

September 30, 2023

Pennsylvania SERS 401(a)



**Investment Measurement Service
Quarterly Review**

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September 30, 2023

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Stunning Growth but Clouds Loom Ahead

ECONOMY

2 A year ago, a recession was on all forecasters' radar. Now ... not so much. GDP stunned with a 4.9% 3Q23 gain, after strong reports in 1Q and 2Q. This despite a number of headwinds, such as war, inflation, and rate hikes. And there are more shocks in store.

Aggregate on Track For Third Annual Fall

FIXED INCOME

8 The Bloomberg Aggregate fell in 3Q, with the rise in yields continuing to detract from performance. U.S. Treasuries continued to climb, with the 10-year ending the quarter at 4.6%. Developed markets sold off as long-term inflation moved higher. Emerging markets also fell.

Returns Easily Exceed Leveraged Loans

PRIVATE CREDIT

12 Private credit has generated a net IRR of 11.8% over the three years ending 2Q23, easily exceeding leveraged loans. And continued 3Q23 rate rises across the yield curve have made private credit even more attractive than in the past for many institutional investors.

Lagging Bond Gains Hinder Performance

INSTITUTIONAL INVESTORS

4 While equity gains helped, low fixed income returns left all major investor types lagging a 60% stocks/40% bonds benchmark over the last year ending 3Q23. Most investor types matched or nearly equaled the gains of the 60%/40% benchmark over the last 20 years.

Private RE, REITs Both Show Drops in Quarter

REAL ESTATE/REAL ASSETS

10 The NCREIF Property Index, a measure of U.S. institutional real estate assets, fell 1.4% during 3Q23. The NCREIF Open-End Diversified Core Equity (ODCE) Index dropped 1.9%. REITs, both in the U.S. and globally, also fell and underperformed equities.

Most Strategies Slightly Higher

HEDGE FUNDS/MACs

13 Geopolitics and an elevated rate environment helped set a backdrop for strong alpha generation for hedge funds. Managers continue to see high dispersion between winners and losers in the stock market, which will favor stock selection and alpha generation over beta returns.

All Indices Decline During Tough Quarter

EQUITY

6 All U.S. equity indices posted negative returns in 3Q, and only 2 of the 11 S&P 500 sectors were up. The Russell 2000 Value Index led the pack in a tough quarter. Global markets retreated amid fears of a worldwide recession driven by higher interest rates and slowing growth.

Focus on Exits as Activity Dipped

PRIVATE EQUITY

11 Private equity activity measures generally dipped in 3Q23 compared to the previous quarter, except for some increases in exit measures. While continued volatility is expected to hamper volumes, GPs are keenly focused on providing liquidity.

2Q23 Finishes With Third Straight Gain

DEFINED CONTRIBUTION

15 The Callan DC Index™ gained again in 2Q23, while balances also rose again. While target date funds, as is typical, saw the largest increase in net flows, stable value saw big outflows for the third straight quarter, while money market saw small net inflows.

Broad Market Quarterly Returns

U.S. Equity
Russell 3000



-3.3%

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



-3.8%

U.S. Fixed Income
Bloomberg Agg



-3.2%

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



-4.0%

Sources: Bloomberg, FTSE Russell, MSCI

Stunning Growth as Clouds Loom

ECONOMY | Jay Kloepfer

A year ago, no one saw this coming. Recession was on everyone's radar for 2023, and the only disagreement was the quarter in which it would show up. Then the U.S. economy generated 2.2% GDP growth in 1Q and another 2.1% in 2Q. The strong job market continued to add new jobs, inflation came down from the 9% spike last summer, and wage growth boosted consumer incomes and spending. Now 3Q GDP has clocked a stunning 4.9% gain, mocking all those who try to predict economic growth (including us). This despite the Federal Reserve's rate hikes, the war in Ukraine, elevated inflation, and geopolitical uncertainty. How are we defying economic gravity?

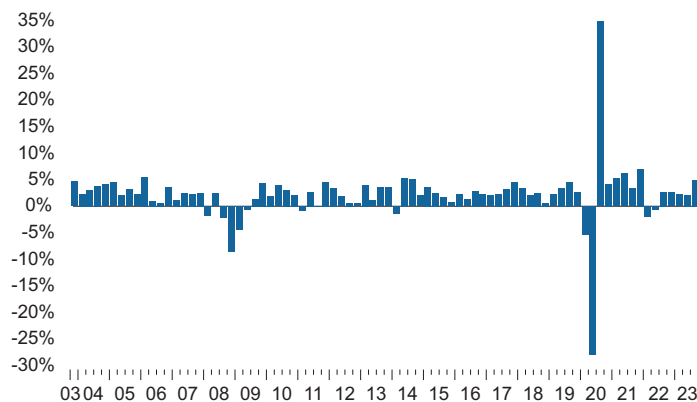
The robust 3Q economic report is the result of strong retail sales, industrial production, and investment in inventory. Retail sales came in much stronger than expected, driven by demand for building materials, recreational goods, and vehicles, as well as core goods such as food and household items. Growth in total consumption expenditures has been broad-based and spread across both goods and services, and it accounted for more than half of GDP growth in 3Q. This surge in spending suggests that many U.S. consumers feel financially secure and are spending freely in a tight labor market.

Headline inflation fell from 9% (year-over-year) in June 2022 to 3% in June 2023, a remarkable reduction. The decline likely reflected both the un-knotting of global supply chains following the pandemic, and the efforts of the Federal Reserve and central banks around the globe to contain inflation with higher interest rates. The lower rates also reflected a denominator effect, perhaps twice, in which the sharp rise in 2022 came off an abnormally low base for prices set during the lockdown in 2020 and 2021, and price increases were measured during the first half of 2023 against the now-higher prices set in 2022. However, headline inflation (including food and energy) edged back up in each of the last three months.

Labor markets are tight. The U.S. economy added 336,000 new jobs in September and has created an average of 260,000 per month this year. (For reference, a monthly rate of 200,000 suggests continuing growth in the economy.) The unemployment rate

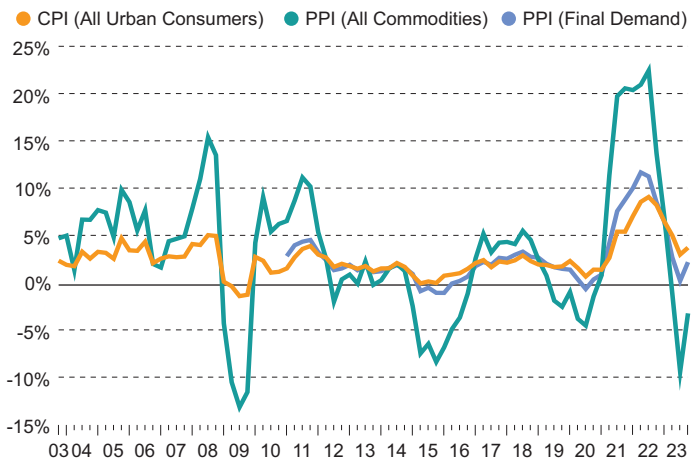
Quarterly Real GDP Growth

(20 Years)



Source: Bureau of Economic Analysis

Inflation Year-Over-Year



Source: Bureau of Labor Statistics

remains below 4%, coming in at 3.8% in September. Finally, the Job Openings and Labor Turnover Survey (JOLTS) reported that the U.S. economy had 9.6 million job openings at the end of August, and 6.4 million unemployed people, so a ratio of unemployed people to job openings of just 0.7.

The current strong GDP growth suggests we may not see an easing in tight labor markets for some time. Hence, the prospect for continued inflationary pressure from the labor market is high. Average hourly earnings have grown between 4.0% and 5.0% (annual rate) during the first three quarters of 2023, meaning real wages finally turned positive starting in May, and this real growth carried through

September (wage growth is exceeding inflation). Inflation has come down significantly from its 2022 peak, but getting down to the Fed's stated goal of 2% will take more time, and some discomfort.

The housing market is in a conundrum. Housing starts have fallen in response to substantially higher mortgage rates, but not as much as might be expected. After plummeting earlier in the year, single-family starts rose 3.2% in September, while multi-family starts surged 17.6%. The single-family housing market is historically tight—and tightening. Inventory of homes for sale declined for the eighth straight month in August to 857,000, a record low. Low inventory has driven home prices up, and with mortgage rates at 7.5%, buying a home is increasingly unaffordable. As a result, sales of existing homes have collapsed.

If we thought clouds loomed at the start of 2023, there are more now. Interest rates are higher still and financial conditions are tight. Geopolitical uncertainty has certainly not abated (the conflict in the Middle East began in the fourth quarter and is not reflected in 3Q data). Another shutdown of the U.S. government is lurking. The full impact of higher interest rates is working through the real estate market, the cost of capital, the cost of home ownership, and the cost of debt to government, business, and consumers. The UAW strike began in mid-September, and the impact will likely show up in 4Q. The bond market has been calling for a recession since May 2022, with an inverted yield curve, and the curve has only become more inverted over the past year.

Expectations that the Fed would be done with rate hikes and would soon revert to rate easing have been continually thwarted by the strength in the job market, in industrial activity, in exports and by strong consumption expenditures. Financial conditions tightened toward the end of 3Q as investors pushed up yields on the long end

The Long-Term View

Index	3Q23	Periods Ended 9/30/23			
		1 Yr	5 Yrs	10 Yrs	25 Yrs
U.S. Equity					
Russell 3000	-3.3	20.5	9.1	11.3	8.1
S&P 500	-3.3	21.6	9.9	11.9	7.9
Russell 2000	-5.1	8.9	2.4	6.6	8.0
Global ex-U.S. Equity					
MSCI EAFE	-4.1	25.6	3.2	3.8	4.8
MSCI ACWI ex USA	-3.8	20.4	2.6	3.3	--
MSCI Emerging Markets	-2.9	11.7	0.6	2.1	--
MSCI ACWI ex USA Small Cap	-1.7	19.0	2.6	4.3	7.4
Fixed Income					
Bloomberg Agg	-3.2	0.6	0.1	1.1	3.6
90-Day T-Bill	1.3	4.5	1.7	1.1	1.9
Bloomberg Long G/C	-9.4	-2.9	-1.2	1.9	4.7
Bloomberg GI Agg ex US	-4.0	3.4	-3.1	-1.7	2.0
Real Estate					
NCREIF Property	-1.4	-8.4	5.3	7.4	8.3
FTSE Nareit Equity	-7.1	3.0	2.8	6.0	8.5
Alternatives					
CS Hedge Fund	0.5	6.3	5.0	4.5	6.5
Cambridge PE*	1.6	2.7	15.4	14.9	13.7
Bloomberg Commodity	4.7	-1.3	6.1	-0.7	2.4
Gold Spot Price	-3.3	11.6	9.3	3.5	7.6
Inflation – CPI-U	0.9	3.7	4.0	2.8	2.6

*Data for most recent period lags. Data as of 2Q23.
Sources: Bloomberg, Bureau of Economic Analysis, Credit Suisse, FTSE Russell, MSCI, NCREIF, Refinitiv/Cambridge, S&P Dow Jones Indices

of the Treasury curve. This tightening may less reflect a change in expectations for short-term monetary policy than investors' lower demand for term risk, as banks lower allocations to Treasuries. Investor sentiment also may indicate concern about our Congress. That the U.S. economy continues to thrive through such crosswinds has been both remarkable and baffling.

Recent Quarterly Economic Indicators

	3Q23	2Q23	1Q23	4Q22	3Q22	2Q22
Employment Cost: Total Compensation Growth	4.3%	4.5%	4.8%	5.1%	5.0%	5.1%
Nonfarm Business: Productivity Growth	4.7%	3.6%	-0.8%	1.6%	0.4%	-3.6%
GDP Growth	4.9%	2.1%	2.2%	2.6%	2.7%	-0.6%
Manufacturing Capacity Utilization	77.8%	78.0%	78.2%	78.5%	79.4%	79.6%
Consumer Sentiment Index (1966=100)	69.6	62.3	64.6	58.8	56.1	57.8

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

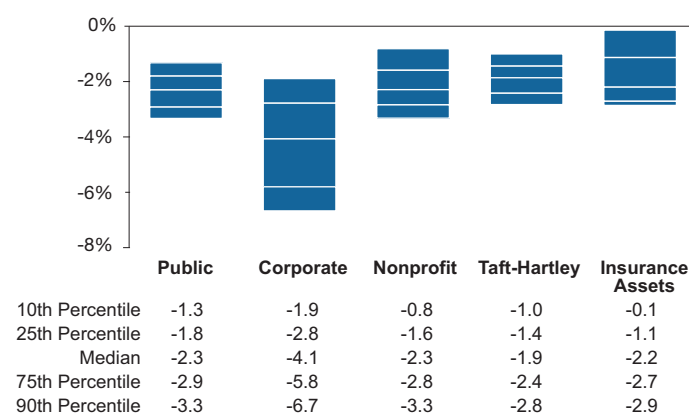
Weak Bond Gains Hinder Performance in Last Year

INSTITUTIONAL INVESTORS

- A big jump in equities over the year ending 3Q23 helped institutional investors' returns over that period, but weak fixed income performance left them trailing a composite index of 60% S&P 500/40% Bloomberg US Aggregate Bond Index.
- Corporate defined benefit (DB) plans, with their higher allocations to fixed income than most other investor types, fared worst among major investor types. Nonprofits slightly topped public DB plans.
- But the returns so far this year have helped make up for double-digit losses for calendar year 2022 for all investor types, and all major indices.
- Despite low gains for bonds over 20 years, most investor types nearly matched the gains of the 60%/40% composite, powered by strong gains from broad U.S. equities.
- Key issues for institutional investors now include:
 - *Inflation*: Its fall eases some concerns for institutional investors, but the Fed remains on its mission to combat it
 - *Stocks*: Equity markets through 3Q23 continue to meet or outpace long-term expectations.
 - *Bonds*: The Bloomberg Aggregate faces its third straight year of losses.

- *Asset-Allocation*: Equity studies revisit active management while fixed income structures focus on the role of the asset class as it becomes more attractive.
- *Alternatives*: Interest varies widely by investor type.

Quarterly Returns, Callan Database Groups (9/30/23)



Source: Callan

Callan Database Median and Index Returns* for Periods Ended 9/30/23

Database Group	Quarter	1 Year	3 Years	5 Years	10 Years	20 Years
Public Database	-2.3	11.1	5.3	5.5	6.7	7.2
Corporate Database	-4.1	6.9	-0.3	3.2	5.2	6.6
Nonprofit Database	-2.3	11.5	5.2	5.2	6.2	7.1
Taft-Hartley Database	-1.9	9.8	5.4	5.4	6.8	6.9
Insurance Assets Database	-2.2	5.4	0.7	2.7	3.5	4.7
All Institutional Investors	-2.4	10.3	4.5	5.0	6.2	6.9
Large (>\$1 billion)	-2.1	9.4	5.5	5.6	6.7	7.2
Medium (\$100mm - \$1bn)	-2.5	10.3	4.7	5.0	6.3	7.0
Small (<\$100 million)	-2.6	11.0	4.2	4.7	5.9	6.6
60% S&P 500/40% Bloomberg Agg	-3.3	12.9	4.0	6.4	7.8	7.3

*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.

Public DB Plans

- The average or median discount rate, according to the most recent NASRA survey, is 7.00%, which is now attainable without taking undue risk.
- For plans that measure at 6/30, the effect of investing in alternatives is measurable. Alternatives helped investors for FYE 2022 but are causing lags (when compared to non-alternatives investors) for FYE 2023.

Corporate DB Plans

- Liabilities decreased slightly, reflecting a small increase in discount rates. Plans that were fully hedged experienced minimal funded status volatility over the quarter.
- Closed plans’ liabilities continue to shorten from aging participants. We are seeing more and more interest in intermediate fixed income.

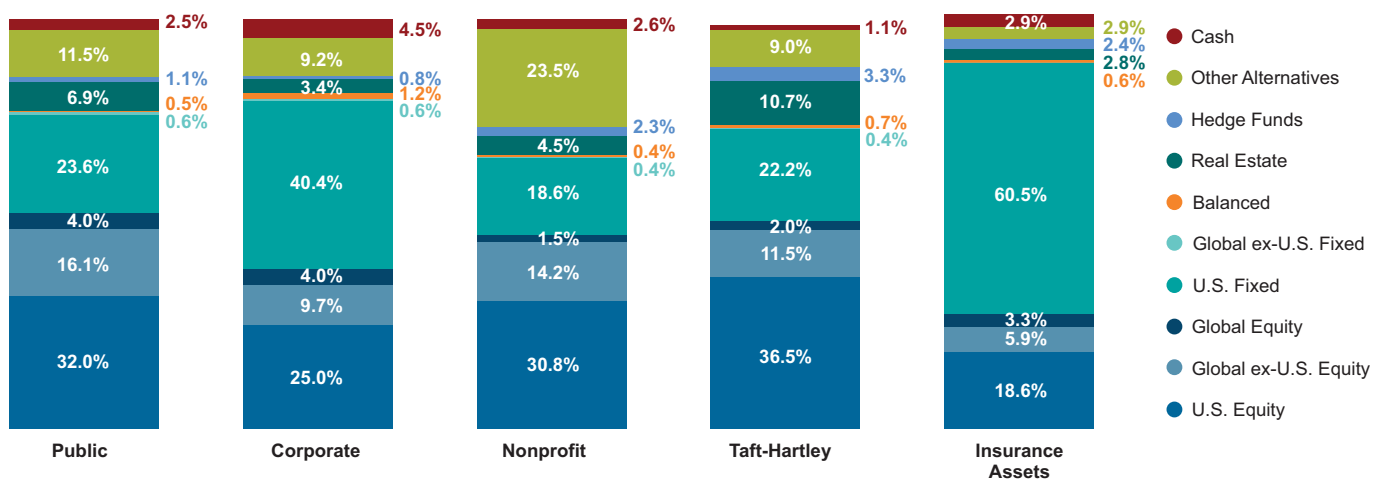
Nonprofits

- Interest in private credit remains strong. Inflation concerns continue to affect real returns. Finally, with fixed income yields approaching 5%, should allocations to fixed income be revisited?

Defined Contribution Plans

- Plan sponsors, recordkeepers, and payroll providers are actively engaging on what and how to implement SECURE 2.0; significant regulatory guidance is anticipated over the next two years.
- The IRS released guidance delaying the implementation of mandatory Roth catch-up contributions, based on income, until 2026.
 - An age 50 catch-up contribution must be Roth for those that earned more than \$145,000 the previous year.
 - To comply, those plans that don’t offer Roth will need to add Roth as a plan feature; OR
 - Plans not able to track the previous year’s earnings and feed to the recordkeeper will need to eliminate all age 50 catch-up contributions.
- Guidance also resolved a drafting error in SECURE 2.0 that had accidentally removed a provision that authorized any age-50 catch-up contributions.

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

Tough quarter for all indices

- All U.S. equity indices posted negative absolute returns during 3Q23.
- The Russell 2000 Value Index led the pack during the quarter, which was a reversal of the previous two quarters when the Russell 1000 Growth Index led.
- Only 2 of the 11 S&P 500 Index sectors gained in 3Q; Energy was up 12% and Communication Services rose 3%.
- On a YTD basis, six sectors generated positive returns, with Information Technology, Communication Services, and Consumer Discretionary substantially leading the group.

Active management remains challenging for large cap

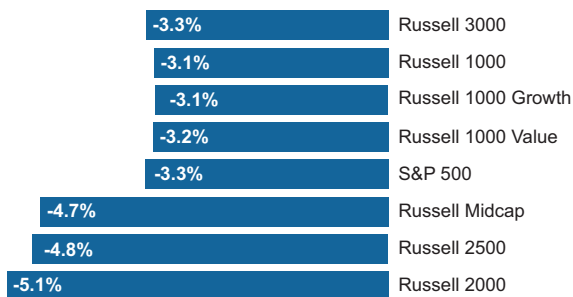
- Index concentration stayed notable within the Russell 1000 Growth Index; the top 10 issuers comprised 51% of the index and the top 5 issuers comprised 40% of the index.
- YTD, 97% of the S&P 500's return has been driven by the 10 largest weighted stocks.

- The "Magnificent 7" has buoyed large cap index returns and has outperformed the broader market significantly. YTD, the Magnificent 7 alone is up 83%.
- No exposures or significant underweights to top benchmark names have been disadvantageous to absolute and relative performance for managers' portfolios.

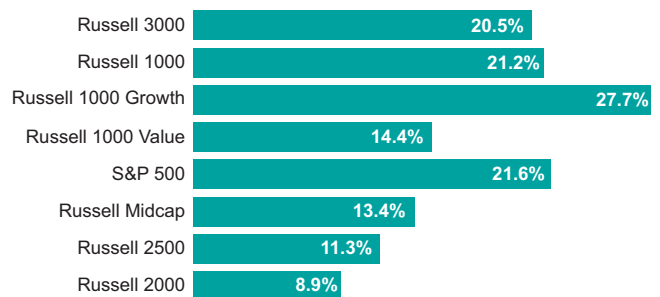
Compelling small cap valuations

- Small cap valuations, on both an absolute and relative (to large cap valuations) basis, continue to look compelling and may point to an attractive entry point for investors.
- What continues to pressure the asset class is the rhetoric around interest rates; as investors anticipate a higher-for-longer interest rate environment, there are concerns about small cap companies' ability to repay and re-finance debt.
- If inflation data continues to improve in 2023, the small cap market could be positioned for a boost to performance.

U.S. Equity: Quarterly Returns (9/30/23)

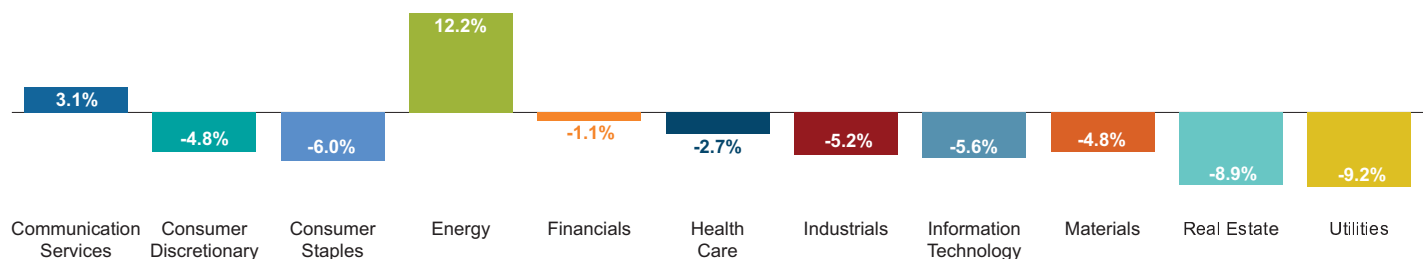


U.S. Equity: One-Year Returns (9/30/23)



Sources: FTSE Russell and S&P Dow Jones Indices

Quarterly Performance of Industry Sectors (9/30/23)



Source: S&P Dow Jones Indices

Global Equity

Most global markets were in the red for 3Q23.

Narrow market with India and Japan leading

- Global markets retreated in 3Q23 amid fears of a global recession driven by higher interest rates and slowing growth in regions outside the U.S.
- Emerging markets outperformed developed markets, buoyed by good results from India, whose economy grew nearly 8% on the heels of supportive infrastructure spending.
- Japan was strong again in local currency as it continues to benefit from post-COVID exuberance, easy monetary policy, and a new economic stimulus plan.

Value outpaces growth

- With energy as a strong outperformer on the heels of oil price increases, value outpaced growth by a wide margin in global ex-U.S. markets.

Strong U.S. dollar a headwind

- The stronger U.S. dollar, which gained 3% over the quarter, was a notable headwind for the period.

Market dispersion is low

- Global markets have seen a prolonged period of low dispersion, excluding the 2016-2018 challenges with Brexit and oil price volatility. The global markets have seen high correlations for most of the last 10 years.
- This was in conjunction with a period of universally tight monetary policies, which helped mitigate any volatility.
- With increased dispersion of central bank actions, we expect there to be fewer co-movements across countries, a period that may benefit active management.

China: Danger or opportunity

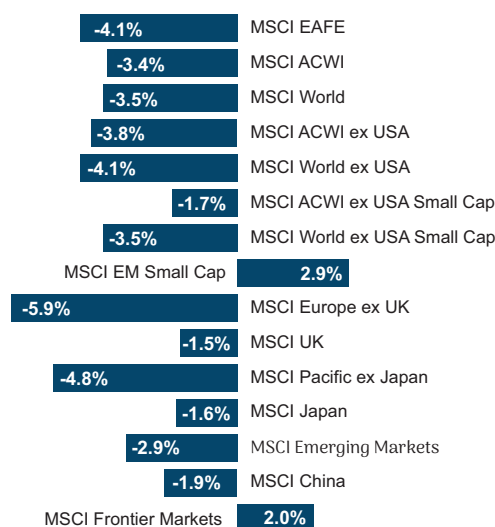
Merits

- *Long-term growth potential:* China has the second-largest GDP and the world's largest population of consumers.
- *Compelling valuation:* Forward earnings yield is at a decade high.

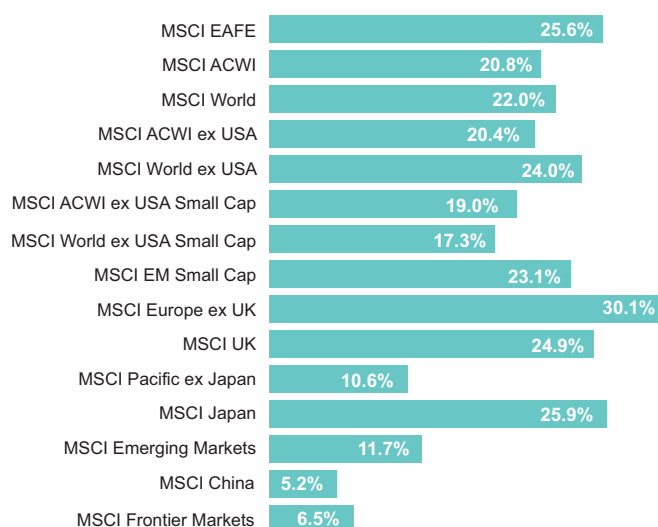
Considerations

- *Downside risk:* Chinese federal debt has continued to grow aggressively and may become unsustainable.
- *Political risk:* China is run by an authoritarian regime that may act against investors.
- *Old before rich:* China currently has 2.26 workers for every retiree—the U.S. has 2.8.

Global ex-U.S. Equity: Quarterly Returns (U.S. Dollar, 9/30/23)



Global ex-U.S. Equity: One-Year Returns (U.S. Dollar, 9/30/23)



Source: MSCI

Fixed Income

U.S. Fixed Income

U.S. fixed income fell for a second straight quarter

- The Bloomberg Aggregate Index is on track for a third calendar year of negative returns, with the rise in yields continuing to detract from performance.

U.S. Treasury 10-year yield climbed roughly 80 bps

- 10-year ended the quarter at 4.6%, its highest level since '07.
- The yield curve's inversion narrowed as it bear-steepened with long-term rates rising more than short-term rates.

TIPS outperformed nominal Treasuries

- 10-year break-even spreads widened over 10 bps.
- Fed policy rate held to 5.25%-5.50%
- The updated dot plot suggested an additional rate hike may be in the cards before year-end.

Lower-quality credit continued to outperform

- High yield spreads were flat, but the sector was buoyed by strong performance in July.
- IG corporate spreads tightened slightly and remain close to their 10-year average.
- Agency MBS underperformed other securitized sectors as interest rate volatility weighed on the sector.

Municipal Bonds

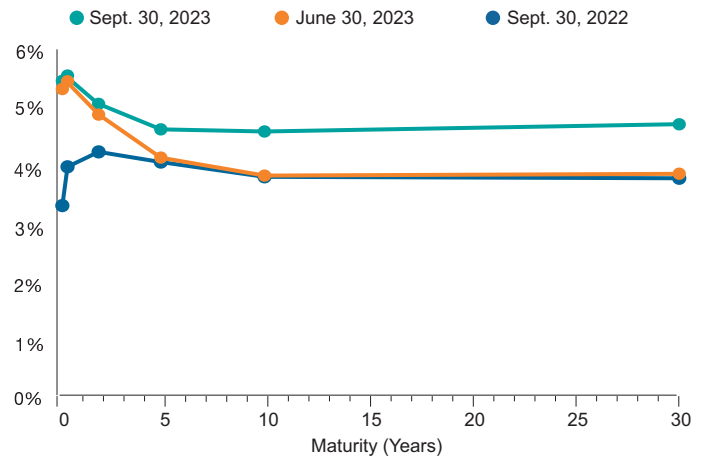
Bloomberg Aggregate down sharply in 3Q

- Corporate excess return: +84 bps; YTD +237 bps
- Mortgage excess return: -85 bps; YTD -58 bps
- High yield corporates excess return: +102 bps; YTD +516 bps
- Taxable equivalent yield is 7.3%

U.S. Treasury yield curve remains inverted

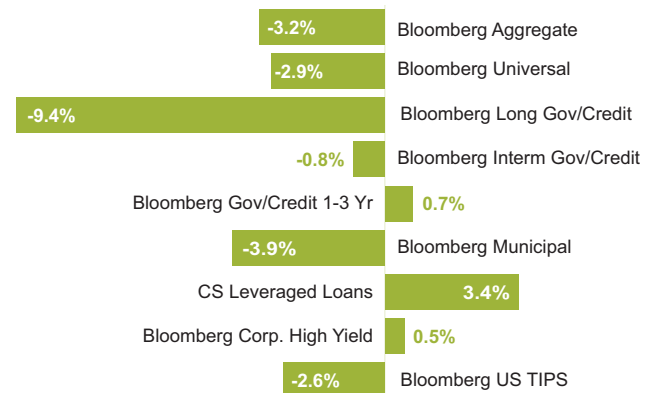
- 106 bps as of 6/30; 44 bps as of 9/30
- 2-year UST: 5.03%; 10-year UST: 4.59%
- Long rates rose more than short rates in a bear-steepening

U.S. Treasury Yield Curves



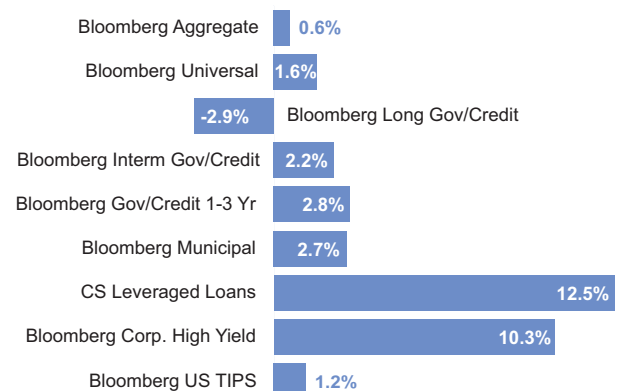
Source: Bloomberg

U.S. Fixed Income: Quarterly Returns (9/30/23)



Sources: Bloomberg and Credit Suisse

U.S. Fixed Income: One-Year Returns (9/30/23)



Fed Funds rate expectations

- “Higher for longer” theme prevails.
- Median expectation from Fed is 5.5% for year-end 2023.
- Market expectations are similar at 5.4%, up sharply from market expectations at the end of 1Q for cuts.

Valuations

- Credit spreads close to historical averages
- Mortgage spreads widened on interest rate volatility and slowing prepayments.

Global Fixed Income

Down on both a hedged and unhedged basis

- Developed market rates sold off as long-term inflation and rate expectations in the U.S. moved higher.
- The ECB continued to tighten monetary policy in September, bringing rates to the highest level since launching the euro.

U.S. dollar strength detracted from unhedged returns

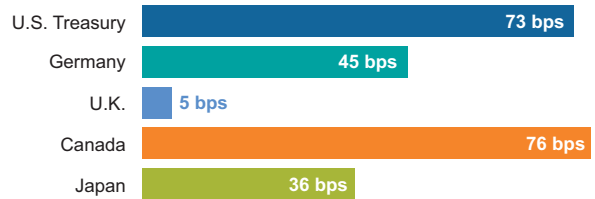
- U.S. dollar gained over 3% versus a basket of developed market currencies.

Emerging market debt indices also negative

- EM yield curves steepened; central banks in Latin America and Eastern Europe have begun monetary easing.
- Heightened geopolitical risk, war, commodity price volatility, and an economic slowdown in China remain significant headwinds to the sector.

Change in 10-Year Global Government Bond Yields

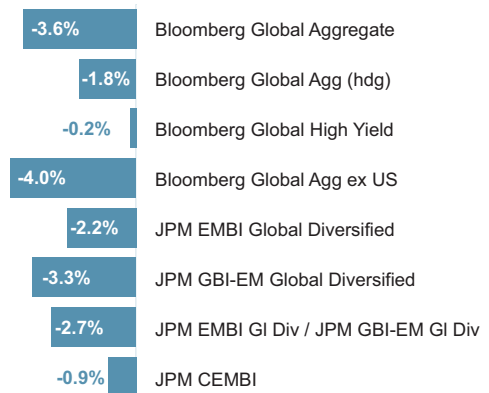
2Q23 to 3Q23



Source: Bloomberg

Global Fixed Income: Quarterly Returns

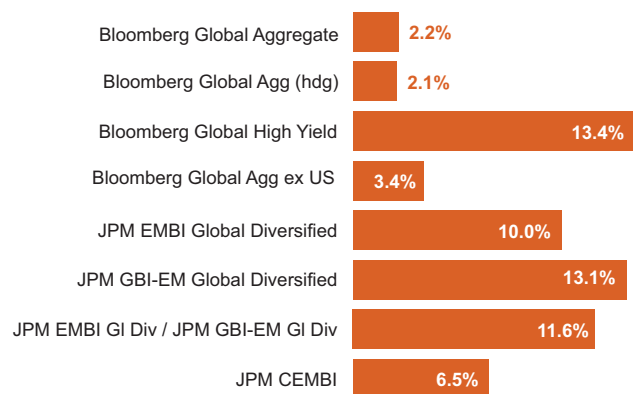
(9/30/23)



Sources: Bloomberg and JPMorgan Chase

Global Fixed Income: One-Year Returns

(9/30/23)



Sources: Bloomberg and JPMorgan Chase

Private Real Estate Falls While REITs Lag Equities

REAL ESTATE/REAL ASSETS | Munir Iman and Aaron Quach

Private valuations reflect higher interest rates

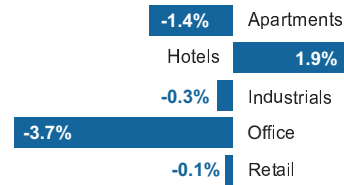
- The NCREIF Property Index, a measure of U.S. institutional real estate assets, fell 1.4% during 3Q23. The income return was 1.1% while the appreciation return was –2.4%.
- Hotels, which represent a small portion of the index, led property sector performance with a gain of 1.9%. Office finished last with a loss of 3.7%.
- Regionally, the South led with a loss of 0.5%, while the West was the worst performer with a drop of 1.8%.
- Income returns were positive across sectors and regions.
- All property sectors and regions experienced negative appreciation.
- The NCREIF Open-End Diversified Core Equity (ODCE) Index, representing equity ownership positions in U.S. core real estate, fell 2.1% during 3Q.

REITs lag equities, globally and in the U.S.

- U.S. REITs fell 7.1% in 3Q23, in contrast with the S&P 500 Index, which declined 3.3%.
- The underperformance in the U.S. was driven by the resilient U.S. economy, but a stronger-than-expected economy spelled trouble for rate-sensitive stocks as real rates continued to rise and the yield curve steepened.
- Global REITs underperformed in 3Q23, falling 5.9% compared to a 3.5% decline for global equities (MSCI World).

Sector Quarterly Returns by Property Type

(9/30/23)



Source: NCREIF

- REITs are now trading at a discount to NAV (-16%) and offer relative value given the recent selloff.
- Historically, global REITs have traded at a -5% discount to NAV.
- The FTSE EPRA Nareit Developed Asia Index (USD) fell 4.3% during the quarter.
- The FTSE EPRA Nareit Developed Europe Index (USD) increased by 1.2% during the quarter. German real estate stocks stood out as the top performers, benefiting from the European Central Bank’s perceived shift to a more accommodative monetary policy stance, potentially marking the end of its rate-hiking cycle.
- Conversely, U.K. self-storage stocks underperformed due to reduced demand from businesses and the ongoing housing market sluggishness.

Callan Database Median and Index Returns* for Periods Ended 9/30/23

Private Real Assets	Quarter	Year to Date	1 Year	3 Years	5 Years	10 Years	15 Years
Real Estate ODCE Style	-0.6	-7.9	-12.3	6.5	5.3	7.7	4.6
NFI-ODCE (value-weighted, net)	-2.1	-8.1	-12.9	6.2	4.7	7.2	4.7
NCREIF Property	-1.4	-5.1	-8.4	6.0	5.3	7.4	6.0
NCREIF Farmland	-0.3	2.6	5.8	7.2	6.1	8.0	9.8
NCREIF Timberland	1.4	4.9	10.0	9.2	5.9	5.9	4.6
Public Real Estate							
Global Real Estate Style	-5.4	-2.8	3.7	1.6	1.4	4.4	5.6
FTSE EPRA Nareit Developed	-5.9	-4.9	1.6	0.6	-1.2	2.0	3.6
Global ex-U.S. Real Estate Style	-3.5	-4.2	4.9	-3.9	-1.5	2.8	3.8
FTSE EPRA Nareit Dev ex US	-3.0	-7.5	2.1	-4.8	-4.2	-0.5	2.5
U.S. REIT Style	-7.4	-2.1	2.6	5.0	4.3	6.9	7.0
FTSE EPRA Nareit Equity REITs	-7.1	-2.1	3.0	5.8	2.8	6.0	5.9

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

Focus on Exits

PRIVATE EQUITY | Gary Robertson

While private equity fundraising and investment measures in 3Q23 fell from 2Q, exits were a bright spot with dollar volume increases for buyout and venture M&A and buyout IPO volumes. The number of venture IPOs increased as well.

Fundraising ► Based on preliminary data, private equity partnerships holding final closes in 3Q totaled \$171 billion, with 435 new partnerships formed (unless otherwise noted, all data are from PitchBook). The dollar volume fell 13% from 2Q23, and the number of funds holding final closes declined 19%. So far, capital raised is running only 22% behind YTD 2022, but the number of funds trails by 42%.

Buyouts ► New buyout transactions and dollar volume fell moderately. Funds closed 2,398 company investments with \$123 billion of disclosed deal value, a 16% decrease in count and an 8% drop in dollar value from 2Q23.

VC Investments ► New financing rounds in venture capital companies totaled 8,977, with \$82 billion of announced value. The number of investments was down 21% from the prior quarter, but the announced value fell only 1%.

Exits ► There were 507 private M&A exits of private equity-backed companies (excluding venture capital), with disclosed values totaling \$123 billion. Exits fell 7% from the prior quarter

but announced dollar volume increased 23%. There were 43 private equity-backed IPOs in 3Q raising \$12 billion, the count fell by 2 IPOs but dollar volume leapt 50%.

Venture-backed M&A exits totaled 489 with disclosed value of \$27 billion. The number of sales declined 10% but announced dollar volume jumped 93%. There were 102 VC-backed IPOs (up 19% from 2Q) but the combined float fell to \$10 billion.

Returns ► With the significant 3Q rally in public equity markets, private equity trailed for the quarter and last 12 months. Private equity posted a third consecutive quarterly gain after the large retreat across most of 2022. Continued capital markets volatility is expected, and private equity should provide a beneficial dampening effect.

Funds Closed 1/1/23 to 9/30/23

Strategy	No. of Funds	Amt (\$mm)	Share
Venture Capital	930	121,173	22%
Growth Equity	91	63,798	12%
Buyouts	319	239,538	43%
Mezzanine Debt	16	35,010	6%
Distressed/Special Credit	20	21,575	4%
Energy	6	3,008	1%
Secondary and Other	74	65,295	12%
Fund-of-funds	16	3,005	1%
Totals	1,472	552,402	100%

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

Private Equity Performance (%) (Pooled Horizon IRRs through 6/30/23*)

Strategy	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years
All Venture	-0.74	-9.26	20.20	18.89	18.21	13.19	12.58	19.11
Growth Equity	1.31	-0.33	17.20	15.61	15.04	12.78	14.14	14.25
All Buyouts	2.57	8.12	21.06	15.67	15.30	11.22	14.80	12.72
Mezzanine	3.17	10.75	15.01	11.14	11.17	10.49	11.29	9.92
Credit Opportunities	1.39	7.37	11.93	7.11	7.63	9.12	9.42	9.46
Control Distressed	1.17	4.88	22.37	13.61	11.99	10.75	11.69	11.40
All Private Equity	1.59	2.72	19.68	15.58	15.03	11.59	13.74	13.25
S&P 500	8.74	19.59	14.60	12.31	12.86	10.88	10.04	7.61
Russell 3000	8.39	18.95	13.89	11.39	12.34	10.61	10.05	7.72

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

*Most recent data available at time of publication

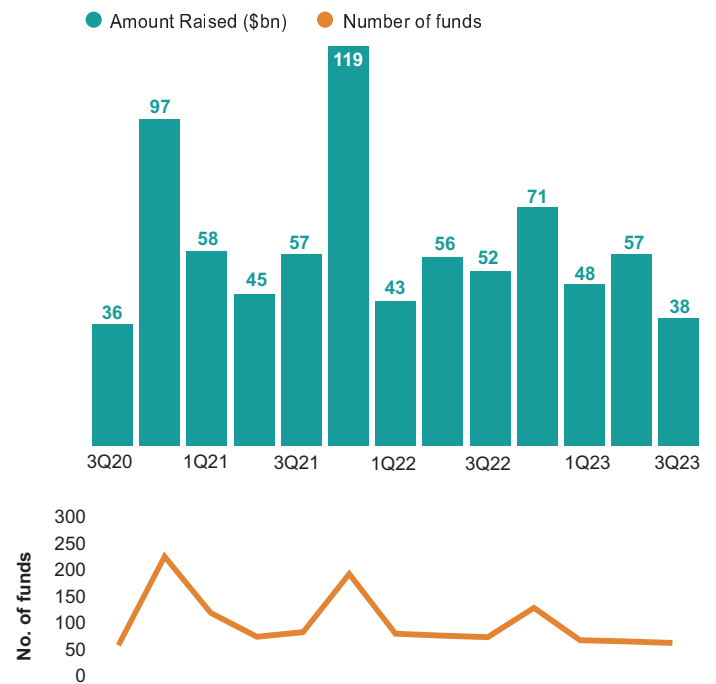
Note: Transaction count and dollar volume figures across all private equity measures are preliminary figures and are subject to update in subsequent versions of the *Capital Markets Review* and other Callan publications.

Returns Exceed Those of Leveraged Loans

PRIVATE CREDIT | Catherine Beard

- Private credit performance varies across sub-asset class and underlying return drivers.
- Over the past three years, the asset class has generated a net IRR of 11.8%, outperforming leveraged loans as of June 30, 2023.
- It has also outperformed over longer time periods, with a net IRR of 9.5% over the last 20 years, compared to 5.3% for leveraged loans and 7.2% for corporate high yield.
- Higher-risk strategies have performed better than lower-risk strategies.
- Private credit remained in high demand across Callan's investor base, and a number of large pensions are looking to increase their existing private credit allocations from 2%–3% to 5%–10%.
- While we always work to build out diversified client portfolios, we think there is particularly interesting relative value in upper middle market sponsor-backed lending, asset-based lending, and opportunistic/special situations.
- Callan is seeing an uptick in stress for some individual names in direct lending portfolios due, in many cases, to a combination of input cost inflation and increased interest expense burden.
- Continued 3Q23 rate rises across the yield curve have made private credit even more attractive than in the past.
- Traditional lenders have not reentered the market in a meaningful way, allowing private credit to expand its opportunity set into larger companies, which are better credits but where loans still command high rates.
- With slight increases in default rates and rating agencies predicting further increases, both opportunistic (flexible) credit

Private Credit Fundraising (\$bn)



Source: Preqin

funds and dedicated distressed credit funds are seeing more investor interest.

- To foster ease of limited partner access and ongoing administration, more private credit general partners are launching evergreen structures and other legal structures.
- Based on the success of traditional private credit, more niche and targeted strategies are being launched such as legal assets, leasing, various royalties (pharma, music), and asset-backed industry-specific funds (shipping, energy).
- Finally, we are seeing a wave of consolidation across private credit asset managers as entities look to build out diversified product offerings and scale their businesses.

Private Credit Performance (%) (Pooled Horizon IRRs through 6/30/23*)

Strategy	Quarter	1 Year	3 Years	5 Years	8 Years	10 Years	15 Years	20 Years
Senior Debt	1.9	8.6	8.0	6.3	6.9	6.8	7.0	N/A
Mezzanine	3.2	10.7	15.0	11.1	11.2	11.2	10.7	10.6
Credit Opportunities	1.4	7.4	11.9	7.1	7.4	7.6	9.2	8.9
Total Private Credit	1.9	8.4	11.8	7.9	8.2	8.3	9.2	9.0

Source: Refinitiv/Cambridge

*Most recent data available at time of publication

Most Strategies End Quarter Slightly Higher

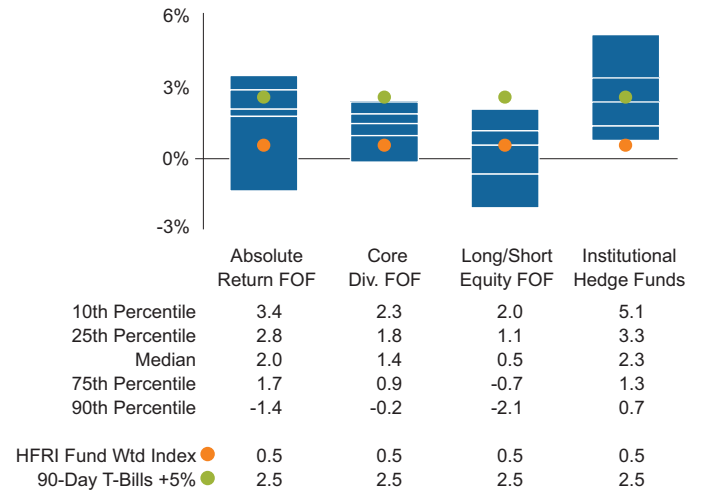
HEDGE FUNDS/MACs | Joe McGuane

Equity markets retreated during 3Q23, as investors came to terms with the fact that central banks were likely to keep rates higher for longer. Inflationary pressures persisted and long-term government bonds sold off with the U.S. 10-year Treasury yield reaching a 16-year high, while crude oil prices surged amid Russia and OPEC supply cuts.

The S&P 500 detracted (-3%) with small-cap, growth, and technology stocks leading declines, as the realization of a longer period of tighter policy sank in and eroded the case for lofty valuations. European, emerging market, and Asian equity markets posted negative results for the quarter. Credit indices generated mixed returns, as U.S. high yield and leveraged loan indices ended the quarter flat to positive, while investment grade credit posted negative returns.

Hedge Fund Style Group Returns

(9/30/23)



Sources: Callan, Credit Suisse, Federal Reserve

Callan Peer Group Median and Index Returns* for Periods Ended 9/30/23

Hedge Fund Universe	Quarter	Year to Date	1 Year	3 Years	5 Years	10 Years
Callan Institutional Hedge Fund Peer Group	2.3	5.7	6.0	7.1	6.2	5.8
Callan Fund-of-Funds Peer Group	1.3	4.1	5.9	5.2	4.2	4.3
Callan Absolute Return FOF Style	2.0	3.2	4.9	6.4	4.5	4.4
Callan Core Diversified FOF Style	1.4	4.1	5.9	5.2	4.1	4.0
Callan Long/Short Equity FOF Style	0.5	4.7	7.8	2.3	3.9	4.0
HFRI Fund-Weighted Index	0.5	3.9	6.3	6.7	5.0	4.5
HFRI Fixed Convertible Arbitrage	0.5	3.3	6.7	5.6	5.5	4.8
HFRI Distressed/Restructuring	1.2	3.5	4.3	8.2	4.5	4.1
HFRI Emerging Markets	-1.0	3.5	8.3	2.4	3.1	3.0
HFRI Equity Market Neutral	1.3	2.7	3.5	4.1	2.2	2.9
HFRI Event-Driven	2.4	4.9	8.2	7.8	4.6	4.5
HFRI Relative Value	1.5	4.1	5.6	5.4	3.6	4.0
HFRI Macro	1.4	0.6	-0.7	7.4	5.3	3.4
HFRI Equity Hedge	-1.0	4.7	9.1	6.5	5.2	5.1
HFRI Multi-Strategy	2.7	4.9	6.5	4.6	2.7	2.8
HFRI Merger Arbitrage	4.4	1.5	4.0	8.1	5.4	4.4
90-Day T-Bill + 5%	2.5	7.3	9.5	6.7	6.7	6.1

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

Hedge funds ended 3Q slightly higher, as equity markets sold off during the quarter when the excitement around technology names expected to benefit from the prospects of generative AI subsided and the view of elevated rates trimmed those lofty valuations. Equity hedge strategies ended the quarter negative, as sector-focused managers in health care, technology, and real estate struggled during the final month of the quarter. Event-driven strategies ended the quarter on a positive note, as a number of strategic deals either closed or received regulatory approval. Macro managers had a solid quarter, as they profited from rising sovereign bond yields and steeper yield curves.

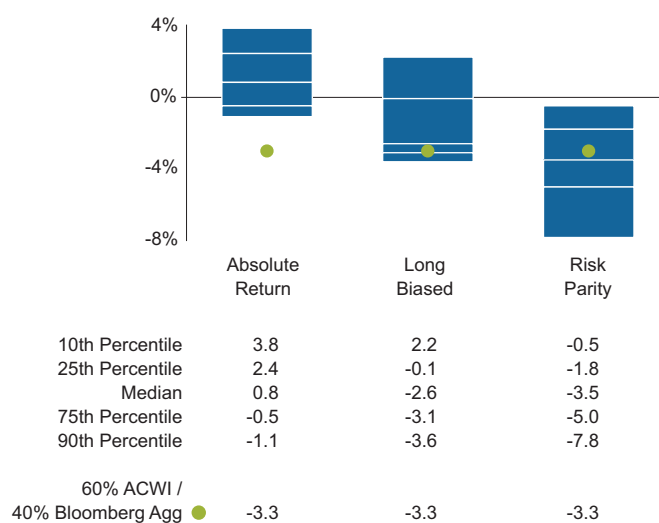
Serving as a proxy for large, broadly diversified hedge funds with low-beta exposure to equity markets, the median Callan Institutional Hedge Fund Peer Group rose 2.3%. Within this style group of 50 peers, the average hedge credit manager gained 4.0%, as lower-rated credits outperformed higher-rated peers later in the quarter. The median Callan institutional hedged rates manager rose 2.4%, largely driven by relative value bond trades in the U.S., given opportunities across the yield curve. Meanwhile, the average hedged equity manager added 1.0%, as managers were able to profit off the dispersion across small cap and growth names.

Within the HFRI indices, one of the best-performing strategy last quarter was the event-driven index (2.4%), as a number of strategic deals received regulatory approval. Relative value strategies ended up 1.5%, as fixed income trading drove gains. Macro strategies finished up 1.4%, as gains came from short positions in U.S., Japanese, and European rates, and short positions in U.S. equities.

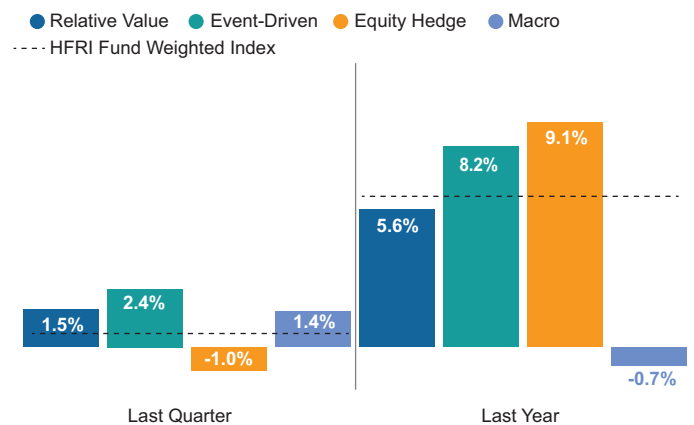
Across the Callan Hedge Fund-of-Funds (FOF) Database, the median Callan Long-Short Equity FOF ended 0.5% higher, as generalist managers offset specialists during the quarter. Meanwhile, the median Callan Core Diverse FOF ended 1.4% higher, as macro and event-driven managers drove performance. Callan Absolute Return FOF ended 2.0% higher, as macro managers drove performance.

Within Callan's database of liquid alternative solutions, the Callan MAC Absolute Return peer group rose 0.8%, as commodities and currencies drove performance. The Callan MAC Risk Parity peer group fell 3.5%, as equities and fixed income moved lower during the quarter. The Callan MAC Long Biased peer group fell 2.6%, as equity investors dumped stocks after realizing interest rates were likely to be higher for longer.

MAC Style Group Returns (9/30/23)



HFRI Hedge Fund-Weighted Strategy Returns (9/30/23)



Source: HFRI

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

Index Finishes 2Q23 with Third Straight Gain

DEFINED CONTRIBUTION | [Scotty Lee](#)

Performance: DC Index Gains 4.7%

- The Callan DC Index™ rose 4.7% in 2Q23, which brought the Index's trailing one-year gain to 11.7%. The Age 45 Target Date Fund (analogous to the 2040 vintage) had a slightly lower quarterly return (4.0%).

Growth Sources: Balances Grow Again

- Balances within the DC Index rose by 4.3% after a 5.3% increase in the previous quarter. Investment gains (4.7%) were the sole driver of the gain, while net flows (-0.4%) had a negligible effect.

Turnover: Material Fall in Net Transfers

- Turnover (i.e., net transfer activity levels within DC plans) in the DC Index decreased materially to 0.33% from the previous quarter's measure of 0.70%, which marked the Index's highest level since 2020.

Net Cash Flow Analysis: Stable Value Declines Sharply

- Target date funds (TDFs) got 67.4% of quarterly net flows.
- Stable value (-39.9%) saw relatively large outflows for the third consecutive quarter, while money market (6.1%) experienced small net inflows.

Equity Allocation: Exposure Rises Slightly

- The Index's overall allocation to equity (71.8%) rose from the previous quarter's level (70.8%), primarily driven by gains in equity markets. The current equity allocation continues to sit above the Index's historical average (68.4%).

Asset Allocation: Large Cap Gains

- U.S. large cap (26.4%) and target date funds (33.8%) were among the asset classes with the largest percentage increases in allocation.

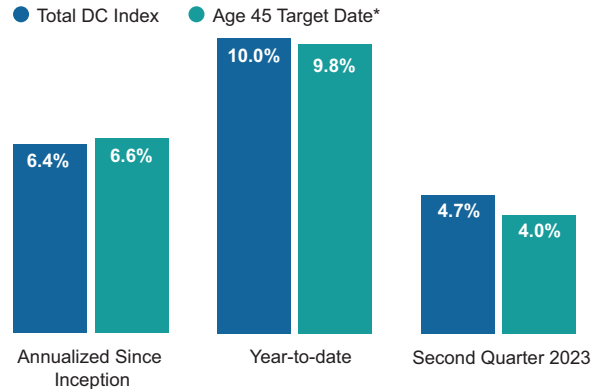
Prevalence of Asset Class: Company Stock Rises

- The prevalence of company stock (21.8%) rose by 3.8 percentage points. Other notable movements included a 1.5 percentage point decrease in the prevalence of a brokerage window offering (39.9%) as well as a 1.5 percentage point decrease in the prevalence of stable value (71.4%).

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.

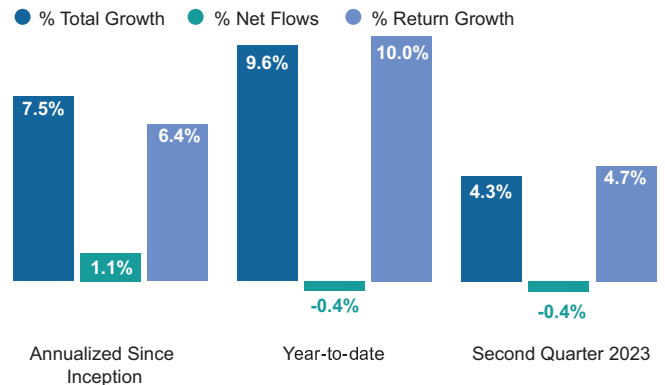
Investment Performance

(6/30/23)



Growth Sources

(6/30/23)



Net Cash Flow Analysis (2Q23)

(Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Target Date Funds	67.4%
U.S. Fixed Income	11.8%
U.S. Large Cap	-27.6%
Stable Value	-39.9%
Total Turnover**	0.3%

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

Source: Callan DC Index

Note: DC Index inception date is January 2006.

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

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

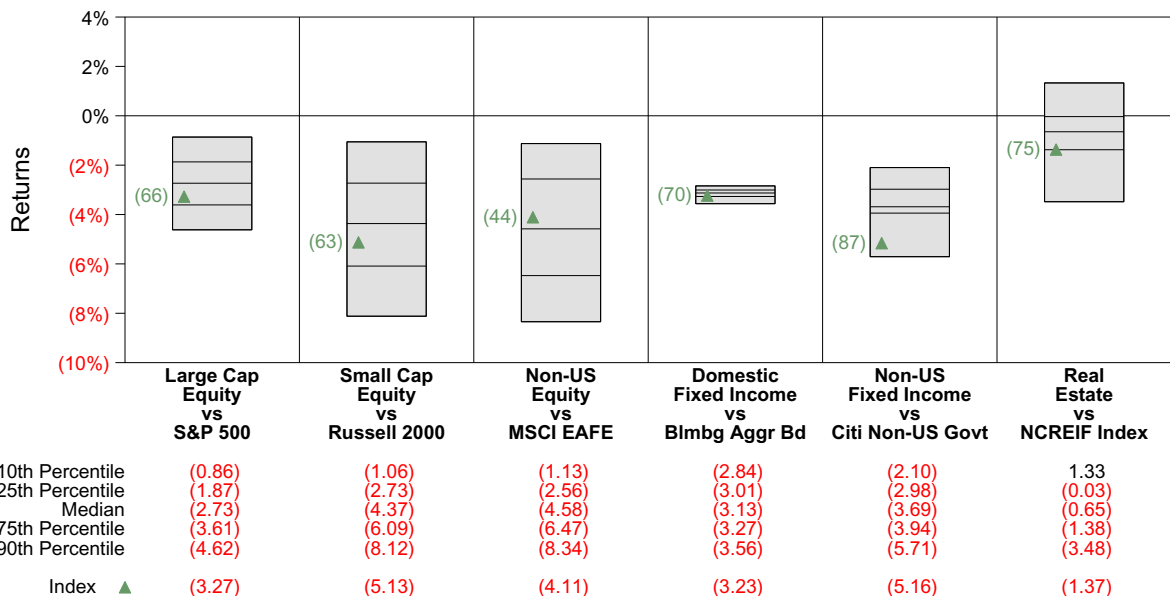
Market Overview

Active Management vs Index Returns

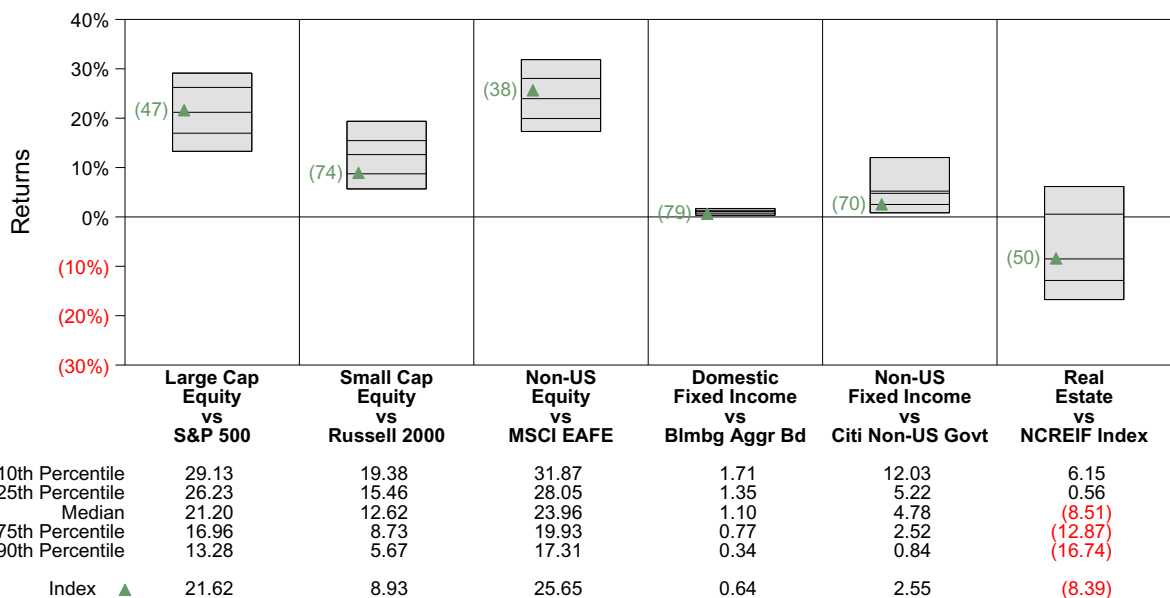
Market Overview

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

Range of Separate Account Manager Returns by Asset Class One Quarter Ended September 30, 2023



Range of Separate Account Manager Returns by Asset Class One Year Ended September 30, 2023

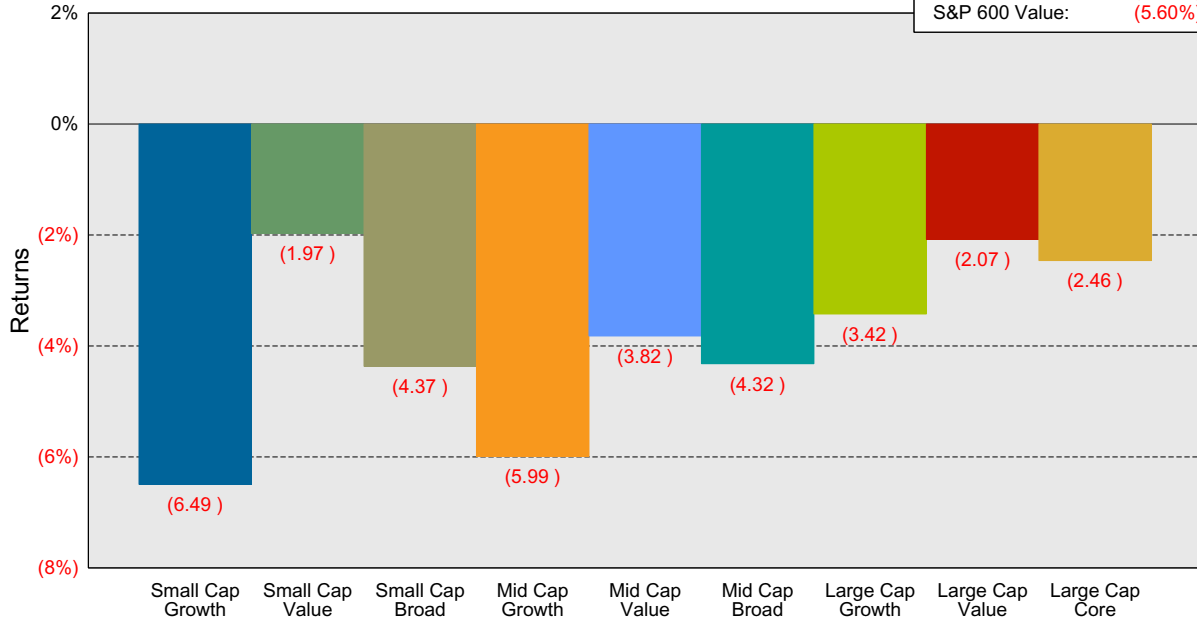


Domestic Equity Active Management Overview

U.S. stock indices posted negative returns in 3Q. The S&P 500 Index declined 3.3% while the tech-heavy Nasdaq Composite dropped 3.9%. Within the S&P 500, Utilities (-9.2%), Real Estate (-8.9%), and Technology (-5.6%) performed the worst while Energy (+12.2%) and Communication Services (+3.1%) led sector returns. In small caps, value stocks (Russell 2000 Value: -3.0%) outperformed growth (Russell 2000 Growth: -7.3%). Growth and value posted similar returns in the large cap space, down 3.1% and 3.2%, respectively. Small cap stocks underperformed large (Russell 2000: -5.1%; Russell 1000: -3.1%). Year-to-date results remain positive for most indices (Russell 1000 Growth: +25.0%; S&P 500 +13.1%; Russell 2000 Value: -0.5%).

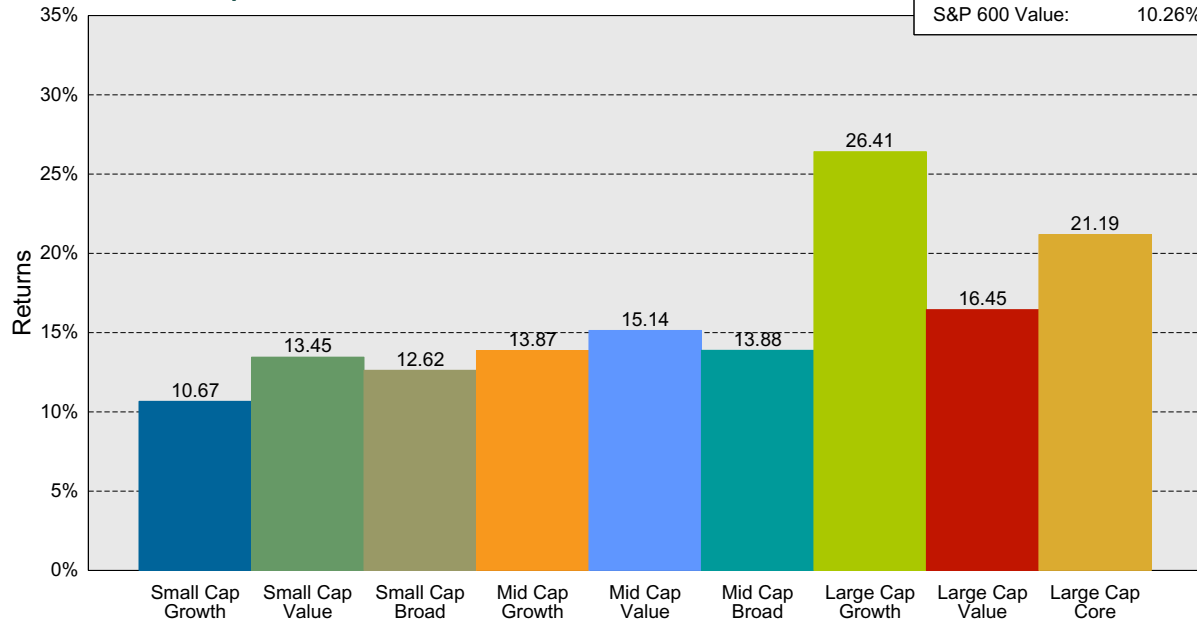
S&P 500:	(3.27%)
S&P 500 Growth:	(2.59%)
S&P 500 Value:	(4.09%)
S&P Mid Cap:	(4.20%)
S&P 600:	(4.93%)
S&P 600 Growth:	(4.25%)
S&P 600 Value:	(5.60%)

Separate Account Style Group Median Returns for Quarter Ended September 30, 2023



S&P 500:	21.62%
S&P 500 Growth:	19.82%
S&P 500 Value:	22.19%
S&P Mid Cap:	15.51%
S&P 600:	10.08%
S&P 600 Growth:	9.62%
S&P 600 Value:	10.26%

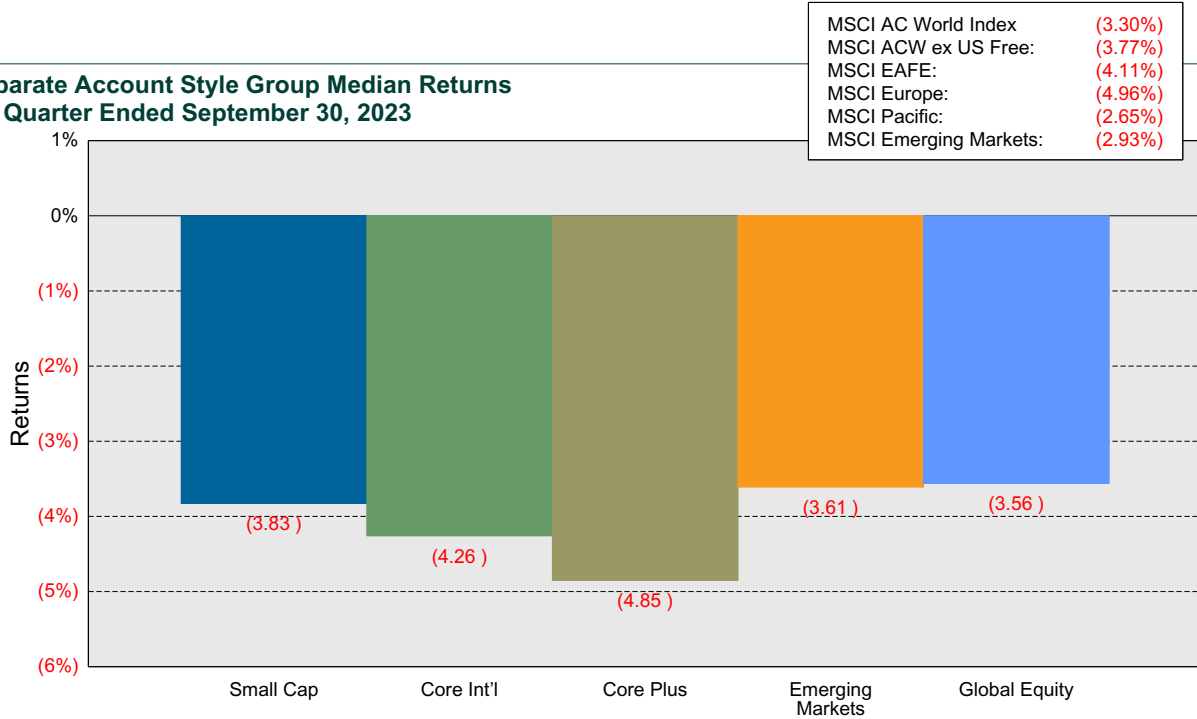
Separate Account Style Group Median Returns for One Year Ended September 30, 2023



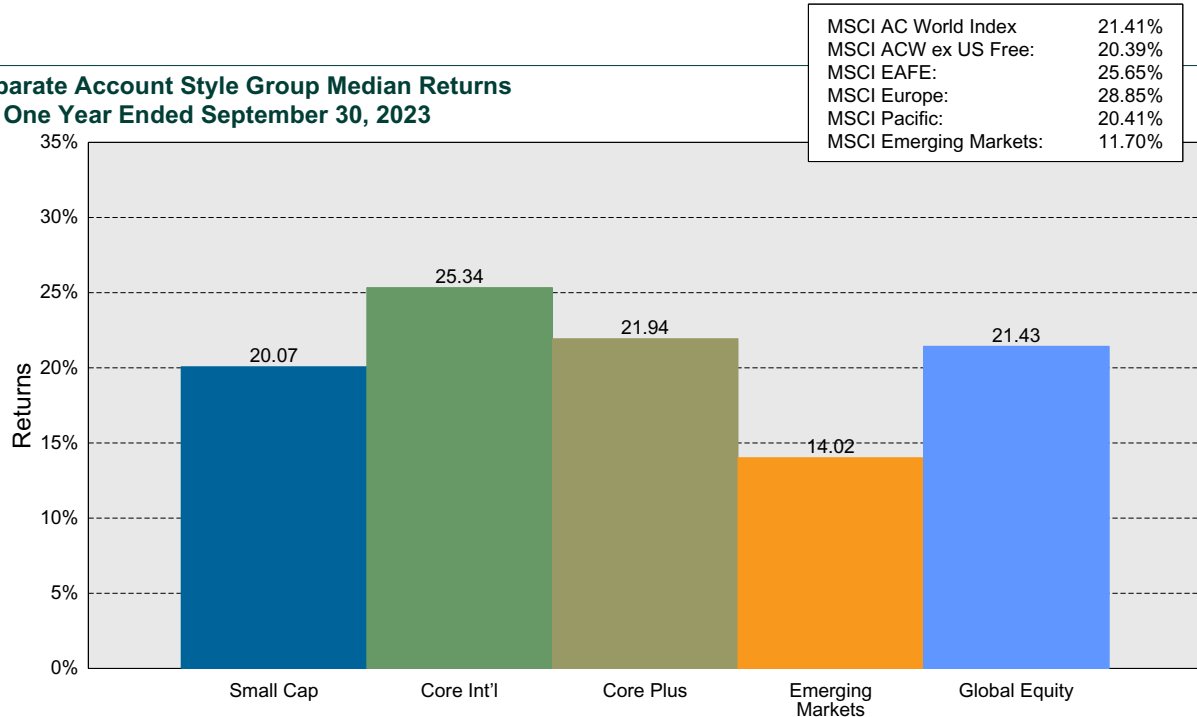
International Equity Active Management Overview

Global ex-U.S. equities (MSCI ACWI ex USA: -3.8%) fell in 3Q. U.S. dollar strength was a notable headwind (MSCI ACWI ex USA Local: -1.4%). Value (MSCI ACWI ex-USA Value: -0.1%) outperformed growth (MSCI ACWI ex-USA Growth Index: -7.3%) by a wide margin. Only Energy (+9.0%) posted a positive return, while Technology saw the biggest decline (-8.7%). Oil prices surged on supply cuts and falling reserves in the U.S. European equities (MSCI Europe ex-UK: -5.9%) fell though returns were mixed across countries. Japan (MSCI Japan: -1.6%) performed well in relative terms and even better in local terms (+1.6%). Emerging markets (MSCI Emerging Markets: -2.9%) outperformed developed markets (MSCI EAFE: -4.1%). In Asia, major index constituents such as South Korea (-6.6%) and Taiwan (-7.4%) weighed on performance. Latin America (-4.7%) was the worst-performing region with Mexico (-6.5%) and Chile (-9.8%) falling sharply. Broadly, Energy (+6.3%) delivered the strongest performance, while Communications (-5.9%) and Technology (-6.8%) underperformed.

Separate Account Style Group Median Returns for Quarter Ended September 30, 2023



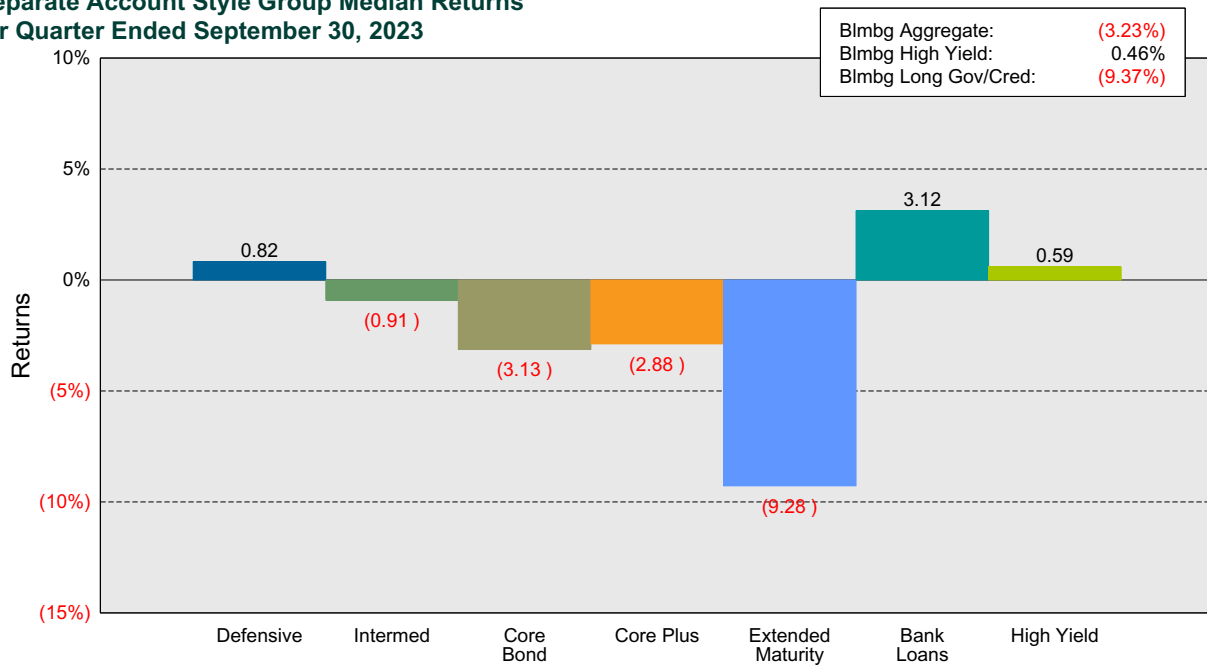
Separate Account Style Group Median Returns for One Year Ended September 30, 2023



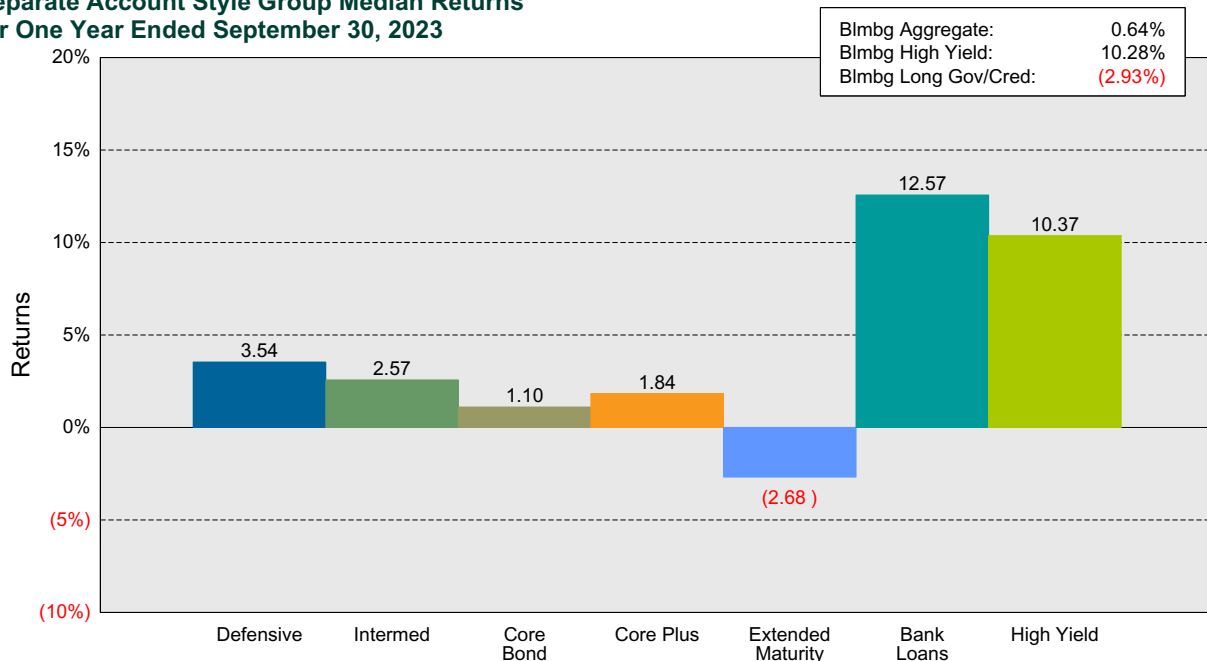
Domestic Fixed Income Active Management Overview

U.S. bond returns are on the path for a third consecutive year of negative returns. The Bloomberg US Aggregate Bond Index sank 3.2% in 3Q and is down 1.2% year-to-date. The U.S. Treasury 10-year yield soared nearly 80 bps during the quarter, closing at 4.59%, its highest since 2007. The yield curve bear-steepened with long-term rates rising more than short-term rates. As a result, the inversion between the 2-year and 10-year U.S. Treasury yields shrank from 106 bps to 44 bps. Corporates outperformed U.S. Treasuries with excess returns of 84 bps while agency-backed mortgages underperformed (-85 bps of excess return). High yield corporates continued to post strong relative returns (Bloomberg Corporate High Yield Index: +0.5%) and are up 5.9% year-to-date.

Separate Account Style Group Median Returns for Quarter Ended September 30, 2023



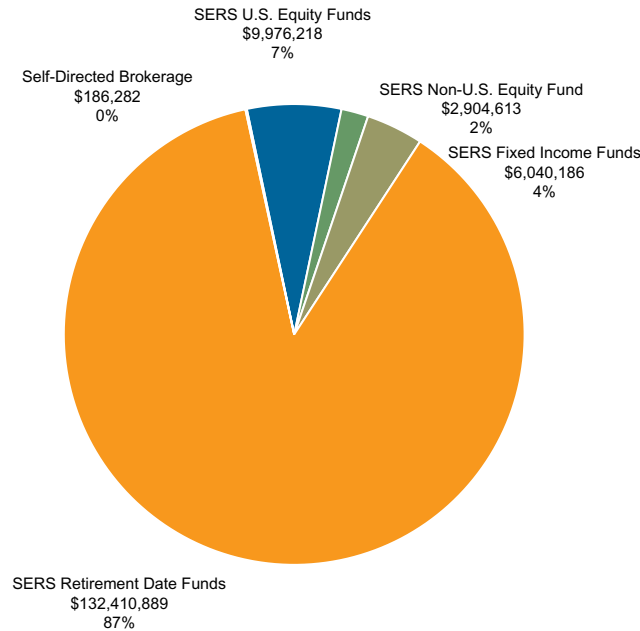
Separate Account Style Group Median Returns for One Year Ended September 30, 2023



Changes in Investment Fund Balances Period Ended September 30, 2023

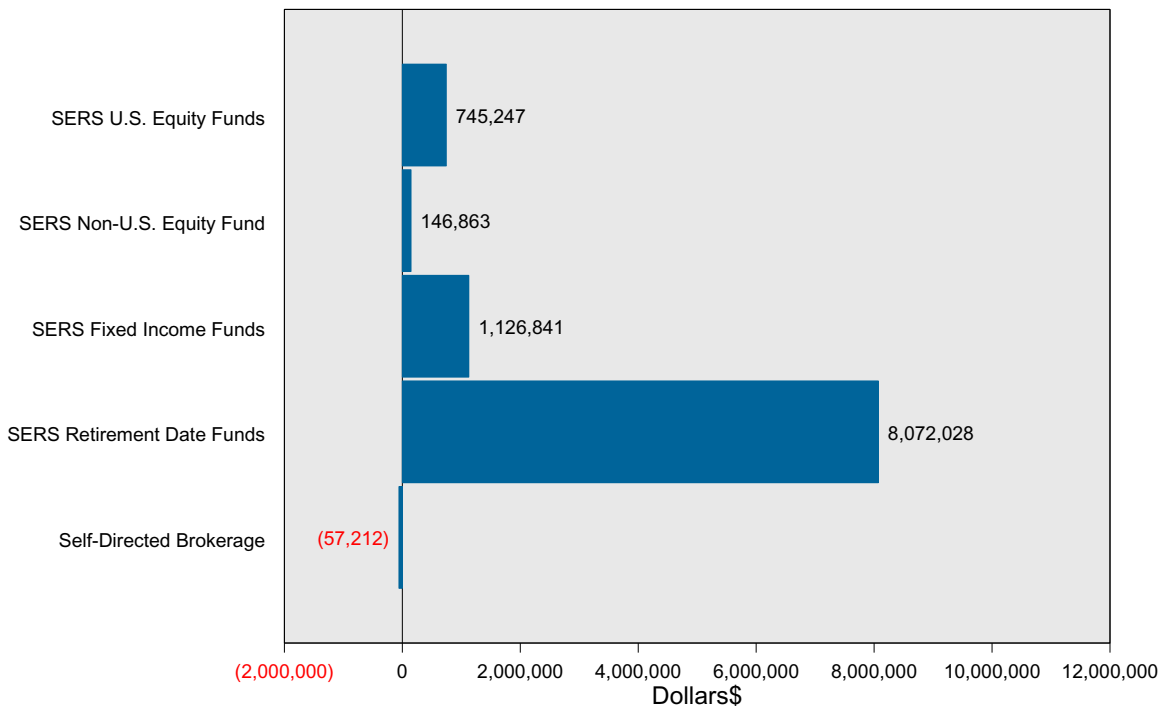
Allocation Across Investment Options

The chart below illustrates the allocation of the aggregate fund assets across the various investment options for the quarter ended September 30, 2023.



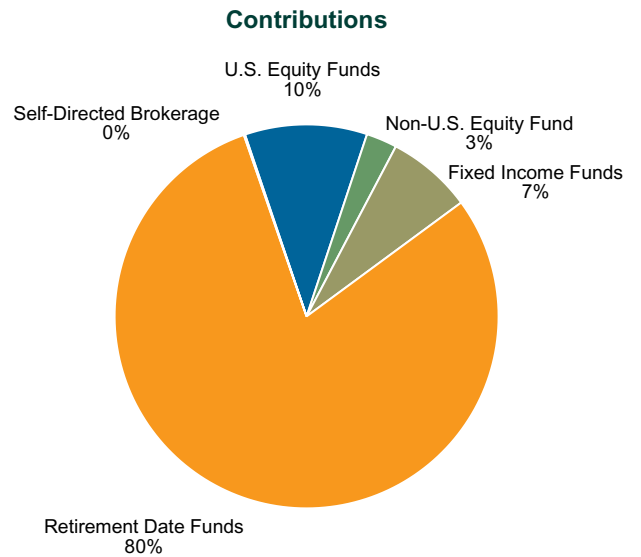
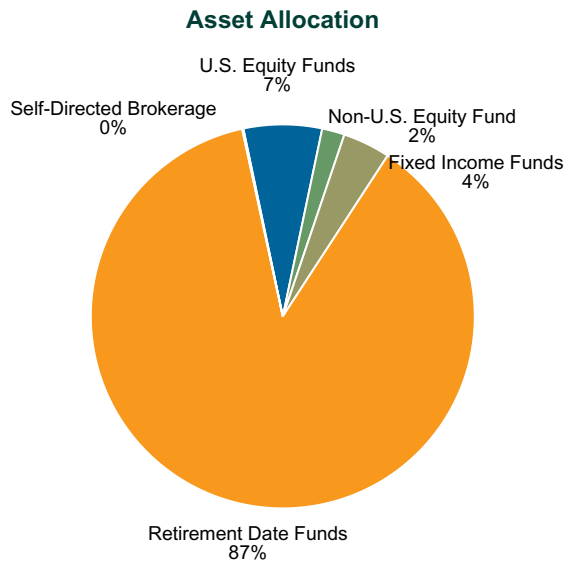
Changes in Fund Values

The chart below shows the net change in fund values across the various investment options for the quarter ended September 30, 2023. 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.

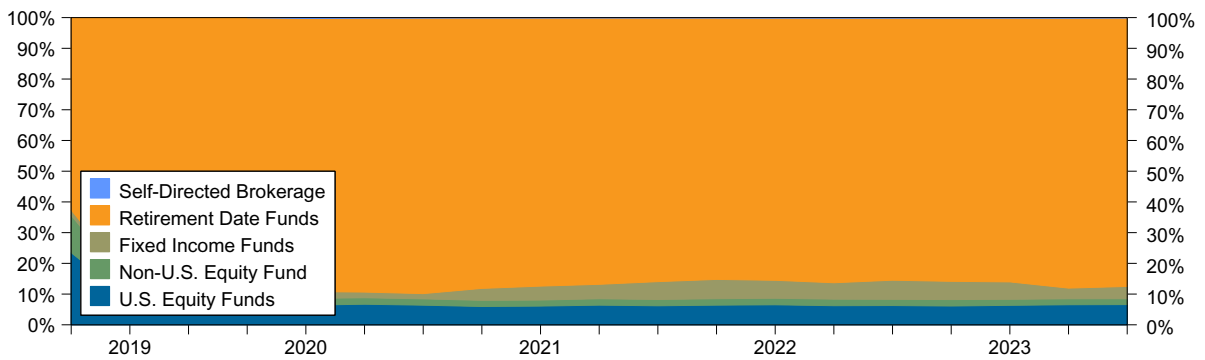


Asset Allocation

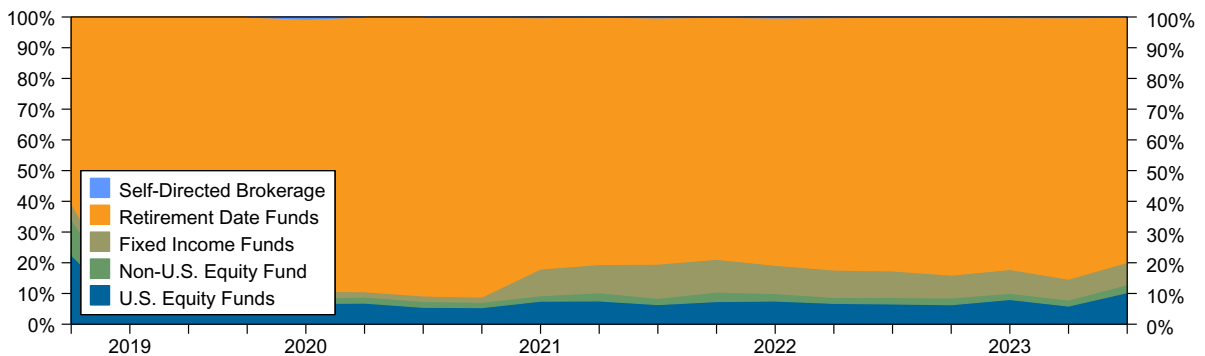
The charts below illustrate the historical asset allocation of the fund as well as the historical allocations of contributions to the fund. The pie charts on the top show the most recent allocations of both assets and contributions which include exchanges and transfers within the plan. The middle chart 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, 2023, with the distribution as of June 30, 2023. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

Asset Distribution Across Investment Managers

	September 30, 2023			June 30, 2023		
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
SERS Retirement Date Funds	\$132,410,889	87.39%	\$13,136,029	\$(5,064,001)	\$124,338,861	87.88%
SERS Post Retirement Fund	1,987,270	1.31%	155,435	(68,120)	1,899,955	1.34%
SERS 2025 Retirement Fund	5,300,491	3.50%	301,644	(193,416)	5,192,263	3.67%
SERS 2030 Retirement Fund	12,573,140	8.30%	1,004,966	(475,129)	12,043,304	8.51%
SERS 2035 Retirement Fund	13,579,373	8.96%	1,277,409	(522,265)	12,824,228	9.06%
SERS 2040 Retirement Fund	15,647,380	10.33%	1,447,432	(609,045)	14,808,993	10.47%
SERS 2045 Retirement Fund	16,341,537	10.79%	1,614,502	(641,661)	15,368,696	10.86%
SERS 2050 Retirement Fund	17,775,964	11.73%	1,709,718	(688,687)	16,754,933	11.84%
SERS 2055 Retirement Fund	18,317,721	12.09%	1,949,525	(692,472)	17,060,668	12.06%
SERS 2060 Retirement Fund	17,052,421	11.25%	1,795,052	(645,389)	15,902,758	11.24%
SERS 2065 Retirement Fund	13,835,592	9.13%	1,880,346	(527,816)	12,483,062	8.82%
SERS U.S. Equity	\$9,976,218	6.58%	\$970,220	\$(224,973)	\$9,230,970	6.52%
SERS U.S. Large Company Index Fund	5,945,730	3.92%	162,655	(212,391)	5,995,466	4.24%
SERS U.S. All Company Index Fund	2,145,158	1.42%	(133,666)	33,927	2,244,896	1.59%
SERS U.S. SMID Company Index Fund	1,885,330	1.24%	941,231	(46,510)	990,608	0.70%
SERS Non-U.S. Equity	\$2,904,613	1.92%	\$272,883	\$(126,020)	\$2,757,750	1.95%
SERS Global Non-U.S. Index Fund	2,904,613	1.92%	272,883	(126,020)	2,757,750	1.95%
SERS Fixed Income	\$6,040,186	3.99%	\$(2,370,530)	\$3,497,371	\$4,913,344	3.47%
SERS Short Term Investment Fund	3,665,770	2.42%	(2,631,547)	3,545,570	2,751,747	1.94%
SERS U.S. Short Term Bond Index Fund	570,407	0.38%	(72,543)	4,105	638,845	0.45%
SERS U.S. TIPS Index Fund	510,969	0.34%	128,939	(11,606)	393,636	0.28%
SERS U.S. Bond Index Fund	1,293,039	0.85%	204,621	(40,698)	1,129,117	0.80%
SERS Self-Directed Brokerage	\$186,282	0.12%	\$(51,253)	\$(5,959)	\$243,493	0.17%
Total Fund	\$151,518,187	100.0%	\$11,957,349	\$(1,923,581)	\$141,484,418	100.0%

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended September 30, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended September 30, 2023

	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance					
Target Date Funds					
SERS Post Retirement Fund	(3.37%)	2.61%	7.42%	0.01%	2.94%
BlackRock Post Retirement Index	(3.30%)	2.52%	7.39%	0.04%	2.94%
Callan Tgt Date Ret Inc	(2.72%)	2.70%	7.08%	0.09%	2.61%
SERS 2025 Retirement Fund	(3.55%)	3.07%	8.52%	1.06%	3.36%
BlackRock 2025 Index	(3.47%)	2.97%	8.43%	1.07%	3.34%
Callan Target Date 2025	(3.12%)	4.11%	10.05%	2.06%	3.68%
SERS 2030 Retirement Fund	(3.68%)	4.37%	11.09%	2.47%	4.12%
BlackRock 2030 Index	(3.57%)	4.32%	11.00%	2.49%	4.09%
Callan Target Date 2030	(3.34%)	4.99%	11.90%	2.98%	4.19%
SERS 2035 Retirement Fund	(3.74%)	5.63%	13.54%	3.83%	4.83%
BlackRock 2035 Index	(3.60%)	5.60%	13.40%	3.83%	4.79%
Callan Target Date 2035	(3.54%)	5.92%	13.94%	4.09%	4.82%
SERS 2040 Retirement Fund	(3.79%)	6.86%	15.94%	5.07%	5.46%
BlackRock 2040 Index	(3.63%)	6.85%	15.75%	5.05%	5.41%
Callan Target Date 2040	(3.62%)	6.87%	15.84%	5.07%	5.23%
SERS 2045 Retirement Fund	(3.80%)	7.98%	18.11%	6.10%	6.02%
BlackRock 2045 Index	(3.61%)	8.00%	17.91%	6.07%	5.94%
Callan Target Date 2045	(3.74%)	7.61%	17.13%	5.69%	5.58%
SERS 2050 Retirement Fund	(3.72%)	8.74%	19.45%	6.69%	6.35%
BlackRock 2050 Index	(3.51%)	8.79%	19.22%	6.64%	6.27%
Callan Target Date 2050	(3.76%)	7.92%	17.79%	5.94%	5.65%
SERS 2055 Retirement Fund	(3.65%)	9.03%	19.87%	6.83%	6.44%
BlackRock 2055 Index	(3.44%)	9.09%	19.66%	6.80%	6.37%
Callan Target Date 2055	(3.75%)	8.04%	18.03%	6.01%	5.78%
SERS 2060 Retirement Fund	(3.66%)	9.03%	19.88%	6.82%	6.43%
BlackRock 2060 Index	(3.44%)	9.09%	19.67%	6.79%	6.37%
Callan Target Date 2060	(3.76%)	8.03%	18.02%	6.10%	5.76%
SERS 2065 Retirement Fund	(3.67%)	9.06%	19.89%	6.79%	-
BlackRock 2065 Index	(3.45%)	9.09%	19.68%	6.79%	-
Callan Target Date 2065	(3.81%)	8.32%	18.30%	5.93%	5.92%

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended September 30, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended September 30, 2023

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
Net Performance				
Target Date Funds				
SERS Post Retirement Fund	3.58%	3.88%	4.95%	-
BlackRock Post Retirement Index	3.56%	3.86%	4.94%	4.94%
Callan Tgt Date Ret Inc	3.14%	3.43%	4.43%	3.55%
SERS 2025 Retirement Fund	4.61%	4.80%	5.76%	-
BlackRock 2025 Index	4.56%	4.75%	5.74%	5.79%
Callan Target Date 2025	5.06%	5.29%	6.22%	-
SERS 2030 Retirement Fund	5.53%	5.52%	6.32%	-
BlackRock 2030 Index	5.47%	5.45%	6.29%	6.23%
Callan Target Date 2030	5.83%	5.91%	6.76%	6.49%
SERS 2035 Retirement Fund	6.42%	6.19%	6.84%	-
BlackRock 2035 Index	6.34%	6.11%	6.79%	6.62%
Callan Target Date 2035	6.61%	6.44%	7.30%	-
SERS 2040 Retirement Fund	7.20%	6.79%	7.29%	-
BlackRock 2040 Index	7.10%	6.68%	7.22%	6.95%
Callan Target Date 2040	7.18%	6.83%	7.65%	7.09%
SERS 2045 Retirement Fund	7.80%	7.26%	7.65%	-
BlackRock 2045 Index	7.68%	7.13%	7.56%	7.27%
Callan Target Date 2045	7.60%	7.21%	7.73%	-
SERS 2050 Retirement Fund	8.10%	7.51%	7.94%	-
BlackRock 2050 Index	7.98%	7.39%	7.87%	7.57%
Callan Target Date 2050	7.70%	7.30%	7.79%	-
SERS 2055 Retirement Fund	8.17%	7.58%	-	-
BlackRock 2055 Index	8.06%	7.47%	-	-
Callan Target Date 2055	7.78%	7.41%	8.28%	-
SERS 2060 Retirement Fund	8.15%	-	-	-
BlackRock 2060 Index	8.06%	-	-	-
Callan Target Date 2060	7.85%	7.65%	-	-

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

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended September 30, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended September 30, 2023

	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance					
Domestic Equity					
SERS U.S. Large Company Index Fund	(3.27%)	13.07%	21.61%	10.15%	9.93%
S&P 500 Index	(3.27%)	13.07%	21.62%	10.15%	9.92%
Callan Lg Cap Broad MF	(3.12%)	13.10%	21.47%	8.76%	8.61%
SERS U.S. All Company Index Fund	1.31%	12.38%	20.45%	9.33%	9.10%
Russell 3000 Index	(3.25%)	12.39%	20.46%	9.38%	9.14%
Callan Multi Cap Brd MF	(3.28%)	8.75%	18.33%	8.32%	7.16%
SERS U.S. SMID Company Idx Fund	(3.36%)	8.90%	14.62%	5.01%	4.70%
Dow Jones US Completion	(3.38%)	8.76%	14.26%	4.57%	4.40%
Callan SMID Broad MFs	(5.20%)	4.26%	12.91%	6.96%	4.44%
International Equity					
SERS Global Non-U.S. Index Fund	(4.09%)	5.60%	20.89%	3.89%	2.81%
MSCI ACWI ex US	(3.77%)	5.34%	20.39%	3.74%	2.58%
Callan Non US Equity MFs	(5.13%)	6.64%	23.88%	5.25%	3.07%
Domestic Fixed Income					
SERS Short Term Investment Fund	1.28%	3.63%	4.57%	1.77%	1.77%
3-month Treasury Bill	1.31%	3.60%	4.47%	1.70%	1.72%
Callan Cash Database(1)	1.36%	3.80%	4.77%	1.80%	1.87%
SERS U.S. Short Term Bond Idx Fund	0.73%	1.85%	2.75%	(0.74%)	1.20%
Blmbg Gov/Cred 1-3 Yr	0.73%	1.87%	2.77%	(0.72%)	1.21%
Callan Short US Govt MFs	0.23%	1.31%	2.05%	(1.53%)	0.57%
SERS U.S. TIPS Index Fund	(2.59%)	(0.77%)	1.29%	(1.97%)	2.12%
Blmbg US TIPS	(2.60%)	(0.78%)	1.25%	(1.98%)	2.12%
Callan TIPS MFs	(2.57%)	(0.64%)	1.36%	(2.06%)	1.98%
SERS U.S. Bond Index Fund	(3.24%)	(1.21%)	0.66%	(5.22%)	0.10%
Blmbg Aggregate	(3.23%)	(1.21%)	0.64%	(5.21%)	0.10%
Callan Core Bond MFs	(3.05%)	(0.72%)	0.93%	(4.97%)	0.35%

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

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended September 30, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended September 30, 2023

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
Net Performance				
Domestic Equity				
SERS U.S. Large Company Index Fund	12.25%	11.93%	11.31%	9.76%
S&P 500 Index	12.24%	11.91%	11.28%	9.72%
Callan Lg Cap Broad MF	11.48%	10.95%	10.73%	9.56%
SERS U.S. All Company Index Fund	11.60%	11.26%	-	-
Russell 3000 Index	11.64%	11.28%	11.05%	9.68%
Callan Multi Cap Brd MF	10.00%	9.21%	9.74%	8.87%
SERS U.S. SMID Company Idx Fund	8.25%	8.03%	9.85%	9.52%
Dow Jones US Completion	7.97%	7.79%	9.63%	9.28%
Callan SMID Broad MFs	8.56%	7.76%	9.55%	9.01%
International Equity				
SERS Global Non-U.S. Index Fund	4.95%	3.57%	-	-
MSCI ACWI ex US	4.74%	3.35%	4.31%	6.02%
Callan Non US Equity MFs	5.03%	3.66%	5.10%	6.22%
Domestic Fixed Income				
SERS Short Term Investment Fund	1.66%	1.23%	0.96%	1.55%
3-month Treasury Bill	1.55%	1.11%	0.80%	1.41%
Callan Cash Database(1)	1.72%	1.38%	1.19%	1.76%
Blmbg Gov/Cred 1-3 Yr	0.99%	1.02%	1.52%	1.96%
Callan Short US Govt MFs	0.42%	0.63%	1.30%	1.81%
Blmbg US TIPS	1.46%	1.74%	2.92%	3.47%
Callan TIPS MFs	1.42%	1.56%	2.76%	3.18%
SERS U.S. Bond Index Fund	(0.10%)	1.11%	2.47%	2.81%
Blmbg Aggregate	(0.09%)	1.13%	2.53%	2.85%
Callan Core Bond MFs	0.20%	1.32%	2.99%	3.05%

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

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

Investment Fund Returns

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

	12/2022- 9/2023	2022	2021	2020	2019
Net Performance					
Target Date Funds					
SERS Post Retirement Fund	2.61%	(14.63%)	6.95%	11.97%	15.65%
BlackRock Post Retirement Index	2.52%	(14.54%)	7.02%	11.80%	15.63%
Callan Tgt Date Ret Inc	2.70%	(12.88%)	6.31%	10.02%	13.21%
SERS 2025 Retirement Fund	3.07%	(15.23%)	8.99%	12.19%	18.60%
BlackRock 2025 Index	2.97%	(15.17%)	9.07%	12.01%	18.56%
Callan Target Date 2025	4.11%	(15.14%)	10.04%	12.58%	18.53%
SERS 2030 Retirement Fund	4.37%	(15.97%)	11.43%	12.88%	20.80%
BlackRock 2030 Index	4.32%	(15.92%)	11.50%	12.72%	20.70%
Callan Target Date 2030	4.99%	(16.04%)	11.63%	13.23%	20.43%
SERS 2035 Retirement Fund	5.63%	(16.67%)	13.80%	13.58%	22.84%
BlackRock 2035 Index	5.60%	(16.67%)	13.85%	13.44%	22.72%
Callan Target Date 2035	5.92%	(16.79%)	13.92%	14.28%	22.16%
SERS 2040 Retirement Fund	6.86%	(17.35%)	15.96%	14.14%	24.71%
BlackRock 2040 Index	6.85%	(17.38%)	15.97%	13.98%	24.62%
Callan Target Date 2040	6.87%	(17.40%)	15.85%	14.91%	23.62%
SERS 2045 Retirement Fund	7.98%	(17.89%)	17.72%	14.83%	26.05%
BlackRock 2045 Index	8.00%	(17.96%)	17.70%	14.65%	25.90%
Callan Target Date 2045	7.61%	(17.95%)	16.83%	15.52%	24.60%
SERS 2050 Retirement Fund	8.74%	(18.20%)	18.67%	15.20%	26.60%
BlackRock 2050 Index	8.79%	(18.30%)	18.62%	15.07%	26.48%
Callan Target Date 2050	7.92%	(18.07%)	17.17%	15.73%	24.89%
SERS 2055 Retirement Fund	9.03%	(18.27%)	18.83%	15.32%	26.67%
BlackRock 2055 Index	9.09%	(18.38%)	18.81%	15.18%	26.58%
Callan Target Date 2055	8.04%	(18.21%)	17.27%	15.83%	24.97%
SERS 2060 Retirement Fund	9.03%	(18.28%)	18.82%	15.31%	26.66%
BlackRock 2060 Index	9.09%	(18.39%)	18.81%	15.19%	26.58%
Callan Target Date 2060	8.03%	(18.27%)	17.41%	15.90%	25.08%
SERS 2065 Retirement Fund	9.06%	(18.30%)	18.77%	15.15%	-
BlackRock 2065 Index	9.09%	(18.40%)	18.80%	15.19%	-
Callan Target Date 2065	8.32%	(18.61%)	17.54%	16.47%	25.62%

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.

	12/2022- 9/2023	2022	2021	2020	2019
Net Performance					
Domestic Equity					
SERS U.S. Large Company Index Fund	13.07%	(18.12%)	28.70%	18.43%	31.51%
S&P 500 Index	13.07%	(18.11%)	28.71%	18.40%	31.49%
Callan Lg Cap Broad MF	13.10%	(18.55%)	25.50%	18.47%	30.14%
SERS U.S. All Company Index Fund	12.38%	(19.23%)	25.61%	21.20%	30.52%
Russell 3000 Index	12.39%	(19.21%)	25.66%	20.89%	31.02%
Callan Multi Cap Brd MF	8.75%	(18.29%)	24.17%	17.19%	29.12%
SERS U.S. SMID Company Idx Fund	8.90%	(26.13%)	12.89%	32.03%	28.20%
Dow Jones US Completion	8.76%	(26.56%)	12.36%	32.17%	27.94%
Callan SMID Broad MFs	4.26%	(21.59%)	19.56%	24.00%	29.40%
International Equity					
SERS Global Non-U.S. Index Fund	5.60%	(15.92%)	7.97%	11.15%	21.77%
MSCI ACWI ex US	5.34%	(16.00%)	7.82%	10.65%	21.51%
Callan Non US Equity MFs	6.64%	(15.77%)	9.47%	11.12%	22.83%
Domestic Fixed Income					
SERS Short Term Investment Fund	3.63%	1.59%	0.07%	0.67%	2.31%
3-month Treasury Bill	3.60%	1.46%	0.05%	0.67%	2.28%
Callan Cash Database(1)	3.80%	1.15%	0.13%	1.05%	2.65%
SERS U.S. Short Term Bond Idx Fund	1.85%	(3.69%)	(0.52%)	3.36%	4.02%
Blmbg Gov/Cred 1-3 Yr	1.87%	(3.69%)	(0.47%)	3.33%	4.03%
Callan Short US Govt MFs	1.31%	(5.07%)	(1.07%)	3.57%	3.52%
SERS U.S. TIPS Index Fund	(0.77%)	(11.76%)	5.87%	11.00%	8.40%
Blmbg US TIPS	(0.78%)	(11.85%)	5.96%	10.99%	8.43%
Callan TIPS MFs	(0.64%)	(11.89%)	5.50%	10.84%	8.31%
SERS U.S. Bond Index Fund	(1.21%)	(12.94%)	(1.65%)	7.56%	8.69%
Blmbg Aggregate	(1.21%)	(13.01%)	(1.54%)	7.51%	8.72%
Callan Core Bond MFs	(0.72%)	(13.47%)	(1.17%)	8.65%	9.17%

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

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended September 30, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended September 30, 2023

	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Gross Performance					
Target Date Funds					
SERS Post Retirement Fund	(3.36%)	2.66%	7.50%	0.08%	3.01%
BlackRock Post Retirement Index	(3.30%)	2.52%	7.39%	0.04%	2.94%
Callan Tgt Date Ret Inc	(2.72%)	2.70%	7.08%	0.09%	2.61%
SERS 2025 Retirement Fund	(3.53%)	3.12%	8.59%	1.12%	3.43%
BlackRock 2025 Index	(3.47%)	2.97%	8.43%	1.07%	3.34%
Callan Target Date 2025	(3.12%)	4.11%	10.05%	2.06%	3.68%
SERS 2030 Retirement Fund	(3.67%)	4.42%	11.16%	2.54%	4.18%
BlackRock 2030 Index	(3.57%)	4.32%	11.00%	2.49%	4.09%
Callan Target Date 2030	(3.34%)	4.99%	11.90%	2.98%	4.19%
SERS 2035 Retirement Fund	(3.73%)	5.68%	13.61%	3.90%	4.90%
BlackRock 2035 Index	(3.60%)	5.60%	13.40%	3.83%	4.79%
Callan Target Date 2035	(3.54%)	5.92%	13.94%	4.09%	4.82%
SERS 2040 Retirement Fund	(3.77%)	6.91%	16.01%	5.14%	5.54%
BlackRock 2040 Index	(3.63%)	6.85%	15.75%	5.05%	5.41%
Callan Target Date 2040	(3.62%)	6.87%	15.84%	5.07%	5.23%
SERS 2045 Retirement Fund	(3.78%)	8.03%	18.19%	6.17%	6.09%
BlackRock 2045 Index	(3.61%)	8.00%	17.91%	6.07%	5.94%
Callan Target Date 2045	(3.74%)	7.61%	17.13%	5.69%	5.58%
SERS 2050 Retirement Fund	(3.71%)	8.80%	19.53%	6.76%	6.42%
BlackRock 2050 Index	(3.51%)	8.79%	19.22%	6.64%	6.27%
Callan Target Date 2050	(3.76%)	7.92%	17.79%	5.94%	5.65%
SERS 2055 Retirement Fund	(3.64%)	9.09%	19.95%	6.90%	6.51%
BlackRock 2055 Index	(3.44%)	9.09%	19.66%	6.80%	6.37%
Callan Target Date 2055	(3.75%)	8.04%	18.03%	6.01%	5.78%
SERS 2060 Retirement Fund	(3.64%)	9.09%	19.96%	6.89%	6.50%
BlackRock 2060 Index	(3.44%)	9.09%	19.67%	6.79%	6.37%
Callan Target Date 2060	(3.76%)	8.03%	18.02%	6.10%	5.76%
SERS 2065 Retirement Fund	(3.65%)	9.12%	19.97%	6.86%	-
BlackRock 2065 Index	(3.45%)	9.09%	19.68%	6.79%	-
Callan Target Date 2065	(3.81%)	8.32%	18.30%	5.93%	5.92%

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended September 30, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended September 30, 2023

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
Gross Performance				
Target Date Funds				
SERS Post Retirement Fund	3.65%	3.95%	5.02%	-
BlackRock Post Retirement Index	3.56%	3.86%	4.94%	4.94%
Callan Tgt Date Ret Inc	3.14%	3.43%	4.43%	3.55%
SERS 2025 Retirement Fund	4.68%	4.87%	5.84%	-
BlackRock 2025 Index	4.56%	4.75%	5.74%	5.79%
Callan Target Date 2025	5.06%	5.29%	6.22%	-
SERS 2030 Retirement Fund	5.61%	5.59%	6.39%	-
BlackRock 2030 Index	5.47%	5.45%	6.29%	6.23%
Callan Target Date 2030	5.83%	5.91%	6.76%	6.49%
SERS 2035 Retirement Fund	6.49%	6.26%	6.91%	-
BlackRock 2035 Index	6.34%	6.11%	6.79%	6.62%
Callan Target Date 2035	6.61%	6.44%	7.30%	-
SERS 2040 Retirement Fund	7.27%	6.86%	7.36%	-
BlackRock 2040 Index	7.10%	6.68%	7.22%	6.95%
Callan Target Date 2040	7.18%	6.83%	7.65%	7.09%
SERS 2045 Retirement Fund	7.87%	7.33%	7.72%	-
BlackRock 2045 Index	7.68%	7.13%	7.56%	7.27%
Callan Target Date 2045	7.60%	7.21%	7.73%	-
SERS 2050 Retirement Fund	8.18%	7.58%	8.01%	-
BlackRock 2050 Index	7.98%	7.39%	7.87%	7.57%
Callan Target Date 2050	7.70%	7.30%	7.79%	-
SERS 2055 Retirement Fund	8.24%	7.65%	-	-
BlackRock 2055 Index	8.06%	7.47%	-	-
Callan Target Date 2055	7.78%	7.41%	8.28%	-
SERS 2060 Retirement Fund	8.23%	-	-	-
BlackRock 2060 Index	8.06%	-	-	-
Callan Target Date 2060	7.85%	7.65%	-	-

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

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended September 30, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended September 30, 2023

	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Gross Performance					
Domestic Equity					
SERS U.S. Large Company Index Fund	(3.27%)	13.07%	21.61%	10.16%	9.93%
S&P 500 Index	(3.27%)	13.07%	21.62%	10.15%	9.92%
Callan Lg Cap Broad MF	(3.12%)	13.10%	21.47%	8.76%	8.61%
SERS U.S. All Company Index Fund	1.32%	12.38%	20.46%	9.34%	9.11%
Russell 3000 Index	(3.25%)	12.39%	20.46%	9.38%	9.14%
Callan Multi Cap Brd MF	(3.28%)	8.75%	18.33%	8.32%	7.16%
SERS U.S. SMID Company Idx Fund	(3.36%)	8.90%	14.63%	5.02%	4.71%
Dow Jones US Completion	(3.38%)	8.76%	14.26%	4.57%	4.40%
Callan SMID Broad MFs	(5.20%)	4.26%	12.91%	6.96%	4.44%
International Equity					
SERS Global Non-U.S. Index Fund	(4.08%)	5.61%	20.91%	3.90%	2.83%
MSCI ACWI ex US	(3.77%)	5.34%	20.39%	3.74%	2.58%
Callan Non US Equity MFs	(5.13%)	6.64%	23.88%	5.25%	3.07%
Domestic Fixed Income					
SERS Short Term Investment Fund	1.28%	3.63%	4.57%	1.77%	1.77%
3-month Treasury Bill	1.31%	3.60%	4.47%	1.70%	1.72%
Callan Cash Database(1)	1.36%	3.80%	4.77%	1.80%	1.87%
SERS U.S. Short Term Bond Idx Fund	0.73%	1.85%	2.76%	(0.74%)	1.21%
Blmbg Gov/Cred 1-3 Yr	0.73%	1.87%	2.77%	(0.72%)	1.21%
Callan Short US Govt MFs	0.23%	1.31%	2.05%	(1.53%)	0.57%
SERS U.S. TIPS Index Fund	(2.59%)	(0.77%)	1.30%	(1.97%)	2.13%
Blmbg US TIPS	(2.60%)	(0.78%)	1.25%	(1.98%)	2.12%
Callan TIPS MFs	(2.57%)	(0.64%)	1.36%	(2.06%)	1.98%
SERS U.S. Bond Index Fund	(3.23%)	(1.20%)	0.67%	(5.22%)	0.11%
Blmbg Aggregate	(3.23%)	(1.21%)	0.64%	(5.21%)	0.10%
Callan Core Bond MFs	(3.05%)	(0.72%)	0.93%	(4.97%)	0.35%

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

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended September 30, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended September 30, 2023

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
Gross Performance				
Domestic Equity				
SERS U.S. Large Company Index Fund	12.25%	11.93%	11.32%	9.76%
S&P 500 Index	12.24%	11.91%	11.28%	9.72%
Callan Lg Cap Broad MF	11.48%	10.95%	10.73%	9.56%
SERS U.S. All Company Index Fund	11.60%	11.26%	-	-
Russell 3000 Index	11.64%	11.28%	11.05%	9.68%
Callan Multi Cap Brd MF	10.00%	9.21%	9.74%	8.87%
SERS U.S. SMID Company Idx Fund	8.25%	8.04%	9.85%	9.52%
Dow Jones US Completion	7.97%	7.79%	9.63%	9.28%
Callan SMID Broad MFs	8.56%	7.76%	9.55%	9.01%
International Equity				
SERS Global Non-U.S. Index Fund	4.97%	3.58%	-	-
MSCI ACWI ex US	4.74%	3.35%	4.31%	6.02%
Callan Non US Equity MFs	5.03%	3.66%	5.10%	6.22%
Domestic Fixed Income				
SERS Short Term Investment Fund	1.66%	1.23%	0.96%	1.55%
3-month Treasury Bill	1.55%	1.11%	0.80%	1.41%
Callan Cash Database(1)	1.72%	1.38%	1.19%	1.76%
Blmbg Gov/Cred 1-3 Yr	0.99%	1.02%	1.52%	1.96%
Callan Short US Govt MFs	0.42%	0.63%	1.30%	1.81%
Blmbg US TIPS	1.46%	1.74%	2.92%	3.47%
Callan TIPS MFs	1.42%	1.56%	2.76%	3.18%
SERS U.S. Bond Index Fund	(0.09%)	1.12%	2.48%	2.82%
Blmbg Aggregate	(0.09%)	1.13%	2.53%	2.85%
Callan Core Bond MFs	0.20%	1.32%	2.99%	3.05%

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

Investment Fund Returns

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

	12/2022- 9/2023	2022	2021	2020	2019
Gross Performance					
Target Date Funds					
SERS Post Retirement Fund	2.66%	(14.57%)	7.03%	12.04%	15.72%
BlackRock Post Retirement Index	2.52%	(14.54%)	7.02%	11.80%	15.63%
Callan Tgt Date Ret Inc	2.70%	(12.88%)	6.31%	10.02%	13.21%
SERS 2025 Retirement Fund	3.12%	(15.17%)	9.06%	12.26%	18.67%
BlackRock 2025 Index	2.97%	(15.17%)	9.07%	12.01%	18.56%
Callan Target Date 2025	4.11%	(15.14%)	10.04%	12.58%	18.53%
SERS 2030 Retirement Fund	4.42%	(15.91%)	11.50%	12.96%	20.86%
BlackRock 2030 Index	4.32%	(15.92%)	11.50%	12.72%	20.70%
Callan Target Date 2030	4.99%	(16.04%)	11.63%	13.23%	20.43%
SERS 2035 Retirement Fund	5.68%	(16.61%)	13.88%	13.65%	22.93%
BlackRock 2035 Index	5.60%	(16.67%)	13.85%	13.44%	22.72%
Callan Target Date 2035	5.92%	(16.79%)	13.92%	14.28%	22.16%
SERS 2040 Retirement Fund	6.91%	(17.29%)	16.04%	14.22%	24.80%
BlackRock 2040 Index	6.85%	(17.38%)	15.97%	13.98%	24.62%
Callan Target Date 2040	6.87%	(17.40%)	15.85%	14.91%	23.62%
SERS 2045 Retirement Fund	8.03%	(17.84%)	17.79%	14.90%	26.12%
BlackRock 2045 Index	8.00%	(17.96%)	17.70%	14.65%	25.90%
Callan Target Date 2045	7.61%	(17.95%)	16.83%	15.52%	24.60%
SERS 2050 Retirement Fund	8.80%	(18.15%)	18.75%	15.27%	26.70%
BlackRock 2050 Index	8.79%	(18.30%)	18.62%	15.07%	26.48%
Callan Target Date 2050	7.92%	(18.07%)	17.17%	15.73%	24.89%
SERS 2055 Retirement Fund	9.09%	(18.22%)	18.91%	15.40%	26.75%
BlackRock 2055 Index	9.09%	(18.38%)	18.81%	15.18%	26.58%
Callan Target Date 2055	8.04%	(18.21%)	17.27%	15.83%	24.97%
SERS 2060 Retirement Fund	9.09%	(18.23%)	18.90%	15.38%	26.74%
BlackRock 2060 Index	9.09%	(18.39%)	18.81%	15.19%	26.58%
Callan Target Date 2060	8.03%	(18.27%)	17.41%	15.90%	25.08%
SERS 2065 Retirement Fund	9.12%	(18.25%)	18.85%	15.22%	-
BlackRock 2065 Index	9.09%	(18.40%)	18.80%	15.19%	-
Callan Target Date 2065	8.32%	(18.61%)	17.54%	16.47%	25.62%

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.

	12/2022- 9/2023	2022	2021	2020	2019
Gross Performance					
Domestic Equity					
SERS U.S. Large Company Index Fund	13.07%	(18.11%)	28.71%	18.44%	31.51%
S&P 500 Index	13.07%	(18.11%)	28.71%	18.40%	31.49%
Callan Lg Cap Broad MF	13.10%	(18.55%)	25.50%	18.47%	30.14%
SERS U.S. All Company Index Fund	12.38%	(19.23%)	25.62%	21.20%	30.53%
Russell 3000 Index	12.39%	(19.21%)	25.66%	20.89%	31.02%
Callan Multi Cap Brd MF	8.75%	(18.29%)	24.17%	17.19%	29.12%
SERS U.S. SMID Company Idx Fund	8.90%	(26.12%)	12.90%	32.04%	28.21%
Dow Jones US Completion	8.76%	(26.56%)	12.36%	32.17%	27.94%
Callan SMID Broad MFs	4.26%	(21.59%)	19.56%	24.00%	29.40%
International Equity					
SERS Global Non-U.S. Index Fund	5.61%	(15.91%)	7.98%	11.17%	21.79%
MSCI ACWI ex US	5.34%	(16.00%)	7.82%	10.65%	21.51%
Callan Non US Equity MFs	6.64%	(15.77%)	9.47%	11.12%	22.83%
Domestic Fixed Income					
SERS Short Term Investment Fund	3.63%	1.59%	0.07%	0.67%	2.31%
3-month Treasury Bill	3.60%	1.46%	0.05%	0.67%	2.28%
Callan Cash Database(1)	3.80%	1.15%	0.13%	1.05%	2.65%
SERS U.S. Short Term Bond Idx Fund	1.85%	(3.68%)	(0.51%)	3.37%	4.02%
Blmbg Gov/Cred 1-3 Yr	1.87%	(3.69%)	(0.47%)	3.33%	4.03%
Callan Short US Govt MFs	1.31%	(5.07%)	(1.07%)	3.57%	3.52%
SERS U.S. TIPS Index Fund	(0.77%)	(11.76%)	5.88%	11.00%	8.40%
Blmbg US TIPS	(0.78%)	(11.85%)	5.96%	10.99%	8.43%
Callan TIPS MFs	(0.64%)	(11.89%)	5.50%	10.84%	8.31%
SERS U.S. Bond Index Fund	(1.20%)	(12.93%)	(1.64%)	7.56%	8.69%
Blmbg Aggregate	(1.21%)	(13.01%)	(1.54%)	7.51%	8.72%
Callan Core Bond MFs	(0.72%)	(13.47%)	(1.17%)	8.65%	9.17%

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

Pennsylvania SERS 401(a)
Investment Manager Performance Monitoring Summary Report
September 30, 2023

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
Net of Fee Performance									
Target Date Funds									
SERS Post Retirement Fund Callan Tgt Date Ret Inc	-3.4 88	7.4 36	0.0 52	2.9 28	3.6 22	3.9 19			0.08 73
BlackRock Post Retirement Index	-3.3 85	7.4 37	0.0 51	2.9 28	3.6 23	3.9 20			
SERS 2025 Retirement Fund Callan Target Date 2025	-3.5 79	8.5 83	1.1 84	3.4 68	4.6 76	4.8 74			0.08 72
BlackRock 2025 Index	-3.5 77	8.4 85	1.1 84	3.3 69	4.6 77	4.8 80			
SERS 2030 Retirement Fund Callan Target Date 2030	-3.7 74	11.1 74	2.5 76	4.1 55	5.5 74	5.5 74			0.08 70
BlackRock 2030 Index	-3.6 66	11.0 76	2.5 74	4.1 57	5.5 76	5.5 78			
SERS 2035 Retirement Fund Callan Target Date 2035	-3.7 69	13.5 63	3.8 63	4.8 49	6.4 63	6.2 72			0.08 72
BlackRock 2035 Index	-3.6 56	13.4 69	3.8 63	4.8 51	6.3 69	6.1 77			
SERS 2040 Retirement Fund Callan Target Date 2040	-3.8 69	15.9 46	5.1 50	5.5 31	7.2 49	6.8 56			0.08 68
BlackRock 2040 Index	-3.6 50	15.8 54	5.0 51	5.4 33	7.1 58	6.7 71			
SERS 2045 Retirement Fund Callan Target Date 2045	-3.8 60	18.1 22	6.1 33	6.0 23	7.8 29	7.3 45			0.08 72
BlackRock 2045 Index	-3.6 33	17.9 28	6.1 34	5.9 25	7.7 40	7.1 52			
SERS 2050 Retirement Fund Callan Target Date 2050	-3.7 46	19.4 6	6.7 16	6.3 12	8.1 21	7.5 39			0.08 68
BlackRock 2050 Index	-3.5 25	19.2 16	6.6 20	6.3 15	8.0 31	7.4 46			
SERS 2055 Retirement Fund Callan Target Date 2055	-3.7 30	19.9 6	6.8 12	6.4 9	8.2 17	7.6 42			0.08 72
BlackRock 2055 Index	-3.4 18	19.7 12	6.8 13	6.4 10	8.1 31	7.5 48			
SERS 2060 Retirement Fund Callan Target Date 2060	-3.7 35	19.9 10	6.8 13	6.4 12	8.2 26				0.08 75
BlackRock 2060 Index	-3.4 21	19.7 13	6.8 14	6.4 14	8.1 40				

Returns:
■ above median
■ third quartile
■ fourth quartile

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

Risk Quadrant:


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

Pennsylvania SERS 401(a)
Investment Manager Performance Monitoring Summary Report
September 30, 2023

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
SERS 2065 Retirement Fund Callan Target Date 2065 BlackRock 2065 Index	-3.7 35 -3.4 18	19.9 13 19.7 16	6.8 19 6.8 19						0.08 53
Domestic Equity									
SERS U.S. Large Company Stock Index Fund Callan Lg Cap Broad MF S&P 500 Index	-3.3 57 -3.3 57	21.6 50 21.6 50	10.2 39 10.2 39	9.9 30 9.9 31	12.2 43 12.2 43	11.9 34 11.9 35			0.02 100
SERS U.S. All Company Index Fund Callan Multi Cap Brd MF Russell 3000 Index	1.3 1 -3.3 49	20.5 37 20.5 37	9.3 41 9.4 41	9.1 24 9.1 24	11.6 28 11.6 27	11.3 20 11.3 20			0.03 99
U.S. Small/Mid Company Stock Index Fund Callan SMID Broad MFs Dow Jones US Completion	-3.4 25 -3.4 26	14.6 33 14.3 40	5.0 58 4.6 61	4.7 46 4.4 52	8.2 56 8.0 59	8.0 41 7.8 49			0.03 98
International Equity									
SERS Global Non-U.S. Index Fund Callan Non US Equity MFs MSCI ACWI ex US	-4.1 38 -3.8 31	20.9 70 20.4 70	3.9 52 3.7 53	2.8 56 2.6 65	5.0 53 4.7 59	3.6 54 3.3 68			0.05 99
Domestic Fixed Income									
SERS Short Term Investment Fund Callan Cash Database 3-month Treasury Bill	1.3 74 1.3 72	4.6 68 4.5 69	1.8 55 1.7 57	1.8 76 1.7 83	1.7 66 1.5 83	1.2 77 1.1 91			0.00 100
Comments: Callan Cash Database includes STIF, enhanced cash, and money market funds.									
SERS U.S. Short Term Bond Idx Fund Callan Short US Govt MFs Blmbg Gov/Cred 1-3 Yr	0.7 15 0.7 15	2.8 17 2.8 17	-0.7 21 -0.7 19	1.2 11 1.2 11		1.0 10 1.0 12			0.02 100
SERS U.S. TIPS Index Fund Callan TIPS MFs Blmbg US TIPS	-2.6 54 -2.6 55	1.3 53 1.2 56	-2.0 40 -2.0 40	2.1 35 2.1 35		1.5 40 1.7 23			0.02 99

Returns:
 above median
 third quartile
 fourth quartile

Return Consistency:
 above median
 third quartile
 fourth quartile

Risk Quadrant:

Expense Ratio:
 below median
 second quartile
 first quartile

Pennsylvania SERS 401(a)
Investment Manager Performance Monitoring Summary Report
September 30, 2023

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
SERS U.S. Bond Index Fund	-3.2 71	0.7 76	-5.2 70	0.1 75	-0.1 85	1.1 79			0.02 98
Callan Core Bond MFs	-3.2 71	0.7 76	-5.2 70	0.1 75	-0.1 85	1.1 79			0.02 98
Blmbg Aggregate	-3.2 71	0.6 76	-5.2 69	0.1 75	-0.1 84	1.1 79			

Returns:
 above median
 third quartile
 fourth quartile

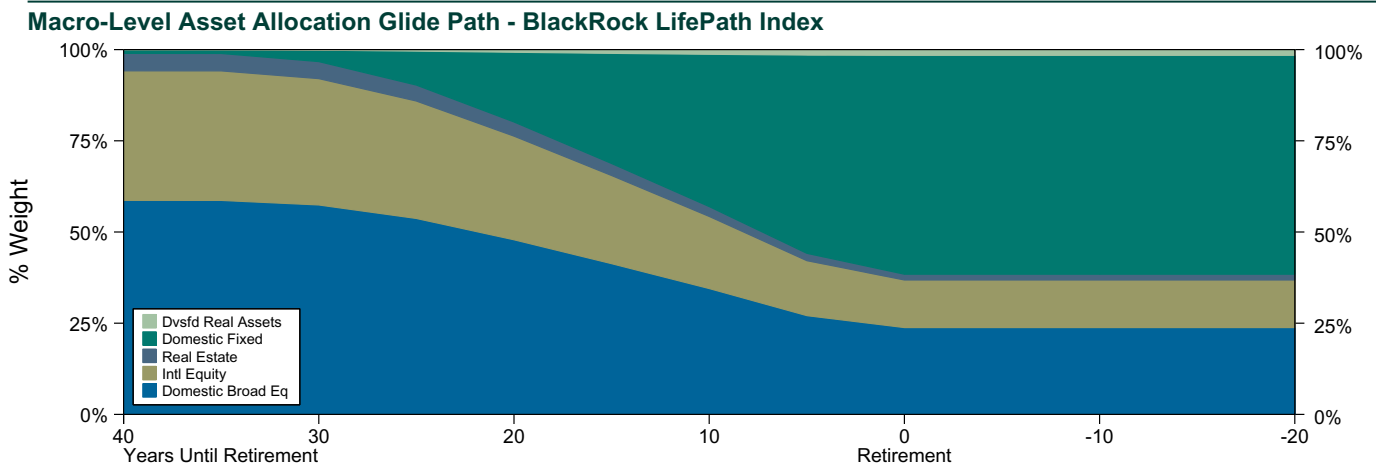
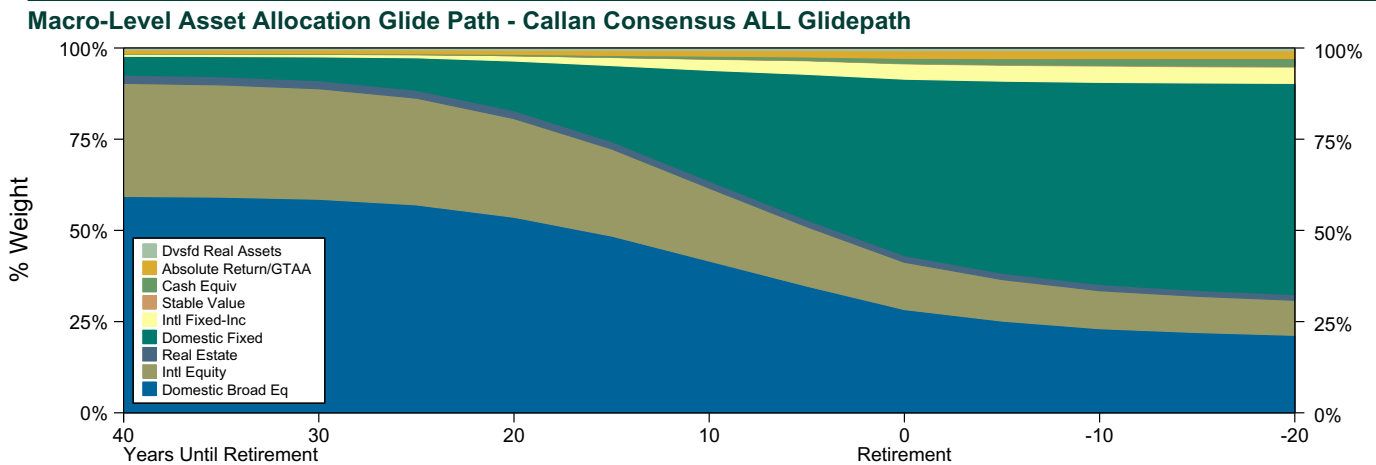
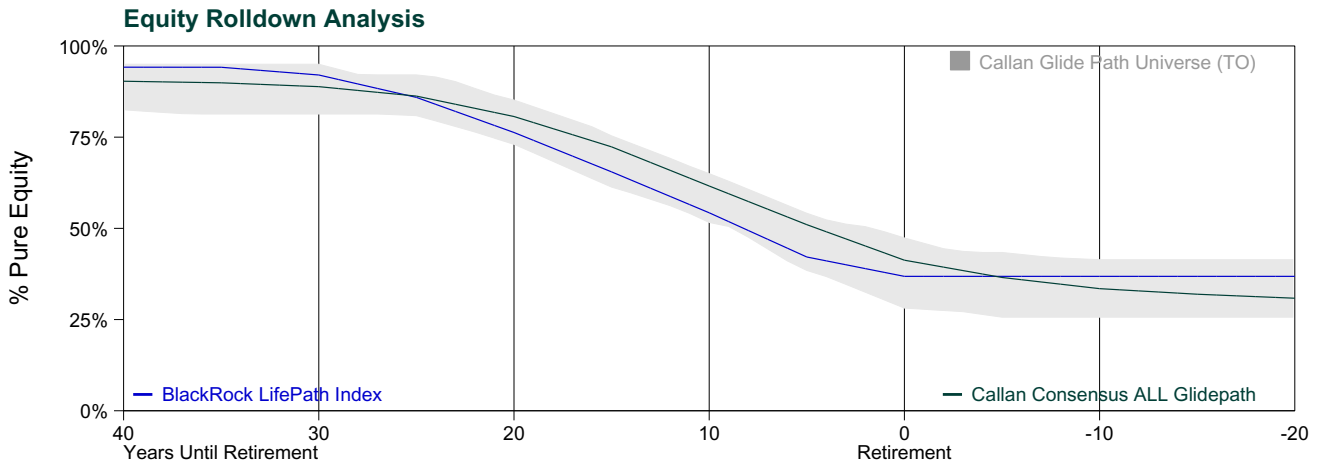
Return Consistency:
 above median
 third quartile
 fourth quartile

Risk Quadrant:
 above median
 third quartile
 fourth quartile

Expense Ratio:
 below median
 second quartile
 first quartile

Callan Consensus ALL Glidepath Target Date Glide Path Analysis as of September 30, 2023

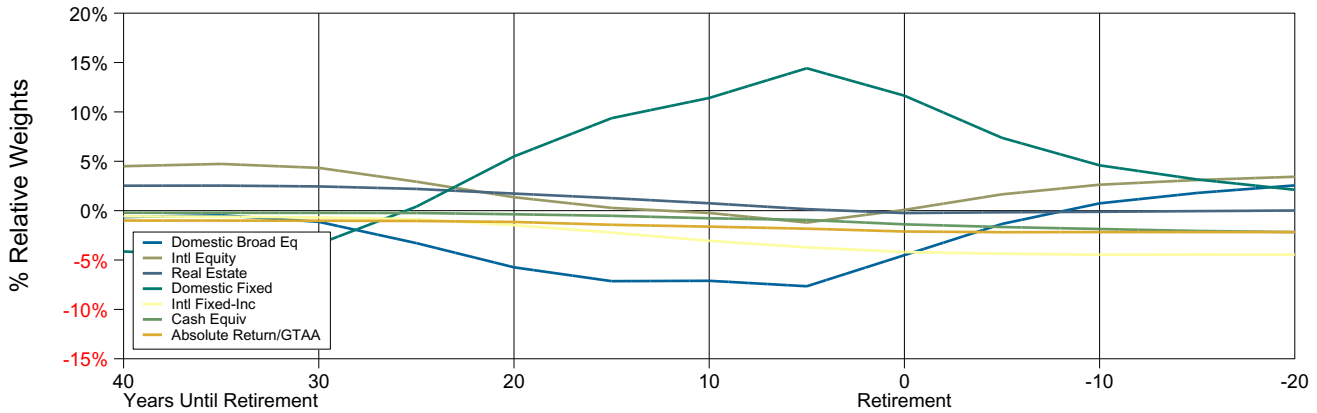
The following charts illustrate the asset allocation "glide path" underlying the relevant suite of target date funds. This analysis covers forty years of investor wealth accumulation up to retirement, as well as twenty years of wealth decumulation following retirement. The top chart shows the "pure"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



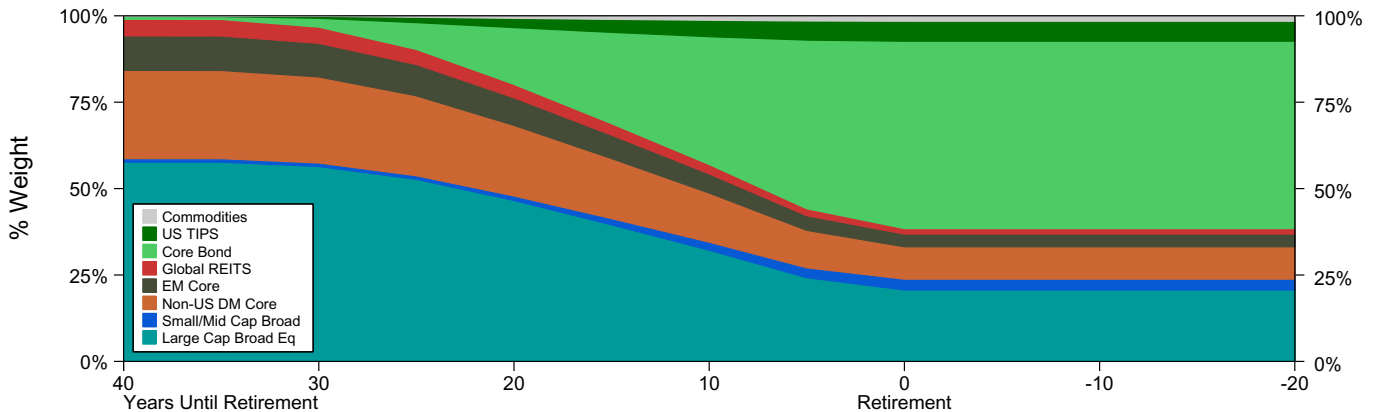
BlackRock LifePath Index Target Date Glide Path Analysis as of September 30, 2023

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.

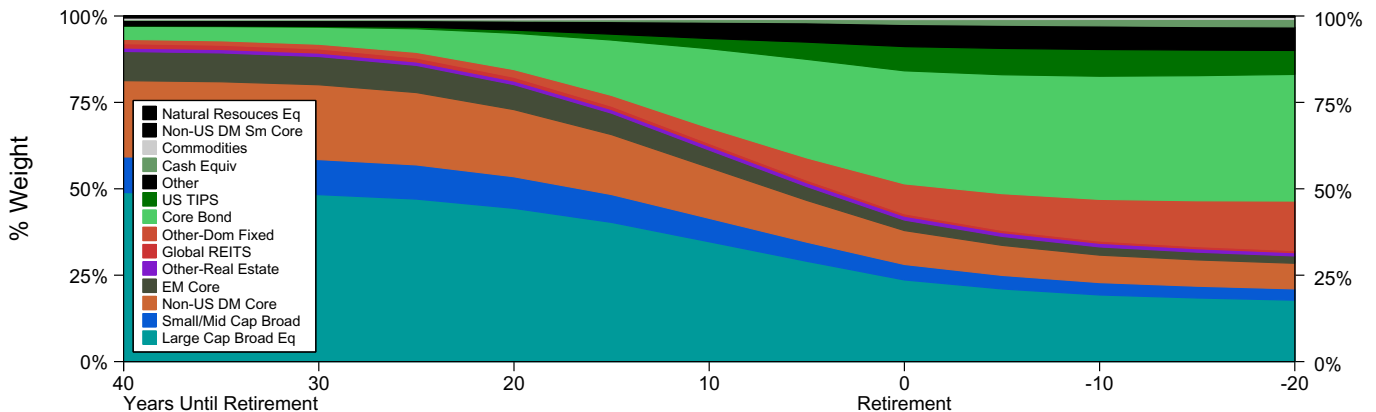
Relative Macro Asset Allocation - BlackRock LifePath Index vs. Callan Consensus ALL Glidep



Micro-Level Asset Allocation Glide Path - BlackRock LifePath Index



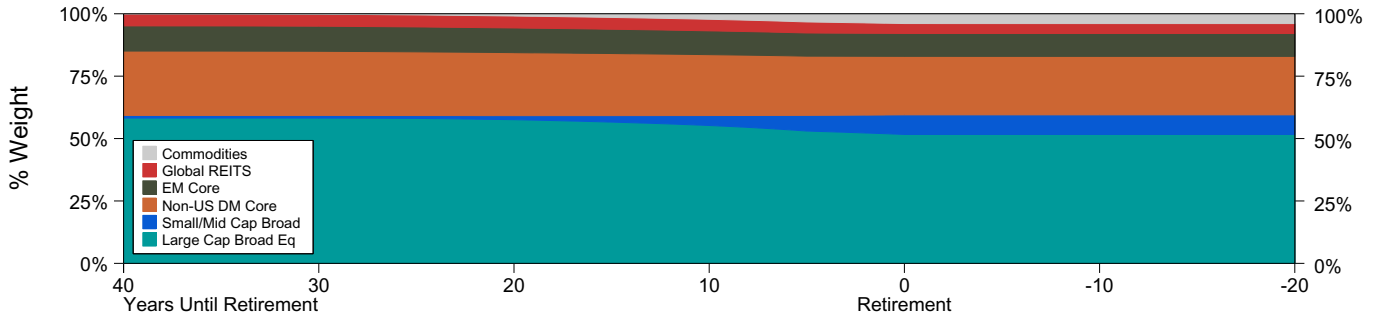
Micro-Level Asset Allocation Glide Path - Callan Consensus ALL Glidepath



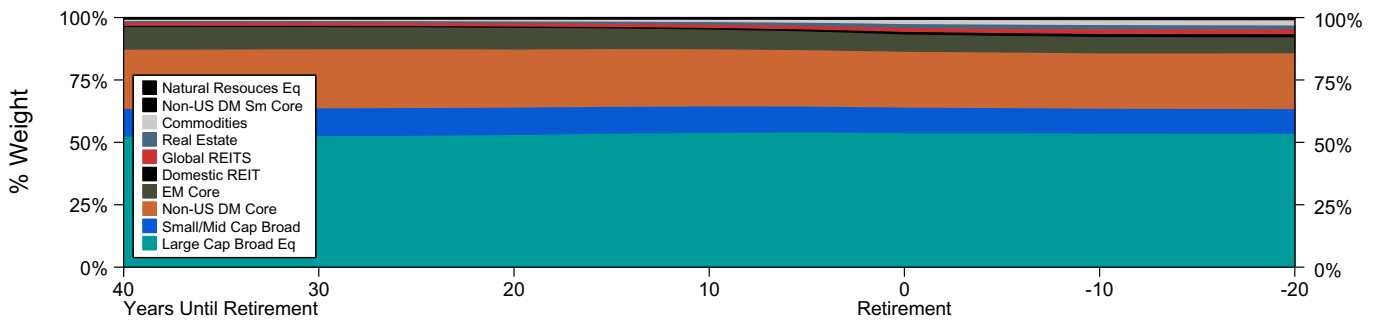
BlackRock LifePath Index Target Date Glide Path Analysis as of September 30, 2023

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

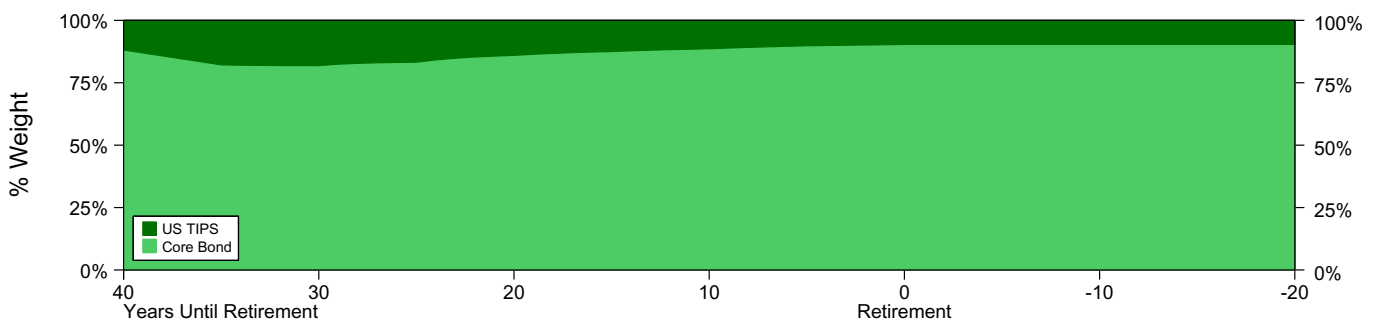
Micro-Level Equity Allocation Glide Path - BlackRock LifePath Index



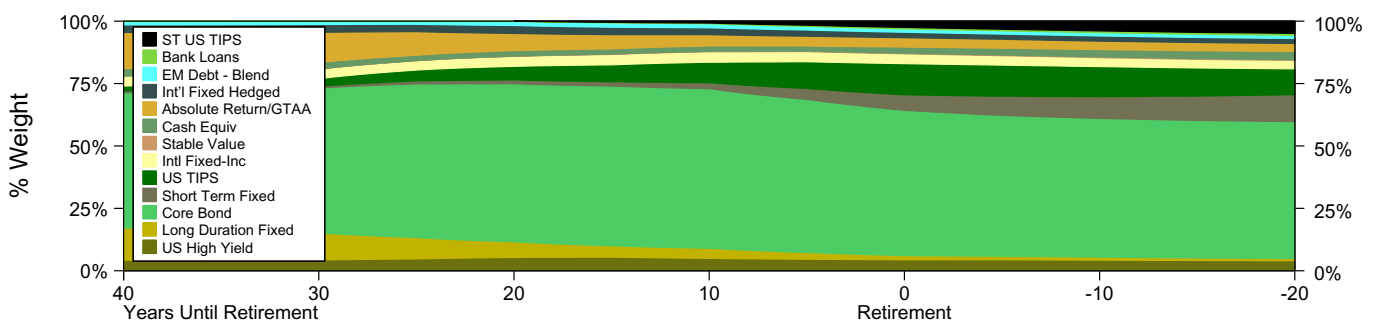
Micro-Level Equity Asset Allocation Glide Path - Callan Consensus ALL Glidepath



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



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



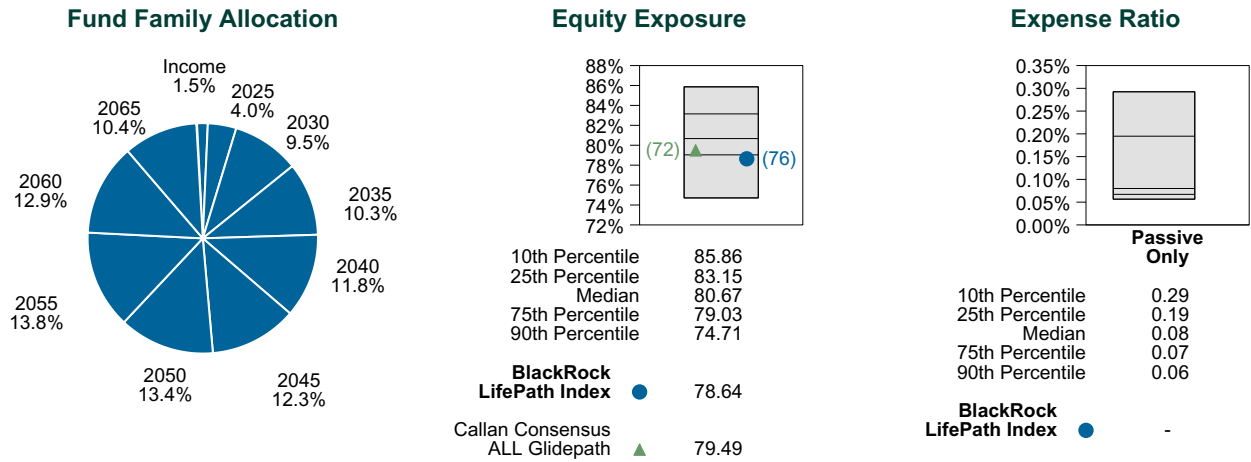
Pennsylvania SERS 401(a) - BlackRock LifePath Index Target Date Fund Family Analysis as of September 30, 2023

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).

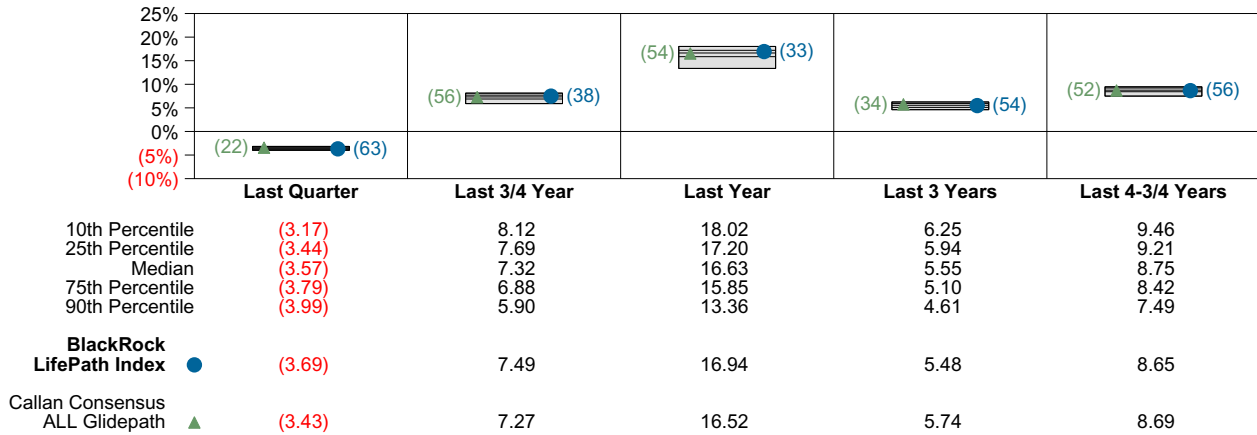
Glidepath Peer Group: ALL

Passive and Non-Passive

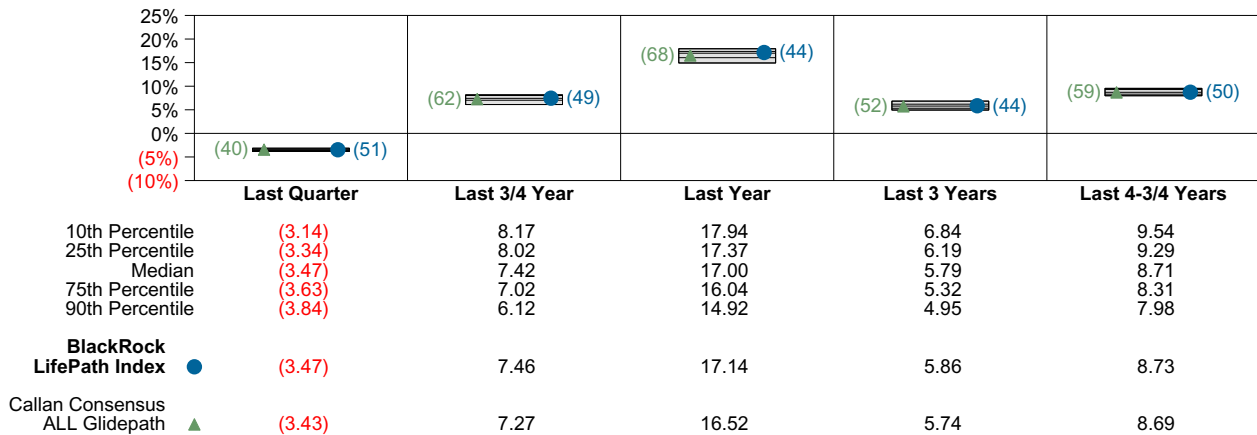
Fee/Return Type: Gross



Target Date Family Performance vs Peer Families



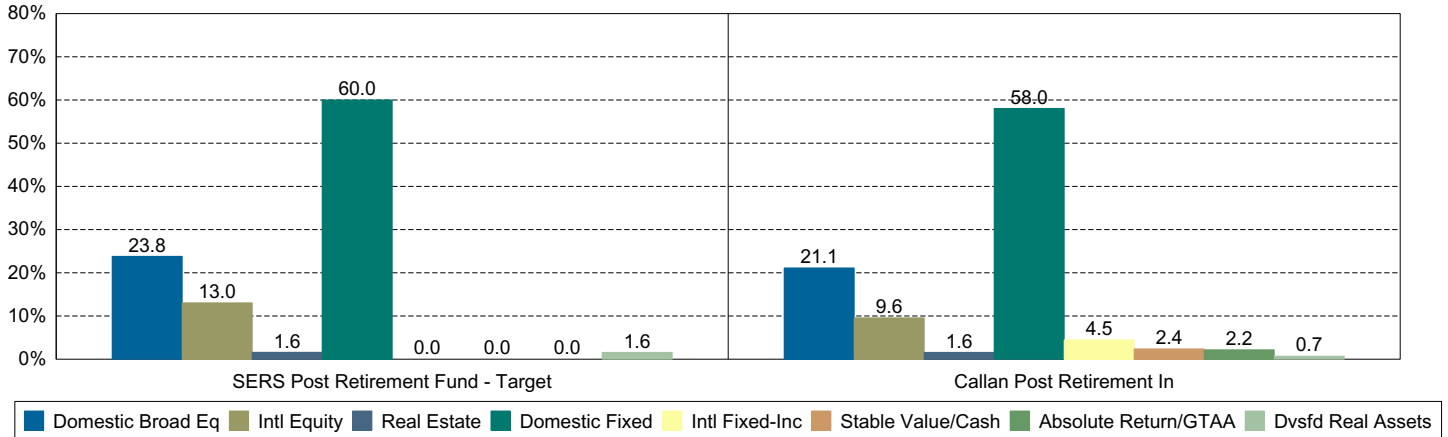
Target Date Family Glide Path Returns vs Peer Families



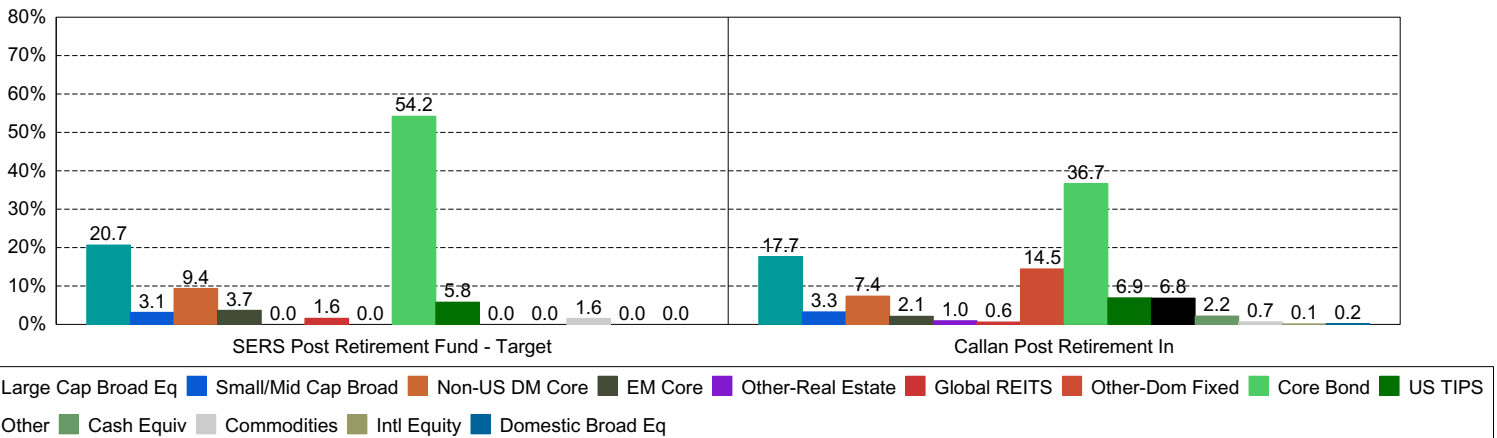
SERS Post Retirement Fund Target Date Fund Asset Allocation as of September 30, 2023

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.

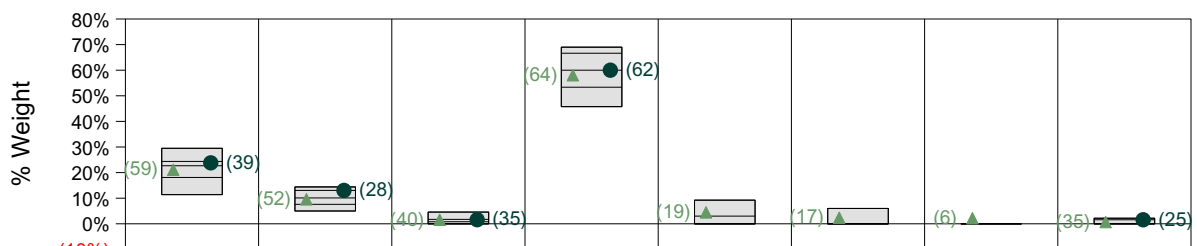
Macro-Level Asset Allocation



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	29.49	14.40	4.58	69.00	9.24	6.00	0.00	2.17
25th Percentile	24.36	13.04	1.73	66.62	3.00	0.00	0.00	1.57
Median	22.67	10.10	0.80	60.00	0.00	0.00	0.00	0.00
75th Percentile	18.10	7.60	0.00	53.35	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
SERS Post Retirement Fund - Target	● 23.80	13.04	1.59	60.00	-	-	-	1.57
Callan Post Retirement In	▲ 21.12	9.56	1.58	58.04	4.46	2.38	2.17	0.69

SERS Post Retirement Fund Period Ended September 30, 2023

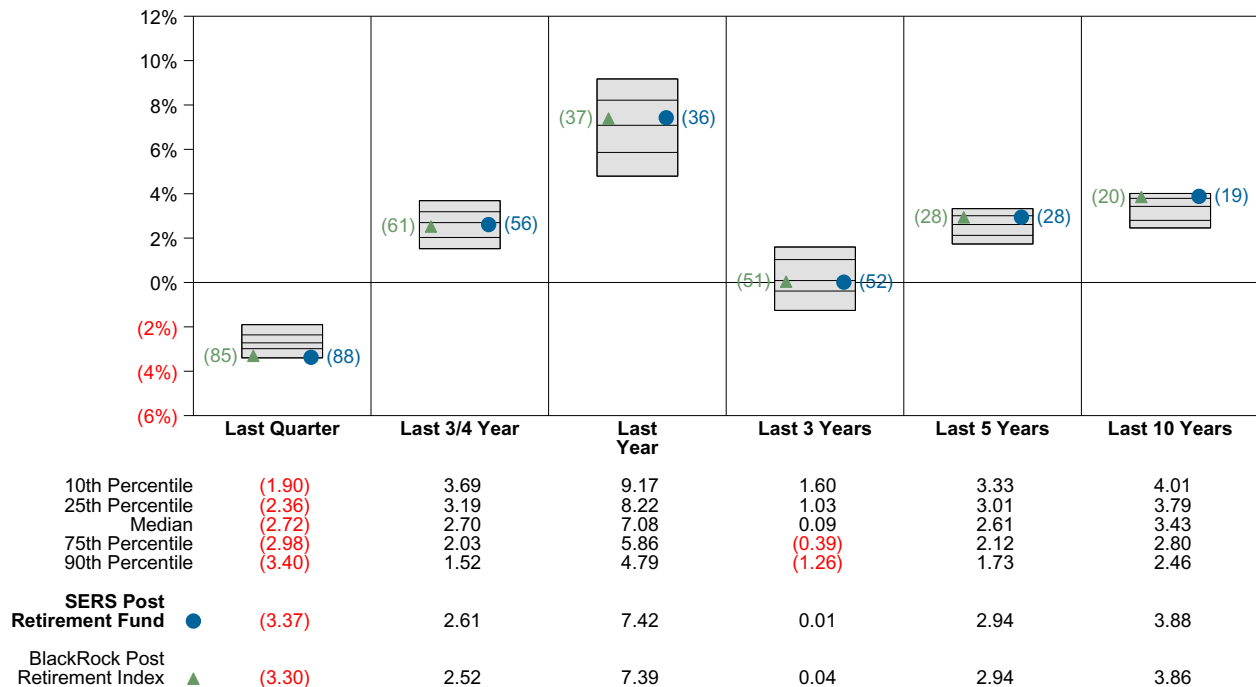
Investment Philosophy

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

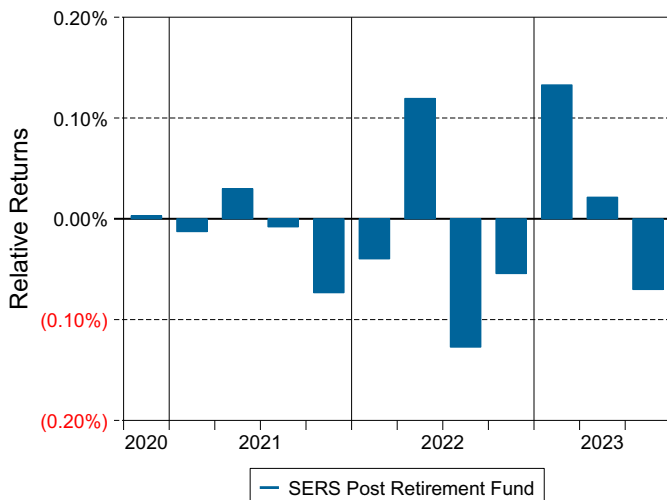
Quarterly Summary and Highlights

- SERS Post Retirement Fund's portfolio posted a (3.37)% return for the quarter placing it in the 88 percentile of the Callan Target Date Retirement Income group for the quarter and in the 36 percentile for the last year.
- SERS Post Retirement Fund's portfolio underperformed the BlackRock Post Retirement Index by 0.07% for the quarter and outperformed the BlackRock Post Retirement Index for the year by 0.03%.

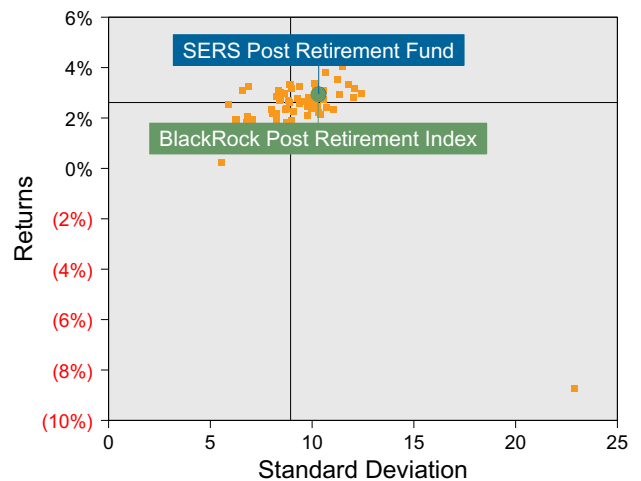
Performance vs Callan Target Date Retirement Income (Net)



Relative Returns vs BlackRock Post Retirement Index



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

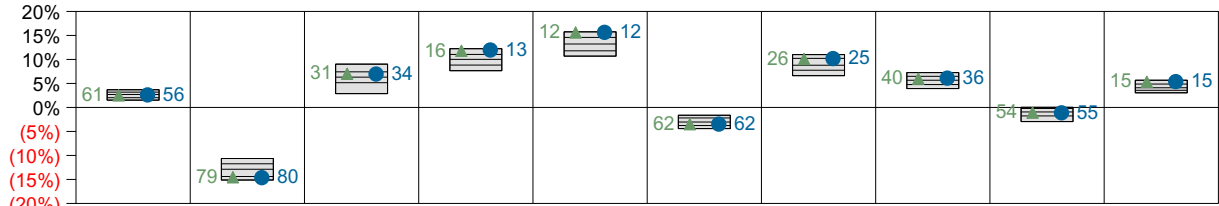


SERS Post Retirement Fund Return Analysis Summary

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.

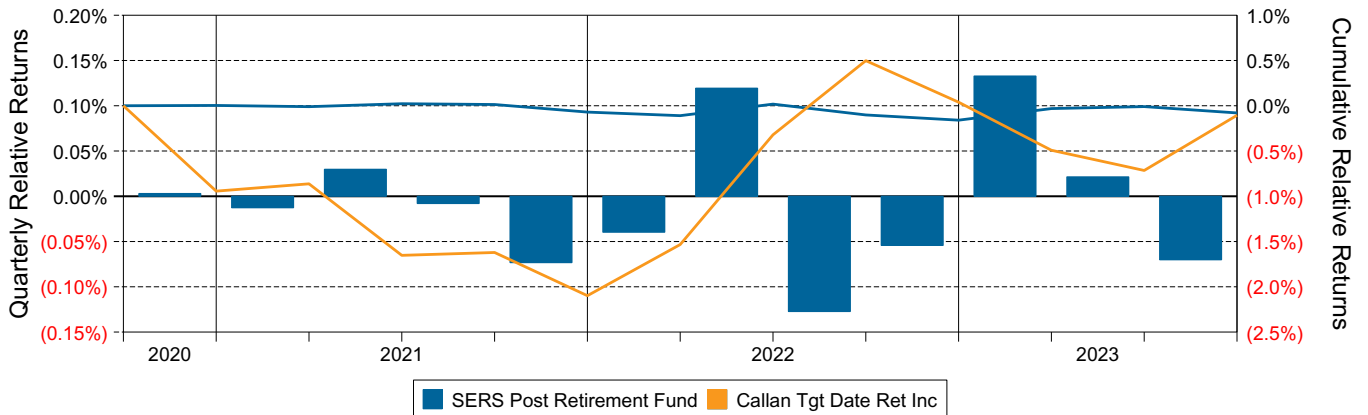
Performance vs Callan Target Date Retirement Income (Net)



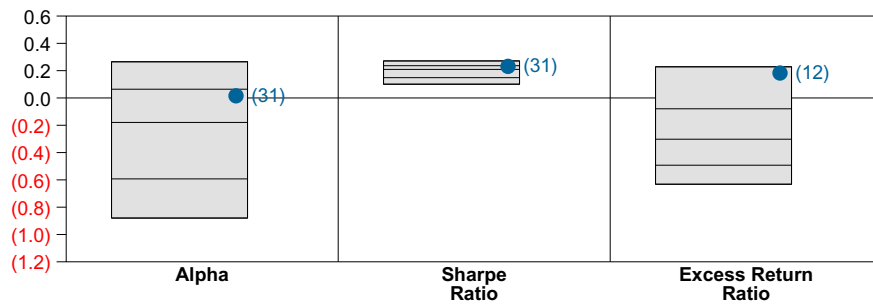
	12/22- 9/23	2022	2021	2020	2019	2018	2017	2016	2015	2014
10th Percentile	3.69	(10.64)	9.02	12.24	15.75	(1.63)	11.01	7.26	0.02	5.66
25th Percentile	3.19	(11.74)	7.42	11.04	14.59	(2.19)	10.22	6.48	(0.22)	4.87
Median	2.70	(12.88)	6.31	10.02	13.21	(3.04)	8.80	5.67	(0.94)	4.10
75th Percentile	2.03	(14.39)	5.16	8.83	11.79	(3.77)	7.75	4.77	(1.77)	3.57
90th Percentile	1.52	(15.12)	2.88	7.66	10.69	(4.41)	6.62	3.93	(2.94)	3.05

	12/22- 9/23	2022	2021	2020	2019	2018	2017	2016	2015	2014
SERS Post Retirement Fund	2.61	(14.63)	6.95	11.97	15.65	(3.47)	10.18	6.10	(1.12)	5.38
BlackRock Post Retirement Index	2.52	(14.54)	7.02	11.80	15.63	(3.48)	10.10	6.01	(1.07)	5.36

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, 2023

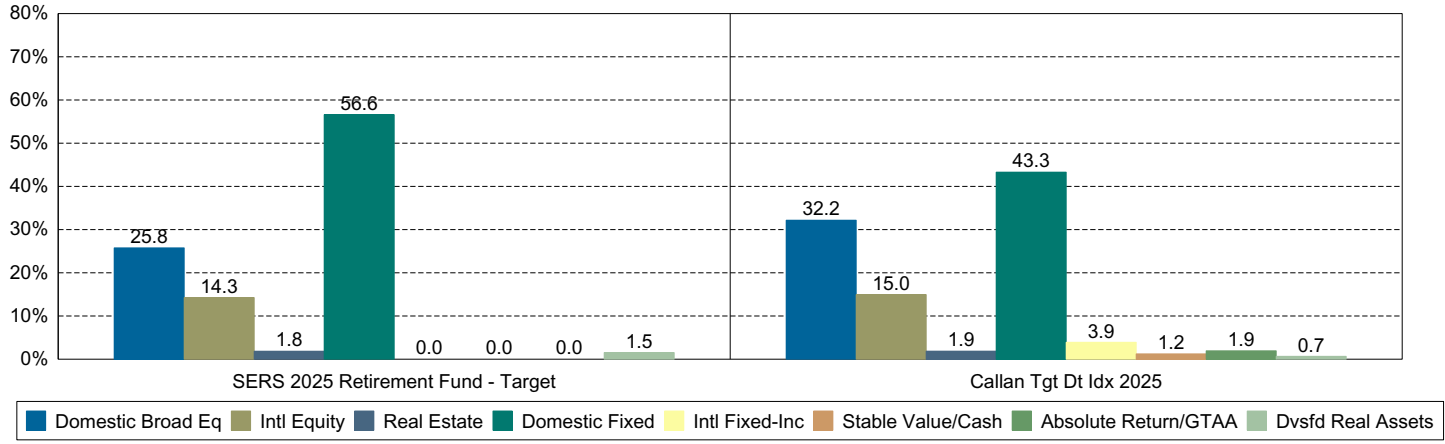


	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.27	0.27	0.23
25th Percentile	0.06	0.24	(0.08)
Median	(0.18)	0.21	(0.30)
75th Percentile	(0.59)	0.15	(0.49)
90th Percentile	(0.88)	0.10	(0.63)
SERS Post Retirement Fund	0.02	0.23	0.18

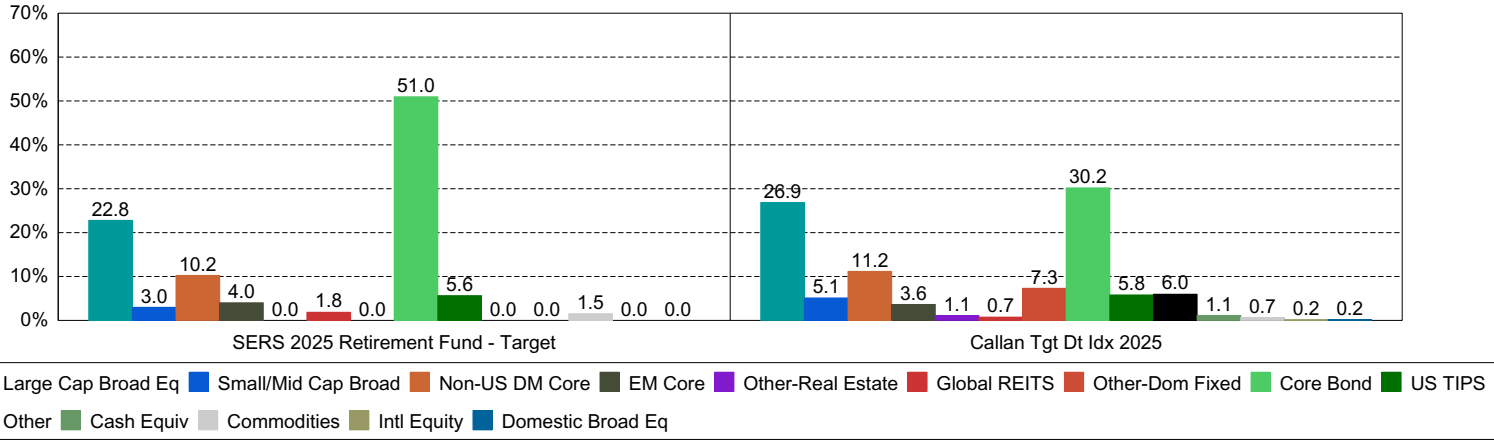
SERS 2025 Retirement Fund Target Date Fund Asset Allocation as of September 30, 2023

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.

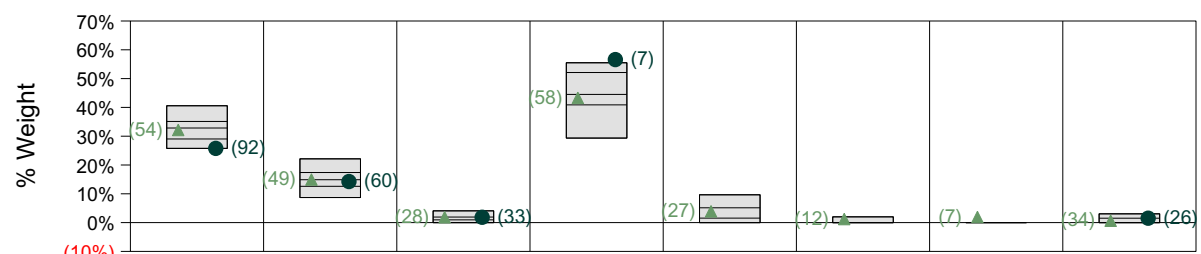
Macro-Level Asset Allocation



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	40.57	22.14	4.08	55.50	9.66	2.00	0.00	3.04
25th Percentile	35.12	17.39	1.93	52.12	5.14	0.00	0.00	1.53
Median	32.85	14.89	0.95	44.51	1.55	0.00	0.00	0.00
75th Percentile	29.04	12.60	0.00	40.88	0.00	0.00	0.00	0.00
90th Percentile	25.77	8.70	0.00	29.34	0.00	0.00	0.00	0.00
SERS 2025 Retirement Fund - Target	● 25.77	14.26	1.85	56.60	-	-	-	1.53
Callan Tgt Dt Idx 2025	▲ 32.17	14.95	1.86	43.29	3.91	1.23	1.94	0.66

SERS 2025 Retirement Fund Period Ended September 30, 2023

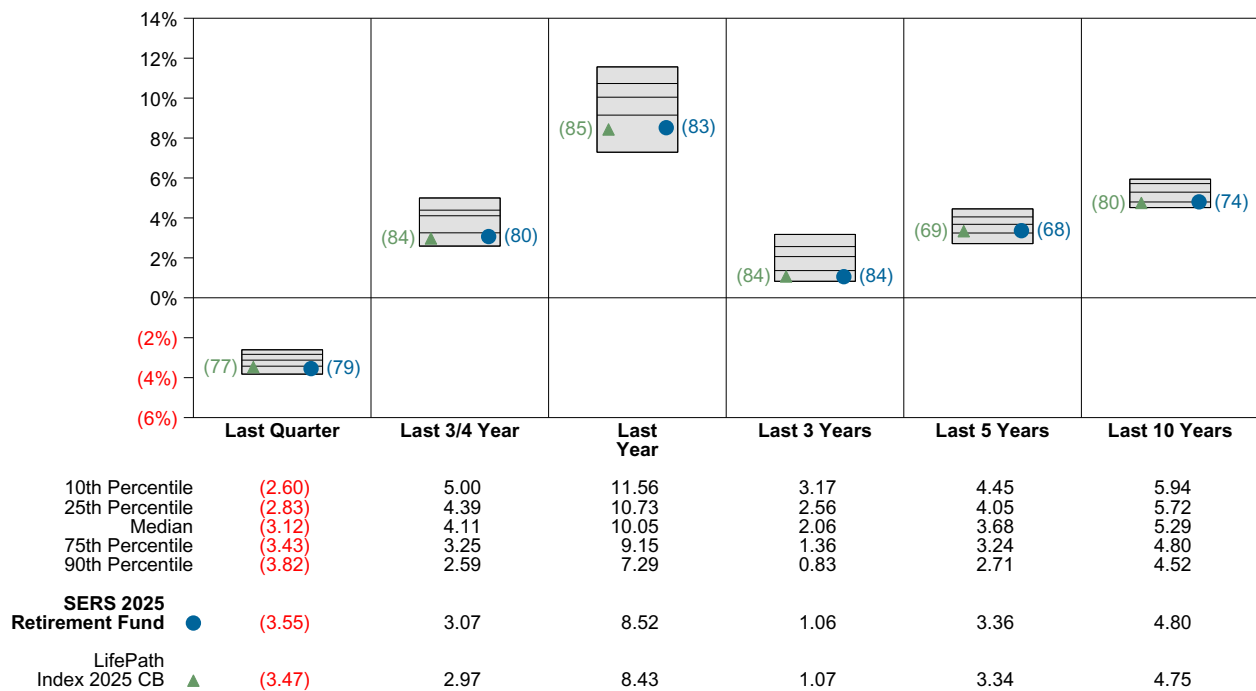
Investment Philosophy

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

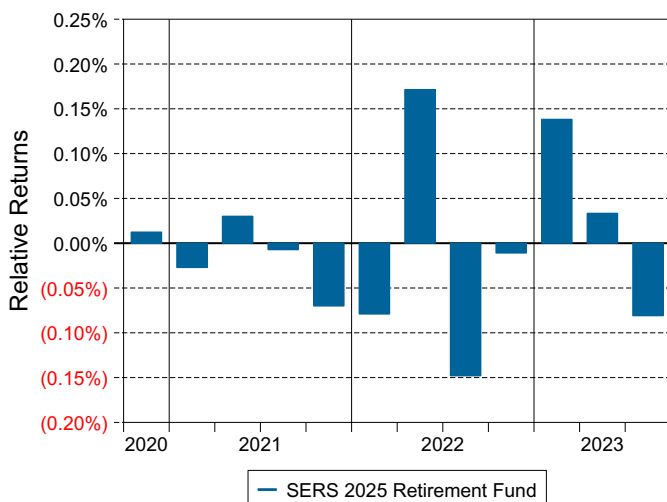
Quarterly Summary and Highlights

- SERS 2025 Retirement Fund's portfolio posted a (3.55)% return for the quarter placing it in the 79 percentile of the Callan Target Date 2025 group for the quarter and in the 83 percentile for the last year.
- SERS 2025 Retirement Fund's portfolio underperformed the LifePath Index 2025 CB by 0.08% for the quarter and outperformed the LifePath Index 2025 CB for the year by 0.09%.

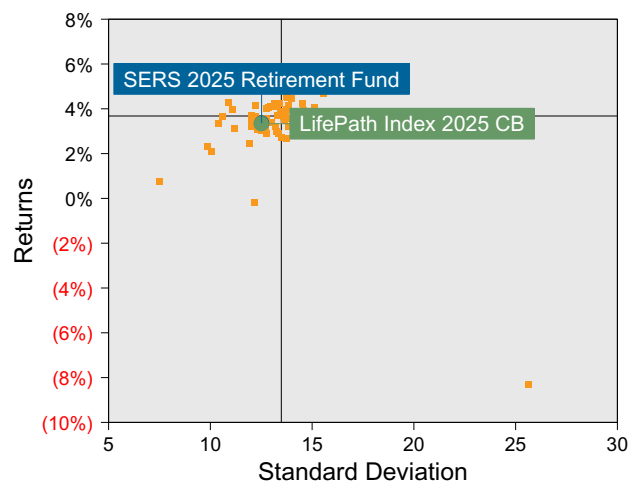
Performance vs Callan Target Date 2025 (Net)



Relative Return vs LifePath Index 2025 CB



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

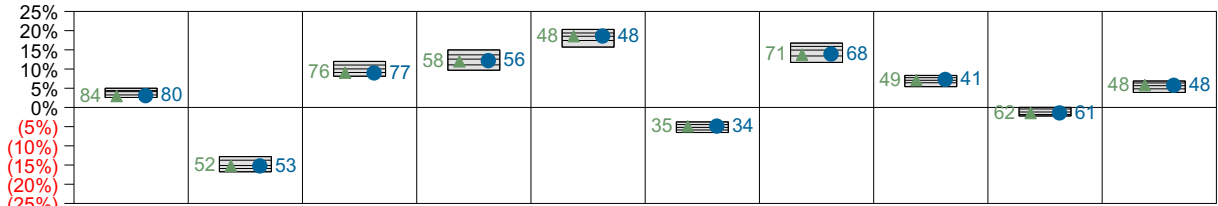


SERS 2025 Retirement Fund Return Analysis Summary

Return Analysis

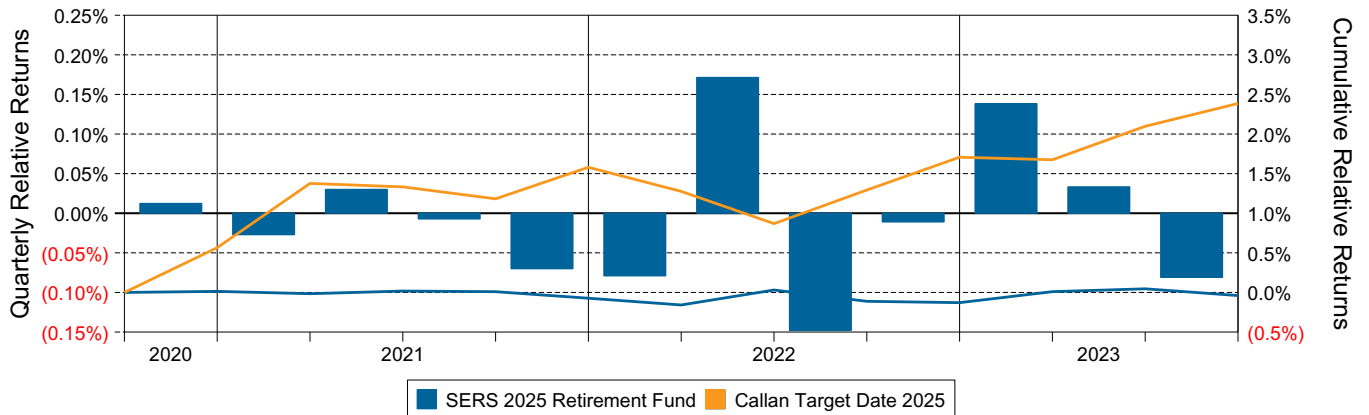
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

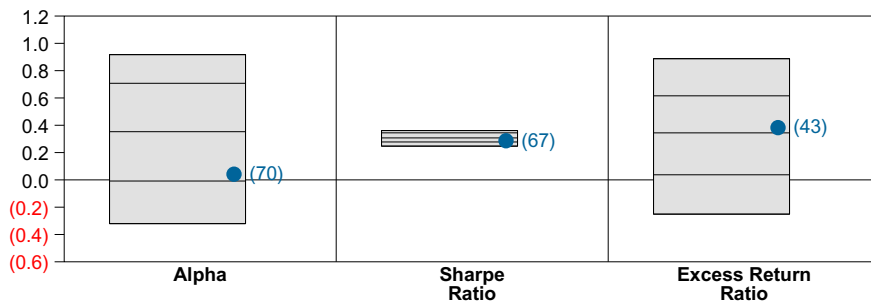


10th Percentile	5.00	(12.80)	11.99	14.98	20.32	(3.77)	16.77	8.34	0.02	6.88	
25th Percentile	4.39	(13.74)	11.04	13.70	19.39	(4.46)	15.90	7.76	(0.39)	6.37	
Median	4.11	(15.14)	10.04	12.58	18.53	(5.20)	14.94	7.07	(1.19)	5.67	
75th Percentile	3.25	(15.90)	9.10	11.08	17.43	(5.87)	13.41	6.43	(1.85)	4.84	
90th Percentile	2.59	(16.76)	8.13	9.69	15.71	(6.53)	11.73	5.41	(2.22)	3.90	
SERS 2025 Retirement Fund	●	3.07	(15.23)	8.99	12.19	18.60	(4.86)	13.91	7.30	(1.43)	5.77
LifePath Index 2025 CB	▲	2.97	(15.17)	9.07	12.01	18.56	(4.90)	13.75	7.10	(1.45)	5.82

Cumulative and Quarterly Relative Returns vs LifePath Index 2025 CB



Risk Adjusted Return Measures vs LifePath Index 2025 CB Rankings Against Callan Target Date 2025 (Net) Seven Years Ended September 30, 2023



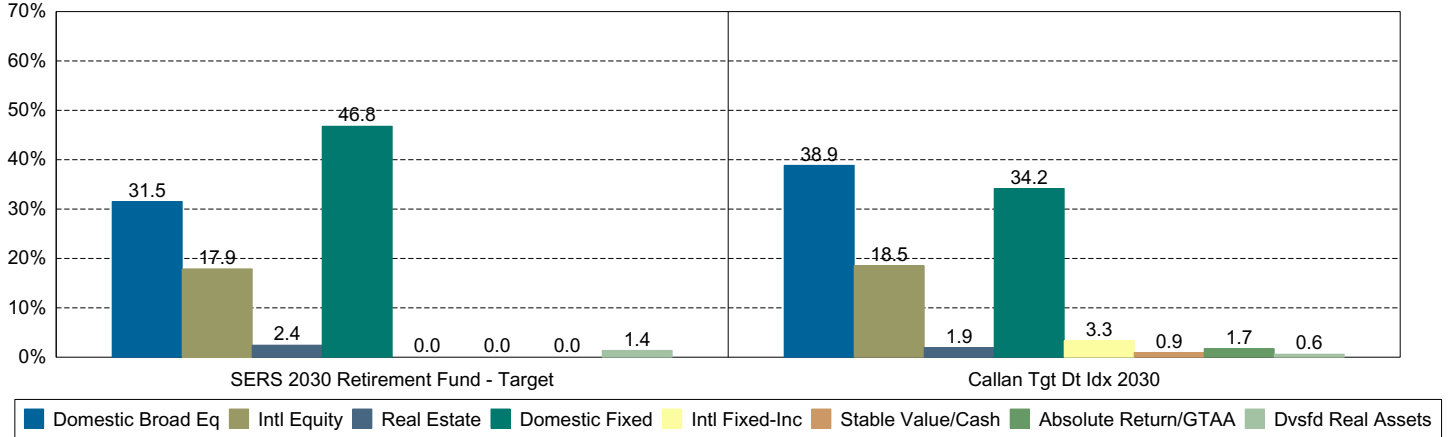
10th Percentile	0.92	0.36	0.89	
25th Percentile	0.71	0.34	0.62	
Median	0.35	0.31	0.34	
75th Percentile	(0.01)	0.28	0.04	
90th Percentile	(0.32)	0.25	(0.25)	
SERS 2025 Retirement Fund	●	0.04	0.29	0.38

SERS 2030 Retirement Fund

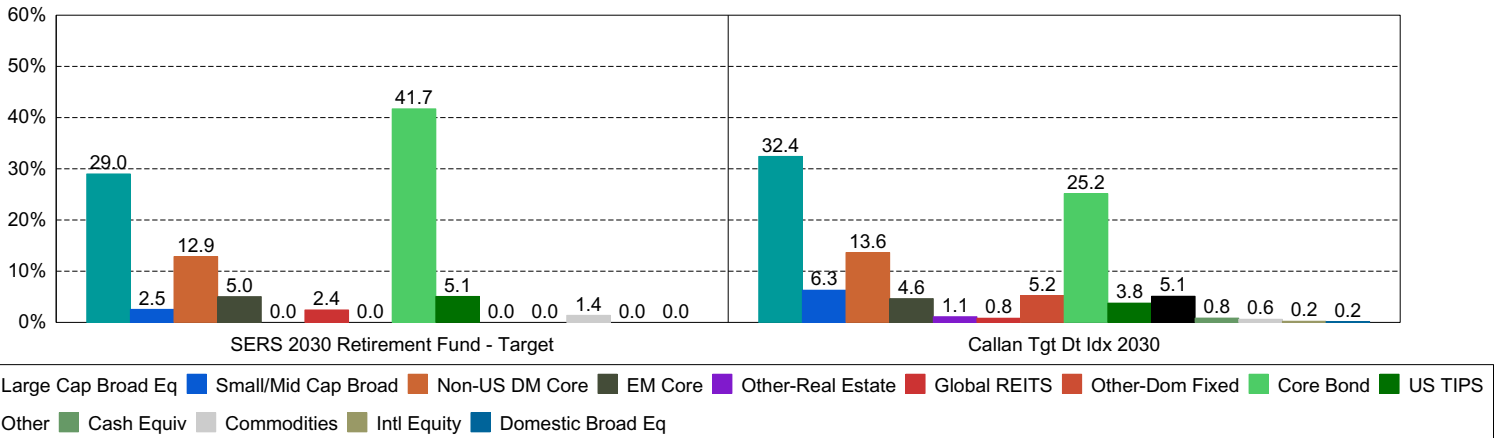
Target Date Fund Asset Allocation as of September 30, 2023

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.

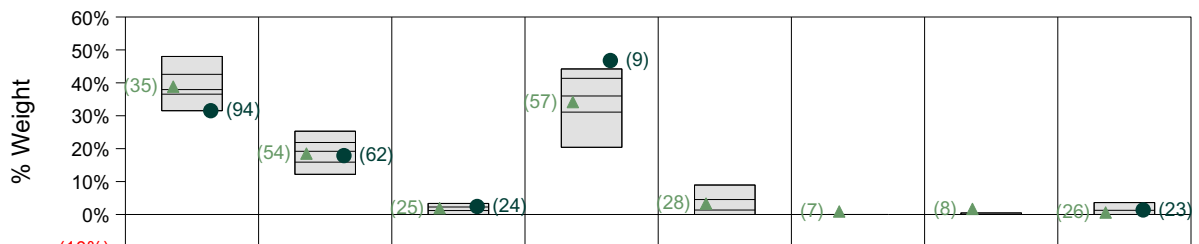
Macro-Level Asset Allocation



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	48.01	25.30	3.35	44.22	8.95	0.00	0.46	3.62
25th Percentile	42.58	21.87	2.27	41.36	4.54	0.00	0.00	1.27
Median	37.95	19.20	1.20	36.00	1.35	0.00	0.00	0.00
75th Percentile	36.55	15.90	0.00	31.10	0.00	0.00	0.00	0.00
90th Percentile	31.53	12.20	0.00	20.41	0.00	0.00	0.00	0.00

SERS 2030 Retirement Fund - Target	●	31.53	17.89	2.43	46.78	-	-	-	1.37
Callan Tgt Dt Idx 2030	▲	38.86	18.51	1.92	34.16	3.32	0.92	1.70	0.61

SERS 2030 Retirement Fund Period Ended September 30, 2023

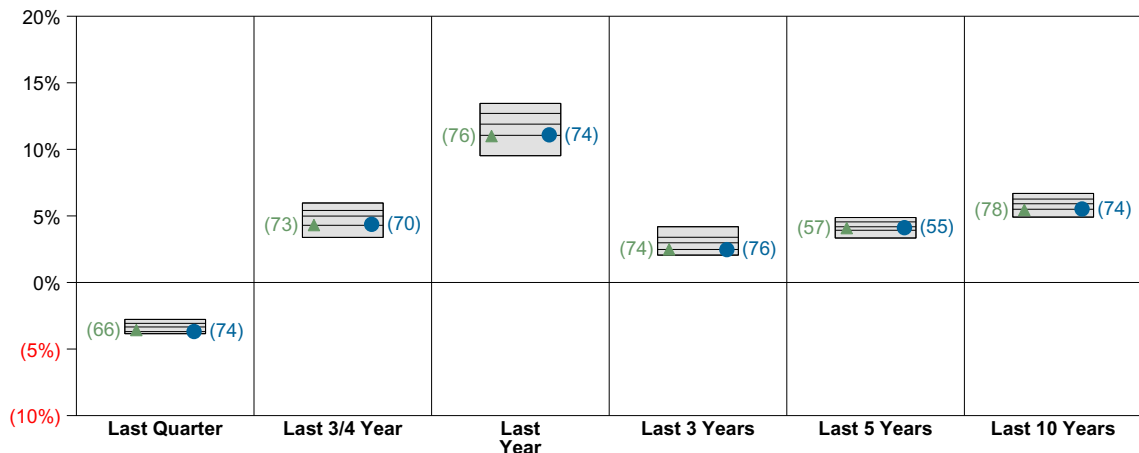
Investment Philosophy

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

Quarterly Summary and Highlights

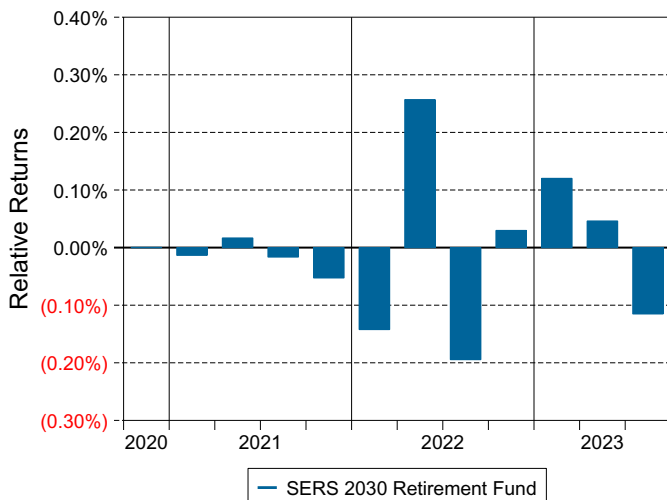
- SERS 2030 Retirement Fund's portfolio posted a (3.68)% return for the quarter placing it in the 74 percentile of the Callan Target Date 2030 group for the quarter and in the 74 percentile for the last year.
- SERS 2030 Retirement Fund's portfolio underperformed the LifePath Index 2030 CB by 0.11% for the quarter and outperformed the LifePath Index 2030 CB for the year by 0.09%.

Performance vs Callan Target Date 2030 (Net)

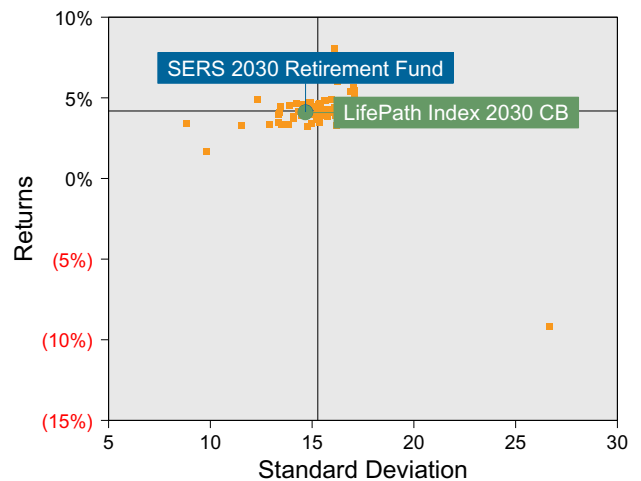


	Last Quarter	Last 3/4 Year	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	(2.77)	5.97	13.45	4.19	4.88	6.69
25th Percentile	(3.07)	5.41	12.70	3.40	4.55	6.27
Median	(3.34)	4.99	11.90	2.98	4.19	5.91
75th Percentile	(3.69)	4.29	11.05	2.48	3.92	5.50
90th Percentile	(3.85)	3.39	9.52	2.06	3.34	4.91
SERS 2030 Retirement Fund	(3.68)	4.37	11.09	2.47	4.12	5.52
LifePath Index 2030 CB	(3.57)	4.32	11.00	2.49	4.09	5.45

Relative Return vs LifePath Index 2030 CB



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

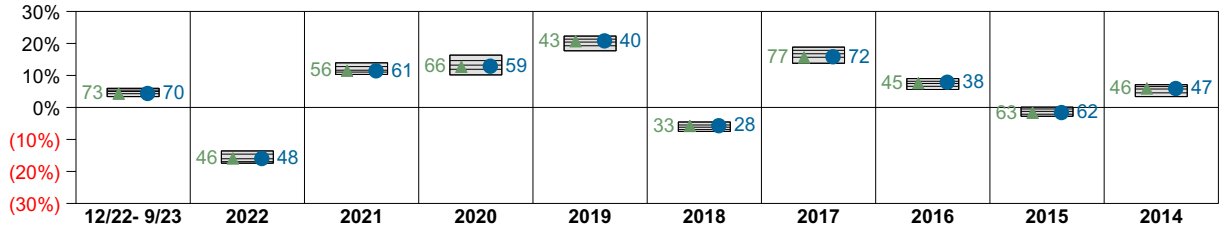


SERS 2030 Retirement Fund Return Analysis Summary

Return Analysis

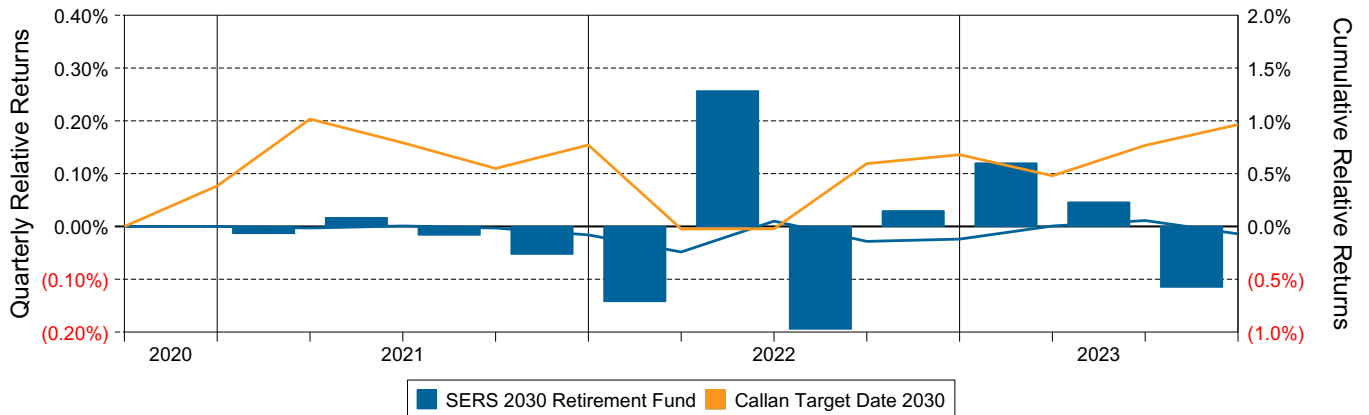
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

Performance vs Callan Target Date 2030 (Net)

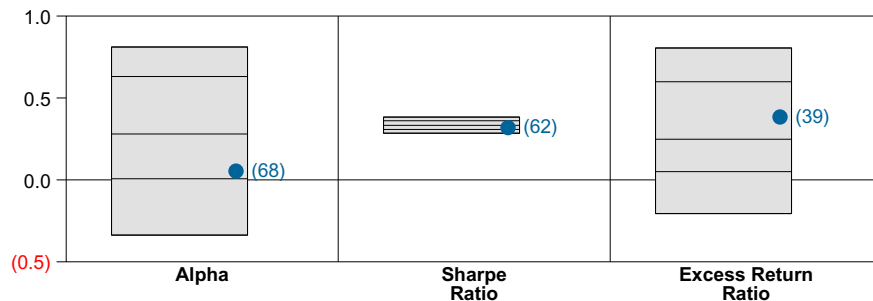


	12/22- 9/23	2022	2021	2020	2019	2018	2017	2016	2015	2014
10th Percentile	5.97	(13.59)	13.94	16.35	22.30	(4.55)	18.85	9.02	0.09	7.11
25th Percentile	5.41	(14.60)	12.77	14.64	21.34	(5.48)	17.85	8.17	(0.48)	6.52
Median	4.99	(16.04)	11.63	13.23	20.43	(6.17)	16.77	7.49	(1.22)	5.76
75th Percentile	4.29	(16.94)	11.05	11.92	19.28	(6.93)	15.68	6.60	(2.12)	4.56
90th Percentile	3.39	(17.42)	10.31	10.16	17.70	(7.50)	13.81	5.61	(2.77)	3.39
SERS 2030 Retirement Fund	● 4.37	(15.97)	11.43	12.88	20.80	(5.71)	15.83	7.88	(1.60)	5.92
LifePath Index 2030 CB	▲ 4.32	(15.92)	11.50	12.72	20.70	(5.76)	15.64	7.61	(1.66)	5.95

Cumulative and Quarterly Relative Returns vs LifePath Index 2030 CB



Risk Adjusted Return Measures vs LifePath Index 2030 CB Rankings Against Callan Target Date 2030 (Net) Seven Years Ended September 30, 2023

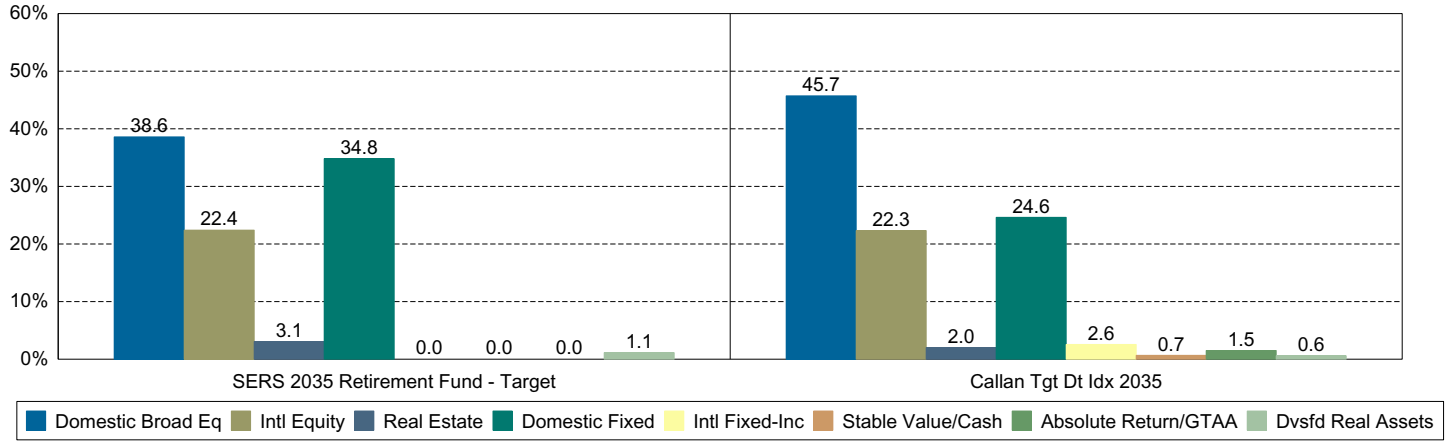


10th Percentile	0.81	0.38	0.80
25th Percentile	0.63	0.36	0.60
Median	0.28	0.33	0.25
75th Percentile	0.01	0.31	0.05
90th Percentile	(0.34)	0.28	(0.21)
SERS 2030 Retirement Fund	● 0.05	0.32	0.38

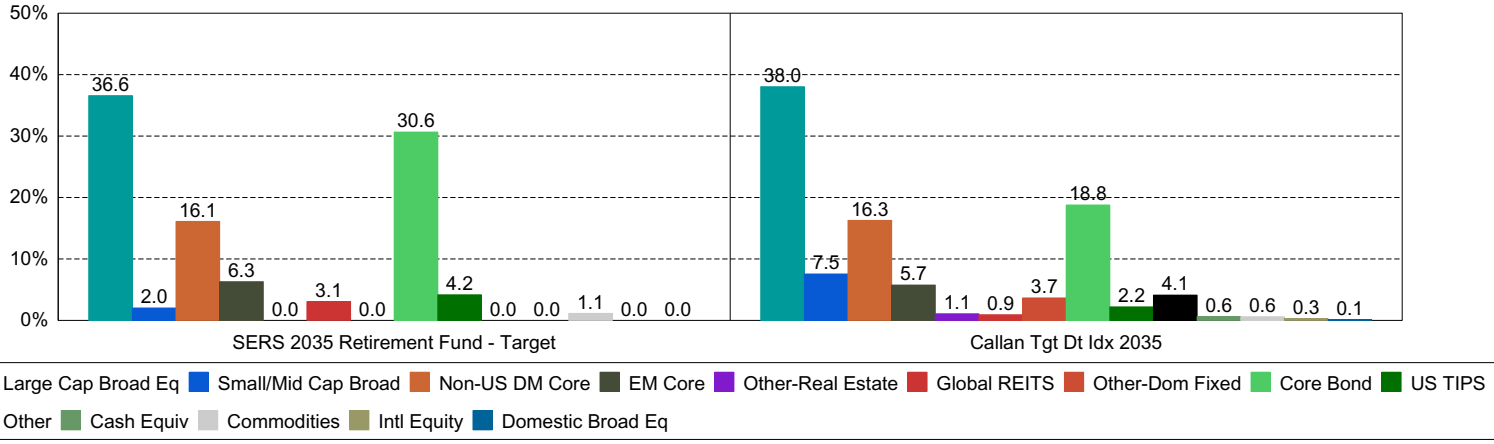
SERS 2035 Retirement Fund Target Date Fund Asset Allocation as of September 30, 2023

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

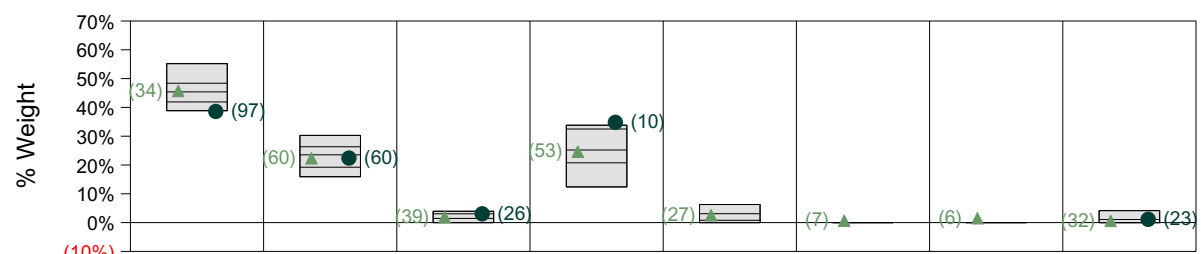
Macro-Level Asset Allocation



Micro-Level Asset Allocation



Macro Asset Allocation Rankings vs. Callan Target Date 2035



	Domestic Broad Eq	Intl Equity	Real Estate	Domestic Fixed	Intl Fixed-Inc	Stable Value/Cash	Absolute Return/GTAA	Dvsfd Real Assets
10th Percentile	55.19	30.28	3.93	33.80	6.28	0.00	0.00	4.16
25th Percentile	48.39	26.33	3.06	32.50	3.09	0.00	0.00	1.08
Median	45.39	23.53	1.45	25.20	0.81	0.00	0.00	0.00
75th Percentile	41.90	19.23	0.00	20.76	0.00	0.00	0.00	0.00
90th Percentile	38.86	15.92	0.00	12.38	0.00	0.00	0.00	0.00
SERS 2035 Retirement Fund - Target	● 38.59	22.40	3.06	34.81	-	-	-	1.13
Callan Tgt Dt Idx 2035	▲ 45.72	22.33	2.00	24.63	2.56	0.67	1.51	0.59

SERS 2035 Retirement Fund Period Ended September 30, 2023

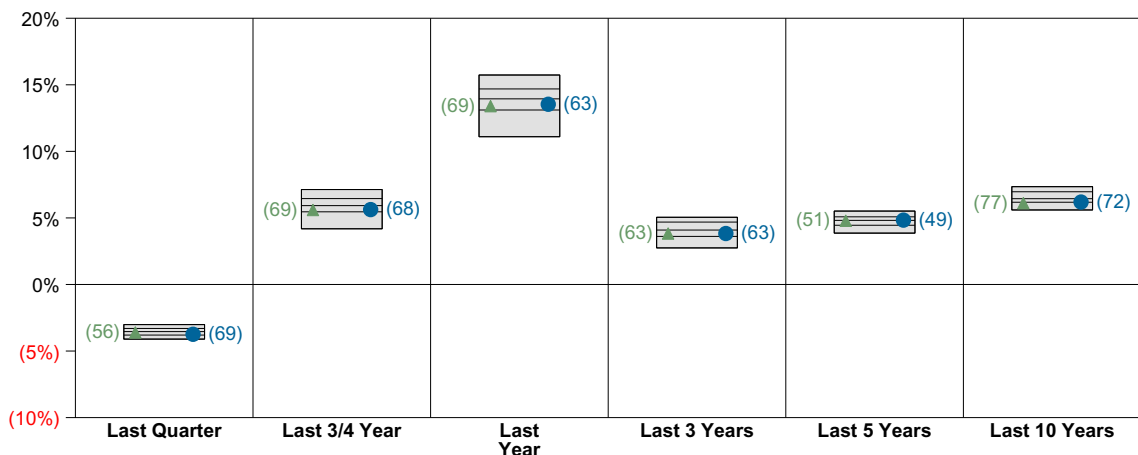
Investment Philosophy

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

Quarterly Summary and Highlights

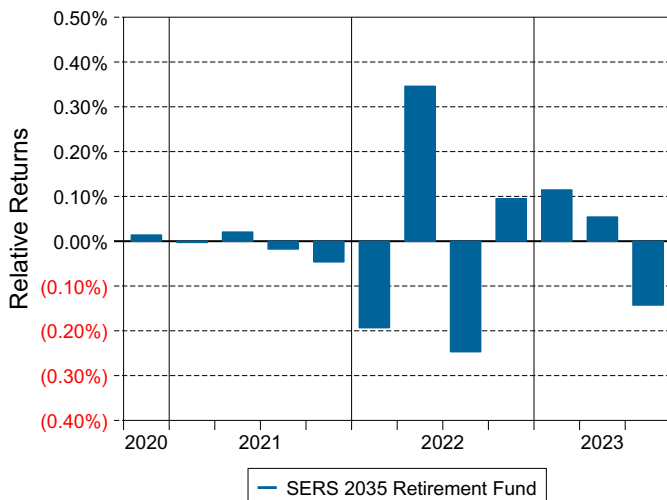
- SERS 2035 Retirement Fund's portfolio posted a (3.74)% return for the quarter placing it in the 69 percentile of the Callan Target Date 2035 group for the quarter and in the 63 percentile for the last year.
- SERS 2035 Retirement Fund's portfolio underperformed the LifePath Index 2035 CB by 0.14% for the quarter and outperformed the LifePath Index 2035 CB for the year by 0.14%.

Performance vs Callan Target Date 2035 (Net)

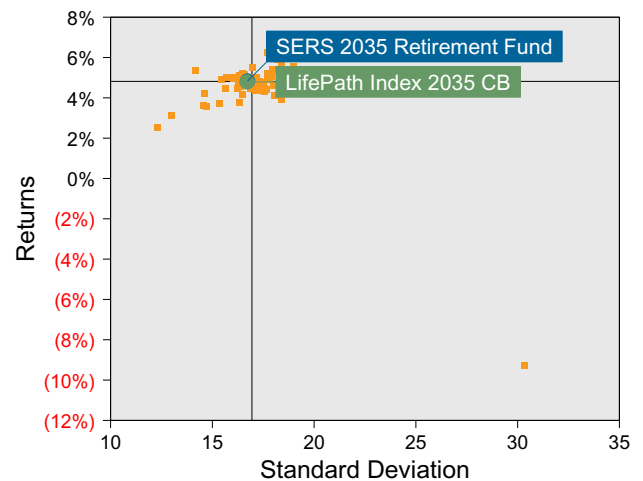


10th Percentile	(3.01)	7.13	15.73	5.05	5.51	7.35
25th Percentile	(3.30)	6.45	14.69	4.69	5.08	6.96
Median	(3.54)	5.92	13.94	4.09	4.82	6.44
75th Percentile	(3.80)	5.46	13.11	3.61	4.45	6.18
90th Percentile	(4.10)	4.18	11.10	2.75	3.86	5.60
SERS 2035 Retirement Fund	(3.74)	5.63	13.54	3.83	4.83	6.19
LifePath Index 2035 CB	(3.60)	5.60	13.40	3.83	4.79	6.11

Relative Return vs LifePath Index 2035 CB



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

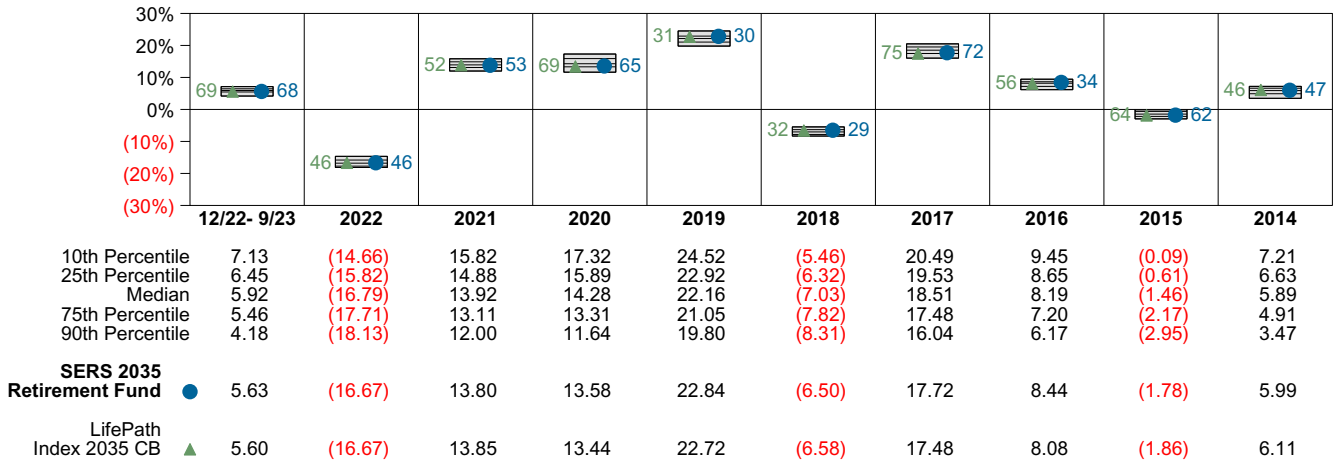


SERS 2035 Retirement Fund Return Analysis Summary

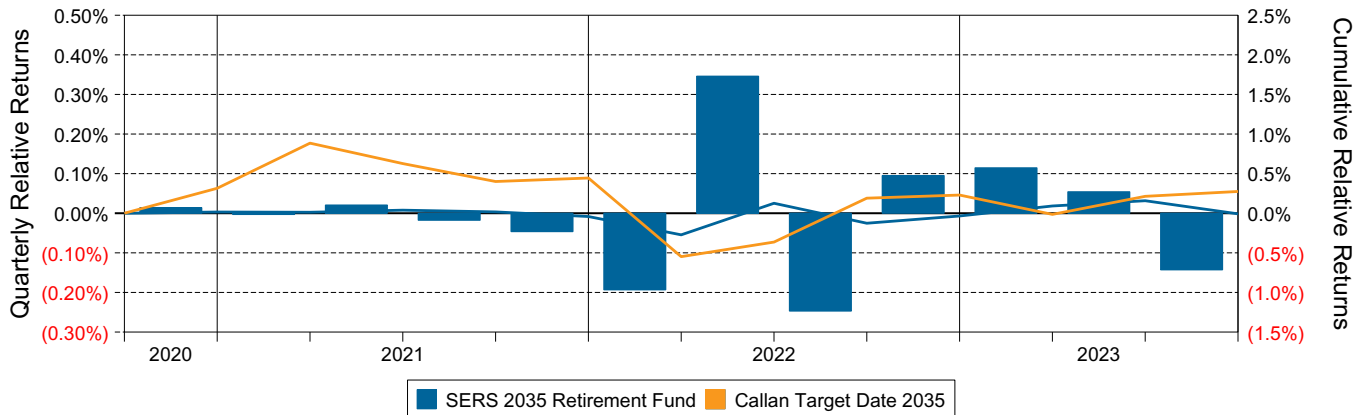
Return Analysis

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

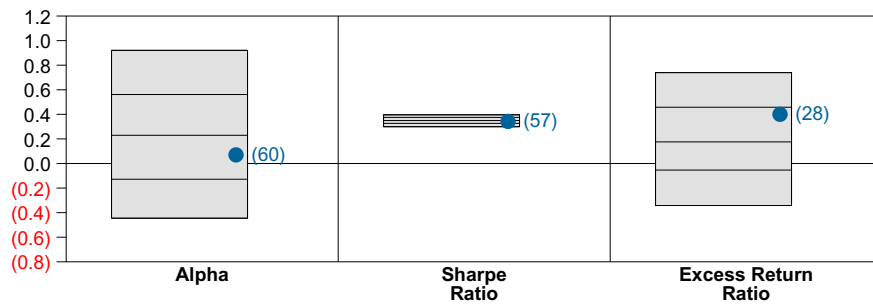
Performance vs Callan Target Date 2035 (Net)



Cumulative and Quarterly Relative Returns vs LifePath Index 2035 CB



Risk Adjusted Return Measures vs LifePath Index 2035 CB Rankings Against Callan Target Date 2035 (Net) Seven Years Ended September 30, 2023

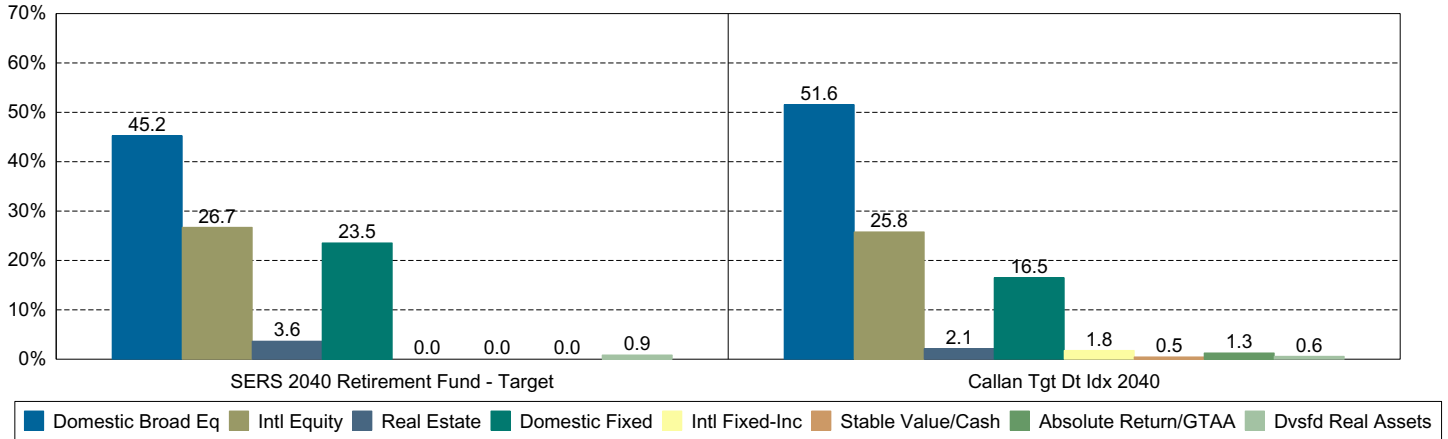


SERS 2040 Retirement Fund

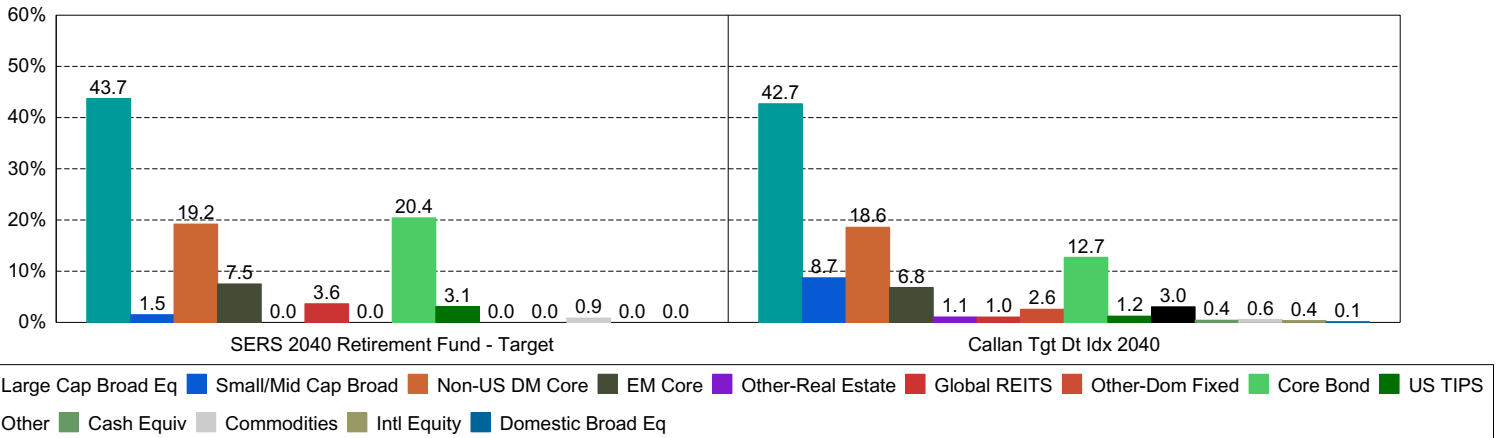
Target Date Fund Asset Allocation as of September 30, 2023

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.

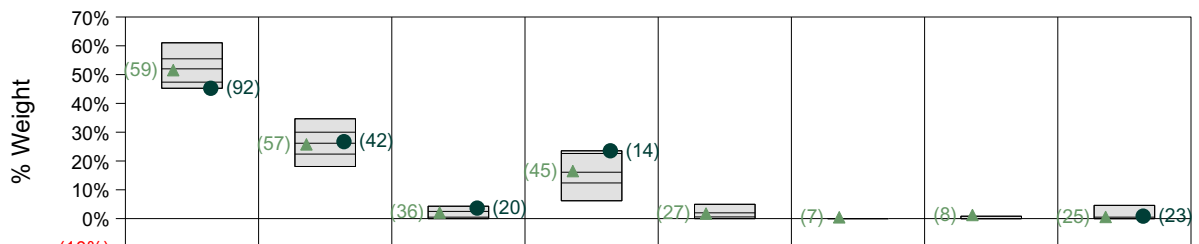
Macro-Level Asset Allocation



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	61.05	34.66	4.30	23.54	4.96	0.00	0.82	4.59
25th Percentile	55.48	30.00	2.50	22.60	2.00	0.00	0.00	0.50
Median	52.00	26.16	0.50	16.10	0.58	0.00	0.00	0.00
75th Percentile	47.38	22.40	0.00	12.38	0.00	0.00	0.00	0.00
90th Percentile	45.25	18.10	0.00	6.20	0.00	0.00	0.00	0.00

SERS 2040 Retirement Fund - Target	●	45.25	26.71	3.65	23.54	-	-	0.85
Callan Tgt Dt Idx 2040	▲	51.55	25.78	2.10	16.50	1.77	0.45	1.26

SERS 2040 Retirement Fund Period Ended September 30, 2023

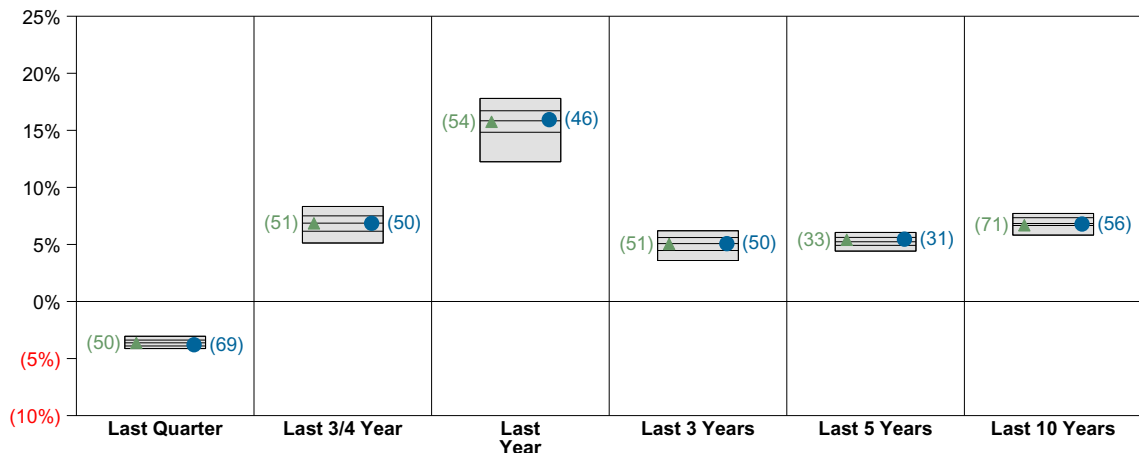
Investment Philosophy

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

Quarterly Summary and Highlights

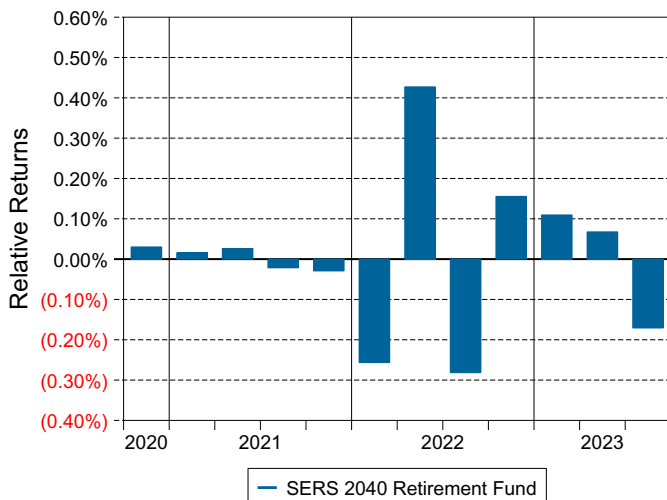
- SERS 2040 Retirement Fund's portfolio posted a (3.79)% return for the quarter placing it in the 69 percentile of the Callan Target Date 2040 group for the quarter and in the 46 percentile for the last year.
- SERS 2040 Retirement Fund's portfolio underperformed the LifePath Index 2040 CB by 0.16% for the quarter and outperformed the LifePath Index 2040 CB for the year by 0.19%.

Performance vs Callan Target Date 2040 (Net)

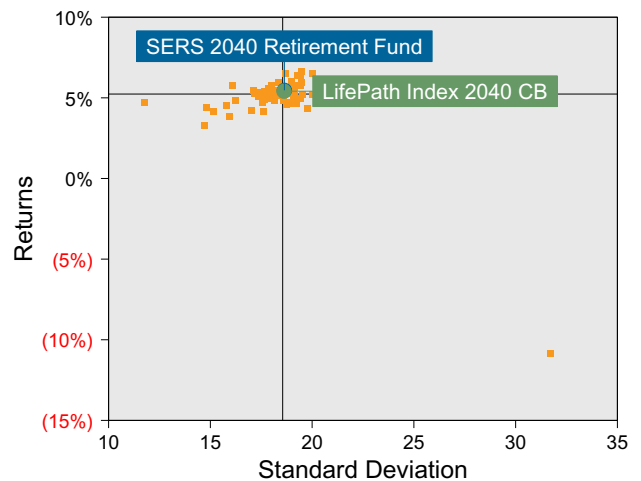


10th Percentile	(3.05)	8.33	17.80	6.20	6.05	7.72
25th Percentile	(3.38)	7.50	16.71	5.61	5.62	7.34
Median	(3.62)	6.87	15.84	5.07	5.23	6.83
75th Percentile	(3.90)	6.16	14.83	4.47	4.92	6.66
90th Percentile	(4.13)	5.12	12.25	3.59	4.42	5.82
SERS 2040 Retirement Fund	(3.79)	6.86	15.94	5.07	5.46	6.79
LifePath Index 2040 CB	(3.63)	6.85	15.75	5.05	5.41	6.68

Relative Return vs LifePath Index 2040 CB



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

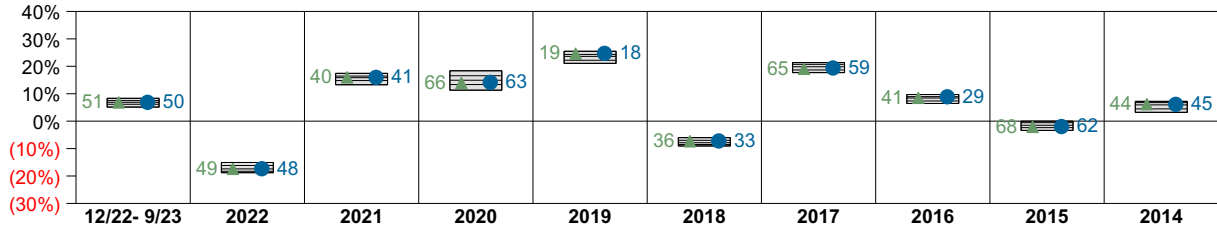


SERS 2040 Retirement Fund Return Analysis Summary

Return Analysis

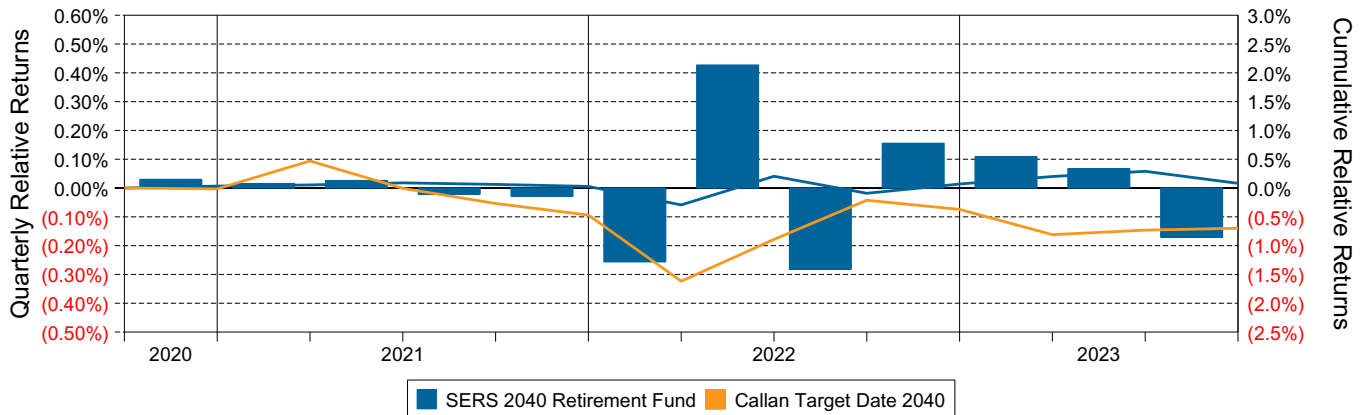
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

Performance vs Callan Target Date 2040 (Net)

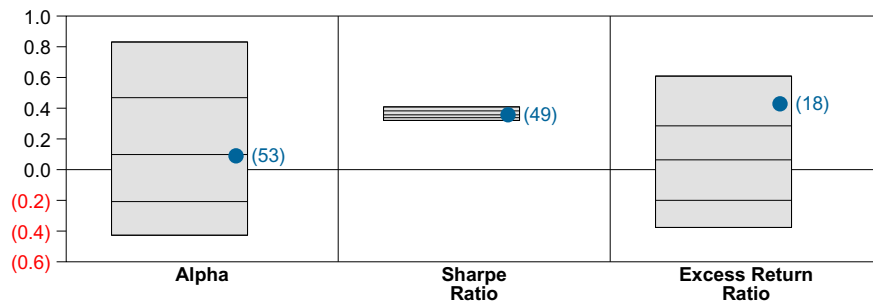


	12/22- 9/23	2022	2021	2020	2019	2018	2017	2016	2015	2014
10th Percentile	8.33	(15.07)	17.43	18.37	25.47	(6.01)	21.35	9.71	(0.03)	7.22
25th Percentile	7.50	(16.16)	16.42	16.56	24.33	(6.99)	20.71	8.93	(0.55)	6.76
Median	6.87	(17.40)	15.85	14.91	23.62	(7.87)	19.84	8.44	(1.51)	5.94
75th Percentile	6.16	(18.28)	14.80	13.35	22.20	(8.52)	18.66	7.35	(2.36)	4.47
90th Percentile	5.12	(18.79)	13.27	11.29	21.07	(9.05)	17.70	6.44	(3.38)	3.21
SERS 2040 Retirement Fund	6.86	(17.35)	15.96	14.14	24.71	(7.22)	19.38	8.88	(1.98)	6.12
LifePath Index 2040 CB	6.85	(17.38)	15.97	13.98	24.62	(7.33)	19.09	8.51	(2.08)	6.21

Cumulative and Quarterly Relative Returns vs LifePath Index 2040 CB



Risk Adjusted Return Measures vs LifePath Index 2040 CB Rankings Against Callan Target Date 2040 (Net) Seven Years Ended September 30, 2023



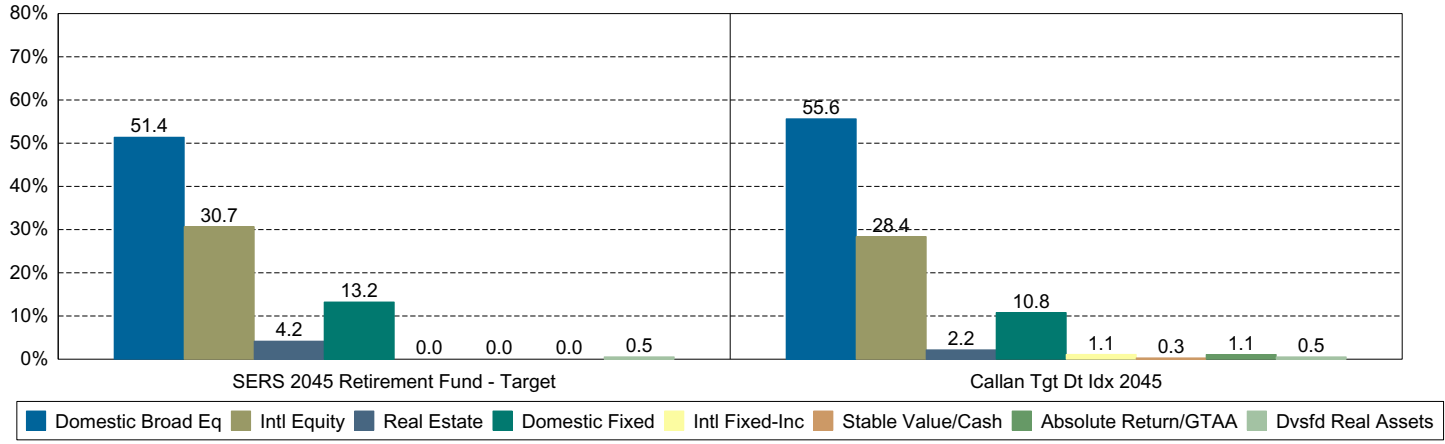
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.83	0.41	0.61
25th Percentile	0.47	0.38	0.29
Median	0.10	0.36	0.06
75th Percentile	(0.21)	0.34	(0.20)
90th Percentile	(0.43)	0.32	(0.38)
SERS 2040 Retirement Fund	0.09	0.36	0.43

SERS 2045 Retirement Fund

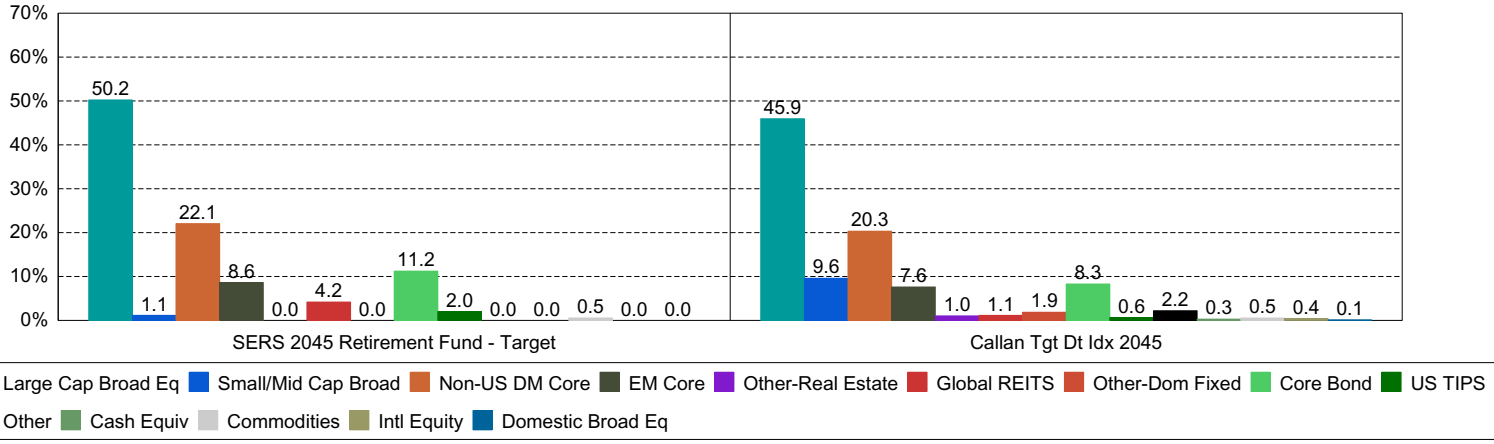
Target Date Fund Asset Allocation as of September 30, 2023

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.

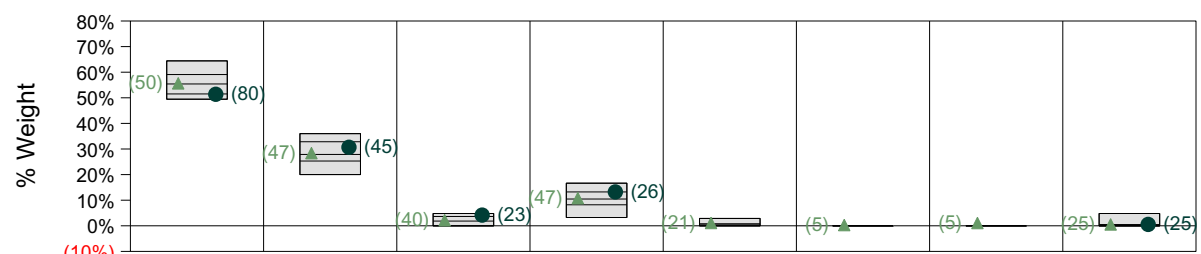
Macro-Level Asset Allocation



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	64.43	36.00	4.80	16.65	2.88	0.00	0.00	4.80
25th Percentile	59.08	32.83	3.65	13.23	0.80	0.00	0.00	0.49
Median	55.41	27.88	1.84	10.46	0.37	0.00	0.00	0.00
75th Percentile	51.51	25.30	0.00	8.20	0.00	0.00	0.00	0.00
90th Percentile	49.45	20.02	0.00	3.24	0.00	0.00	0.00	0.00
SERS 2045 Retirement Fund - Target	● 51.37	30.68	4.17	13.23	-	-	-	0.54
Callan Tgt Dt Idx 2045	▲ 55.64	28.37	2.16	10.79	1.11	0.30	1.09	0.54

SERS 2045 Retirement Fund Period Ended September 30, 2023

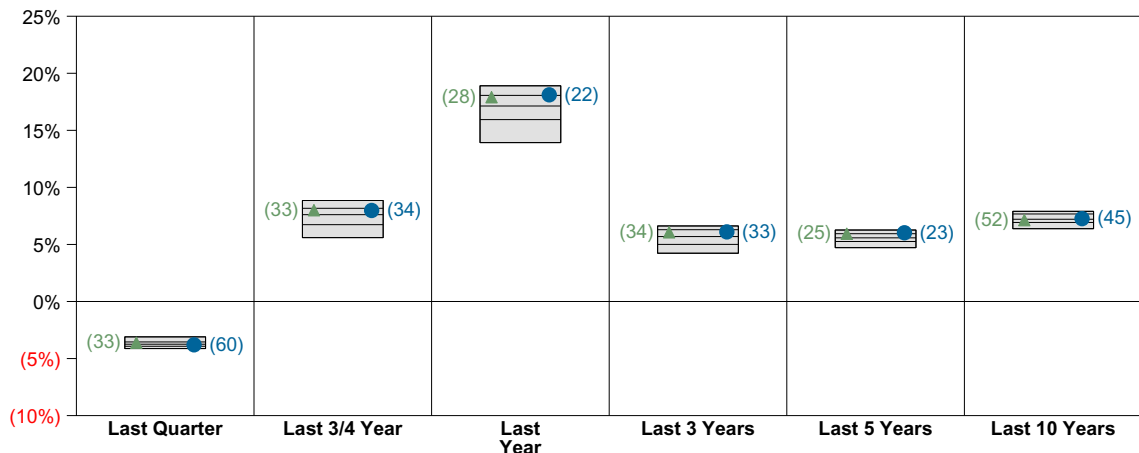
Investment Philosophy

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

Quarterly Summary and Highlights

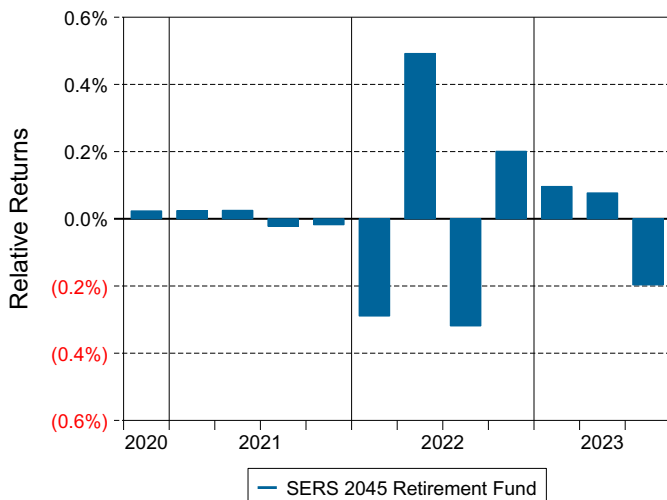
- SERS 2045 Retirement Fund's portfolio posted a (3.80)% return for the quarter placing it in the 60 percentile of the Callan Target Date 2045 group for the quarter and in the 22 percentile for the last year.
- SERS 2045 Retirement Fund's portfolio underperformed the LifePath Index 2045 CB by 0.19% for the quarter and outperformed the LifePath Index 2045 CB for the year by 0.21%.

Performance vs Callan Target Date 2045 (Net)

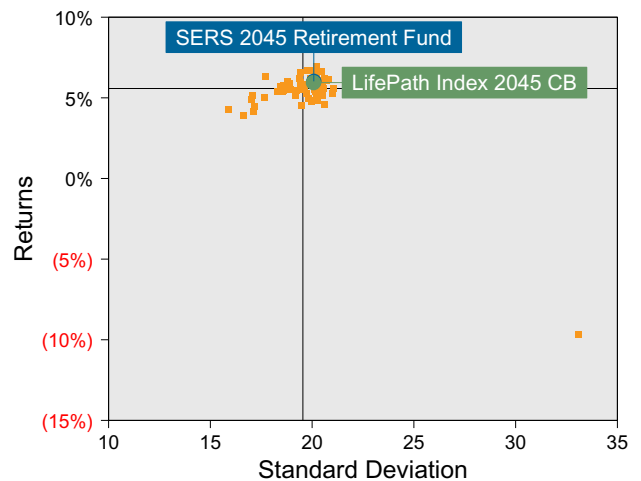


10th Percentile	(3.10)	8.85	18.90	6.62	6.26	7.90
25th Percentile	(3.55)	8.17	18.06	6.29	5.94	7.67
Median	(3.74)	7.61	17.13	5.69	5.58	7.21
75th Percentile	(3.92)	6.73	15.94	5.00	5.26	6.93
90th Percentile	(4.13)	5.60	13.93	4.23	4.72	6.38
SERS 2045 Retirement Fund	(3.80)	7.98	18.11	6.10	6.02	7.26
LifePath Index 2045 CB	(3.61)	8.00	17.91	6.07	5.94	7.13

Relative Return vs LifePath Index 2045 CB



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

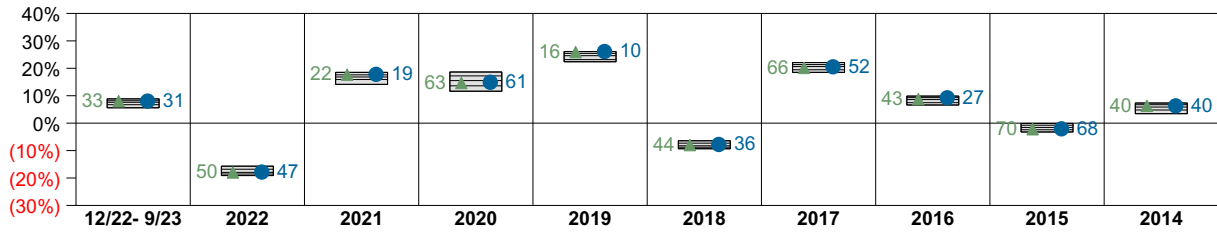


SERS 2045 Retirement Fund Return Analysis Summary

Return Analysis

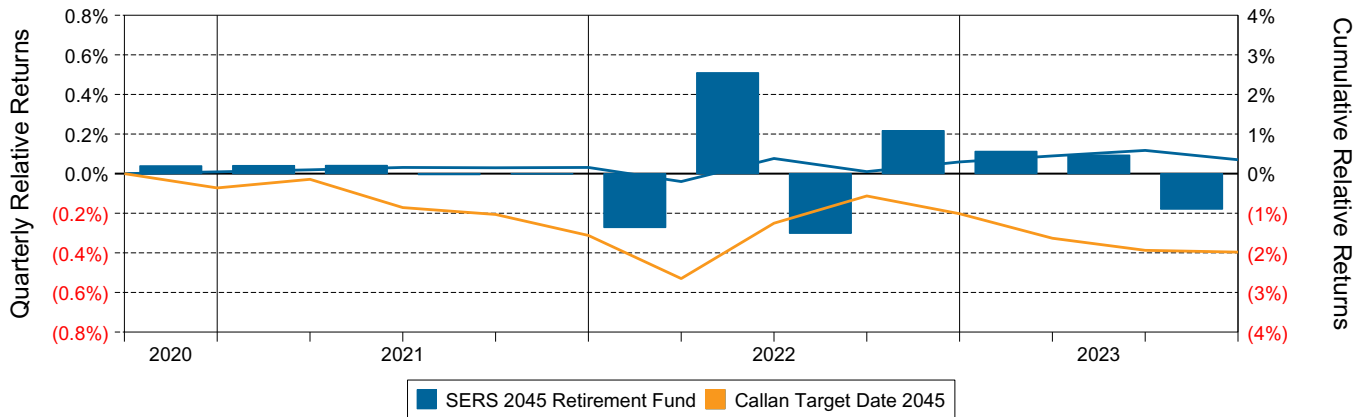
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

Performance vs Callan Target Date 2045 (Net)

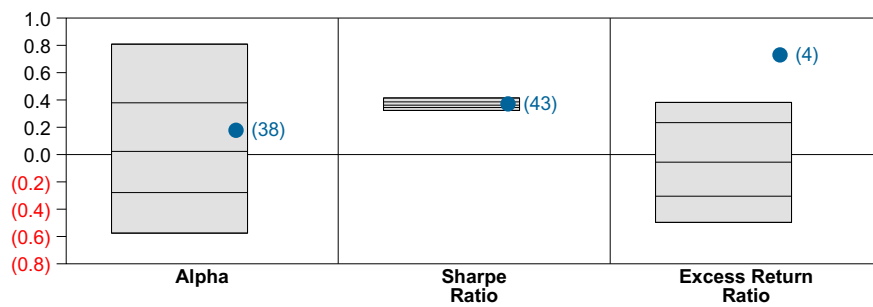


Period	12/22- 9/23	2022	2021	2020	2019	2018	2017	2016	2015	2014
10th Percentile	8.85	(15.69)	18.52	18.65	26.10	(6.43)	22.09	9.86	(0.12)	7.33
25th Percentile	8.17	(16.79)	17.62	17.23	25.44	(7.30)	21.36	9.31	(0.75)	6.73
Median	7.61	(17.95)	16.83	15.52	24.60	(8.25)	20.63	8.59	(1.57)	5.87
75th Percentile	6.73	(18.55)	15.91	13.61	23.16	(8.78)	19.47	7.47	(2.41)	4.80
90th Percentile	5.60	(19.12)	14.14	11.64	22.38	(9.33)	18.51	6.62	(3.23)	3.45
SERS 2045 Retirement Fund	8.03	(17.84)	17.79	14.90	26.12	(7.78)	20.54	9.25	(2.07)	6.30
LifePath Index 2045 CB	8.00	(17.96)	17.70	14.65	25.90	(7.99)	20.15	8.77	(2.22)	6.31

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, 2023



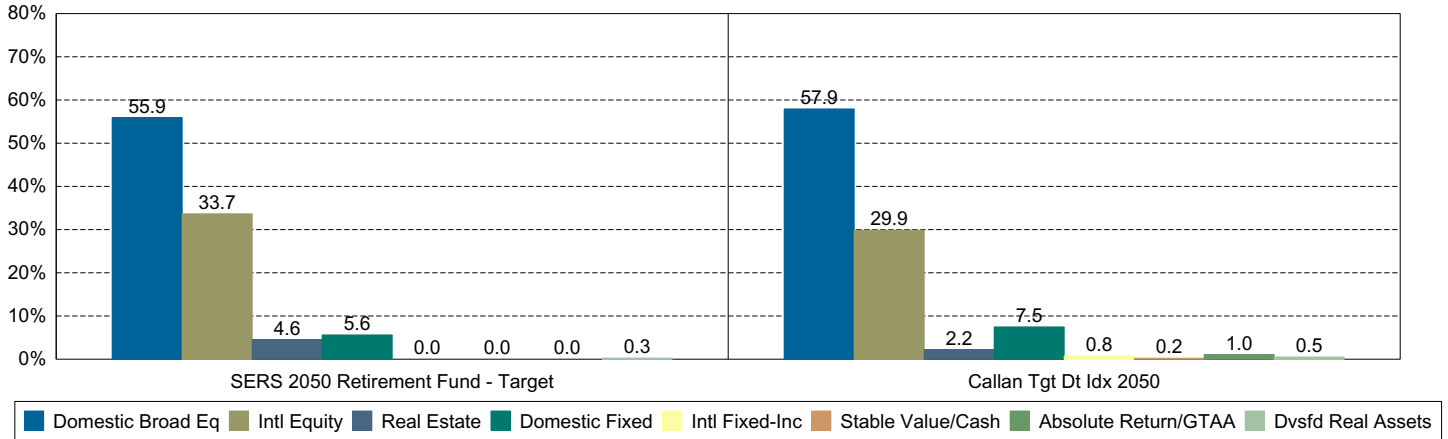
Measure	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.81	0.41	0.38
25th Percentile	0.38	0.39	0.23
Median	0.02	0.36	(0.06)
75th Percentile	(0.28)	0.34	(0.30)
90th Percentile	(0.58)	0.32	(0.50)
SERS 2045 Retirement Fund	0.18	0.37	0.73

SERS 2050 Retirement Fund

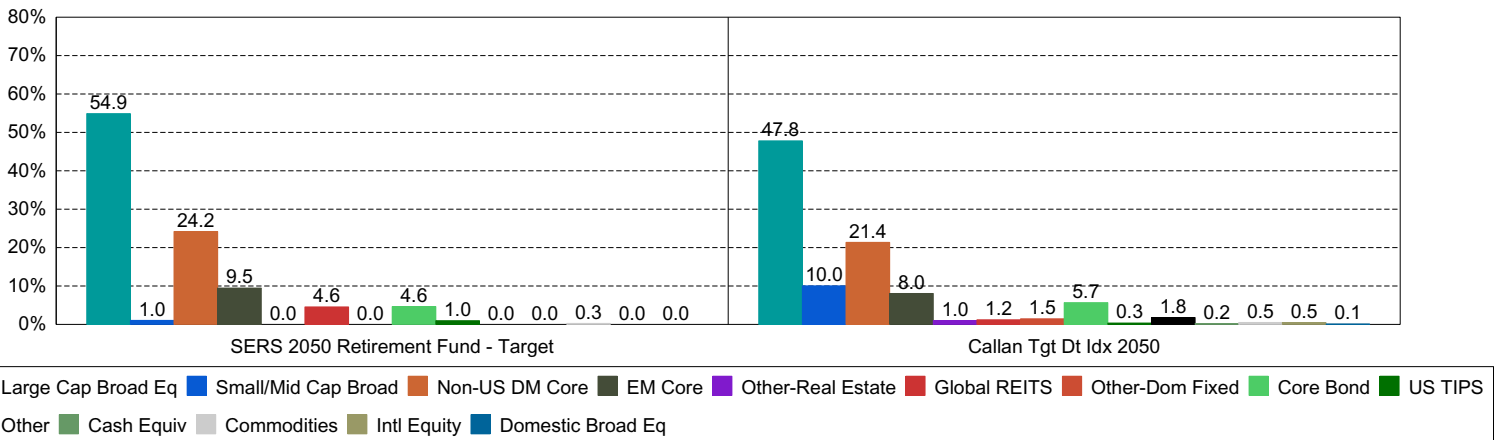
Target Date Fund Asset Allocation as of September 30, 2023

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.

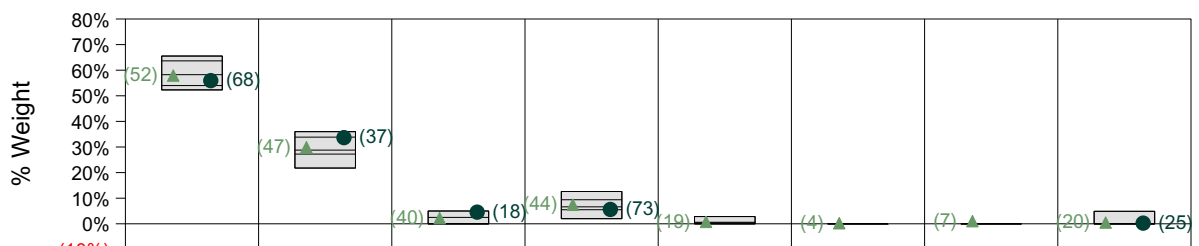
Macro-Level Asset Allocation



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	65.53	36.00	5.00	12.62	2.83	0.00	0.00	4.88
25th Percentile	63.65	33.85	2.50	9.40	0.60	0.00	0.00	0.00
Median	58.25	28.78	0.00	6.62	0.35	0.00	0.00	0.00
75th Percentile	54.00	27.23	0.00	5.50	0.00	0.00	0.00	0.00
90th Percentile	52.30	21.78	0.00	2.00	0.00	0.00	0.00	0.00
SERS 2050 Retirement Fund - Target	● 55.93	33.65	4.55	5.61	-	-	-	0.26
Callan Tgt Dt Idx 2050	▲ 57.93	29.88	2.20	7.47	0.76	0.23	1.03	0.50

SERS 2050 Retirement Fund Period Ended September 30, 2023

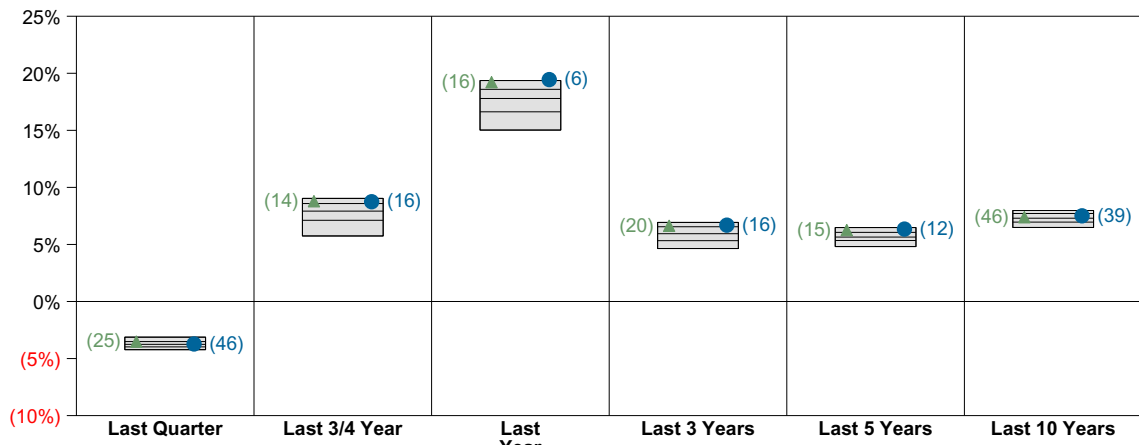
Investment Philosophy

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

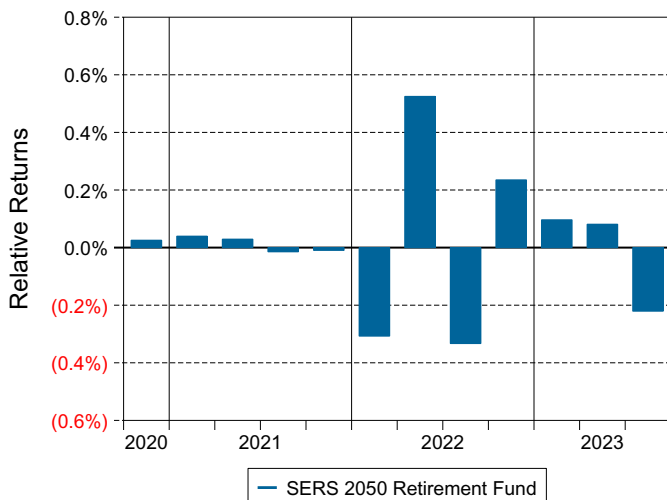
Quarterly Summary and Highlights

- SERS 2050 Retirement Fund's portfolio posted a (3.72)% return for the quarter placing it in the 46 percentile of the Callan Target Date 2050 group for the quarter and in the 6 percentile for the last year.
- SERS 2050 Retirement Fund's portfolio underperformed the LifePath Index 2050 CB by 0.21% for the quarter and outperformed the LifePath Index 2050 CB for the year by 0.23%.

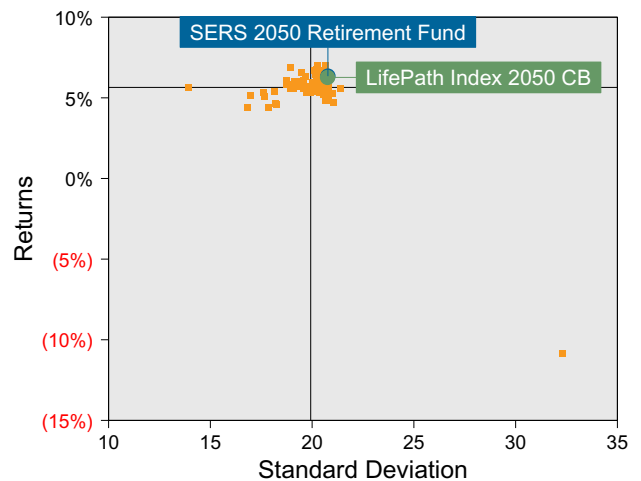
Performance vs Callan Target Date 2050 (Net)



Relative Return vs LifePath Index 2050 CB



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

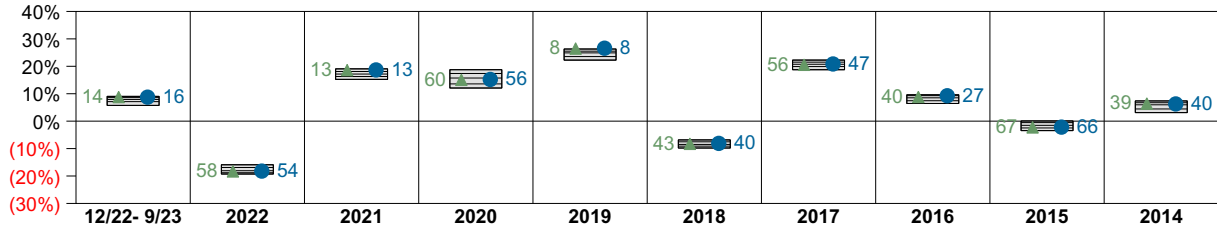


SERS 2050 Retirement Fund Return Analysis Summary

Return Analysis

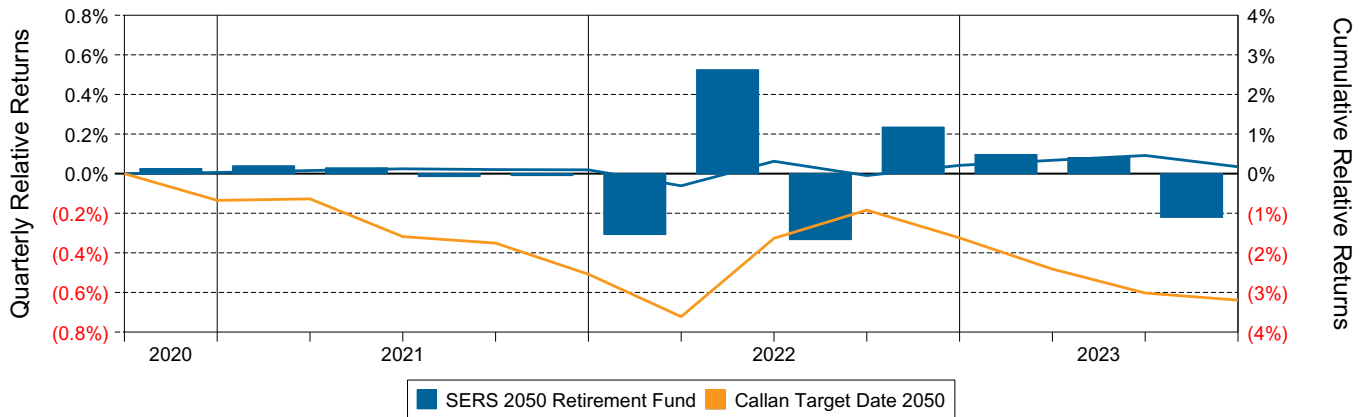
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

Performance vs Callan Target Date 2050 (Net)

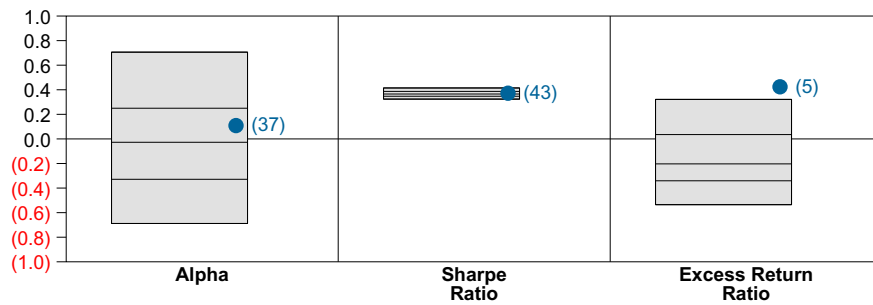


	12/22- 9/23	2022	2021	2020	2019	2018	2017	2016	2015	2014
10th Percentile	9.03	(15.90)	19.07	18.76	26.30	(6.84)	22.27	9.60	0.05	7.37
25th Percentile	8.58	(16.89)	18.10	17.38	25.51	(7.53)	21.51	9.29	(0.54)	6.72
Median	7.92	(18.07)	17.17	15.73	24.89	(8.48)	20.74	8.51	(1.53)	5.96
75th Percentile	7.12	(18.80)	16.27	13.59	23.55	(9.11)	19.91	7.45	(2.48)	4.45
90th Percentile	5.74	(19.28)	15.23	12.08	22.26	(9.80)	18.75	6.44	(3.45)	3.12
SERS 2050 Retirement Fund	● 8.74	(18.20)	18.67	15.20	26.60	(8.11)	20.85	9.26	(2.17)	6.28
LifePath Index 2050 CB	▲ 8.79	(18.30)	18.62	15.07	26.48	(8.26)	20.55	8.82	(2.26)	6.41

Cumulative and Quarterly Relative Returns vs LifePath Index 2050 CB



Risk Adjusted Return Measures vs LifePath Index 2050 CB Rankings Against Callan Target Date 2050 (Net) Seven Years Ended September 30, 2023

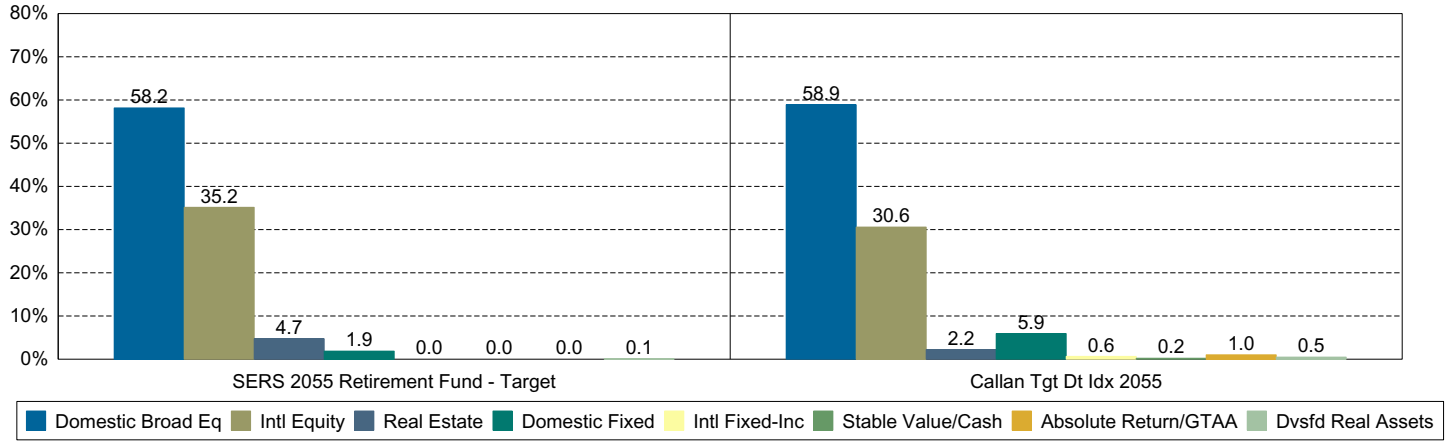


	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.71	0.41	0.32
25th Percentile	0.25	0.39	0.04
Median	(0.03)	0.37	(0.20)
75th Percentile	(0.33)	0.35	(0.34)
90th Percentile	(0.69)	0.32	(0.54)
SERS 2050 Retirement Fund	● 0.11	0.37	0.42

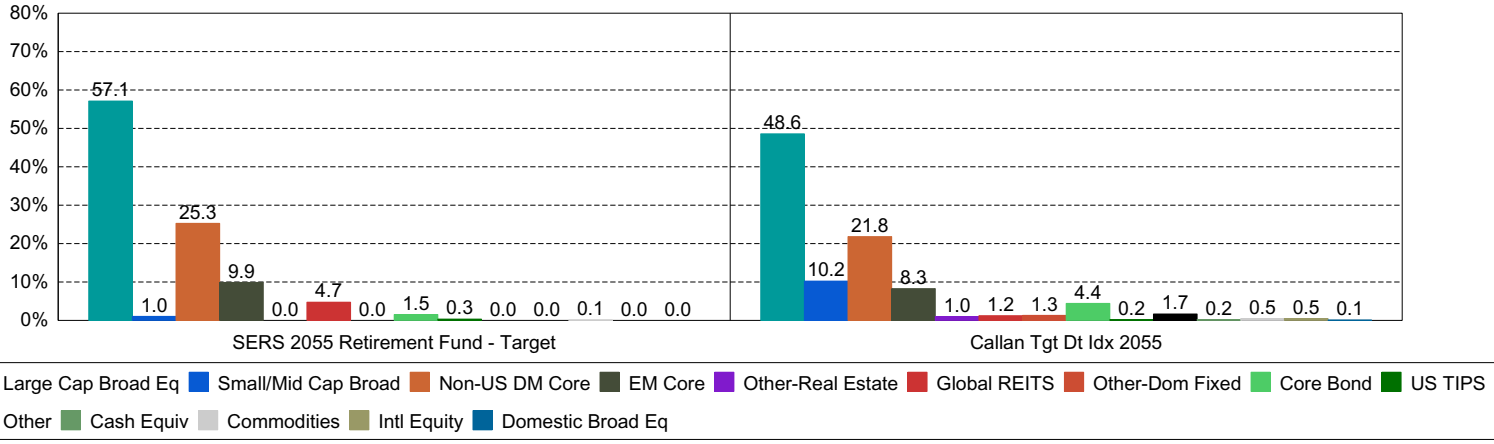
SERS 2055 Retirement Fund Target Date Fund Asset Allocation as of September 30, 2023

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

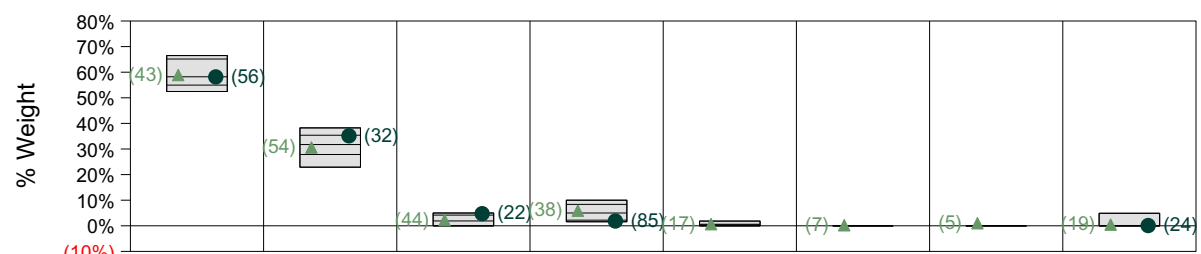
Macro-Level Asset Allocation



Micro-Level Asset Allocation



Macro Asset Allocation Rankings vs. Callan Target Date 2055



	Domestic Broad Eq	Intl Equity	Real Estate	Domestic Fixed	Intl Fixed-Inc	Stable Value/Cash	Absolute Return/GTAA	Dvsfd Real Assets
10th Percentile	66.50	38.25	5.00	10.00	1.84	0.00	0.00	4.90
25th Percentile	65.15	35.38	4.18	8.36	0.60	0.00	0.00	0.07
Median	58.21	31.74	1.90	5.00	0.35	0.00	0.00	0.00
75th Percentile	54.96	27.85	0.00	2.21	0.00	0.00	0.00	0.00
90th Percentile	52.46	22.90	0.00	1.58	0.00	0.00	0.00	0.00
SERS 2055 Retirement Fund - Target	● 58.16	35.15	4.74	1.86	-	-	-	0.09
Callan Tgt Dt Idx 2055	▲ 58.89	30.58	2.23	5.93	0.65	0.22	1.01	0.48

SERS 2055 Retirement Fund Period Ended September 30, 2023

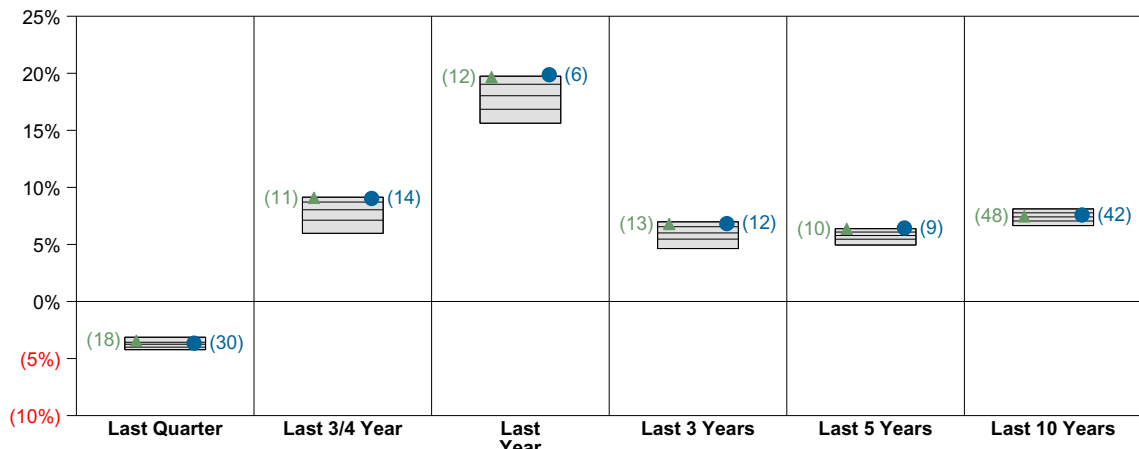
Investment Philosophy

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

Quarterly Summary and Highlights

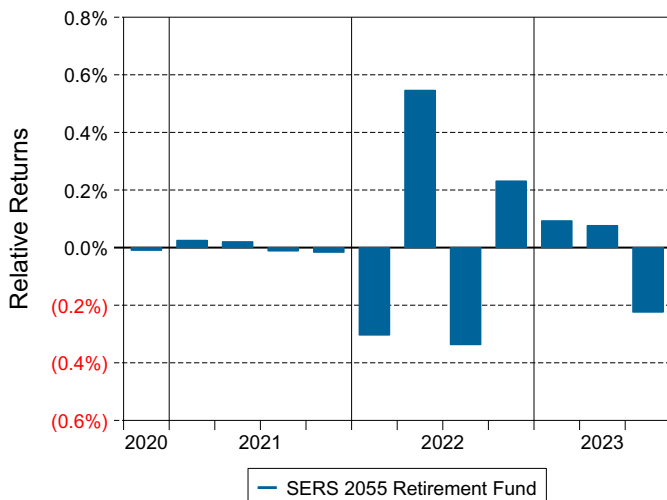
- SERS 2055 Retirement Fund's portfolio posted a (3.65)% return for the quarter placing it in the 30 percentile of the Callan Target Date 2055 group for the quarter and in the 6 percentile for the last year.
- SERS 2055 Retirement Fund's portfolio underperformed the LifePath Index 2055 CB by 0.22% for the quarter and outperformed the LifePath Index 2055 CB for the year by 0.21%.

Performance vs Callan Target Date 2055 (Net)

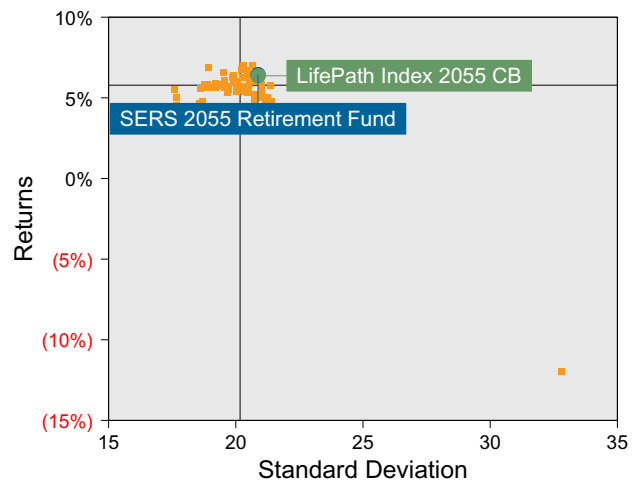


10th Percentile	(3.13)	9.14	19.75	6.98	6.38	8.12
25th Percentile	(3.57)	8.72	19.04	6.55	6.08	7.77
Median	(3.75)	8.04	18.03	6.01	5.78	7.41
75th Percentile	(4.00)	7.13	16.85	5.47	5.46	7.06
90th Percentile	(4.22)	5.97	15.62	4.64	4.95	6.65
SERS 2055 Retirement Fund	(3.65)	9.03	19.87	6.83	6.44	7.58
LifePath Index 2055 CB	(3.44)	9.09	19.66	6.80	6.37	7.47

Relative Return vs LifePath Index 2055 CB



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

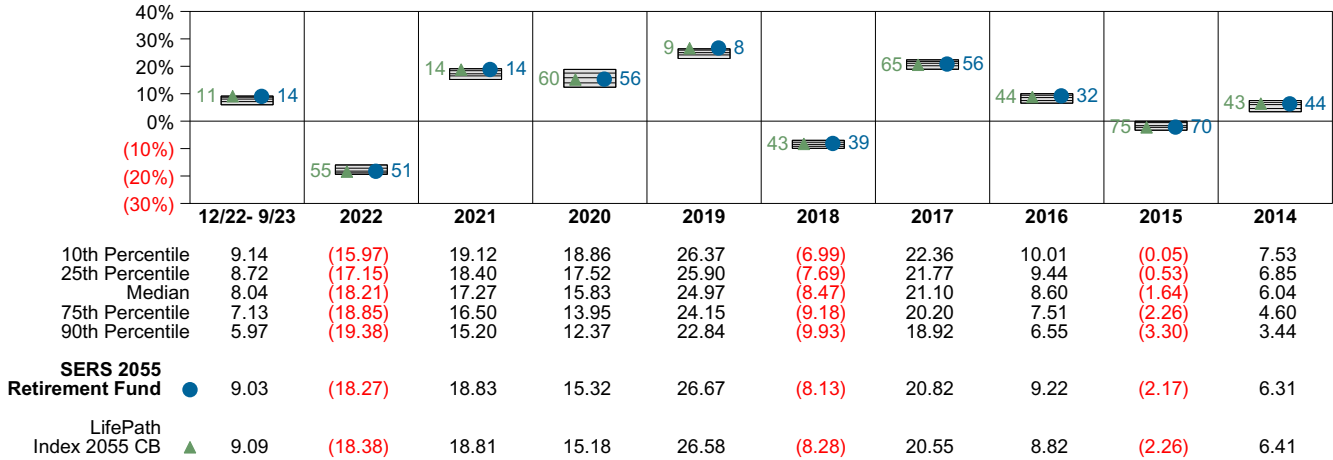


SERS 2055 Retirement Fund Return Analysis Summary

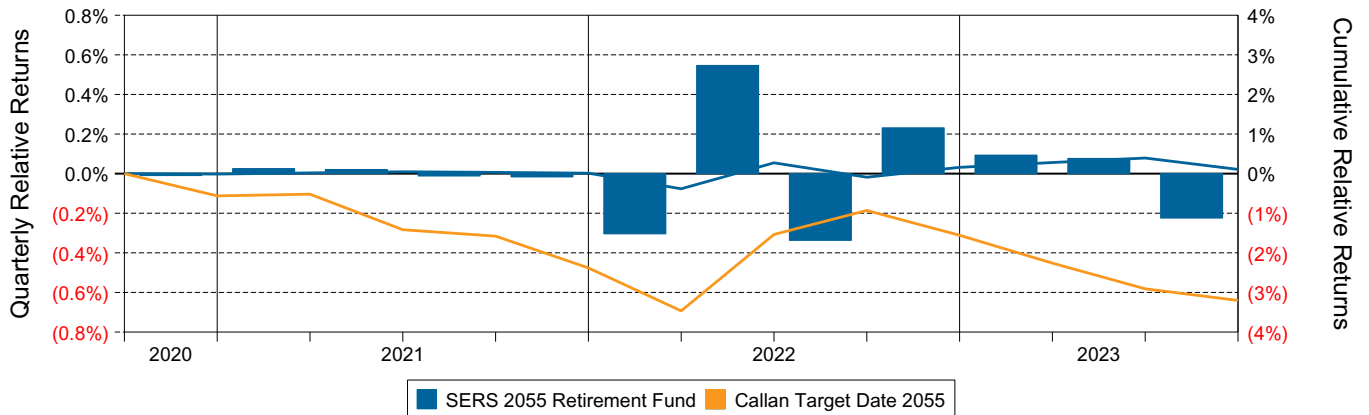
Return Analysis

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

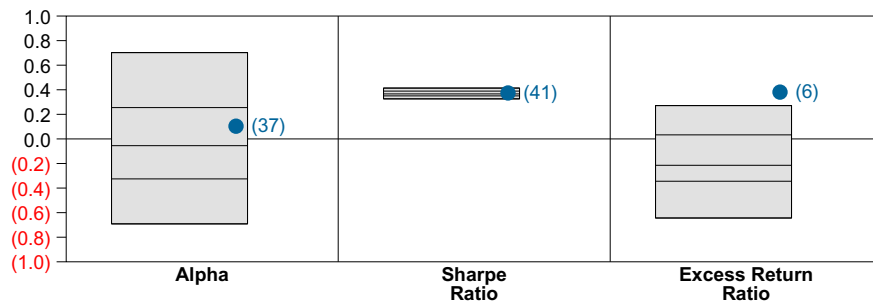
Performance vs Callan Target Date 2055 (Net)



Cumulative and Quarterly Relative Returns vs LifePath Index 2055 CB



Risk Adjusted Return Measures vs LifePath Index 2055 CB Rankings Against Callan Target Date 2055 (Net) Seven Years Ended September 30, 2023



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.70	0.41	0.27
25th Percentile	0.25	0.39	0.03
Median	(0.05)	0.37	(0.21)
75th Percentile	(0.33)	0.35	(0.34)
90th Percentile	(0.69)	0.33	(0.64)
SERS 2055 Retirement Fund	0.10	0.37	0.38

SERS 2060 Retirement Fund Period Ended September 30, 2023

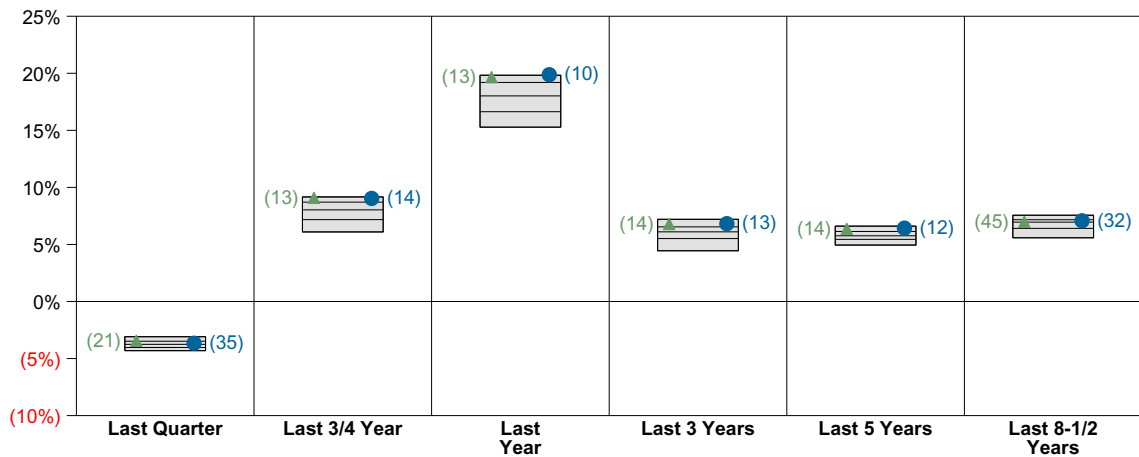
Investment Philosophy

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

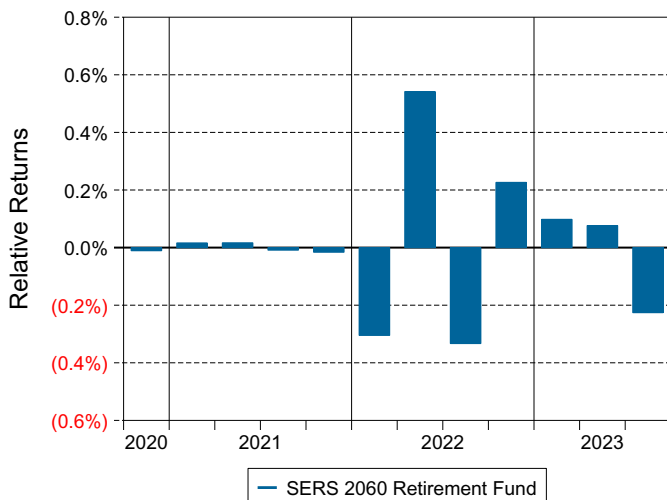
Quarterly Summary and Highlights

- SERS 2060 Retirement Fund's portfolio posted a (3.66)% return for the quarter placing it in the 35 percentile of the Callan Target Date 2060 group for the quarter and in the 10 percentile for the last year.
- SERS 2060 Retirement Fund's portfolio underperformed the LifePath Index 2060 CB by 0.22% for the quarter and outperformed the LifePath Index 2060 CB for the year by 0.21%.

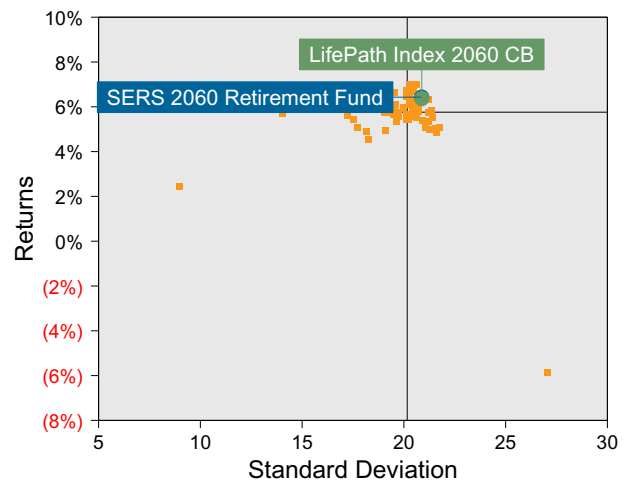
Performance vs Callan Target Date 2060 (Net)



Relative Return vs LifePath Index 2060 CB



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

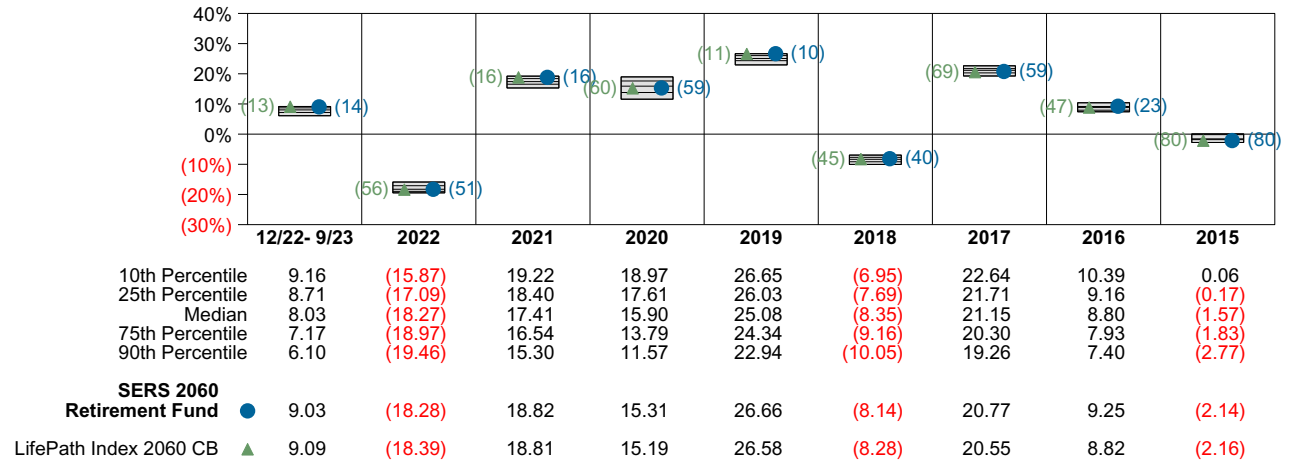


SERS 2060 Retirement Fund Return Analysis Summary

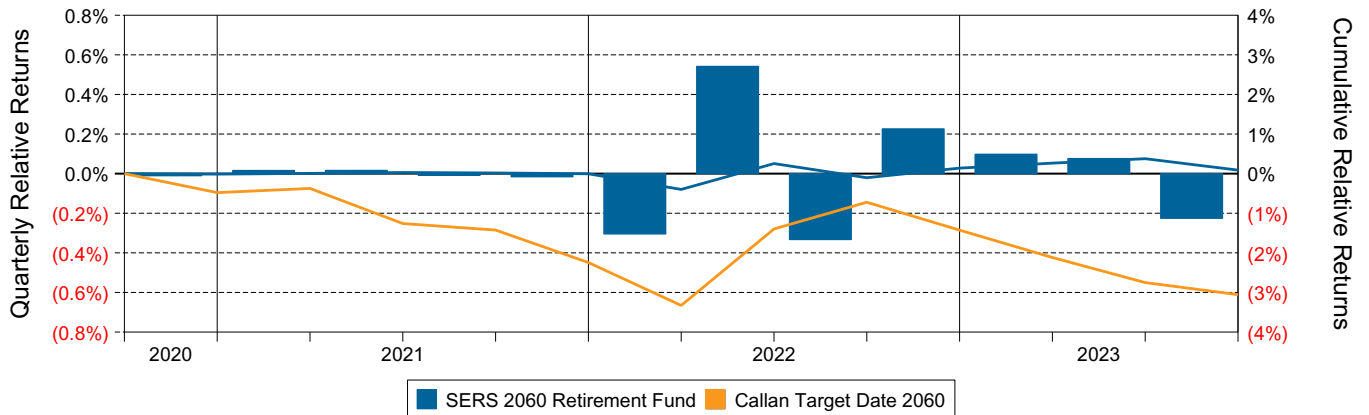
Return Analysis

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

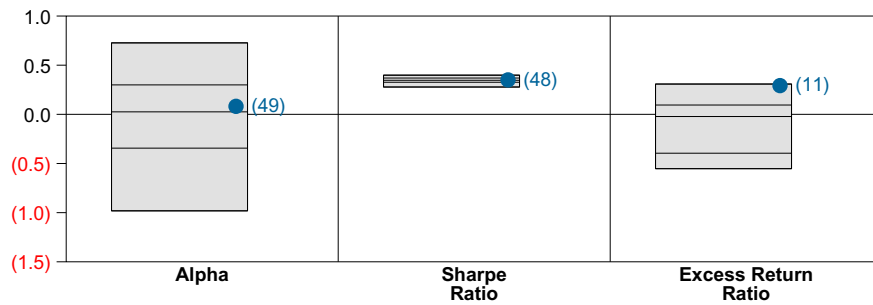
Performance vs Callan Target Date 2060 (Net)



Cumulative and Quarterly Relative Returns vs LifePath Index 2060 CB



Risk Adjusted Return Measures vs LifePath Index 2060 CB Rankings Against Callan Target Date 2060 (Net) Eight and One-Half Years Ended September 30, 2023



SERS 2065 Retirement Fund Period Ended September 30, 2023

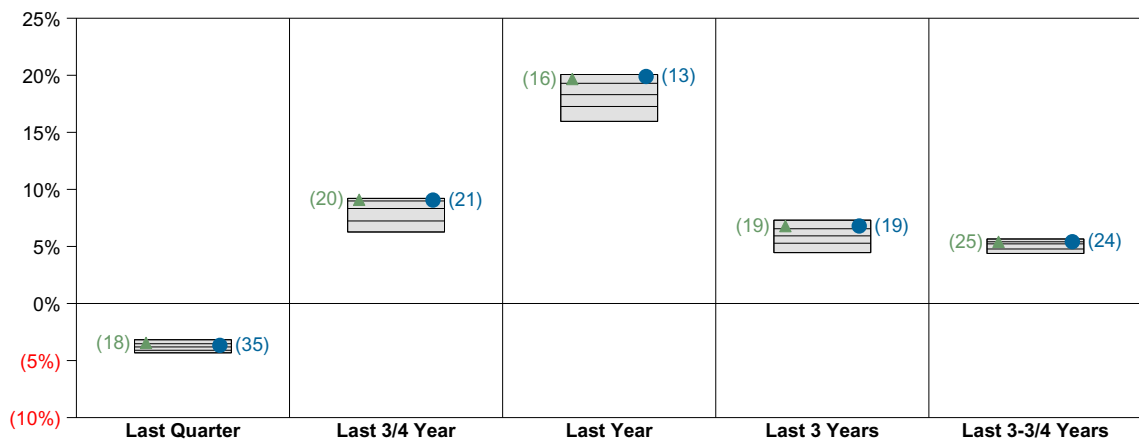
Investment Philosophy

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

Quarterly Summary and Highlights

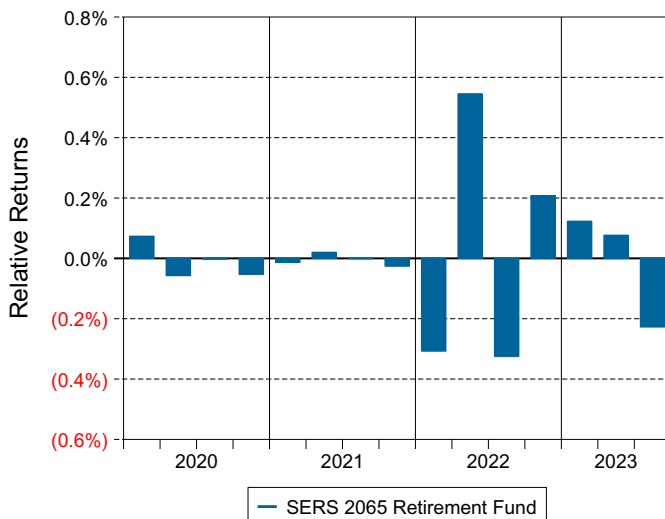
- SERS 2065 Retirement Fund's portfolio posted a (3.67)% return for the quarter placing it in the 35 percentile of the Callan Target Date 2065 group for the quarter and in the 13 percentile for the last year.
- SERS 2065 Retirement Fund's portfolio underperformed the LifePath Index 2065 CB by 0.22% for the quarter and outperformed the LifePath Index 2065 CB for the year by 0.22%.

Performance vs Callan Target Date 2065 (Net)

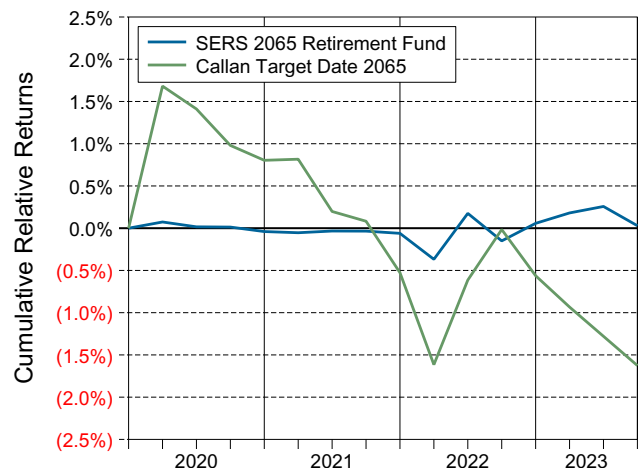


	Last Quarter	Last 3/4 Year	Last Year	Last 3 Years	Last 3-3/4 Years
10th Percentile	(3.17)	9.21	20.07	7.30	5.65
25th Percentile	(3.53)	8.99	19.30	6.55	5.41
Median	(3.81)	8.32	18.30	5.93	5.23
75th Percentile	(4.10)	7.23	17.27	5.28	4.78
90th Percentile	(4.32)	6.26	15.96	4.46	4.38
SERS 2065 Retirement Fund	(3.67)	9.06	19.89	6.79	5.41
LifePath Index 2065 CB	(3.45)	9.09	19.68	6.79	5.40

Relative Return vs LifePath Index 2065 CB



Cumulative Returns vs LifePath Index 2065 CB



SERS U.S. Large Company Index Period Ended September 30, 2023

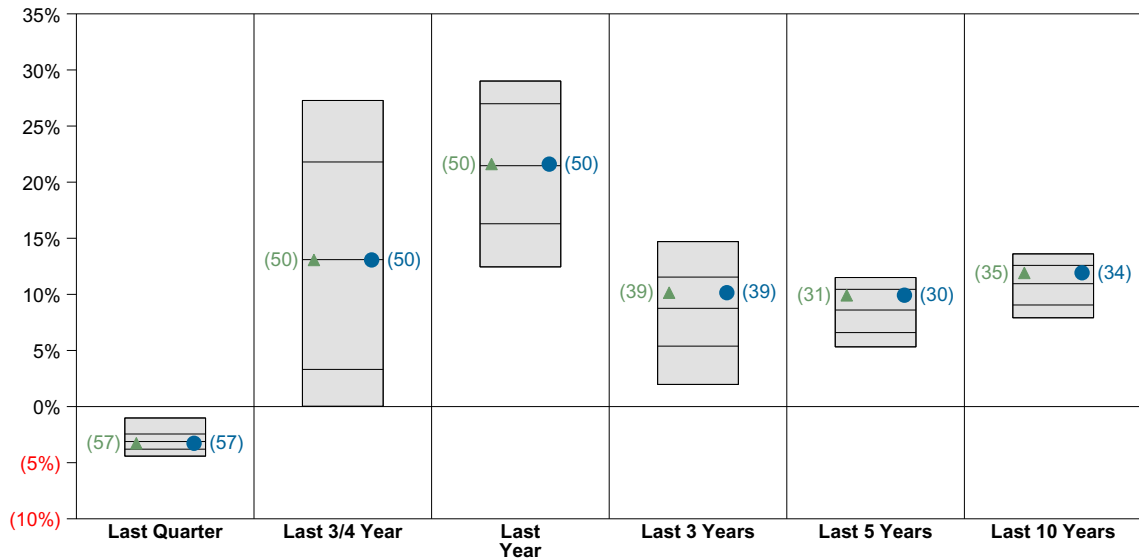
Investment Philosophy

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

Quarterly Summary and Highlights

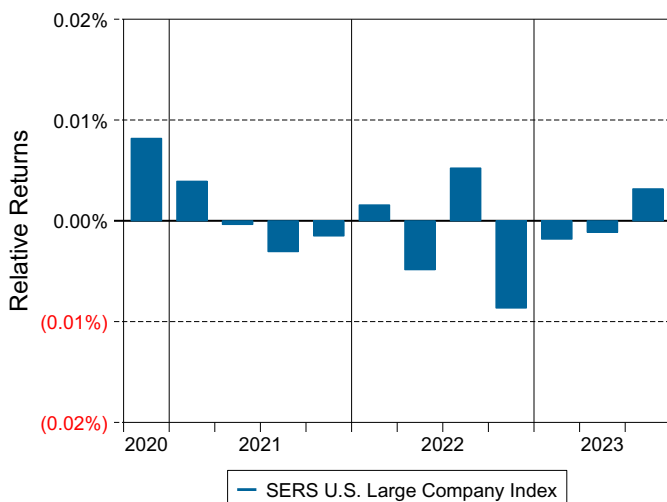
- SERS U.S. Large Company Index's portfolio posted a (3.27)% return for the quarter placing it in the 57 percentile of the Callan Large Cap Broad Equity Mut Funds group for the quarter and in the 50 percentile for the last year.
- SERS U.S. Large Company Index's portfolio outperformed the S&P 500 Index by 0.00% for the quarter and underperformed the S&P 500 Index for the year by 0.01%.

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

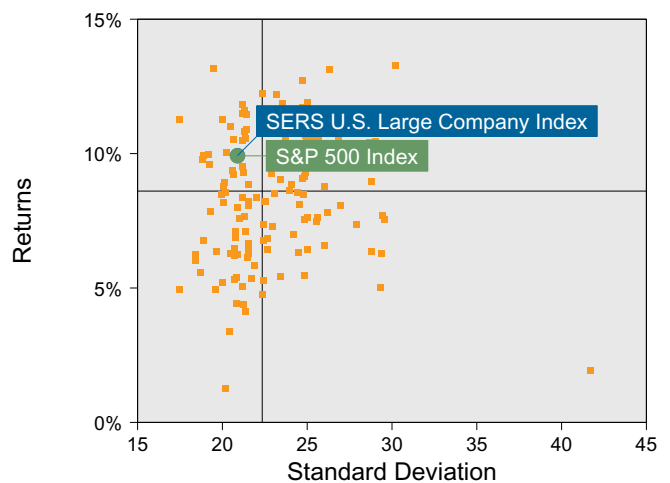


10th Percentile	(1.01)	27.28	29.01	14.70	11.50	13.61
25th Percentile	(2.44)	21.80	26.99	11.54	10.45	12.58
Median	(3.12)	13.10	21.47	8.76	8.61	10.95
75th Percentile	(3.79)	3.31	16.29	5.39	6.59	9.05
90th Percentile	(4.42)	0.02	12.45	1.97	5.32	7.91
SERS U.S. Large Company Index	● (3.27)	13.07	21.61	10.15	9.93	11.93
S&P 500 Index	▲ (3.27)	13.07	21.62	10.15	9.92	11.91

Relative Return vs S&P 500 Index



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

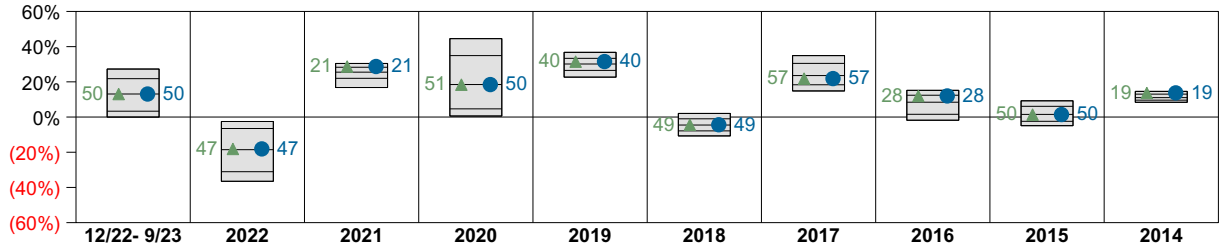


SERS U.S. Large Company Index Return Analysis Summary

Return Analysis

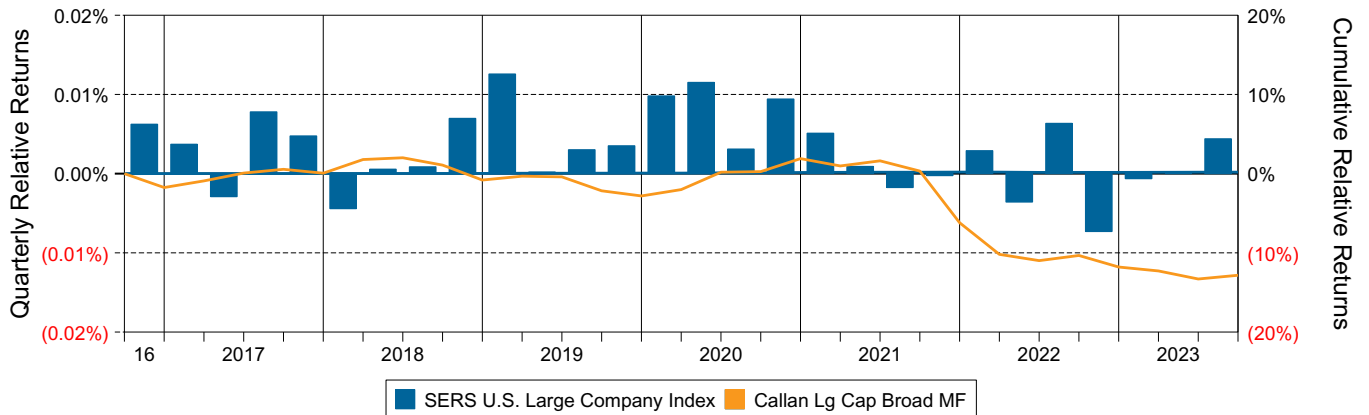
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

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

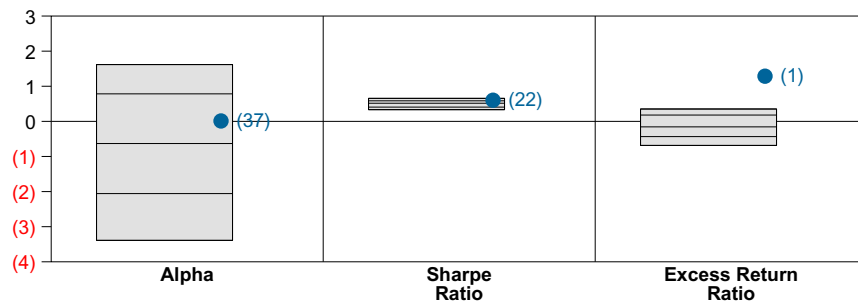


	12/22- 9/23	2022	2021	2020	2019	2018	2017	2016	2015	2014
10th Percentile	27.28	(2.53)	30.44	44.54	36.76	2.05	34.91	15.17	9.23	14.58
25th Percentile	21.80	(6.52)	28.29	34.90	33.34	(1.00)	30.48	12.39	6.09	13.01
Median	13.10	(18.55)	25.50	18.47	30.14	(4.54)	23.56	8.43	1.50	11.02
75th Percentile	3.31	(31.06)	22.00	4.64	26.51	(7.86)	18.33	1.56	(2.42)	9.59
90th Percentile	0.02	(36.52)	16.77	0.58	22.66	(10.72)	14.82	(1.82)	(4.91)	8.38
SERS U.S. Large Company Index	● 13.07	(18.11)	28.71	18.44	31.51	(4.38)	21.85	11.99	1.41	13.72
S&P 500 Index	▲ 13.07	(18.11)	28.71	18.40	31.49	(4.38)	21.83	11.96	1.38	13.69

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, 2023



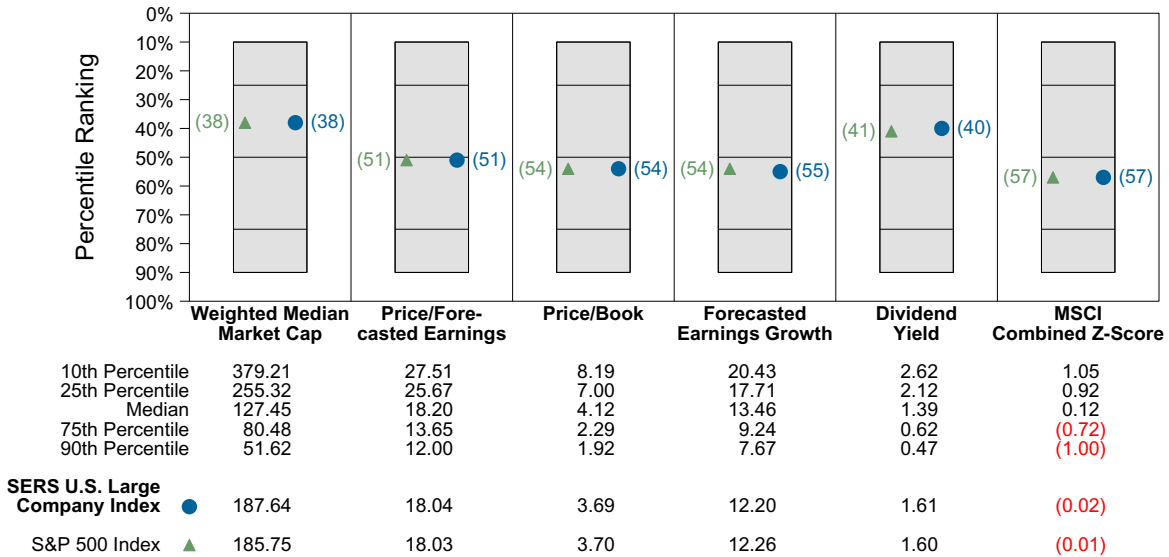
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	1.62	0.66	0.35
25th Percentile	0.78	0.59	0.18
Median	(0.63)	0.52	(0.16)
75th Percentile	(2.06)	0.41	(0.43)
90th Percentile	(3.39)	0.33	(0.69)
SERS U.S. Large Company Index	● 0.01	0.60	1.29

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

Portfolio Characteristics

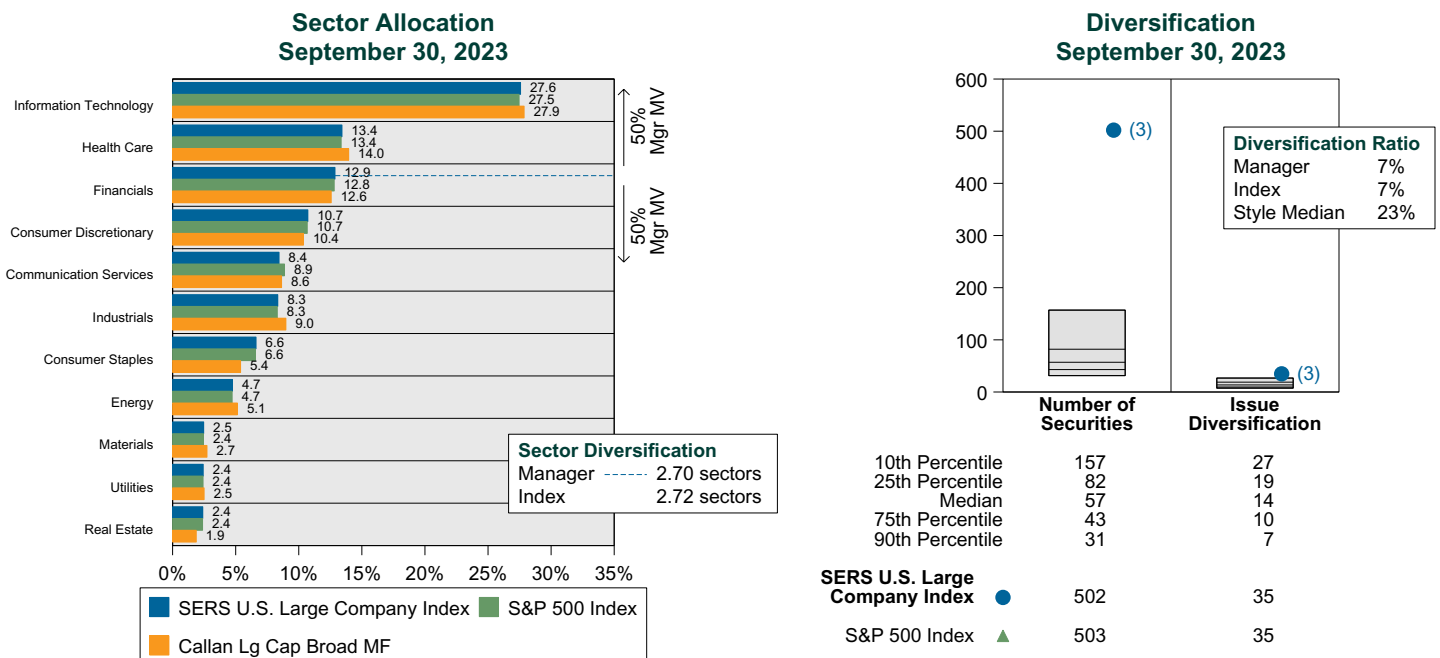
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Broad Equity Mut Funds as of September 30, 2023



Sector Weights

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



SERS U.S. Large Company Index Top 10 Portfolio Holdings Characteristics as of September 30, 2023

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	\$417,948	7.0%	(11.61)%	2676.74	25.98	0.56%	7.40%
Microsoft Corp	Information Technology	\$389,679	6.6%	(7.08)%	2345.95	27.72	0.86%	13.76%
Amazon.Com	Consumer Discretionary	\$191,721	3.2%	(2.49)%	1311.59	43.61	0.00%	6.05%
Nvidia Corp	Information Technology	\$178,470	3.0%	2.84%	1074.43	29.54	0.04%	78.70%
Alphabet Inc Cl A	Communication Services	\$128,964	2.2%	9.32%	776.39	20.34	0.00%	18.50%
Tesla Mtrs Inc	Consumer Discretionary	\$114,772	1.9%	(4.41)%	794.20	59.11	0.00%	8.56%
Meta Platforms Inc	Communication Services	\$110,834	1.9%	4.61%	667.24	18.92	0.00%	32.00%
Alphabet Inc Cl C	Communication Services	\$110,533	1.9%	8.99%	764.86	20.64	0.00%	18.50%
Berkshire Hathaway Inc Del Cl B New	Financials	\$106,115	1.8%	2.73%	458.22	19.49	0.00%	10.86%
Exxon Mobil Corp	Energy	\$78,186	1.3%	10.55%	470.70	12.76	3.10%	(10.00)%

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
Zion Bancorporation Na	Financials	\$865	0.0%	31.42%	5.17	7.96	4.70%	16.31%
Marathon Pete Corp	Energy	\$10,049	0.2%	30.48%	60.51	8.60	1.98%	(17.90)%
Phillips 66	Energy	\$8,881	0.1%	27.14%	53.50	8.44	3.50%	(7.90)%
Cf Inds Hldgs Inc	Materials	\$2,730	0.0%	24.14%	16.54	11.93	1.87%	(31.20)%
Westrock Co	Materials	\$1,533	0.0%	24.14%	9.18	13.69	3.07%	(18.40)%
Halliburton Co	Energy	\$6,063	0.1%	23.25%	36.39	12.15	1.58%	23.70%
Amgen	Health Care	\$23,880	0.4%	22.03%	143.76	14.27	3.17%	1.69%
Valero Energy Corp New	Energy	\$8,336	0.1%	21.79%	50.04	8.08	2.88%	(21.05)%
Apa Corp	Energy	\$2,104	0.0%	21.07%	12.63	7.45	2.43%	(2.00)%
Western Digital Corp	Information Technology	\$2,437	0.0%	20.30%	14.69	(21.14)	0.00%	(26.80)%

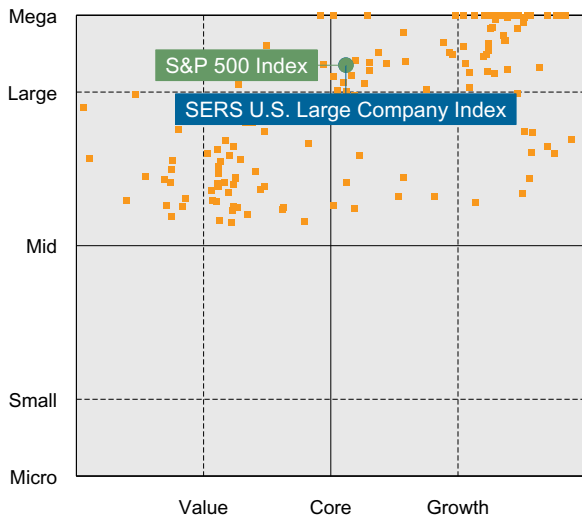
10 Worst Performers

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Solaredge Technologies Inc	Information Technology	\$1,221	0.0%	(51.86)%	7.32	12.39	0.00%	36.65%
Insulet Corp	Health Care	\$1,850	0.0%	(44.69)%	11.14	76.49	0.00%	30.60%
Dollar Gen Corp New	Consumer Staples	\$3,868	0.1%	(37.47)%	23.22	12.88	2.23%	(1.10)%
F M C Corp	Materials	\$1,399	0.0%	(35.25)%	8.35	9.70	3.46%	4.49%
Resmed Inc	Health Care	\$3,592	0.1%	(32.14)%	21.75	20.60	1.30%	11.60%
Tapestry Inc	Consumer Discretionary	\$1,114	0.0%	(32.09)%	6.59	6.81	4.87%	11.00%
Alaska Air Group Inc	Industrials	\$791	0.0%	(30.27)%	4.72	5.81	0.00%	22.49%
American Airlines Group Inc	Industrials	\$1,399	0.0%	(28.60)%	8.37	4.60	0.00%	109.96%
Enphase Energy Inc	Information Technology	\$2,703	0.0%	(28.26)%	16.38	19.65	0.00%	27.60%
Dexcom Inc	Health Care	\$5,998	0.1%	(27.40)%	36.19	61.46	0.00%	36.65%

Historical Holdings Based Style Analysis SERS U.S. Large Company Index For Three Years Ended September 30, 2023

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.

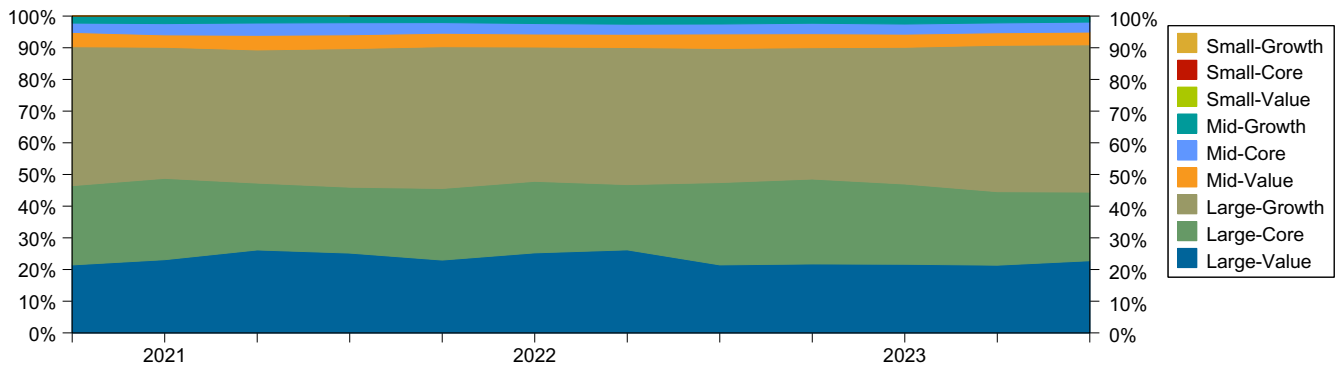
Average Style Map vs Callan Lg Cap Broad MF Holdings for Three Years Ended September 30, 2023



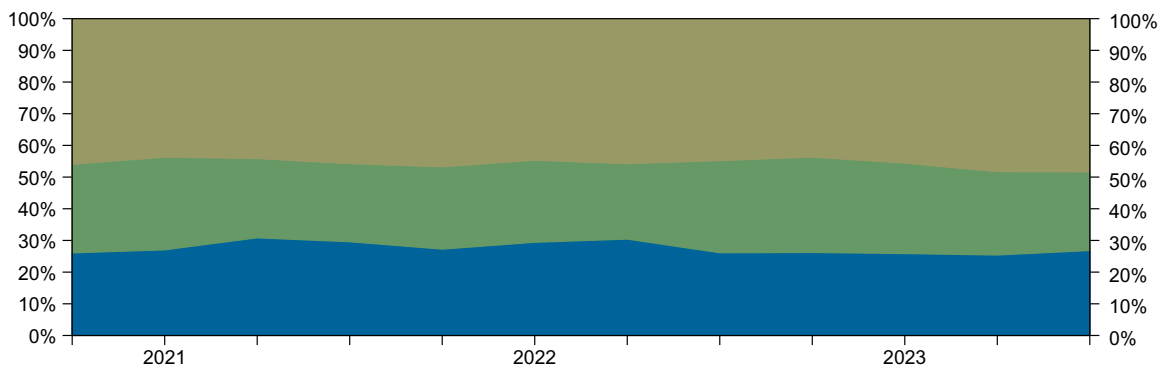
Average Style Exposure Matrix Holdings for Three Years Ended September 30, 2023

Large	23.3% (97)	23.4% (93)	43.4% (85)	90.2% (275)
	23.3% (97)	23.3% (93)	43.5% (85)	90.2% (275)
Mid	4.3% (102)	3.3% (77)	2.2% (46)	9.8% (225)
	4.3% (101)	3.3% (77)	2.2% (46)	9.8% (224)
Small	0.0% (3)	0.0% (2)	0.0% (1)	0.1% (6)
	0.0% (3)	0.0% (2)	0.0% (1)	0.1% (6)
Micro	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Total	27.6% (202)	26.8% (172)	45.6% (132)	100.0% (506)
	27.6% (201)	26.7% (172)	45.7% (132)	100.0% (505)
	Value	Core	Growth	Total

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



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



SERS U.S. All Company Index Fund

Period Ended September 30, 2023

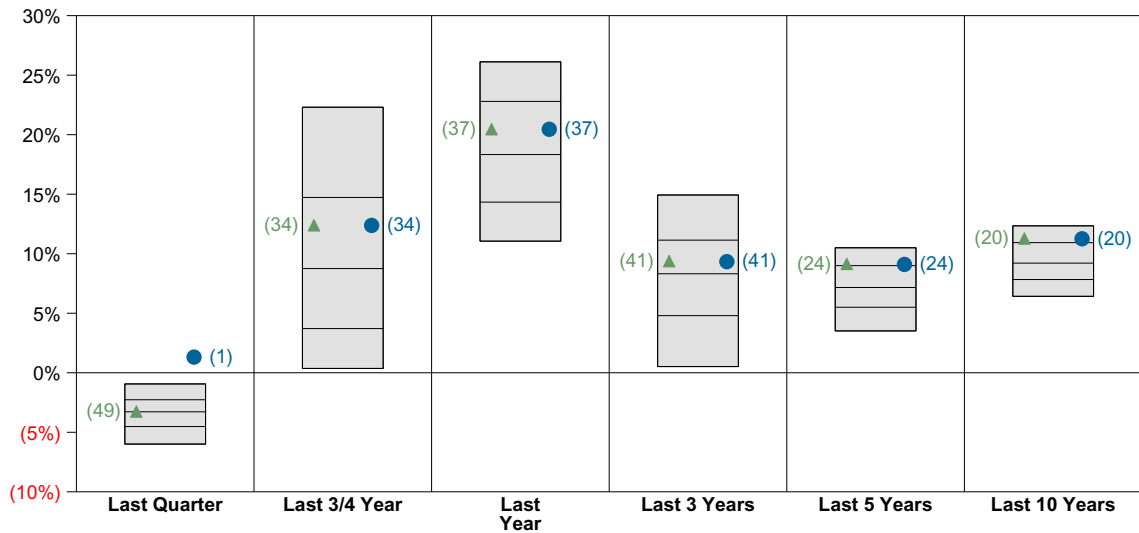
Investment Philosophy

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

Quarterly Summary and Highlights

- SERS U.S. All Company Index Fund's portfolio posted a 1.31% return for the quarter placing it in the 1 percentile of the Callan Multi Cap Broad Mutual Funds group for the quarter and in the 37 percentile for the last year.
- SERS U.S. All Company Index Fund's portfolio outperformed the Russell 3000 Index by 4.57% for the quarter and underperformed the Russell 3000 Index for the year by 0.01%.

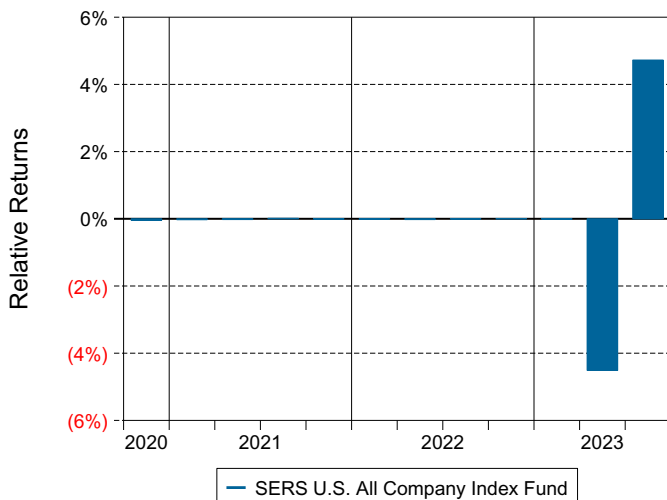
Performance vs Callan Multi Cap Broad Mutual Funds (Institutional Net)



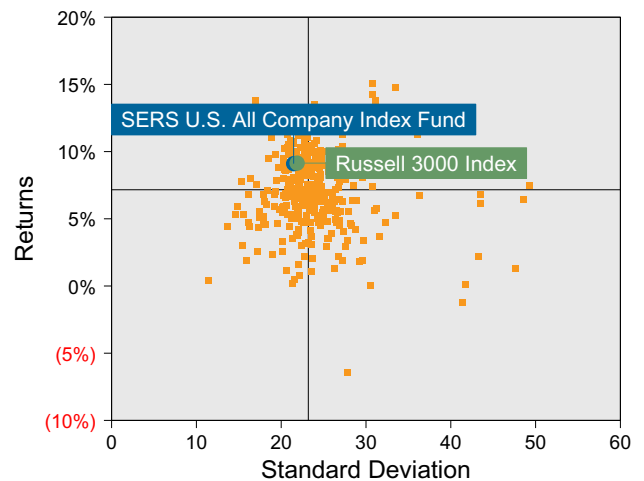
	Last Quarter	Last 3/4 Year	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	(0.94)	22.31	26.12	14.93	10.50	12.34
25th Percentile	(2.27)	14.73	22.80	11.14	9.00	10.93
Median	(3.28)	8.75	18.33	8.32	7.16	9.21
75th Percentile	(4.52)	3.71	14.34	4.80	5.51	7.83
90th Percentile	(5.99)	0.36	11.06	0.52	3.51	6.42

SERS U.S. All Company Index Fund	●	1.31	12.38	20.45	9.33	9.10	11.26
Russell 3000 Index	▲	(3.25)	12.39	20.46	9.38	9.14	11.28

Relative Return vs Russell 3000 Index



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

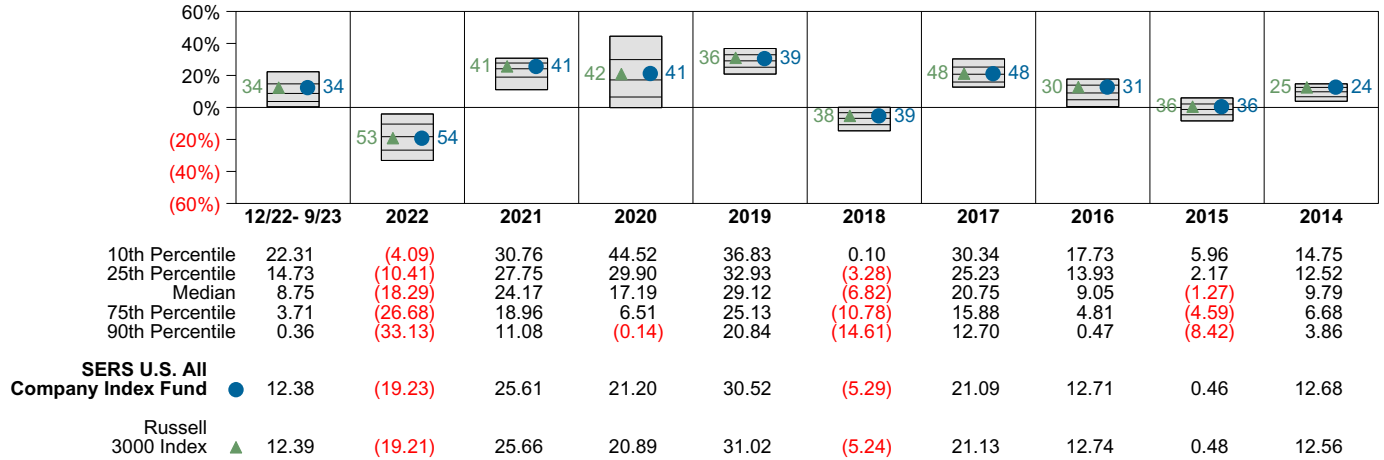


SERS U.S. All Company Index Fund Return Analysis Summary

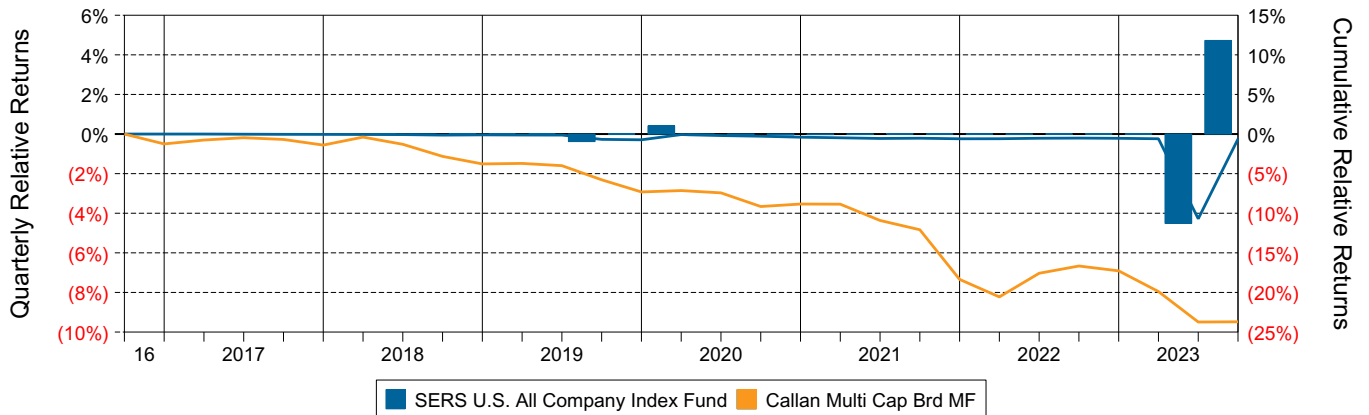
Return Analysis

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

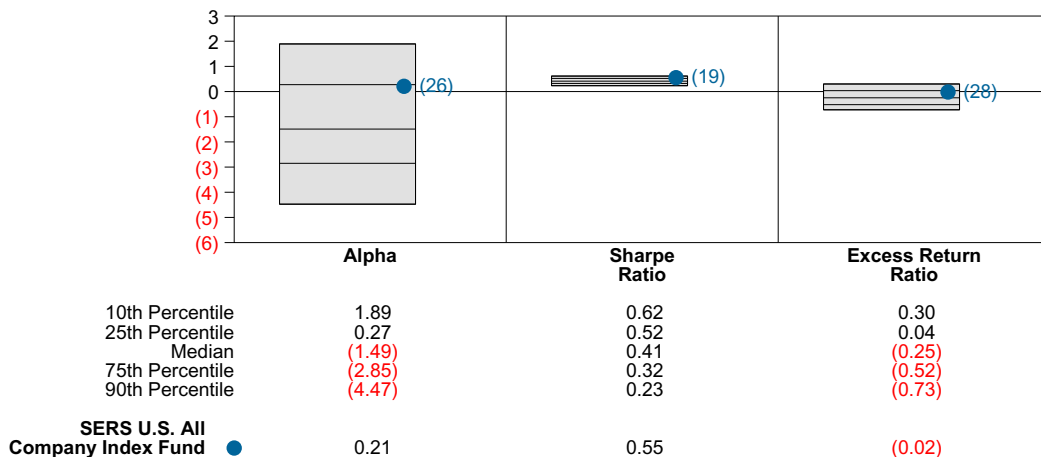
Performance vs Callan Multi Cap Broad Mutual Funds (Institutional Net)



Cumulative and Quarterly Relative Returns vs Russell 3000 Index



Risk Adjusted Return Measures vs Russell 3000 Index Rankings Against Callan Multi Cap Broad Mutual Funds (Institutional Net) Seven Years Ended September 30, 2023

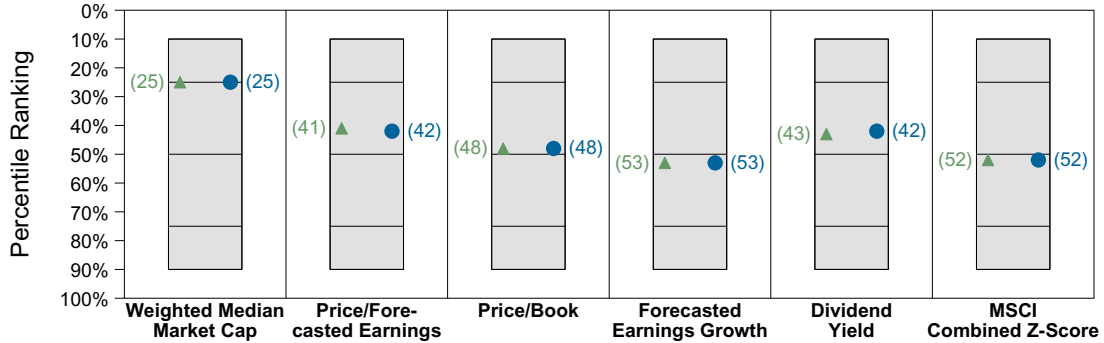


SERS U.S. All Company Index Fund Equity Characteristics Analysis Summary

Portfolio Characteristics

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

Portfolio Characteristics Percentile Rankings Rankings Against Callan Multi Cap Broad Mutual Funds as of September 30, 2023

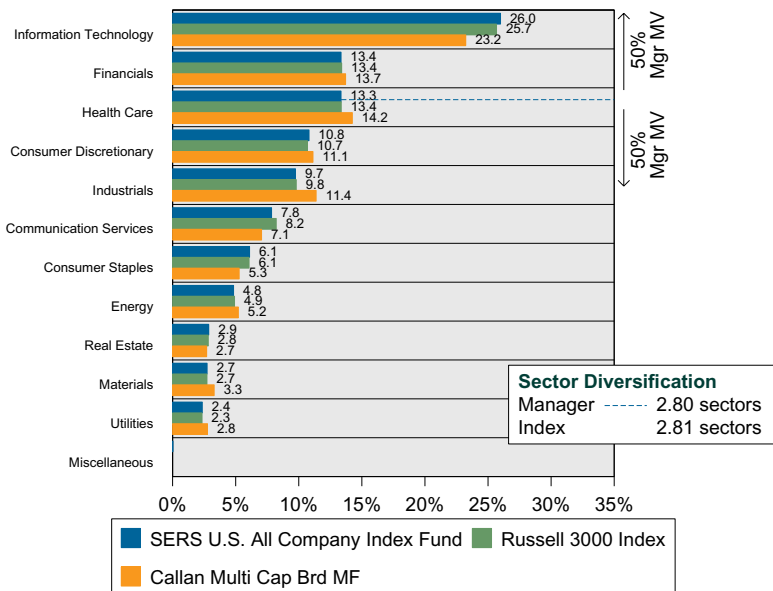


	Weighted Median Market Cap	Price/Forecasted Earnings	Price/Book	Forecasted Earnings Growth	Dividend Yield	MSCI Combined Z-Score
10th Percentile	242.46	26.56	7.34	20.02	2.54	0.92
25th Percentile	123.12	22.36	5.25	16.78	2.00	0.63
Median	72.33	16.93	3.27	13.05	1.44	0.06
75th Percentile	36.20	13.28	2.18	10.27	0.80	(0.54)
90th Percentile	16.12	11.78	1.81	7.99	0.53	(0.92)
SERS U.S. All Company Index Fund	● 123.43	18.14	3.35	12.69	1.58	0.00
Russell 3000 Index	▲ 122.22	18.18	3.36	12.71	1.56	0.01

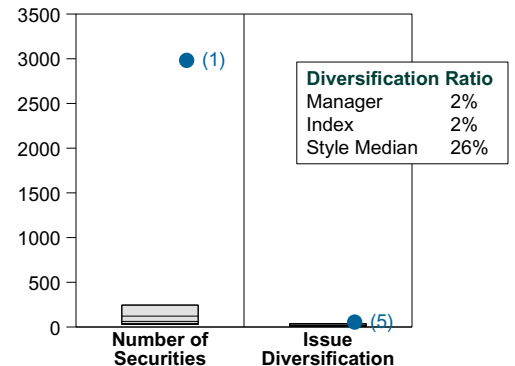
Sector Weights

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

Sector Allocation September 30, 2023



Diversification September 30, 2023



	Number of Securities	Issue Diversification
10th Percentile	245	39
25th Percentile	122	25
Median	63	15
75th Percentile	40	10
90th Percentile	28	8
SERS U.S. All Company Index Fund	● 2982	55
Russell 3000 Index	▲ 2993	55

SERS U.S. All Company Index Fund Top 10 Portfolio Holdings Characteristics as of September 30, 2023

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	\$131,614	6.1%	(11.61)%	2676.74	25.98	0.56%	7.40%
Microsoft Corp	Information Technology	\$121,045	5.6%	(7.08)%	2345.95	27.72	0.86%	13.76%
Amazon.Com	Consumer Discretionary	\$58,965	2.7%	(2.49)%	1311.59	43.61	0.00%	6.05%
Nvidia Corp	Information Technology	\$53,245	2.5%	2.84%	1074.43	29.54	0.04%	78.70%
Alphabet Inc Cl A	Communication Services	\$40,048	1.9%	9.32%	776.39	20.34	0.00%	18.50%
Tesla Mtrs Inc	Consumer Discretionary	\$35,547	1.7%	(4.41)%	794.20	59.11	0.00%	8.56%
Alphabet Inc Cl C	Communication Services	\$34,538	1.6%	8.99%	764.86	20.64	0.00%	18.50%
Meta Platforms Inc	Communication Services	\$34,189	1.6%	4.61%	667.24	18.92	0.00%	32.00%
Berkshire Hathaway Inc Del Cl B New	Financials	\$33,000	1.5%	2.73%	458.22	19.49	0.00%	10.86%
Exxon Mobil Corp	Energy	\$24,249	1.1%	10.55%	470.70	12.76	3.10%	(10.00)%

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
Tango Therapeutics Inc	Health Care	\$25	0.0%	239.20%	1.14	(7.57)	0.00%	-
Cardlytics Inc	Communication Services	\$28	0.0%	161.07%	0.62	(83.76)	0.00%	-
Telephone & Data Sys Inc	Communication Services	\$92	0.0%	124.80%	1.93	(19.92)	4.04%	(9.29)%
Thorne Healthtech Inc	Health Care	\$8	0.0%	116.82%	0.55	19.79	0.00%	-
Immunovant Inc	Health Care	\$105	0.0%	102.38%	5.47	(19.26)	0.00%	-
Tetra Technologies Inc Del	Energy	\$40	0.0%	88.76%	0.83	13.75	0.00%	(28.73)%
Nexnav Inc	Communication Services	\$14	0.0%	74.86%	0.56	(10.22)	0.00%	-
Centrus Energy Corp Cl A	Energy	\$35	0.0%	74.00%	0.84	24.20	0.00%	(55.28)%
Hallador Energy Company	Energy	\$17	0.0%	67.78%	0.48	7.99	0.00%	42.94%
Intercept Pharmaceuticals Inc	Health Care	\$37	0.0%	67.64%	0.78	15.35	0.00%	-

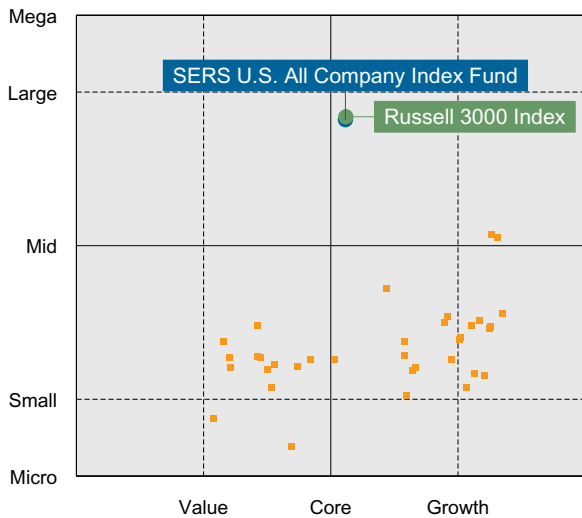
10 Worst Performers

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Outlook Therapeutics Inc	Health Care	\$2	0.0%	(87.23)%	0.06	(1.94)	0.00%	-
Cxapp Inc Cl A	Information Technology	\$0	0.0%	(83.42)%	0.02	(1.79)	0.00%	-
Cano Health Inc Com Cl A	Health Care	\$3	0.0%	(81.71)%	0.07	(0.53)	0.00%	-
Amc Entmt Hldgs Inc Cl A New	Communication Services	\$26	0.0%	(79.41)%	1.58	(4.38)	0.00%	6.01%
Loop Media Inc	Communication Services	\$1	0.0%	(79.21)%	0.03	(1.33)	0.00%	-
Akoustis Technologies Inc	Information Technology	\$2	0.0%	(76.32)%	0.05	(1.34)	0.00%	-
Benson Hill Inc Common Stock	Consumer Staples	\$3	0.0%	(74.49)%	0.07	(0.66)	0.00%	-
Tpi Composites Inc	Industrials	\$6	0.0%	(74.45)%	0.11	(1.60)	0.00%	(50.41)%
Kodiak Sciences Inc	Health Care	\$3	0.0%	(73.91)%	0.09	(0.57)	0.00%	-
System1 Inc Cl A Com	Communication Services	\$2	0.0%	(73.11)%	0.11	(0.84)	0.00%	-

Historical Holdings Based Style Analysis SERS U.S. All Company Index Fund For Five Years Ended September 30, 2023

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

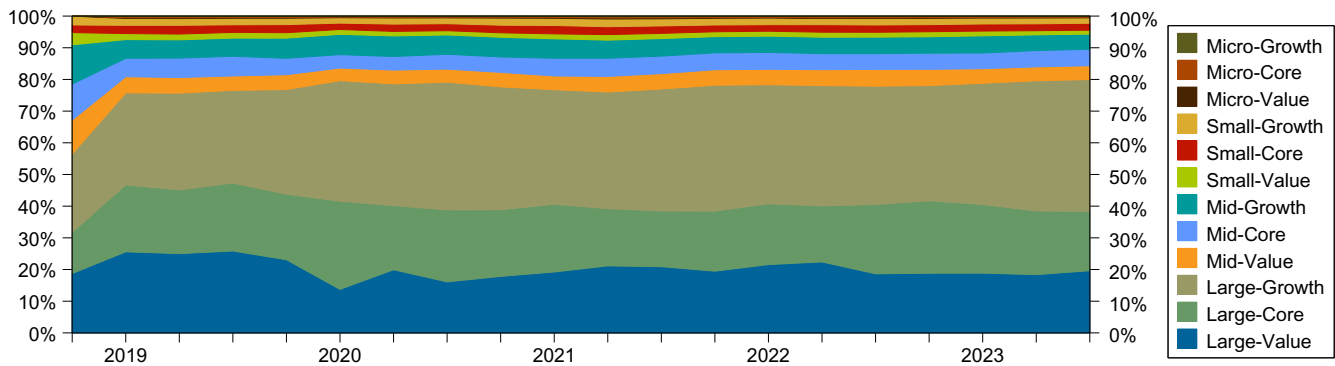
Average Style Map vs Callan SMID Broad MFs Holdings for Five Years Ended September 30, 2023



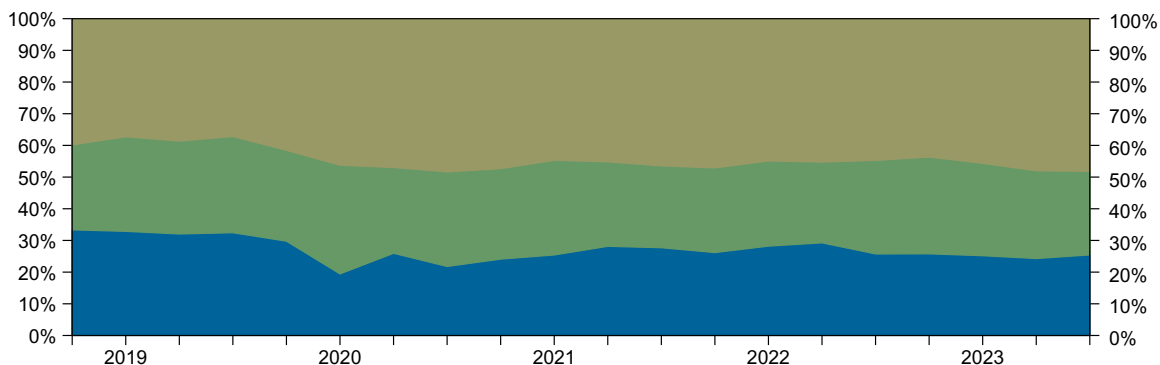
Average Style Exposure Matrix Holdings for Five Years Ended September 30, 2023

	20.2% (95)	20.3% (94)	36.2% (100)	76.7% (289)
Large	20.5% (98)	20.8% (96)	36.5% (103)	77.8% (297)
Mid	5.0% (165)	5.5% (206)	6.0% (220)	16.5% (591)
	4.7% (166)	5.2% (208)	5.7% (222)	15.6% (596)
Small	1.7% (297)	2.3% (484)	2.1% (370)	6.1% (1151)
	1.6% (307)	2.4% (500)	2.0% (384)	6.0% (1191)
Micro	0.2% (295)	0.3% (390)	0.1% (160)	0.7% (845)
	0.2% (310)	0.3% (414)	0.2% (169)	0.7% (893)
Total	27.1% (852)	28.5% (1174)	44.4% (850)	100.0% (2876)
	27.0% (881)	28.7% (1218)	44.4% (878)	100.0% (2977)
	Value	Core	Growth	Total

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



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



SERS U.S. SMID Company Index Period Ended September 30, 2023

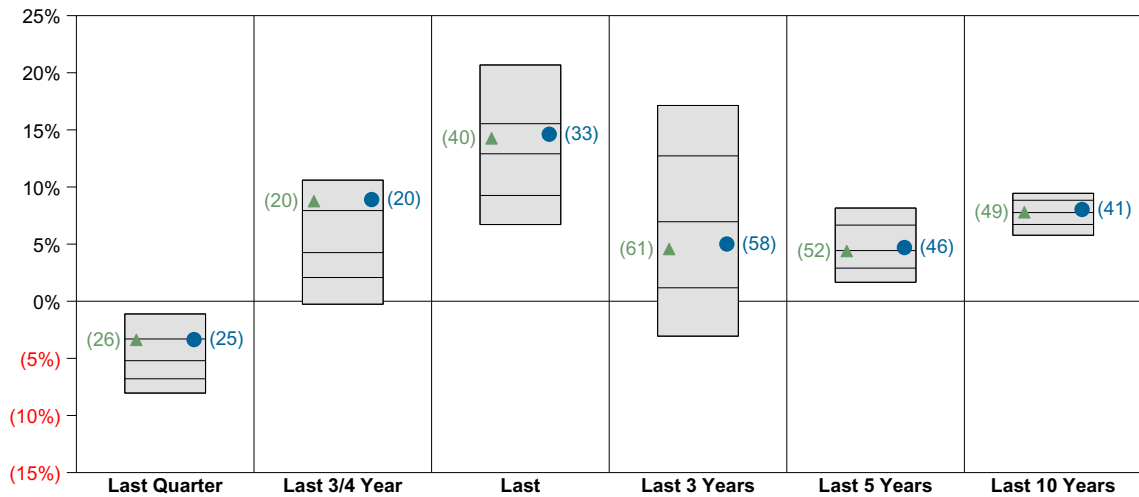
Investment Philosophy

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

Quarterly Summary and Highlights

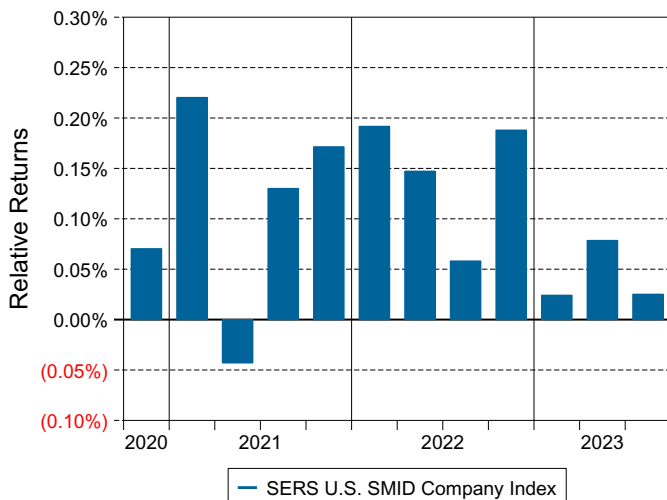
- SERS U.S. SMID Company Index's portfolio posted a (3.36)% return for the quarter placing it in the 25 percentile of the Callan Small/MidCap Broad Mutual Funds group for the quarter and in the 33 percentile for the last year.
- SERS U.S. SMID Company Index's portfolio outperformed the Dow Jones US Completion by 0.02% for the quarter and outperformed the Dow Jones US Completion for the year by 0.36%.

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

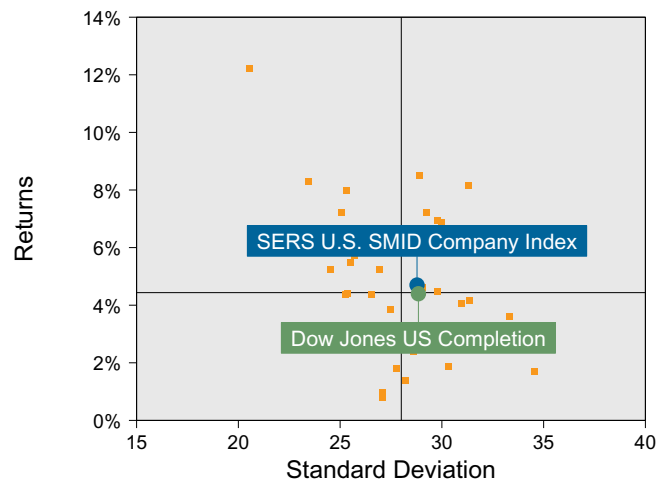


	Last Quarter	Last 3/4 Year	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	(1.11)	10.60	20.68	17.14	8.16	9.45
25th Percentile	(3.30)	7.94	15.54	12.72	6.66	8.84
Median	(5.20)	4.26	12.91	6.96	4.44	7.76
75th Percentile	(6.79)	2.08	9.26	1.18	2.90	6.72
90th Percentile	(8.04)	(0.26)	6.71	(3.06)	1.66	5.77
SERS U.S. SMID Company Index	(3.36)	8.90	14.62	5.01	4.70	8.03
Dow Jones US Completion	(3.38)	8.76	14.26	4.57	4.40	7.79

Relative Return vs Dow Jones US Completion



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

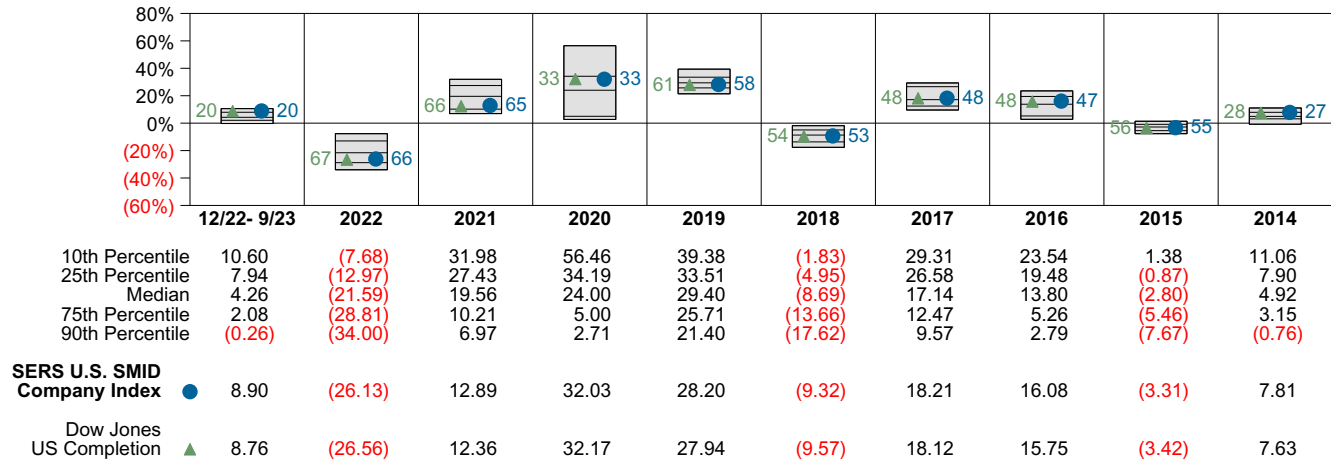


SERS U.S. SMID Company Index Return Analysis Summary

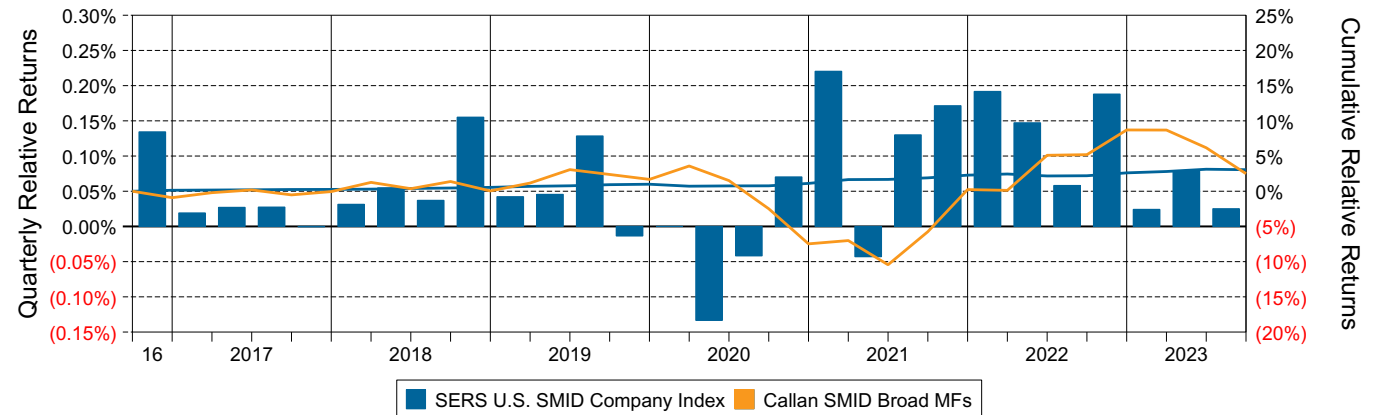
Return Analysis

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

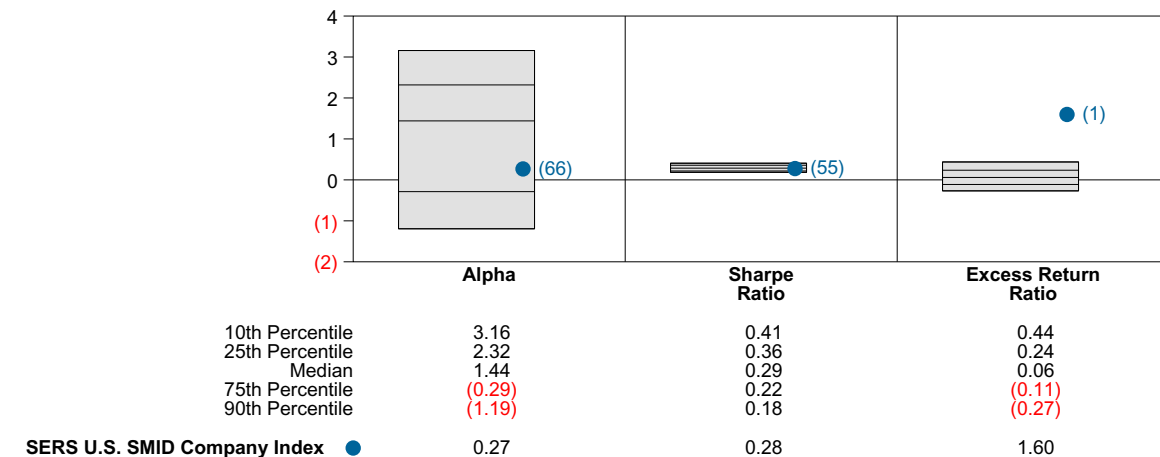
Performance vs Callan Small/MidCap Broad Mutual Funds (Institutional Net)



Cumulative and Quarterly Relative Returns vs Dow Jones US Completion



Risk Adjusted Return Measures vs Dow Jones US Completion Rankings Against Callan Small/MidCap Broad Mutual Funds (Institutional Net) Seven Years Ended September 30, 2023

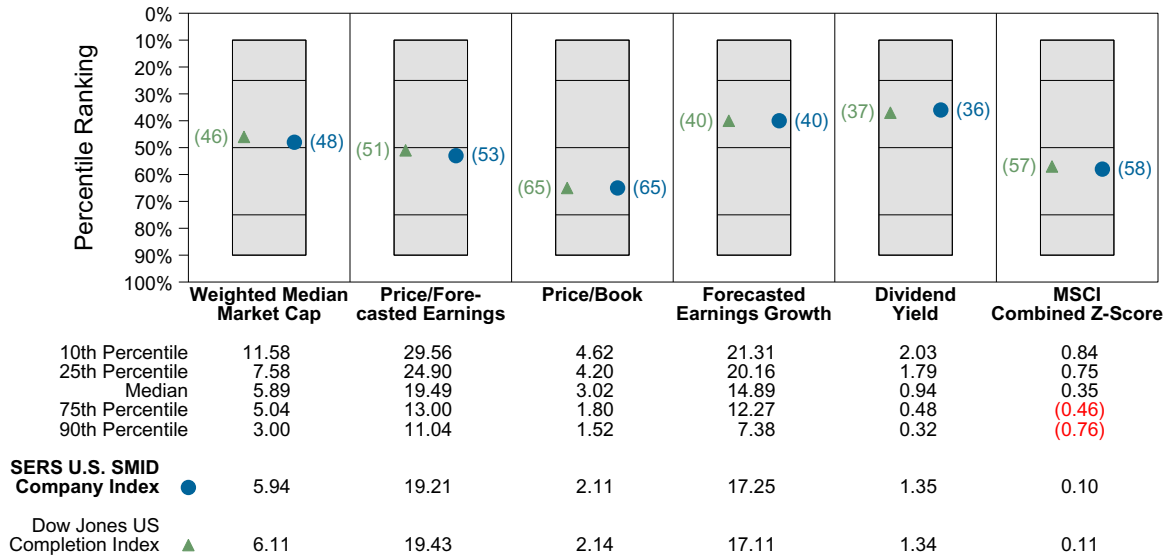


SERS U.S. SMID Company Index Equity Characteristics Analysis Summary

Portfolio Characteristics

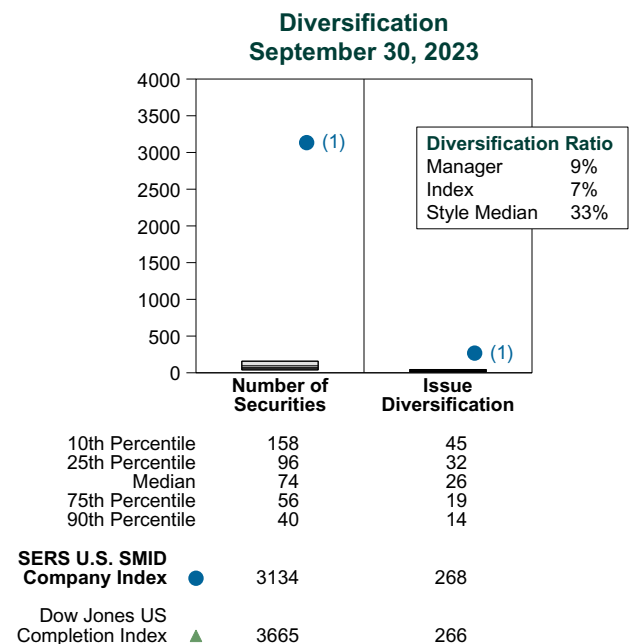
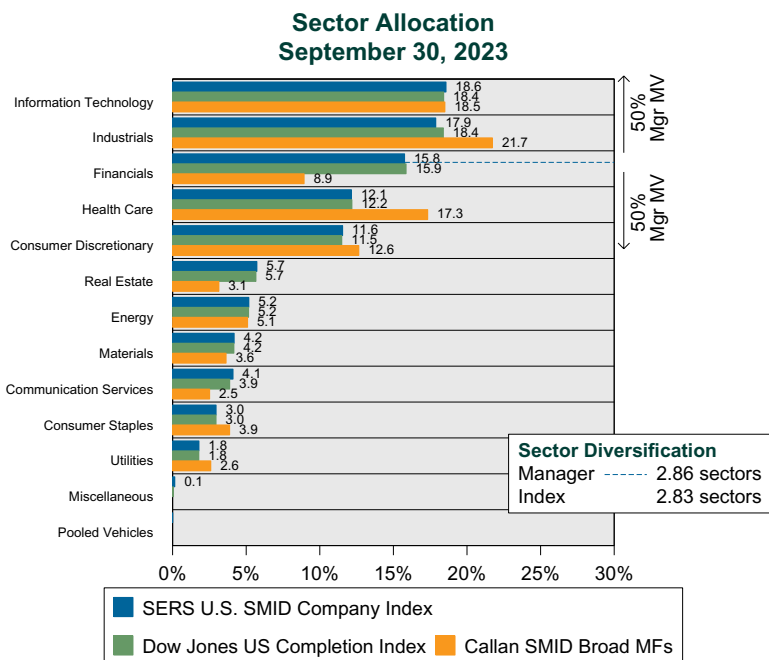
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan Small/MidCap Broad Mutual Funds as of September 30, 2023



Sector Weights

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



SERS U.S. SMID Company Index Top 10 Portfolio Holdings Characteristics as of September 30, 2023

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
Uber Technologies Inc	Industrials	\$29,648	1.6%	6.53%	93.98	52.26	0.00%	-
Snowflake Inc Cl A	Information Technology	\$15,715	0.8%	(13.19)%	50.37	164.98	0.00%	-
Marvell Technology Group Ltd	Information Technology	\$14,640	0.8%	(9.36)%	46.70	26.04	0.44%	14.15%
Lululemon Athletica Inc	Consumer Discretionary	\$14,066	0.7%	1.88%	46.82	28.94	0.00%	20.00%
Workday Inc Cl A	Information Technology	\$13,917	0.7%	(4.89)%	44.21	34.30	0.00%	27.70%
Cheniere Energy Inc	Energy	\$12,570	0.7%	9.19%	39.93	10.67	0.95%	30.20%
Kkr & Co Inc Cl A	Financials	\$12,552	0.7%	10.31%	54.49	14.15	1.07%	13.58%
Apollo Global Mgmt Inc	Financials	\$12,331	0.7%	17.49%	50.88	11.43	1.92%	22.20%
CrowdStrike Hldgs Inc Cl A	Information Technology	\$11,814	0.6%	13.97%	37.84	50.80	0.00%	40.33%
Vmware Inc Cl A Com	Information Technology	\$11,500	0.6%	15.86%	71.88	21.46	0.00%	1.22%

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
Enochian Biosciences Inc	Health Care	\$35	0.0%	688.90%	0.26	(2.23)	0.00%	-
Soleno Therapeutics Inc	Health Care	\$60	0.0%	589.69%	0.38	(15.19)	0.00%	-
Taysha Gene Therapies Inc	Health Care	\$61	0.0%	380.08%	0.59	(5.07)	0.00%	-
Tango Therapeutics Inc	Health Care	\$147	0.0%	239.20%	1.14	(7.57)	0.00%	-
T2 Biosystems Inc	Health Care	\$0	0.0%	200.00%	0.07	(1.74)	0.00%	-
Vistagen Therapeutics Inc	Consumer Discretionary	\$12	0.0%	176.92%	0.05	(1.51)	0.00%	-
Cardlytics Inc	Communication Services	\$176	0.0%	161.07%	0.62	(83.76)	0.00%	-
Groupon Inc	Consumer Discretionary	\$117	0.0%	159.29%	0.48	33.23	0.00%	(25.10)%
The Oncology Institute Inc	Health Care	\$7	0.0%	154.50%	0.10	(3.11)	0.00%	-
United States Cellular Corp	Communication Services	\$201	0.0%	143.73%	2.25	59.60	0.00%	(19.55)%

10 Worst Performers

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Neonode Inc Com Par	Information Technology	\$2	0.0%	-	0.02	23.88	0.00%	18.70%
Seelos Therapeutics Inc	Health Care	\$7	0.0%	-	0.03	(0.52)	0.00%	-
Mymd Pharmaceuticals Inc	Health Care	\$5	0.0%	-	0.03	(2.38)	0.00%	-
Esports Entmt Group Inc	Consumer Discretionary	\$0	0.0%	-	0.01	(0.06)	0.00%	-
Baudax Bio Inc	Health Care	\$0	0.0%	-	0.00	(0.54)	0.00%	-
Galera Therapeutics	Health Care	\$3	0.0%	(94.38)%	0.01	(0.17)	0.00%	-
Ault Alliance Inc	Industrials	\$0	0.0%	(93.59)%	0.00	(0.00)	0.00%	103.71%
Faraday Futre Intlgt Elctr I Com Cl	Consumer Discretionary	\$5	0.0%	(91.79)%	0.02	(0.08)	0.00%	-
Brainstorm Cell Therapeutics	Health Care	\$2	0.0%	(90.29)%	0.01	(0.34)	0.00%	-
Aravive Inc	Health Care	\$1	0.0%	(89.55)%	0.01	(0.61)	0.00%	-

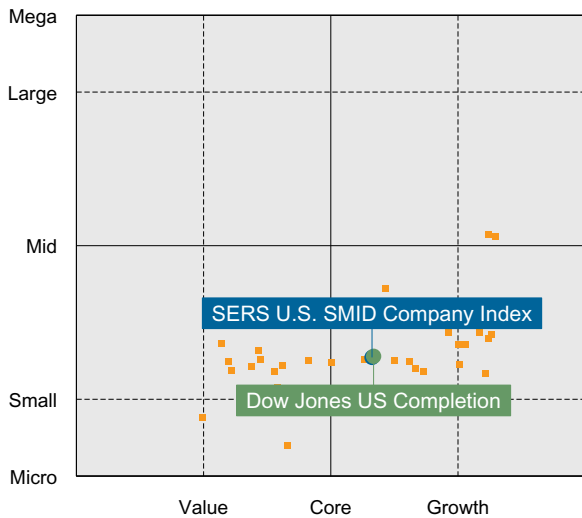
Historical Holdings Based Style Analysis

SERS U.S. SMID Company Index

For Three Years Ended September 30, 2023

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.

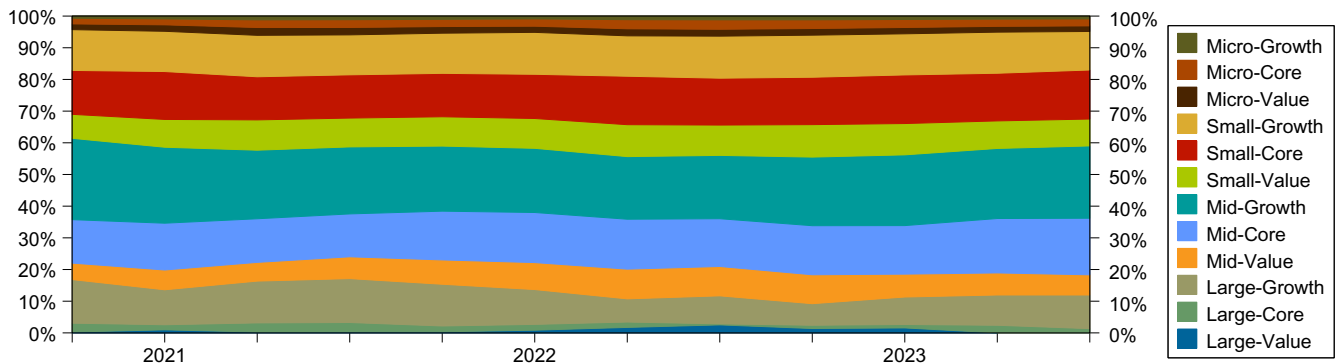
Average Style Map vs Callan SMID Broad MFs Holdings for Three Years Ended September 30, 2023



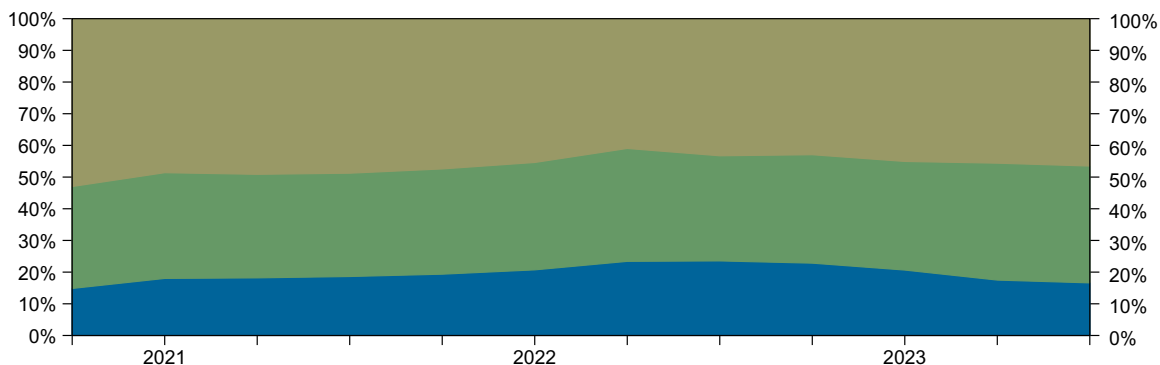
Average Style Exposure Matrix Holdings for Three Years Ended September 30, 2023

	0.8% (2)	1.8% (4)	10.7% (19)	13.3% (25)
Large	0.9% (2)	1.9% (4)	10.8% (19)	13.6% (25)
Mid	7.4% (65)	15.3% (140)	21.8% (170)	44.5% (375)
Small	9.2% (288)	14.6% (530)	12.9% (389)	36.7% (1207)
Micro	2.1% (562)	2.4% (708)	1.0% (230)	5.5% (1500)
Total	19.5% (917)	34.1% (1382)	46.4% (808)	100.0% (3107)
	19.3% (1074)	34.2% (1673)	46.5% (867)	100.0% (3614)
	Value	Core	Growth	Total

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



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



SERS Global Non-U.S. Index Fund

Period Ended September 30, 2023

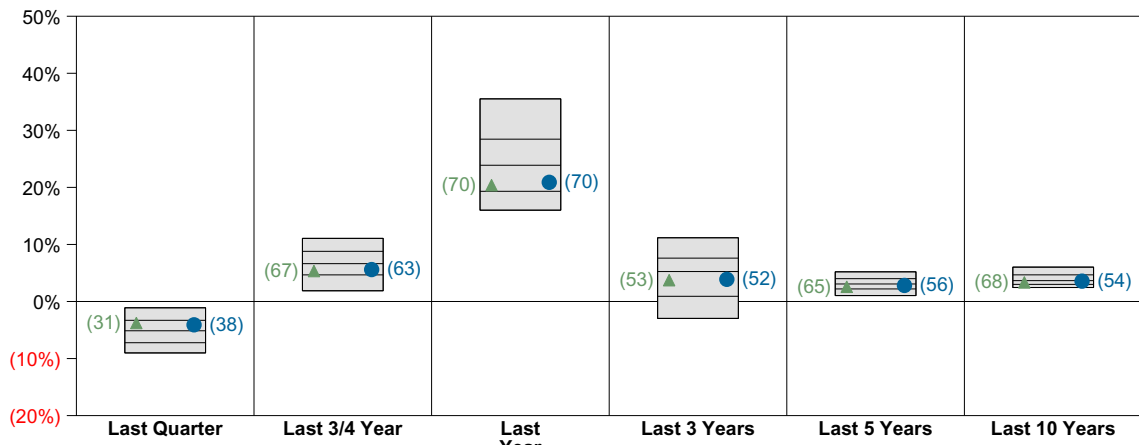
Investment Philosophy

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

Quarterly Summary and Highlights

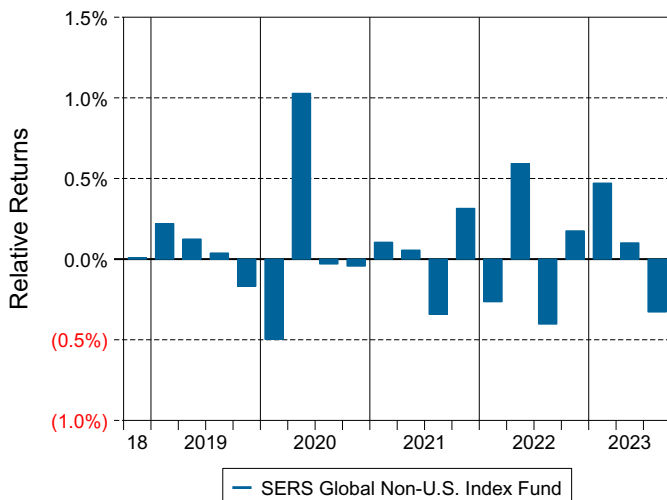
- SERS Global Non-U.S. Index Fund's portfolio posted a (4.09)% return for the quarter placing it in the 38 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 70 percentile for the last year.
- SERS Global Non-U.S. Index Fund's portfolio underperformed the MSCI ACWI xUS (Net) by 0.32% for the quarter and outperformed the MSCI ACWI xUS (Net) for the year by 0.50%.

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

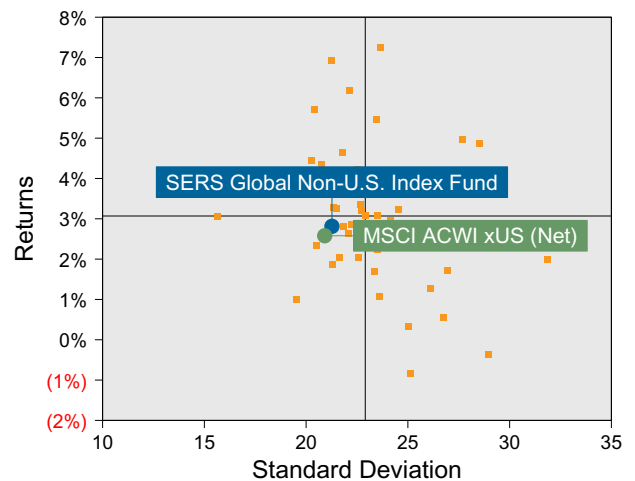


10th Percentile	(1.10)	11.06	35.52	11.17	5.20	6.03
25th Percentile	(3.30)	8.79	28.45	7.60	4.00	4.67
Median	(5.13)	6.64	23.88	5.25	3.07	3.66
75th Percentile	(7.23)	4.67	19.31	0.91	2.20	3.00
90th Percentile	(9.02)	1.88	16.00	(2.96)	1.04	2.45
SERS Global Non-U.S. Index Fund	(4.09)	5.60	20.89	3.89	2.81	3.57
MSCI ACWI xUS (Net)	(3.77)	5.34	20.39	3.74	2.58	3.35

Relative Return vs MSCI ACWI xUS (Net)



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

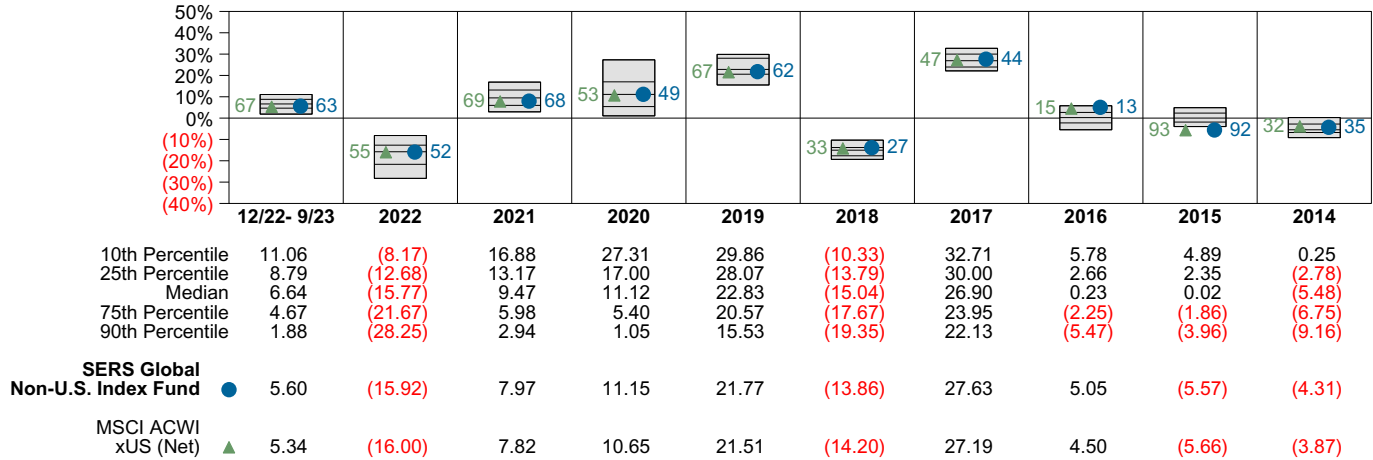


SERS Global Non-U.S. Index Fund Return Analysis Summary

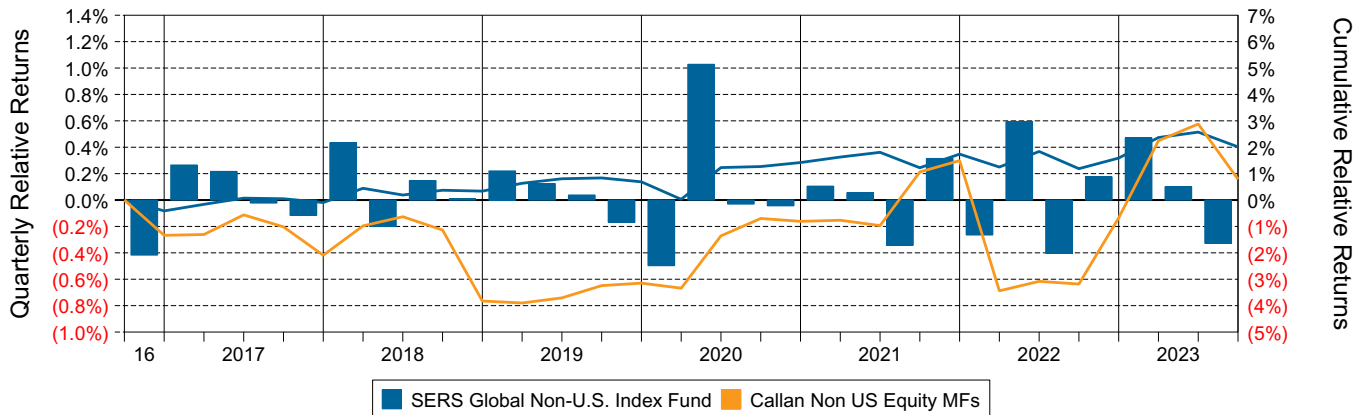
Return Analysis

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.

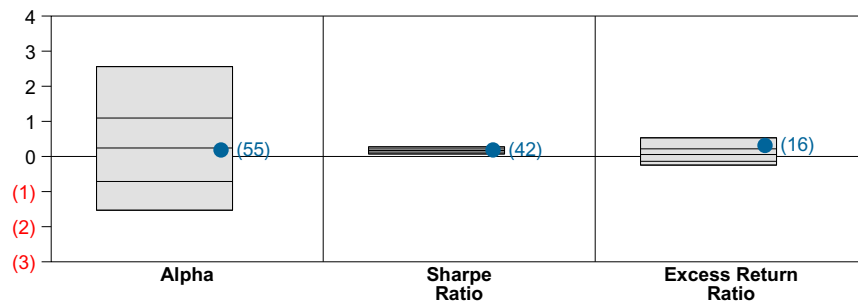
Performance vs Callan Non US Equity Mutual Funds (Institutional Net)



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, 2023



10th Percentile	2.56	0.27	0.53
25th Percentile	1.09	0.22	0.22
Median	0.24	0.17	0.06
75th Percentile	(0.71)	0.12	(0.14)
90th Percentile	(1.53)	0.07	(0.25)

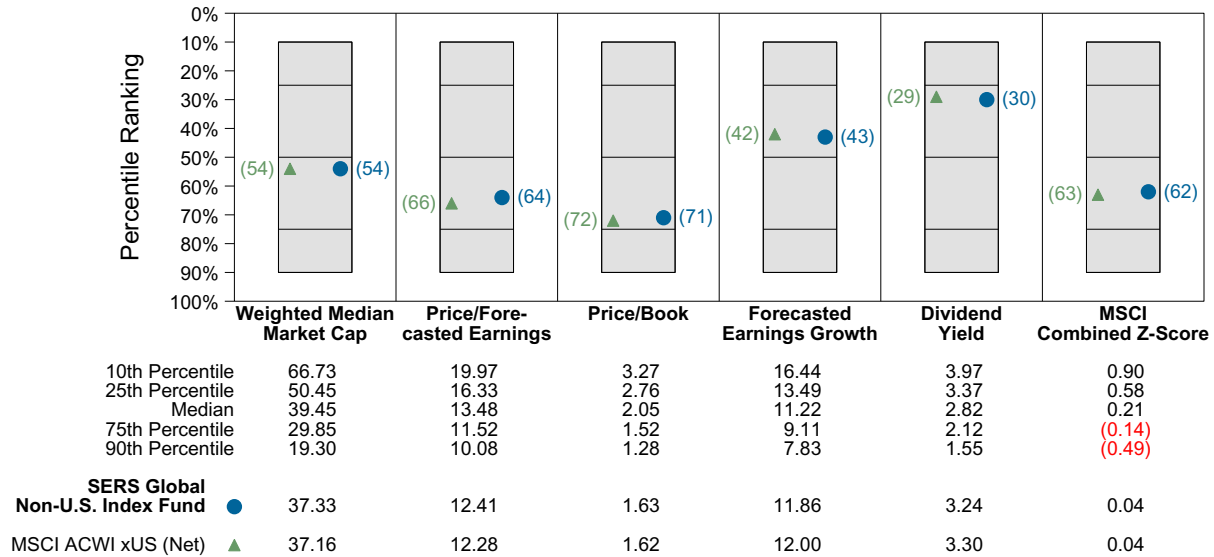
SERS Global Non-U.S. Index Fund ● 0.18 0.19 0.31

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

Portfolio Characteristics

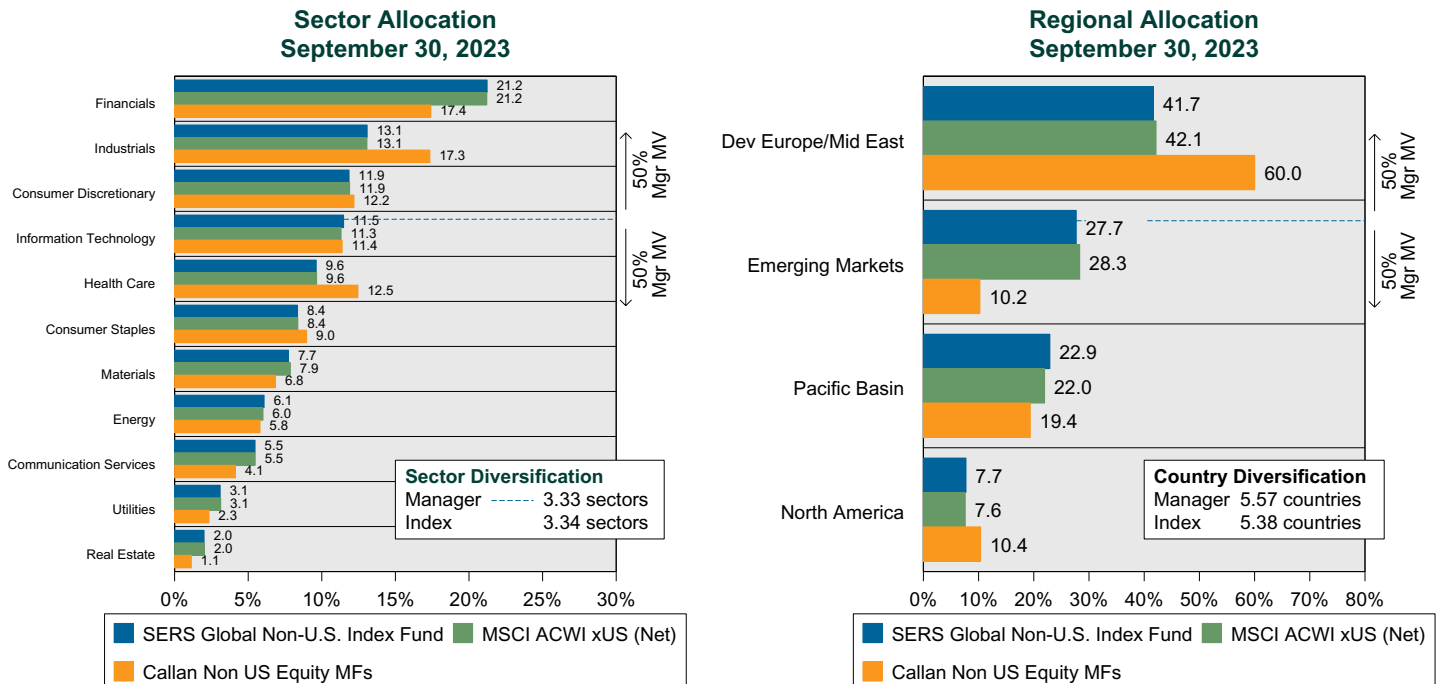
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan Non US Equity Mutual Funds as of September 30, 2023



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.



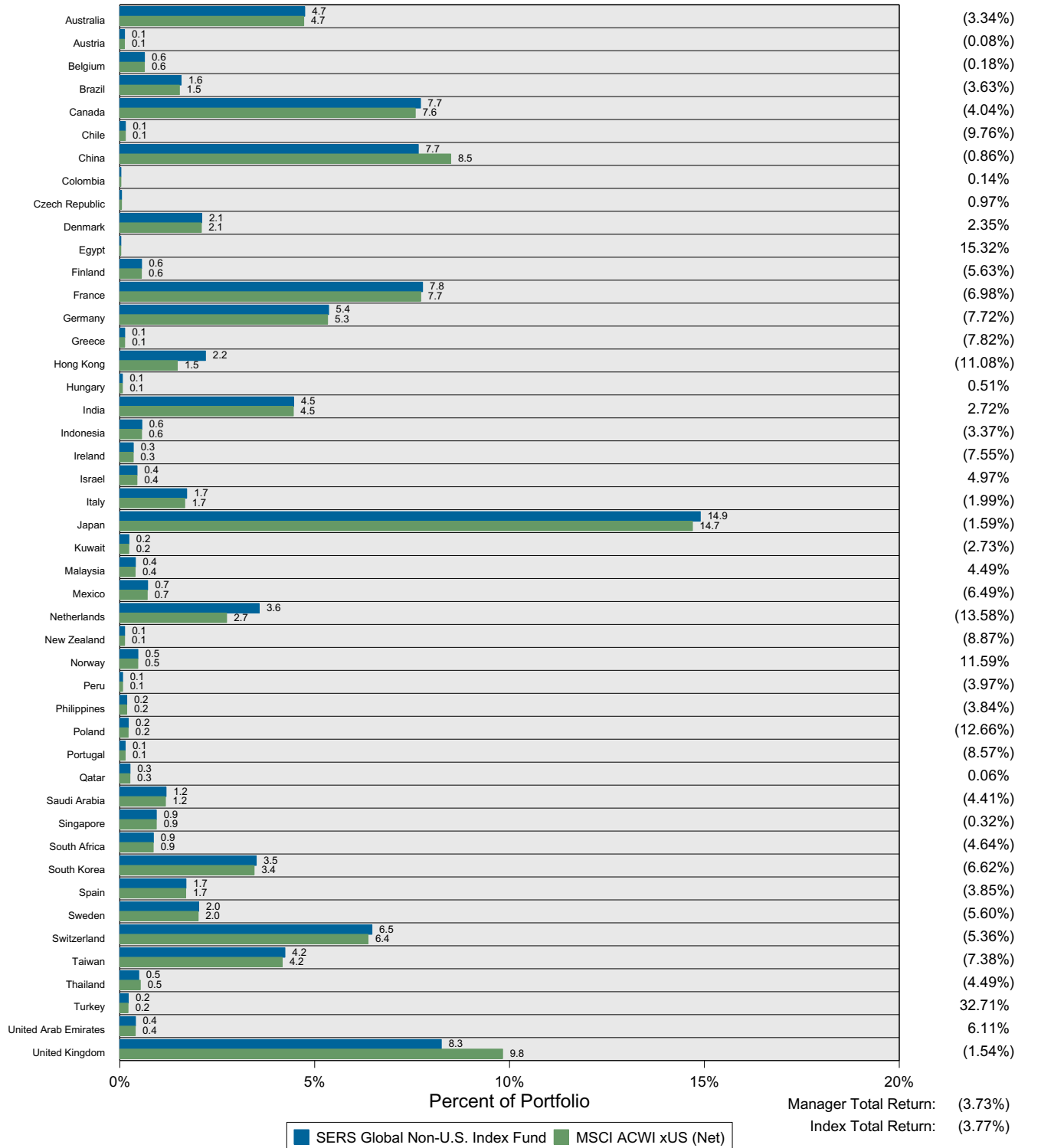
Country Allocation

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, 2023. 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, 2023



SERS Global Non-U.S. Index Fund Top 10 Portfolio Holdings Characteristics as of September 30, 2023

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	\$51,259	1.8%	(11.92)%	420.14	14.96	2.20%	3.19%
Nestle S A Shs Nom New	Consumer Staples	\$38,316	1.3%	(5.71)%	302.79	19.94	2.84%	6.71%
Novo-Nordisk A S Almindelig Aktie	Health Care	\$37,775	1.3%	14.05%	314.04	31.78	1.10%	28.70%
Tencent Holdings Limited Shs Par Hkd	Communication Services	\$33,457	1.2%	(7.80)%	372.50	16.31	0.78%	19.31%
Samsung Electronics Co Ltd Ord	Information Technology	\$31,074	1.1%	(7.03)%	302.60	20.00	2.11%	(6.60)%
Asml Holding N V Asml Rev Stk Spl	Information Technology	\$30,215	1.0%	(17.98)%	238.63	26.41	1.05%	22.89%
Shell Plc Shs A	Energy	\$27,004	0.9%	7.28%	214.59	7.88	3.56%	(8.30)%
Novartis	Health Care	\$26,635	0.9%	2.00%	233.70	13.81	3.41%	9.60%
Astrazeneca Plc Ord	Health Care	\$26,595	0.9%	(4.87)%	210.02	16.39	2.14%	13.00%
Lvmh Moet Hennessy Lou Vuitt Ord	Consumer Discretionary	\$26,524	0.9%	(19.44)%	380.78	20.58	0.77%	10.94%

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
Tupras Turkiye Petrol	Energy	\$741	0.0%	99.69%	11.17	10.27	4.73%	100.60%
Rural Elecfn.Corp.	Financials	\$524	0.0%	79.51%	9.11	5.82	3.69%	1.93%
Daewoo Intl	Industrials	\$363	0.0%	74.96%	9.31	16.49	1.40%	46.90%
Hanmi Semiconductor	Information Technology	\$223	0.0%	70.68%	3.80	36.39	0.38%	(11.16)%
Barito Pacific Timber	Materials	\$298	0.0%	69.27%	7.89	80.00	-	(32.73)%
Akbank Akt	Financials	\$494	0.0%	57.52%	6.35	3.09	4.92%	79.10%
Miniso Group Hldg Ltd Issue_code 10	Consumer Discretionary	\$312	0.0%	54.51%	8.18	24.16	1.59%	48.13%
Bim Birlesik Magazalar As Shs	Consumer Staples	\$576	0.0%	53.21%	6.08	10.46	1.82%	33.10%
Tal Ed Group Ads Repstg Com	Consumer Discretionary	\$526	0.0%	52.62%	4.47	74.07	0.00%	(17.49)%
Quanta Computer Inc Shs	Information Technology	\$2,562	0.1%	52.02%	28.66	21.45	2.50%	22.90%

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
Adyen NV Common Stock	Financials	\$2,045	0.1%	(56.81)%	23.17	29.94	0.00%	22.65%
China Meidong Auto Hdg.	Consumer Discretionary	\$51	0.0%	(52.57)%	0.74	6.60	3.16%	24.60%
Pepco Group	Consumer Discretionary	\$99	0.0%	(48.83)%	2.67	9.28	0.00%	-
Nuvei Corporation Sub Vtg	Financials	\$119	0.0%	(48.75)%	0.95	7.51	2.65%	13.20%
Ningbo Deye Tech A	Industrials	\$11	0.0%	(48.50)%	4.56	8.47	1.62%	-
Country Garden Hldgs Co Ltd	Real Estate	\$193	0.0%	(42.86)%	3.25	(2.23)	0.00%	10.00%
Dong Energy A/S Common Stock	Utilities	\$1,290	0.0%	(42.12)%	22.99	19.14	3.51%	3.98%
Grupo Televisa S A Ord Part Ctf	Communication Services	\$184	0.0%	(40.30)%	1.76	10.97	3.28%	(14.51)%
Magazine Luiza Sa	Consumer Discretionary	\$161	0.0%	(39.37)%	2.86	105.00	2.38%	(11.55)%
Ecovacs Robotics A	Consumer Discretionary	\$10	0.0%	(37.73)%	3.83	14.95	1.86%	62.23%

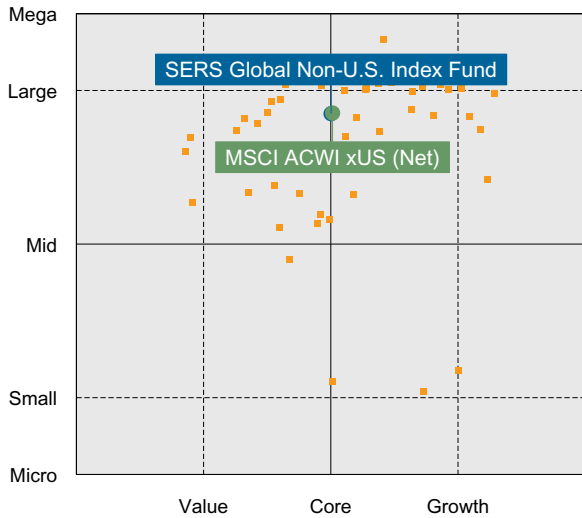
Historical Holdings Based Style Analysis

SERS Global Non-U.S. Index Fund

For Three Years Ended September 30, 2023

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.

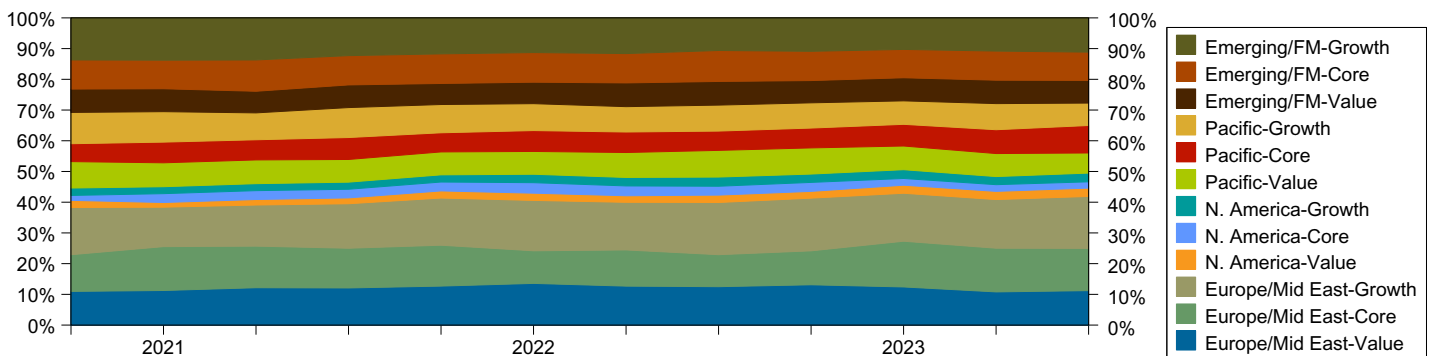
Average Style Map vs Callan Non US Equity MFs Holdings for Three Years Ended September 30, 2023



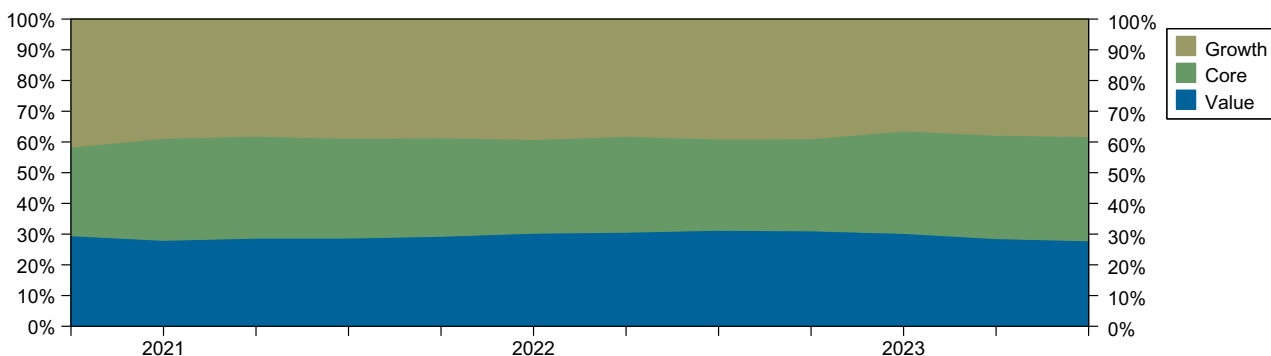
Average Style Exposure Matrix Holdings for Three Years Ended September 30, 2023

Europe/ Mid East	12.1% (139)	12.7% (126)	15.5% (147)	40.3% (412)
	12.1% (149)	12.4% (129)	15.8% (161)	40.3% (439)
N. America	2.2% (25)	2.7% (28)	2.6% (30)	7.5% (83)
	2.4% (27)	2.6% (30)	2.6% (33)	7.6% (90)
Pacific	7.8% (137)	6.9% (118)	8.7% (126)	23.4% (381)
	7.6% (138)	6.8% (118)	8.5% (126)	22.9% (382)
Emerging/ FM	7.4% (414)	9.6% (385)	11.8% (399)	28.8% (1198)
	7.5% (450)	9.7% (432)	12.1% (454)	29.3% (1336)
Total	29.5% (715)	31.8% (657)	38.6% (702)	100.0% (2074)
	29.6% (764)	31.4% (709)	39.0% (774)	100.0% (2247)
	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, 2023

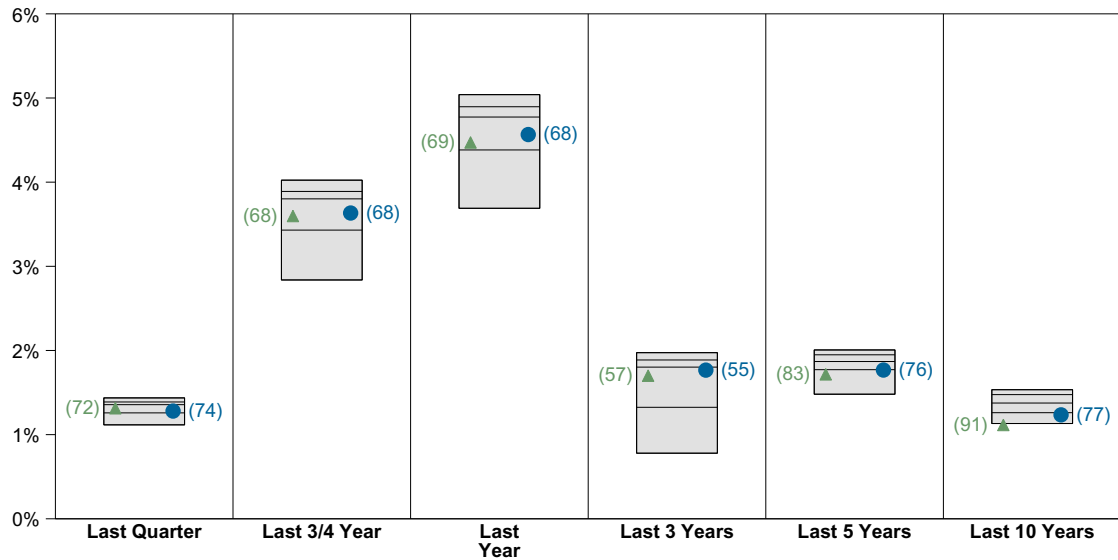
Investment Philosophy

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

Quarterly Summary and Highlights

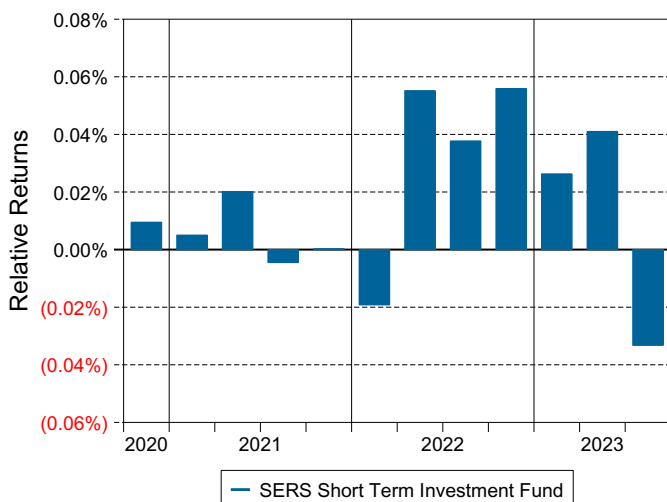
- SERS Short Term Investment Fund's portfolio posted a 1.28% return for the quarter placing it in the 74 percentile of the Callan Cash Database group for the quarter and in the 68 percentile for the last year.
- SERS Short Term Investment Fund's portfolio underperformed the 3-month Treasury Bill by 0.03% for the quarter and outperformed the 3-month Treasury Bill for the year by 0.09%.

Performance vs Callan Cash Database (Gross)

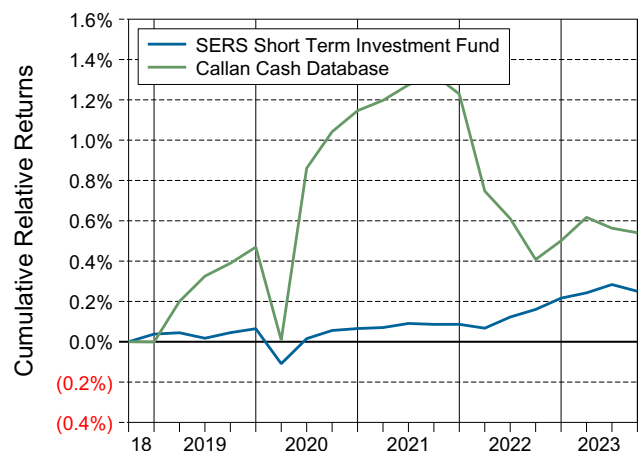


10th Percentile	1.44	4.02	5.04	1.97	2.01	1.53
25th Percentile	1.39	3.89	4.90	1.89	1.95	1.48
Median	1.36	3.80	4.77	1.80	1.87	1.38
75th Percentile	1.26	3.43	4.38	1.32	1.77	1.26
90th Percentile	1.12	2.84	3.69	0.78	1.48	1.13
SERS Short Term Investment Fund	● 1.28	3.63	4.57	1.77	1.77	1.23
3-month Treasury Bill	▲ 1.31	3.60	4.47	1.70	1.72	1.11

Relative Return vs 3-month Treasury Bill



Cumulative Returns vs 3-month Treasury Bill

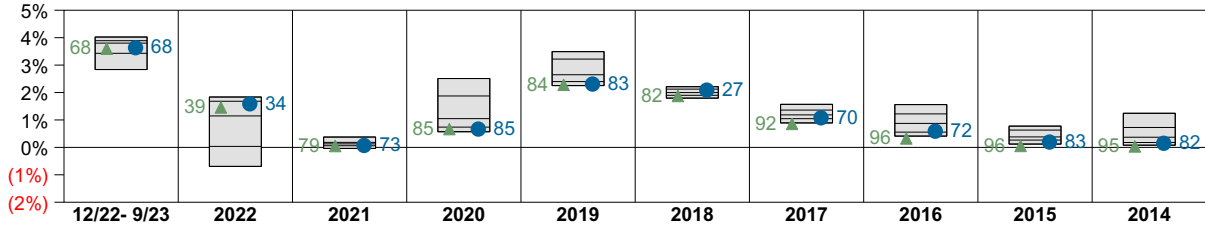


SERS Short Term Investment Fund Return Analysis Summary

Return Analysis

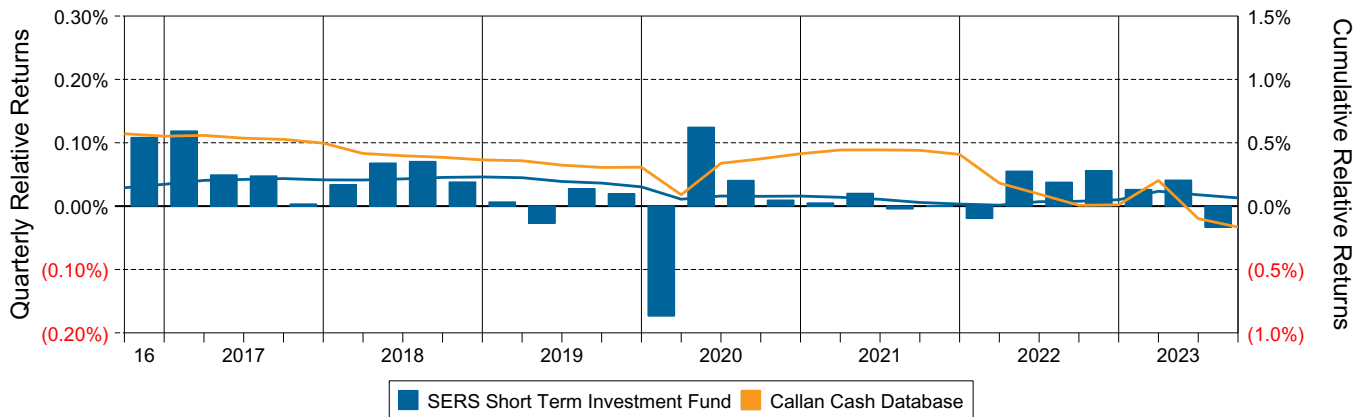
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and 12 quarter rolling manager returns versus the appropriate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

Performance vs Callan Cash Database (Gross)

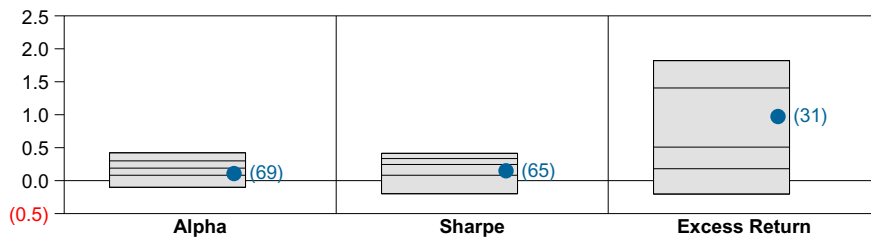


	12/22- 9/23	2022	2021	2020	2019	2018	2017	2016	2015	2014
10th Percentile	4.02	1.84	0.38	2.51	3.49	2.21	1.57	1.56	0.78	1.24
25th Percentile	3.89	1.68	0.18	1.87	3.22	2.12	1.36	1.22	0.63	0.73
Median	3.80	1.15	0.13	1.05	2.65	2.00	1.19	0.87	0.38	0.37
75th Percentile	3.43	0.04	0.06	0.74	2.40	1.90	1.05	0.56	0.27	0.18
90th Percentile	2.84	(0.69)	(0.04)	0.57	2.25	1.80	0.89	0.41	0.12	0.08
SERS Short Term Investment Fund	3.63	1.59	0.07	0.67	2.31	2.09	1.08	0.59	0.19	0.15
3-month Treasury Bill	3.60	1.46	0.05	0.67	2.28	1.87	0.86	0.33	0.05	0.03

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, 2023



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.42	0.41	1.82
25th Percentile	0.30	0.34	1.41
Median	0.19	0.25	0.51
75th Percentile	0.08	0.08	0.18
90th Percentile	(0.10)	(0.20)	(0.20)
SERS Short Term Investment Fund	0.11	0.15	0.97

	Alpha	Sharpe Ratio	Excess Return Ratio
SERS Short Term Investment Fund	0.11	0.15	0.97

SERS U.S. Short Term Bond Idx Fund

Period Ended September 30, 2023

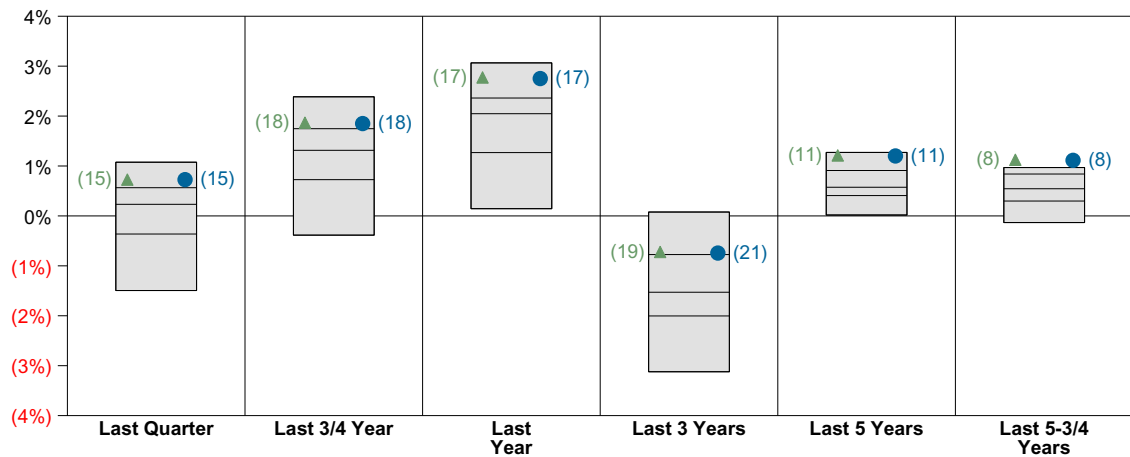
Investment Philosophy

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

Quarterly Summary and Highlights

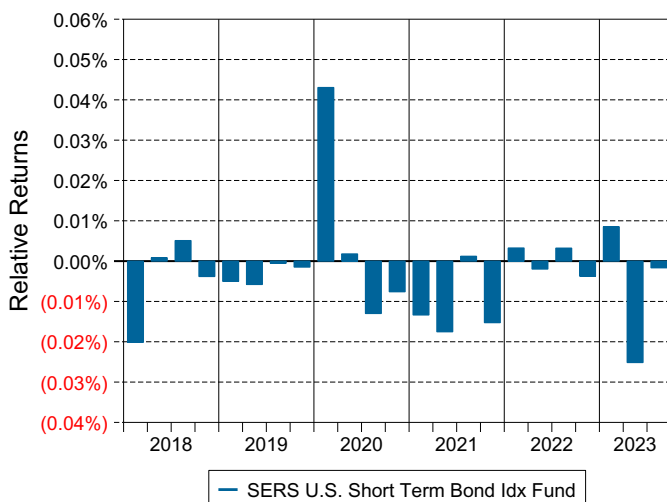
- SERS U.S. Short Term Bond Idx Fund's portfolio posted a 0.73% return for the quarter placing it in the 15 percentile of the Callan Short US Gov Bond Mut Funds group for the quarter and in the 17 percentile for the last year.
- SERS U.S. Short Term Bond Idx Fund's portfolio underperformed the Blmbg Gov/Cred 1-3 Yr by 0.00% for the quarter and underperformed the Blmbg Gov/Cred 1-3 Yr for the year by 0.02%.

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

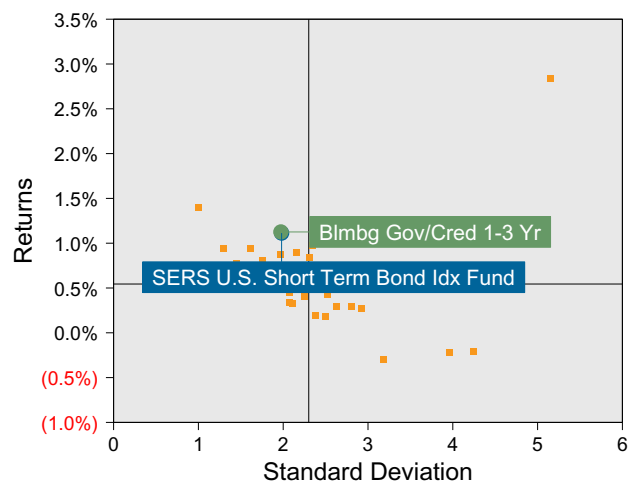


	Last Quarter	Last 3/4 Year	Last Year	Last 3 Years	Last 5 Years	Last 5-3/4 Years
10th Percentile	1.08	2.39	3.07	0.08	1.27	0.97
25th Percentile	0.57	1.75	2.36	(0.77)	0.91	0.84
Median	0.23	1.31	2.05	(1.53)	0.57	0.54
75th Percentile	(0.36)	0.73	1.27	(2.00)	0.41	0.30
90th Percentile	(1.49)	(0.39)	0.14	(3.12)	0.02	(0.13)
SERS U.S. Short Term Bond Idx Fund	● 0.73	1.85	2.75	(0.74)	1.20	1.11
Blmbg Gov/Cred 1-3 Yr	▲ 0.73	1.87	2.77	(0.72)	1.21	1.13

Relative Return vs Blmbg Gov/Cred 1-3 Yr



Callan Short US Gov Bond Mut Funds (Institutional Net) Annualized Five and Three-Quarter Year Risk vs Return



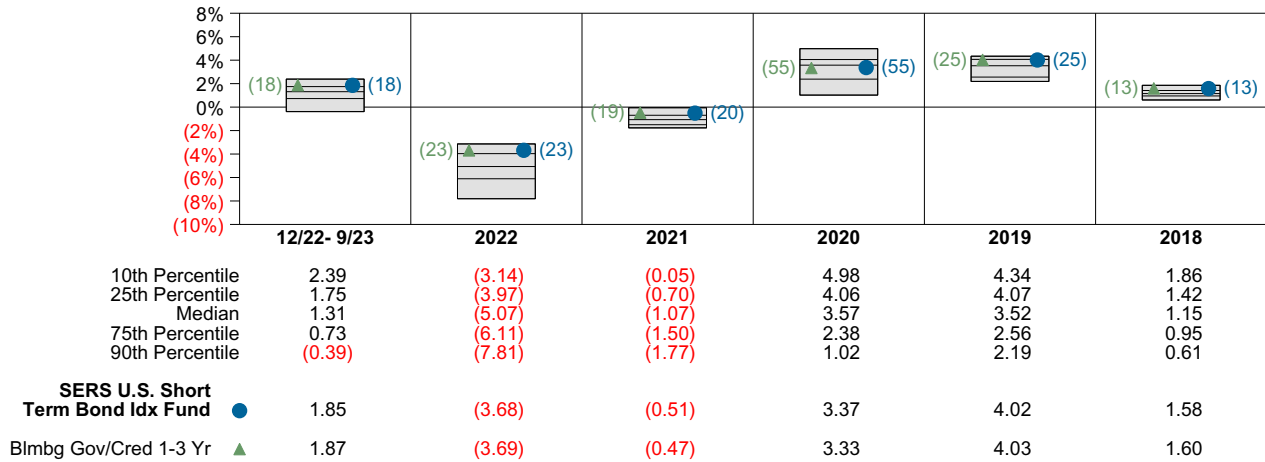
SERS U.S. Short Term Bond Idx Fund

Return Analysis Summary

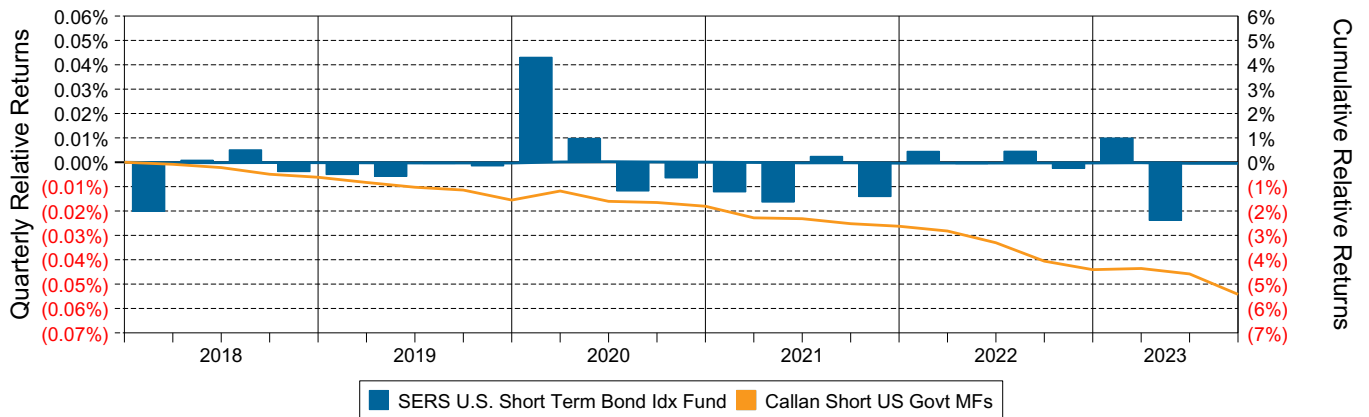
Return Analysis

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

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



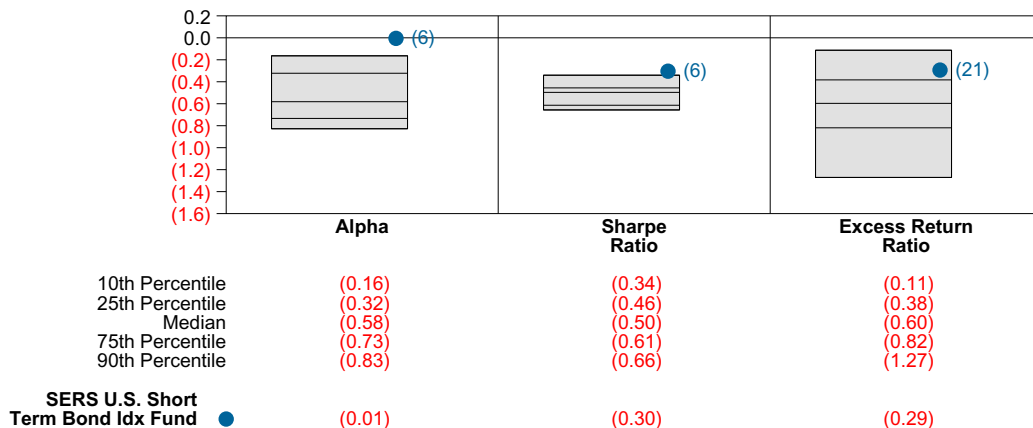
Cumulative and Quarterly Relative Returns vs Blmbg Gov/Cred 1-3 Yr



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

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

Five and Three-Quarter Years Ended September 30, 2023



SERS U.S. Short Term Bond Idx Fund

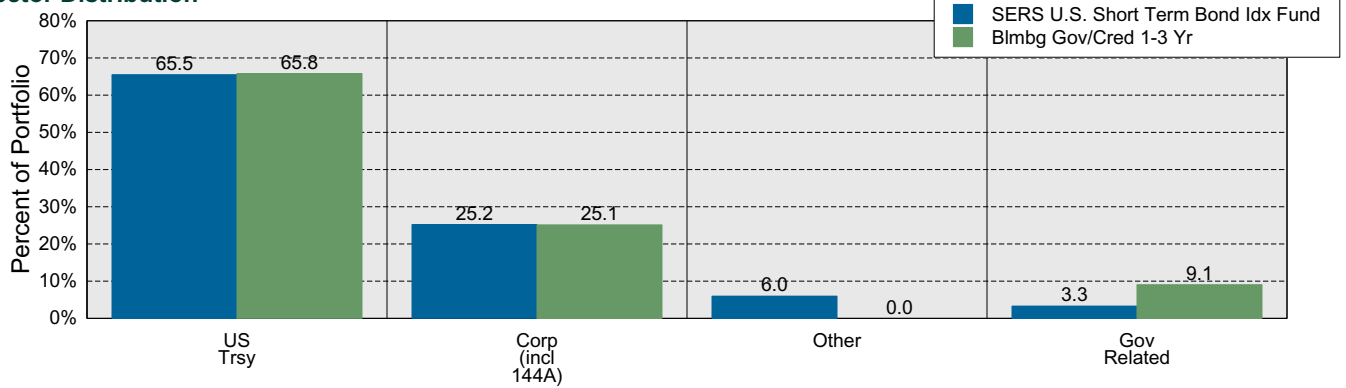
Portfolio Characteristics Summary

As of September 30, 2023

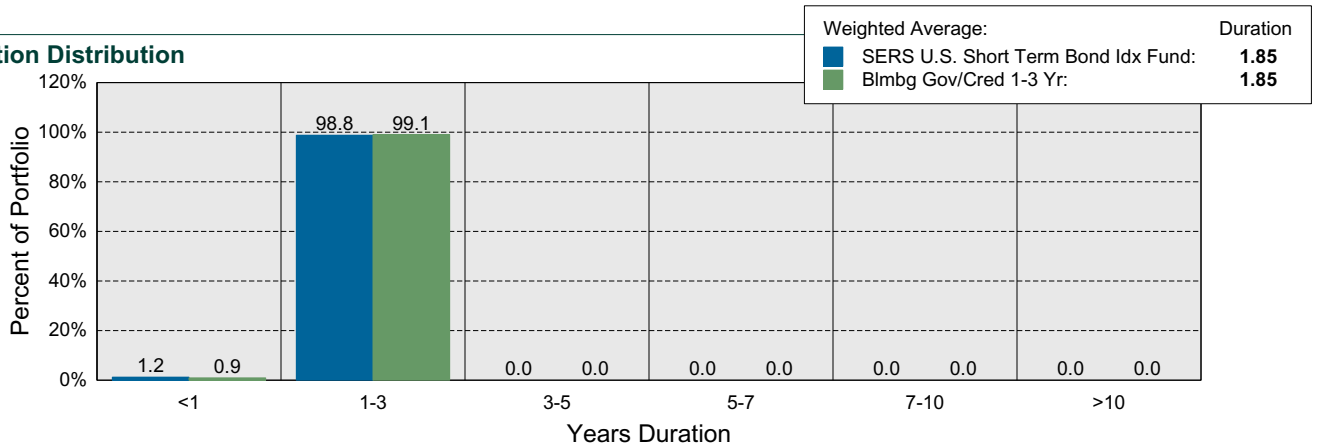
Portfolio Structure Comparison

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

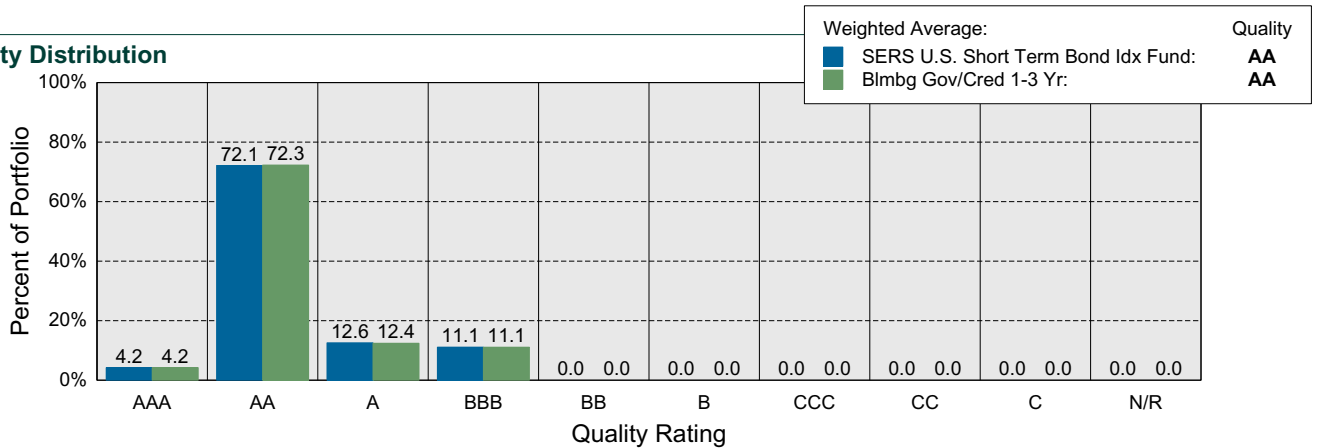
Sector Distribution



Duration Distribution



Quality Distribution



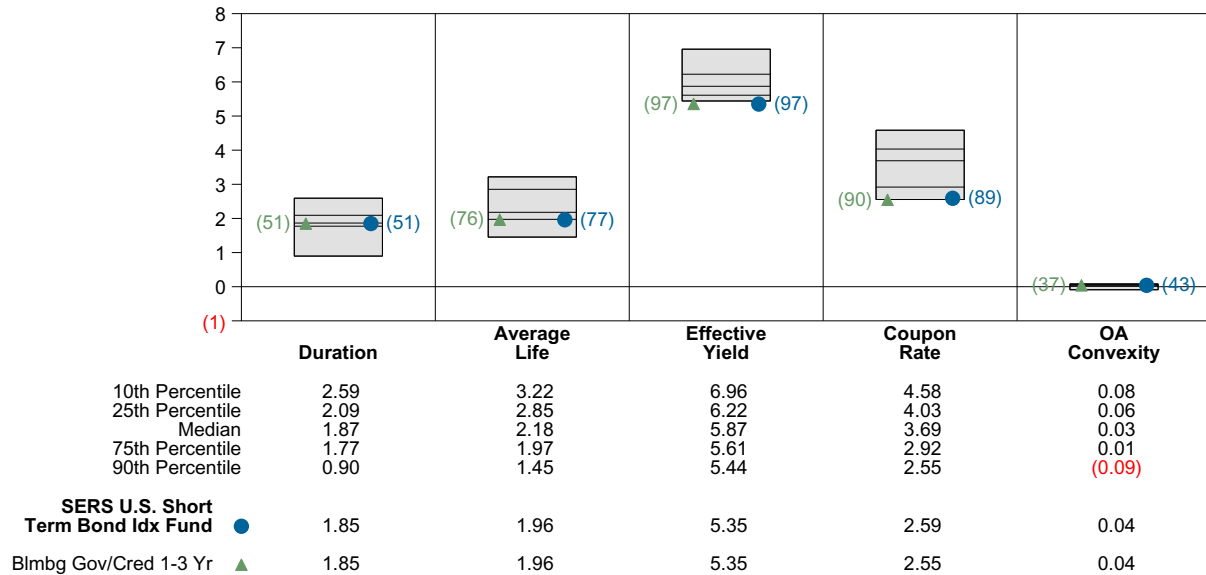
SERS U.S. Short Term Bond Idx Fund

Bond Characteristics Analysis Summary

Portfolio Characteristics

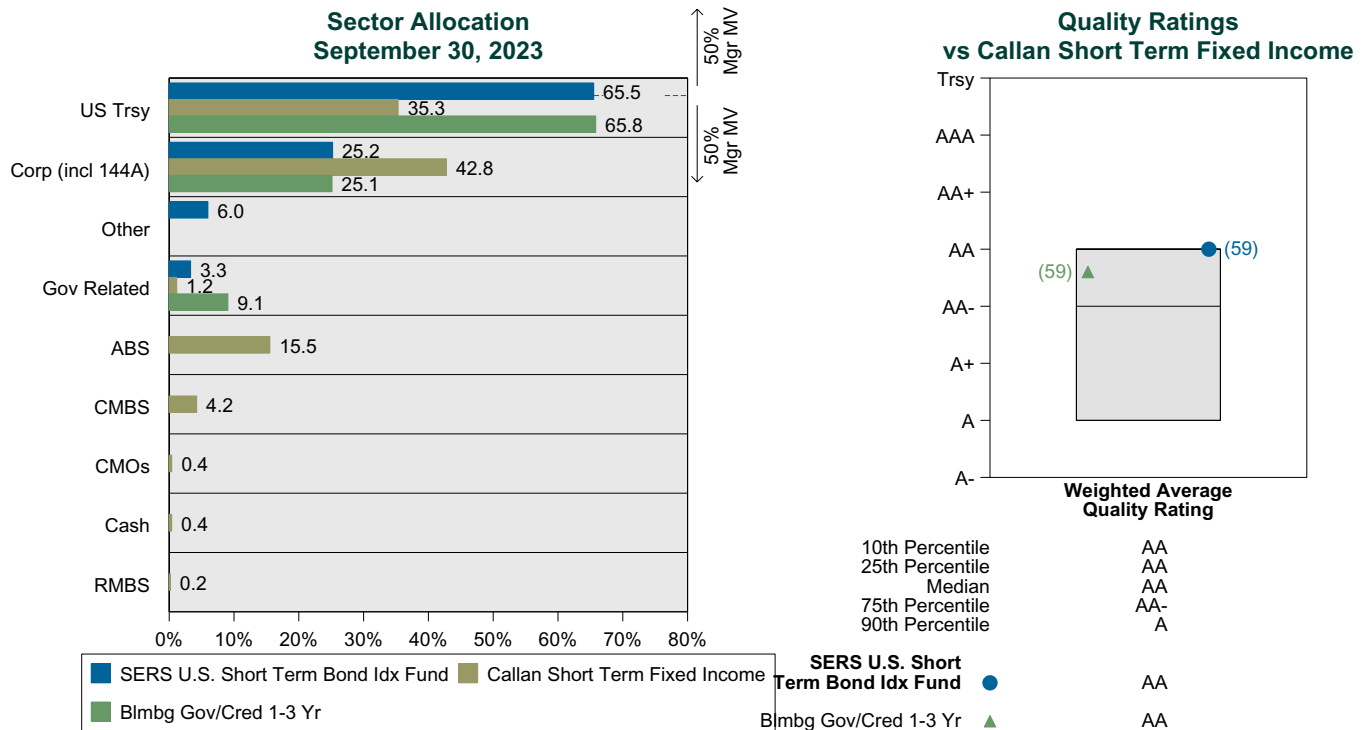
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Callan Short Term Fixed Income as of September 30, 2023



Sector Allocation and Quality Ratings

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



SERS U.S. TIPS Index Fund

Period Ended September 30, 2023

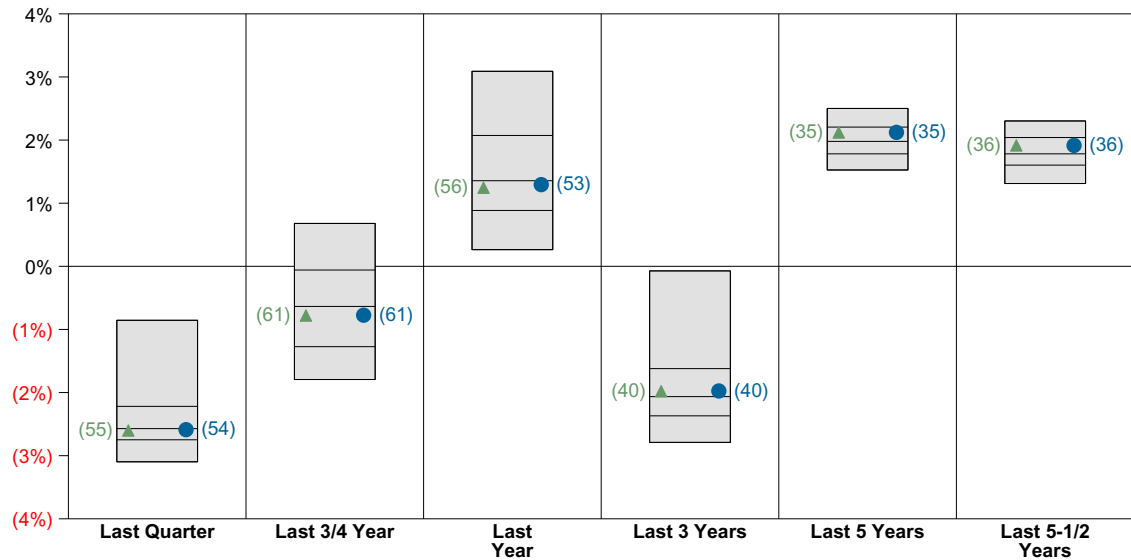
Investment Philosophy

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

Quarterly Summary and Highlights

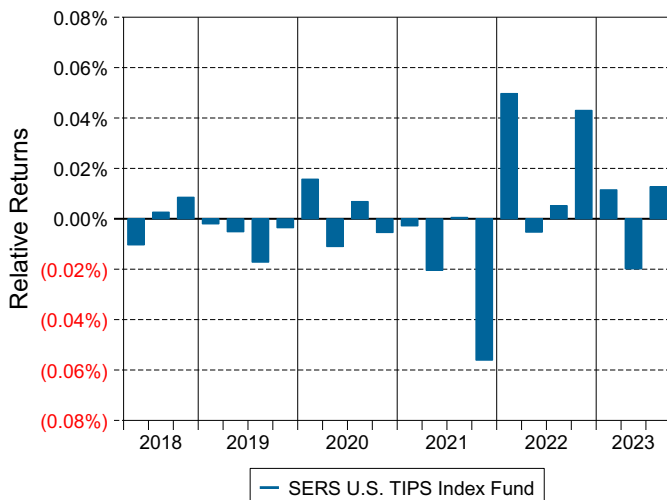
- SERS U.S. TIPS Index Fund's portfolio posted a (2.59)% return for the quarter placing it in the 54 percentile of the Callan Treas Infl Prot Securities MFs group for the quarter and in the 53 percentile for the last year.
- SERS U.S. TIPS Index Fund's portfolio outperformed the Blmbg TIPS by 0.01% for the quarter and outperformed the Blmbg TIPS for the year by 0.05%.

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

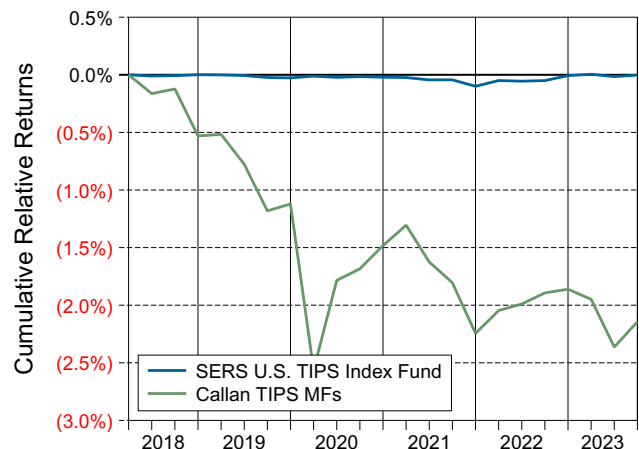


10th Percentile	(0.86)	0.68	3.09	(0.07)	2.50	2.30
25th Percentile	(2.22)	(0.06)	2.07	(1.62)	2.21	2.04
Median	(2.57)	(0.64)	1.36	(2.06)	1.98	1.78
75th Percentile	(2.75)	(1.27)	0.89	(2.37)	1.78	1.60
90th Percentile	(3.10)	(1.79)	0.26	(2.79)	1.53	1.31
SERS U.S. TIPS Index Fund	(2.59)	(0.77)	1.29	(1.97)	2.12	1.92
Blmbg TIPS	(2.60)	(0.78)	1.25	(1.98)	2.12	1.92

Relative Return vs Blmbg TIPS



Cumulative Returns vs Blmbg TIPS

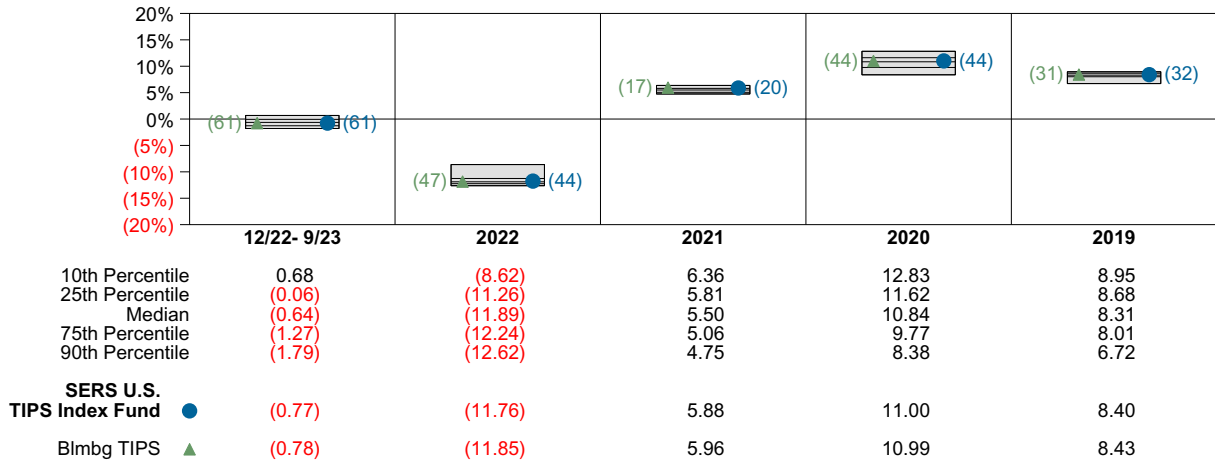


SERS U.S. TIPS Index Fund Return Analysis Summary

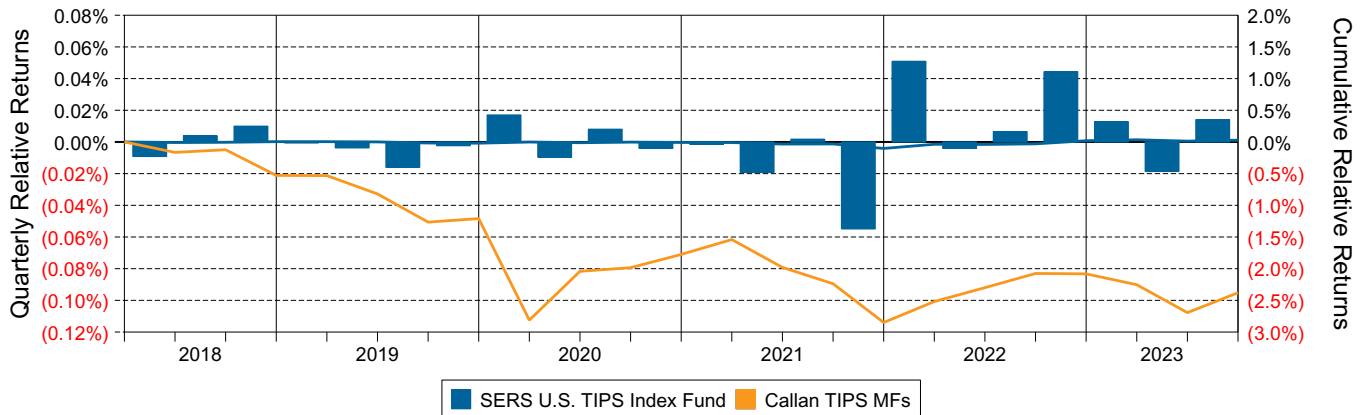
Return Analysis

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

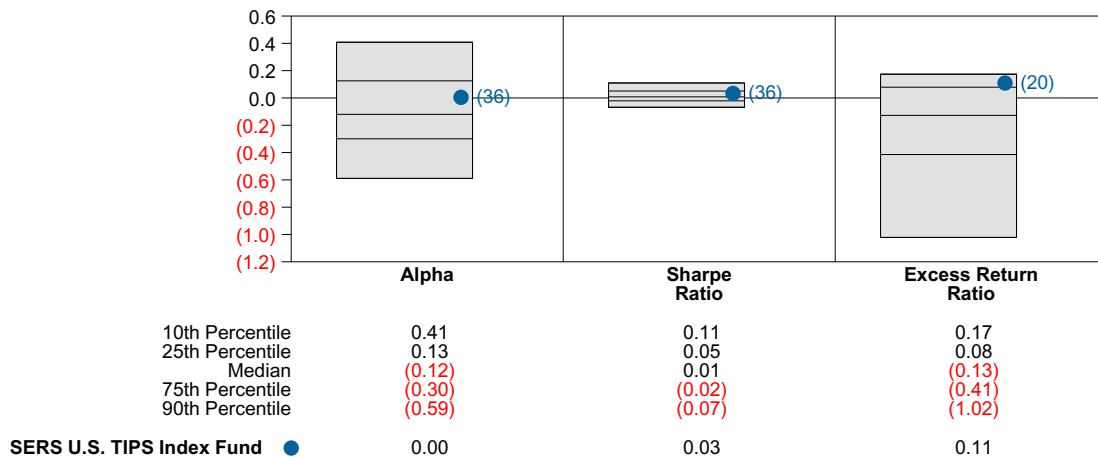
Performance vs Callan Treas Infl Prot Securities MFs (Institutional Net)



Cumulative and Quarterly Relative Returns vs Blmbg TIPS



Risk Adjusted Return Measures vs Blmbg TIPS Rankings Against Callan Treas Infl Prot Securities MFs (Institutional Net) Five and One-Half Years Ended September 30, 2023

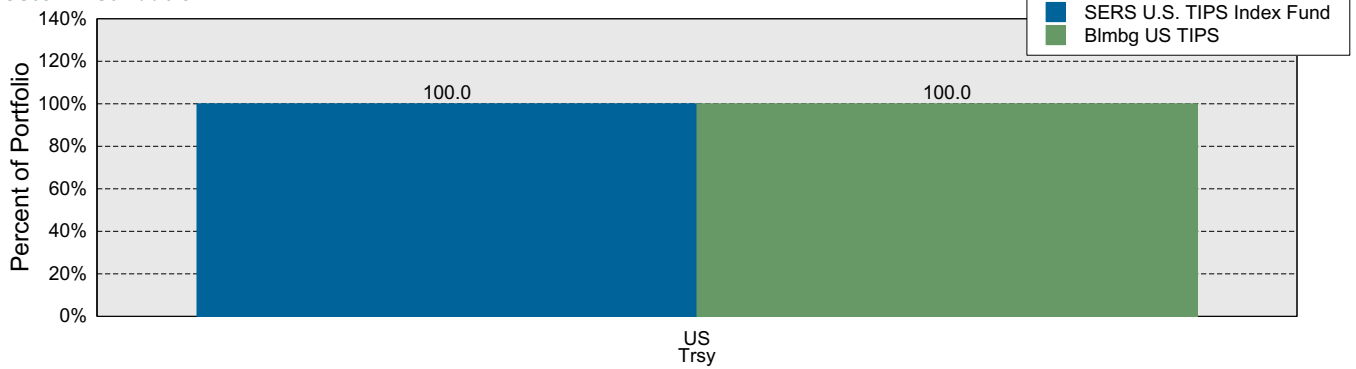


SERS U.S. TIPS Index Fund
Portfolio Characteristics Summary
As of September 30, 2023

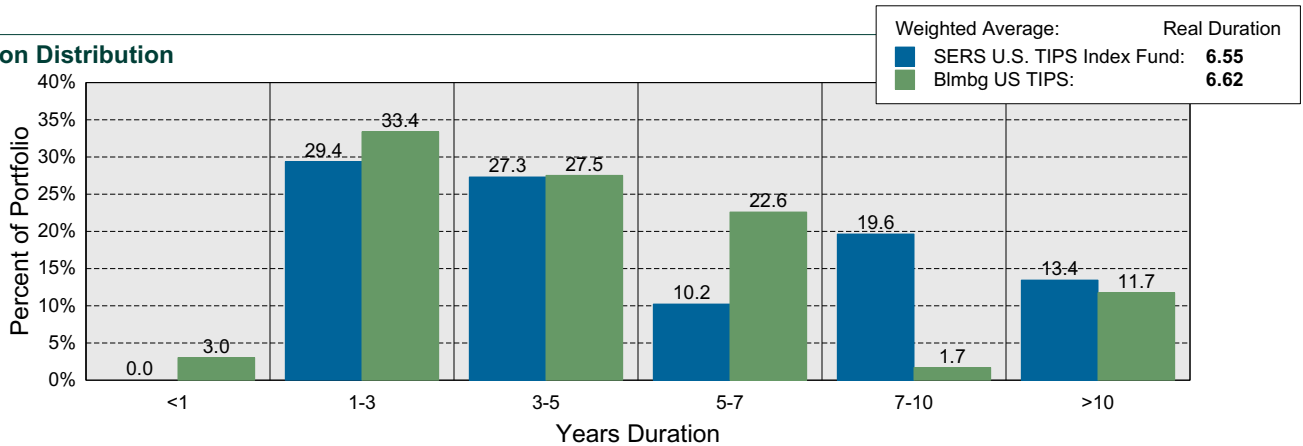
Portfolio Structure Comparison

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

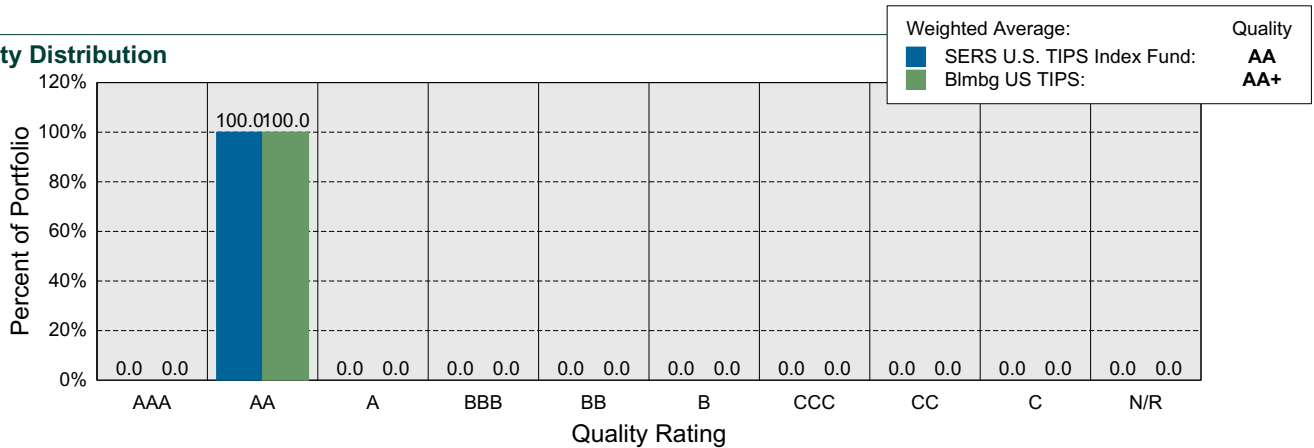
Sector Distribution



Duration Distribution



Quality Distribution

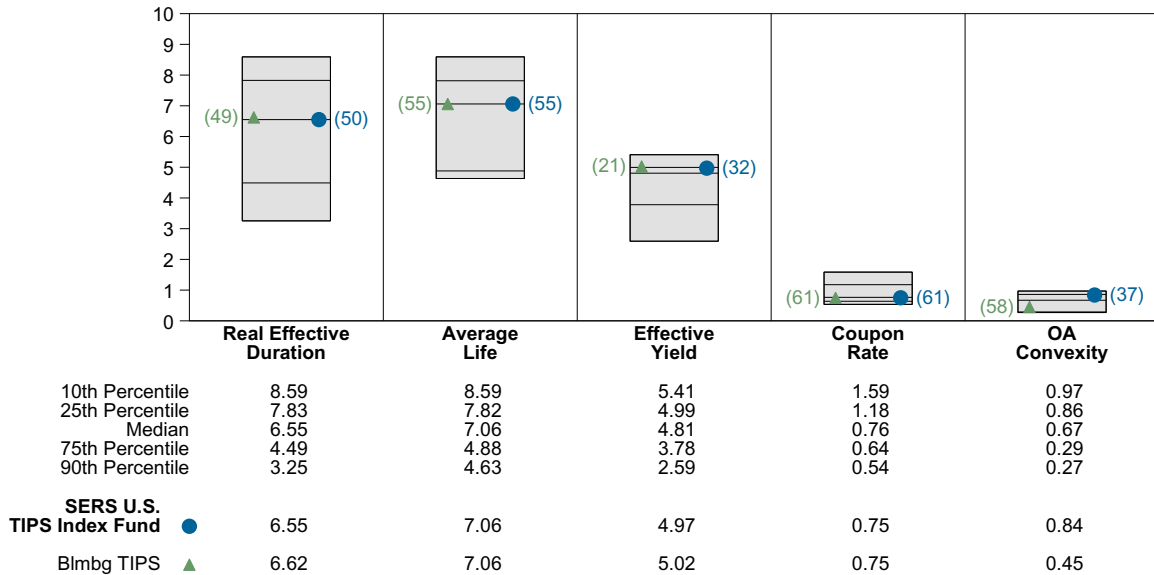


SERS U.S. TIPS Index Fund Bond Characteristics Analysis Summary

Portfolio Characteristics

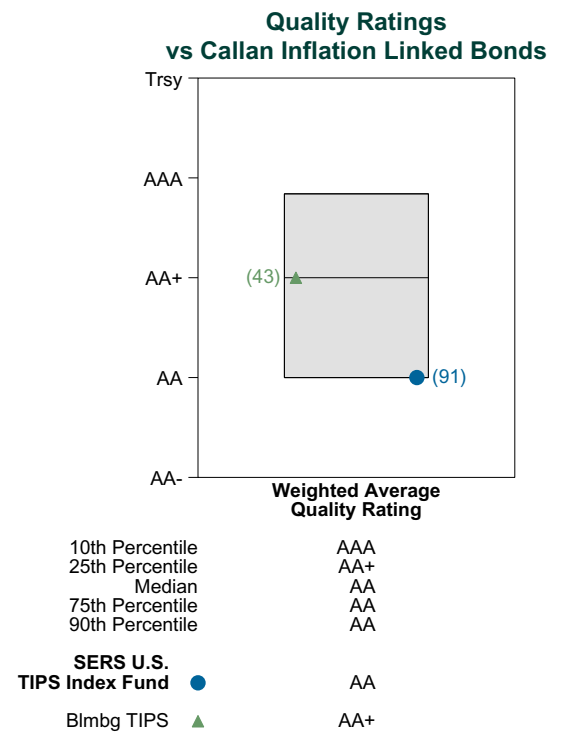
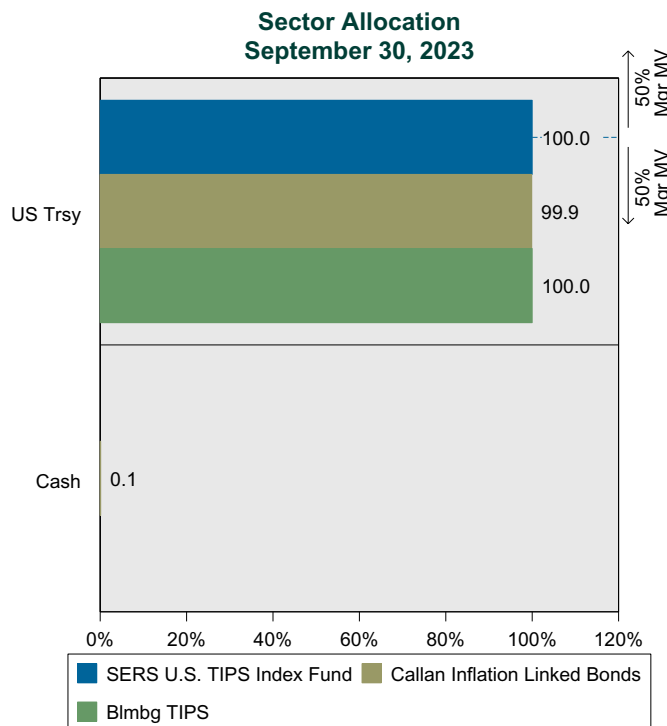
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of September 30, 2023



Sector Allocation and Quality Ratings

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



SERS U.S. Bond Index Fund

Period Ended September 30, 2023

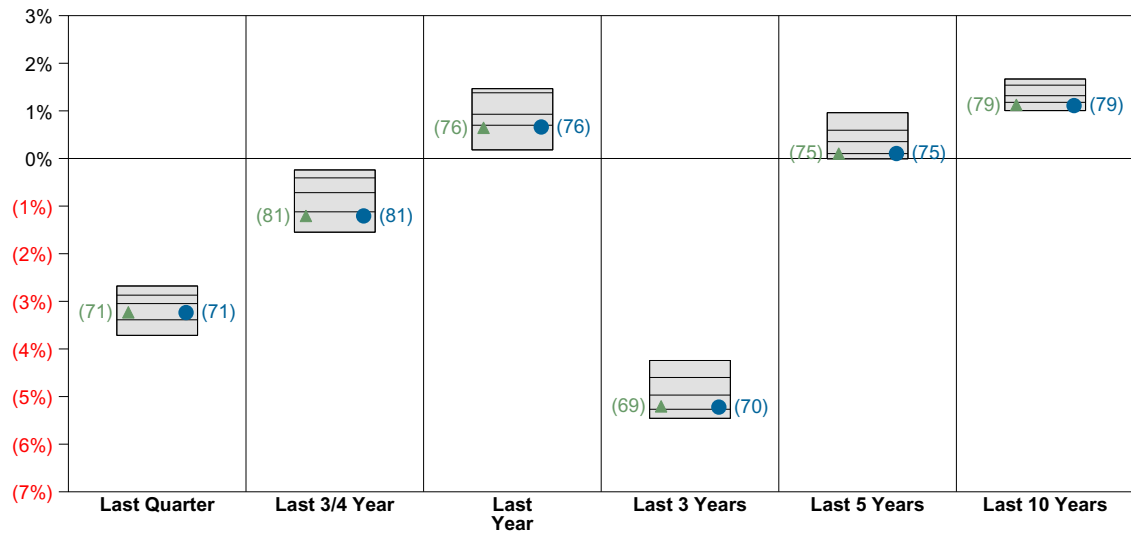
Investment Philosophy

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

Quarterly Summary and Highlights

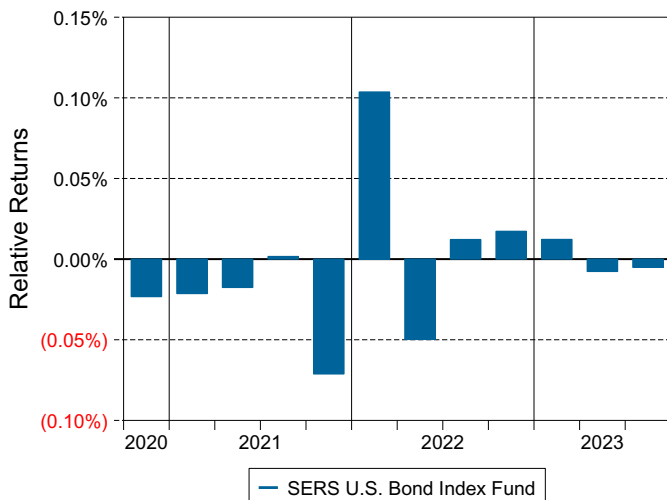
- SERS U.S. Bond Index Fund's portfolio posted a (3.24)% return for the quarter placing it in the 71 percentile of the Callan Core Bond Mutual Funds group for the quarter and in the 76 percentile for the last year.
- SERS U.S. Bond Index Fund's portfolio underperformed the Blmbg:Aggregate by 0.00% for the quarter and outperformed the Blmbg:Aggregate for the year by 0.02%.

Performance vs Callan Core Bond Mutual Funds (Institutional Net)

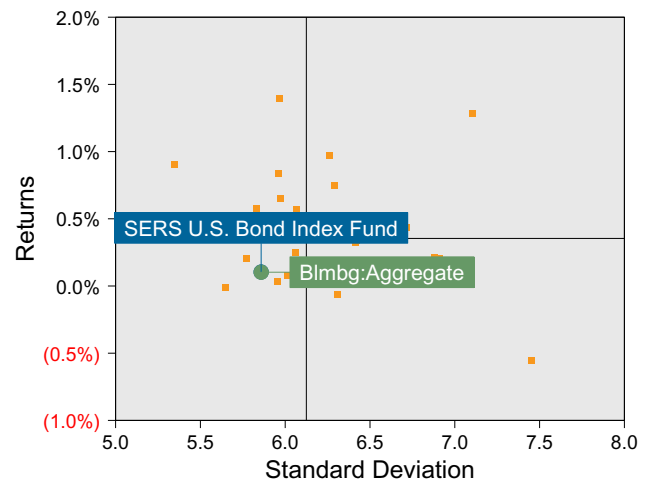


10th Percentile	(2.68)	(0.24)	1.47	(4.24)	0.96	1.67
25th Percentile	(2.87)	(0.41)	1.38	(4.60)	0.59	1.54
Median	(3.05)	(0.72)	0.93	(4.97)	0.35	1.32
75th Percentile	(3.39)	(1.12)	0.70	(5.27)	0.10	1.18
90th Percentile	(3.71)	(1.55)	0.18	(5.46)	(0.01)	1.01
SERS U.S. Bond Index Fund	● (3.24)	(1.21)	0.66	(5.22)	0.10	1.11
Blmbg:Aggregate	▲ (3.23)	(1.21)	0.64	(5.21)	0.10	1.13

Relative Return vs Blmbg:Aggregate



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

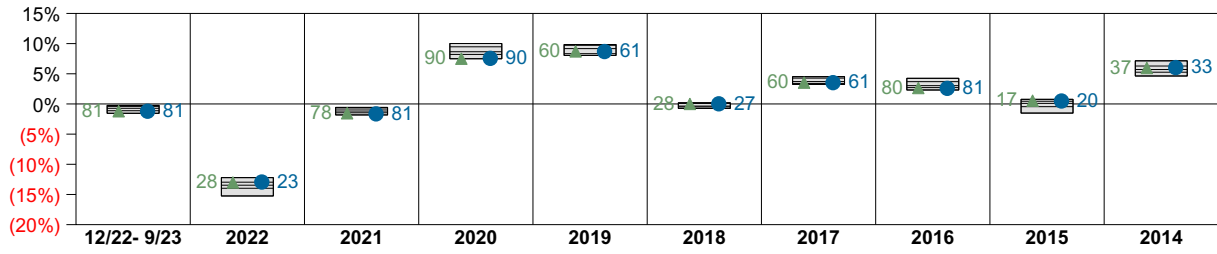


SERS U.S. Bond Index Fund Return Analysis Summary

Return Analysis

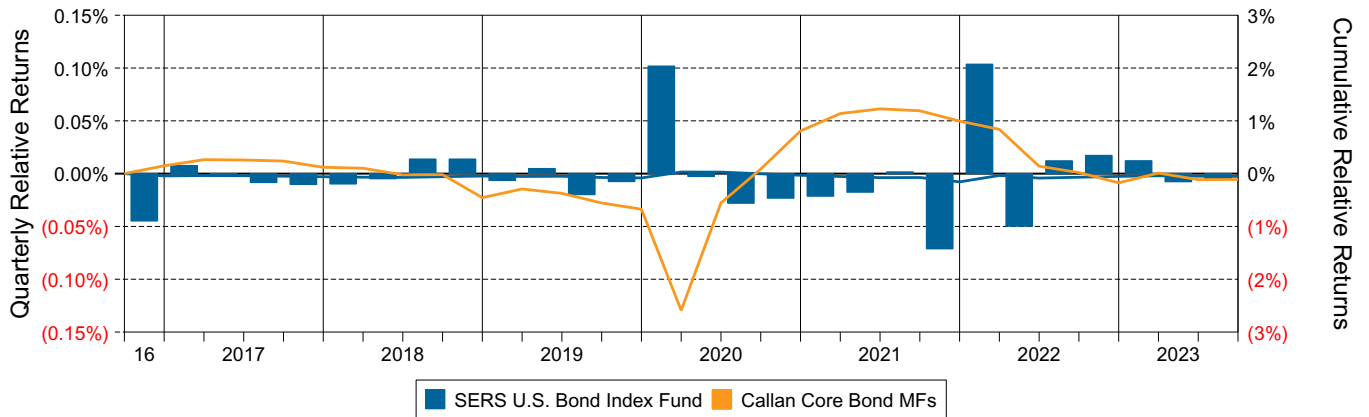
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

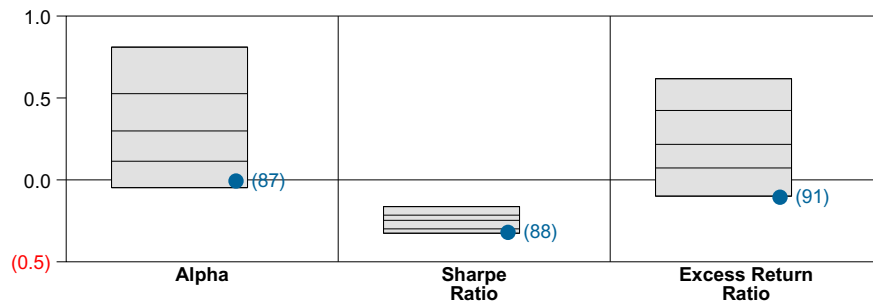


	12/22- 9/23	2022	2021	2020	2019	2018	2017	2016	2015	2014
SERS U.S. Bond Index Fund	● (1.21)	(12.94)	(1.65)	7.56	8.69	0.02	3.53	2.59	0.49	6.03
Bloomberg:Aggregate	▲ (1.21)	(13.01)	(1.54)	7.51	8.72	0.01	3.54	2.65	0.55	5.97

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, 2023



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.81	(0.16)	0.62
25th Percentile	0.53	(0.22)	0.42
Median	0.30	(0.25)	0.22
75th Percentile	0.11	(0.30)	0.07
90th Percentile	(0.05)	(0.33)	(0.10)
SERS U.S. Bond Index Fund	● (0.01)	(0.32)	(0.11)

SERS U.S. Bond Index Fund

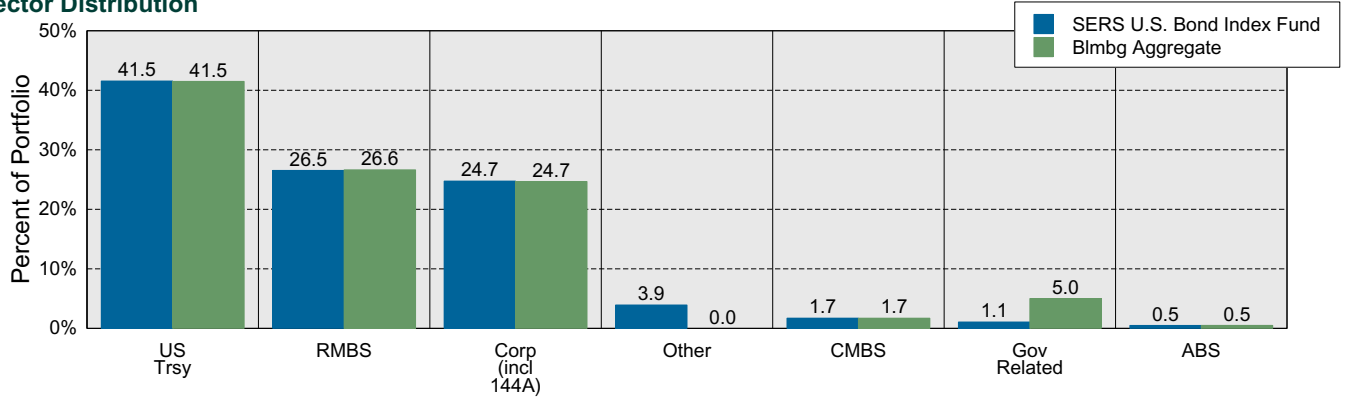
Portfolio Characteristics Summary

As of September 30, 2023

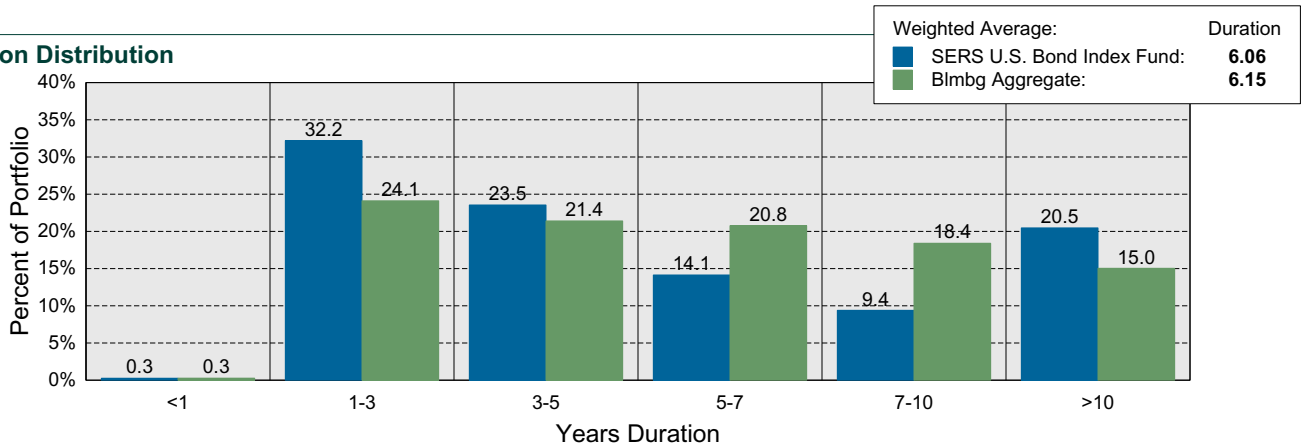
Portfolio Structure Comparison

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.

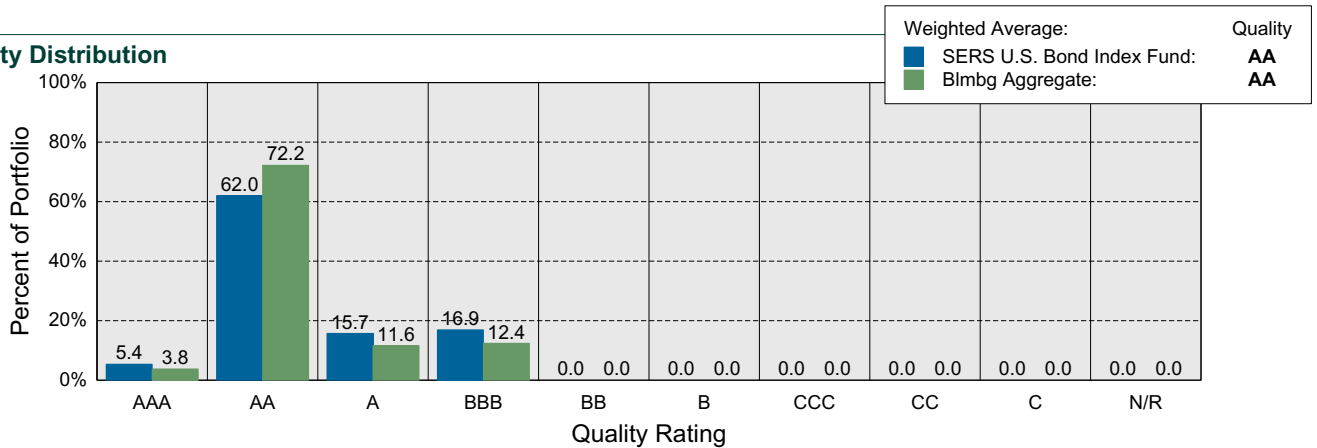
Sector Distribution



Duration Distribution



Quality Distribution



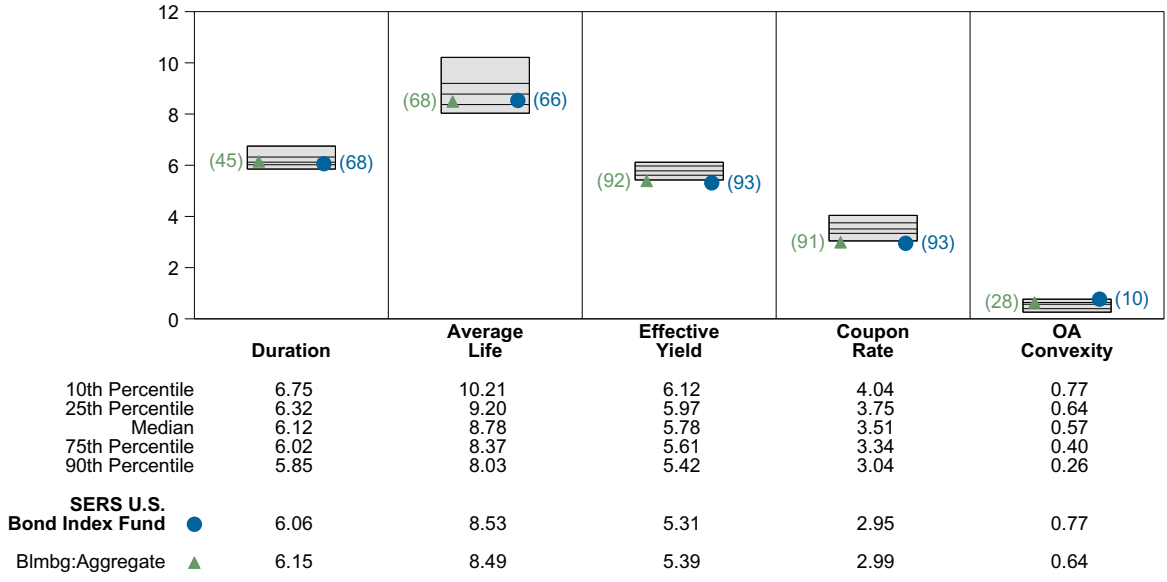
SERS U.S. Bond Index Fund

Bond Characteristics Analysis Summary

Portfolio Characteristics

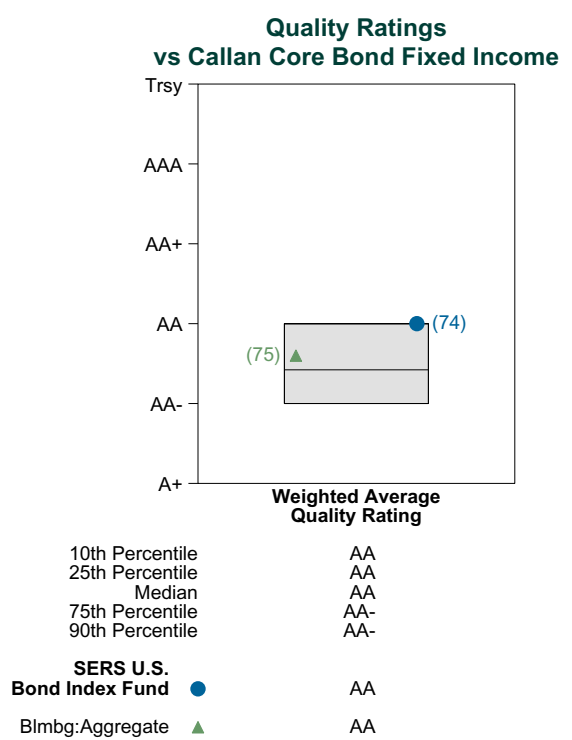
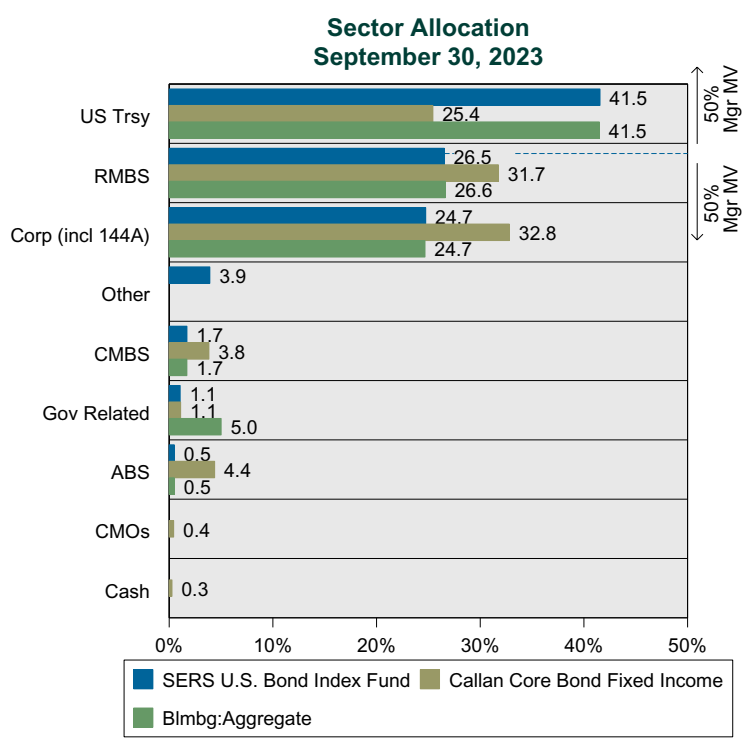
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of September 30, 2023



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.



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.

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.

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.

Risk/Reward Statistics

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

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

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

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

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

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

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

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

Quarterly Highlights

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

New Research from Callan's Experts

[3Q23 Real Assets Reporter: Office-to-Residential Conversions](#)

This paper discusses issues surrounding office-to-residential conversions and the key elements that institutional investors need to understand about these challenging projects.

[Real Estate Indicators: Too Hot to Touch or Cool Enough to Handle? 2Q23](#)

Callan's Real Assets Consulting group identifies seven indicators—based on spreads in real estate and fixed income markets—that, combined with an understanding of prevailing market dynamics, have helped signal when the institutional real estate market is overheated or cooled.

Blog Highlights

[Our First Private Credit Fees and Terms Study: What We Found in 2023](#)

Callan's 2023 Private Credit Fees and Terms Study is our inaugural study in the private credit space. The study is intended to help institutional investors better evaluate private credit funds.

[An Investor's Guide to the Nasdaq-100's Special Rebalance](#)

Over the summer, the Nasdaq-100 Index implemented a "Special Rebalance" to reduce the influence of a few key stocks, which had grown to have a large effect on the index.

[Callan Discount Rate Reporter](#)

These blog posts from our Corporate DB Plan Focus Group are monthly updates about the impact of interest rates on corporate defined benefit (DB) plans, designed to highlight trends in the market.

[How Your Public DB Plan's Returns Compare](#)

These blog posts provide context for public defined benefit (DB) plans about their returns over time, from our Public DB Plan Focus Group.

Quarterly Updates

[Private Equity Update, 2Q23](#) | A high-level summary of private equity activity in the quarter through all the investment stages

[Active vs. Passive Charts, 2Q23](#) | A comparison of active managers alongside relevant benchmarks over the long term

[Market Pulse, 2Q23](#) | A quarterly market reference guide covering trends in the U.S. economy, developments for institutional investors, and the latest data on the capital markets

[Capital Markets Review, 2Q23](#) | Analysis and a broad overview of the economy and public and private markets activity each quarter across a wide range of asset classes

[Hedge Fund Update, 2Q23](#) | Commentary on developments for hedge funds and multi-asset class (MAC) strategies

[Real Assets Update, 2Q23](#) | A summary of market activity for real assets and private real estate during the quarter

[Private Credit Update, 2Q23](#) | A review of performance and fundraising activity for private credit during the quarter

[Callan Target Date Index™, 2Q23](#) | Allows plan sponsors, managers, and participants to track the performance and asset allocation of available target date mutual funds and collective trusts.

[Callan DC Index™, 2Q23](#) | Provides underlying fund performance, asset allocation, and cash flows of more than 100 large defined contribution plans representing approximately \$400 billion in assets

Events

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

Please mark your calendar and look forward to upcoming invitations:

Webinar: Callan's Retirement Conundrum

Nov. 15, 2023 – Virtual

Webinar: Callan's 2024 Capital Markets Assumptions

Jan. 17, 2024 – Virtual

2024 National Conference

April 8-10, 2024 – San Francisco

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

Education: By the Numbers

50+

Unique pieces of research the Institute generates each year

525

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

3,700

Total attendees of the "Callan College" since 1994

Education

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

Alternative Investments

Feb. 21-22, 2024 – Virtual

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

Introduction to Investments

March 5-7, 2024 – Virtual

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

Our virtual sessions are held over two to three days with virtual modules of 2.5-3 hours, while in-person sessions run either a full day or one-and-a-half days. Virtual tuition is \$950 per person and includes instruction and digital materials. In-person tuition is \$2,350 per person and includes instruction, all materials, breakfast and lunch on each day, and dinner on the first evening with the instructors.

Additional information including registration can be found at: callan.com/events-education



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

Greg Allen, CEO and Chief Research Officer

List of Callan's Investment Manager Clients

Confidential – For Callan Client Use Only

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

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

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

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