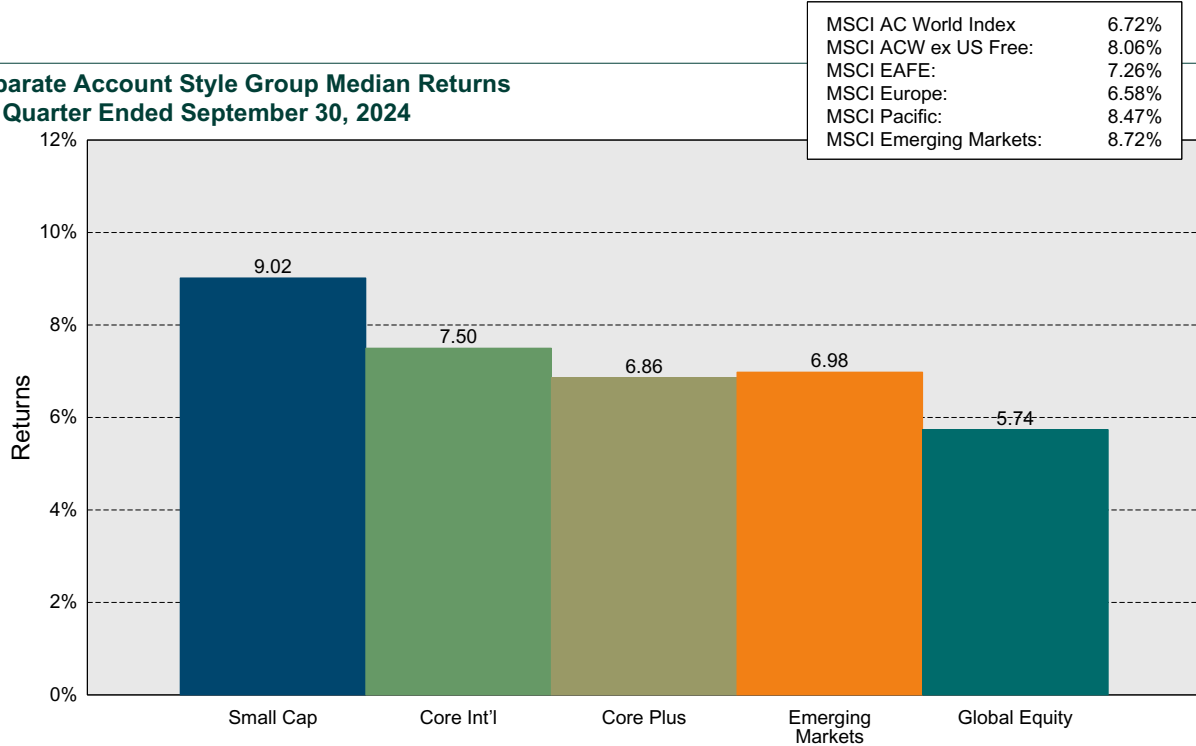




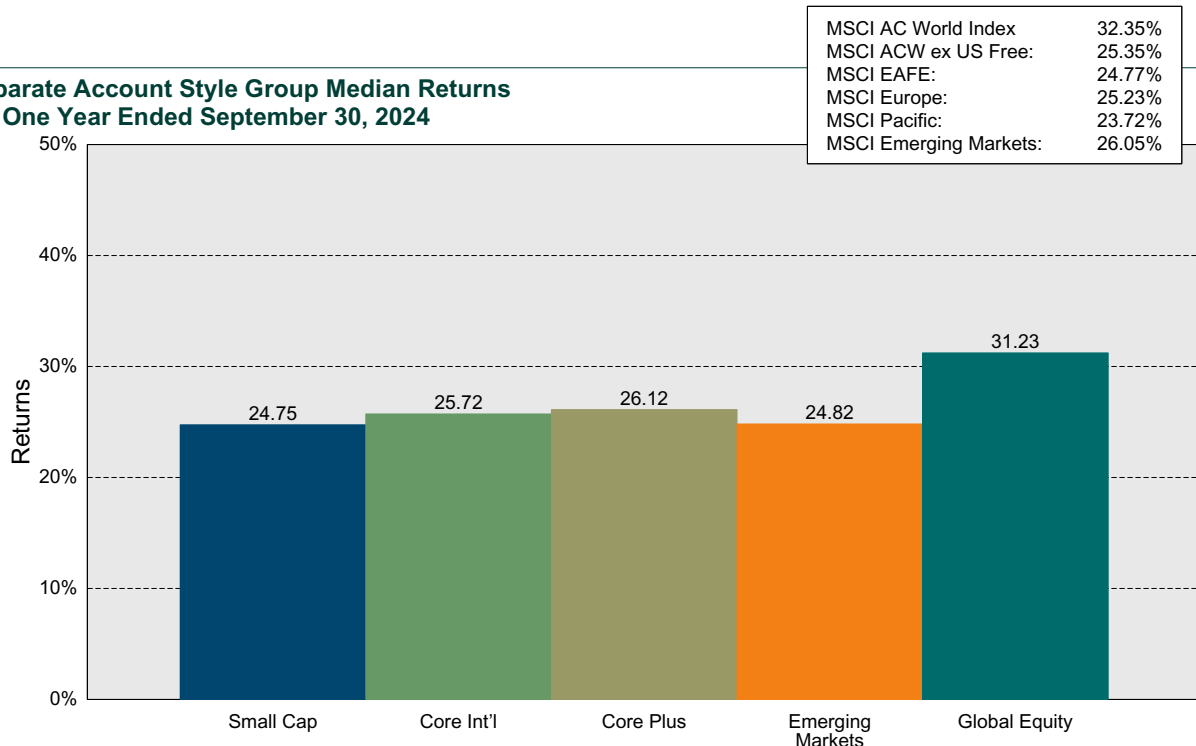
## International Equity Active Management Overview

Global ex-U.S. equities (MSCI ACWI ex USA: +8.1%) had a strong quarter, boosting year-to-date returns to +14.2%. Within developed markets, Value (MSCI World ex-USA Value: +9.7%) outperformed growth (MSCI World ex-USA Growth Index: +5.9%) by a wide margin. Real Estate (MSCI EAFE Real Estate: +17.4%) and Utilities (MSCI EAFE Utilities: +15.6%) were the strongest-performing developed market sectors. Japan (MSCI Japan: +5.7%) was up for the quarter, but Q3 saw unusually high volatility due to the Bank of Japan's action in raising interest rates, and the election of a new prime minister pushing fiscal discipline and being a China hawk. The U.S. dollar weakened in Q3, helping overseas returns. The yen had an especially good quarter, up nearly 13% versus the greenback as the central bank tightened monetary policy.

### Separate Account Style Group Median Returns for Quarter Ended September 30, 2024



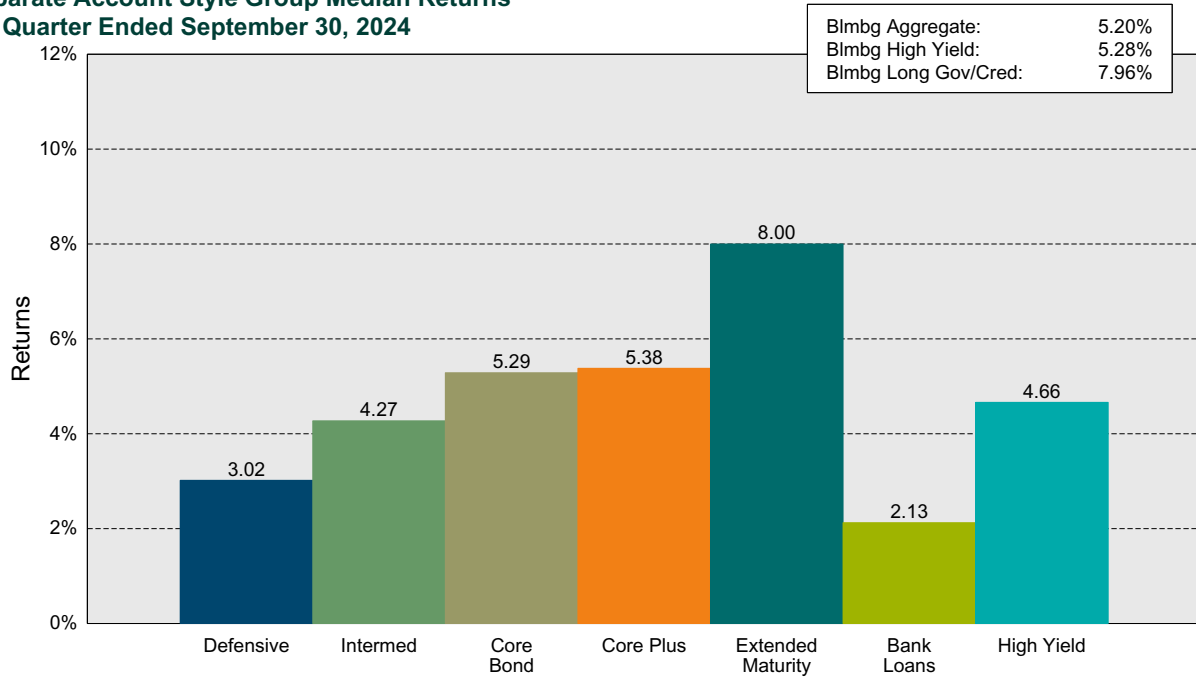
### Separate Account Style Group Median Returns for One Year Ended September 30, 2024



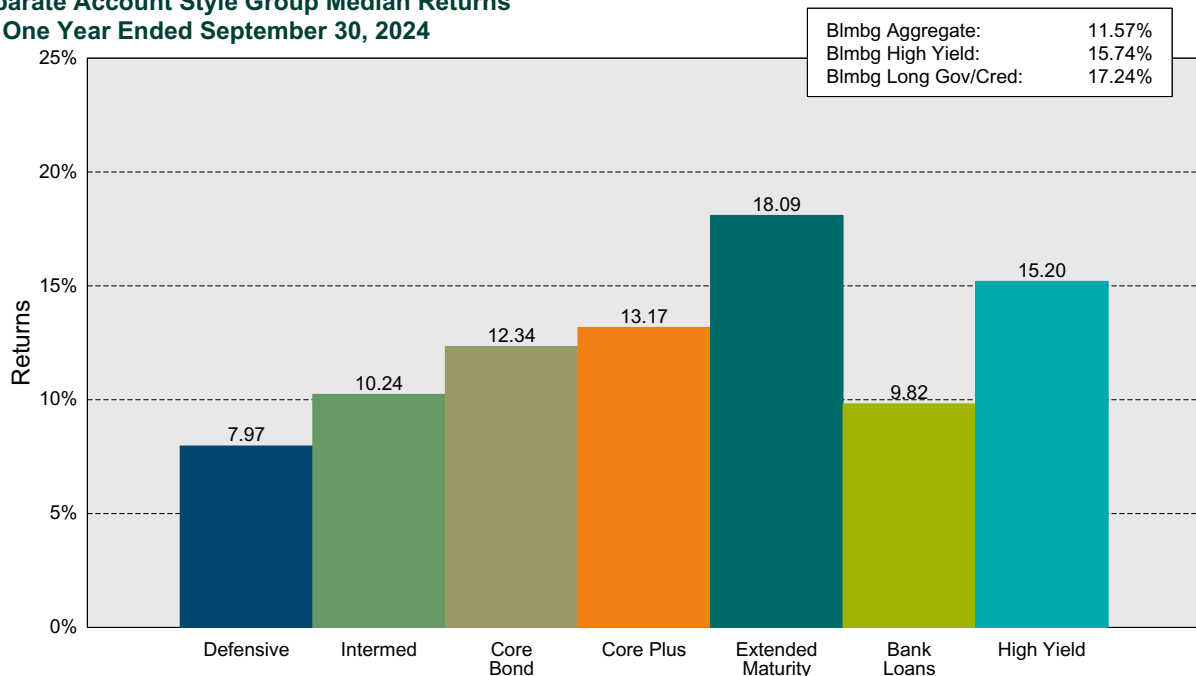
## Domestic Fixed Income Active Management Overview

The Bloomberg US Aggregate Bond Index soared 5.2% in 3Q, bringing its year-to-date return to 4.9%. The 10-year Treasury yield sank 55 bps, closing at 3.8%. The yield curve "normalized" with the spread between the 2-year and 10-year Treasury becoming positive for the first time since July 2022. All the Aggregate sectors outperformed Treasuries on a like-duration basis, led by agency mortgage-backed securities. Investment grade corporates (+5.8%) outperformed High Yield (+5.3%) for the quarter. Spreads broadly remained flat over the quarter despite intra-quarter volatility and remained tight relative to historical averages. Both investment grade and high yield issuance was robust in 3Q and met with strong demand.

### Separate Account Style Group Median Returns for Quarter Ended September 30, 2024



### Separate Account Style Group Median Returns for One Year Ended September 30, 2024

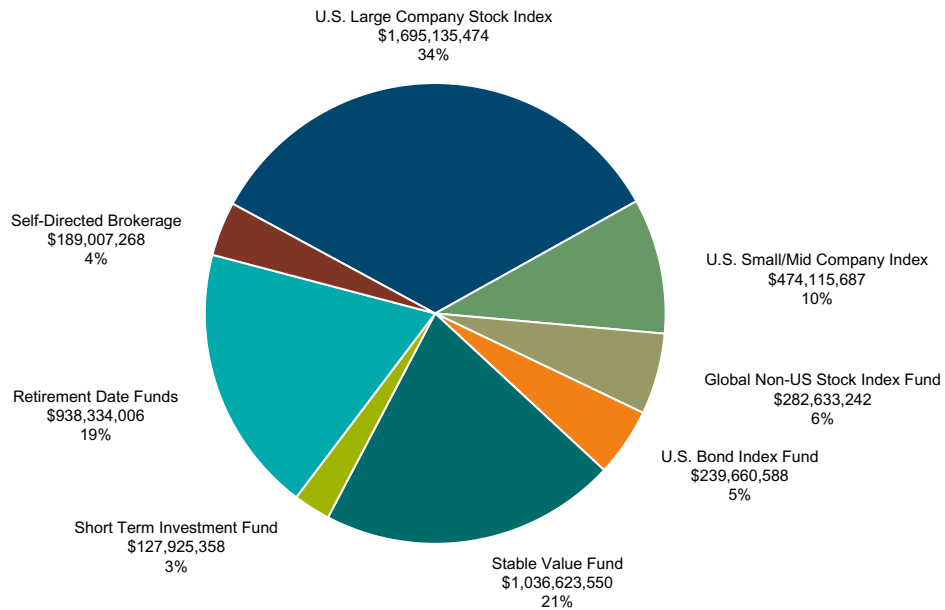




# Changes in Investment Fund Balances Period Ended September 30, 2024

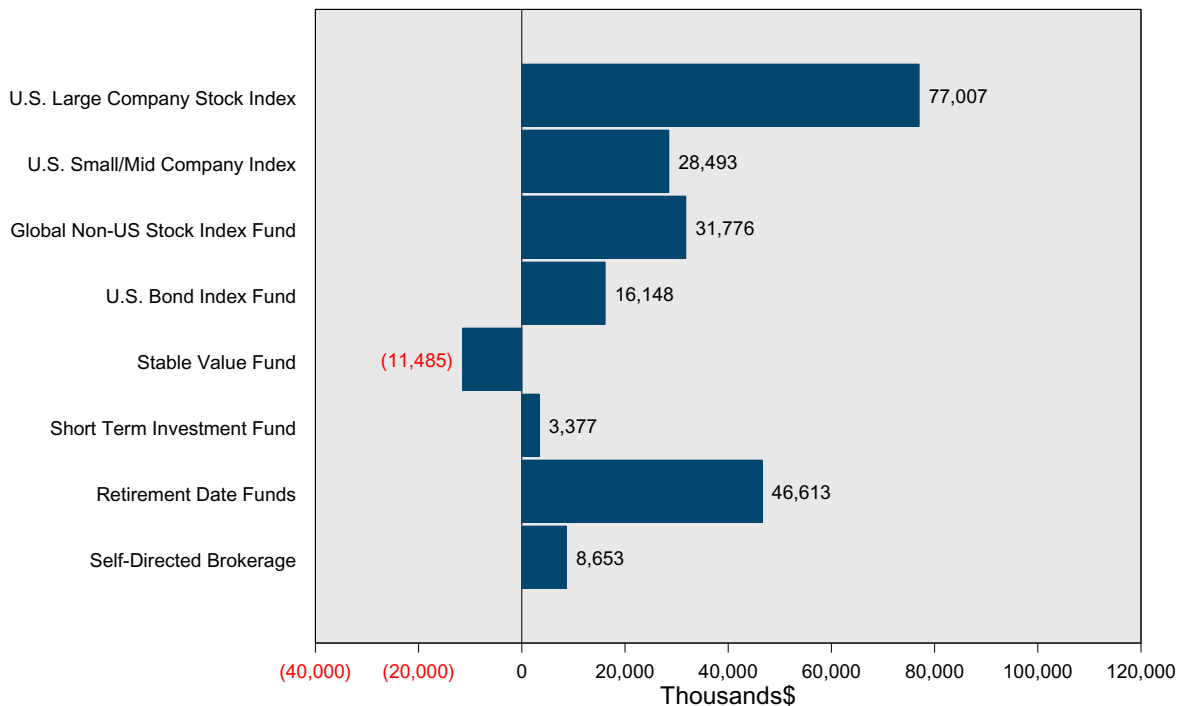
## Allocation Across Investment Options

The chart below illustrates the allocation of the aggregate fund assets across the various investment options for the quarter ended September 30, 2024.



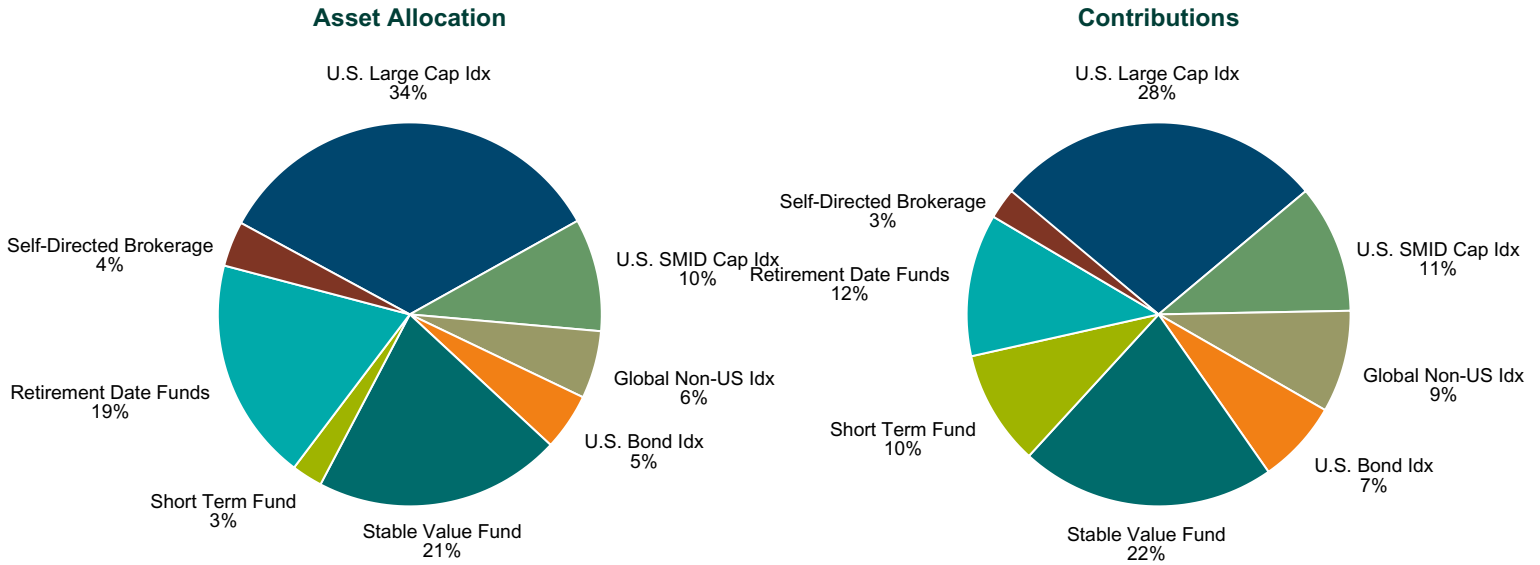
## Changes in Fund Values

The chart below shows the net change in fund values across the various investment options for the quarter ended September 30, 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.

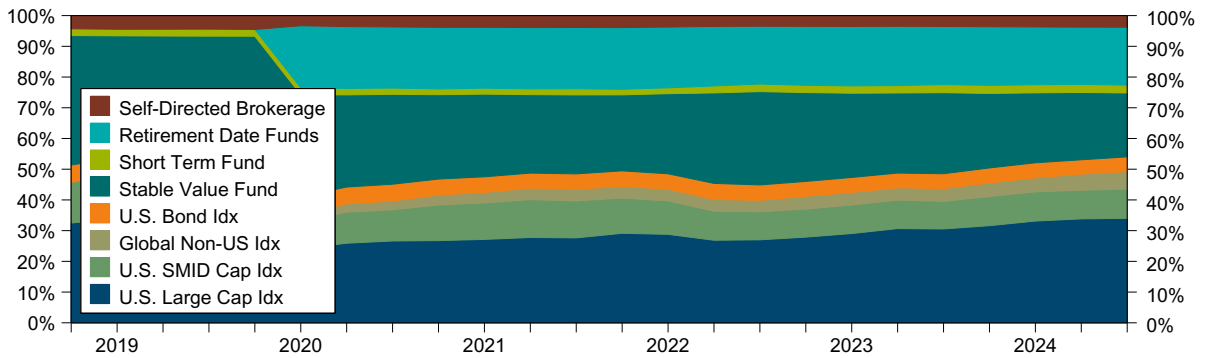


# Asset Allocation

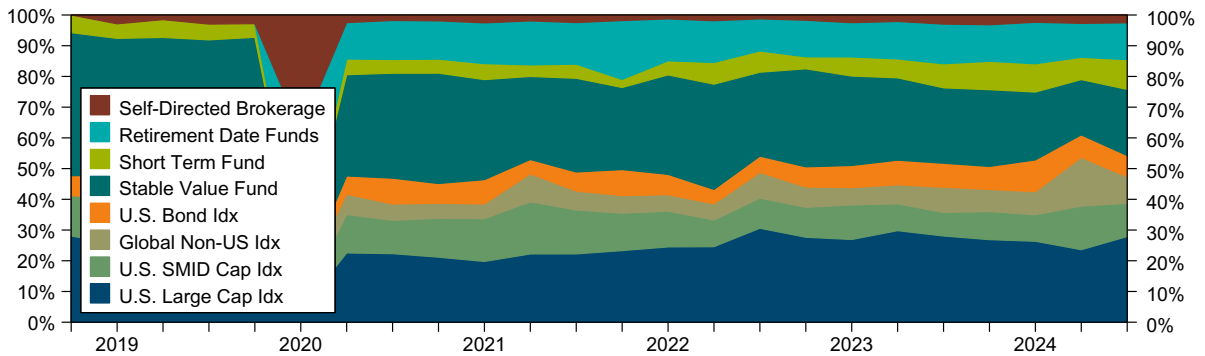
The charts below illustrate the historical asset allocation of the fund as well as the historical allocations of contributions to the fund. The pie charts on the top show the most recent allocations of both assets and contributions which include exchanges and transfers within the plan. The middle chart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

	September 30, 2024			June 30, 2024		
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
<b>SERS Retirement Date Funds</b>	<b>\$938,334,006</b>	<b>18.83%</b>	<b>\$(9,952,008)</b>	<b>\$56,565,358</b>	<b>\$891,720,656</b>	<b>18.64%</b>
SERS Post Retirement Fund	216,378,553	4.34%	(1,813,210)	11,811,550	206,380,213	4.32%
SERS 2025 Retirement Fund	135,448,923	2.72%	(4,933,788)	7,643,312	132,739,399	2.78%
SERS 2030 Retirement Fund	148,681,596	2.98%	(3,505,559)	8,885,949	143,301,206	3.00%
SERS 2035 Retirement Fund	142,716,962	2.86%	(3,102,682)	8,854,526	136,965,118	2.86%
SERS 2040 Retirement Fund	100,165,878	2.01%	(805,451)	6,460,060	94,511,269	1.98%
SERS 2045 Retirement Fund	88,902,411	1.78%	781,076	5,880,210	82,241,125	1.72%
SERS 2050 Retirement Fund	62,195,002	1.25%	942,253	4,139,518	57,113,231	1.19%
SERS 2055 Retirement Fund	25,550,027	0.51%	1,514,116	1,681,057	22,354,854	0.47%
SERS 2060 Retirement Fund	11,273,378	0.23%	644,314	742,178	9,886,886	0.21%
SERS 2065 Retirement Fund	7,021,276	0.14%	326,922	466,999	6,227,355	0.13%
<b>SERS U.S. Equity</b>	<b>\$2,169,251,161</b>	<b>43.53%</b>	<b>\$(24,160,264)</b>	<b>\$129,660,314</b>	<b>\$2,063,751,111</b>	<b>43.15%</b>
SERS U.S. Large Company Index Fund	1,695,135,474	34.02%	(16,910,021)	93,917,296	1,618,128,200	33.83%
SERS U.S. SMID Company Index Fund	474,115,687	9.51%	(7,250,243)	35,743,018	445,622,911	9.32%
<b>SERS Non-U.S. Equity</b>	<b>\$282,633,242</b>	<b>5.67%</b>	<b>\$11,027,090</b>	<b>\$20,749,092</b>	<b>\$250,857,060</b>	<b>5.24%</b>
SERS Global Non-US Index Fund	282,633,242	5.67%	11,027,090	20,749,092	250,857,060	5.24%
<b>SERS Fixed Income</b>	<b>\$1,404,209,496</b>	<b>28.18%</b>	<b>\$(12,471,975)</b>	<b>\$20,511,680</b>	<b>\$1,396,169,791</b>	<b>29.19%</b>
SERS Short Term Investment Fund	127,925,358	2.57%	1,763,795	1,612,791	124,548,773	2.60%
SERS Stable Value Fund	1,036,623,550	20.80%	(18,821,374)	7,336,241	1,048,108,683	21.91%
SERS U.S. Bond Index Fund	239,660,588	4.81%	4,585,604	11,562,648	223,512,336	4.67%
<b>Self-Directed Brokerage Account</b>	<b>\$189,007,268</b>	<b>3.79%</b>	<b>\$(467,760)</b>	<b>\$9,120,849</b>	<b>\$180,354,178</b>	<b>3.77%</b>
<b>SERS 457(b) Total Fund</b>	<b>\$4,983,435,173</b>	<b>100.0%</b>	<b>\$(36,024,917)</b>	<b>\$236,607,293</b>	<b>\$4,782,852,797</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 September 30, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended September 30, 2024

	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
<b>Net Performance</b>					
<b>Retirement Date Funds</b>					
SERS Post Retirement Fund	5.80%	9.53%	18.64%	2.14%	5.21%
BlackRock Post Retirement Index	5.84%	9.52%	18.69%	2.18%	5.20%
Callan Tgt Date Ret Inc	5.25%	8.99%	17.03%	2.37%	4.65%
SERS 2025 Retirement Fund	5.89%	9.87%	19.40%	2.46%	5.98%
BlackRock 2025 Index	5.90%	9.85%	19.41%	2.48%	5.96%
Callan Target Date 2025	5.66%	10.73%	20.27%	3.29%	6.77%
SERS 2030 Retirement Fund	6.30%	11.62%	22.18%	3.66%	7.37%
BlackRock 2030 Index	6.34%	11.62%	22.23%	3.69%	7.36%
Callan Target Date 2030	5.89%	12.21%	22.90%	4.04%	7.75%
SERS 2035 Retirement Fund	6.62%	13.27%	24.71%	4.75%	8.68%
BlackRock 2035 Index	6.66%	13.27%	24.74%	4.76%	8.66%
Callan Target Date 2035	6.13%	13.53%	24.84%	4.90%	8.81%
SERS 2040 Retirement Fund	6.90%	14.85%	27.16%	5.79%	9.89%
BlackRock 2040 Index	6.94%	14.86%	27.16%	5.78%	9.84%
Callan Target Date 2040	6.26%	14.81%	26.88%	5.80%	9.84%
SERS 2045 Retirement Fund	7.16%	16.34%	29.45%	6.75%	10.95%
BlackRock 2045 Index	7.21%	16.35%	29.41%	6.72%	10.89%
Callan Target Date 2045	6.43%	15.89%	28.39%	6.39%	10.67%
SERS 2050 Retirement Fund	7.24%	17.34%	30.83%	7.35%	11.57%
BlackRock 2050 Index	7.30%	17.36%	30.79%	7.32%	11.51%
Callan Target Date 2050	6.42%	16.32%	29.21%	6.64%	10.84%
SERS 2055 Retirement Fund	7.26%	17.81%	31.34%	7.58%	11.75%
BlackRock 2055 Index	7.33%	17.84%	31.31%	7.55%	11.70%
Callan Target Date 2055	6.49%	16.41%	29.35%	6.67%	10.97%
SERS 2060 Retirement Fund	7.26%	17.81%	31.36%	7.58%	11.75%
BlackRock 2060 Index	7.33%	17.85%	31.34%	7.55%	11.71%
Callan Target Date 2060	6.47%	16.43%	29.40%	6.63%	11.02%
SERS 2065 Retirement Fund	7.28%	17.85%	31.41%	7.59%	11.70%
BlackRock 2065 Index	7.34%	17.86%	31.36%	7.55%	11.71%
Callan Target Date 2065	6.52%	16.57%	29.47%	6.50%	11.06%

\*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 September 30, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended September 30, 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	5.19%	4.99%	5.74%	-
BlackRock Post Retirement Index	5.18%	4.98%	5.73%	5.43%
Callan Tgt Date Ret Inc	4.61%	4.42%	5.07%	4.77%
SERS 2025 Retirement Fund	5.87%	5.82%	6.91%	-
BlackRock 2025 Index	5.84%	5.77%	6.87%	6.12%
Callan Target Date 2025	6.22%	6.25%	7.57%	6.68%
SERS 2030 Retirement Fund	6.93%	6.73%	7.70%	-
BlackRock 2030 Index	6.91%	6.67%	7.66%	6.65%
Callan Target Date 2030	7.08%	7.07%	8.29%	6.60%
SERS 2035 Retirement Fund	7.92%	7.58%	8.44%	-
BlackRock 2035 Index	7.88%	7.50%	8.37%	7.12%
Callan Target Date 2035	7.93%	7.77%	8.86%	7.49%
SERS 2040 Retirement Fund	8.83%	8.35%	9.10%	-
BlackRock 2040 Index	8.77%	8.25%	9.01%	7.53%
Callan Target Date 2040	8.62%	8.37%	9.44%	7.37%
SERS 2045 Retirement Fund	9.60%	8.97%	9.64%	-
BlackRock 2045 Index	9.52%	8.85%	9.55%	7.88%
Callan Target Date 2045	9.16%	8.78%	9.58%	8.29%
SERS 2050 Retirement Fund	10.04%	9.30%	9.99%	-
BlackRock 2050 Index	9.96%	9.18%	9.89%	8.24%
Callan Target Date 2050	9.27%	8.94%	9.79%	-
SERS 2055 Retirement Fund	10.17%	9.39%	-	-
BlackRock 2055 Index	10.10%	9.28%	-	-
Callan Target Date 2055	9.35%	9.02%	9.92%	-
SERS 2060 Retirement Fund	10.16%	-	-	-
BlackRock 2060 Index	10.10%	-	-	-
Callan Target Date 2060	9.48%	9.11%	-	-

\*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 September 30, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended September 30, 2024

	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
<b>Net Performance</b>					
<b>Domestic Equity</b>					
SERS U.S. Large Company Index	5.88%	22.06%	36.34%	11.91%	15.98%
S&P 500 Index	5.89%	22.08%	36.35%	11.91%	15.98%
Callan Lg Cap Broad MF	5.14%	20.36%	35.19%	9.78%	15.01%
SERS U.S. SMID Company Index	8.16%	11.89%	28.83%	1.48%	10.95%
Dow Jones US Completion	8.07%	11.61%	28.26%	1.03%	10.62%
Callan SMID Broad MFs	8.14%	12.34%	24.89%	3.41%	10.50%
<b>International Equity</b>					
SERS Global Non-US Index	8.16%	14.43%	25.78%	4.48%	7.82%
MSCI ACWI ex US	8.06%	14.21%	25.35%	4.14%	7.59%
Callan Non US Equity MFs	7.58%	13.21%	24.87%	4.77%	8.19%
<b>Domestic Fixed Income</b>					
SERS Short Term Investment Fund	1.33%	3.98%	5.35%	3.52%	2.34%
3-month Treasury Bill	1.37%	4.03%	5.46%	3.49%	2.32%
Callan Cash Database(1)	1.64%	4.26%	5.94%	3.59%	2.51%
SERS Stable Value Fund	0.72%	2.19%	2.89%	2.32%	2.24%
3-month Treasury Bill	1.37%	4.03%	5.46%	3.49%	2.32%
Callan Stable Value SA	0.72%	2.14%	2.85%	2.42%	2.35%
SERS U.S. Bond Index Fund	5.21%	4.46%	11.59%	(1.38%)	0.34%
Blmbg Aggregate	5.20%	4.45%	11.57%	(1.39%)	0.33%
Callan Core Bond MFs	5.23%	4.93%	12.23%	(1.30%)	0.74%

(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 September 30, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended September 30, 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	14.50%	13.39%	14.16%	10.75%
S&P 500 Index	14.50%	13.38%	14.15%	10.71%
Callan Lg Cap Broad MF	13.61%	12.53%	13.50%	10.44%
SERS U.S. SMID Company Index	9.46%	9.76%	12.00%	9.98%
Dow Jones US Completion	9.15%	9.48%	11.74%	9.74%
Callan SMID Broad MFs	9.26%	9.34%	11.59%	9.75%
<b>International Equity</b>				
SERS Global Non-US Index	5.70%	5.48%	5.70%	-
MSCI ACWI ex US	5.44%	5.22%	5.49%	6.14%
Callan Non US Equity MFs	5.60%	5.62%	6.20%	6.47%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	2.27%	1.75%	1.24%	1.75%
3-month Treasury Bill	2.22%	1.65%	1.13%	1.62%
Callan Cash Database(1)	2.43%	1.94%	1.41%	2.04%
SERS Stable Value Fund	2.28%	2.21%	2.51%	3.05%
3-month Treasury Bill	2.22%	1.65%	1.13%	1.62%
Callan Stable Value SA	2.39%	2.32%	2.48%	3.04%
SERS U.S. Bond Index Fund	1.48%	1.83%	2.56%	3.19%
Blmbg Aggregate	1.47%	1.84%	2.60%	3.22%
Callan Core Bond MFs	1.76%	2.06%	3.02%	3.46%

(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.

	12/2023- 9/2024	2023	2022	2021	2020
<b>Net Performance</b>					
<b>Retirement Date Funds</b>					
SERS Post Retirement Fund	9.53%	11.13%	(14.63%)	6.95%	11.97%
BlackRock Post Retirement Index	9.52%	11.11%	(14.54%)	7.02%	11.80%
Callan Tgt Date Ret Inc	8.99%	10.56%	(12.88%)	6.31%	9.93%
SERS 2025 Retirement Fund	9.87%	12.00%	(15.23%)	8.99%	12.19%
BlackRock 2025 Index	9.85%	11.94%	(15.17%)	9.07%	12.01%
Callan Target Date 2025	10.73%	12.88%	(15.17%)	10.04%	12.58%
SERS 2030 Retirement Fund	11.62%	14.24%	(15.97%)	11.43%	12.88%
BlackRock 2030 Index	11.62%	14.23%	(15.92%)	11.50%	12.72%
Callan Target Date 2030	12.21%	14.49%	(16.05%)	11.63%	13.22%
SERS 2035 Retirement Fund	13.27%	16.29%	(16.67%)	13.80%	13.58%
BlackRock 2035 Index	13.27%	16.29%	(16.67%)	13.85%	13.44%
Callan Target Date 2035	13.53%	16.38%	(16.79%)	13.92%	14.30%
SERS 2040 Retirement Fund	14.85%	18.30%	(17.35%)	15.96%	14.14%
BlackRock 2040 Index	14.86%	18.29%	(17.38%)	15.97%	13.98%
Callan Target Date 2040	14.81%	18.04%	(17.41%)	15.87%	14.83%
SERS 2045 Retirement Fund	16.34%	20.14%	(17.89%)	17.72%	14.83%
BlackRock 2045 Index	16.35%	20.12%	(17.96%)	17.70%	14.65%
Callan Target Date 2045	15.89%	19.29%	(17.94%)	16.89%	15.48%
SERS 2050 Retirement Fund	17.34%	21.25%	(18.20%)	18.67%	15.20%
BlackRock 2050 Index	17.36%	21.23%	(18.30%)	18.62%	15.07%
Callan Target Date 2050	16.32%	19.92%	(18.06%)	17.20%	15.65%
SERS 2055 Retirement Fund	17.81%	21.56%	(18.27%)	18.83%	15.32%
BlackRock 2055 Index	17.84%	21.56%	(18.38%)	18.81%	15.18%
Callan Target Date 2055	16.41%	20.05%	(18.19%)	17.28%	15.56%
SERS 2060 Retirement Fund	17.81%	21.57%	(18.28%)	18.82%	15.31%
BlackRock 2060 Index	17.85%	21.57%	(18.39%)	18.81%	15.19%
Callan Target Date 2060	16.43%	20.07%	(18.28%)	17.41%	15.92%
SERS 2065 Retirement Fund	17.85%	21.62%	(18.30%)	18.77%	15.15%
BlackRock 2065 Index	17.86%	21.59%	(18.40%)	18.80%	15.19%
Callan Target Date 2065	16.57%	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.

	12/2023- 9/2024	2023	2022	2021	2020
<b>Net Performance</b>					
<b>Domestic Equity</b>					
SERS U.S. Large Company Index	22.06%	26.29%	(18.12%)	28.70%	18.43%
S&P 500 Index	22.08%	26.29%	(18.11%)	28.71%	18.40%
Callan Lg Cap Broad MF	20.36%	25.85%	(18.55%)	25.50%	18.47%
SERS U.S. SMID Company Index	11.89%	25.39%	(26.13%)	12.89%	32.03%
Dow Jones US Completion	11.61%	24.99%	(26.56%)	12.36%	32.17%
Callan SMID Broad MFs	12.34%	16.85%	(20.87%)	19.19%	22.70%
<b>International Equity</b>					
SERS Global Non-US Index	14.43%	16.07%	(15.92%)	7.97%	11.15%
MSCI ACWI ex US	14.21%	15.62%	(16.00%)	7.82%	10.65%
Callan Non US Equity MFs	13.21%	17.70%	(15.77%)	9.47%	11.12%
<b>Domestic Fixed Income</b>					
SERS Short Term Investment Fund	3.98%	5.00%	1.59%	0.07%	0.67%
3-month Treasury Bill	4.03%	5.01%	1.46%	0.05%	0.67%
Callan Cash Database(1)	4.26%	5.31%	0.80%	0.14%	1.49%
SERS Stable Value Fund	2.19%	2.66%	1.73%	1.64%	2.32%
3-month Treasury Bill	4.03%	5.01%	1.46%	0.05%	0.67%
Callan Stable Value SA	2.14%	2.71%	1.96%	1.84%	2.39%
SERS U.S. Bond Index Fund	4.46%	5.54%	(12.94%)	(1.65%)	7.56%
Bimbg Aggregate	4.45%	5.53%	(13.01%)	(1.54%)	7.51%
Callan Core Bond MFs	4.93%	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 September 30, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended September 30, 2024

	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
<b>Gross Performance</b>					
<b>Retirement Date Funds</b>					
SERS Post Retirement Fund	5.82%	9.59%	18.72%	2.20%	5.28%
BlackRock Post Retirement Index	5.84%	9.52%	18.69%	2.18%	5.20%
Callan Tgt Date Ret Inc	5.25%	8.99%	17.03%	2.37%	4.65%
SERS 2025 Retirement Fund	5.90%	9.92%	19.48%	2.53%	6.05%
BlackRock 2025 Index	5.90%	9.85%	19.41%	2.48%	5.96%
Callan Target Date 2025	5.66%	10.73%	20.27%	3.29%	6.77%
SERS 2030 Retirement Fund	6.32%	11.68%	22.26%	3.73%	7.45%
BlackRock 2030 Index	6.34%	11.62%	22.23%	3.69%	7.36%
Callan Target Date 2030	5.89%	12.21%	22.90%	4.04%	7.75%
SERS 2035 Retirement Fund	6.63%	13.33%	24.79%	4.82%	8.75%
BlackRock 2035 Index	6.66%	13.27%	24.74%	4.76%	8.66%
Callan Target Date 2035	6.13%	13.53%	24.84%	4.90%	8.81%
SERS 2040 Retirement Fund	6.91%	14.91%	27.24%	5.86%	9.96%
BlackRock 2040 Index	6.94%	14.86%	27.16%	5.78%	9.84%
Callan Target Date 2040	6.26%	14.81%	26.88%	5.80%	9.84%
SERS 2045 Retirement Fund	7.17%	16.40%	29.53%	6.82%	11.03%
BlackRock 2045 Index	7.21%	16.35%	29.41%	6.72%	10.89%
Callan Target Date 2045	6.43%	15.89%	28.39%	6.39%	10.67%
SERS 2050 Retirement Fund	7.25%	17.40%	30.92%	7.42%	11.64%
BlackRock 2050 Index	7.30%	17.36%	30.79%	7.32%	11.51%
Callan Target Date 2050	6.42%	16.32%	29.21%	6.64%	10.84%
SERS 2055 Retirement Fund	7.28%	17.87%	31.43%	7.65%	11.83%
BlackRock 2055 Index	7.33%	17.84%	31.31%	7.55%	11.70%
Callan Target Date 2055	6.49%	16.41%	29.35%	6.67%	10.97%
SERS 2060 Retirement Fund	7.28%	17.87%	31.45%	7.65%	11.82%
BlackRock 2060 Index	7.33%	17.85%	31.34%	7.55%	11.71%
Callan Target Date 2060	6.47%	16.43%	29.40%	6.63%	11.02%
SERS 2065 Retirement Fund	7.30%	17.90%	31.50%	7.66%	11.77%
BlackRock 2065 Index	7.34%	17.86%	31.36%	7.55%	11.71%
Callan Target Date 2065	6.52%	16.57%	29.47%	6.50%	11.06%

\*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 September 30, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended September 30, 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	5.26%	5.06%	5.81%	-
BlackRock Post Retirement Index	5.18%	4.98%	5.73%	5.43%
Callan Tgt Date Ret Inc	4.61%	4.42%	5.07%	4.77%
SERS 2025 Retirement Fund	5.94%	5.89%	6.99%	-
BlackRock 2025 Index	5.84%	5.77%	6.87%	6.12%
Callan Target Date 2025	6.22%	6.25%	7.57%	6.68%
SERS 2030 Retirement Fund	7.00%	6.80%	7.78%	-
BlackRock 2030 Index	6.91%	6.67%	7.66%	6.65%
Callan Target Date 2030	7.08%	7.07%	8.29%	6.60%
SERS 2035 Retirement Fund	8.00%	7.65%	8.52%	-
BlackRock 2035 Index	7.88%	7.50%	8.37%	7.12%
Callan Target Date 2035	7.93%	7.77%	8.86%	7.49%
SERS 2040 Retirement Fund	8.90%	8.42%	9.17%	-
BlackRock 2040 Index	8.77%	8.25%	9.01%	7.53%
Callan Target Date 2040	8.62%	8.37%	9.44%	7.37%
SERS 2045 Retirement Fund	9.67%	9.04%	9.72%	-
BlackRock 2045 Index	9.52%	8.85%	9.55%	7.88%
Callan Target Date 2045	9.16%	8.78%	9.58%	8.29%
SERS 2050 Retirement Fund	10.11%	9.38%	10.07%	-
BlackRock 2050 Index	9.96%	9.18%	9.89%	8.24%
Callan Target Date 2050	9.27%	8.94%	9.79%	-
SERS 2055 Retirement Fund	10.24%	9.47%	-	-
BlackRock 2055 Index	10.10%	9.28%	-	-
Callan Target Date 2055	9.35%	9.02%	9.92%	-
SERS 2060 Retirement Fund	10.23%	-	-	-
BlackRock 2060 Index	10.10%	-	-	-
Callan Target Date 2060	9.48%	9.11%	-	-

\*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 September 30, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended September 30, 2024

	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
<b>Gross Performance</b>					
<b>Domestic Equity</b>					
SERS U.S. Large Company Index	5.89%	22.07%	36.34%	11.91%	15.99%
S&P 500 Index	5.89%	22.08%	36.35%	11.91%	15.98%
Callan Lg Cap Broad MF	5.14%	20.36%	35.19%	9.78%	15.01%
SERS U.S. SMID Company Index	8.16%	11.89%	28.84%	1.49%	10.96%
Dow Jones US Completion	8.07%	11.61%	28.26%	1.03%	10.62%
Callan SMID Broad MFs	8.14%	12.34%	24.89%	3.41%	10.50%
<b>International Equity</b>					
SERS Global Non-US Index	8.16%	14.44%	25.80%	4.50%	7.84%
MSCI ACWI ex US	8.06%	14.21%	25.35%	4.14%	7.59%
Callan Non US Equity MFs	7.58%	13.21%	24.87%	4.77%	8.19%
<b>Domestic Fixed Income</b>					
SERS Short Term Investment Fund	1.33%	3.98%	5.35%	3.52%	2.34%
3-month Treasury Bill	1.37%	4.03%	5.46%	3.49%	2.32%
Callan Cash Database(1)	1.64%	4.26%	5.94%	3.59%	2.51%
SERS Stable Value Fund	0.74%	2.25%	2.97%	2.38%	2.31%
3-month Treasury Bill	1.37%	4.03%	5.46%	3.49%	2.32%
Callan Stable Value SA	0.72%	2.14%	2.85%	2.42%	2.35%
SERS U.S. Bond Index Fund	5.21%	4.46%	11.59%	(1.37%)	0.34%
Blmbg Aggregate	5.20%	4.45%	11.57%	(1.39%)	0.33%
Callan Core Bond MFs	5.23%	4.93%	12.23%	(1.30%)	0.74%

(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 September 30, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended September 30, 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	14.51%	13.39%	14.17%	10.75%
S&P 500 Index	14.50%	13.38%	14.15%	10.71%
Callan Lg Cap Broad MF	13.61%	12.53%	13.50%	10.44%
SERS U.S. SMID Company Index	9.47%	9.77%	12.00%	9.99%
Dow Jones US Completion	9.15%	9.48%	11.74%	9.74%
Callan SMID Broad MFs	9.26%	9.34%	11.59%	9.75%
<b>International Equity</b>				
SERS Global Non-US Index	5.72%	5.50%	5.71%	-
MSCI ACWI ex US	5.44%	5.22%	5.49%	6.14%
Callan Non US Equity MFs	5.60%	5.62%	6.20%	6.47%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	2.27%	1.75%	1.24%	1.75%
3-month Treasury Bill	2.22%	1.65%	1.13%	1.62%
Callan Cash Database(1)	2.43%	1.94%	1.41%	2.04%
SERS Stable Value Fund	2.35%	2.36%	2.72%	3.27%
3-month Treasury Bill	2.22%	1.65%	1.13%	1.62%
Callan Stable Value SA	2.39%	2.32%	2.48%	3.04%
SERS U.S. Bond Index Fund	1.48%	1.84%	2.57%	3.20%
Blmbg Aggregate	1.47%	1.84%	2.60%	3.22%
Callan Core Bond MFs	1.76%	2.06%	3.02%	3.46%

(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.

	12/2023- 9/2024	2023	2022	2021	2020
<b>Gross Performance</b>					
<b>Retirement Date Funds</b>					
SERS Post Retirement Fund	9.59%	11.21%	(14.57%)	7.03%	12.04%
BlackRock Post Retirement Index	9.52%	11.11%	(14.54%)	7.02%	11.80%
Callan Tgt Date Ret Inc	8.99%	10.56%	(12.88%)	6.31%	9.93%
SERS 2025 Retirement Fund	9.92%	12.08%	(15.17%)	9.06%	12.26%
BlackRock 2025 Index	9.85%	11.94%	(15.17%)	9.07%	12.01%
Callan Target Date 2025	10.73%	12.88%	(15.17%)	10.04%	12.58%
SERS 2030 Retirement Fund	11.68%	14.32%	(15.91%)	11.50%	12.96%
BlackRock 2030 Index	11.62%	14.23%	(15.92%)	11.50%	12.72%
Callan Target Date 2030	12.21%	14.49%	(16.05%)	11.63%	13.22%
SERS 2035 Retirement Fund	13.33%	16.37%	(16.61%)	13.88%	13.65%
BlackRock 2035 Index	13.27%	16.29%	(16.67%)	13.85%	13.44%
Callan Target Date 2035	13.53%	16.38%	(16.79%)	13.92%	14.30%
SERS 2040 Retirement Fund	14.91%	18.38%	(17.29%)	16.04%	14.22%
BlackRock 2040 Index	14.86%	18.29%	(17.38%)	15.97%	13.98%
Callan Target Date 2040	14.81%	18.04%	(17.41%)	15.87%	14.83%
SERS 2045 Retirement Fund	16.40%	20.22%	(17.84%)	17.79%	14.90%
BlackRock 2045 Index	16.35%	20.12%	(17.96%)	17.70%	14.65%
Callan Target Date 2045	15.89%	19.29%	(17.94%)	16.89%	15.48%
SERS 2050 Retirement Fund	17.40%	21.33%	(18.15%)	18.75%	15.27%
BlackRock 2050 Index	17.36%	21.23%	(18.30%)	18.62%	15.07%
Callan Target Date 2050	16.32%	19.92%	(18.06%)	17.20%	15.65%
SERS 2055 Retirement Fund	17.87%	21.64%	(18.22%)	18.91%	15.40%
BlackRock 2055 Index	17.84%	21.56%	(18.38%)	18.81%	15.18%
Callan Target Date 2055	16.41%	20.05%	(18.19%)	17.28%	15.56%
SERS 2060 Retirement Fund	17.87%	21.65%	(18.23%)	18.90%	15.38%
BlackRock 2060 Index	17.85%	21.57%	(18.39%)	18.81%	15.19%
Callan Target Date 2060	16.43%	20.07%	(18.28%)	17.41%	15.92%
SERS 2065 Retirement Fund	17.90%	21.70%	(18.25%)	18.85%	15.22%
BlackRock 2065 Index	17.86%	21.59%	(18.40%)	18.80%	15.19%
Callan Target Date 2065	16.57%	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.

	12/2023- 9/2024	2023	2022	2021	2020
<b>Gross Performance</b>					
<b>Domestic Equity</b>					
SERS U.S. Large Company Index	22.07%	26.29%	(18.11%)	28.71%	18.44%
S&P 500 Index	22.08%	26.29%	(18.11%)	28.71%	18.40%
Callan Lg Cap Broad MF	20.36%	25.85%	(18.55%)	25.50%	18.47%
SERS U.S. SMID Company Index	11.89%	25.40%	(26.12%)	12.90%	32.04%
Dow Jones US Completion	11.61%	24.99%	(26.56%)	12.36%	32.17%
Callan SMID Broad MFs	12.34%	16.85%	(20.87%)	19.19%	22.70%
<b>International Equity</b>					
SERS Global Non-US Index	14.44%	16.09%	(15.91%)	7.98%	11.17%
MSCI ACWI ex US	14.21%	15.62%	(16.00%)	7.82%	10.65%
Callan Non US Equity MFs	13.21%	17.70%	(15.77%)	9.47%	11.12%
<b>Domestic Fixed Income</b>					
SERS Short Term Investment Fund	3.98%	5.00%	1.59%	0.07%	0.67%
3-month Treasury Bill	4.03%	5.01%	1.46%	0.05%	0.67%
Callan Cash Database(1)	4.26%	5.31%	0.80%	0.14%	1.49%
SERS Stable Value Fund	2.25%	2.71%	1.79%	1.72%	2.38%
3-month Treasury Bill	4.03%	5.01%	1.46%	0.05%	0.67%
Callan Stable Value SA	2.14%	2.71%	1.96%	1.84%	2.39%
SERS U.S. Bond Index Fund	4.46%	5.54%	(12.93%)	(1.64%)	7.56%
Blmbg Aggregate	4.45%	5.53%	(13.01%)	(1.54%)	7.51%
Callan Core Bond MFs	4.93%	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**  
**September 30, 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	5.8 9	18.6 24	2.1 63	5.2 27	5.2 13	5.0 17			0.07 75
BlackRock Post Retirement Index	5.8 7	18.7 23	2.2 61	5.2 27	5.2 13	5.0 17			
<b>SERS 2025 Retirement Fund</b> Callan Target Date 2025	5.9 22	19.4 73	2.5 88	6.0 75	5.9 72	5.8 79			0.07 79
BlackRock 2025 Index	5.9 21	19.4 73	2.5 87	6.0 75	5.8 74	5.8 80			
<b>SERS 2030 Retirement Fund</b> Callan Target Date 2030	6.3 12	22.2 60	3.7 71	7.4 70	6.9 57	6.7 73			0.07 68
BlackRock 2030 Index	6.3 11	22.2 59	3.7 70	7.4 70	6.9 58	6.7 76			
<b>SERS 2035 Retirement Fund</b> Callan Target Date 2035	6.6 11	24.7 55	4.7 55	8.7 66	7.9 50	7.6 67			0.07 74
BlackRock 2035 Index	6.7 10	24.7 54	4.8 54	8.7 66	7.9 53	7.5 73			
<b>SERS 2040 Retirement Fund</b> Callan Target Date 2040	6.9 8	27.2 43	5.8 50	9.9 47	8.8 32	8.3 51			0.07 71
BlackRock 2040 Index	6.9 6	27.2 43	5.8 50	9.8 50	8.8 41	8.2 56			
<b>SERS 2045 Retirement Fund</b> Callan Target Date 2045	7.2 4	29.4 17	6.7 23	11.0 27	9.6 24	9.0 34			0.07 74
BlackRock 2045 Index	7.2 3	29.4 17	6.7 25	10.9 29	9.5 29	8.8 44			
<b>SERS 2050 Retirement Fund</b> Callan Target Date 2050	7.2 5	30.8 9	7.4 12	11.6 12	10.0 10	9.3 22			0.07 71
BlackRock 2050 Index	7.3 3	30.8 9	7.3 13	11.5 14	10.0 14	9.2 32			
<b>SERS 2055 Retirement Fund</b> Callan Target Date 2055	7.3 8	31.3 8	7.6 10	11.8 7	10.2 8	9.4 20			0.07 74
BlackRock 2055 Index	7.3 4	31.3 8	7.5 11	11.7 8	10.1 10	9.3 30			
<b>SERS 2060 Retirement Fund</b> Callan Target Date 2060	7.3 7	31.4 11	7.6 13	11.7 11	10.2 11				0.07 72
BlackRock 2060 Index	7.3 4	31.3 11	7.6 14	11.7 12	10.1 13				

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**  
**September 30, 2024**

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	10 Year Return	5 Year Return Consistency	5 Year Risk Quadrant	Expense Ratio
<b>SERS 2065 Retirement Fund</b> Callan Target Date 2065	7.3 8	31.4 11	7.6 13	11.7 17					0.07 76
BlackRock 2065 Index	7.3 6	31.4 11	7.6 14	11.7 17					
<b>Domestic Equity</b>									
<b>SERS U.S. Large Company Index</b> Callan Lg Cap Broad MF	5.9 37	36.3 44	11.9 21	16.0 38	14.5 40	13.4 40			0.01 100
S&P 500 Index	5.9 37	36.4 44	11.9 21	16.0 38	14.5 40	13.4 40			
<b>SERS U.S. Small/Mid Company Index</b> Callan SMID Broad MFs	8.2 48	28.8 25	1.5 62	11.0 40	9.5 44	9.8 43			0.02 100
Dow Jones US Completion	8.1 52	28.3 27	1.0 64	10.6 46	9.1 52	9.5 49			
<b>International Equity</b>									
<b>SERS Global Non-U.S. Index Fund</b> Callan Non US Equity MFs	8.2 33	25.8 38	4.5 52	7.8 60	5.7 47	5.5 52			0.04 99
MSCI ACWI ex US	8.1 39	25.4 41	4.1 54	7.6 65	5.4 57	5.2 61			
<b>Domestic Fixed Income</b>									
<b>SERS Short Term Investment Fund</b> Callan Cash Database	1.3 94	5.4 95	3.5 56	2.3 79	2.3 84	1.7 79			0.00 100
3-month Treasury Bill	1.4 82	5.5 94	3.5 56	2.3 80	2.2 88	1.6 89			
<b>Comments:</b> Callan Cash Database includes STIF, enhanced cash, and money market funds.									
<b>SERS Stable Value Fund</b> Callan Stable Value SA	0.7 48	2.9 45	2.3 68	2.2 66	2.3 66	2.2 71			0.25 70
3-month Treasury Bill	1.4 2	5.5 2	3.5 4	2.3 52	2.2 82	1.6 94			
<b>SERS U.S. Bond Index Fund</b> Callan Core Bond MFs	5.2 59	11.6 91	-1.4 56	0.3 93	1.5 88	1.8 88			0.01 100
Blmbg Aggregate	5.2 60	11.6 91	-1.4 57	0.3 93	1.5 88	1.8 86			

Returns:  
 above median  
 third quartile  
 fourth quartile

Return Consistency:  
 above median  
 third quartile  
 fourth quartile

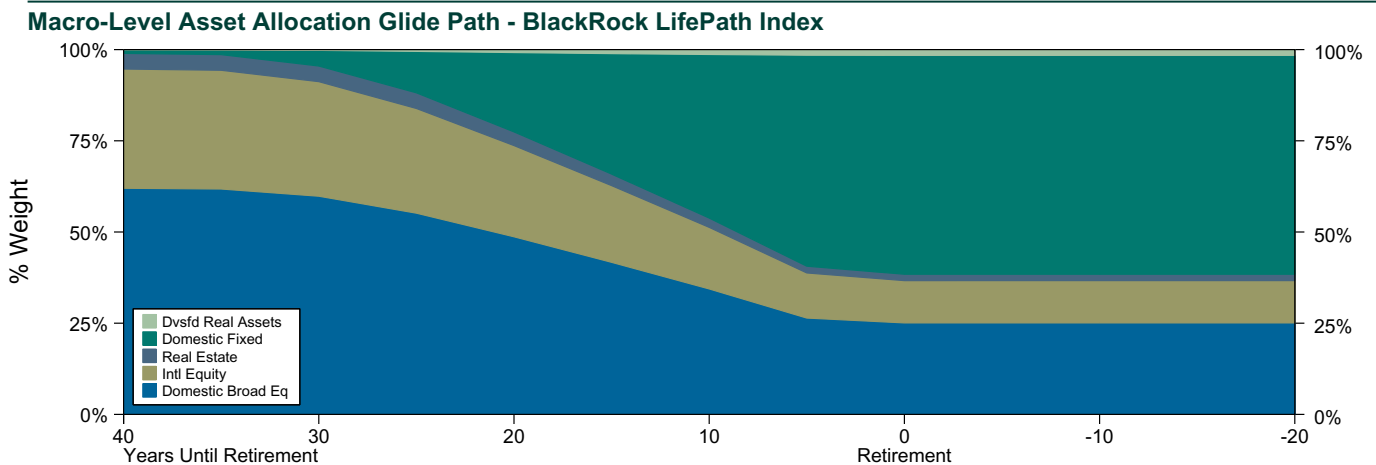
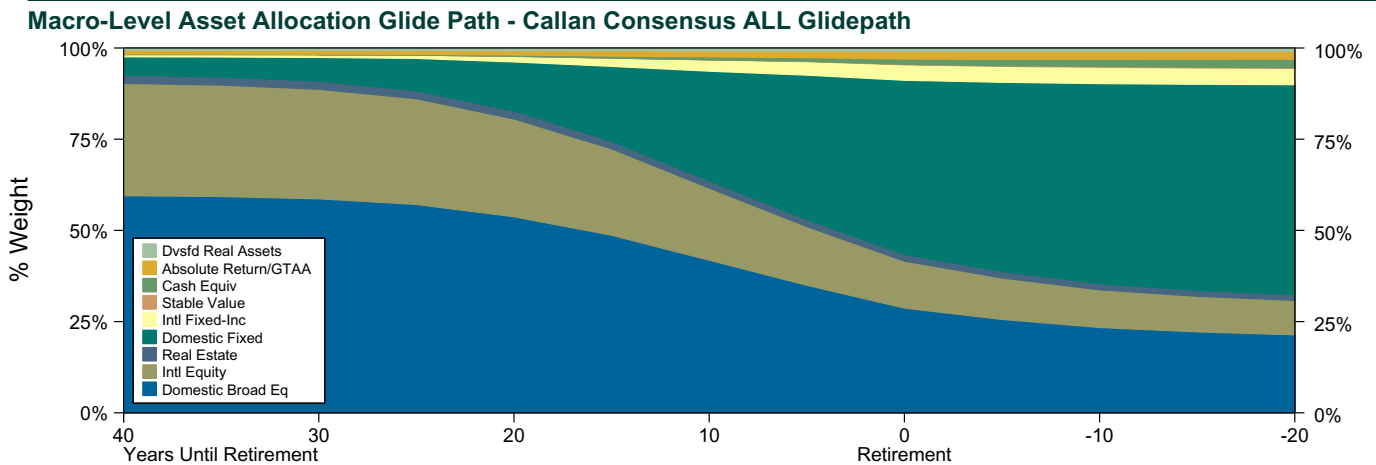
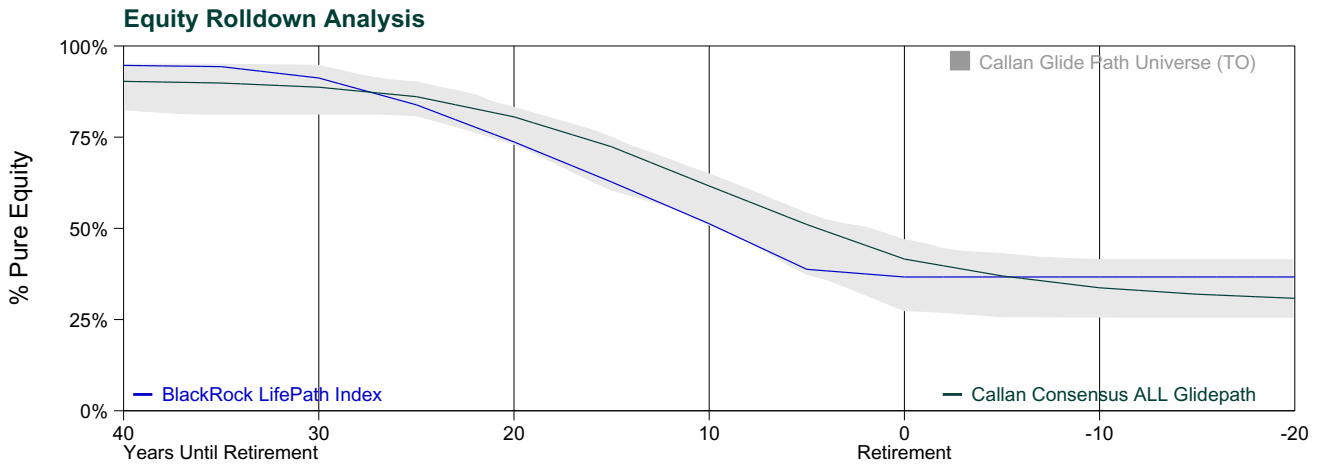
Risk Quadrant:

Expense Ratio:  
 below median  
 second quartile  
 first quartile



# Callan Consensus ALL Glidepath Target Date Glide Path Analysis as of September 30, 2024

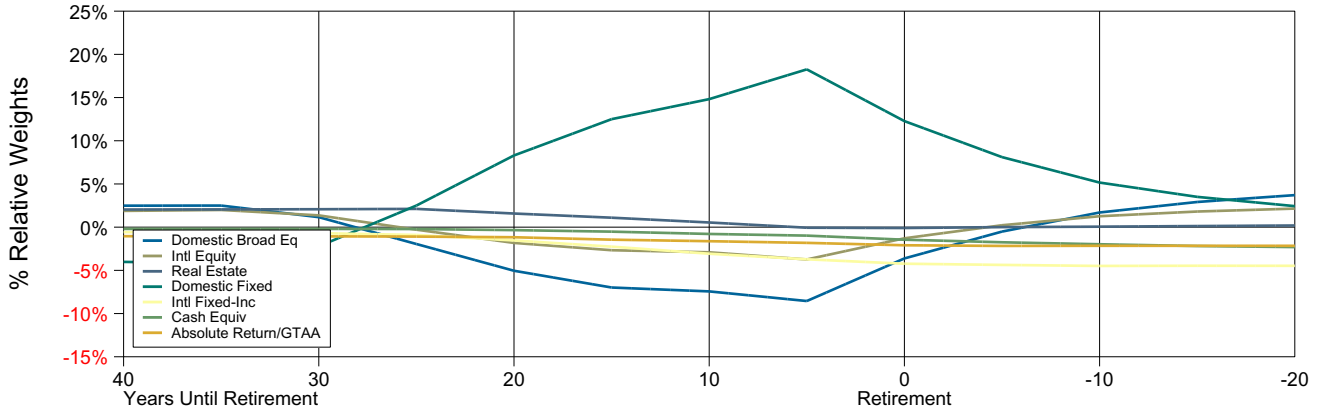
The following charts illustrate the asset allocation "glide path" underlying the relevant suite of target date funds. This analysis covers forty years of investor wealth accumulation up to retirement, as well as twenty years of wealth decumulation following retirement. The top chart shows the "pure"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



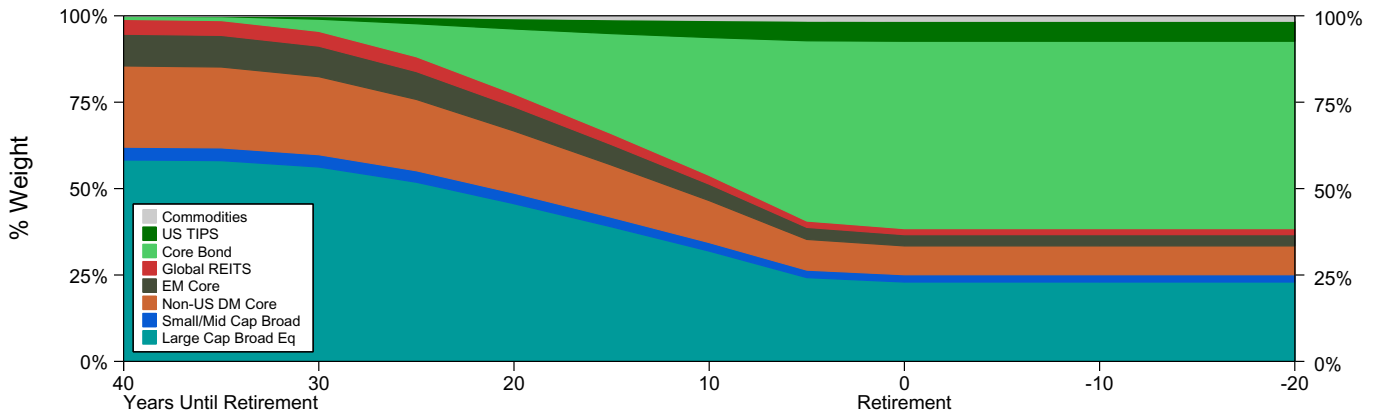
# BlackRock LifePath Index Target Date Glide Path Analysis as of September 30, 2024

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.

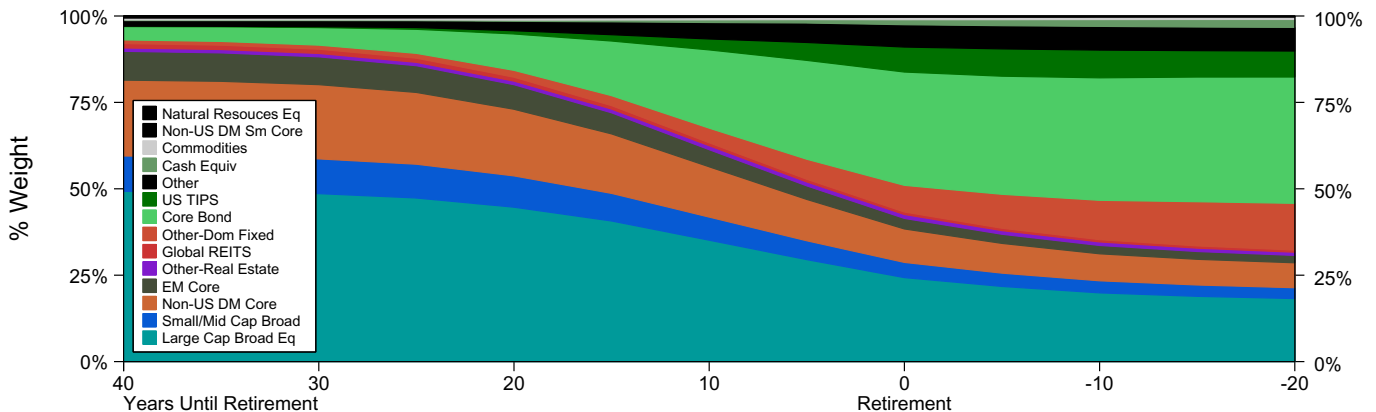
**Relative Macro Asset Allocation - BlackRock LifePath Index vs. Callan Consensus ALL Glidep**



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



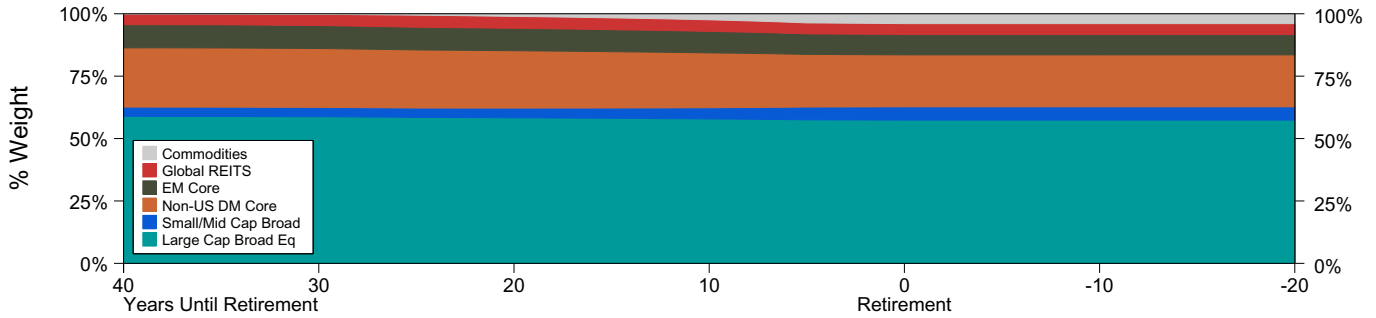
**Micro-Level Asset Allocation Glide Path - Callan Consensus ALL Glidepath**



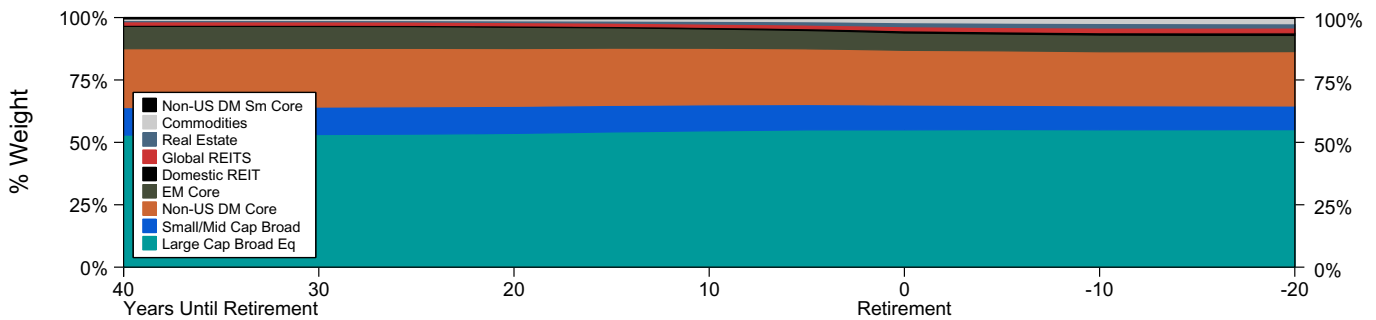
# BlackRock LifePath Index Target Date Glide Path Analysis as of September 30, 2024

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.

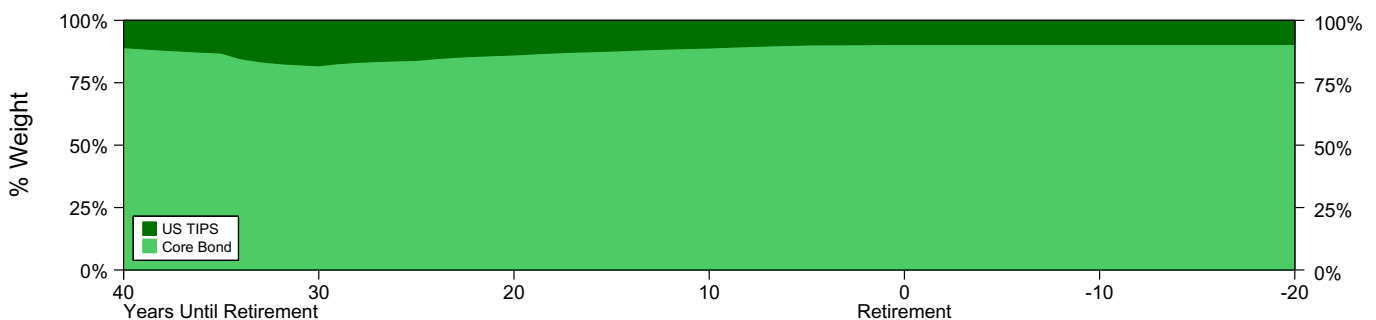
## Micro-Level Equity Allocation Glide Path - BlackRock LifePath Index



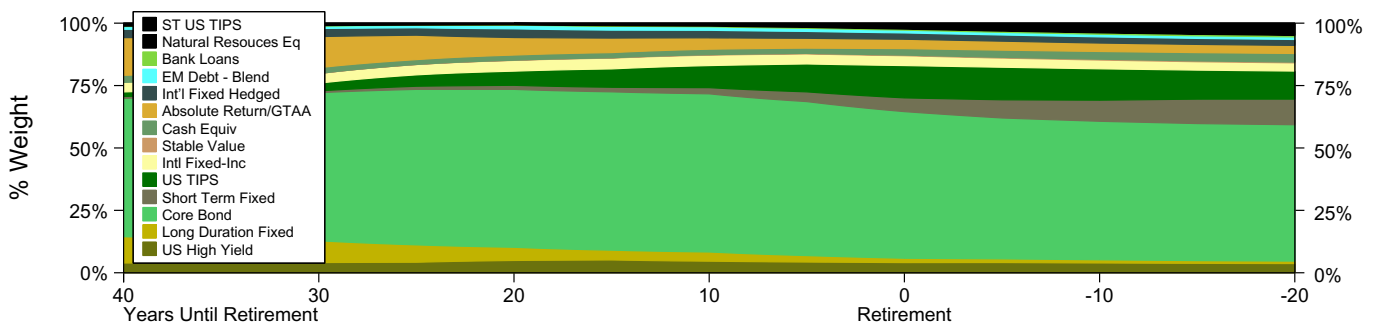
## Micro-Level Equity Asset Allocation Glide Path - Callan Consensus ALL Glidepath



## 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 September 30, 2024

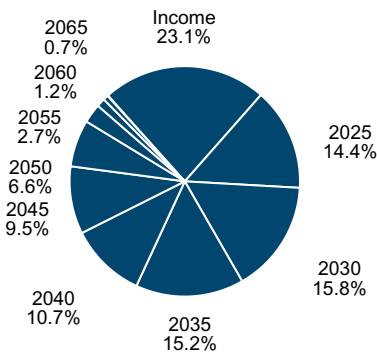
The following is an analysis of the client's suite of target date funds as an aggregated portfolio using actual proportions held by the client's participants. The upper-left pie chart shows the current client weights across target dates. The rest of the charts compare different attributes of the aggregated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

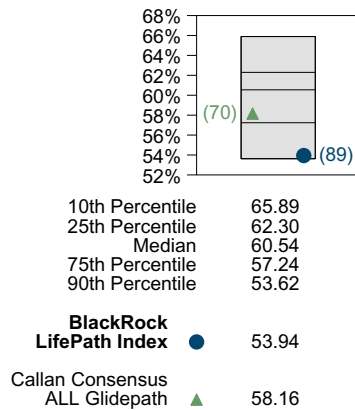
**Passive and Non-Passive**

**Fee/Return Type: Gross**

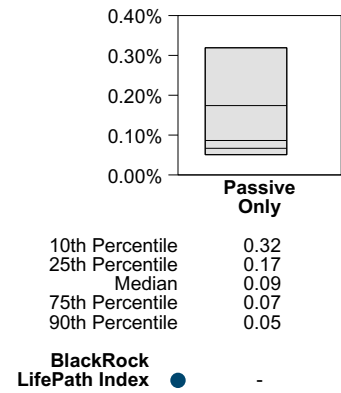
**Fund Family Allocation**



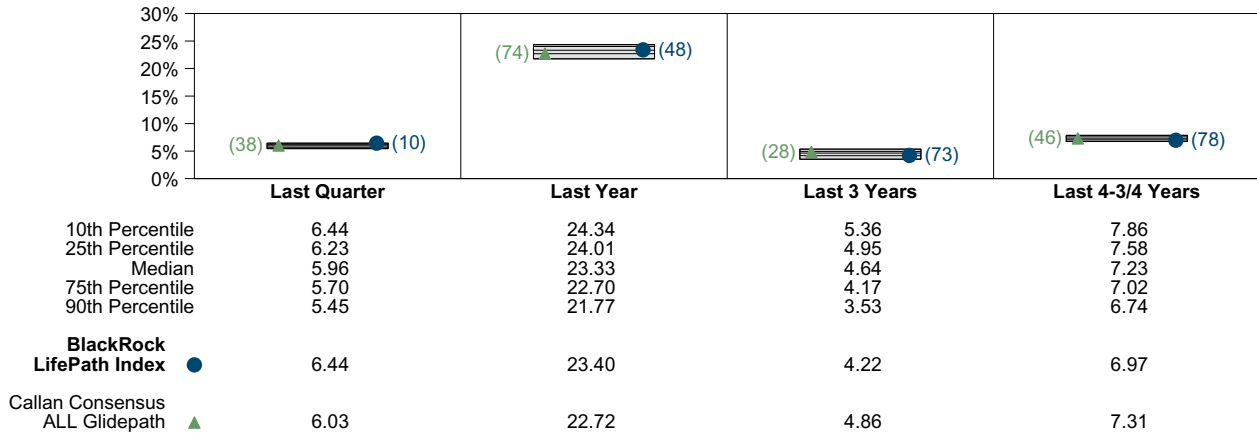
**Equity Exposure**



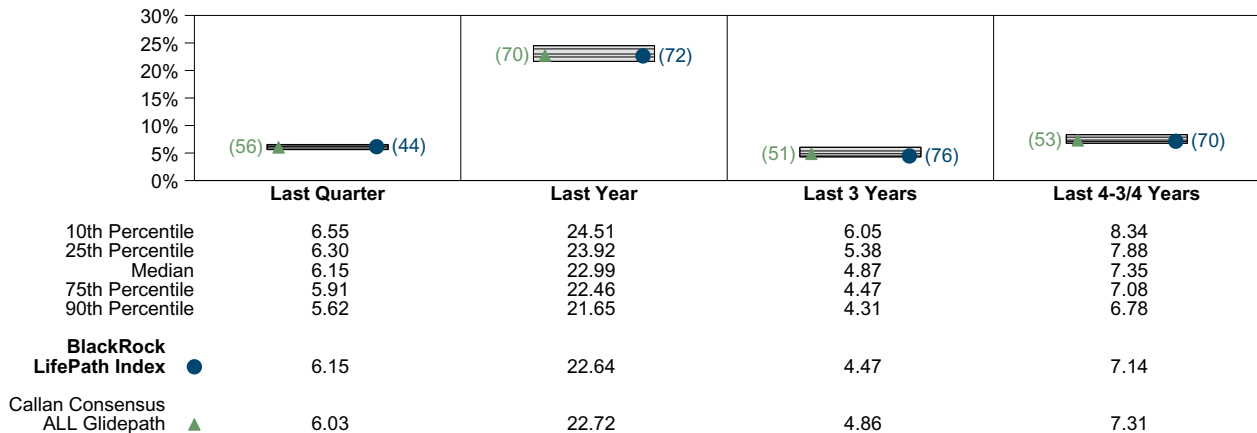
**Expense Ratio**



## Target Date Family Performance vs Peer Families



## Target Date Family Glide Path Returns vs Peer Families

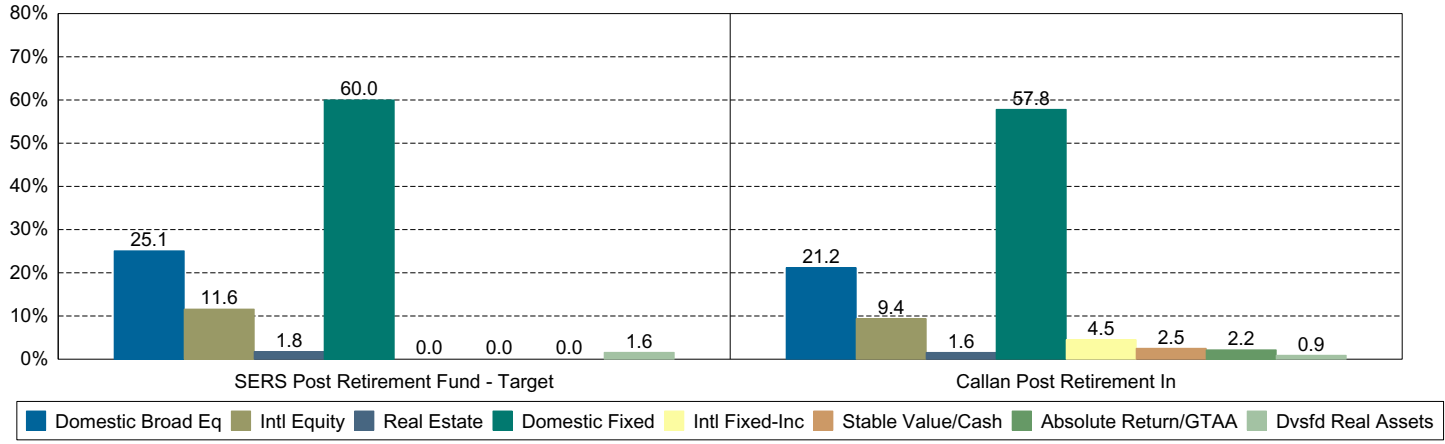


# SERS Post Retirement Fund

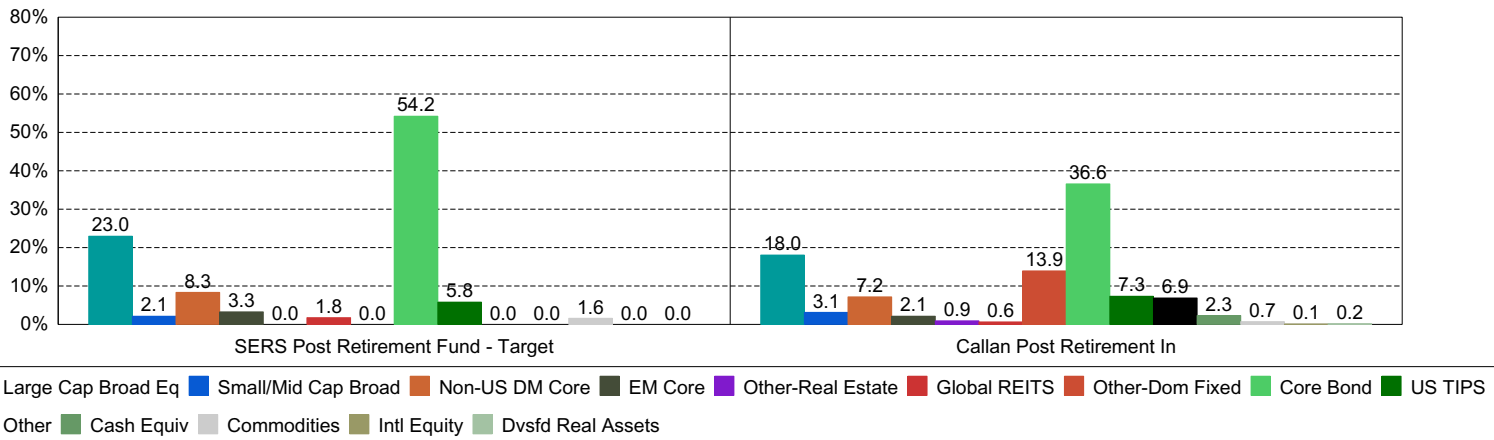
## Target Date Fund Asset Allocation as of September 30, 2024

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.

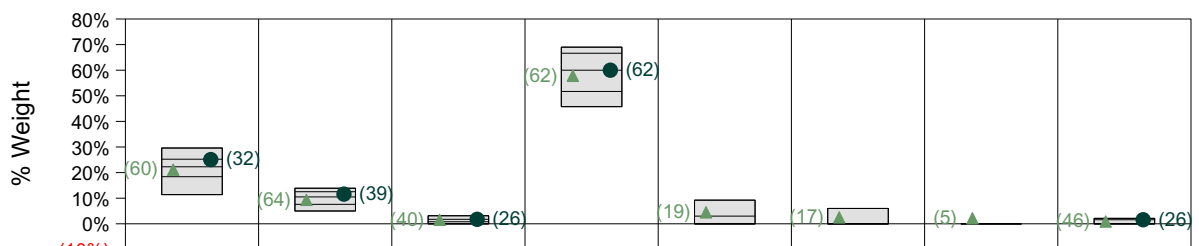
### Macro-Level Asset Allocation



### 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	22.28	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 September 30, 2024

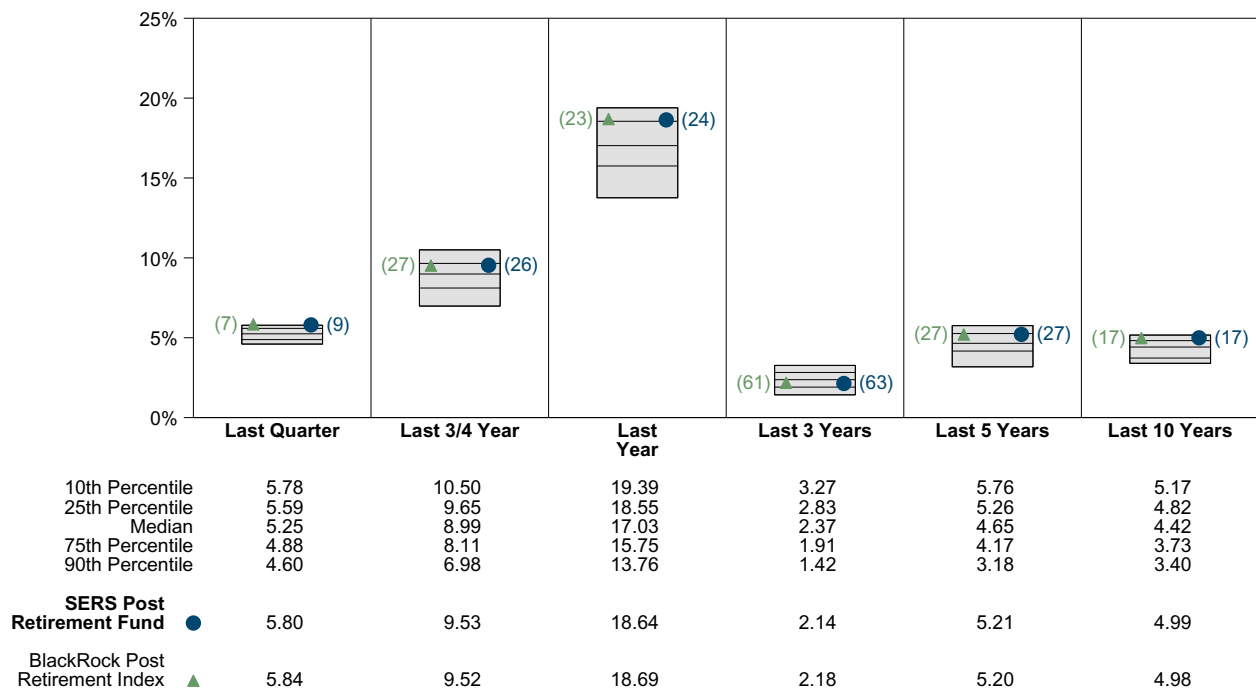
## Investment Philosophy

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.

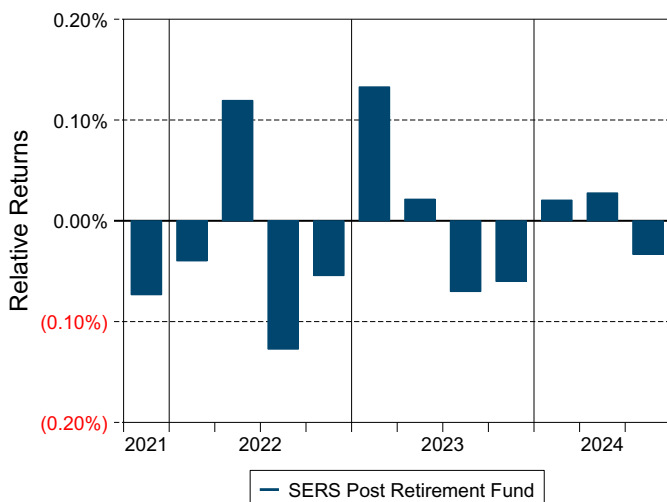
## Quarterly Summary and Highlights

- SERS Post Retirement Fund's portfolio posted a 5.80% return for the quarter placing it in the 9 percentile of the Callan Target Date Retirement Income group for the quarter and in the 24 percentile for the last year.
- SERS Post Retirement Fund's portfolio underperformed the BlackRock Post Retirement Index by 0.04% for the quarter and underperformed the BlackRock Post Retirement Index for the year by 0.05%.

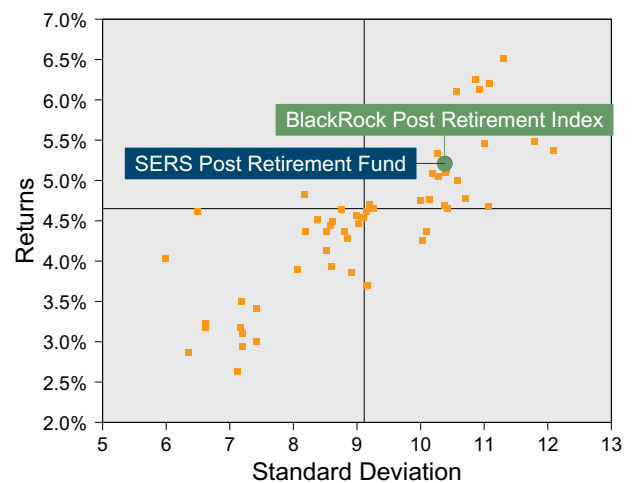
## Performance vs Callan Target Date Retirement Income (Net)



## Relative Returns vs BlackRock Post Retirement Index



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

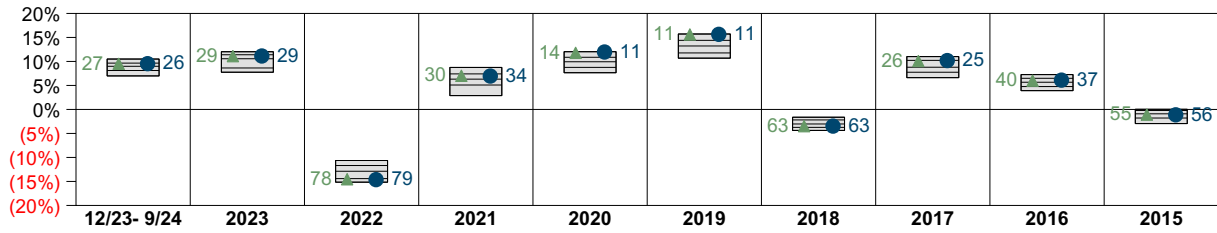


# SERS Post Retirement Fund Return Analysis Summary

## Return Analysis

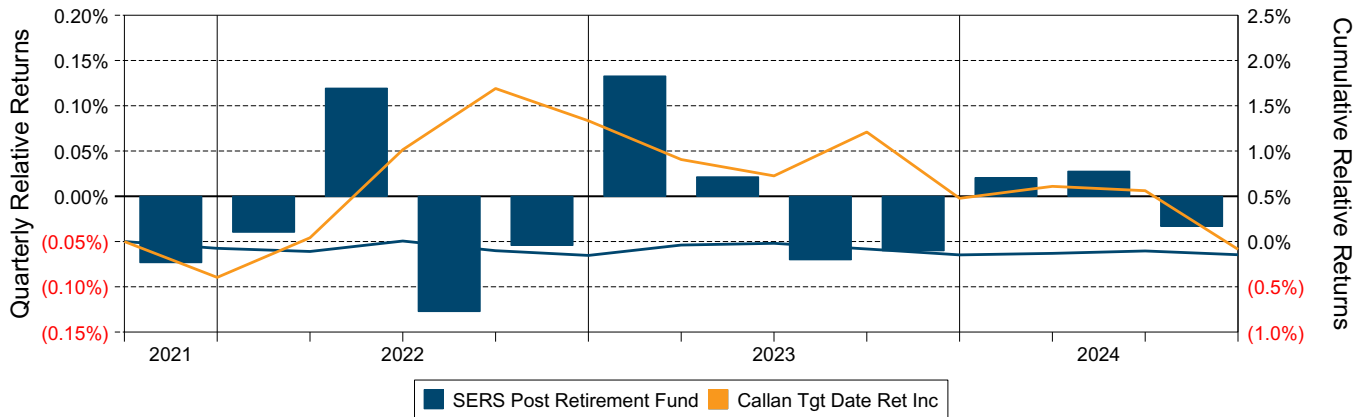
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

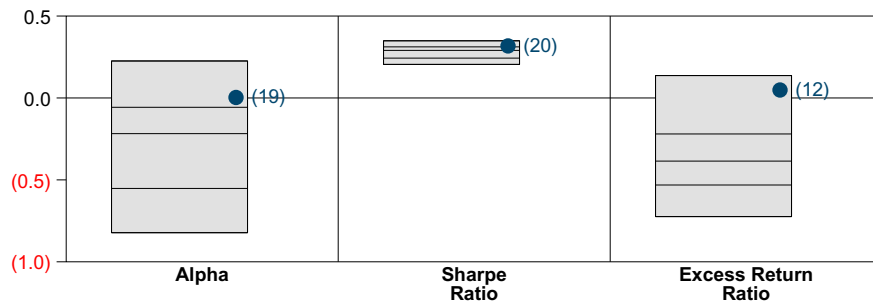


	12/23- 9/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	10.50	12.02	(10.64)	8.75	12.03	15.72	(1.62)	11.01	7.26	0.03
25th Percentile	9.65	11.40	(11.68)	7.40	10.87	14.40	(2.19)	10.22	6.49	(0.21)
Median	8.99	10.56	(12.88)	6.31	9.93	13.22	(3.03)	8.80	5.67	(0.91)
75th Percentile	8.11	8.64	(14.41)	5.09	8.76	11.77	(3.73)	7.75	4.77	(1.79)
90th Percentile	6.98	7.75	(15.16)	2.88	7.65	10.68	(4.37)	6.62	3.92	(2.95)
<b>SERS Post Retirement Fund</b>	● 9.53	11.13	(14.63)	6.95	11.97	15.65	(3.47)	10.18	6.10	(1.12)
BlackRock Post Retirement Index	▲ 9.52	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 September 30, 2024



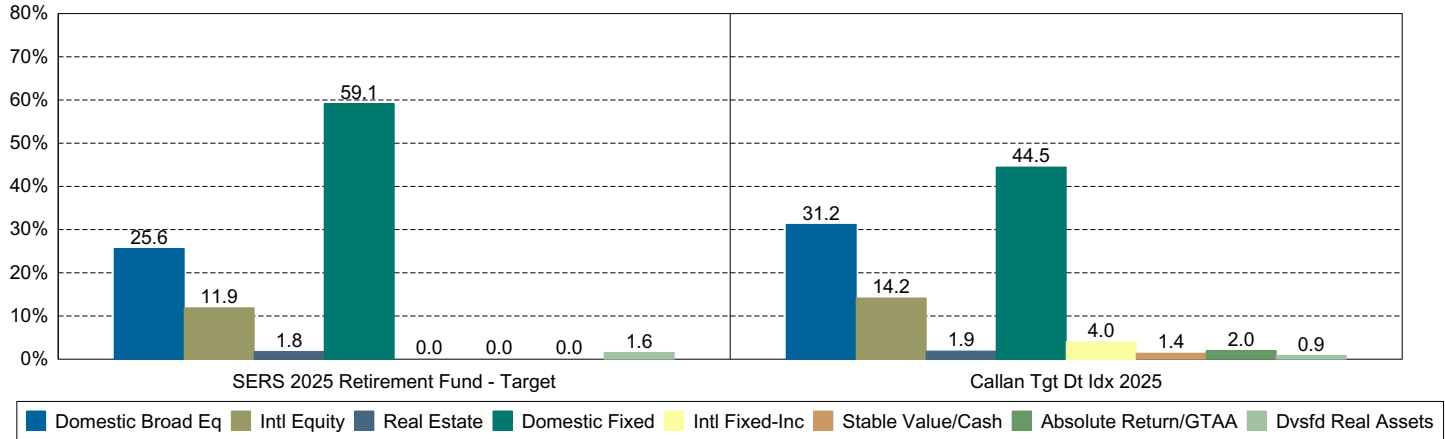
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.23	0.35	0.14
25th Percentile	(0.06)	0.31	(0.22)
Median	(0.22)	0.29	(0.39)
75th Percentile	(0.55)	0.24	(0.53)
90th Percentile	(0.82)	0.20	(0.72)
<b>SERS Post Retirement Fund</b>	● 0.00	0.32	0.05

# SERS 2025 Retirement Fund

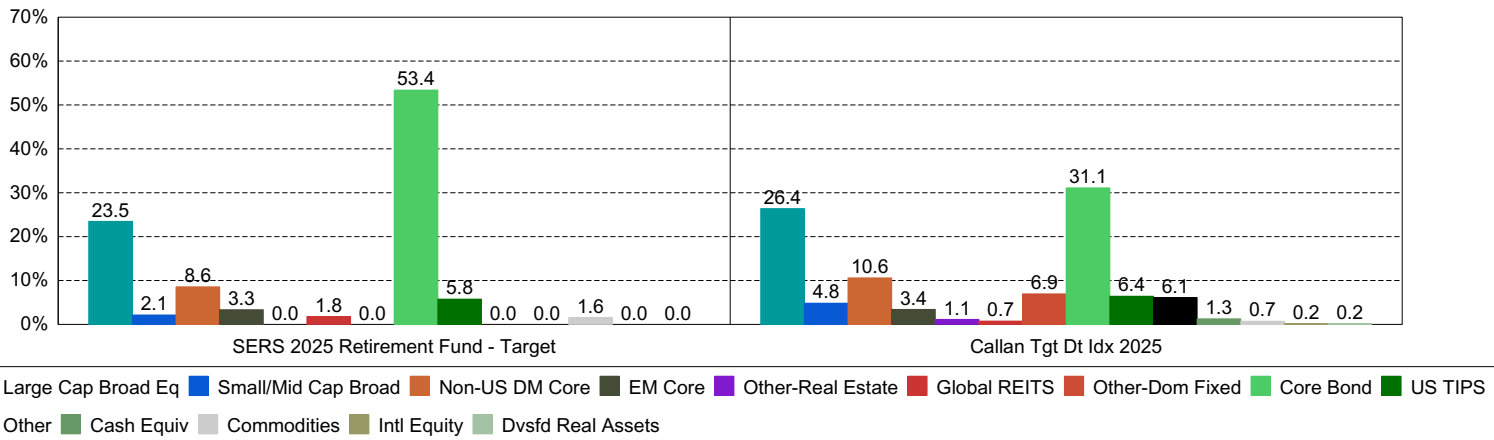
## Target Date Fund Asset Allocation as of September 30, 2024

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

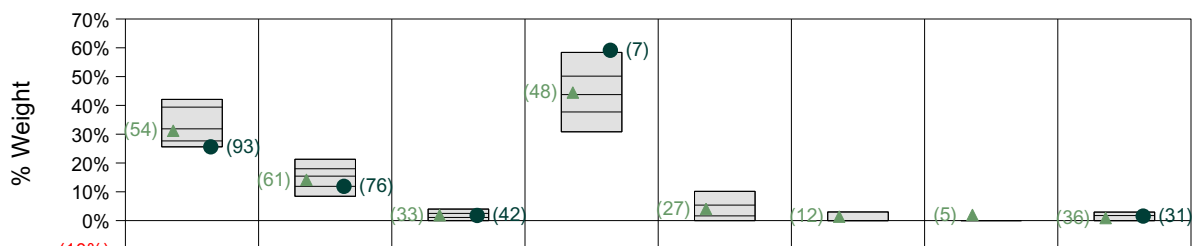
### Macro-Level Asset Allocation



### Micro-Level Asset Allocation



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



	Domestic Broad Eq	Intl Equity	Real Estate	Domestic Fixed	Intl Fixed-Inc	Stable Value/Cash	Absolute Return/GTAA	Dvsfd Real Assets
10th Percentile	42.08	21.29	4.00	58.40	10.16	3.00	0.00	2.95
25th Percentile	39.40	18.00	2.50	50.16	5.38	0.00	0.00	1.75
Median	31.86	15.43	1.09	43.75	1.64	0.00	0.00	0.00
75th Percentile	27.67	11.90	0.00	37.72	0.00	0.00	0.00	0.00
90th Percentile	25.61	8.44	0.00	30.84	0.00	0.00	0.00	0.00

<b>SERS 2025 Retirement Fund - Target</b>	●	25.61	11.90	1.79	59.14	-	-	1.56
Callan Tgt Dt Idx 2025	▲	31.20	14.17	1.87	44.47	1.39	1.98	0.89

# SERS 2025 Retirement Fund Period Ended September 30, 2024

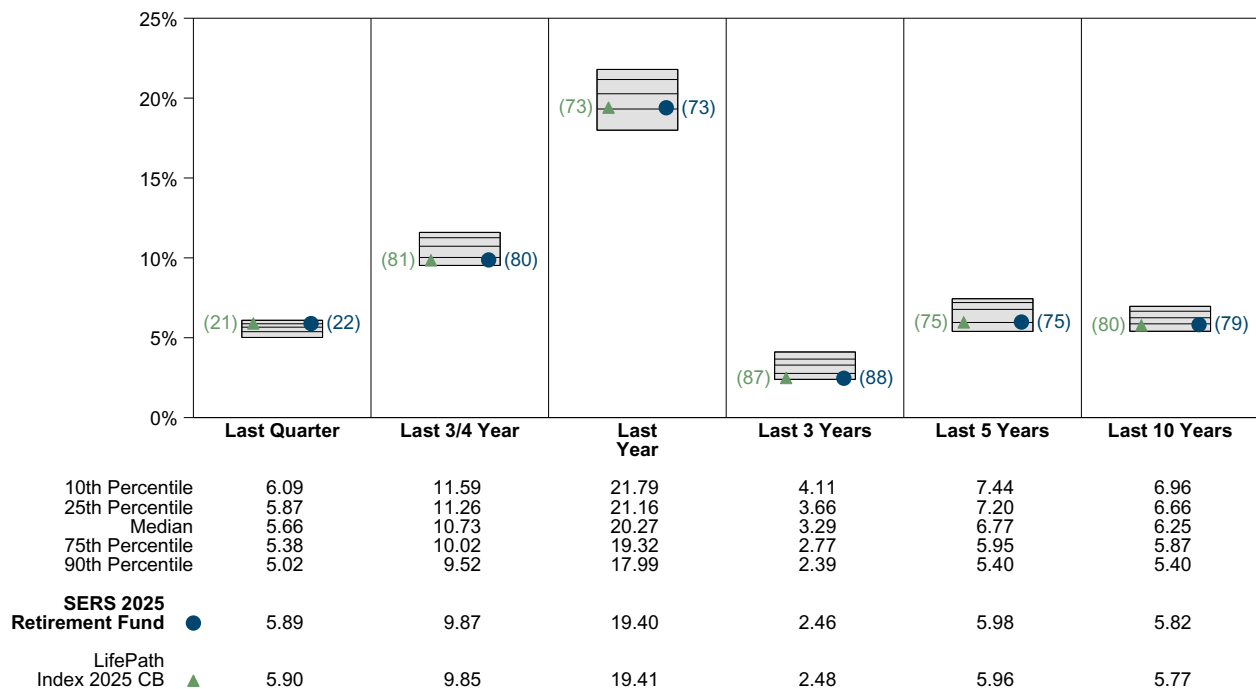
## Investment Philosophy

The BlackRock LifePath(R) Index 2025 Fund (the "Fund") seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. The Fund will be diversified across global asset classes, with allocations changing over the investment horizon to become more heavily oriented toward debt and debt-like securities, on the premise that individuals investing for retirement desire to reduce investment risk in their retirement accounts as their retirement date approaches. Target Date funds replaced risk-based funds in 1Q20.

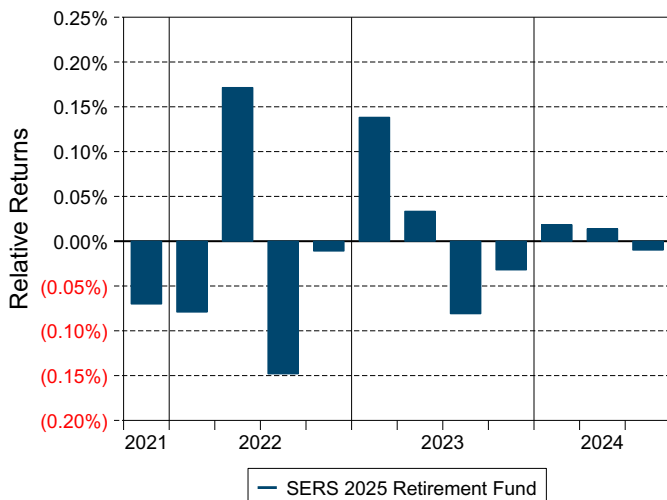
## Quarterly Summary and Highlights

- SERS 2025 Retirement Fund's portfolio posted a 5.89% return for the quarter placing it in the 22 percentile of the Callan Target Date 2025 group for the quarter and in the 73 percentile for the last year.
- SERS 2025 Retirement Fund's portfolio underperformed the LifePath Index 2025 CB by 0.01% for the quarter and underperformed the LifePath Index 2025 CB for the year by 0.01%.

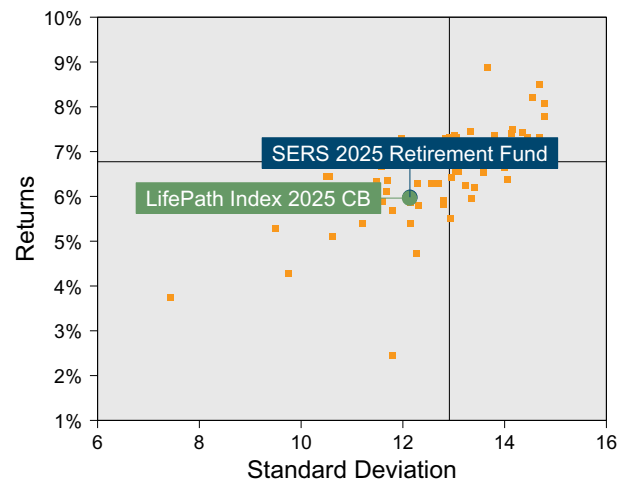
## Performance vs Callan Target Date 2025 (Net)



## Relative Return vs LifePath Index 2025 CB



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

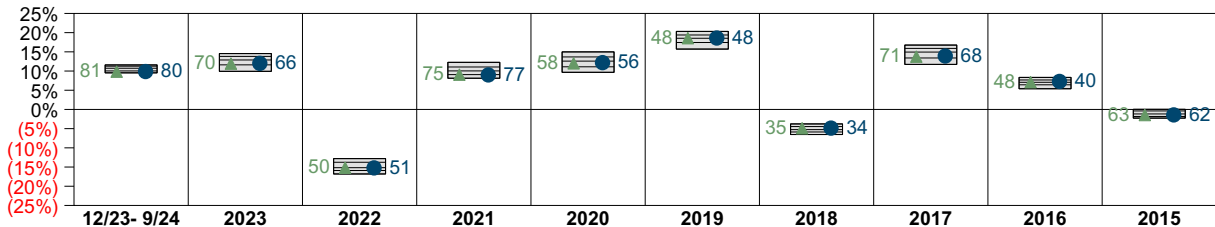


# SERS 2025 Retirement Fund Return Analysis Summary

## Return Analysis

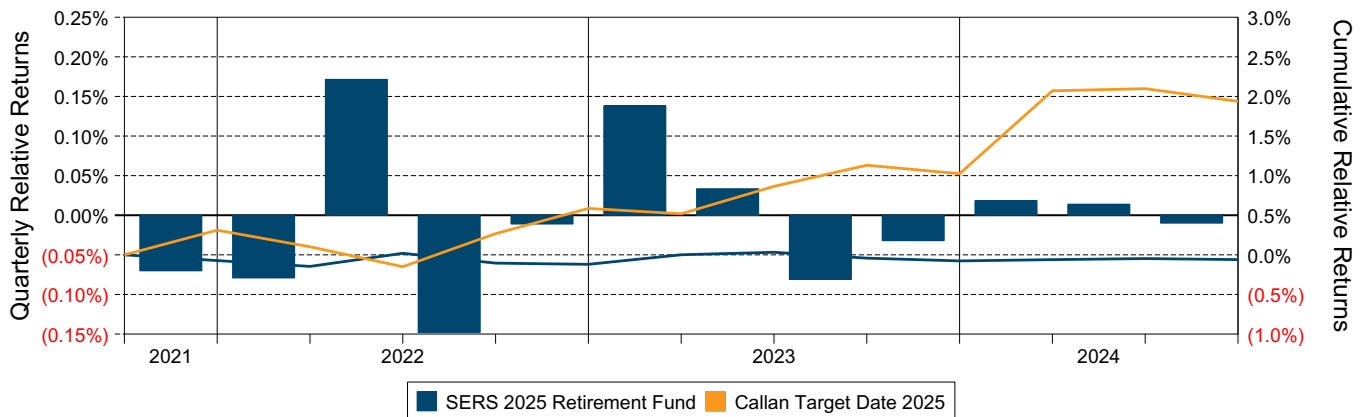
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

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

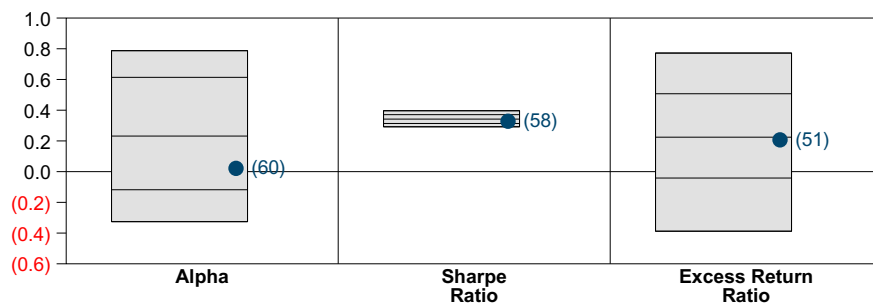


	12/23- 9/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
<b>SERS 2025 Retirement Fund</b> ●	9.87	12.00	(15.23)	8.99	12.19	18.60	(4.86)	13.91	7.30	(1.43)
BlackRock 2025 Index ▲	9.85	11.94	(15.17)	9.07	12.01	18.56	(4.90)	13.75	7.10	(1.45)

### Cumulative and Quarterly Relative Returns vs BlackRock 2025 Index



### Risk Adjusted Return Measures vs BlackRock 2025 Index Rankings Against Callan Target Date 2025 (Net) Seven Years Ended September 30, 2024

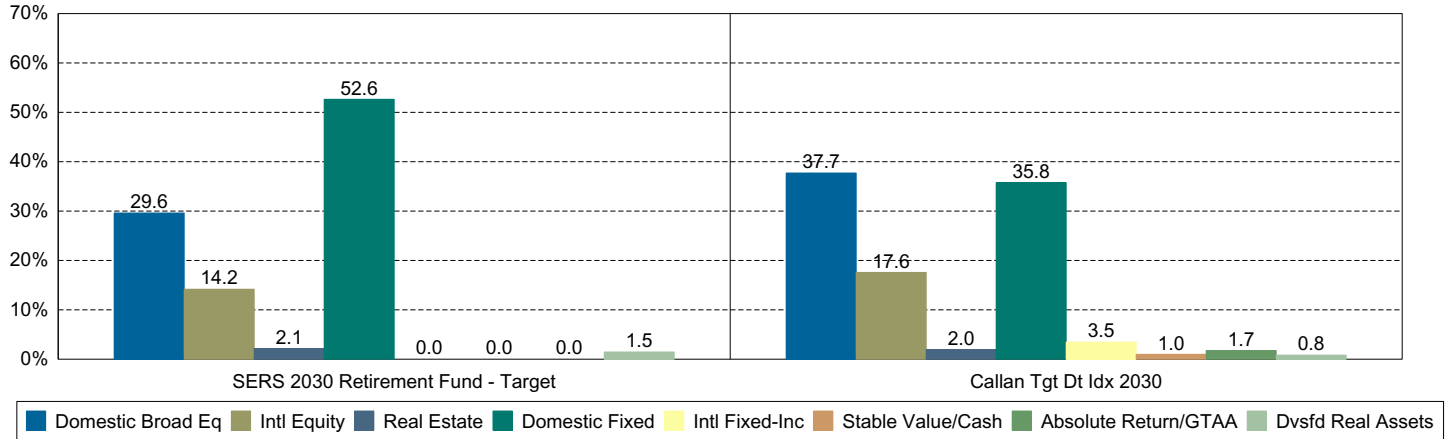


	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.79	0.40	0.77
25th Percentile	0.61	0.37	0.51
Median	0.23	0.34	0.22
75th Percentile	(0.12)	0.31	(0.04)
90th Percentile	(0.33)	0.29	(0.39)
<b>SERS 2025 Retirement Fund</b> ●	0.02	0.33	0.21

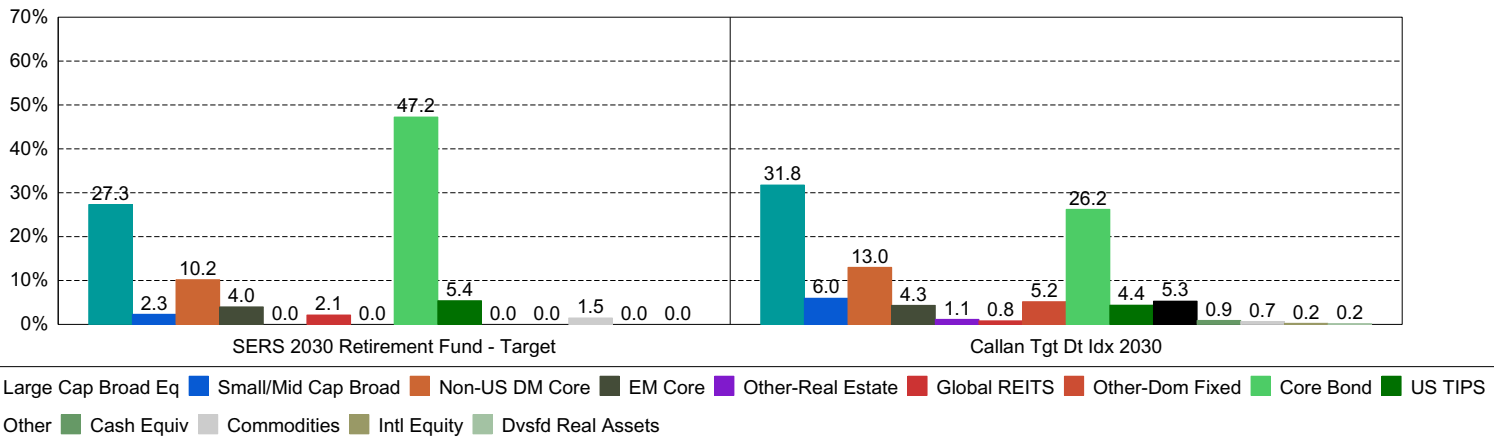
# SERS 2030 Retirement Fund Target Date Fund Asset Allocation as of September 30, 2024

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.

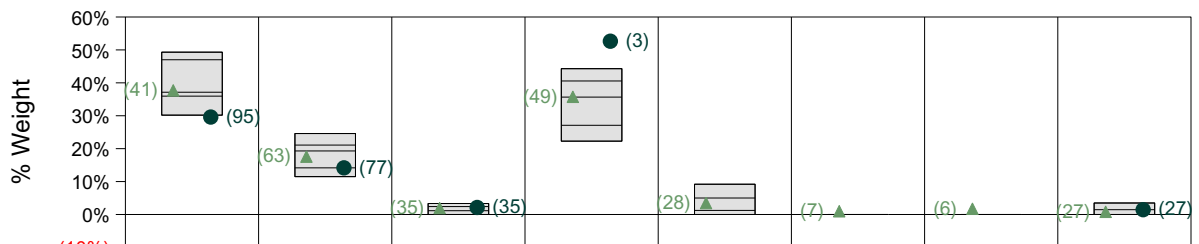
## Macro-Level Asset Allocation



## 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 September 30, 2024

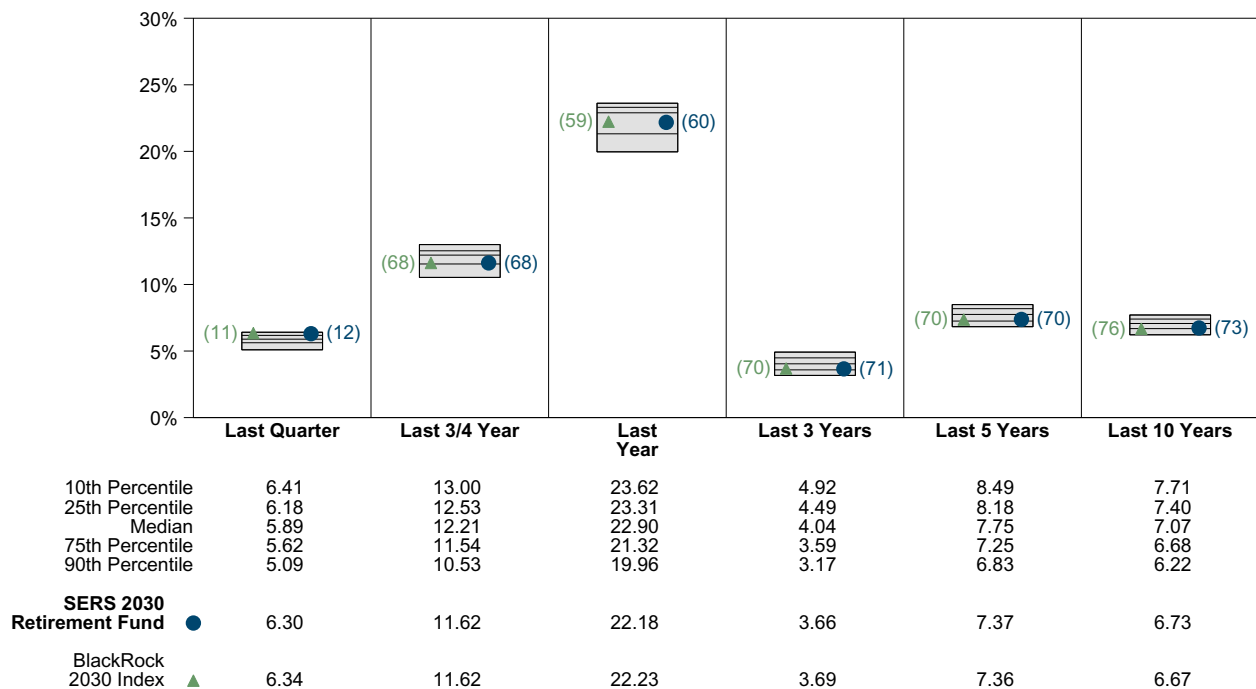
## Investment Philosophy

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.

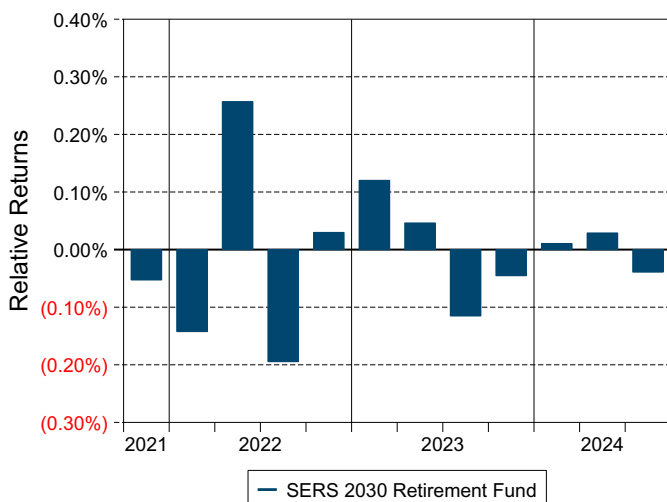
## Quarterly Summary and Highlights

- SERS 2030 Retirement Fund's portfolio posted a 6.30% return for the quarter placing it in the 12 percentile of the Callan Target Date 2030 group for the quarter and in the 60 percentile for the last year.
- SERS 2030 Retirement Fund's portfolio underperformed the BlackRock 2030 Index by 0.04% for the quarter and underperformed the BlackRock 2030 Index for the year by 0.05%.

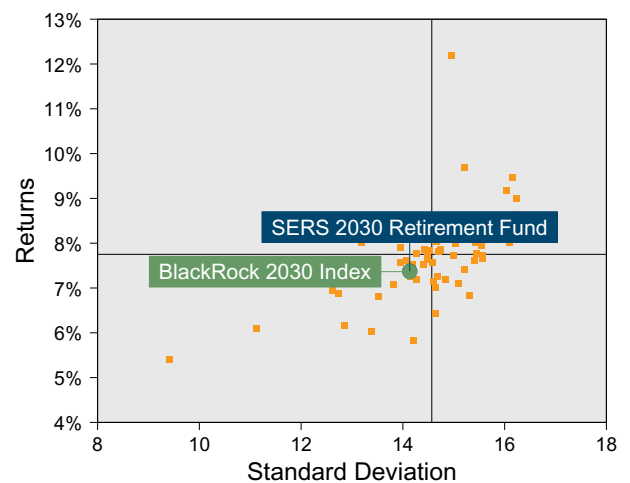
## Performance vs Callan Target Date 2030 (Net)



## Relative Return vs BlackRock 2030 Index



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

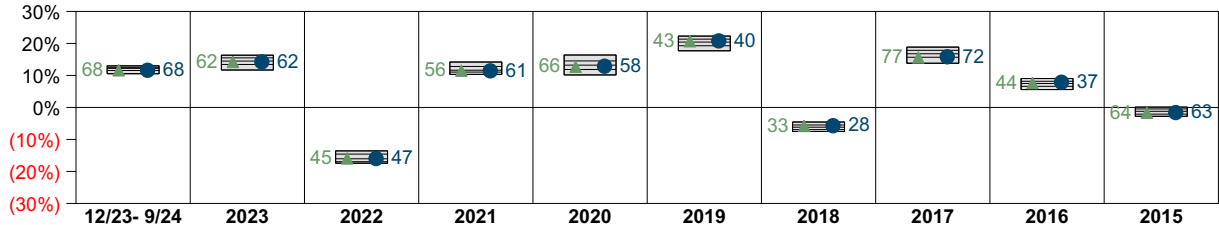


# SERS 2030 Retirement Fund Return Analysis Summary

## Return Analysis

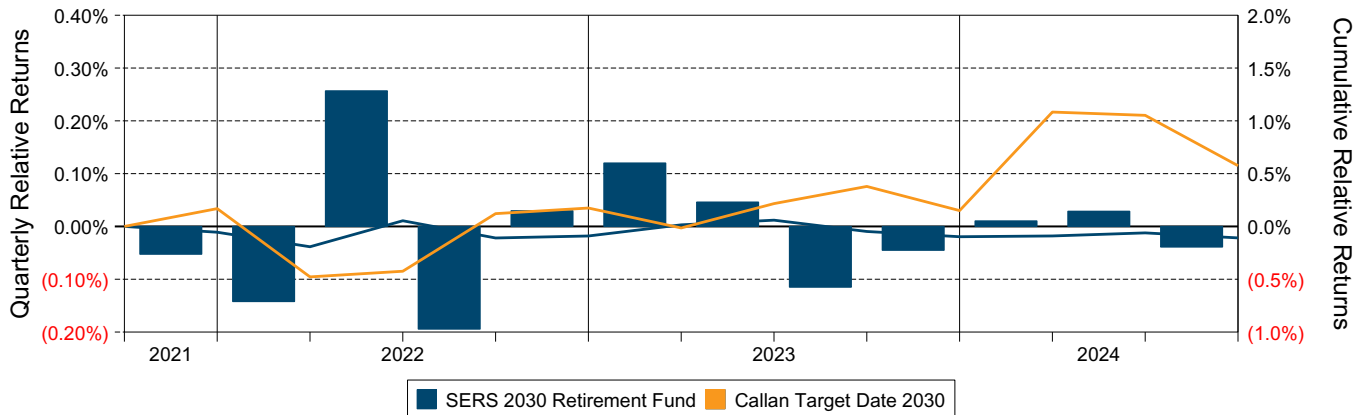
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

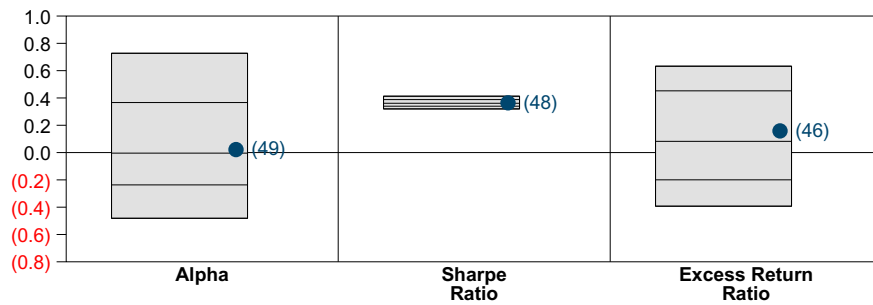


	12/23- 9/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	13.00	16.33	(13.58)	14.19	16.38	22.30	(4.55)	18.85	9.04	0.10
25th Percentile	12.53	15.49	(14.59)	12.81	14.54	21.34	(5.48)	17.85	8.17	(0.47)
Median	12.21	14.49	(16.05)	11.63	13.22	20.43	(6.17)	16.77	7.48	(1.21)
75th Percentile	11.54	13.42	(16.96)	11.05	11.87	19.28	(6.93)	15.68	6.59	(2.09)
90th Percentile	10.53	11.69	(17.42)	10.33	10.16	17.70	(7.50)	13.81	5.58	(2.78)
<b>SERS 2030 Retirement Fund</b>	● 11.62	14.24	(15.97)	11.43	12.88	20.80	(5.71)	15.83	7.88	(1.60)
<b>BlackRock 2030 Index</b>	▲ 11.62	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 September 30, 2024



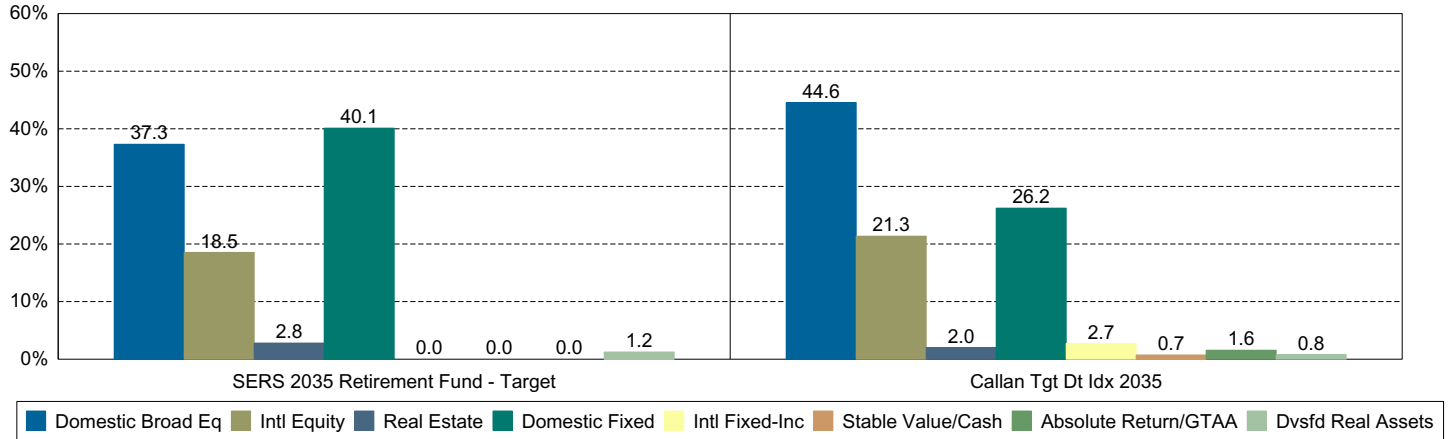
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.73	0.41	0.63
25th Percentile	0.37	0.39	0.45
Median	(0.00)	0.36	0.08
75th Percentile	(0.24)	0.34	(0.20)
90th Percentile	(0.48)	0.32	(0.39)
<b>SERS 2030 Retirement Fund</b>	● 0.02	0.36	0.16

# SERS 2035 Retirement Fund

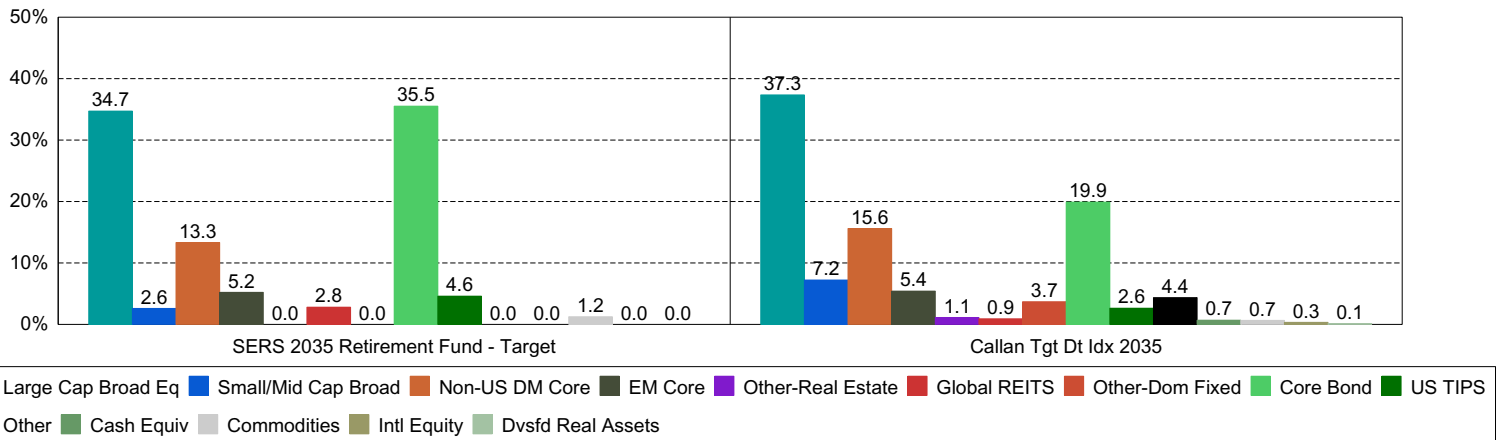
## Target Date Fund Asset Allocation as of September 30, 2024

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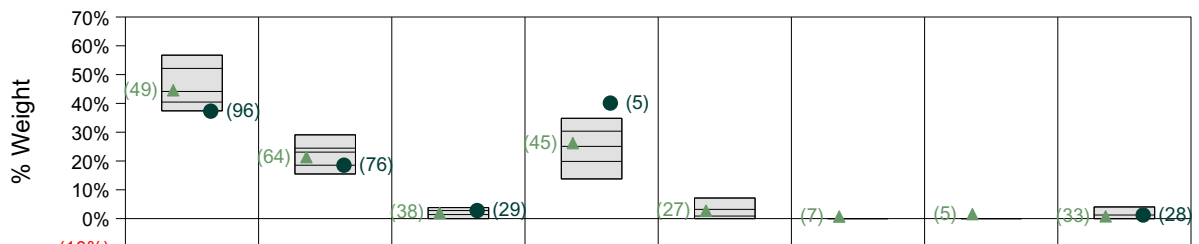
### Macro-Level Asset Allocation



### 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 September 30, 2024

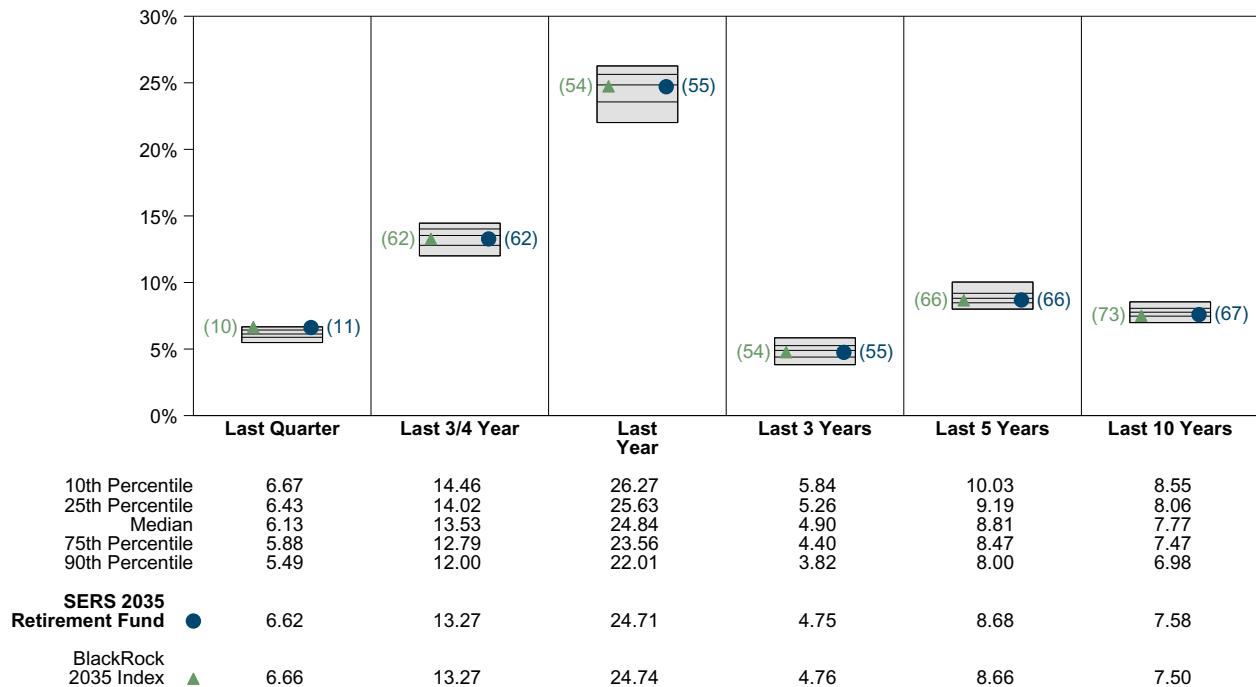
## Investment Philosophy

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.

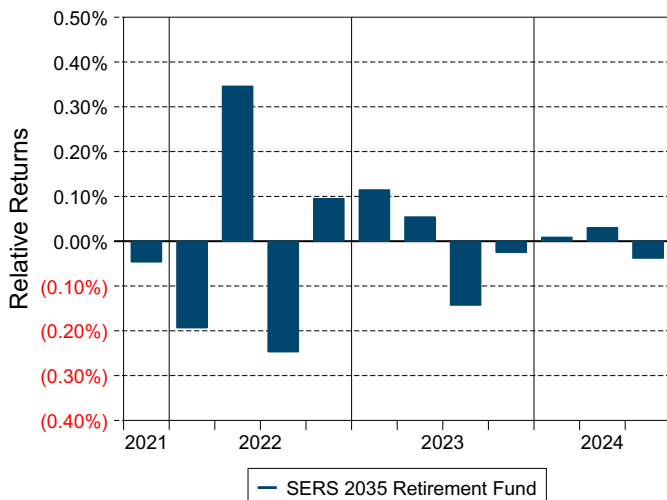
## Quarterly Summary and Highlights

- SERS 2035 Retirement Fund's portfolio posted a 6.62% return for the quarter placing it in the 11 percentile of the Callan Target Date 2035 group for the quarter and in the 55 percentile for the last year.
- SERS 2035 Retirement Fund's portfolio underperformed the BlackRock 2035 Index by 0.04% for the quarter and underperformed the BlackRock 2035 Index for the year by 0.03%.

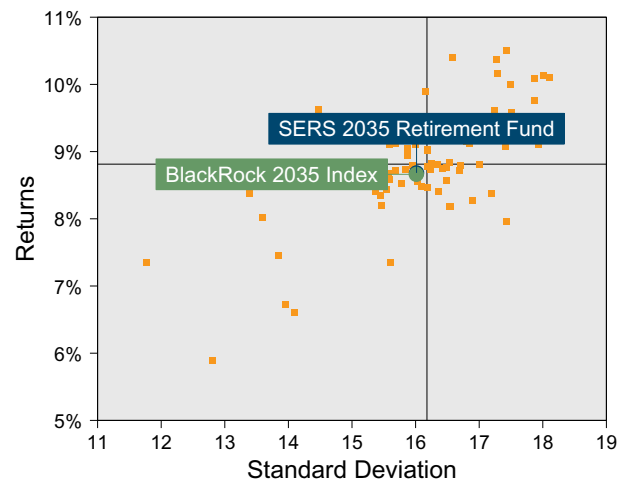
## Performance vs Callan Target Date 2035 (Net)



## Relative Return vs BlackRock 2035 Index



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

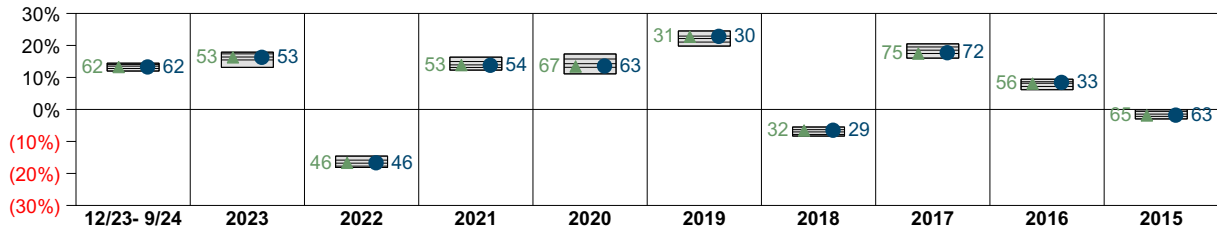


# SERS 2035 Retirement Fund Return Analysis Summary

## Return Analysis

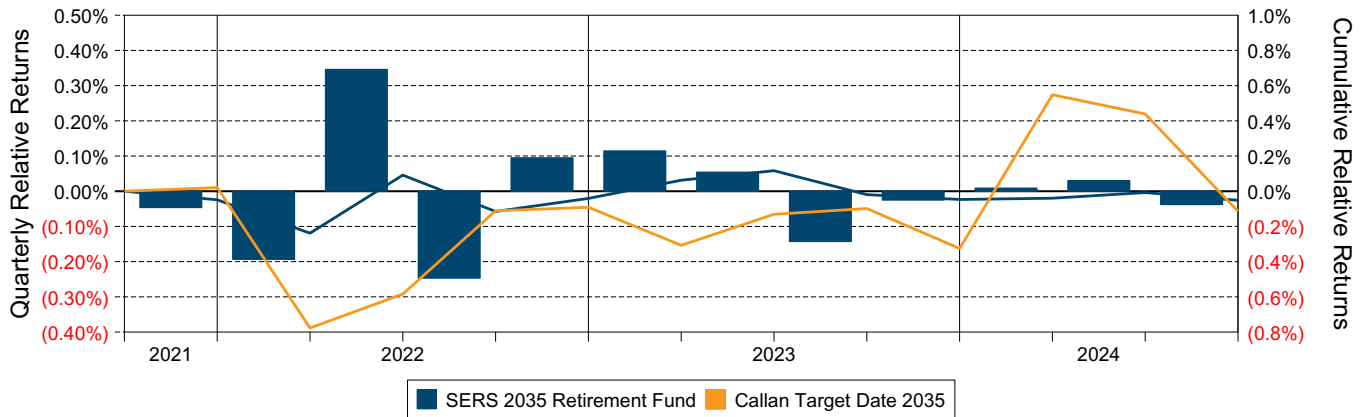
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

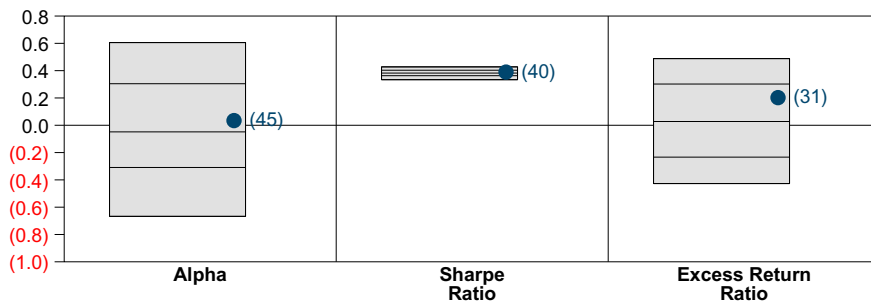


	12/23- 9/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	14.46	17.90	(14.58)	16.34	17.33	24.52	(5.49)	20.49	9.45	(0.09)
25th Percentile	14.02	17.36	(15.84)	14.96	15.75	22.92	(6.32)	19.53	8.66	(0.61)
Median	13.53	16.38	(16.79)	13.92	14.30	22.16	(7.03)	18.51	8.18	(1.46)
75th Percentile	12.79	15.47	(17.72)	13.12	13.17	21.05	(7.82)	17.48	7.18	(2.17)
90th Percentile	12.00	13.15	(18.14)	12.30	11.11	19.80	(8.31)	16.04	6.17	(2.97)
<b>SERS 2035 Retirement Fund</b>	● 13.27	16.29	(16.67)	13.80	13.58	22.84	(6.50)	17.72	8.44	(1.78)
BlackRock 2035 Index	▲ 13.27	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 September 30, 2024



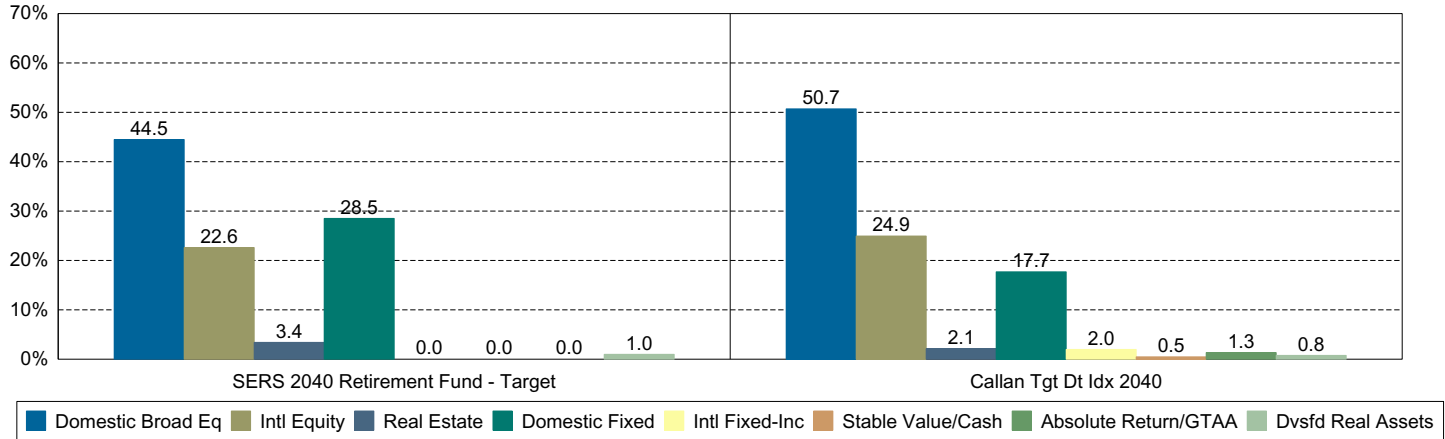
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.61	0.43	0.49
25th Percentile	0.30	0.40	0.30
Median	(0.05)	0.38	0.03
75th Percentile	(0.31)	0.36	(0.23)
90th Percentile	(0.67)	0.33	(0.43)
<b>SERS 2035 Retirement Fund</b>	● 0.03	0.39	0.20

# SERS 2040 Retirement Fund

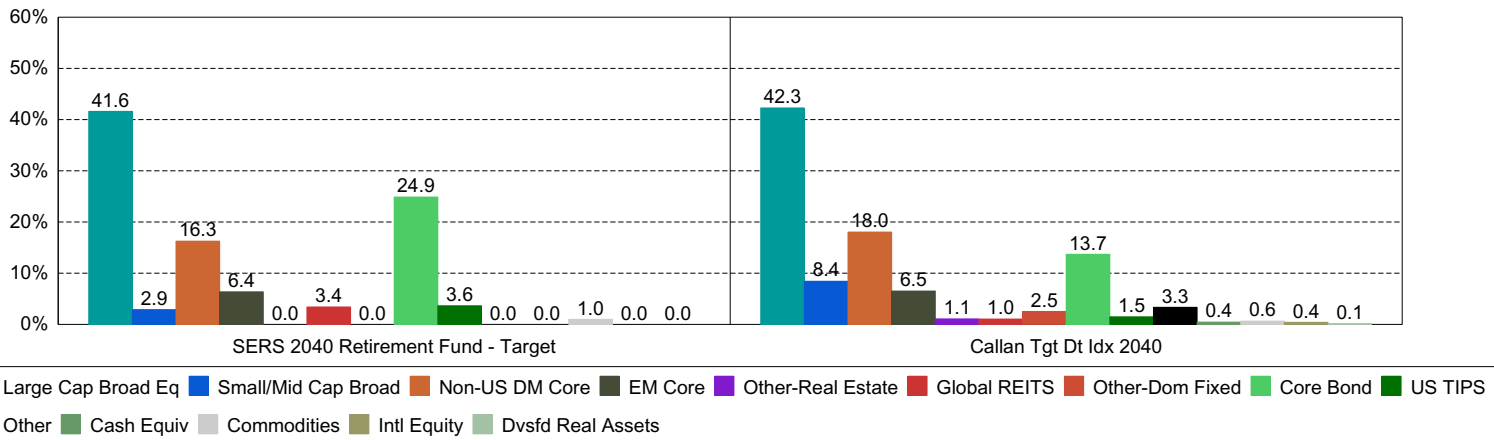
## Target Date Fund Asset Allocation as of September 30, 2024

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.

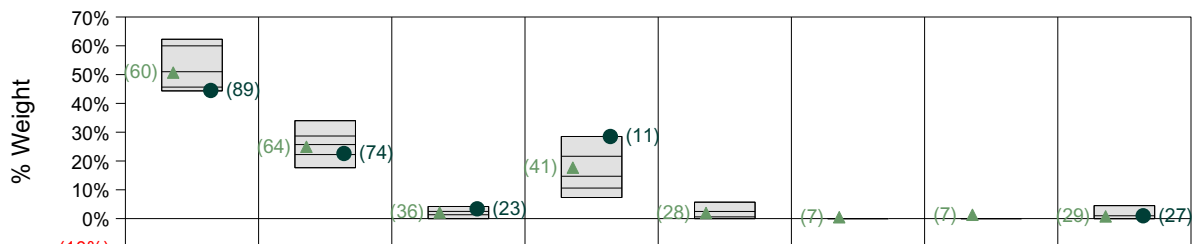
### Macro-Level Asset Allocation



### 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 September 30, 2024

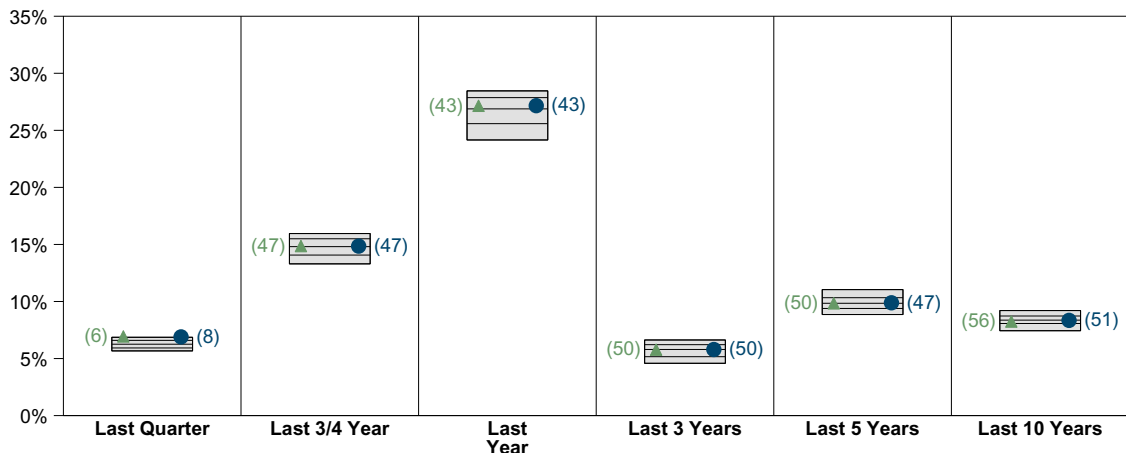
## Investment Philosophy

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

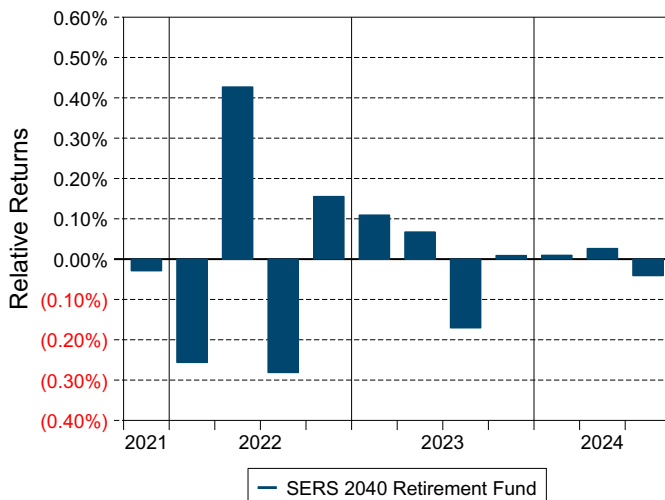
- SERS 2040 Retirement Fund's portfolio posted a 6.90% return for the quarter placing it in the 8 percentile of the Callan Target Date 2040 group for the quarter and in the 43 percentile for the last year.
- SERS 2040 Retirement Fund's portfolio underperformed the BlackRock 2040 Index by 0.04% for the quarter and outperformed the BlackRock 2040 Index for the year by 0.00%.

## Performance vs Callan Target Date 2040 (Net)

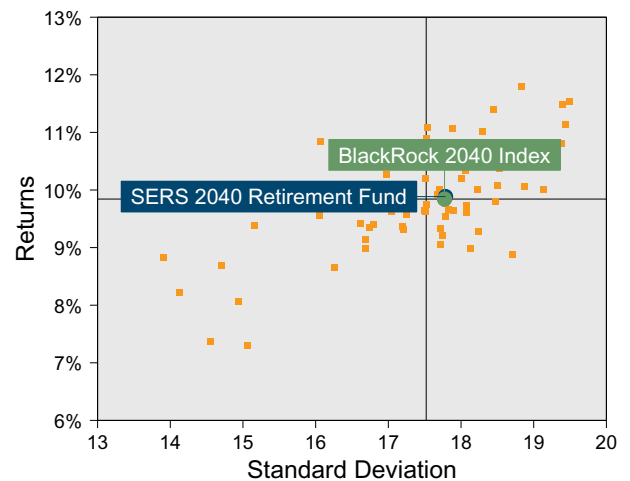


10th Percentile	6.87	15.96	28.46	6.63	11.04	9.20
25th Percentile	6.59	15.50	27.87	6.22	10.33	8.73
Median	6.26	14.81	26.88	5.80	9.84	8.37
75th Percentile	5.93	14.07	25.59	5.16	9.39	8.07
90th Percentile	5.67	13.30	24.16	4.58	8.86	7.44
<b>SERS 2040 Retirement Fund</b>	<b>6.90</b>	<b>14.85</b>	<b>27.16</b>	<b>5.79</b>	<b>9.89</b>	<b>8.35</b>
BlackRock 2040 Index	6.94	14.86	27.16	5.78	9.84	8.25

## Relative Return vs BlackRock 2040 Index



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

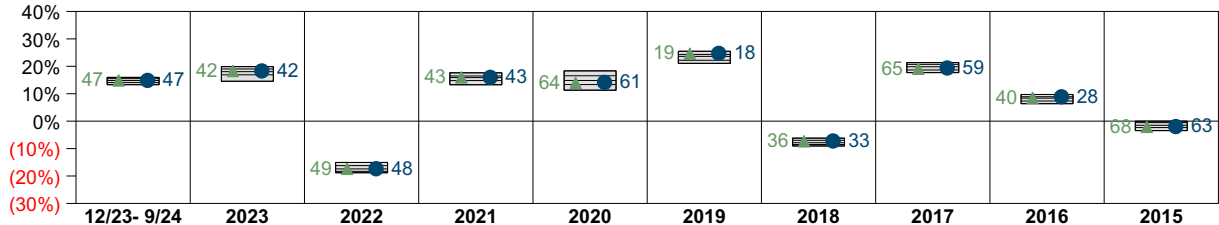


# SERS 2040 Retirement Fund Return Analysis Summary

## Return Analysis

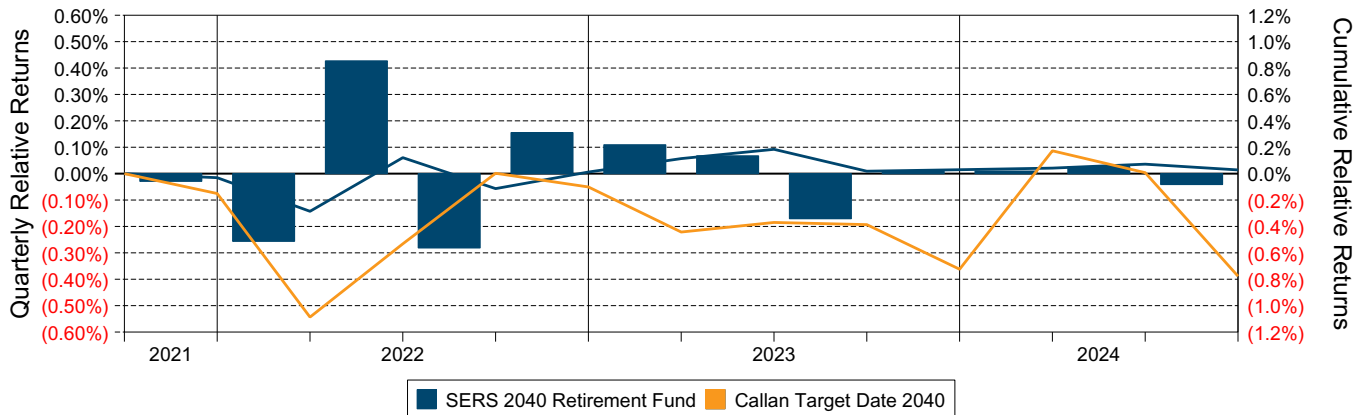
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

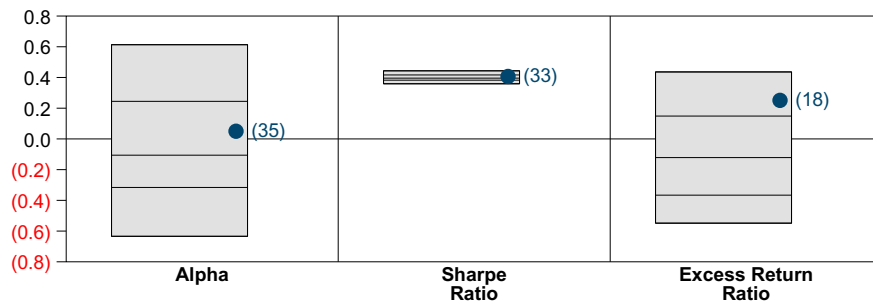


	12/23- 9/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	15.96	19.88	(15.05)	17.63	18.34	25.47	(6.19)	21.35	9.72	(0.02)
25th Percentile	15.50	19.02	(16.20)	16.46	16.55	24.33	(6.99)	20.71	8.91	(0.53)
Median	14.81	18.04	(17.41)	15.87	14.83	23.62	(7.87)	19.84	8.40	(1.50)
75th Percentile	14.07	16.90	(18.31)	14.80	13.34	22.20	(8.52)	18.66	7.34	(2.34)
90th Percentile	13.30	14.54	(18.81)	13.27	11.29	21.07	(9.05)	17.70	6.37	(3.45)
<b>SERS 2040 Retirement Fund</b>	● 14.85	18.30	(17.35)	15.96	14.14	24.71	(7.22)	19.38	8.88	(1.98)
BlackRock 2040 Index	▲ 14.86	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 September 30, 2024



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.61	0.44	0.44
25th Percentile	0.24	0.42	0.15
Median	(0.11)	0.40	(0.12)
75th Percentile	(0.32)	0.38	(0.37)
90th Percentile	(0.63)	0.36	(0.55)
<b>SERS 2040 Retirement Fund</b>	● 0.05	0.41	0.25

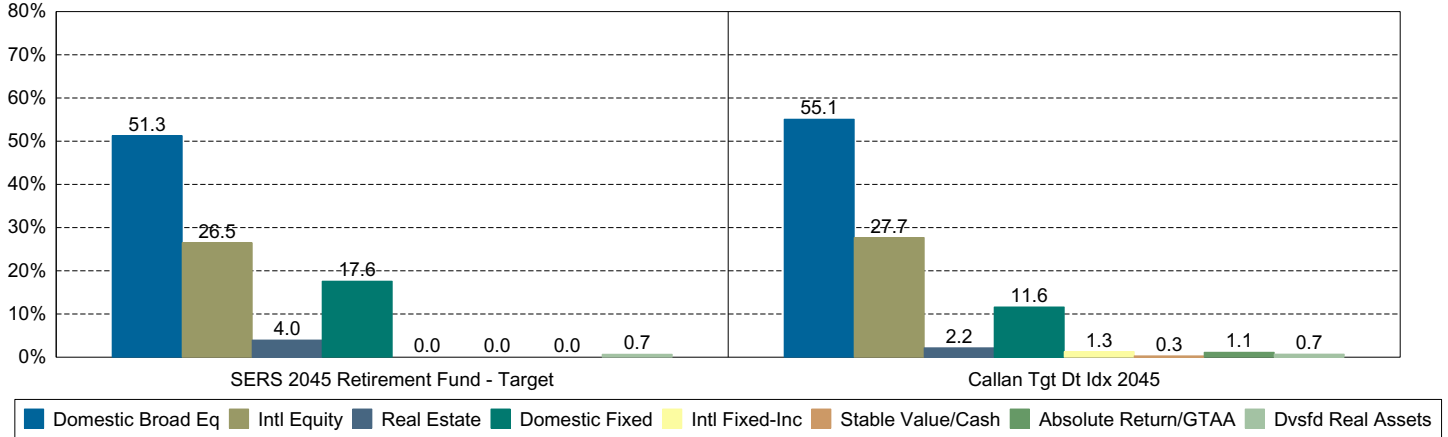


# SERS 2045 Retirement Fund

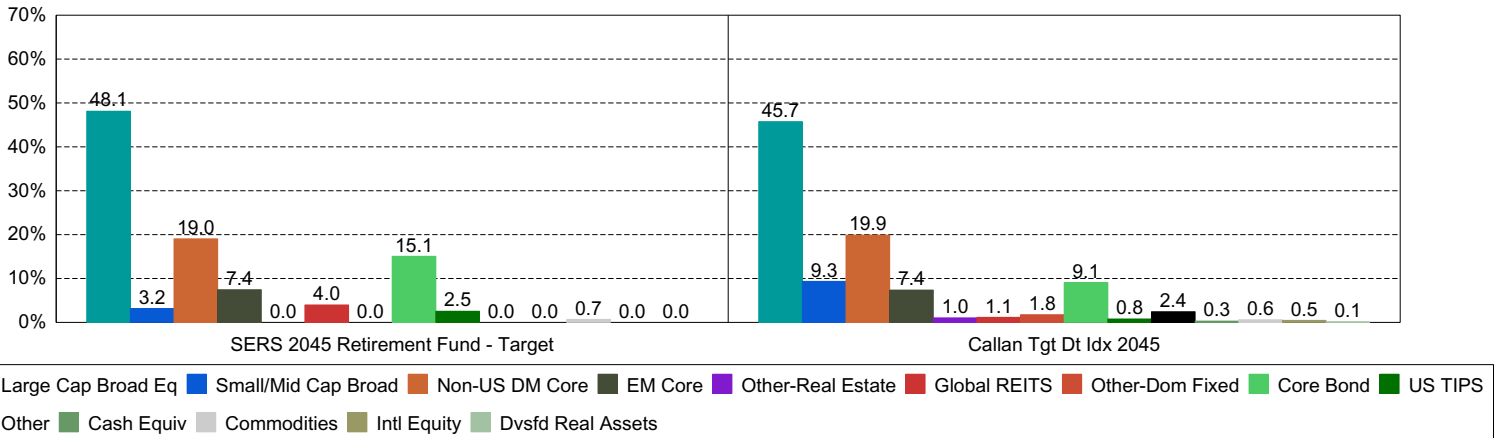
## Target Date Fund Asset Allocation as of September 30, 2024

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.

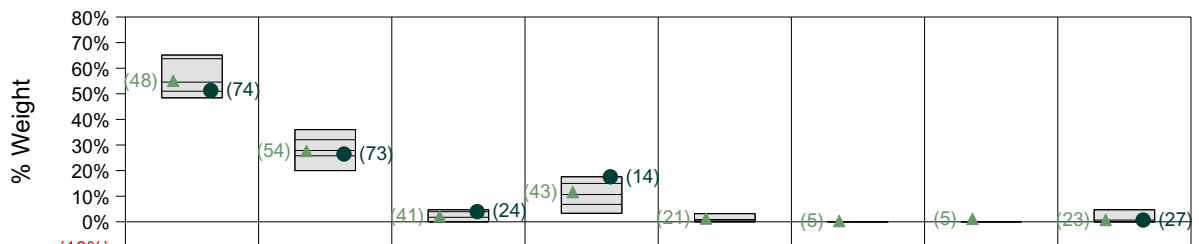
### Macro-Level Asset Allocation



### 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 September 30, 2024

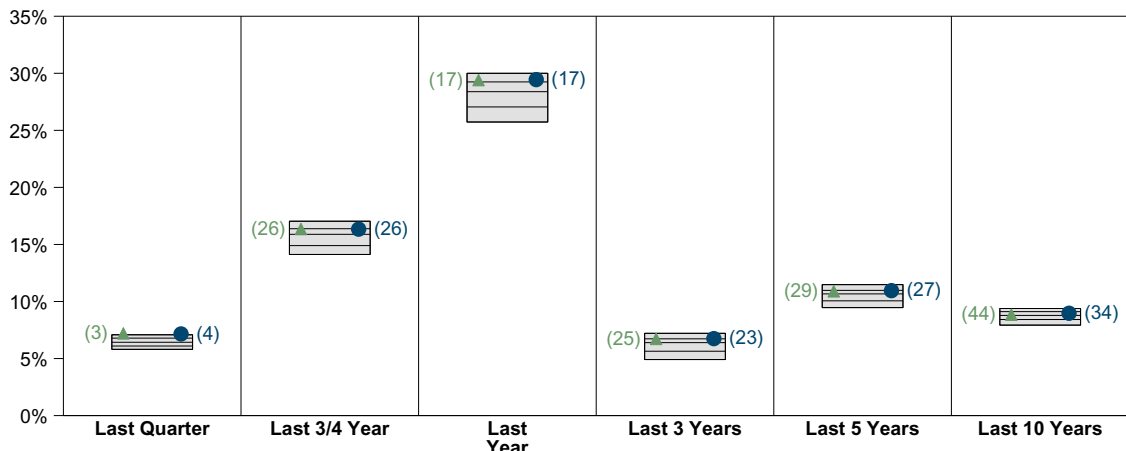
## Investment Philosophy

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

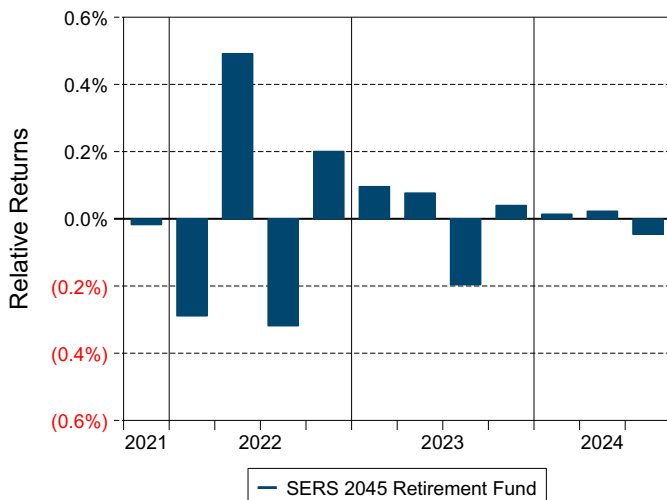
- SERS 2045 Retirement Fund's portfolio posted a 7.16% return for the quarter placing it in the 4 percentile of the Callan Target Date 2045 group for the quarter and in the 17 percentile for the last year.
- SERS 2045 Retirement Fund's portfolio underperformed the BlackRock 2045 Index by 0.05% for the quarter and outperformed the BlackRock 2045 Index for the year by 0.04%.

## Performance vs Callan Target Date 2045 (Net)

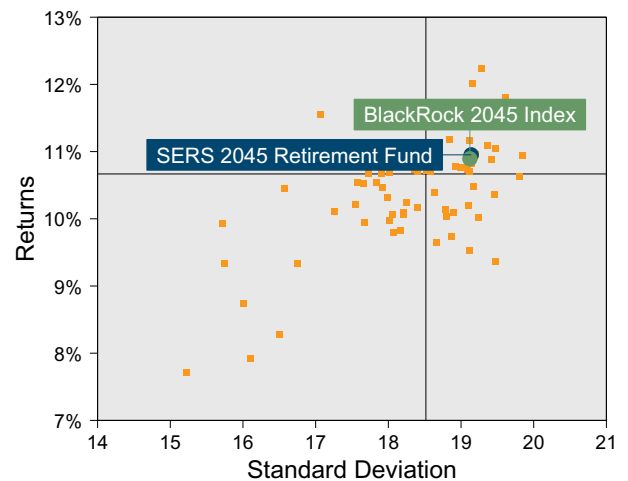


	Last Quarter	Last 3/4 Year	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	7.08	17.04	30.00	7.21	11.48	9.39
25th Percentile	6.79	16.38	29.24	6.73	10.98	9.11
Median	6.43	15.89	28.39	6.39	10.67	8.78
75th Percentile	6.10	14.90	27.05	5.64	10.06	8.42
90th Percentile	5.80	14.12	25.73	4.91	9.47	7.93
<b>SERS 2045 Retirement Fund</b>	<b>7.16</b>	<b>16.34</b>	<b>29.45</b>	<b>6.75</b>	<b>10.95</b>	<b>8.97</b>
BlackRock 2045 Index	7.21	16.35	29.41	6.72	10.89	8.85

## Relative Return vs BlackRock 2045 Index



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

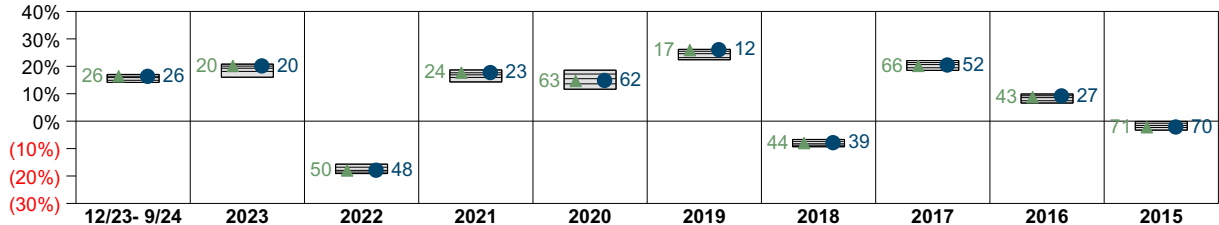


# SERS 2045 Retirement Fund Return Analysis Summary

## Return Analysis

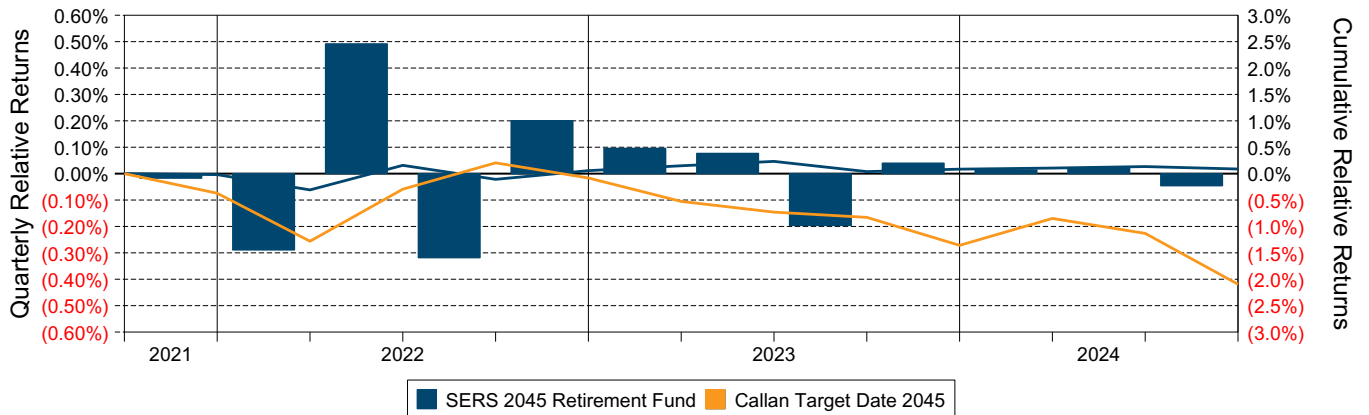
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

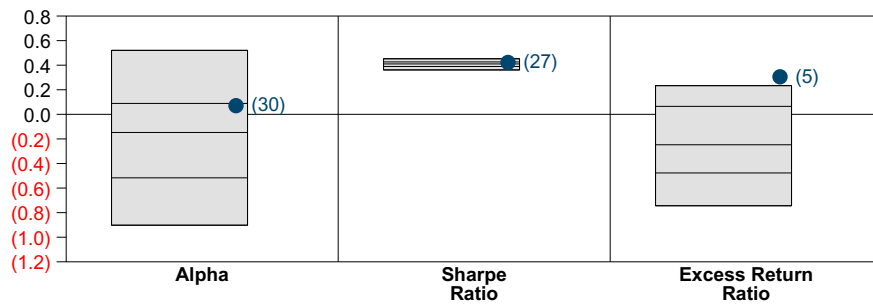


	12/23- 9/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	17.04	20.78	(15.68)	18.67	18.58	26.17	(6.67)	22.09	9.90	(0.11)
25th Percentile	16.38	20.06	(16.79)	17.64	17.17	25.47	(7.37)	21.36	9.27	(0.75)
Median	15.89	19.29	(17.94)	16.89	15.48	24.60	(8.25)	20.63	8.57	(1.56)
75th Percentile	14.90	18.13	(18.56)	15.94	13.60	23.16	(8.78)	19.47	7.45	(2.32)
90th Percentile	14.12	16.01	(19.12)	14.29	11.64	22.38	(9.33)	18.51	6.60	(3.27)
<b>SERS 2045 Retirement Fund</b>	● 16.34	20.14	(17.89)	17.72	14.83	26.05	(7.85)	20.47	9.20	(2.13)
LifePath Index 2045 CB	▲ 16.35	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 September 30, 2024



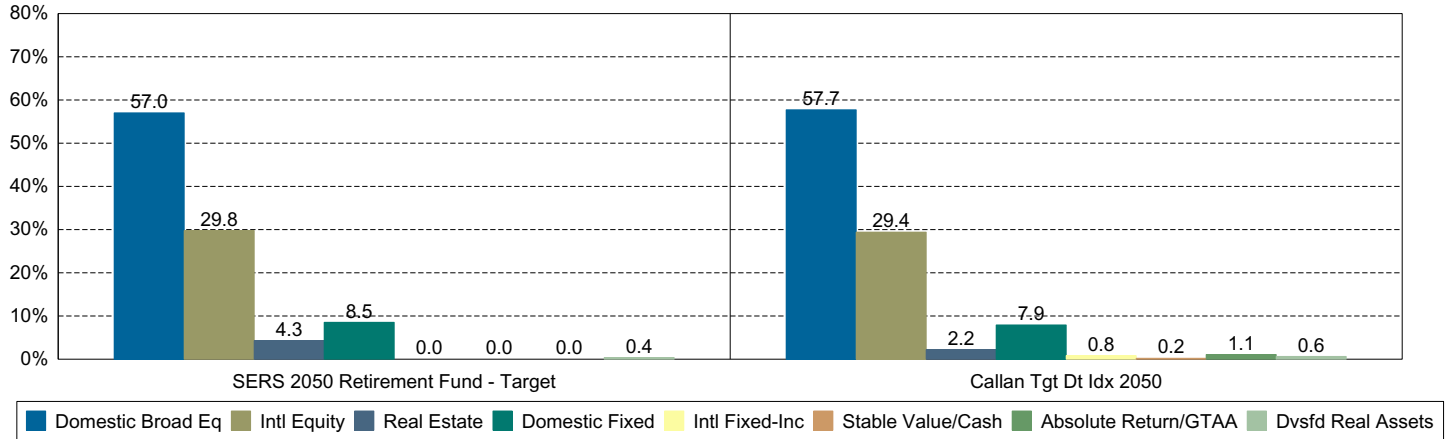
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.52	0.45	0.23
25th Percentile	0.09	0.43	0.07
Median	(0.15)	0.41	(0.25)
75th Percentile	(0.52)	0.39	(0.48)
90th Percentile	(0.90)	0.36	(0.74)
<b>SERS 2045 Retirement Fund</b>	● 0.07	0.42	0.31

# SERS 2050 Retirement Fund

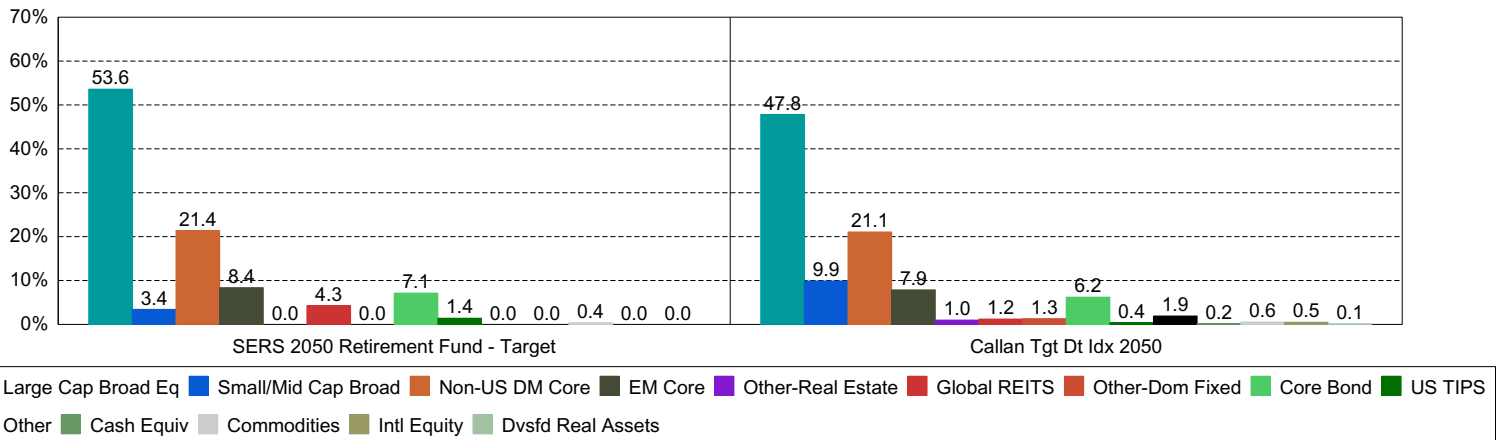
## Target Date Fund Asset Allocation as of September 30, 2024

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.

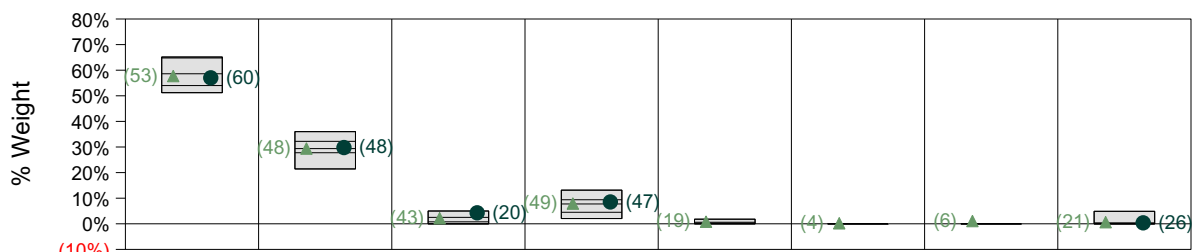
### Macro-Level Asset Allocation



### 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

<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	1.08	0.64

# SERS 2050 Retirement Fund Period Ended September 30, 2024

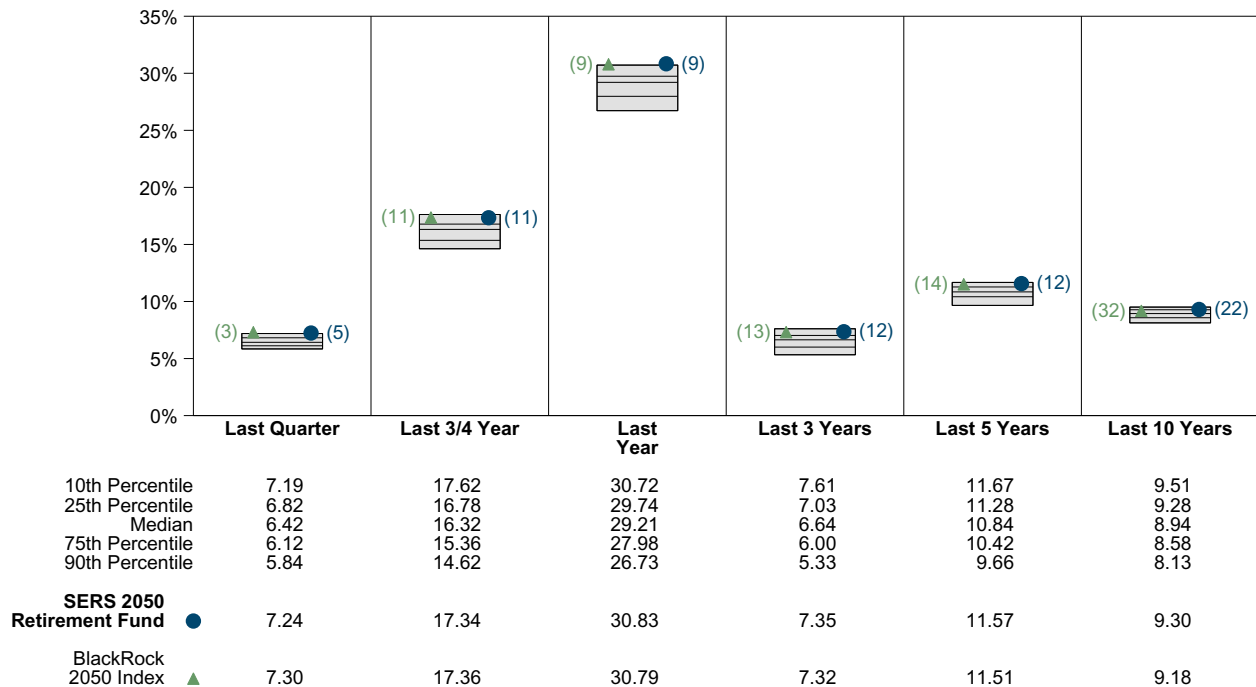
## Investment Philosophy

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.

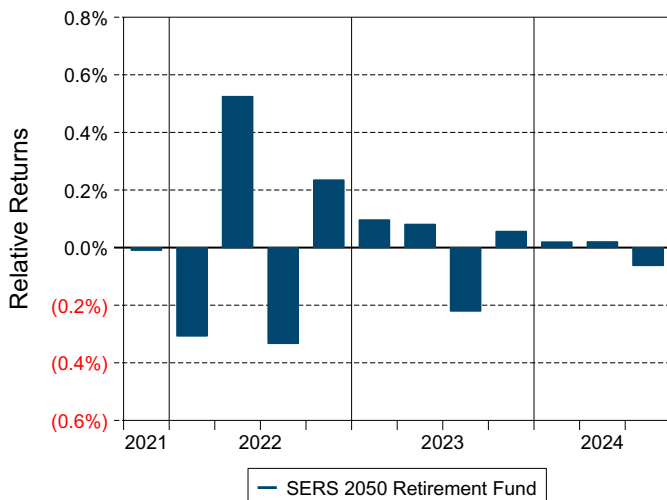
## Quarterly Summary and Highlights

- SERS 2050 Retirement Fund's portfolio posted a 7.24% return for the quarter placing it in the 5 percentile of the Callan Target Date 2050 group for the quarter and in the 9 percentile for the last year.
- SERS 2050 Retirement Fund's portfolio underperformed the BlackRock 2050 Index by 0.07% for the quarter and outperformed the BlackRock 2050 Index for the year by 0.04%.

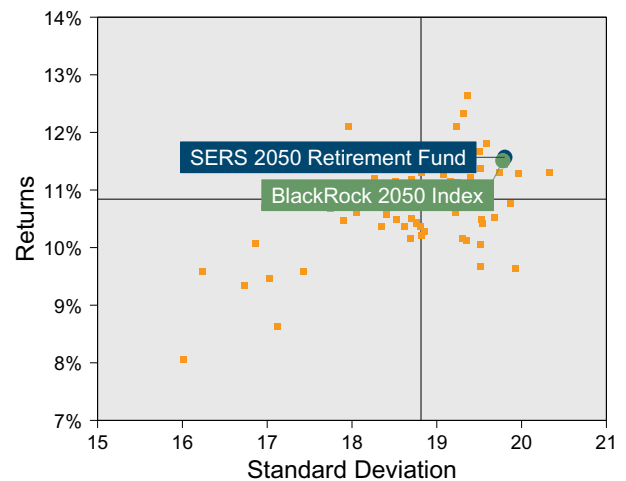
## Performance vs Callan Target Date 2050 (Net)



## Relative Return vs BlackRock 2050 Index



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

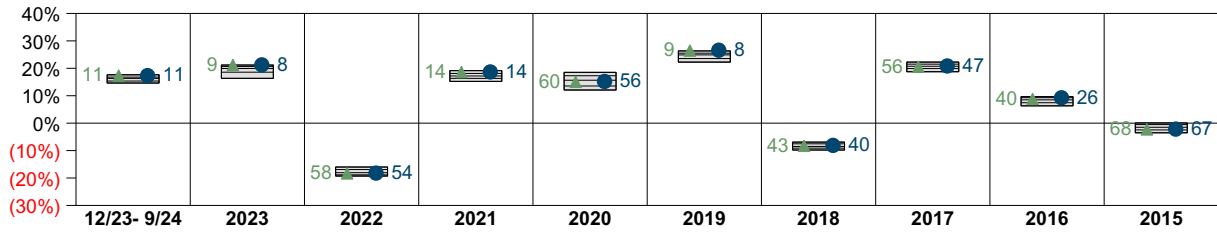


# SERS 2050 Retirement Fund Return Analysis Summary

## Return Analysis

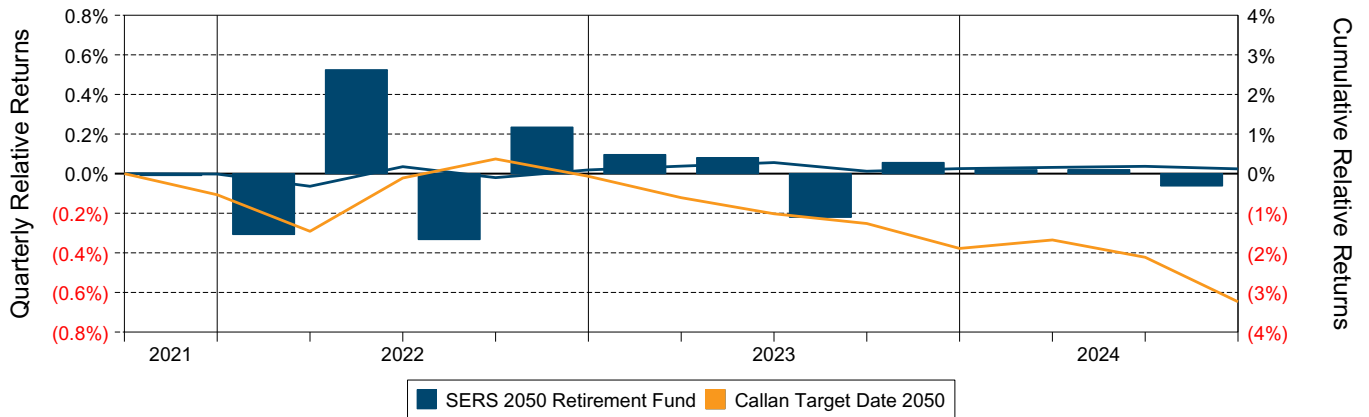
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

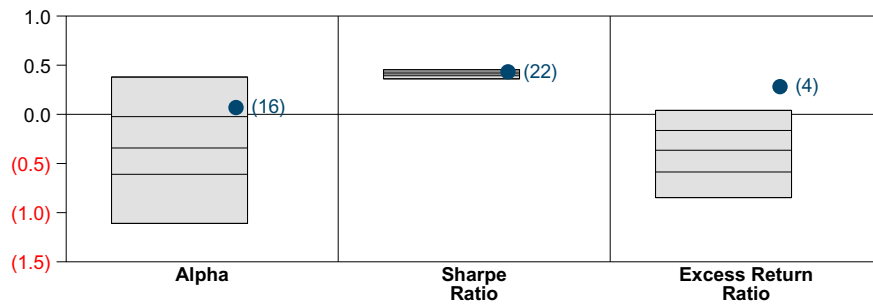


	12/23- 9/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	17.62	21.18	(15.99)	19.15	18.53	26.34	(6.91)	22.27	9.65	0.05
25th Percentile	16.78	20.63	(16.91)	18.13	17.29	25.51	(7.53)	21.51	9.29	(0.52)
Median	16.32	19.92	(18.06)	17.20	15.65	24.89	(8.48)	20.74	8.50	(1.50)
75th Percentile	15.36	18.58	(18.84)	16.33	13.55	23.55	(9.11)	19.91	7.45	(2.47)
90th Percentile	14.62	16.33	(19.28)	15.23	12.08	22.26	(9.80)	18.75	6.32	(3.51)
<b>SERS 2050 Retirement Fund</b>	● 17.34	21.25	(18.20)	18.67	15.20	26.60	(8.11)	20.85	9.26	(2.17)
BlackRock 2050 Index	▲ 17.36	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 September 30, 2024

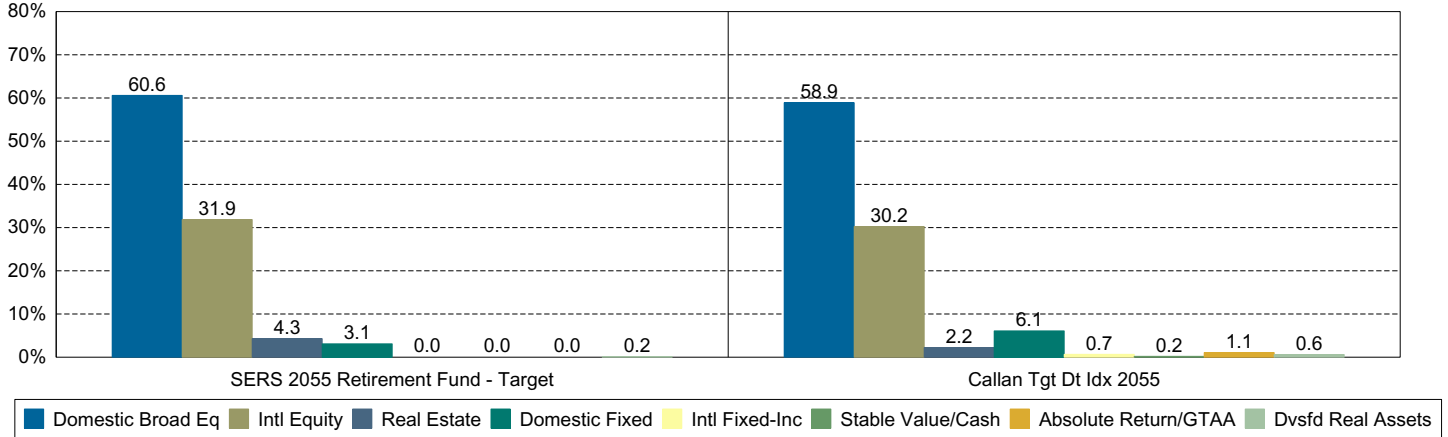


	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.38	0.45	0.04
25th Percentile	(0.02)	0.43	(0.16)
Median	(0.34)	0.41	(0.37)
75th Percentile	(0.61)	0.39	(0.59)
90th Percentile	(1.11)	0.36	(0.85)
<b>SERS 2050 Retirement Fund</b>	● 0.07	0.43	0.28

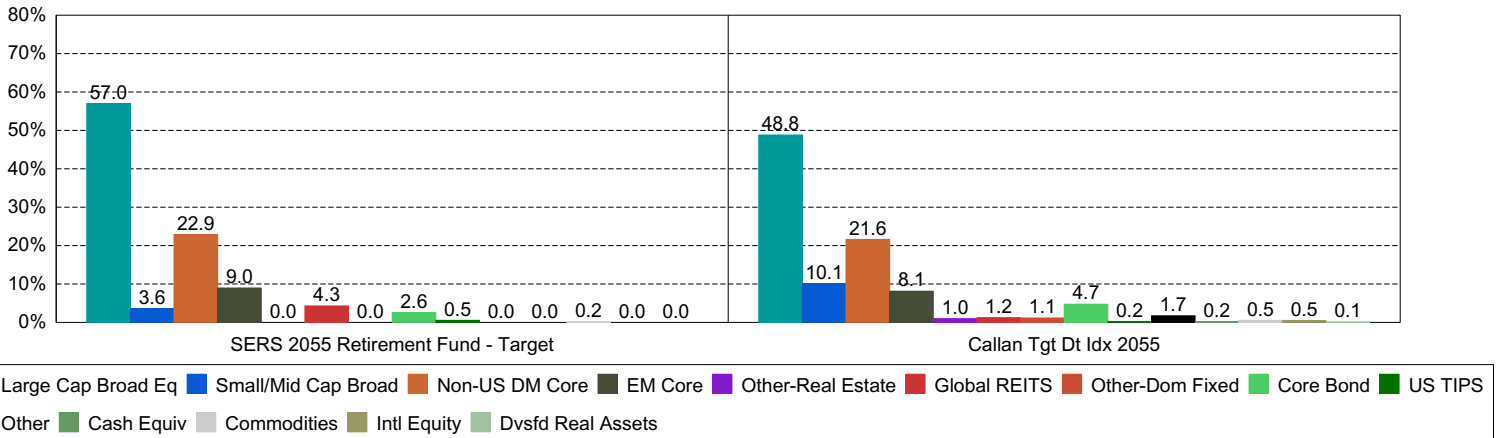
# SERS 2055 Retirement Fund Target Date Fund Asset Allocation as of September 30, 2024

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.

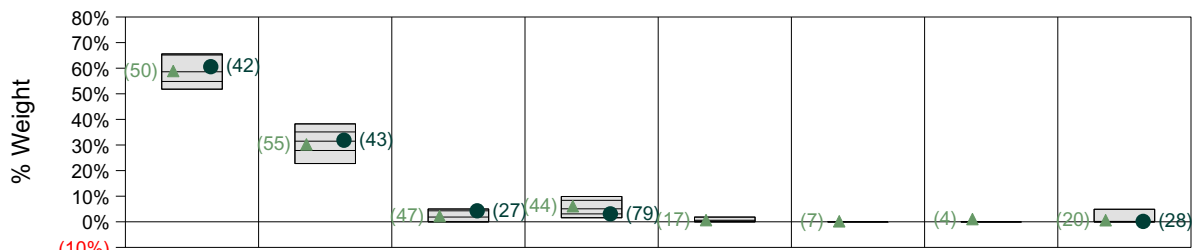
## Macro-Level Asset Allocation



## 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 September 30, 2024

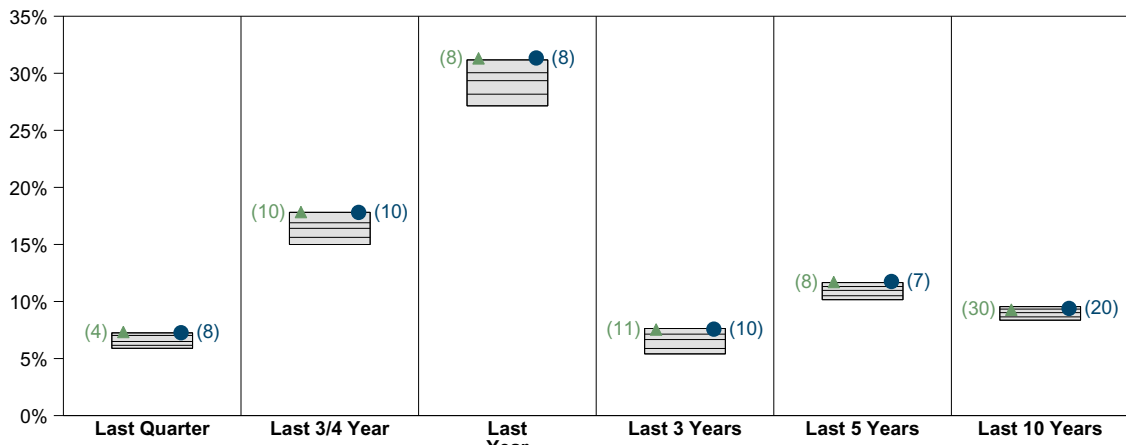
## Investment Philosophy

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

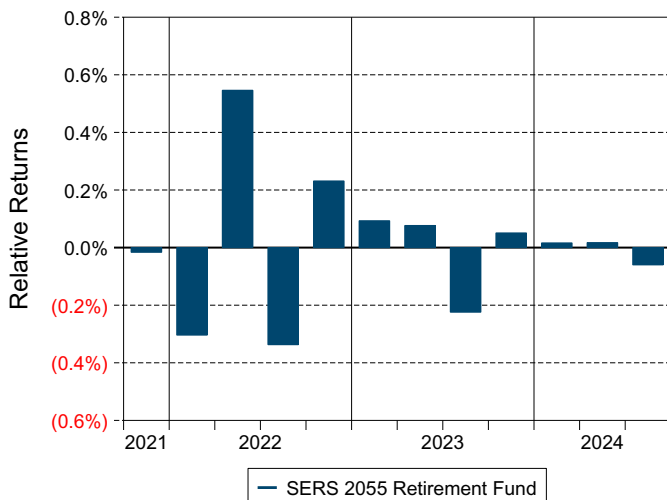
- SERS 2055 Retirement Fund's portfolio posted a 7.26% return for the quarter placing it in the 8 percentile of the Callan Target Date 2055 group for the quarter and in the 8 percentile for the last year.
- SERS 2055 Retirement Fund's portfolio underperformed the BlackRock 2055 Index by 0.06% for the quarter and outperformed the BlackRock 2055 Index for the year by 0.03%.

## Performance vs Callan Target Date 2055 (Net)

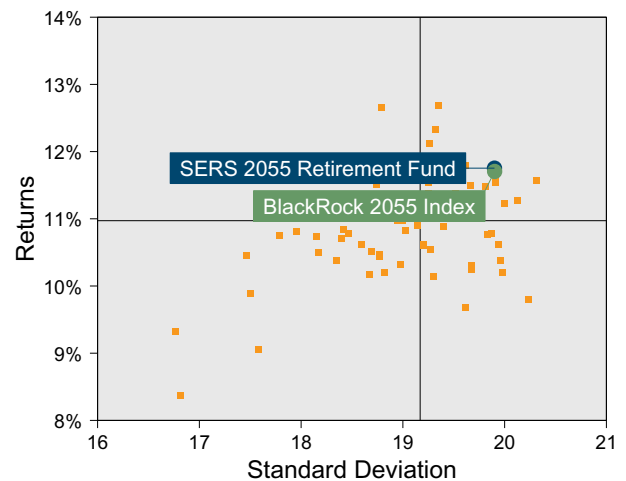


10th Percentile	7.25	17.81	31.17	7.63	11.66	9.55
25th Percentile	7.03	16.90	30.05	7.14	11.31	9.33
Median	6.49	16.41	29.35	6.67	10.97	9.02
75th Percentile	6.16	15.62	28.17	5.88	10.51	8.65
90th Percentile	5.90	14.99	27.15	5.41	10.16	8.36
<b>SERS 2055 Retirement Fund</b>	● 7.26	17.81	31.34	7.58	11.75	9.39
BlackRock 2055 Index	▲ 7.33	17.84	31.31	7.55	11.70	9.28

## Relative Return vs BlackRock 2055 Index



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



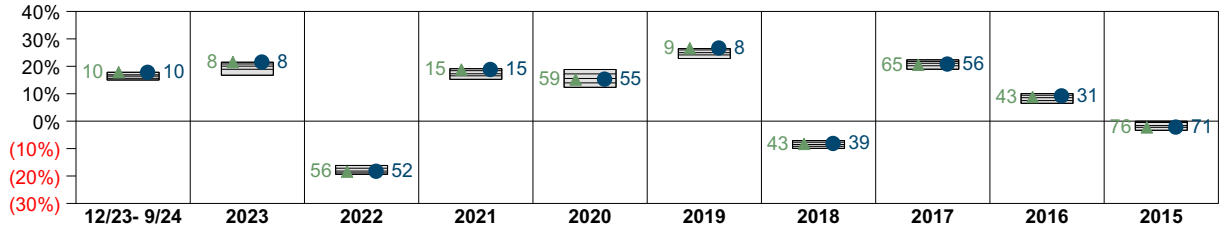


# SERS 2055 Retirement Fund Return Analysis Summary

## Return Analysis

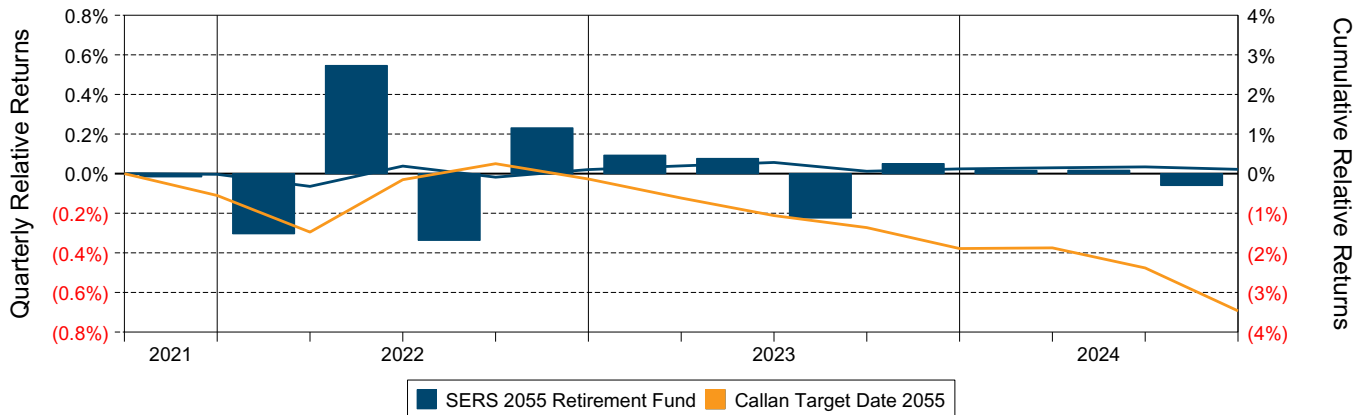
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

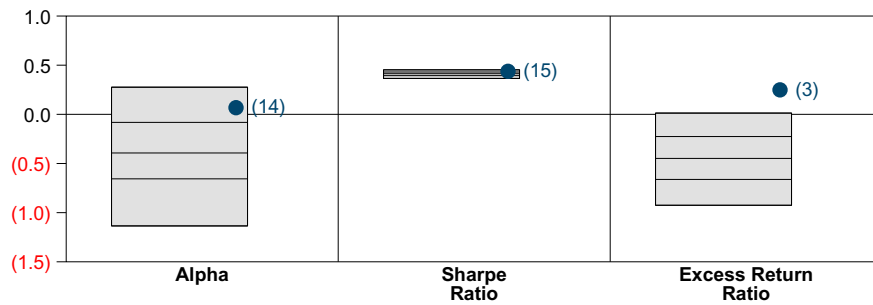


10th Percentile	17.81	21.48	(16.16)	19.13	18.84	26.48	(7.09)	22.36	10.05	(0.03)
25th Percentile	16.90	20.85	(17.15)	18.41	17.23	25.96	(7.69)	21.77	9.44	(0.49)
Median	16.41	20.05	(18.19)	17.28	15.56	24.97	(8.51)	21.10	8.56	(1.61)
75th Percentile	15.62	18.92	(18.87)	16.53	13.95	24.15	(9.18)	20.20	7.50	(2.25)
90th Percentile	14.99	16.74	(19.38)	15.24	12.33	22.84	(9.93)	18.92	6.49	(3.33)
<b>SERS 2055 Retirement Fund</b>	● 17.81	21.56	(18.27)	18.83	15.32	26.67	(8.13)	20.82	9.22	(2.17)
<b>BlackRock 2055 Index</b>	▲ 17.84	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 September 30, 2024



10th Percentile	0.28	0.45	0.01
25th Percentile	(0.08)	0.43	(0.23)
Median	(0.39)	0.41	(0.45)
75th Percentile	(0.66)	0.39	(0.66)
90th Percentile	(1.14)	0.37	(0.92)
<b>SERS 2055 Retirement Fund</b>	● 0.07	0.44	0.25

# SERS 2060 Retirement Fund Period Ended September 30, 2024

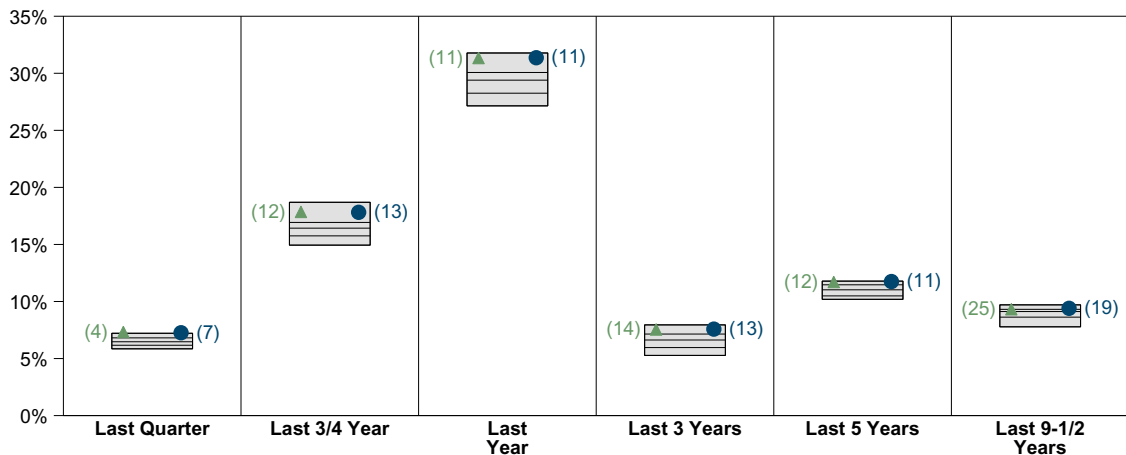
## Investment Philosophy

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

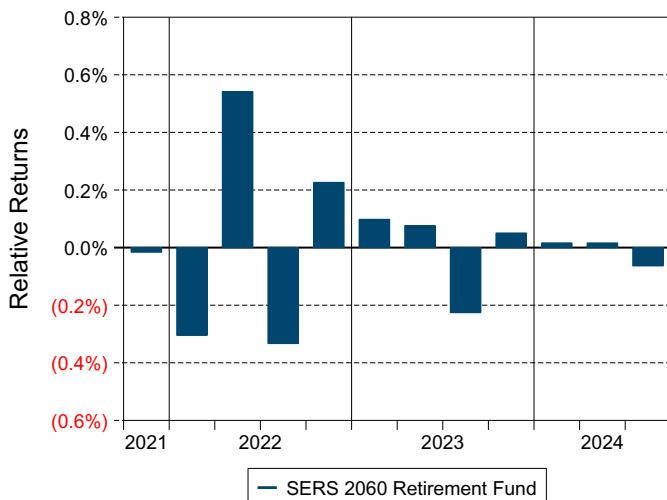
- SERS 2060 Retirement Fund's portfolio posted a 7.26% return for the quarter placing it in the 7 percentile of the Callan Target Date 2060 group for the quarter and in the 11 percentile for the last year.
- SERS 2060 Retirement Fund's portfolio underperformed the BlackRock 2060 Index by 0.07% for the quarter and outperformed the BlackRock 2060 Index for the year by 0.03%.

## Performance vs Callan Target Date 2060 (Net)

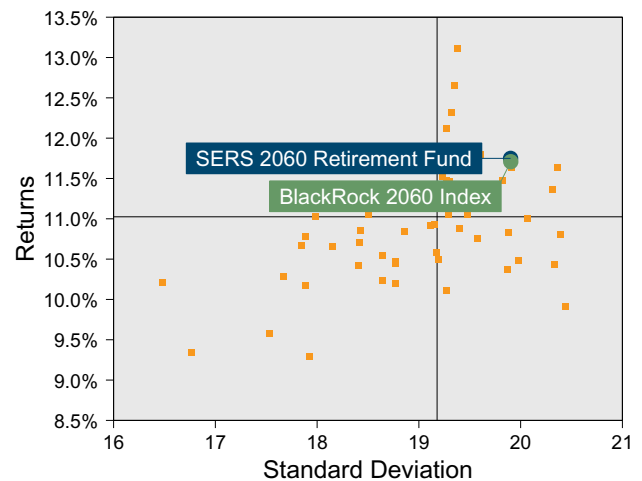


	Last Quarter	Last 3/4 Year	Last Year	Last 3 Years	Last 5 Years	Last 9-1/2 Years
10th Percentile	7.21	18.70	31.78	7.95	11.79	9.70
25th Percentile	6.81	16.93	30.07	7.15	11.46	9.31
Median	6.47	16.43	29.40	6.63	11.02	9.12
75th Percentile	6.17	15.75	28.26	5.96	10.49	8.63
90th Percentile	5.85	14.94	27.15	5.28	10.19	7.78
<b>SERS 2060 Retirement Fund</b>	● 7.26	17.81	31.36	7.58	11.75	9.40
BlackRock 2060 Index	▲ 7.33	17.85	31.34	7.55	11.71	9.32

## Relative Return vs BlackRock 2060 Index



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

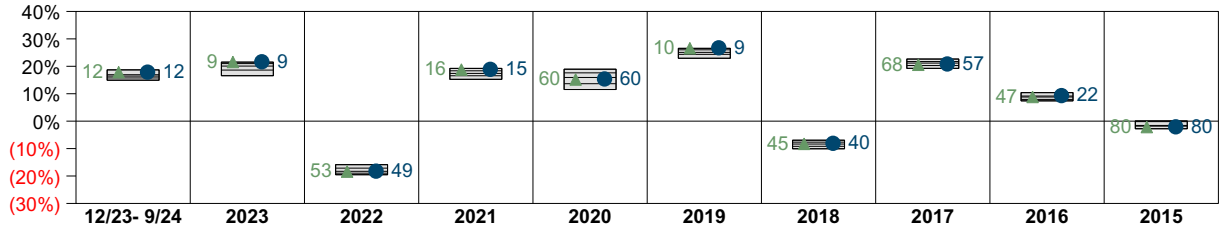


# SERS 2060 Retirement Fund Return Analysis Summary

## Return Analysis

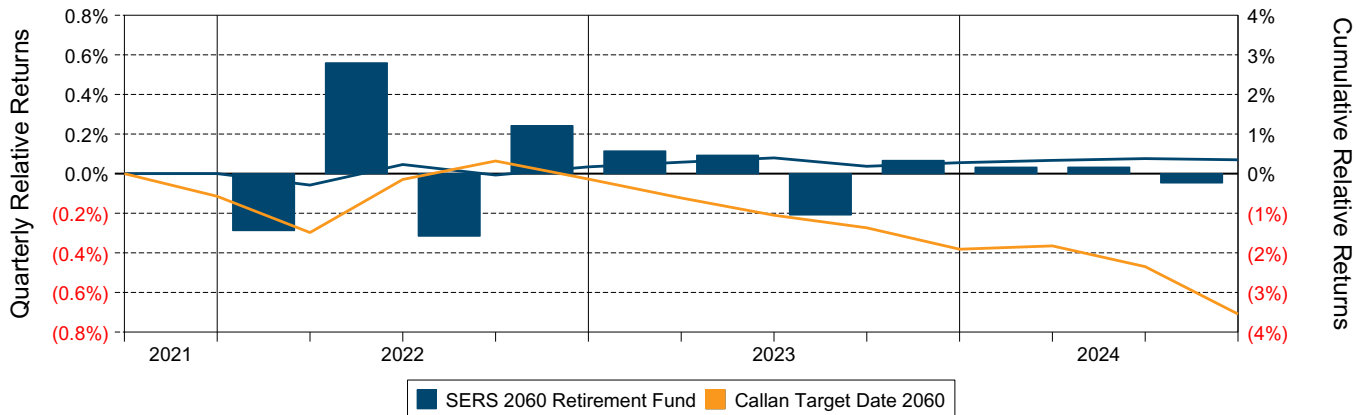
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

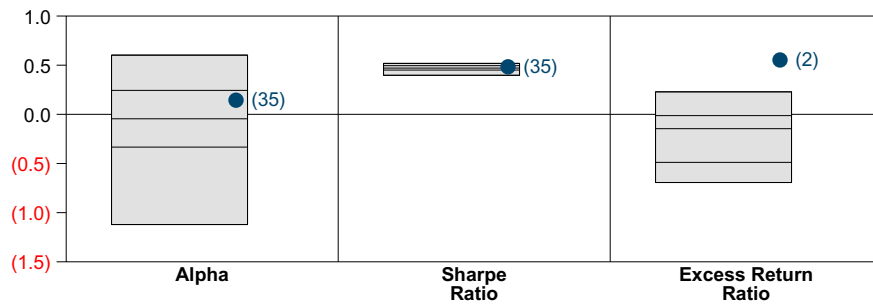


	12/23- 9/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	18.70	21.51	(15.86)	19.23	18.95	26.54	(6.94)	22.65	10.39	0.06
25th Percentile	16.93	20.98	(17.12)	18.36	17.61	26.01	(7.66)	21.73	9.16	(0.17)
Median	16.43	20.07	(18.28)	17.41	15.92	25.08	(8.35)	21.17	8.80	(1.57)
75th Percentile	15.75	18.62	(18.97)	16.55	13.65	24.36	(9.18)	20.27	7.93	(1.83)
90th Percentile	14.94	16.57	(19.53)	15.25	11.54	22.93	(10.07)	19.24	7.40	(2.77)
<b>SERS 2060 Retirement Fund</b>	● 17.87	21.65	(18.23)	18.90	15.38	26.74	(8.08)	20.85	9.32	(2.07)
BlackRock 2060 Index	▲ 17.85	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 One-Half Years Ended September 30, 2024



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.60	0.52	0.23
25th Percentile	0.24	0.50	(0.01)
Median	(0.05)	0.47	(0.15)
75th Percentile	(0.33)	0.45	(0.49)
90th Percentile	(1.12)	0.40	(0.69)
<b>SERS 2060 Retirement Fund</b>	● 0.14	0.48	0.55

# SERS 2065 Retirement Fund

## Period Ended September 30, 2024

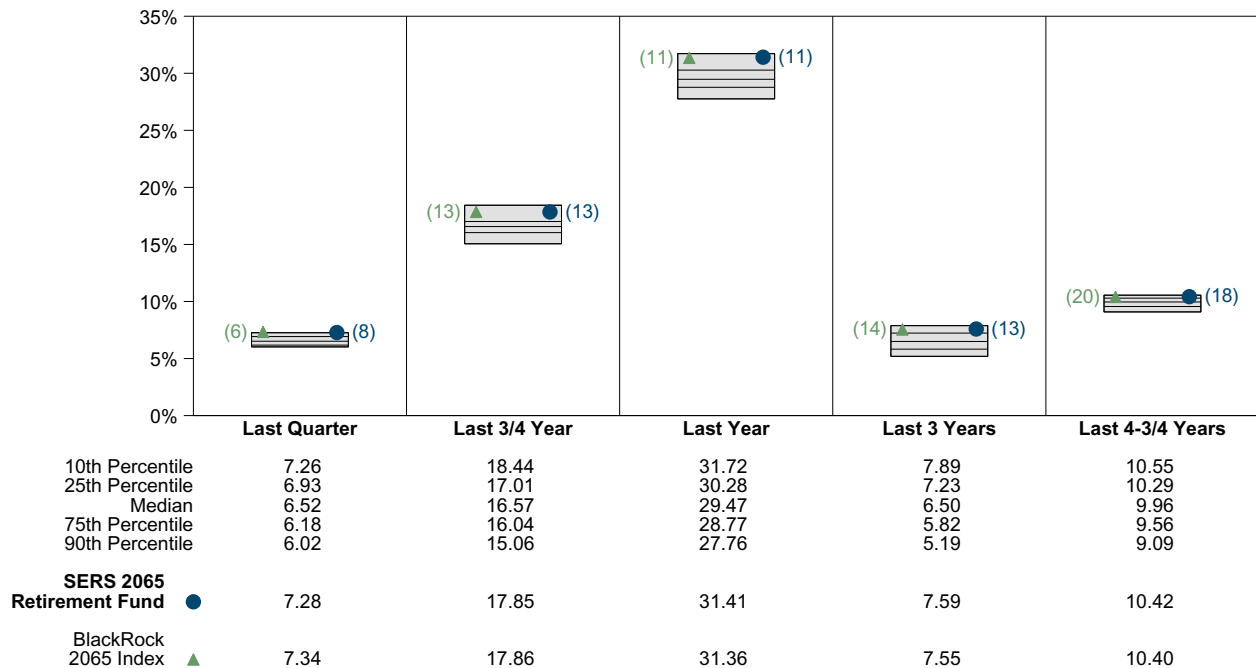
### Investment Philosophy

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.

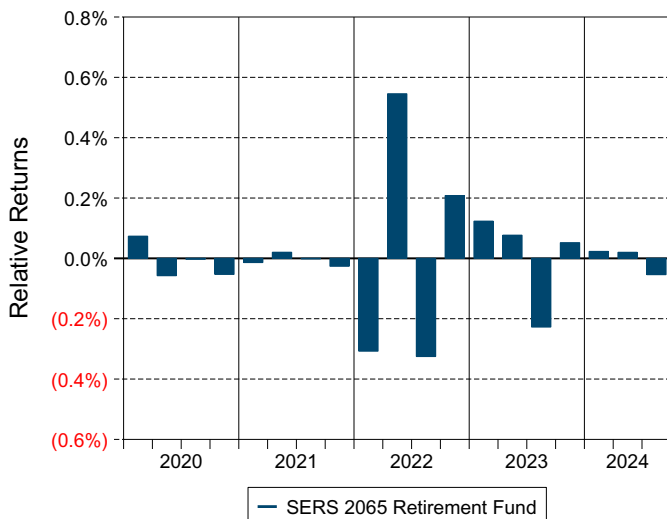
### Quarterly Summary and Highlights

- SERS 2065 Retirement Fund's portfolio posted a 7.28% return for the quarter placing it in the 8 percentile of the Callan Target Date 2065 group for the quarter and in the 11 percentile for the last year.
- SERS 2065 Retirement Fund's portfolio underperformed the BlackRock 2065 Index by 0.06% for the quarter and outperformed the BlackRock 2065 Index for the year by 0.05%.

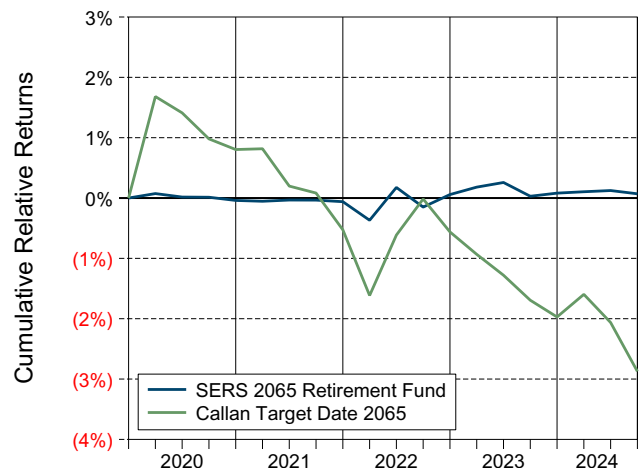
### Performance vs Callan Target Date 2065 (Net)



### Relative Return vs BlackRock 2065 Index



### Cumulative Returns vs BlackRock 2065 Index





# SERS U.S. Large Company Index Fund

## Period Ended September 30, 2024

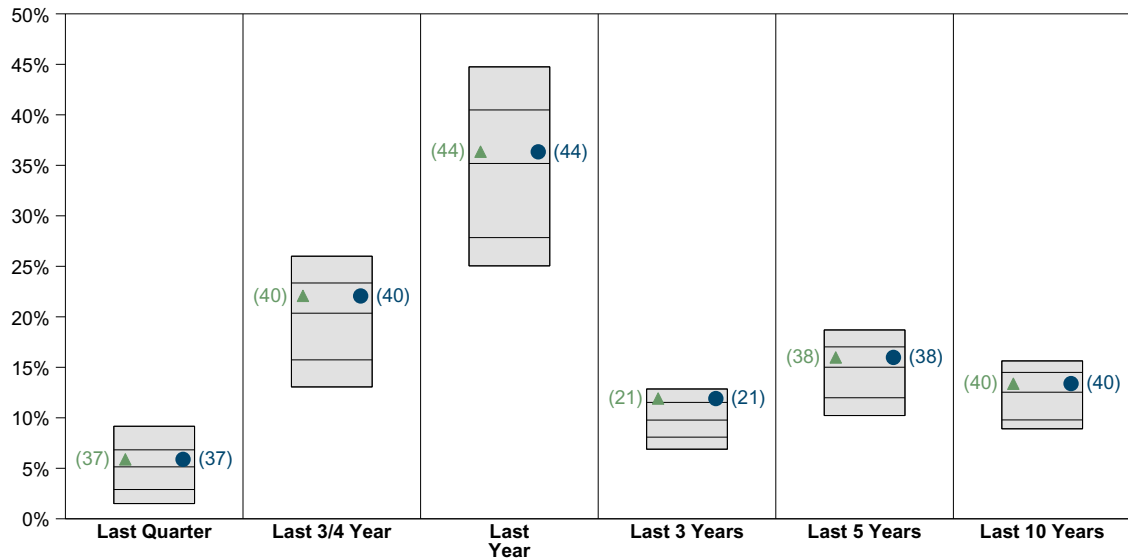
### Investment Philosophy

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 5.88% return for the quarter placing it in the 37 percentile of the Callan Large Cap Broad Equity Mut Funds group for the quarter and in the 44 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%.

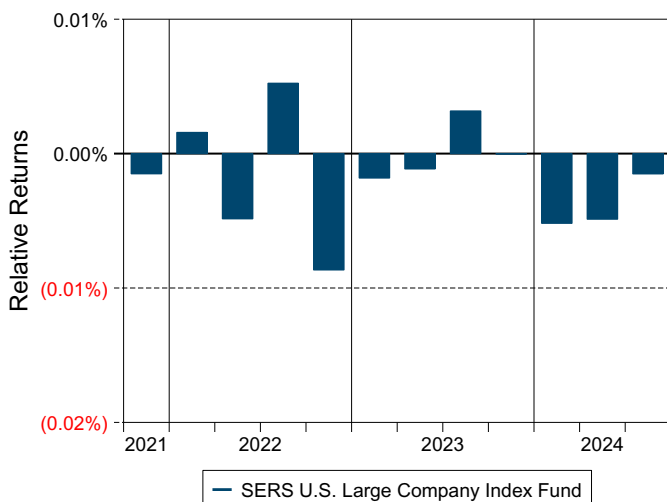
### Performance vs Callan Large Cap Broad Equity Mut Funds (Institutional Net)



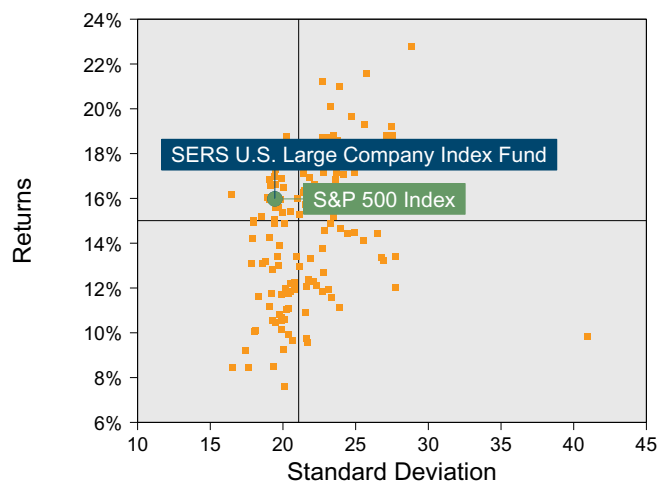
10th Percentile	9.16	26.00	44.75	12.85	18.70	15.63
25th Percentile	6.83	23.35	40.48	11.52	17.02	14.50
Median	5.14	20.36	35.19	9.78	15.01	12.53
75th Percentile	2.90	15.74	27.84	8.08	11.99	9.79
90th Percentile	1.51	13.06	25.05	6.89	10.22	8.91

<b>SERS U.S. Large Company Index Fund</b> ●	5.88	22.06	36.34	11.91	15.98	13.39
S&P 500 Index ▲	5.89	22.08	36.35	11.91	15.98	13.38

### Relative Return vs S&P 500 Index



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

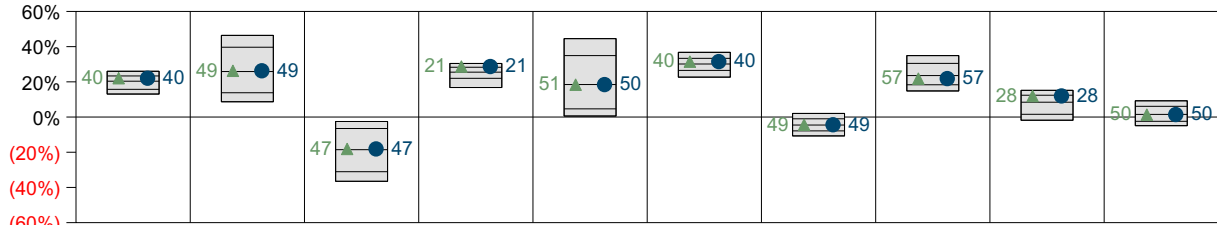


# SERS U.S. Large Company Index Fund Return Analysis Summary

## Return Analysis

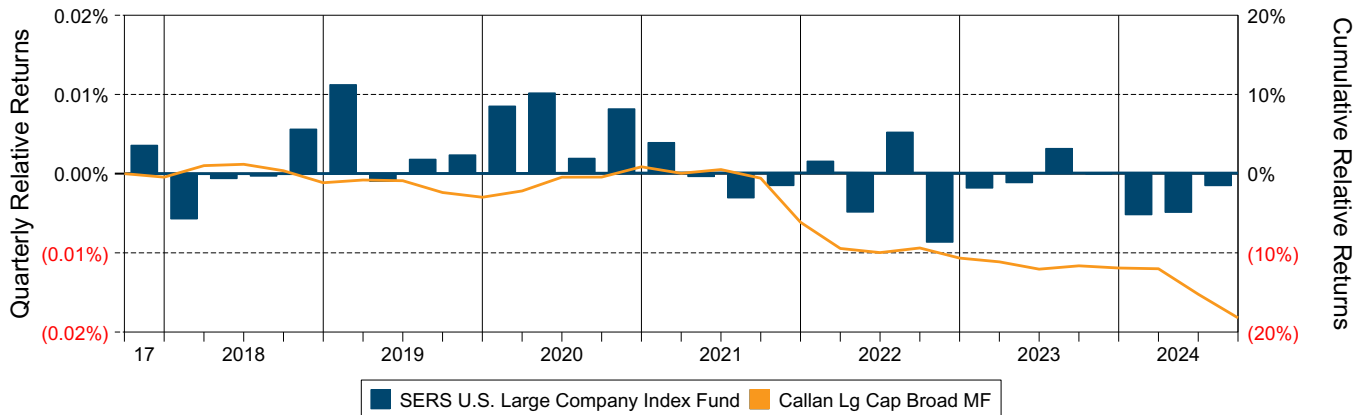
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

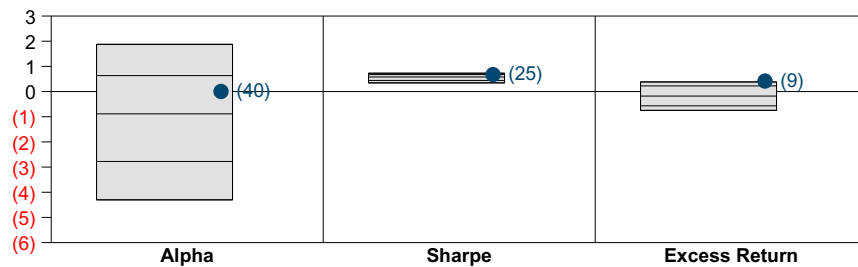


	12/23- 9/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	26.00	46.39	(2.53)	30.44	44.54	36.76	2.05	34.91	15.17	9.23
25th Percentile	23.35	39.67	(6.52)	28.29	34.90	33.34	(1.00)	30.48	12.39	6.09
Median	20.36	25.85	(18.55)	25.50	18.47	30.14	(4.54)	23.56	8.43	1.50
75th Percentile	15.74	13.80	(31.06)	22.00	4.64	26.51	(7.86)	18.33	1.56	(2.42)
90th Percentile	13.06	8.68	(36.52)	16.77	0.58	22.66	(10.72)	14.82	(1.82)	(4.91)
<b>SERS U.S. Large Company Index Fund</b>	● 22.06	26.29	(18.12)	28.70	18.43	31.51	(4.39)	21.84	11.98	1.40
S&P 500 Index	▲ 22.08	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 September 30, 2024



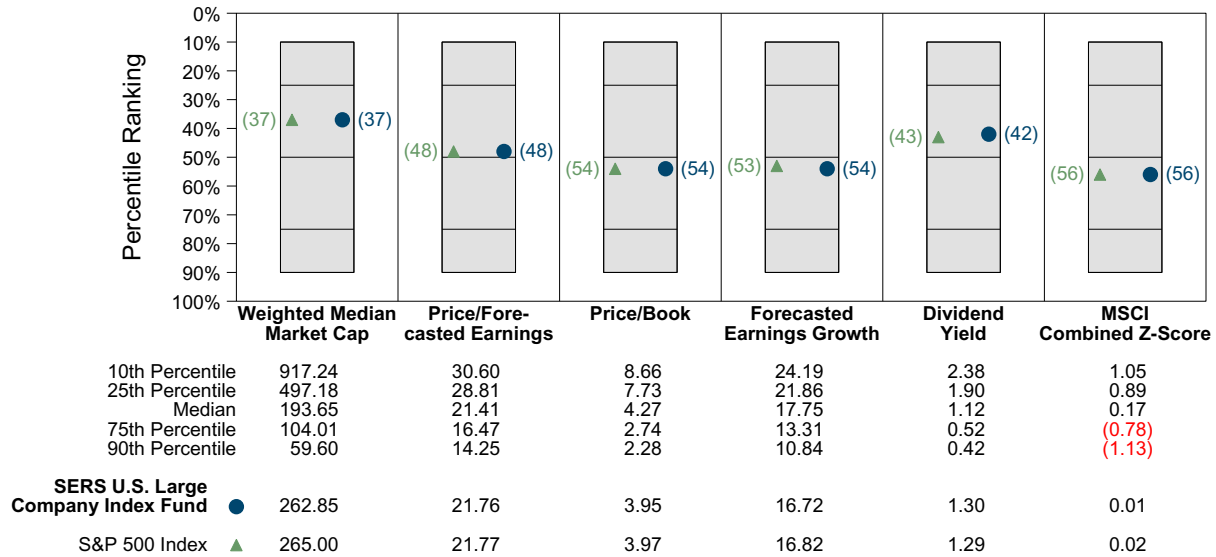
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	1.88	0.73	0.38
25th Percentile	0.63	0.67	0.22
Median	(0.89)	0.58	(0.18)
75th Percentile	(2.78)	0.44	(0.57)
90th Percentile	(4.30)	0.35	(0.75)
<b>SERS U.S. Large Company Index Fund</b>	● 0.00	0.67	0.42

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

## Portfolio Characteristics

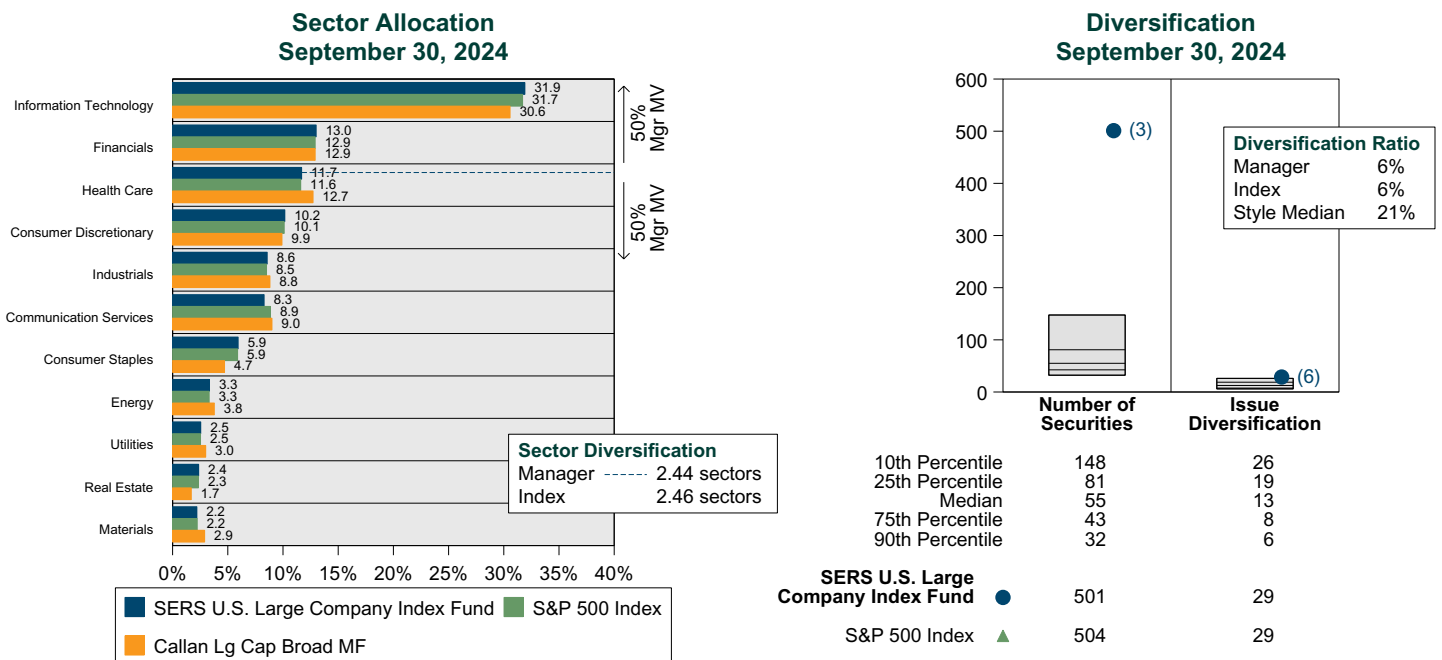
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Broad Equity Mut Funds as of September 30, 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 September 30, 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	\$123,959,621	7.3%	10.75%	3542.56	31.14	0.43%	11.10%
Microsoft Corp	Information Technology	\$111,918,090	6.6%	(3.55)%	3198.44	31.62	0.77%	14.72%
Nvidia Corp	Information Technology	\$104,543,136	6.2%	(1.69)%	2978.92	33.47	0.03%	52.53%
Amazon.Com	Consumer Discretionary	\$60,903,355	3.6%	(3.58)%	1955.64	33.57	0.00%	31.75%
Meta Platforms Inc	Communication Services	\$43,761,279	2.6%	13.64%	1250.63	24.38	0.35%	13.60%
Alphabet Inc Cl A	Communication Services	\$34,001,772	2.0%	(8.83)%	971.71	19.63	0.48%	21.00%
Berkshire Hathaway Inc Del Cl B New	Financials	\$29,501,268	1.7%	13.14%	609.93	22.73	0.00%	18.65%
Alphabet Inc Cl C	Communication Services	\$28,099,231	1.7%	(8.73)%	933.76	19.80	0.48%	21.00%
Broadcom Ltd Shs	Information Technology	\$28,097,039	1.7%	7.78%	805.67	28.49	1.23%	19.90%
Tesla Mtrs Inc	Consumer Discretionary	\$25,400,979	1.5%	32.22%	834.39	90.28	0.00%	1.45%

### 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
Erie Indty Co Cl A	Financials	\$470,951	0.0%	49.49%	24.93	41.90	0.94%	10.89%
Ge Vernova LLC Com	Industrials	\$2,451,815	0.1%	48.67%	70.07	45.01	0.00%	21.00%
Palantir Technologies Inc Cl A	Information Technology	\$2,619,278	0.2%	46.86%	79.69	89.86	0.00%	57.65%
Mohawk Industries	Consumer Discretionary	\$296,922	0.0%	41.46%	10.14	14.32	0.00%	12.75%
Kellogg Co	Consumer Staples	\$758,377	0.0%	40.92%	27.82	20.95	2.82%	8.64%
Builders Firstsource Inc	Industrials	\$794,102	0.0%	40.06%	22.58	16.29	0.00%	14.06%
Cb Richard Ellis Group Inc Cl A	Real Estate	\$1,317,843	0.1%	39.69%	38.14	22.11	0.00%	3.86%
Stanley Black & Decker Inc	Industrials	\$594,990	0.0%	38.98%	16.96	20.76	2.98%	15.82%
Vistra Energy Corp	Utilities	\$1,427,365	0.1%	38.15%	40.73	19.88	0.73%	34.53%
Axon Enterprise Inc	Industrials	\$1,002,678	0.1%	35.81%	30.20	70.95	0.00%	20.50%

### 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
Super Micro Computer Inc	Information Technology	\$736,242	0.0%	(49.18)%	24.38	114.52	0.00%	62.40%
Moderna Inc	Health Care	\$788,168	0.0%	(43.72)%	25.69	(7.92)	0.00%	-
Dexcom Inc	Health Care	\$943,036	0.1%	(40.87)%	26.86	34.63	0.00%	16.20%
Dollar Gen Corp New	Consumer Staples	\$652,565	0.0%	(35.75)%	18.60	13.75	2.79%	(3.30)%
Dollar Tree Inc	Consumer Staples	\$499,256	0.0%	(34.14)%	15.12	12.01	0.00%	7.14%
Edwards Lifesciences Corp	Health Care	\$1,395,426	0.1%	(28.56)%	39.75	24.50	0.00%	7.55%
CrowdStrike Hldgs Inc Cl A	Information Technology	\$2,265,213	0.1%	(26.81)%	65.27	69.22	0.00%	21.90%
Walgreens Boots Alliance Inc	Consumer Staples	\$226,938	0.0%	(24.14)%	7.73	4.83	11.16%	(24.60)%
Intel Corp	Information Technology	\$3,502,782	0.2%	(23.75)%	100.10	25.95	0.00%	20.98%
Lam Research Corp	Information Technology	\$3,733,661	0.2%	(23.13)%	105.77	21.34	1.13%	18.03%

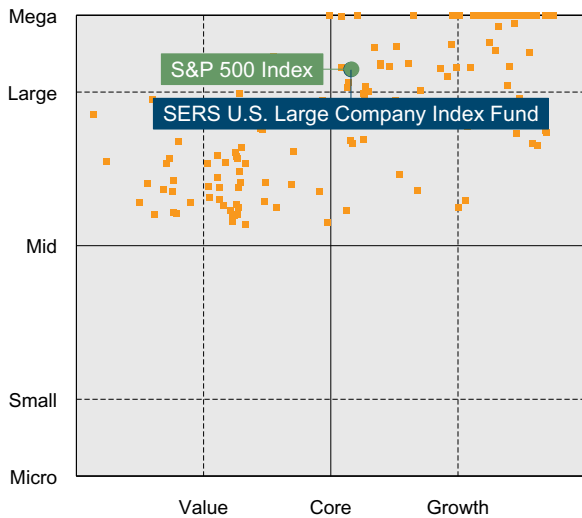
# Historical Holdings Based Style Analysis

## SERS U.S. Large Company Index Fund

### For Three Years Ended September 30, 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.

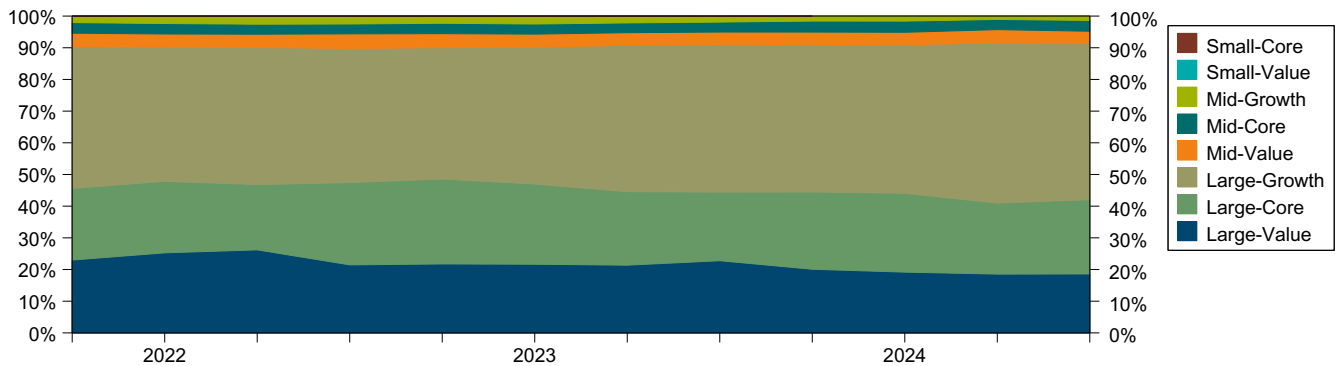
**Average Style Map vs Callan Lg Cap Broad MF Holdings for Three Years Ended September 30, 2024**



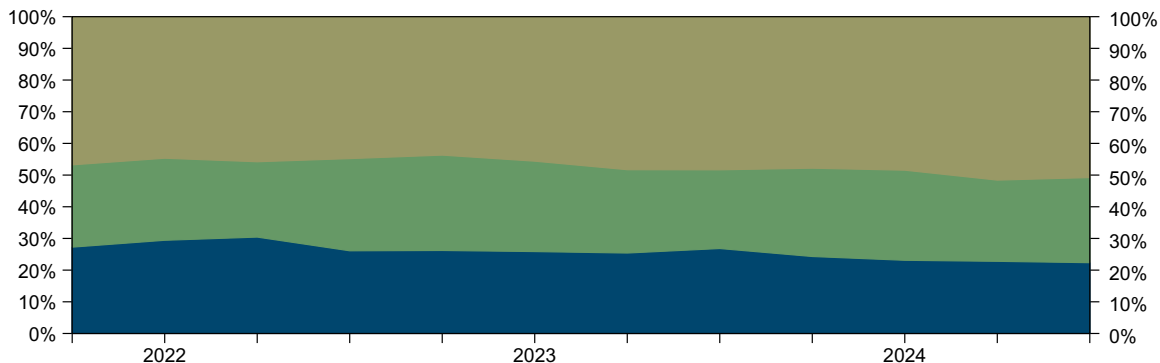
**Average Style Exposure Matrix Holdings for Three Years Ended September 30, 2024**

	Value	Core	Growth	Total
Large	21.7% (98)	23.7% (93)	45.3% (84)	<b>90.6% (275)</b>
Mid	4.2% (103)	3.3% (79)	2.0% (43)	<b>9.4% (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>25.8% (203)</b>	<b>26.9% (173)</b>	<b>47.2% (127)</b>	<b>100.0% (503)</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 September 30, 2024

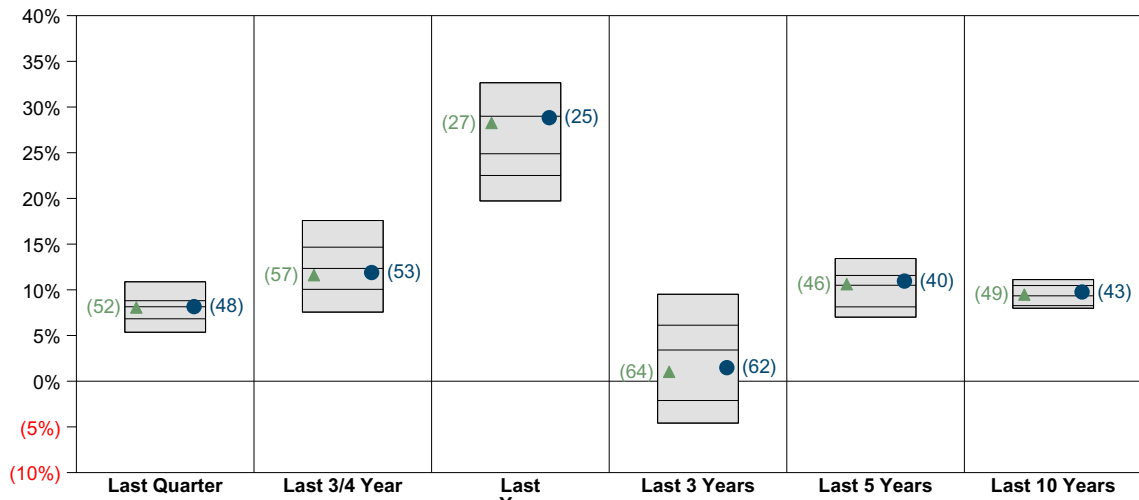
## Investment Philosophy

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 8.16% return for the quarter placing it in the 48 percentile of the Callan Small/MidCap Broad Mutual Funds group for the quarter and in the 25 percentile for the last year.
- SERS U.S. SMID Company Stock Idx's portfolio outperformed the Dow Jones US Completion by 0.09% for the quarter and outperformed the Dow Jones US Completion for the year by 0.57%.

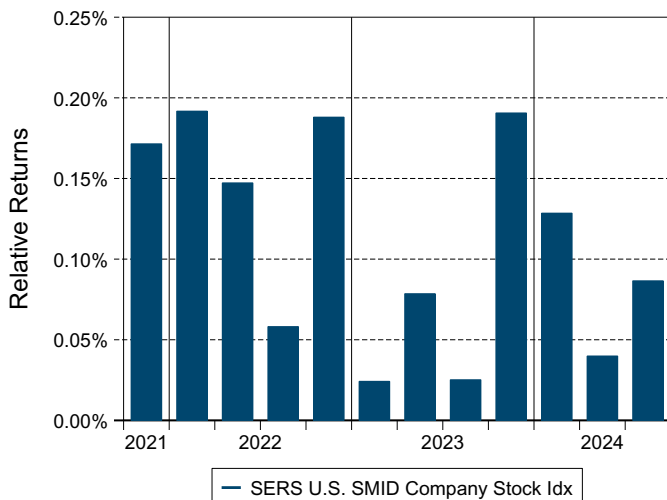
## Performance vs Callan Small/MidCap Broad Mutual Funds (Institutional Net)



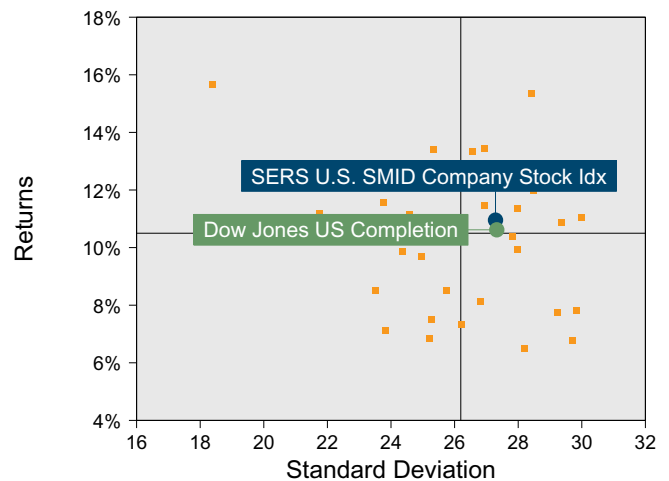
10th Percentile	10.88	17.58	32.66	9.51	13.42	11.12
25th Percentile	8.81	14.66	28.99	6.13	11.57	10.47
Median	8.14	12.34	24.89	3.41	10.50	9.34
75th Percentile	6.83	10.05	22.51	(2.11)	8.13	8.27
90th Percentile	5.36	7.56	19.72	(4.58)	7.01	7.98

<b>SERS U.S. SMID Company Stock Idx</b>	●	8.16	11.89	28.83	1.48	10.95	9.76
Dow Jones US Completion	▲	8.07	11.61	28.26	1.03	10.62	9.48

## Relative Return vs Dow Jones US Completion



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

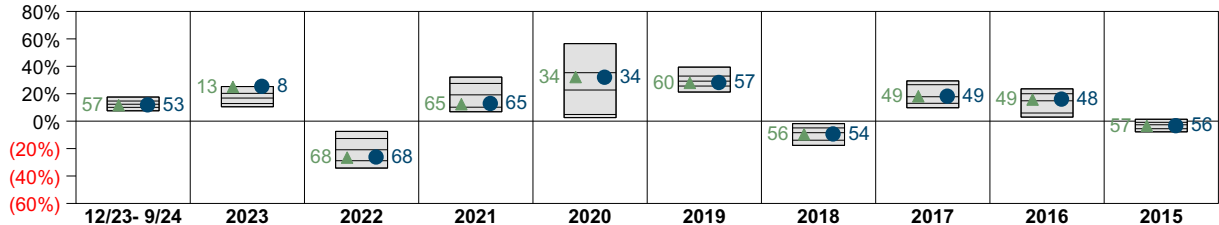


# SERS U.S. SMID Company Stock Idx Return Analysis Summary

## Return Analysis

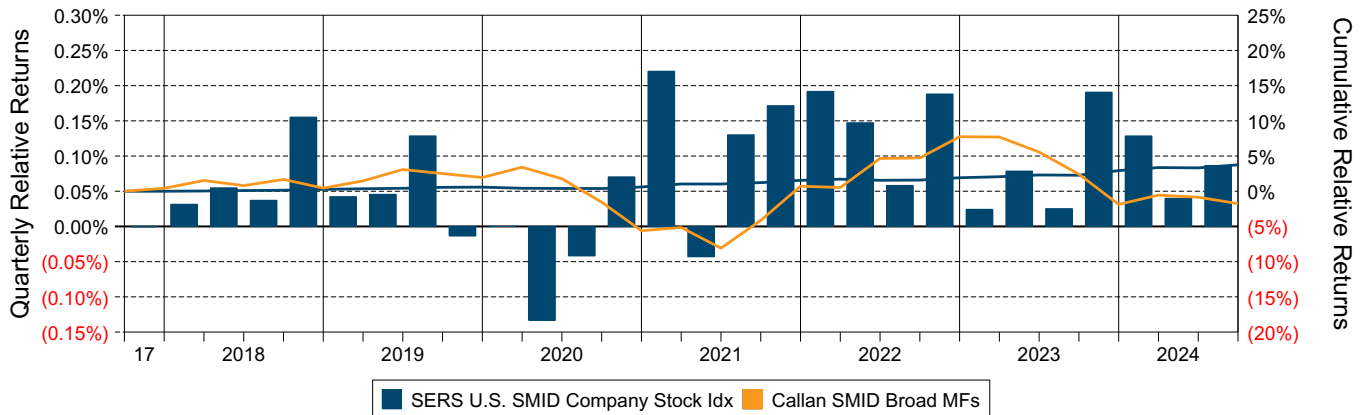
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

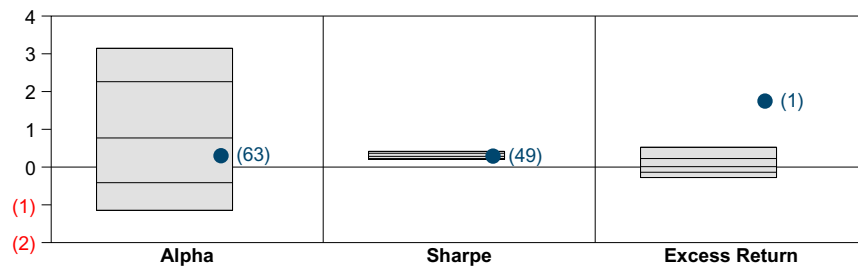


	12/23- 9/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	17.58	25.23	(7.46)	32.13	56.54	39.40	(1.80)	29.36	23.55	1.39
25th Percentile	14.66	20.26	(12.67)	27.51	35.34	32.88	(4.93)	26.59	20.00	(0.85)
Median	12.34	16.85	(20.87)	19.19	22.70	29.17	(8.41)	17.80	14.84	(2.63)
75th Percentile	10.05	12.84	(28.86)	10.18	4.86	25.60	(13.90)	13.02	5.94	(5.51)
90th Percentile	7.56	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>	● 11.89	25.39	(26.13)	12.89	32.03	28.20	(9.32)	18.21	16.08	(3.31)
Dow Jones US Completion	▲ 11.61	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 September 30, 2024



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	3.14	0.42	0.52
25th Percentile	2.26	0.37	0.23
Median	0.77	0.28	0.01
75th Percentile	(0.41)	0.23	(0.14)
90th Percentile	(1.15)	0.20	(0.28)
<b>SERS U.S. SMID Company Stock Idx</b>	● 0.30	0.29	1.75

# SERS U.S. SMID Company Idx Fund Equity Characteristics Analysis Summary

## Portfolio Characteristics

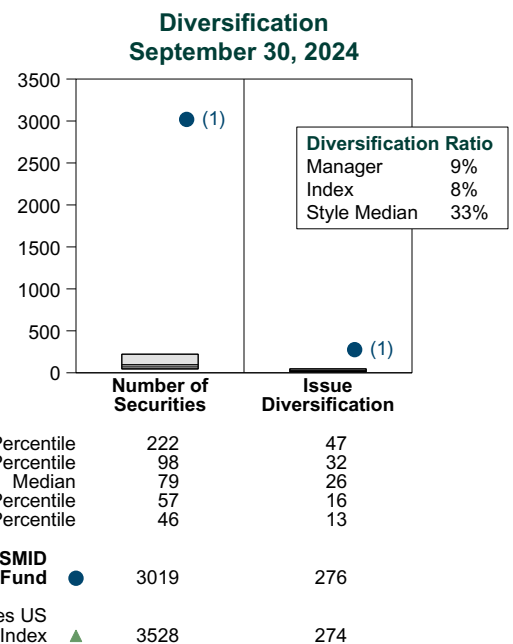
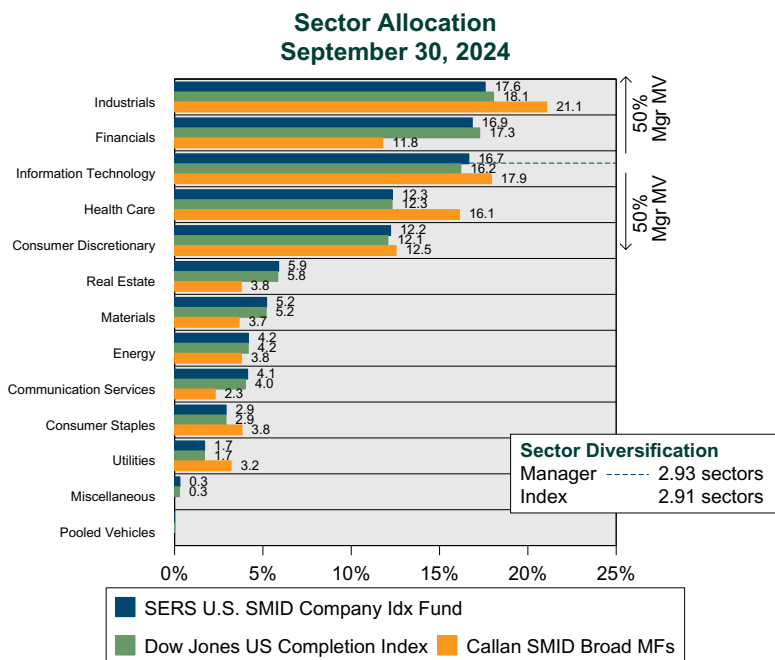
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Small/MidCap Broad Mutual Funds as of September 30, 2024



## Sector Weights

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



## SERS U.S. SMID Company Idx Fund Top 10 Portfolio Holdings Characteristics as of September 30, 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
Crh Plc Ord	Materials	\$4,191,493	0.9%	24.17%	63.09	15.72	1.65%	12.72%
Marvell Technology Group Ltd	Information Technology	\$4,139,341	0.9%	3.26%	62.47	33.61	0.33%	23.60%
Apollo Global Mgmt Inc	Financials	\$3,723,803	0.8%	6.23%	71.14	15.25	1.48%	14.55%
Workday Inc Cl A	Information Technology	\$3,439,520	0.7%	9.33%	52.06	31.06	0.00%	20.74%
The Trade Desk Inc Com Cl A	Communication Services	\$3,253,718	0.7%	12.27%	49.09	60.05	0.00%	26.35%
Doordash Inc Cl A Com Usd0.00001 Cla	Consumer Discretionary	\$3,132,991	0.7%	31.22%	54.90	116.90	0.00%	43.50%
Flutter Entertainment Plc Shs	Consumer Discretionary	\$2,790,298	0.6%	28.93%	41.92	30.80	0.00%	50.19%
Cheniere Energy Inc	Energy	\$2,695,209	0.6%	2.87%	40.69	16.40	0.97%	(37.50)%
Snowflake Inc Cl A	Information Technology	\$2,550,129	0.5%	(14.98)%	38.50	137.89	0.00%	10.44%
Gs Acquisition Hldgs Corp Com Cl A	Industrials	\$2,476,573	0.5%	14.96%	37.32	32.98	0.10%	29.60%

### 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
Instil Bio Inc	Health Care	\$16,885	0.0%	553.34%	0.44	(6.72)	0.00%	-
Centurylink Inc	Communication Services	\$483,605	0.1%	545.46%	7.22	(15.11)	0.00%	(20.92)%
Commscope Hldg Co Inc	Information Technology	\$84,580	0.0%	396.47%	1.32	5.98	0.00%	24.70%
Personalis Inc	Health Care	\$13,778	0.0%	359.37%	0.31	(4.34)	0.00%	-
Neonode Inc Com Par	Information Technology	\$13,136	0.0%	339.61%	0.14	(14.40)	0.00%	18.70%
Capricor Therapeutics Inc	Health Care	\$30,484	0.0%	215.30%	0.49	(17.26)	0.00%	-
Freightcar Amer Inc	Industrials	\$9,962	0.0%	209.13%	0.20	16.86	0.00%	(5.85)%
Summit Therapeutics Inc	Health Care	\$200,769	0.0%	197.91%	16.10	(73.74)	0.00%	-
Corvus Pharmaceuticals Inc	Health Care	\$19,946	0.0%	190.13%	0.33	(11.81)	0.00%	-
Gevo Inc Com Par	Energy	\$25,260	0.0%	190.00%	0.39	(5.22)	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
Ocean Pwr Technologies Inc	Utilities	\$3,042	0.0%	-	0.02	(0.30)	0.00%	-
Viracta Therapeutics Inc	Health Care	\$1,116	0.0%	-	0.01	(0.34)	0.00%	-
Helius Med Technologies Inc Com Cl A	Health Care	\$1	0.0%	-	0.00	(0.18)	0.00%	-
T2 Biosystems Inc	Health Care	\$3,693	0.0%	-	0.03	(1.18)	0.00%	-
Aptevo Therapeutics Inc	Health Care	\$7	0.0%	-	0.00	(0.02)	0.00%	-
Faraday Futre Intlgt Elctr I Com Cl	Consumer Discretionary	\$89	0.0%	-	0.04	(0.02)	0.00%	-
Seelos Therapeutics Inc	Health Care	\$38	0.0%	(96.77)%	0.00	(0.92)	0.00%	-
Mullen Automotive Inc	Consumer Discretionary	\$7	0.0%	(91.04)%	0.01	(0.00)	0.00%	-
Hillevax Inc Com	Health Care	\$3,005	0.0%	(87.83)%	0.09	(0.92)	0.00%	-
Hyzon Motors Inc Com Cl A	Industrials	\$262	0.0%	(84.98)%	0.01	(0.09)	0.00%	-

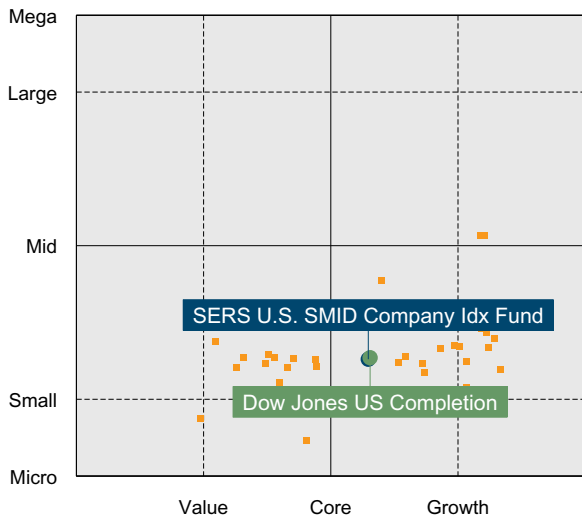
# Historical Holdings Based Style Analysis

## SERS U.S. SMID Company Idx Fund

### For Three Years Ended September 30, 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.

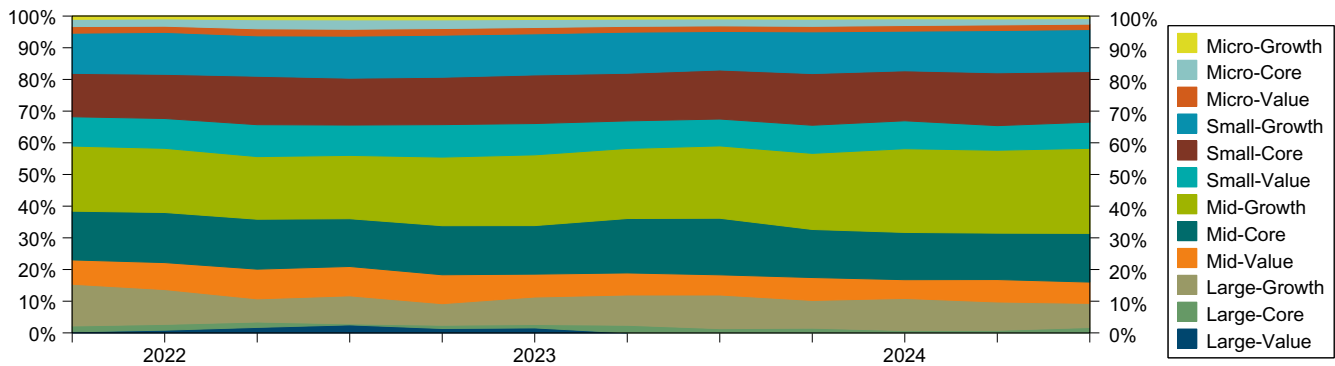
**Average Style Map vs Callan SMID Broad MFs Holdings for Three Years Ended September 30, 2024**



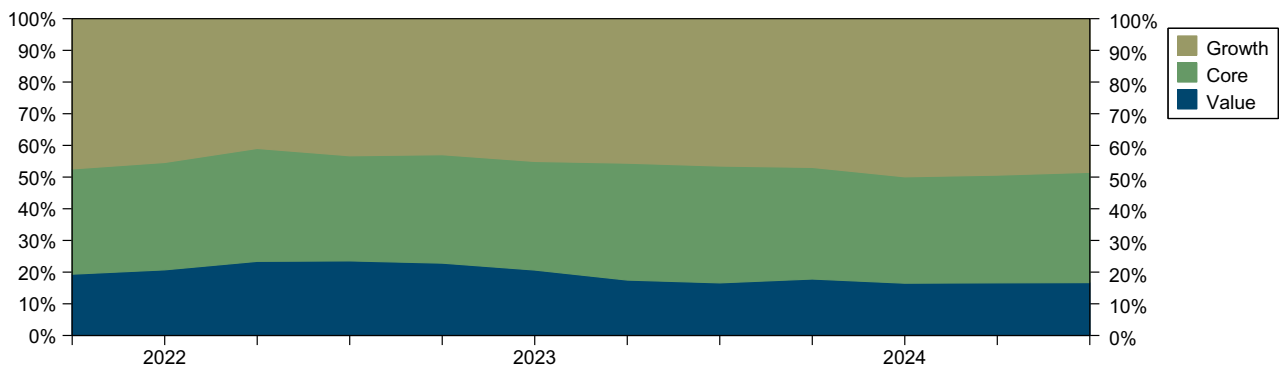
**Average Style Exposure Matrix Holdings for Three Years Ended September 30, 2024**

	0.7% (1)	1.4% (2)	9.3% (15)	11.3% (18)
Large	0.8% (1)	1.7% (3)	9.5% (16)	11.9% (20)
Mid	7.6% (64)	15.7% (134)	22.7% (169)	46.0% (367)
	7.5% (64)	15.6% (136)	22.7% (171)	45.9% (371)
Small	9.1% (282)	15.3% (524)	13.0% (377)	37.4% (1183)
	9.0% (282)	15.1% (529)	12.9% (381)	36.9% (1192)
Micro	1.9% (533)	2.4% (761)	1.0% (252)	5.3% (1546)
	1.9% (668)	2.4% (1090)	1.0% (318)	5.3% (2076)
<b>Total</b>	<b>19.4% (880)</b>	<b>34.7% (1421)</b>	<b>46.0% (813)</b>	<b>100.0% (3114)</b>
	19.1% (1015)	34.9% (1758)	46.0% (886)	100.0% (3659)
	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 September 30, 2024

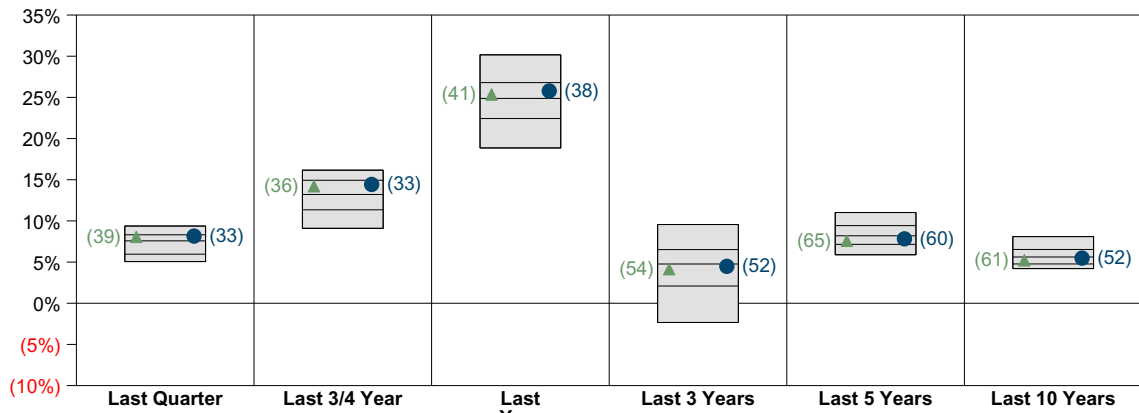
### Investment Philosophy

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

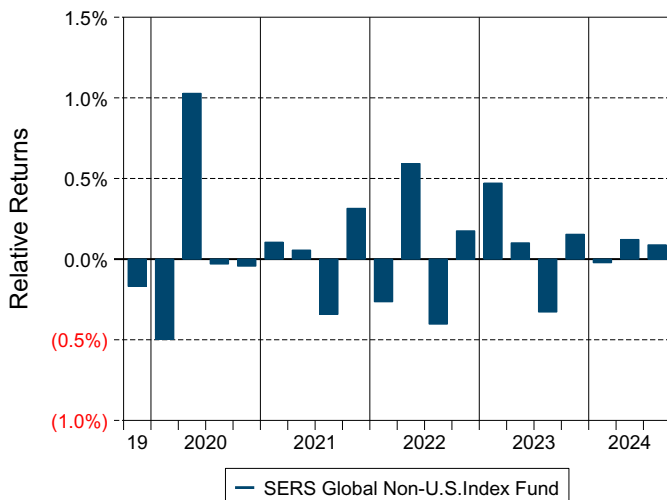
- SERS Global Non-U.S. Index Fund's portfolio posted a 8.16% return for the quarter placing it in the 33 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 38 percentile for the last year.
- SERS Global Non-U.S. Index Fund's portfolio outperformed the MSCI ACWI xUS (Net) by 0.10% for the quarter and outperformed the MSCI ACWI xUS (Net) for the year by 0.43%.

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

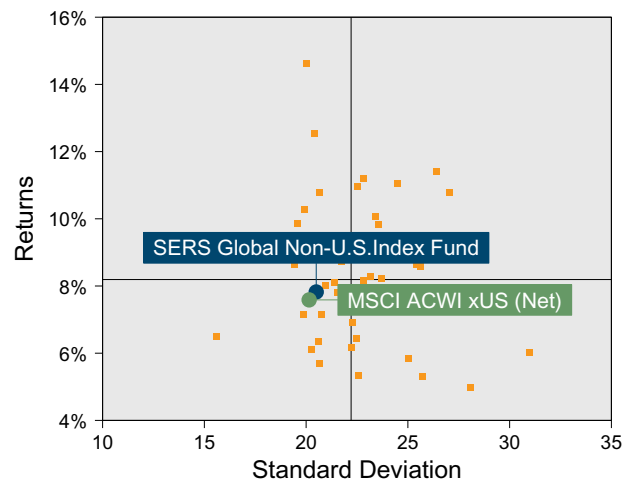


10th Percentile	9.38	16.16	30.17	9.56	11.02	8.09
25th Percentile	8.31	14.94	26.79	6.51	9.43	6.53
Median	7.58	13.21	24.87	4.77	8.19	5.62
75th Percentile	5.96	11.35	22.43	2.09	7.15	4.77
90th Percentile	5.06	9.10	18.86	(2.33)	5.89	4.21
<b>SERS Global Non-U.S. Index Fund</b> ●	8.16	14.43	25.78	4.48	7.82	5.48
MSCI ACWI xUS (Net) ▲	8.06	14.21	25.35	4.14	7.59	5.22

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



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

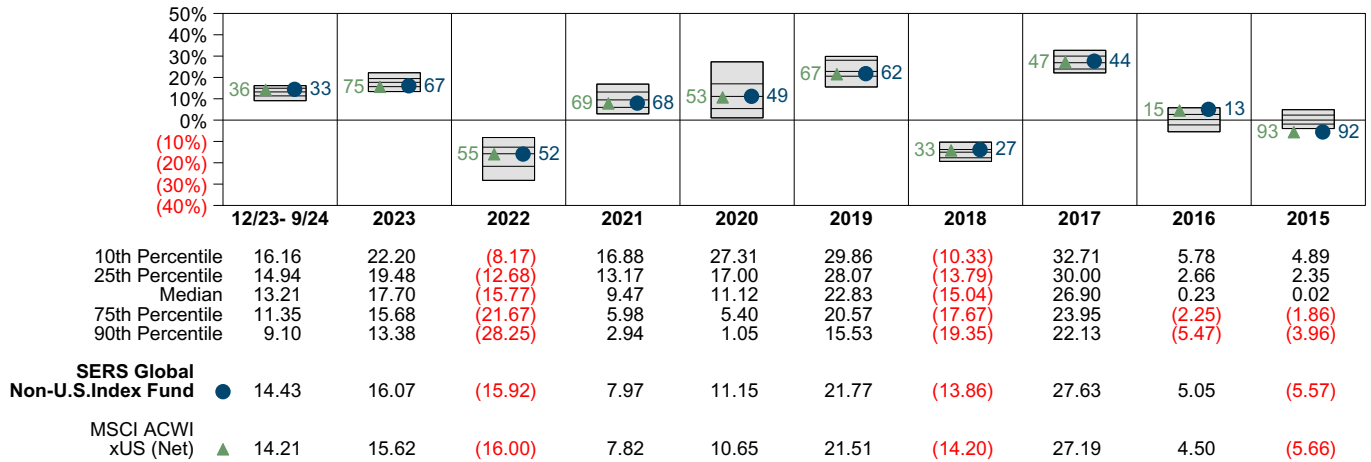


# SERS Global Non-U.S.Index Fund Return Analysis Summary

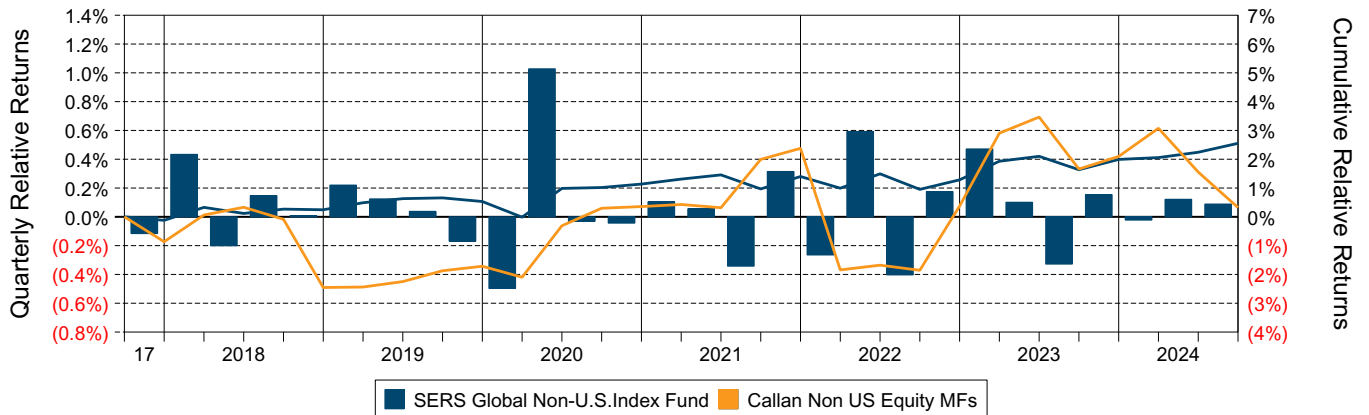
## Return Analysis

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.

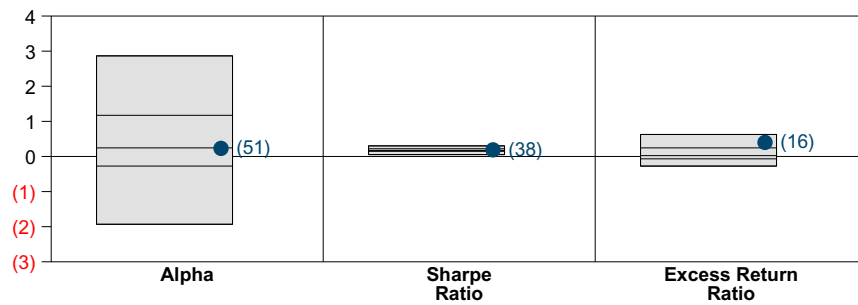
### Performance vs Callan Non US Equity Mutual Funds (Institutional Net)



### 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 September 30, 2024

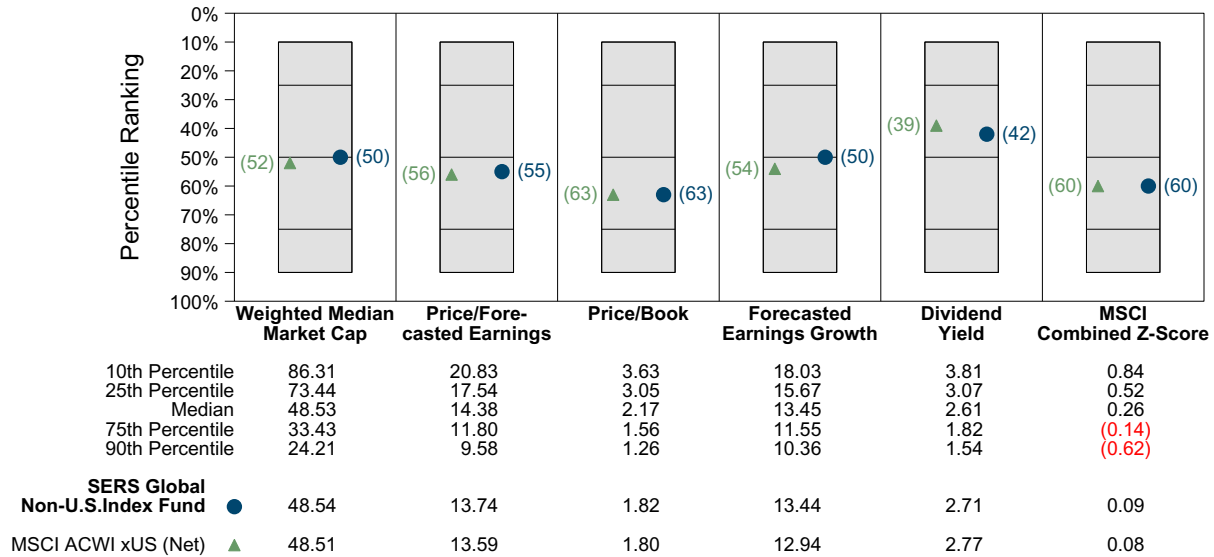


# SERS Global Non-U.S.Index Fund Equity Characteristics Analysis Summary

## Portfolio Characteristics

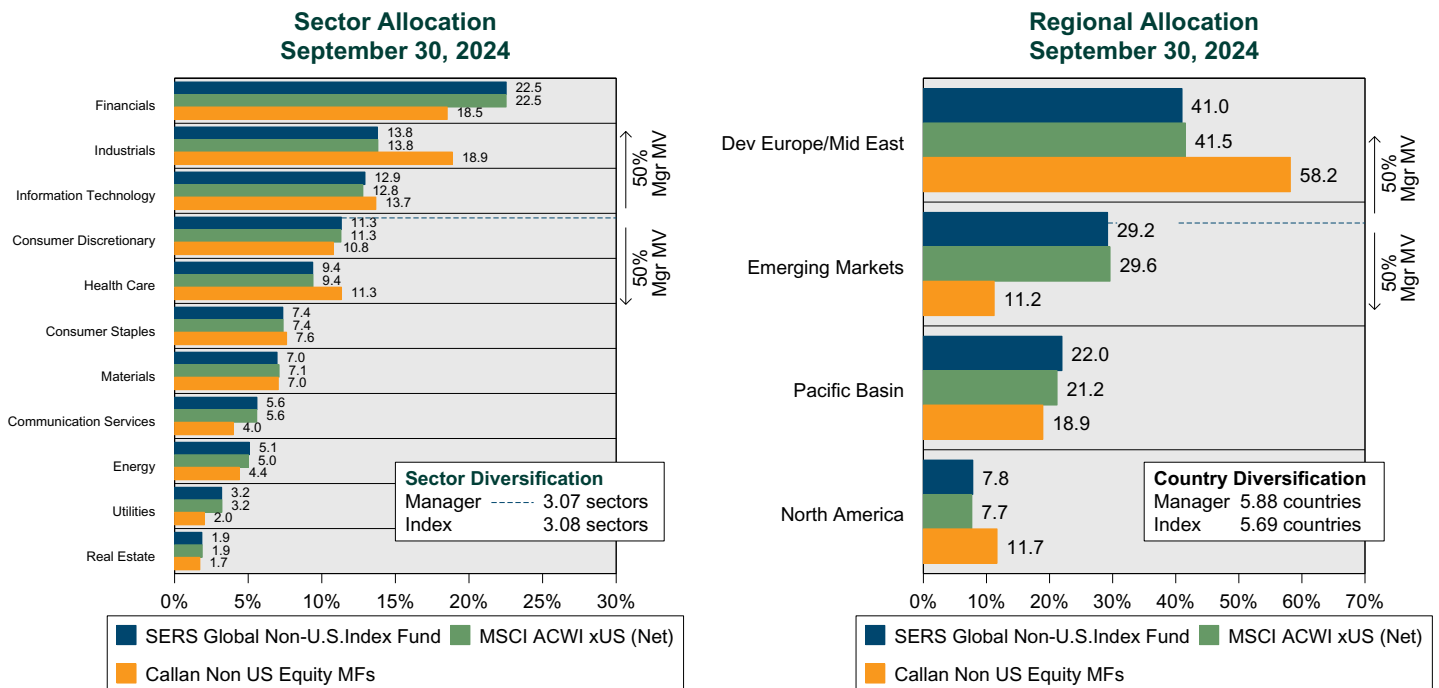
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Non US Equity Mutual Funds as of September 30, 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

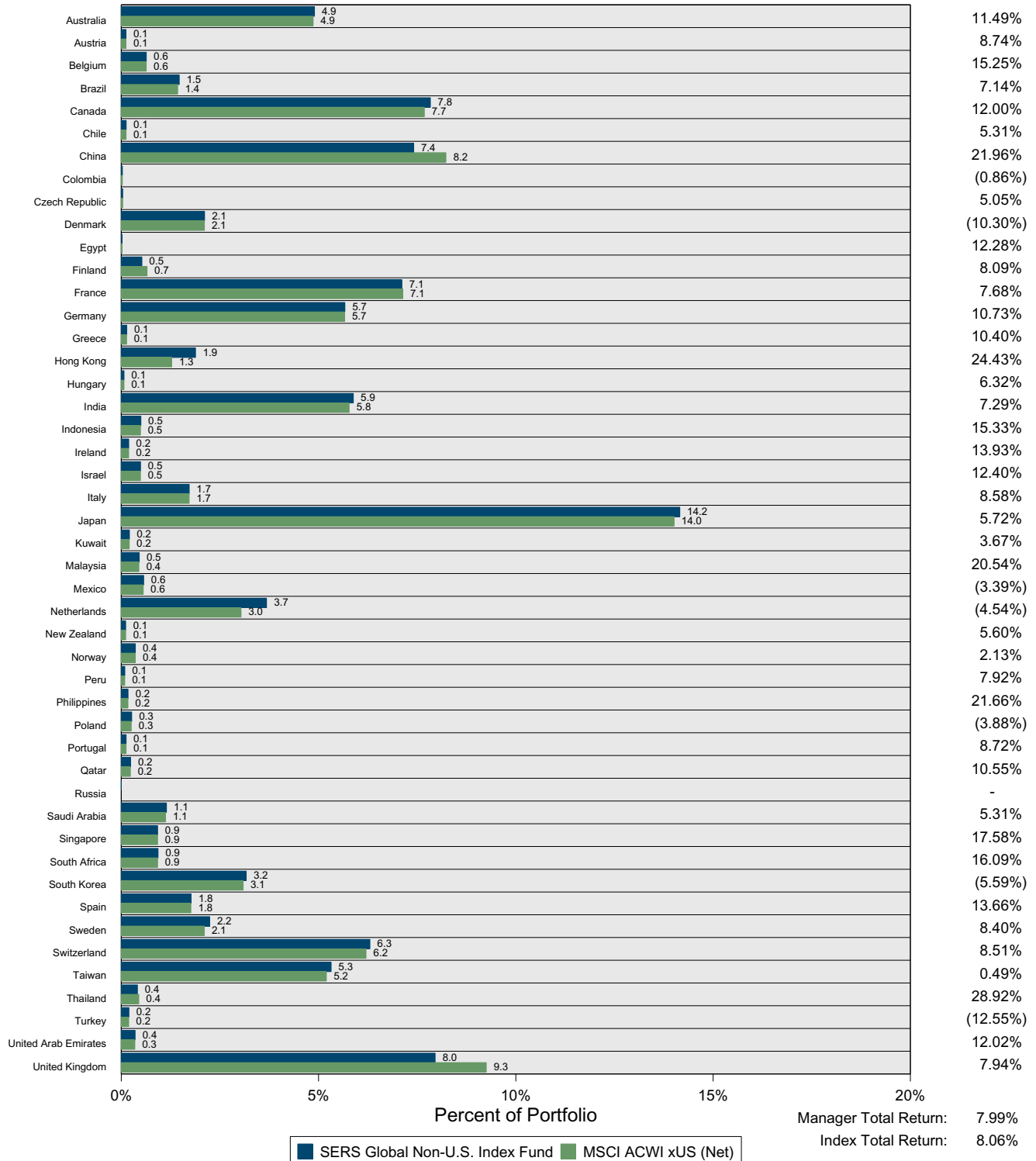
## SERS Global Non-U.S. Index Fund VS MSCI ACWI xUS (Net)

### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of September 30, 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 September 30, 2024

### Index Rtns



## SERS Global Non-U.S. Index Fund Top 10 Portfolio Holdings Characteristics as of September 30, 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	\$7,645,035	2.7%	1.99%	784.21	18.82	1.57%	24.26%
Tencent Holdings Limited Shs Par Hkd	Communication Services	\$3,829,610	1.4%	24.54%	534.77	16.55	0.76%	25.95%
Asml Holding N V Asml Rev Stk Spl	Information Technology	\$3,333,709	1.2%	(19.32)%	332.51	27.53	0.83%	18.00%
Nestle S A Shs Nom New	Consumer Staples	\$2,645,208	0.9%	(1.33)%	263.88	17.07	3.53%	2.70%
Astrazeneca Plc Ord	Health Care	\$2,415,153	0.9%	0.13%	240.97	17.20	2.02%	12.50%
Sap Se Shs	Information Technology	\$2,387,416	0.8%	12.61%	279.91	36.18	1.00%	11.80%
Samsung Electronics Co Ltd Ord	Information Technology	\$2,307,139	0.8%	(20.22)%	280.75	8.93	2.35%	36.10%
Novartis	Health Care	\$2,274,714	0.8%	7.61%	252.21	14.61	3.40%	9.70%
Roche Hldgs Ag Basel Div Rts Ctf	Health Care	\$2,258,446	0.8%	15.53%	225.37	13.62	3.55%	5.00%
Alibaba Group Holding Ltd	Consumer Discretionary	\$2,199,049	0.8%	62.75%	271.88	12.10	0.89%	0.05%

### 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
East Money Information	Financials	\$5,303	0.0%	100.54%	45.67	36.58	0.20%	(3.30)%
China Galaxy Securities 'h'	Financials	\$33,448	0.0%	96.93%	3.45	9.54	3.60%	8.90%
Wuxi Apptec H	Health Care	\$25,376	0.0%	95.05%	2.72	13.76	2.14%	4.03%
Hexin Flush Info.Net.'a'	Financials	\$2,913	0.0%	94.46%	14.81	65.75	1.14%	(3.07)%
Citic Securities Co Ltd H	Financials	\$41,611	0.0%	92.66%	6.93	12.60	2.50%	13.80%
Akeso	Health Care	\$54,629	0.0%	89.57%	7.65	883.20	0.00%	(21.07)%
Xpeng Inc Class A	Consumer Discretionary	\$86,366	0.0%	86.91%	10.57	(20.72)	0.00%	-
Yuhan Corp	Health Care	\$63,049	0.0%	85.54%	8.75	59.53	0.30%	(19.02)%
New China Life Insurance 'h'	Financials	\$27,770	0.0%	80.13%	3.23	5.04	3.79%	4.28%
21 Cn Cybernet Corp.	Consumer Staples	\$38,908	0.0%	78.31%	11.08	36.26	0.00%	41.00%

### 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
Bank Rakyat Indonesia Shs	Financials	\$227,702	0.1%	(84.04)%	0.01	-	0.00%	-
Idea Cellular Ltd	Communication Services	\$30,263	0.0%	(42.37)%	8.62	(2.61)	5.79%	20.04%
Tofas Turk Otomobil Fabrikas Shs	Consumer Discretionary	\$7,260	0.0%	(39.22)%	3.15	4.20	9.28%	78.69%
Kum Yang	Materials	\$15,112	0.0%	(35.99)%	2.32	(40.15)	0.00%	-
Hanmi Semiconductor	Information Technology	\$37,072	0.0%	(33.84)%	8.03	33.96	0.39%	(11.16)%
Wiwynn Corporation	Information Technology	\$63,031	0.0%	(33.53)%	10.07	12.66	2.45%	27.60%
Disco Corp	Information Technology	\$244,265	0.1%	(30.75)%	28.41	28.60	0.82%	33.10%
Nanya Technology Co Ltd Ord	Information Technology	\$19,696	0.0%	(30.38)%	4.64	14.42	0.00%	34.08%
Global Unichip	Information Technology	\$31,240	0.0%	(29.74)%	4.66	31.83	1.27%	0.67%
Coca Cola Icecek Sanayi A S Shs	Consumer Staples	\$14,079	0.0%	(27.21)%	4.67	6.28	1.25%	21.20%

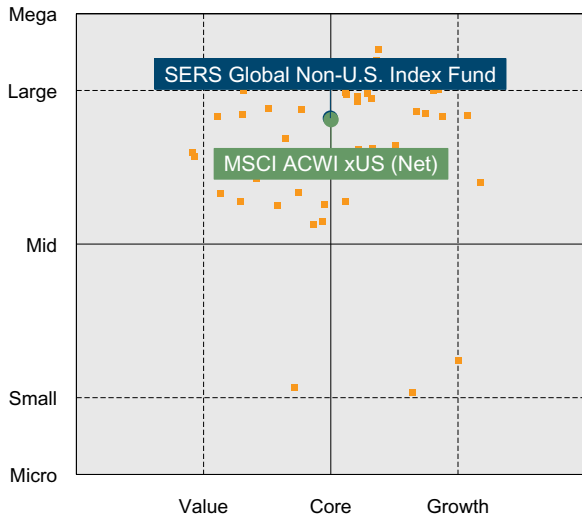
# Historical Holdings Based Style Analysis

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

### For Three Years Ended September 30, 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.

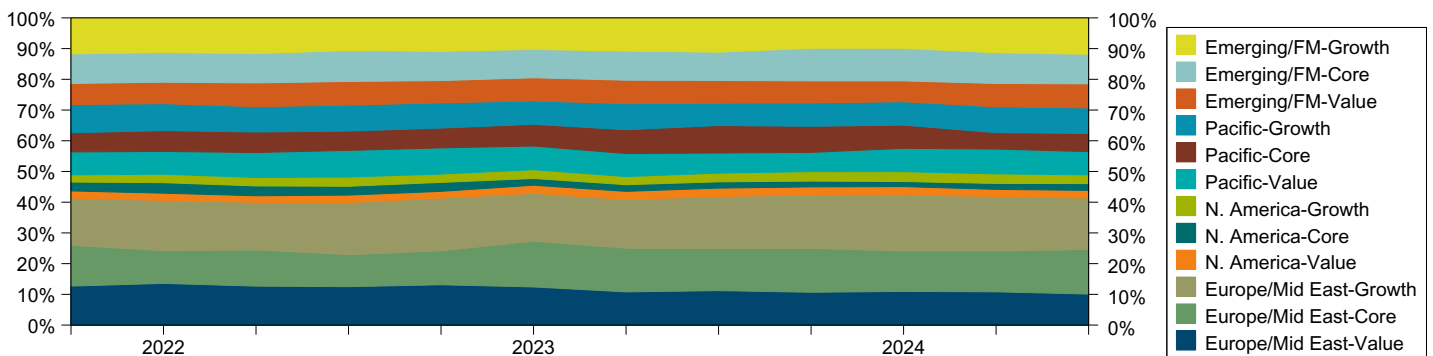
**Average Style Map vs Callan Non US Equity MFs Holdings for Three Years Ended September 30, 2024**



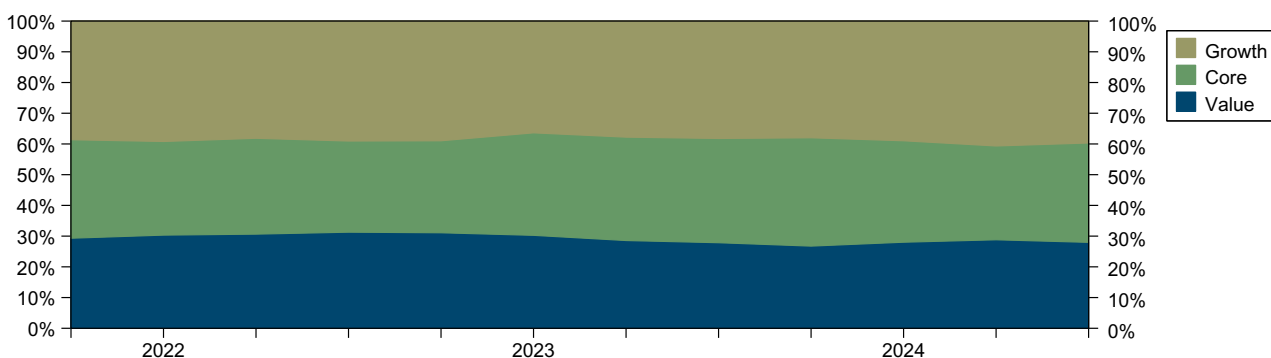
**Average Style Exposure Matrix Holdings for Three Years Ended September 30, 2024**

Europe/ Mid East	11.8% (146)	12.9% (131)	16.7% (139)	41.4% (416)
	11.7% (153)	12.4% (133)	16.7% (149)	40.8% (435)
N. America	2.5% (26)	2.5% (24)	2.8% (33)	7.8% (83)
	2.6% (27)	2.4% (26)	2.9% (35)	7.8% (88)
Pacific	7.6% (131)	7.0% (106)	8.2% (113)	22.8% (350)
	7.6% (132)	7.1% (106)	8.0% (113)	22.7% (351)
Emerging/ FM	7.4% (386)	9.8% (393)	10.9% (425)	28.1% (1204)
	7.4% (412)	10.0% (428)	11.2% (475)	28.6% (1315)
<b>Total</b>	<b>29.2% (689)</b>	<b>32.1% (654)</b>	<b>38.6% (710)</b>	<b>100.0% (2053)</b>
	<b>29.3% (724)</b>	<b>31.9% (693)</b>	<b>38.8% (772)</b>	<b>100.0% (2189)</b>
	Value	Core	Growth	Total

**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 September 30, 2024

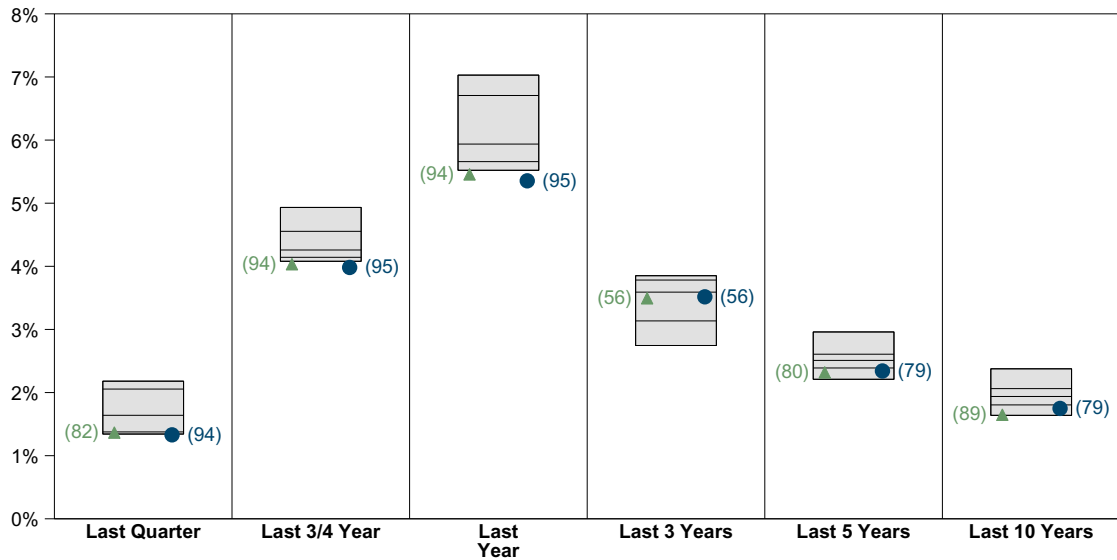
## Investment Philosophy

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

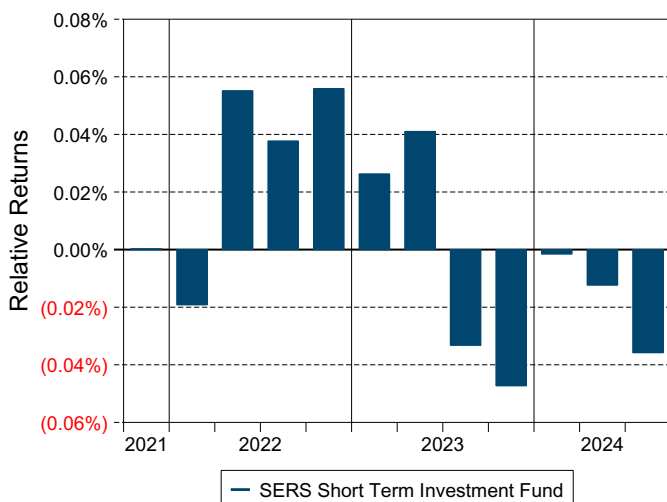
- SERS Short Term Investment Fund's portfolio posted a 1.33% return for the quarter placing it in the 94 percentile of the Callan Cash Database group for the quarter and in the 95 percentile for the last year.
- SERS Short Term Investment Fund's portfolio underperformed the 3-month Treasury Bill by 0.04% for the quarter and underperformed the 3-month Treasury Bill for the year by 0.10%.

## Performance vs Callan Cash Database (Gross)

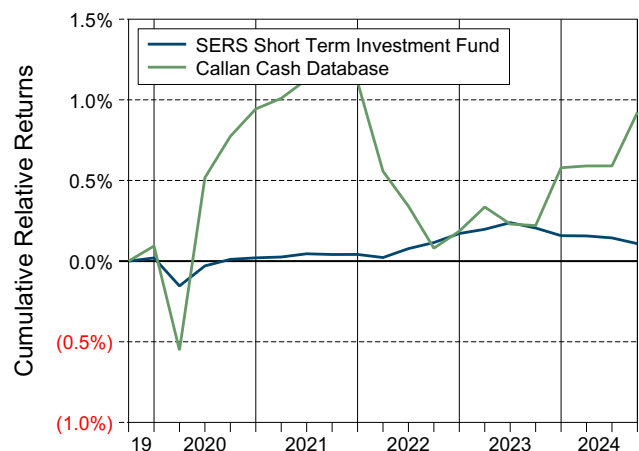


10th Percentile	2.18	4.93	7.03	3.85	2.96	2.38
25th Percentile	2.06	4.55	6.71	3.78	2.61	2.06
Median	1.64	4.26	5.94	3.59	2.51	1.94
75th Percentile	1.38	4.14	5.66	3.14	2.39	1.80
90th Percentile	1.34	4.08	5.52	2.75	2.21	1.64
<b>SERS Short Term Investment Fund</b>	● 1.33	3.98	5.35	3.52	2.34	1.75
3-month Treasury Bill	▲ 1.37	4.03	5.46	3.49	2.32	1.65

## Relative Return vs 3-month Treasury Bill



## Cumulative Returns vs 3-month Treasury Bill



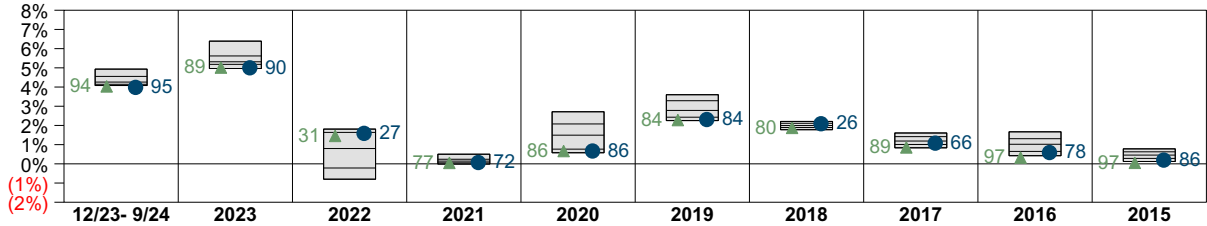


# SERS Short Term Investment Fund Return Analysis Summary

## Return Analysis

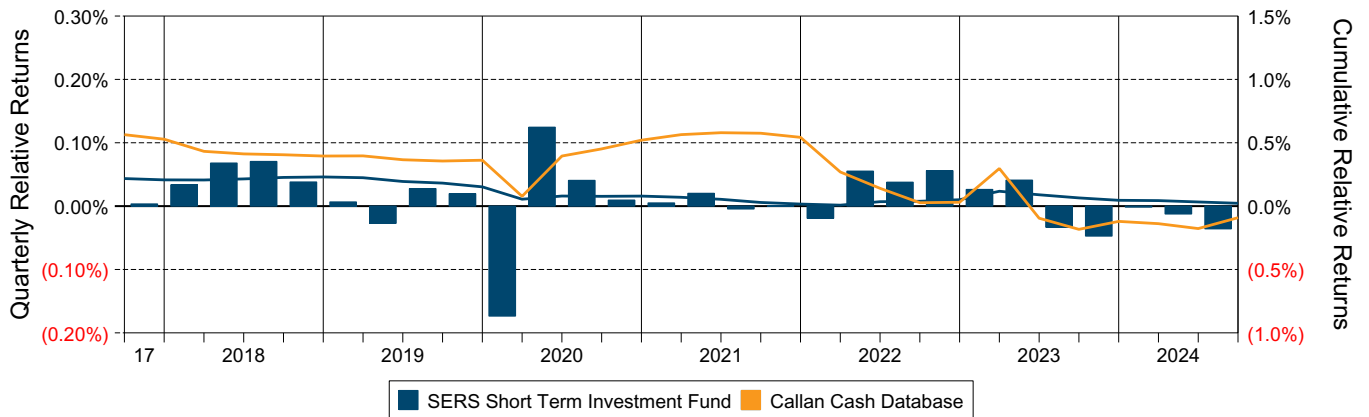
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and 12 quarter rolling manager returns versus the appropriate 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)

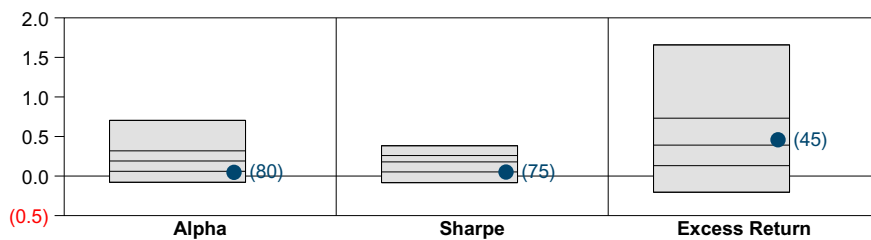


	12/23- 9/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	4.93	6.39	1.81	0.50	2.71	3.60	2.21	1.61	1.67	0.78
25th Percentile	4.55	5.62	1.64	0.24	2.08	3.29	2.11	1.42	1.31	0.63
Median	4.26	5.31	0.80	0.14	1.49	2.78	1.99	1.19	1.02	0.46
75th Percentile	4.14	5.18	(0.22)	0.05	0.77	2.43	1.89	1.01	0.65	0.28
90th Percentile	4.08	4.97	(0.80)	(0.01)	0.58	2.25	1.78	0.83	0.42	0.12
<b>SERS Short Term Investment Fund</b>	● 3.98	5.00	1.59	0.07	0.67	2.31	2.09	1.08	0.59	0.19
3-month Treasury Bill	▲ 4.03	5.01	1.46	0.05	0.67	2.28	1.87	0.86	0.33	0.05

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



## Risk Adjusted Return Measures vs 3-month Treasury Bill Rankings Against Callan Cash Database (Gross) Seven Years Ended September 30, 2024



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.70	0.38	1.66
25th Percentile	0.32	0.26	0.73
Median	0.19	0.18	0.39
75th Percentile	0.06	0.05	0.13
90th Percentile	(0.08)	(0.08)	(0.20)
<b>SERS Short Term Investment Fund</b>	● 0.05	0.05	0.46

	Alpha	Sharpe Ratio	Excess Return Ratio
<b>SERS Short Term Investment Fund</b>	● 0.05	0.05	0.46

# SERS Stable Value Fund

## Period Ended September 30, 2024

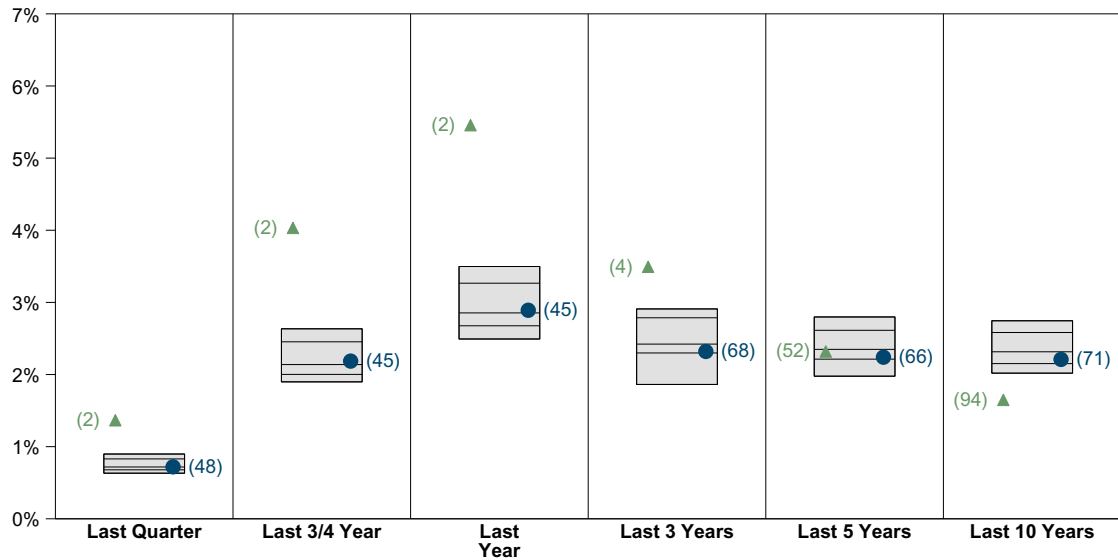
### Investment Philosophy

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

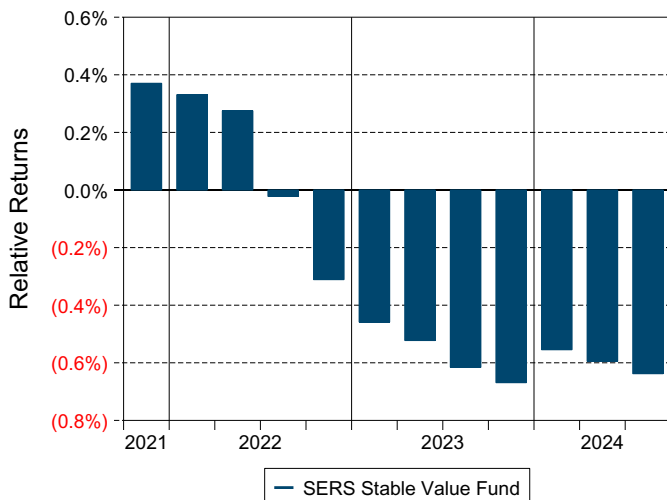
- SERS Stable Value Fund's portfolio posted a 0.72% return for the quarter placing it in the 48 percentile of the Callan Stable Value SA group for the quarter and in the 45 percentile for the last year.
- SERS Stable Value Fund's portfolio underperformed the 3-month Treasury Bill by 0.65% for the quarter and underperformed the 3-month Treasury Bill for the year by 2.57%.

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

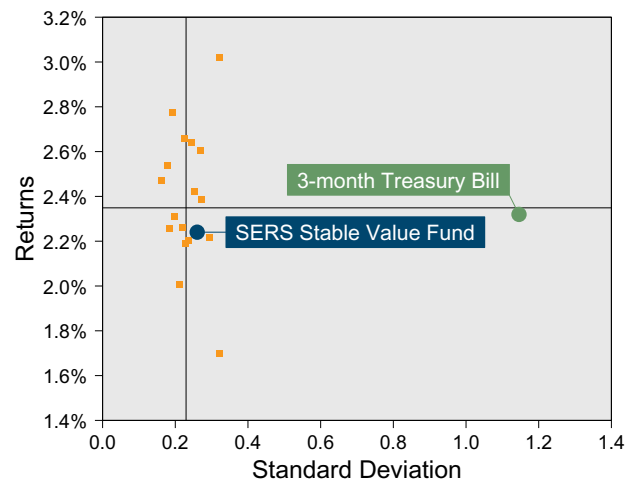


10th Percentile	0.90	2.63	3.50	2.91	2.80	2.75
25th Percentile	0.83	2.45	3.27	2.79	2.61	2.58
Median	0.72	2.14	2.85	2.42	2.35	2.32
75th Percentile	0.68	2.00	2.68	2.30	2.21	2.15
90th Percentile	0.63	1.90	2.49	1.86	1.98	2.02
<b>SERS Stable Value Fund</b>	<b>● 0.72</b>	<b>2.19</b>	<b>2.89</b>	<b>2.32</b>	<b>2.24</b>	<b>2.21</b>
3-month Treasury Bill	<b>▲ 1.37</b>	<b>4.03</b>	<b>5.46</b>	<b>3.49</b>	<b>2.32</b>	<b>1.65</b>

### Relative Return vs 3-month Treasury Bill



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

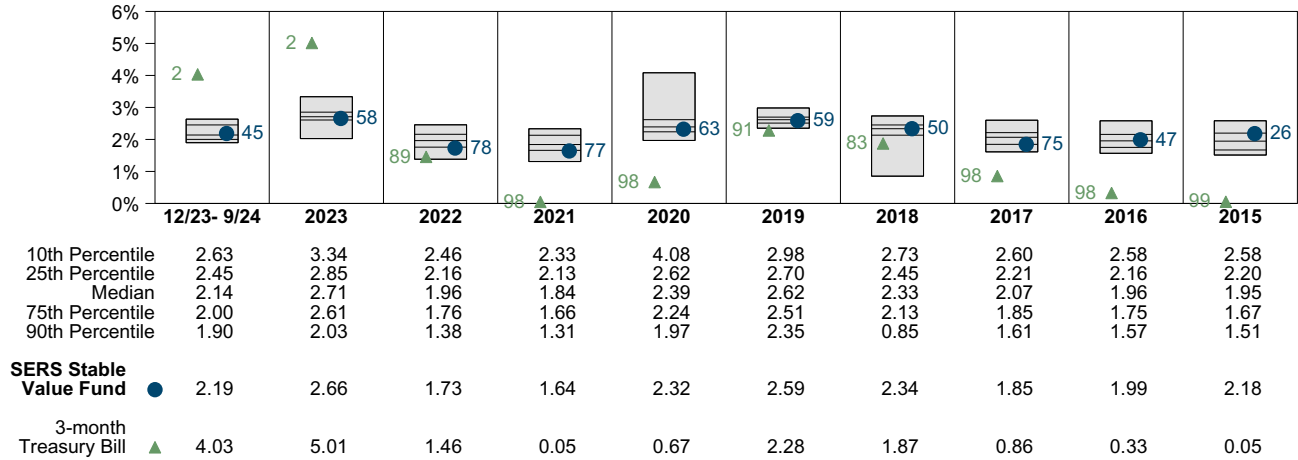


# SERS Stable Value Fund Return Analysis Summary

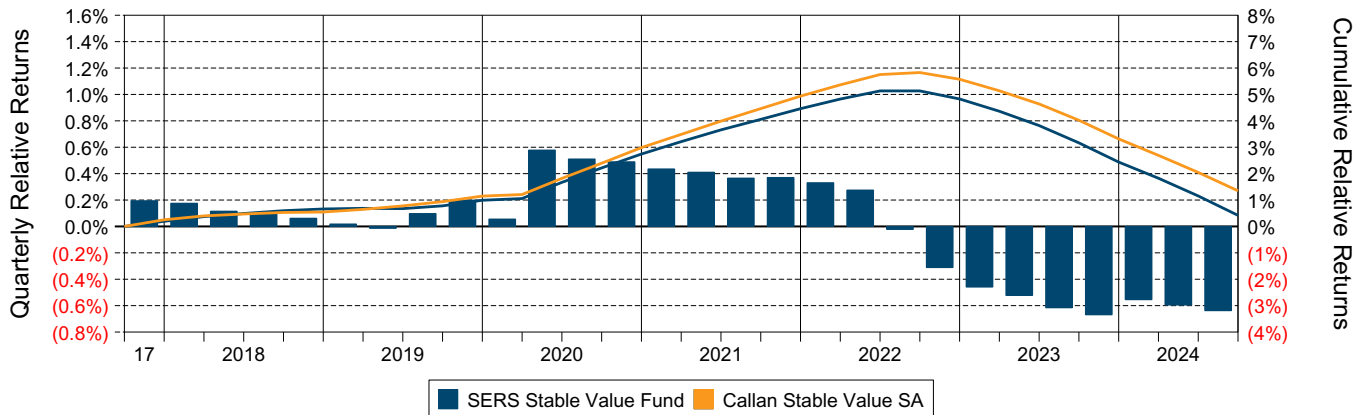
## Return Analysis

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.

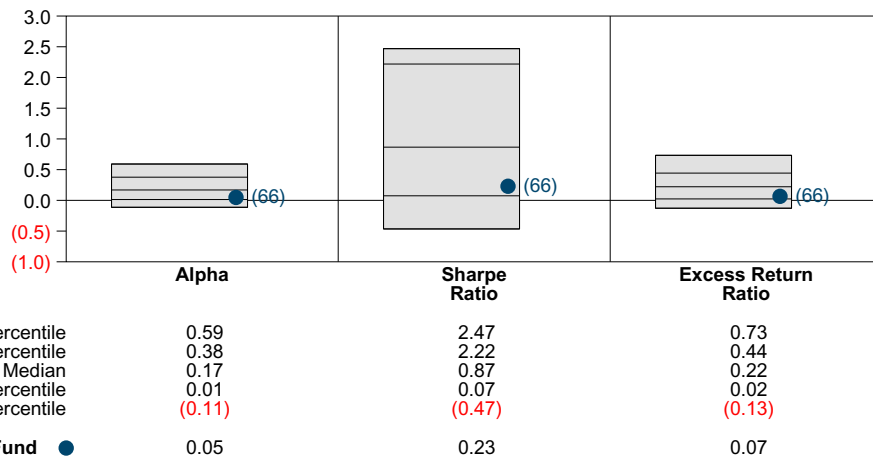
### Performance vs Callan Stable Value SA (Gross)



### 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 September 30, 2024



# SERS U.S. Bond Index Fund

## Period Ended September 30, 2024

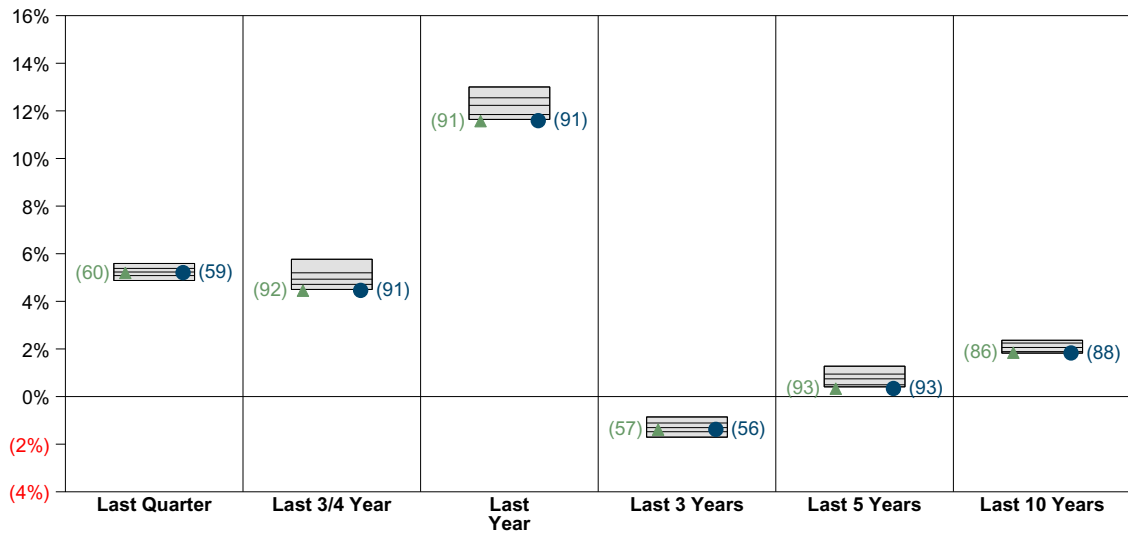
### Investment Philosophy

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

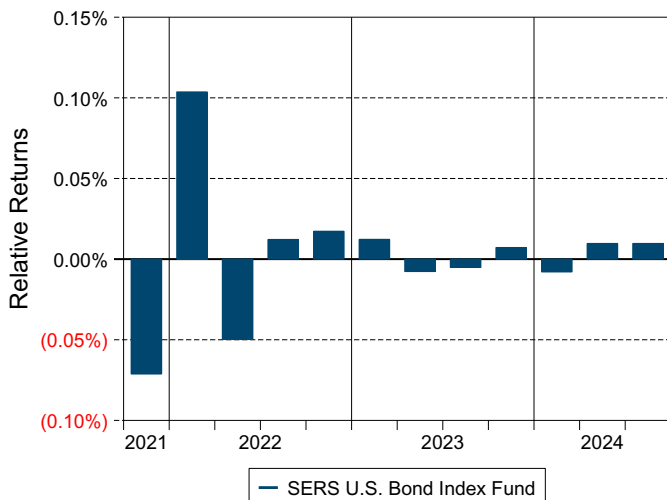
- SERS U.S. Bond Index Fund's portfolio posted a 5.21% return for the quarter placing it in the 59 percentile of the Callan Core Bond Mutual Funds group for the quarter and in the 91 percentile for the last year.
- SERS U.S. Bond Index Fund's portfolio outperformed the Blmbg:Aggregate by 0.01% for the quarter and outperformed the Blmbg:Aggregate for the year by 0.02%.

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

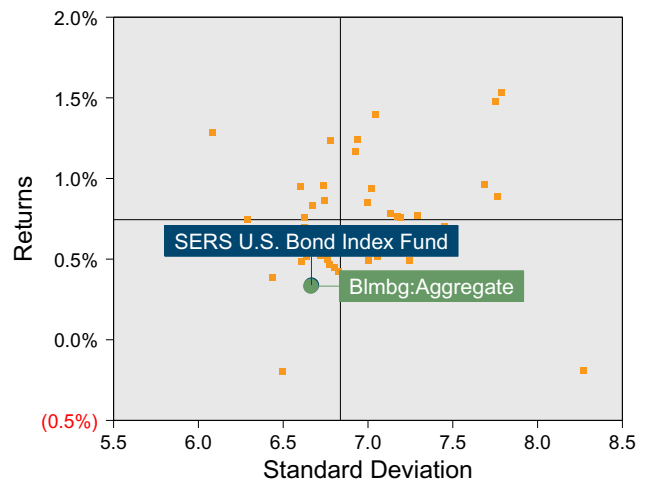


10th Percentile	5.59	5.77	13.00	(0.86)	1.28	2.36
25th Percentile	5.38	5.20	12.55	(1.11)	0.94	2.25
Median	5.23	4.93	12.23	(1.30)	0.74	2.06
75th Percentile	5.08	4.71	11.85	(1.48)	0.49	1.89
90th Percentile	4.87	4.50	11.64	(1.70)	0.41	1.83
<b>SERS U.S. Bond Index Fund</b>	<b>● 5.21</b>	<b>4.46</b>	<b>11.59</b>	<b>(1.38)</b>	<b>0.34</b>	<b>1.83</b>
Blmbg:Aggregate	▲ 5.20	4.45	11.57	(1.39)	0.33	1.84

### Relative Return vs Blmbg:Aggregate



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

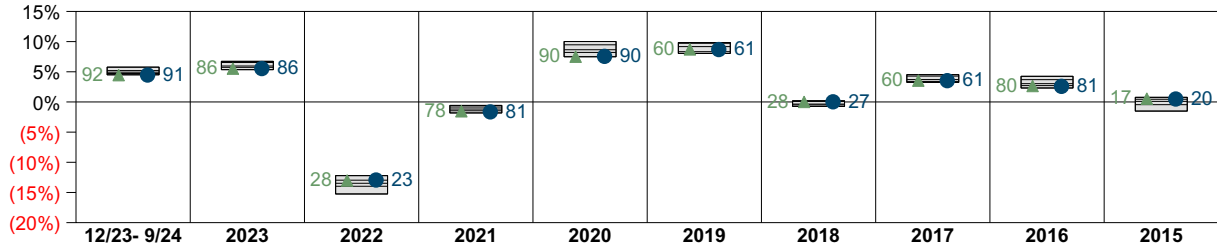


# SERS U.S. Bond Index Fund Return Analysis Summary

## Return Analysis

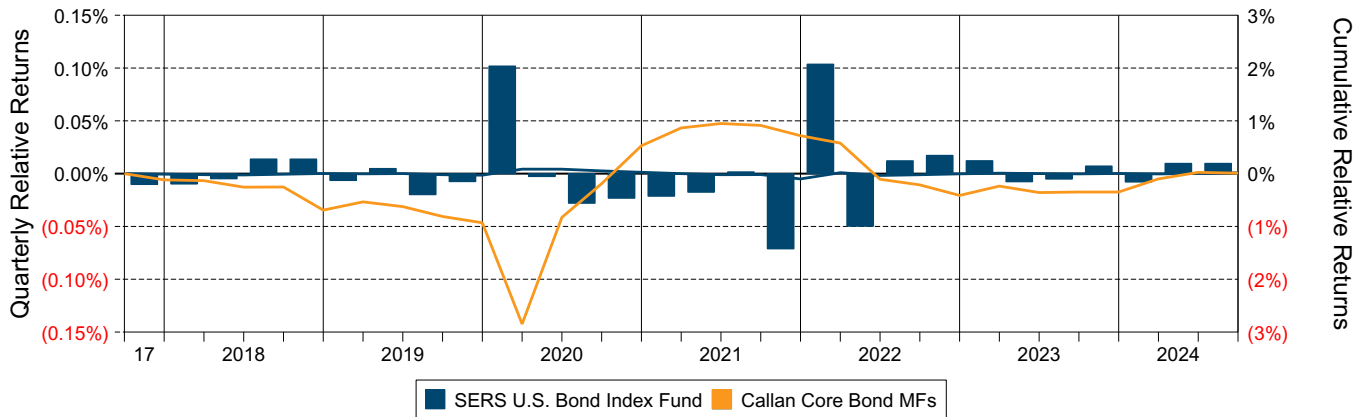
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

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

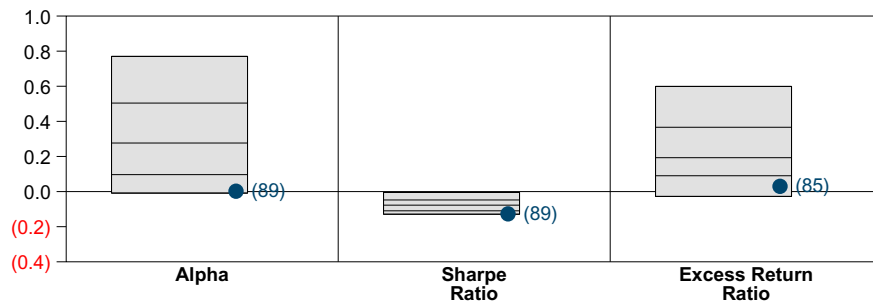


	12/23- 9/24	2023	2022	2021	2020	2019	2018	2017	2016	2015
<b>SERS U.S. Bond Index Fund</b>	4.46	5.54	(12.94)	(1.65)	7.56	8.69	0.02	3.53	2.59	0.49
Blmbg:Aggregate	4.45	5.53	(13.01)	(1.54)	7.51	8.72	0.01	3.54	2.65	0.55

### 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 September 30, 2024



	Alpha	Sharpe Ratio	Excess Return Ratio
<b>SERS U.S. Bond Index Fund</b>	0.00	(0.13)	0.03

# SERS U.S. Bond Index Fund

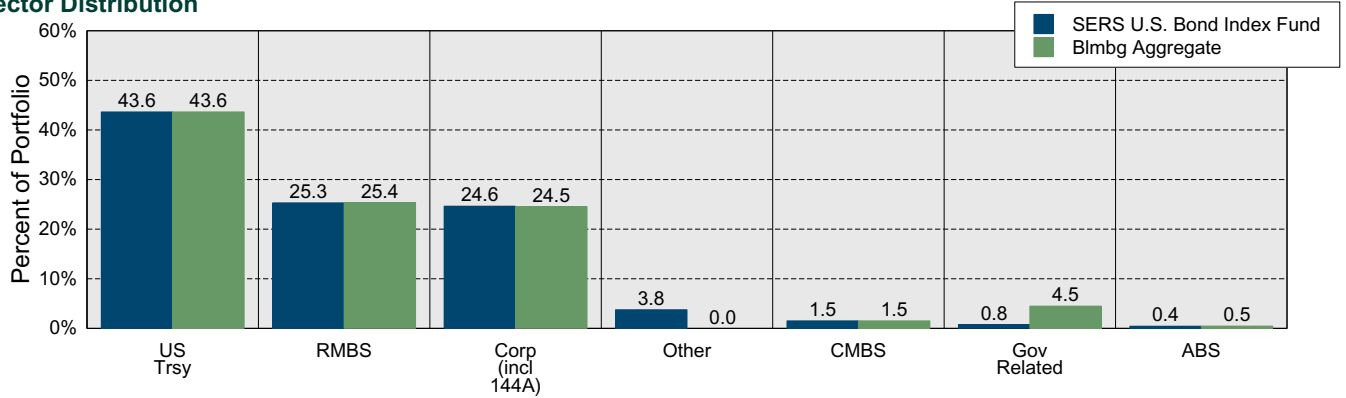
## Portfolio Characteristics Summary

### As of September 30, 2024

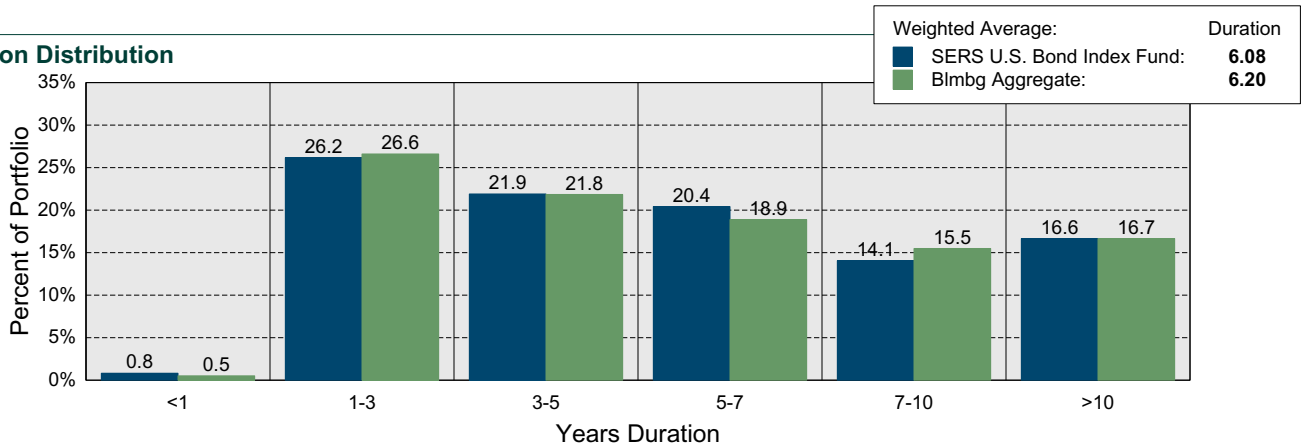
#### Portfolio Structure Comparison

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.

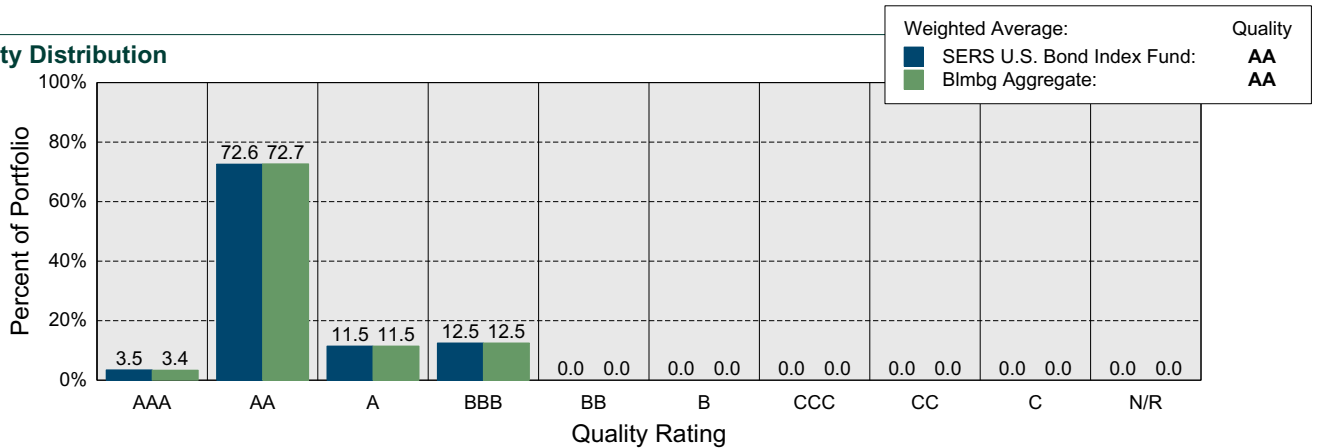
#### Sector Distribution



#### Duration Distribution



#### Quality Distribution



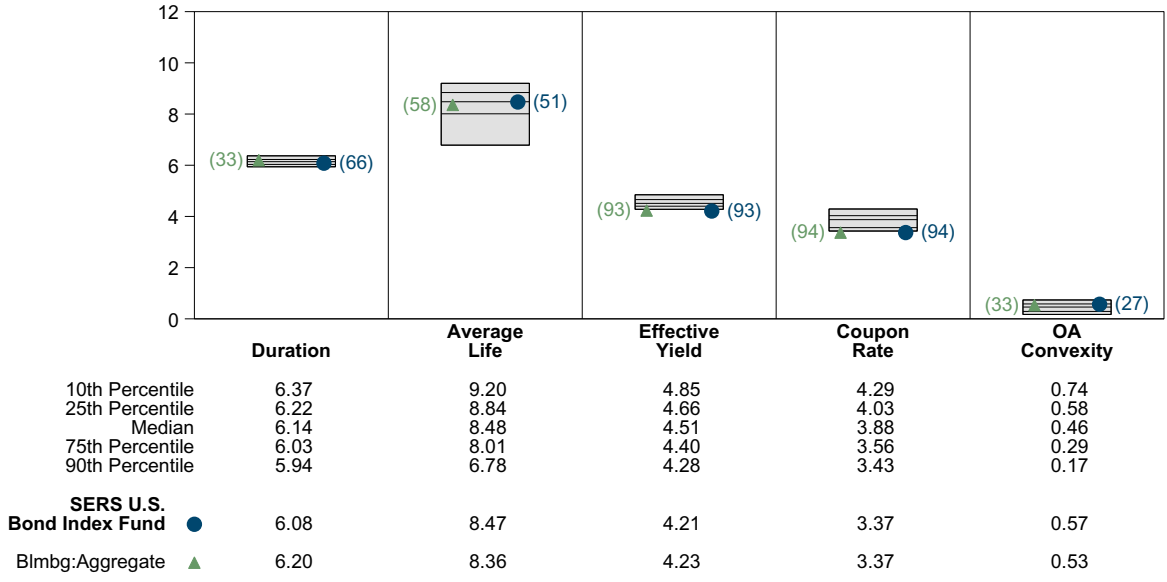
# SERS U.S. Bond Index Fund

## Bond Characteristics Analysis Summary

### Portfolio Characteristics

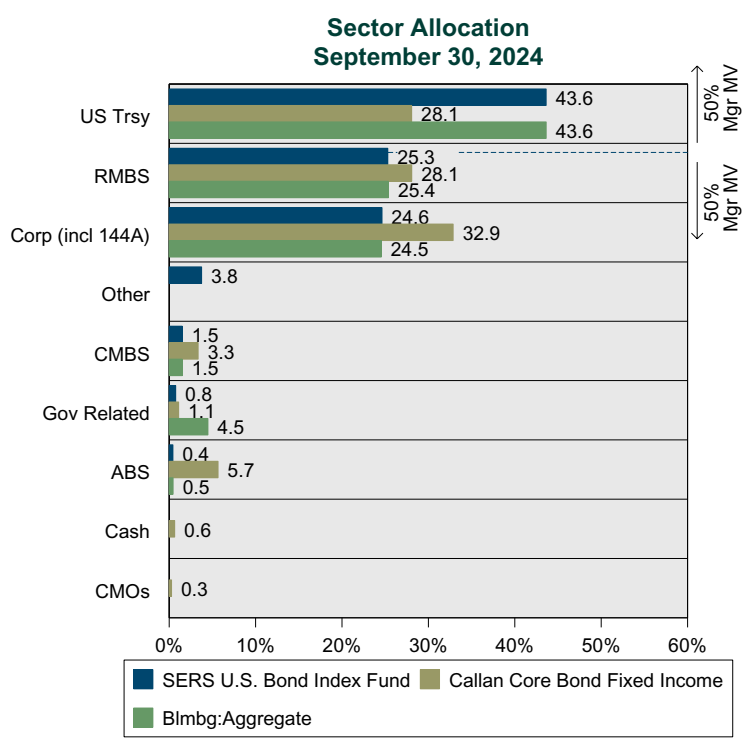
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

### Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of September 30, 2024

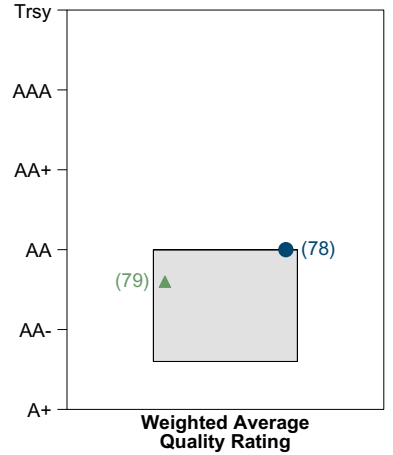


### Sector Allocation and Quality Ratings

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-
<b>SERS U.S. Bond Index Fund</b>	AA
<b>Blmbg:Aggregate</b>	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.











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