

December 31, 2023

Pennsylvania SERS 457(b)



**Investment Measurement Service
Quarterly Review**

Table of Contents

December 31, 2023

Capital Markets Review	
Capital Markets Overview	2
Active Management Overview	19
Plan Assets and Performance	24
Risk-Based Funds	
Post Retirement Date Fund	47
2025 Retirement Date Fund	50
2030 Retirement Date Fund	53
2035 Retirement Date Fund	56
2040 Retirement Date Fund	59
2045 Retirement Date Fund	62
2050 Retirement Date Fund	65
2055 Retirement Date Fund	68
2060 Retirement Date Fund	71
2065 Retirement Date Fund	73
Domestic Equity	
U.S. Large Company Stock Index Fund	75
U.S. Small/Mid Company Stock Index Fund	80
International Equity	
Global Non-U.S. Index Fund	86
Domestic Fixed Income	
Short Term Investment Fund	93
Stable Value Fund	95
U.S. Bond Index Fund	97
Definitions	
Market Indicators	102
Database Groups	103
Risk/Reward Statistics	105
Callan Research/Education	106
Disclosures	109

Economy Becomes Even More Surprising

ECONOMY

2 Last year was supposed to feature the recession caused by the Fed's dedication to fighting inflation; instead, the economy grew 2.5% for the year. While the rate of overall growth slowed in 4Q, the economy seemed to get stronger by the quarter in 2023.

Broad Rally for Bonds Across the World

FIXED INCOME

8 Driven by falling rates and strong risk-on sentiment, the Agg returned 6.8%, the highest quarterly return since 2Q89. The 10-year U.S. Treasury yield closed the year at 3.88%. Global bonds saw broad-based gains across countries and developed markets topped the U.S.

Net IRR of Nearly 9% Over Three Years

PRIVATE CREDIT

12 Given its high returns, private credit remained in high demand across Callan's investor base. Private credit assets under management stood at over \$1.5 trillion at the end of 2023, with Preqin forecasting the asset class will grow to over \$2.5 trillion by 2028.

Increases in 2023 but Inflation Tops Worries

INSTITUTIONAL INVESTORS

4 Robust equity returns led all institutional investor types to show gains for 2023, a stark reversal from the double-digit losses of 2022. But over the last year, all investors lagged a 60% stocks/40% bonds benchmark by a significant amount, likely due to those same equity gains.

Private RE Falls but REITs Outpace Stocks

REAL ESTATE/REAL ASSETS

10 The NCREIF Property Index fell 3.0% during 4Q23. The NCREIF Open-End Diversified Core Equity (ODCE) Index fell 4.8% during 4Q. The FTSE EPRA Nareit Developed REIT Index rose 15.6% during 4Q23. The FTSE Nareit Equity REITs Index increased 16.2%.

Gains Spurred by Stocks and Bonds

HEDGE FUNDS/MACs

13 Most hedge fund managers showed gains in 4Q23. Equity hedge strategies were the best performing. Relative value strategies generated positive performance as well, while event-driven strategies also ended on a strong note. Multi-asset class (MAC) strategies also gained.

Dovish Policy Drives Widespread Gains

EQUITY

6 U.S. equity markets rebounded in the last two months of the year as the impact of possible rate cuts in 2024 started to get priced in. Dovish signaling from central banks and dropping yields led to a broad market rally in 4Q23 for global ex-U.S. markets as well.

Big Slowdown After Frenzy of 2021

PRIVATE EQUITY

11 Both new investment activity and exit activity slowed markedly in 2023. Public equity's strong recovery in 2023 has left private equity in its wake. Private equity only saw about a fifth of the gains of the public markets over the last year, on a PME basis.

2.9% Drop After Three Quarters of Gains

DEFINED CONTRIBUTION

15 Despite the loss, the Callan DC Index™ saw a trailing one-year gain of 13.8%. The Age 45 Target Date Fund (analogous to the 2045 vintage) fell 3.6%. Balances within the DC Index fell by 3.2% after a 4.3% increase in the previous quarter, driven by investment losses.

Broad Market Quarterly Returns

U.S. Equity
Russell 3000



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



U.S. Fixed Income
Bloomberg Agg



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



Sources: Bloomberg, FTSE Russell, MSCI

The Economy Is More Surprising by the Quarter

ECONOMY | Jay Kloepfer

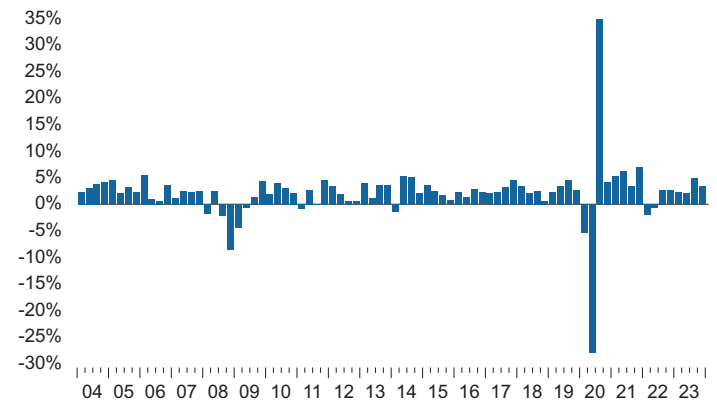
The U.S. economy grew by 3.3% in 4Q23, once again surprising to the upside. If you asked anyone who has to indulge in the hubris of forecasting the economy, all of 2023 has been a surprise. Last year was supposed to feature the recession caused by the Fed's dedication to fighting inflation by raising interest rates; instead, the economy grew 2.5% for the year, up from the 1.9% rate in 2022. The job market has generated 5.4 million new jobs since the end of 2019, before the start of the pandemic. Real wages and real income growth turned positive in mid-2023 as inflation subsided but demand for workers remained. Workers feel confident in the tight labor market, and this confidence is driving consumer spending. Consumption expenditures accounted for half of GDP growth in 3Q and almost 60% in 4Q. The economy seemed to get stronger by the quarter in 2023.

So why no recession? Underneath the mayhem that defined both 2022 and 2023—geopolitical uncertainty, spiking inflation, rising interest rates, and the volatility in the equity market—the U.S. and global economies remain in remarkably good shape. The U.S. economy weathered the rate hikes in 2022 and 2023 particularly well. The first reason is stimulus and lots of it, around the globe, which translated into pent-up demand. Second, the very tight labor market in the U.S. gives workers and their families confidence to spend. Third, despite the housing market taking a big hit as mortgage rates shot up, housing has not dragged down the economy as in rate hike episodes of yore. In addition, we do not have a mortgage crisis similar to the one that struck in 2008-09 and nearly took down the banking system.

However, we do have a commercial real estate tsunami working through offices in central business districts and retail trade, which will reshape the physical as well as business landscape of many communities in the U.S. Finally, we do have a housing shortage around the U.S. that may have long-term generational consequences for homeownership, wealth creation, and financial security for younger people.

Quarterly Real GDP Growth

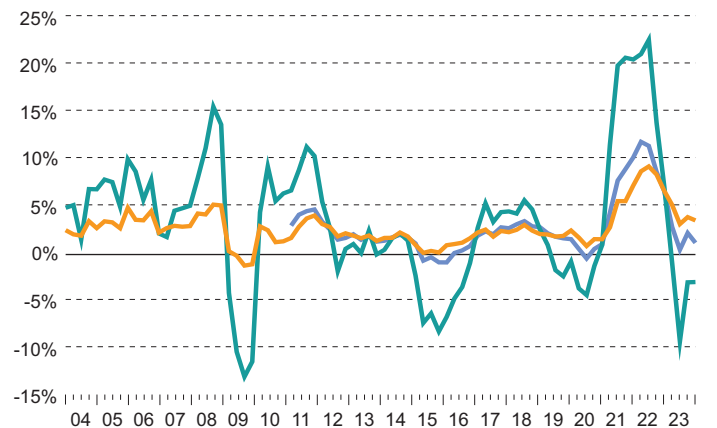
(20 Years)



Source: Bureau of Economic Analysis

Inflation Year-Over-Year

● CPI (All Urban Consumers) ● PPI (All Commodities) ● PPI (Final Demand)



Source: Bureau of Labor Statistics

Inflation shot up to 9% in mid 2022, but the rate of price increases began to ebb in the second half of 2022 and declined steadily to 3% by the end of 3Q23. Unfortunately, headline inflation ticked back up to 3.5% by the end of the year, so we are not out of the inflation woods yet. Even as the rate of price increases comes down, prices are now “permanently” higher unless we see deflation. The level of the CPI-U index is up 10% since the start of 2022.

One key factor keeping inflation from falling back toward the Federal Reserve's goal of 2% is the labor market. We ended 2023 with labor markets not only tight but tightening. Initial unemployment claims (measured on a weekly basis)—one of our few leading indicators—began climbing in 2Q, and by early spring weekly claims had surpassed the average set in 2019 of 218,000. As claims rose to 250,000 by August, the data appeared to show that interest rate hikes were finally starting to bite. Then initial claims fell back sharply and we ended the year at 203,000. Continuing unemployment claims also began to rise from a very low level starting in 4Q22 and ended the year about 9% higher than the pre-pandemic level. So initial claims show workers holding onto jobs, but the continuing claims show workers have a bit more trouble finding jobs once laid off. However, the unemployment rate remains low at 3.7%. The tightness in the labor market is inconsistent with the Fed's goal of achieving its 2% inflation target. As continuing claims rose in 2023, bond markets read the data as the first sign of easing in the labor market, but the robust end-of-the-year GDP report, the lower initial claims, and the strong December job market report suggest labor market tightness is not yet easing.

The remarkable GDP growth is fueling continued demand for workers, and with inflation falling while wages are rising, workers saw real incomes (wages and salaries net of inflation) grow in each of the last three quarters of 2023, with a sharp gain of 2.5% in real disposable (after-tax) income in 4Q. Average hourly earnings growth slowed from 5% (annual growth) in 2022 to 4% by December 2023, but as inflation fell real wage growth finally turned positive starting in May, and this real growth carried through December (wage growth is exceeding inflation).

The upshot: it may take longer than many believed to unravel the current growth momentum in the U.S. economy. The Fed had stated

The Long-Term View

Index	4Q23	Periods Ended 12/31/23			
		1 Yr	5 Yrs	10 Yrs	25 Yrs
U.S. Equity					
Russell 3000	12.1	26.0	15.2	11.5	7.7
S&P 500	11.7	26.3	15.7	12.0	7.6
Russell 2000	14.0	16.9	10.0	7.2	7.9
Global ex-U.S. Equity					
MSCI EAFE	10.4	18.2	8.2	4.3	4.4
MSCI ACWI ex USA	9.8	15.6	7.1	3.8	--
MSCI Emerging Markets	7.9	9.8	3.7	2.7	--
MSCI ACWI ex USA Small Cap	10.1	15.7	7.9	4.9	7.3
Fixed Income					
Bloomberg Agg	6.8	5.5	1.1	1.8	3.9
90-Day T-Bill	1.4	5.0	1.9	1.3	1.9
Bloomberg Long G/C	13.2	7.1	1.1	3.2	5.2
Bloomberg GI Agg ex US	9.2	5.7	-1.6	-0.8	2.2
Real Estate					
NCREIF Property	-3.0	-7.9	4.3	6.8	8.0
FTSE Nareit Equity	16.2	13.7	7.4	7.6	9.3
Alternatives					
HFRI Fund Weighted	4.2	8.1	7.1	4.6	6.3
Cambridge PE*	-0.4	4.2	14.6	14.3	13.9
Bloomberg Commodity	-4.6	-7.9	7.2	-1.1	2.8
Gold Spot Price	11.0	13.4	10.1	5.6	8.2
Inflation – CPI-U	-0.3	3.4	4.1	2.8	2.5

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

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

earlier in 2023 a belief that rates would remain elevated, based on its economic expectation of “stronger for longer.” After the Fed reversed course in the November and December FOMC meetings, signaling rate cuts were likely in 2024, the economy reverted to stronger for longer on its own.

Recent Quarterly Economic Indicators

	4Q23	3Q23	2Q23	1Q23	4Q22	3Q22
Employment Cost: Total Compensation Growth	4.2%	4.3%	4.5%	4.8%	5.1%	5.0%
Nonfarm Business: Productivity Growth	3.2%	4.9%	3.6%	-0.8%	1.6%	0.4%
GDP Growth	3.3%	4.9%	2.1%	2.2%	2.6%	2.7%
Manufacturing Capacity Utilization	77.1%	77.7%	78.0%	78.2%	78.5%	79.4%
Consumer Sentiment Index (1966=100)	64.9	69.6	62.3	64.6	58.8	56.1

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

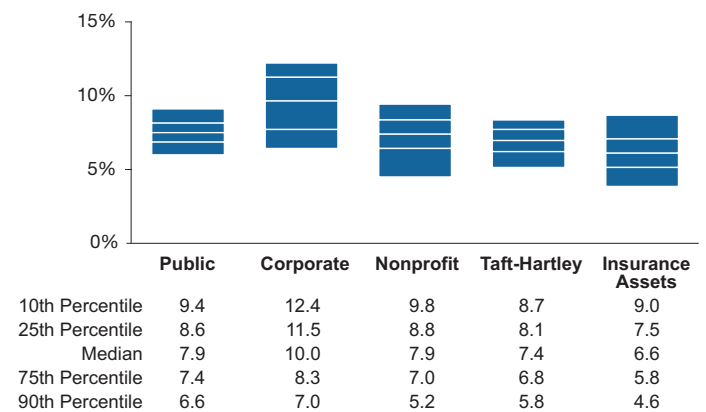
Gains in 2023 but Inflation Tops Worries

INSTITUTIONAL INVESTORS

- The 2023 equity market was up 24%, led by seven securities nicknamed “The Magnificent Seven.”
- Other 493 securities gained 12% in 2023.
- These robust equity returns led all institutional investor types to show gains for 2023, a stark reversal from the double-digit losses of 2022.
- Nonprofits showed the best returns, while corporate defined benefit (DB) plans and Taft-Hartley plans brought up the rear.
- But over the last year, all investors lagged a 60%/40% stocks/40% bonds benchmark by a significant amount.
- Remarkable U.S. equity gains likely played a big role in that gap.
- As has been the case for years, institutional investors continued to show 20-year returns close to but still below the 60%/40% benchmark.

- *Recession:* There is no shortage of worries that could cause one: interest rate hikes, global armed conflicts, U.S.-China conflict, the U.S. presidential election
- *Equity valuations:* The Magnificent Seven and index concentration worried some clients, while stock prices in light of higher interest rates were also a concern.

Quarterly Returns, Callan Database Groups (12/31/23)



Source: Callan

All Investor Types

- The major macroeconomic issues investors are discussing include:
 - *Interest rates:* As has been true for much of the past year, worries about inflation and the future direction of interest rates were pervasive.

Callan Database Median and Index Returns* for Periods Ended 12/31/23

Database Group	Quarter	1 Year	3 Years	5 Years	10 Years	20 Years
Public Database	7.9	13.0	4.3	9.0	6.9	7.2
Corporate Database	10.0	11.8	-0.1	6.6	5.7	6.6
Nonprofit Database	7.9	13.5	4.3	8.7	6.5	7.0
Taft-Hartley Database	7.4	11.9	4.5	8.6	6.9	6.8
Insurance Assets Database	6.6	9.7	1.5	5.1	4.1	4.9
All Institutional Investors	8.1	12.6	3.7	8.3	6.5	6.9
Large (>\$1 billion)	7.5	11.7	4.6	8.6	6.9	7.2
Medium (\$100mm - \$1bn)	8.2	12.8	3.8	8.4	6.5	7.0
Small (<\$100 million)	8.3	13.1	3.4	8.2	6.2	6.5
60% S&P 500/40% Bloomberg Agg	9.7	17.7	4.7	10.1	8.1	7.4

*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, remains at 7.00%.
- A 7.00% return expectation can be hit with almost 50% in fixed income.
- Plans have increased their exposure to both fixed income and/or alternatives.
- Given this rate, investors are weighing how or whether to adjust allocations based on Callan’s 2024-2033 Capital Markets Assumptions.
- The rise in fixed income expectations in particular has made estimated return-on-asset assumptions much easier to hit.
- But if plans increase their discount rates, the higher funded status could lead to increased pressure to improve benefits.

Corporate DB Plans

- Liabilities decreased as rates rose.
- Interest rate hedging continues to work.
- Plans that were hedged were insulated from changes to interest rates in 2023.
- Some plans focused on total return “won” for a second year in a row as rising rates decreased the liability, resulting in an increased funded ratio.
- As closed plans’ liabilities shorten, interest in intermediate fixed income continues.

- Many plans’ improved funded status has led some to further implement de-risking glidepaths.
- Higher fixed income assumptions have led clients to weigh changing allocations to the asset class, but in different ways. Some are looking at long duration bonds, others at whether to add to their fixed income allocations or stay pat.

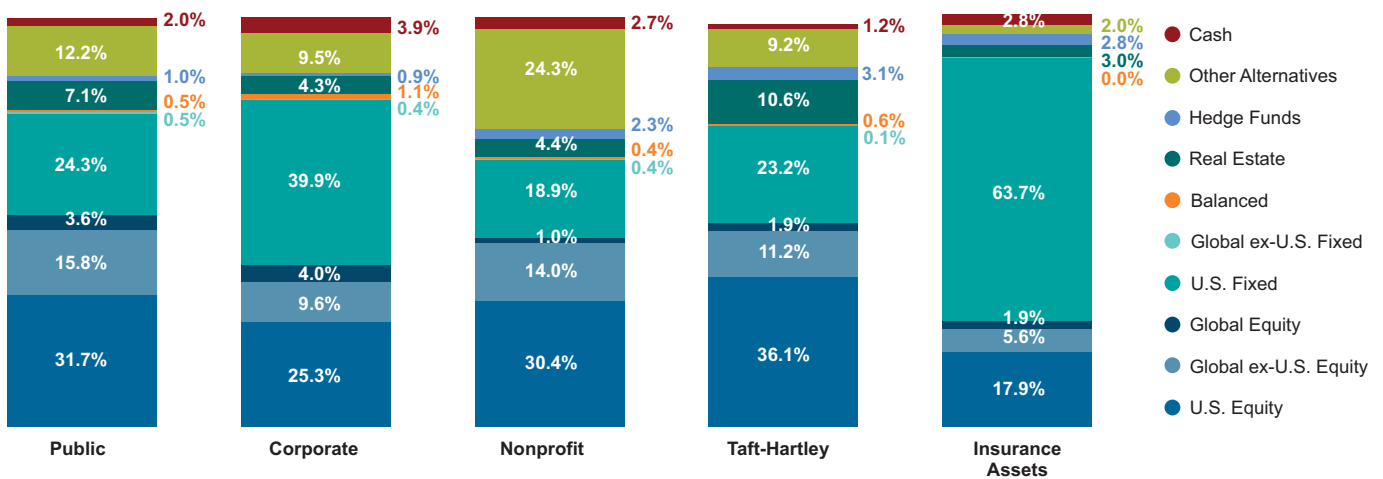
Nonprofits

- These investors are still focused on total return.
- Interest in private credit remains strong.
- Inflation concerns continue to affect real returns.
- Strong economies can lead to strong fundraising efforts, which can help dampen return volatility.

Defined Contribution (DC) Plans

- These are the significant new issues:
 - SECURE 2.0 and its postponement
 - Retirement income and how the maturing demographics of participants, higher rates, and rollovers can affect the different types of retirement income solutions plans can choose.
- The gap in returns between money market and stable value funds was a new source of concern for some plans.

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

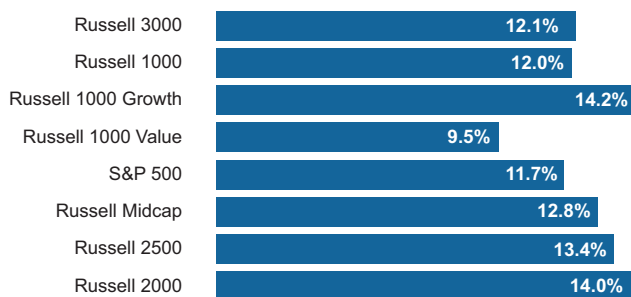
U.S. Equities

End-of-the-year rally

- U.S. equity markets rebounded in the last two months of the year as the impact of possible rate cuts in 2024 started to get priced in.
- The S&P 500 Index approached a record high as the year closed. Of note, 2023 was the first year since 2012 that the S&P failed to reach a high-water mark. That said, the index was up an impressive 11.7% in 4Q and 26.3% for the year.
- The tech sector was the clear winner for the quarter and the year (+17.2%; +57.8%) while Energy (-6.9%; -1.3%) was the only sector to register both a 4Q and 2023 decline.
- 2023 saw the narrowest breadth of leadership (“the Magnificent Seven”) since 1987, with just 27% of stocks outperforming the S&P 500. Historically, such concentrated leadership has not been the sign of a healthy market.
- Fourth quarter and 2023 returns for the bunch were impressive: Alphabet: +6.8%, +58.8%; Amazon: +19.5%, +80.9%; Apple: +12.6%, +49.0%; Meta: +17.9%, +194.1%; Microsoft: +19.3%, +58.2%; NVIDIA: +13.9%, +239.0%; Tesla: -0.7%, +101.7%.
- The index would have been up only about 10% for the year without these stocks, and the equal-weighted S&P 500 returned 11.9% in 4Q and 13.9% in 2023.
- However, gains started broadening out in the last two months of the year with the equal-weighted S&P index outperforming the capitalization-weighted version.
- Smaller cap stocks also outperformed their large cap counterparts in 4Q23, further proof of the broadening out of returns.
- For the full year, large cap stocks outperformed small cap stocks by almost 10 percentage points.
- Growth vs. value performance was mixed across market capitalization during the quarter. Within large cap, growth outperformed value, while the opposite was true within small cap.

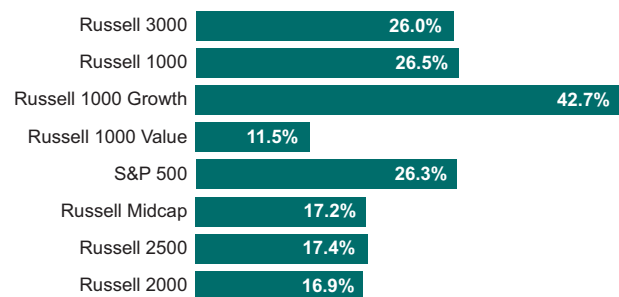
U.S. Equity: Quarterly Returns

(12/31/23)



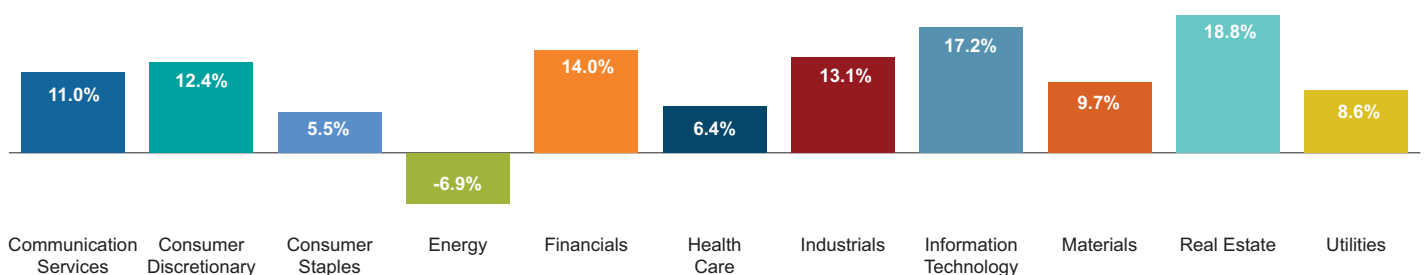
U.S. Equity: One-Year Returns

(12/31/23)



Sources: FTSE Russell and S&P Dow Jones Indices

Quarterly Performance of Industry Sectors (12/31/23)



Source: S&P Dow Jones Indices

Global Equities: Global markets in the black for 4Q

Broad market

- Dovish signaling from central banks and dropping yields led to a broad market rally in 4Q23.
- Global ex-U.S. small caps reclaimed some of their lagging performance in 4Q but ended the year as the worst-performing broad-based index, albeit up over 12%. Elevated borrowing costs and the persistent risk of a recession have kept investors away.
- Japan's low rates have benefited exporters, and the threat of being delisted spurred a stock buy-back spree. Coupled with an increased focus on governance, this spurred Japan to a multi-decade high.

Emerging markets

- Emerging markets underperformed developed markets.
- India's rally couldn't overcome China's weakness, whose economic growth was near the government's target, but investor concerns around stimulus and a surprisingly sluggish reopening drove stocks lower.

Growth vs. value

- Energy, a volatile area in the market, pulled back value's rally after having a strong 3Q. Global ex-U.S. growth rallied on lowering yields but couldn't overcome earlier underperformance and ended the year behind its value peers in both emerging and developed markets.

U.S. dollar vs. other currencies

- The U.S. dollar weakened in 4Q as investors believed that U.S. interest rates would fall faster than much of the developed world.

China: Danger or opportunity?

Long-term growth potential

- China has the second-largest GDP and the world's largest population of consumers.

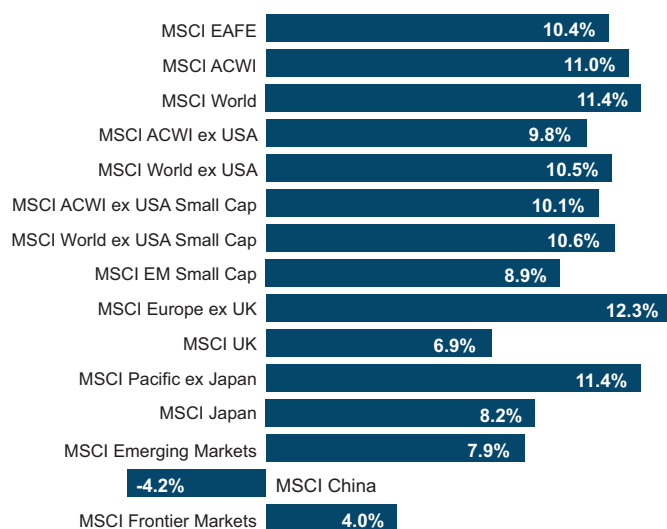
Valuation

- Valuations remain attractive on a forward P/E basis.

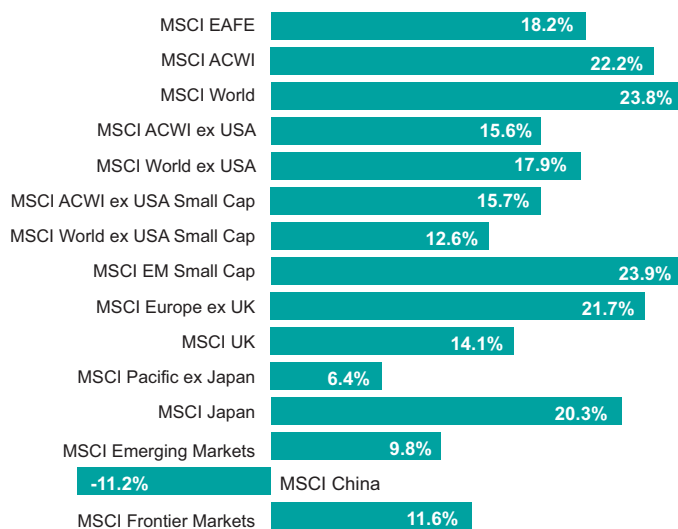
Structural challenges

- Inbound foreign direct investment (FDI) for China went negative for the first time as local markets remained weak and geopolitical tensions persisted.
- China is run by an authoritarian regime that may act against investors' best interests.

Global ex-U.S. Equity: Quarterly Returns (U.S. Dollar, 12/31/23)



Global ex-U.S. Equity: One-Year Returns (U.S. Dollar, 12/31/23)



Source: MSCI

Fixed Income

U.S. Fixed Income

Strong returns at end of year

- Driven by falling rates and strong risk-on sentiment, the Agg returned 6.8%, the highest quarterly return since 2Q89 (when the 90-day T-bill was over 8% and inflation hit 14% earlier in the decade)!
- 10-year U.S. Treasury yield closed the year at 3.88%
- A round trip from December 2022, masking significant volatility during the year
- High was 4.98% in October and low was 3.30% in April
- Corporates and mortgages outperformed Treasuries for the quarter and year.
- High yield corporates soared as defaults remained low and the economy resilient.

U.S. Treasury yield curve remained inverted, but less so

- 106 bps as of 6/30; 44 bps as of 9/30; 35 bps as of 12/31

Fed kept Fed Funds rate on hold and softened language

- Pivoted from “higher for longer” to projected rate cuts in 2024
- Inflation over past six months below Fed’s 2% target
- Core PCE Price Index was 1.9% annualized in November.
- Markets expect six rate cuts in 2024 versus three in the Fed’s Summary of Economic Projections.

Valuations

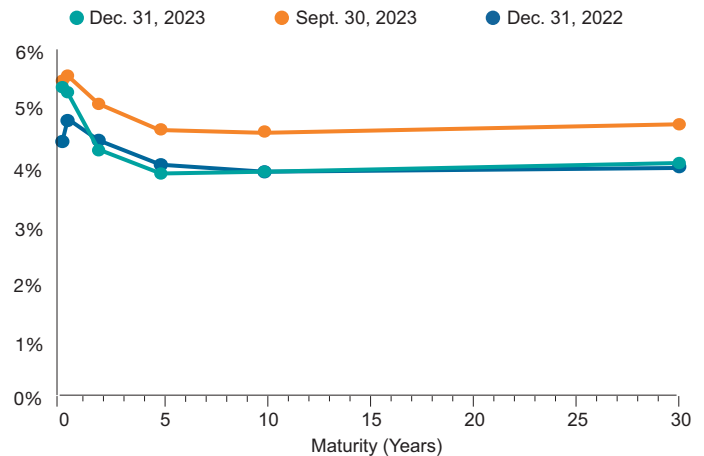
- Investment grade and high yield corporate spreads now below 10-year averages

Municipal Bonds

Gains in 4Q and a superb November

- November was the best month since August 1982.
- Helped by falling yields, muted issuance, and strong demand
- Reversed the -1.4% year-to-date return as of 9/30

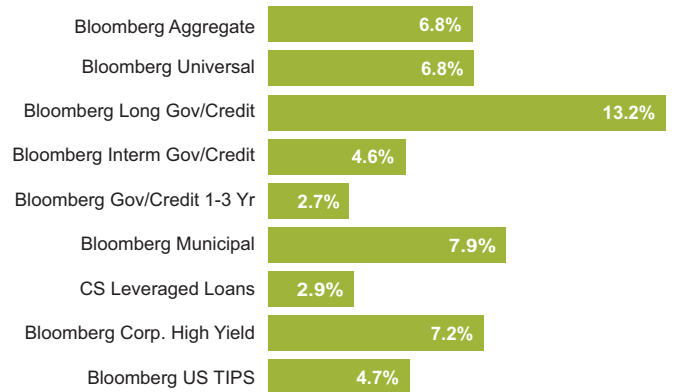
U.S. Treasury Yield Curves



Source: Bloomberg

U.S. Fixed Income: Quarterly Returns

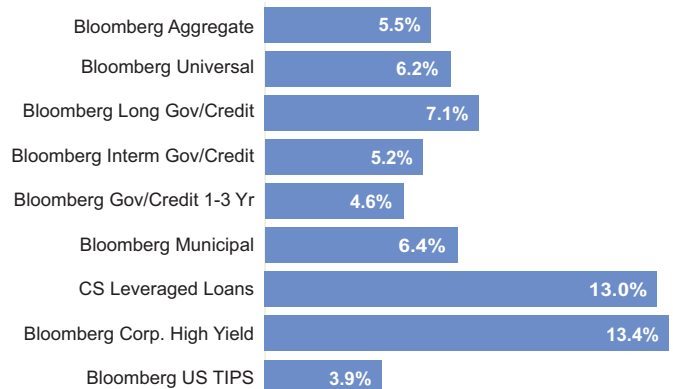
(12/31/23)



Sources: Bloomberg and Credit Suisse

U.S. Fixed Income: One-Year Returns

(12/31/23)



FIXED INCOME (Continued)

BBBs performed best for quarter and year

- AAA: +8.4%; +5.8%
- AA: +7.6%; +5.9%
- A: +8.0%; +7.3%
- BBB: +9.2%; +8.9%

Valuations

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

Valuations vs. U.S. Treasuries richened

- 10-year AAA Muni/10-year U.S. Treasury yield ratio 59%, down from 75% as of 9/30
- Well below 10-year median of 87%
- After-tax yields remain attractive at 5.4% (source: Morgan Stanley).

Fundamentals for state, local governments remain sound

- Upgrades exceeded downgrades in 2023.

Global Fixed Income

Falling rates bolstered 4Q returns globally

- Central banks seen as moving closer to cutting rates as inflation moderated
- Gains were broad-based across countries with the U.S. lagging other developed markets in unhedged terms.
- Emerging markets also posted strong results with gains across most countries.

U.S. dollar weakened

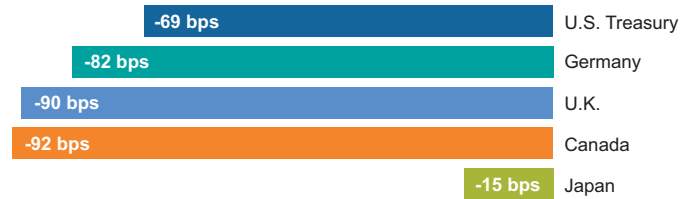
- Major currencies rose compared to the dollar in 4Q.

Emerging markets also posted strong results

- Gains across most countries

Change in 10-Year Global Government Bond Yields

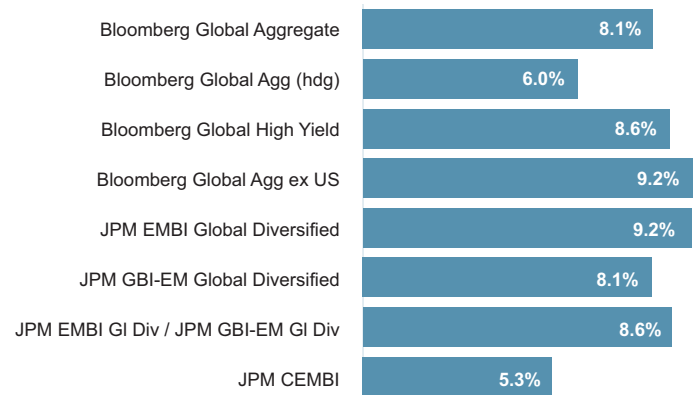
3Q23 to 4Q23



Source: Bloomberg

Global Fixed Income: Quarterly Returns

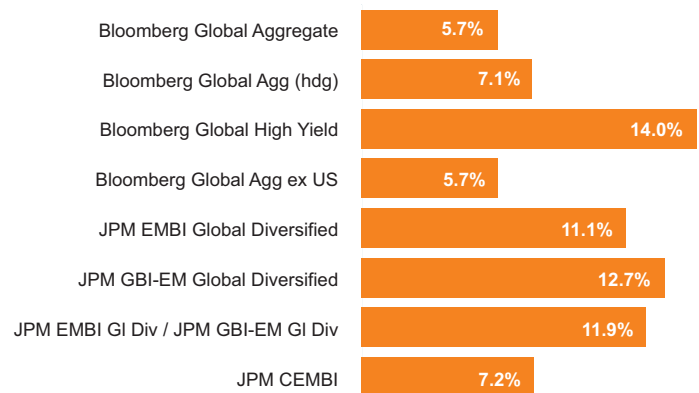
(12/31/23)



Sources: Bloomberg and JPMorgan Chase

Global Fixed Income: One-Year Returns

(12/31/23)



Sources: Bloomberg and JPMorgan Chase

Private RE Falls but REITs Outpace Stocks

REAL ESTATE/REAL ASSETS | Munir Iman

Private RE valuations reflect higher rates

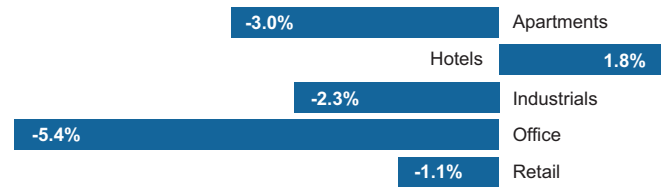
- The NCREIF Property Index, a measure of U.S. institutional real estate assets, fell 3.0% during 4Q23. The income return was 1.1% while the appreciation return was –4.1%.
- Hotels, which represent a small portion of the index, led property sector performance with a gain of 1.8%.
- Office finished last with a loss of 5.4%.
- Regionally, the South led with a loss of 1.9%, while the West was the worst performer with a drop of 3.7%.
- The NCREIF Open-End Diversified Core Equity (ODCE) Index, representing equity ownership positions in U.S. core real estate, fell 4.8% during 4Q, with an income return of 1.0% and an appreciation return of -5.8%.

REITs outperform equities

- The FTSE EPRA Nareit Developed REIT Index, a measure of global real estate securities, rose 15.6% during 4Q23.
- U.S. REITs, as measured by the FTSE Nareit Equity REITs Index, increased 16.2%.
- The FTSE EPRA Nareit Asia Index (USD), representing the Asia/Pacific region, gained 8.6%.
- European REITs, as measured by the FTSE EPRA Nareit Europe Index (USD), jumped 26.8%.
- U.S. REITs outperformed the S&P 500 (11.7%). They also topped Asia REITs but underperformed Europe.

Sector Quarterly Returns by Property Type

(12/31/23)



Source: NCREIF

- The outperformance in the U.S. was driven by dampening inflation, coupled with a more dovish Federal Reserve sentiment sparking a rally to close the year.
- The office sector outperformed, coming off its lows.
- Gaming, residential, health care, and data center lagged, impacted by interest rate challenges and prior strong performances.
- The FTSE EPRA Nareit Developed Asia Index (USD) rose 8.6% during the quarter. China's economic outlook remains uncertain, exacerbated by geopolitical tensions and underwhelming stimulus.
- The FTSE EPRA Nareit Developed Europe Index (USD) increased by 26.8% during the quarter.
- Europe was the top-performing region, driven by meaningful currency tailwinds. Expectations of a dovish central bank were driven by weakening economic data.

Callan Database Median and Index Returns* for Periods Ended 12/31/23

Private Real Assets	Quarter	Year to Date	1 Year	3 Years	5 Years	10 Years	15 Years
Real Estate ODCE Style	-0.4	-10.0	-10.0	4.9	4.7	7.0	5.2
NFI-ODCE (value-weighted, net)	-5.0	-12.7	-12.7	4.0	3.3	6.3	5.1
NCREIF Property	-3.0	-7.9	-7.9	4.6	4.3	6.8	6.4
NCREIF Farmland	2.3	5.0	5.0	7.4	6.0	7.3	9.4
NCREIF Timberland	4.3	9.5	9.5	10.5	6.6	5.8	4.7
Public Real Estate							
Global Real Estate Style	15.4	12.2	12.2	2.6	5.6	6.0	9.3
FTSE EPRA Nareit Developed	11.3	2.2	2.2	3.5	5.9	6.0	8.6
Global ex-U.S. Real Estate Style	15.4	9.0	9.0	-3.7	3.2	4.8	8.6
FTSE EPRA Nareit Dev ex US	14.9	6.3	6.3	-4.5	-0.5	1.0	5.6
U.S. REIT Style	16.5	14.0	14.0	6.8	8.8	8.6	11.6
FTSE EPRA Nareit Equity REITs	16.2	13.7	13.7	7.2	7.4	7.6	10.5

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

Big Slowdown After Frenzy of 2021

PRIVATE EQUITY | Ashley Kahn

Both new investment activity and exit activity slowed markedly in 2023, following rising interest rates, declines in the public markets, and continued price uncertainty.

Fundraising ► Fundraising declined back closer to historical levels in 2022 after its frenzied peak in 2021. So far, 2023 has been another down year, with LPs being more selective with their commitments.

Buyouts ► There was a significant decline in deal activity this year after the highs of 2021-2022, caused by high interest rates, a wide bid-ask spread, and lingering effects from the slowdown in the public markets. There was also greater difficulty in obtaining financing this year, particularly for mega buyout deals, which has brought down leverage ratios across the industry.

Buyout valuations are finally starting to normalize in 2023 after their peak in 2021. Buyout valuations are sensitive to changes in interest rates—as the cost of borrowing rises, it is harder to justify high valuations.

Venture Capital and Growth Equity ► There was a substantial decline in venture capital and growth equity activity in 2023, following the crazed highs of 2021 and early 2022. Valuations, likewise, have reverted back to historical levels, particularly at the late stage.

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

Strategy	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years
All Venture	-2.4	-8.9	14.8	17.2	17.2	13.4	12.5	20.4
Growth Equity	-0.6	0.8	12.3	14.8	14.3	13.1	13.8	14.3
All Buyouts	0.1	10.2	16.8	15.0	14.6	12.4	14.6	12.8
Mezzanine	1.8	13.0	13.5	11.0	11.1	10.7	11.1	9.9
Credit Opportunities	1.2	8.2	11.1	7.1	7.5	10.1	9.3	9.6
Control Distressed	0.4	5.6	19.4	13.6	11.7	11.5	11.6	11.4
All Private Equity	-0.4	4.2	15.4	14.8	14.3	12.5	13.6	13.0
S&P 500	11.7	26.3	10.0	15.7	12.0	14.0	9.7	7.6
Russell 3000	12.1	26.0	8.5	15.2	11.5	13.8	9.7	7.7

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

Exits ► Exits have declined dramatically after hitting all-time records in 2021. Only 8% of total private equity AUM generated liquidity in 2023 (the lowest level ever)—lower even than the depths of the Global Financial Crisis.

With the IPO window still closed and increasing antitrust sentiment, it is unclear whether exit activity will rebound in 2024. IPO exits in 2023 were at just 15% of pre-pandemic levels.

Returns ► Public equity's strong recovery in 2023 (led by the "Magnificent 7" technology stocks) has left private equity in its wake. Private equity only saw about a fifth of the gains of the public markets over the last year, on a PME basis.

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

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

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

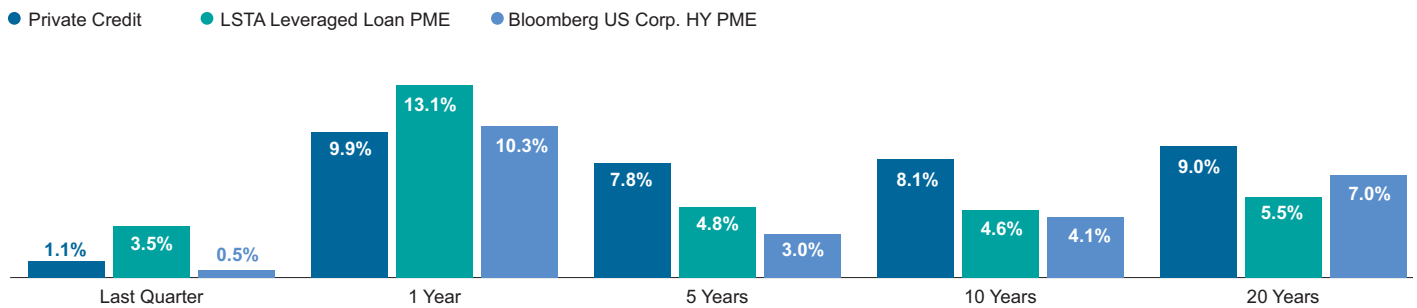
Note: Transaction count and dollar volume figures across all private equity measures are preliminary figures and are subject to update in subsequent versions of the *Capital Markets Review* and other Callan publications.

Net IRR of Nearly 9% Over Three Years

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 nearly 9%. Higher-risk strategies have performed better than lower-risk strategies.
- Private credit remained in high demand across Callan’s investor base, and a number of large defined benefit plans are looking to increase their existing private credit allocations from 2%–3% to 5%–10%.
- While we always work to build out diversified client portfolios, we think there is particularly interesting relative value in upper middle market sponsor-backed lending and asset-based lending.
- We are seeing an uptick in stress for some individual names in direct lending portfolios due to a combination of input cost inflation and increased interest expense.
- Private credit AUM stood at over \$1.5 trillion at the end of 2023, with Preqin forecasting the asset class will grow to over \$2.5 trillion by 2028 at a 11.13% CAGR from 2023 to 2028.
- Direct lending is expected to grow steadily through 2028 as investors increase their private credit allocations. Distressed exposure will grow a bit more slowly with other strategies such as opportunistic, special situations, and other niche diversifiers growing more quickly.

Private Credit Performance (%) (Pooled Horizon IRRs through 9/30/23*)



Private Credit Performance (%) (Pooled Horizon IRRs by Strategy through 9/30/23*)

Strategy	Quarter	1 Year	5 Years	10 Years	20 Years
Senior Debt	0.1	11.4	5.9	6.6	6.8
Mezzanine	1.8	13.0	11.0	11.1	10.5
Credit Opportunities	1.2	8.2	7.1	7.6	8.9

Source: LSEG/Cambridge

*Most recent data available at time of publication

Gains in 4Q23 Spurred by Rising Stocks and Bonds

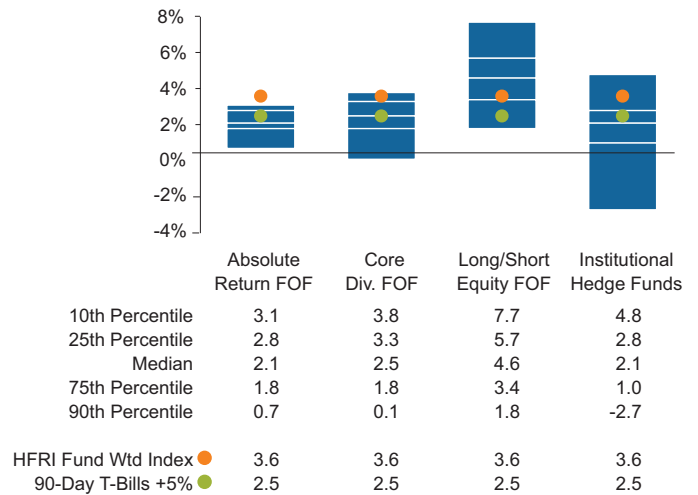
HEDGE FUNDS/MACs | Joe McGuane

Equity markets ended the final quarter of 2023 with double-digit gains and, by the time the year ended, recouped all of 2022's losses. This surge was marked by rising expectations that the Federal Reserve was done hiking interest rates and would begin easing monetary policy in the new year. The yield on the U.S. 10-year Treasury declined sharply to end December at 3.9%, the same level where it began the year. Credit in general had a positive quarter, driven by lower rates and tighter spreads. Investment grade outperformed high yield, as both indices ended the quarter positive.

Hedge funds ended the year on a strong note. Equity hedge strategies were the best performing, as those with higher net long exposure performed better, along with strategies focused on health care and technology, media, and telecommunications (TMT). Relative value strategies generated positive performance during the quarter, driven by fundamental and systematic equity relative value strategies. Event-driven strategies

Hedge Fund Style Group Returns

(12/31/23)



Sources: Callan, Credit Suisse, Federal Reserve

Callan Peer Group Median and Index Returns* for Periods Ended 12/31/23

Hedge Fund Universe	Quarter	Year to Date	1 Year	3 Years	5 Years	10 Years
Callan Institutional Hedge Fund Peer Group	2.1	7.5	7.5	5.6	7.1	5.8
Callan Fund-of-Funds Peer Group	2.9	6.9	6.9	4.0	5.6	4.2
Callan Absolute Return FOF Style	2.1	5.7	5.7	5.5	5.3	4.3
Callan Core Diversified FOF Style	2.5	6.8	6.8	3.7	5.7	3.6
Callan Long/Short Equity FOF Style	4.6	9.0	9.0	-0.2	6.1	5.2
HFRI Fund Weighted Index	3.6	7.6	7.6	4.3	7.0	4.5
HFRI Fixed Convertible Arbitrage	1.4	4.8	4.8	3.8	6.8	4.8
HFRI Distressed/Restructuring	3.2	6.7	6.7	5.7	6.3	4.0
HFRI Emerging Markets	4.2	8.1	8.1	0.1	4.8	3.1
HFRI Equity Market Neutral	1.4	5.6	5.6	4.6	3.2	2.9
HFRI Event-Driven	5.4	10.4	10.4	5.7	6.8	4.6
HFRI Relative Value	2.6	7.0	7.0	4.6	4.9	4.0
HFRI Macro	-1.1	-0.6	-0.6	5.3	5.5	3.1
HFRI Equity Hedge	5.6	10.5	10.5	3.5	8.3	5.2
HFRI Multi-Strategy	4.6	9.8	9.8	1.8	4.5	2.9
HFRI Merger Arbitrage	4.3	5.8	5.8	6.4	6.2	4.7
90-Day T-Bill + 5%	2.5	10.0	10.0	7.2	6.9	6.3

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

also ended on a strong note, as interest rate volatility provided trading opportunities when credit spreads tightened going into year-end. Macro strategies ended the quarter slightly negative, as losses from short positions in U.S. equities and developed market rates were offset by long technology equities and long front-end rates positions.

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 2.1%. Within this style group of 50 peers, the average hedged credit manager gained 2.6%, driven by actively trading around interest rate volatility. The median Callan Institutional hedged rates manager rose 2.3%, largely driven by relative value fixed income trades. Meanwhile, the average hedged equity manager added 2.2%, as sector-focused managers were able to profit from the broad market rally.

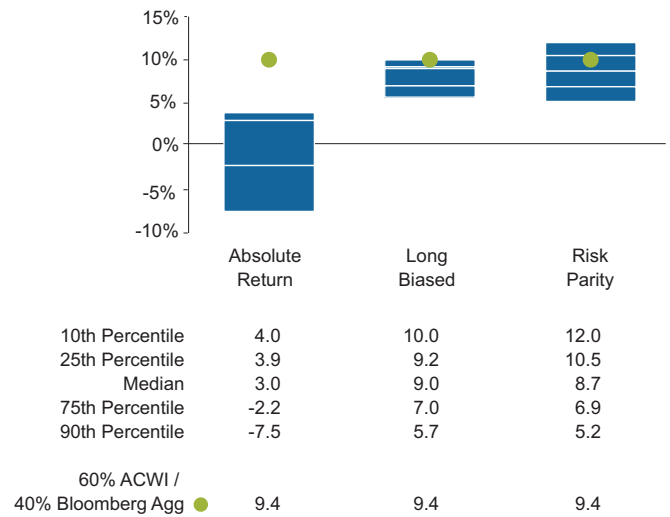
Within the HFRI indices, the best-performing strategy last quarter was equity hedge (5.6%), as health care-, financial-, and technology-focused strategies drove performance during the final quarter of the year. Macro strategies fell 1.1%, as short equity positions offset gains from front end interest rate trading.

Across the Callan Hedge FOF database, the median Callan Long-Short Equity FOF gained 4.6%, as sector-focused strategies drove performance during the quarter. The median Callan Core Diversified FOF rose 2.5%, boosted by equity and event-driven strategies. The Callan Absolute Return FOF ended 2.1% higher, as lower equity beta strategies were behind this move higher.

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

MAC Style Group Returns

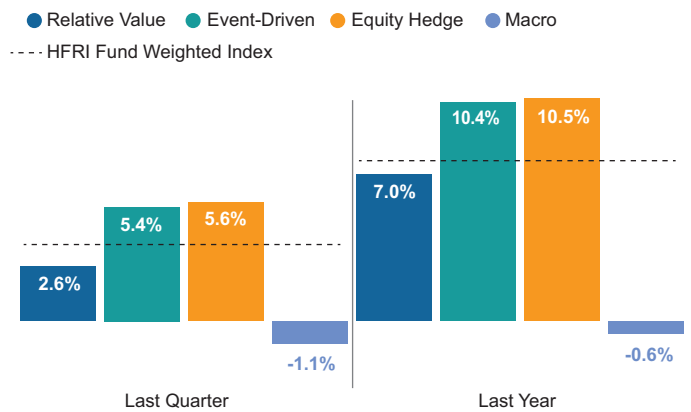
(12/31/23)



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

HFRI Hedge Fund-Weighted Strategy Returns

(12/31/23)



Source: HFRI

Index Drops by 2.9% After Three Quarters of Gains

DEFINED CONTRIBUTION | [Scotty Lee](#)

Performance: Index Dips after Third Straight Quarterly Gain

- The Callan DC Index™ lost 2.9% in 3Q23, which brought the Index’s trailing one-year gain to 13.8%. The Age 45 Target Date Fund (analogous to the 2045 vintage) had a lower quarterly return (-3.6%).

Growth sources: Investment Losses Lead to Fall in Balances

- Balances within the DC Index fell by 3.2% after a 4.3% increase in the previous quarter. Investment losses (-2.9%) were the primary driver.

Turnover: Net Transfers Decrease

- Turnover (i.e., net transfer activity levels within DC plans) in the DC Index decreased to 0.26% from the previous quarter’s measure of 0.33%. Despite the decrease, the Index’s historical average (0.55%) remained steady.

Net cash flow analysis: Stable Value Declines Sharply

- Automatic features and their appeal to “do-it-for-me” investors typically result in target date funds (TDFs) receiving the largest net inflows in the DC Index, which was the case in 3Q23 as the asset allocation funds garnered 87.2% of quarterly net flows. Stable value (-56.2%) saw relatively large outflows for the fourth straight quarter.

Equity allocation: Exposure Declines

- The Index’s overall allocation to equity (71.5%) fell slightly from the previous quarter’s level (71.8%). The current equity allocation continues to sit above the Index’s historical average (68.4%).

Asset allocation: Fixed Income, TDFs See Gains

- U.S. fixed income (5.5%) and target date funds (34.1%) were among the asset classes with the largest percentage increases in allocation, while U.S small/mid cap equity (7.4%) had the largest decrease in allocation from the previous quarter due to net outflows.

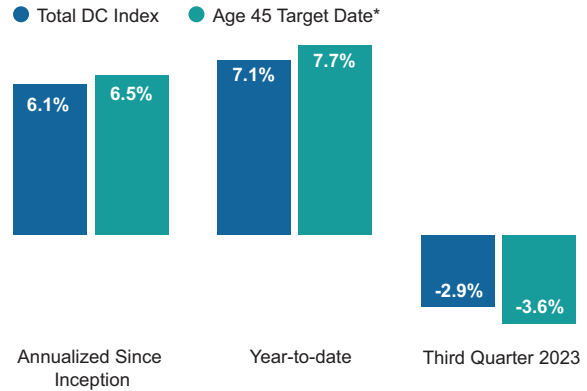
Prevalence: Money Market Up, Stable Value Down

- The prevalence of money market funds (54.1%) rose by 1.5% accompanied by a decrease in the prevalence of stable value funds (70.1%) by 0.8%.

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

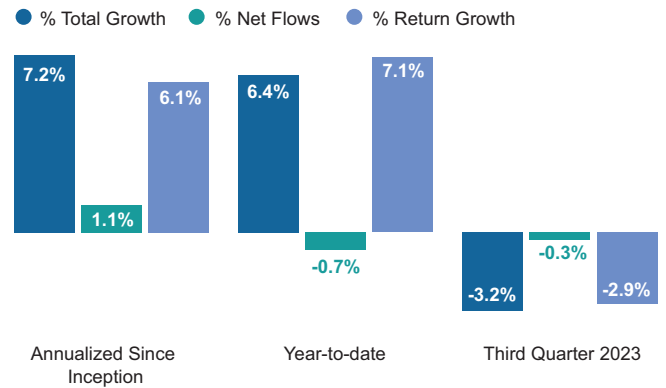
Investment Performance

(9/30/23)



Growth Sources

(9/30/23)



Net Cash Flow Analysis (3Q23)

(Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Target Date Funds	87.2%
Global ex-U.S. Equity	5.3%
U.S. Small/Mid Cap	-13.3%
Stable Value	-56.2%
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.

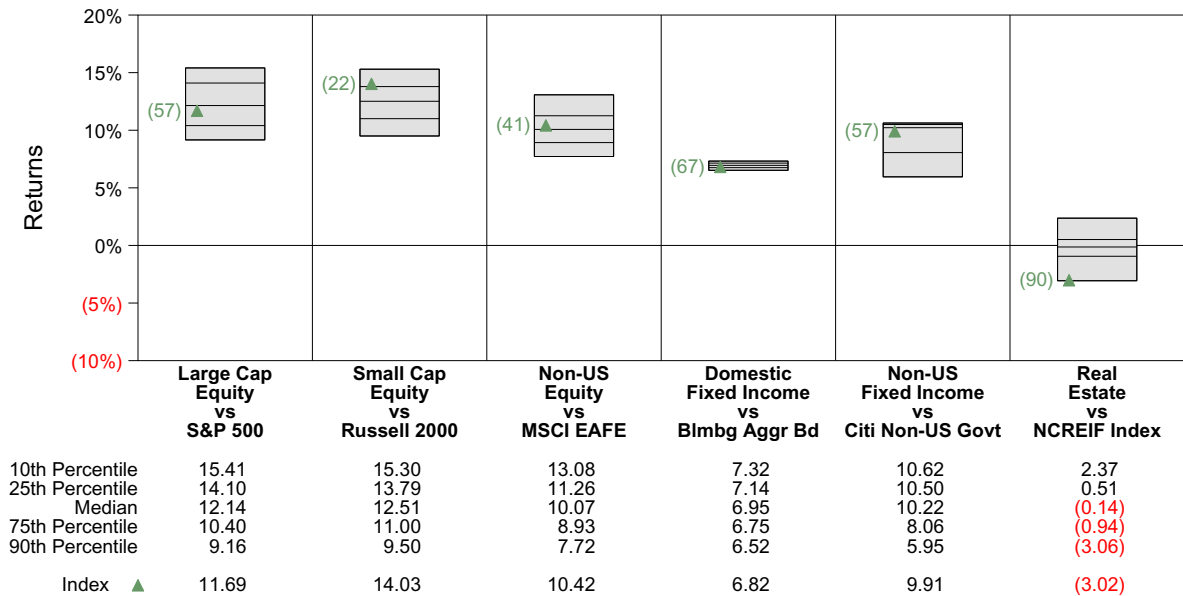
Market Overview

Active Management vs Index Returns

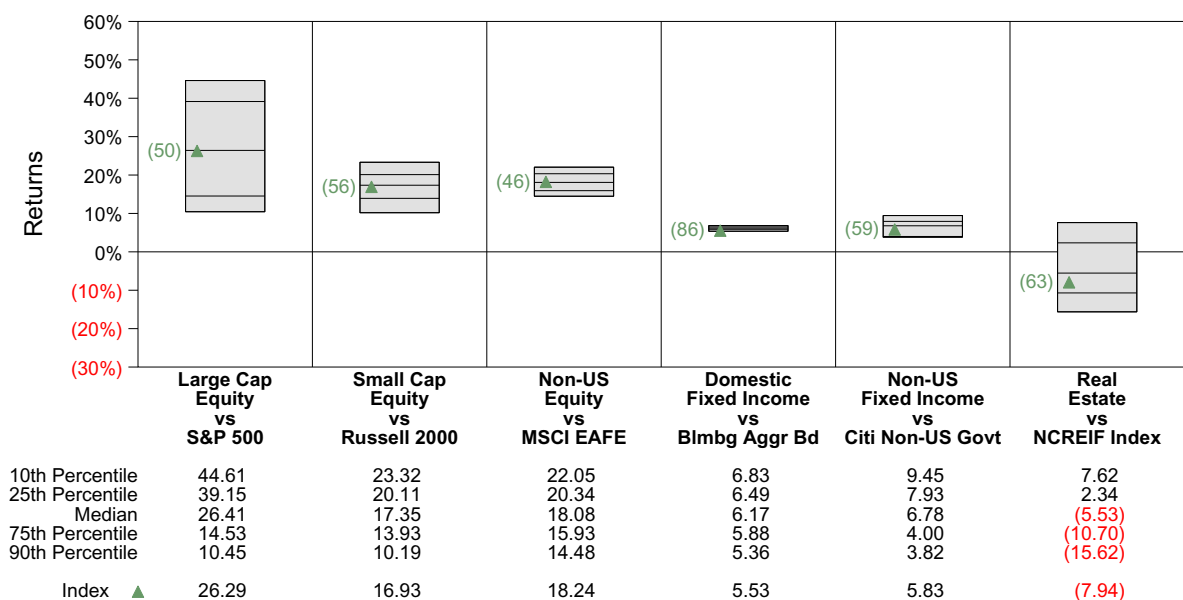
Market Overview

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 December 31, 2023



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

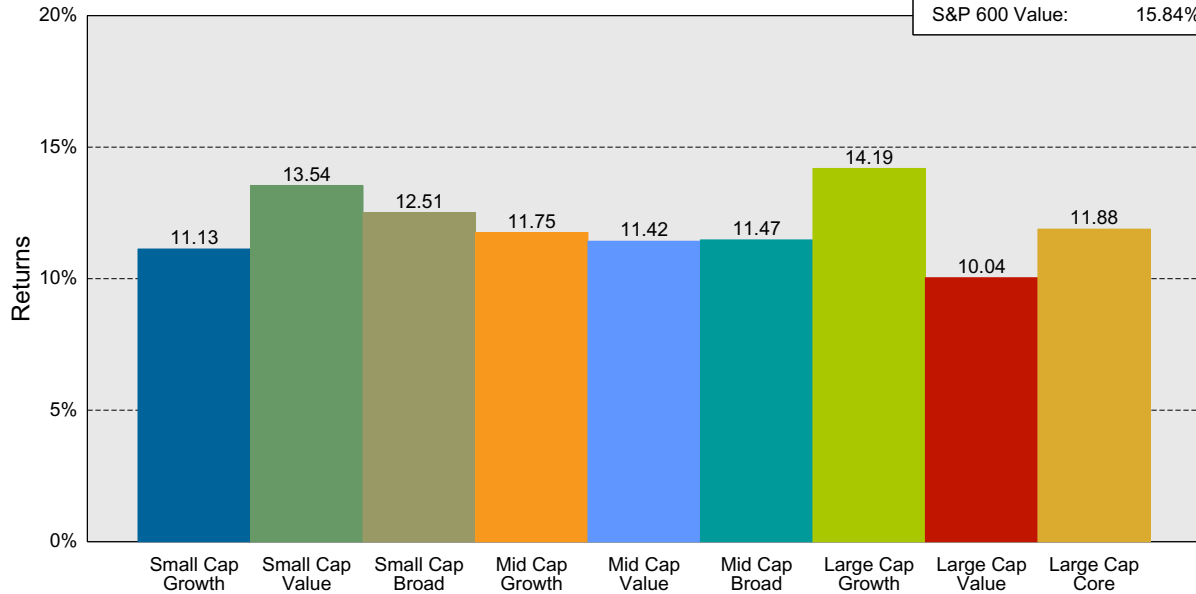


Domestic Equity Active Management Overview

The S&P 500 Index approached a record high as the year closed. Of note, 2023 was the first year since 2012 that the S&P failed to reach a high-water mark. That said, the index was up an impressive 11.7% in 4Q and 26.3% for the year. The tech sector was the clear winner for the quarter and the year (+17.2%; +57.8%) while Energy (-6.9%; -1.3%) was the only sector to register both a 4Q and 2023 decline. Small caps (R2000: +14.0%; R1000: +12.0%) outperformed large caps for the quarter but lagged for the year (R2000: +16.9%; R1000: +26.5%). Growth outperformed value in 4Q (R1000 Growth: +14.2%; R1000 Value: +9.5%) and even more substantially for the year (R1000 Growth: +42.7%; R1000 Value: +11.5%). Index concentration continued to have a notable impact on returns in 4Q. The "Magnificent Seven," which comprise over 25% of the S&P 500, accounted for 76% of the 2023 return for the index. The index would have been up only about 10% for the year without these stocks, and the equal-weighted S&P 500 returned 11.9% in 4Q and 13.9% in 2023

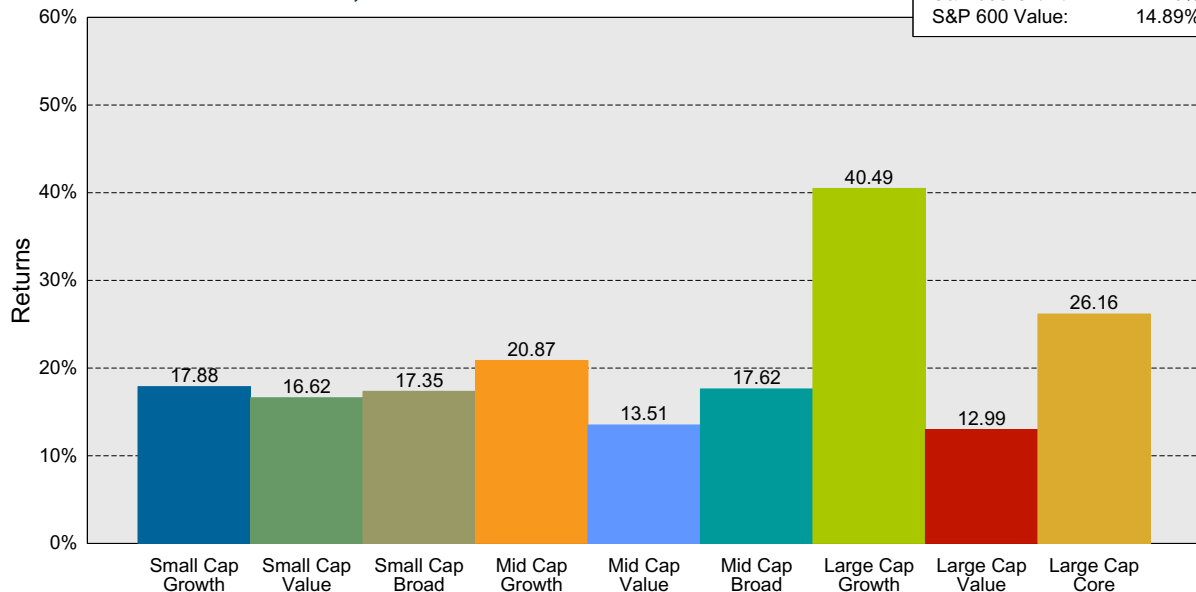
S&P 500:	11.69%
S&P 500 Growth:	10.09%
S&P 500 Value:	13.63%
S&P Mid Cap:	11.67%
S&P 600:	15.12%
S&P 600 Growth:	14.28%
S&P 600 Value:	15.84%

Separate Account Style Group Median Returns for Quarter Ended December 31, 2023



S&P 500:	26.29%
S&P 500 Growth:	30.03%
S&P 500 Value:	22.23%
S&P Mid Cap:	16.44%
S&P 600:	16.05%
S&P 600 Growth:	17.10%
S&P 600 Value:	14.89%

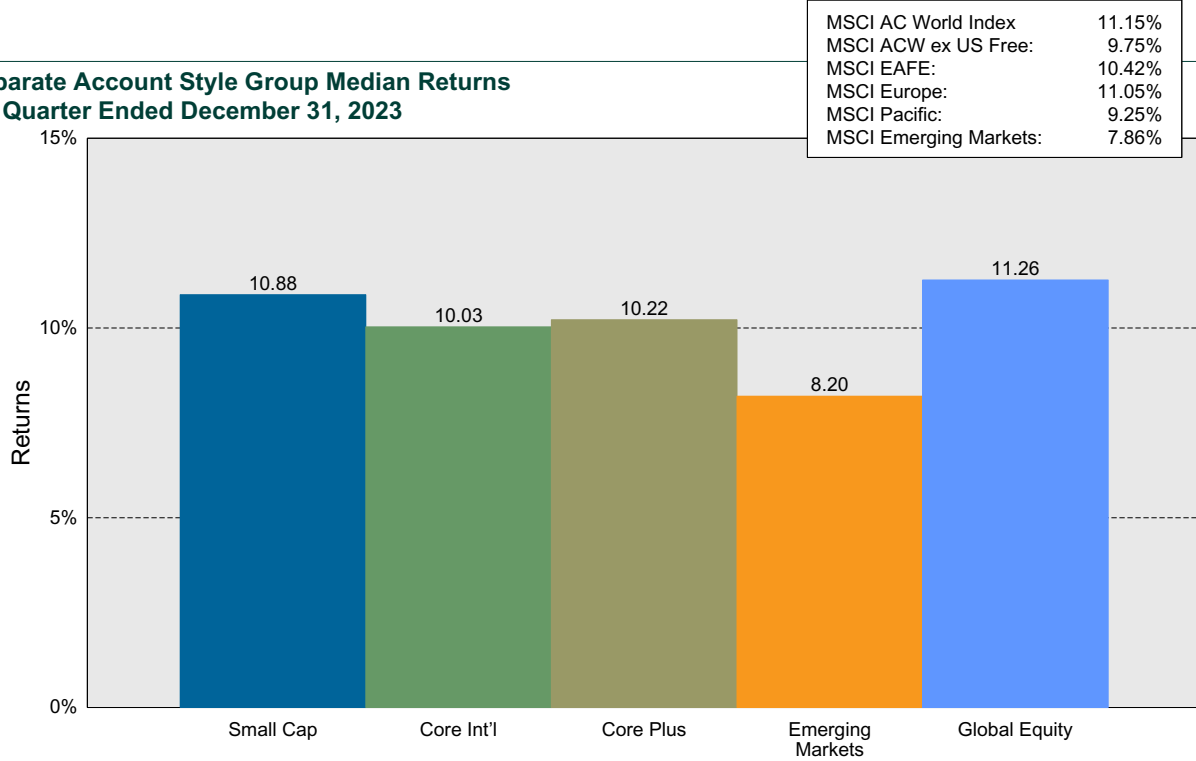
Separate Account Style Group Median Returns for One Year Ended December 31, 2023



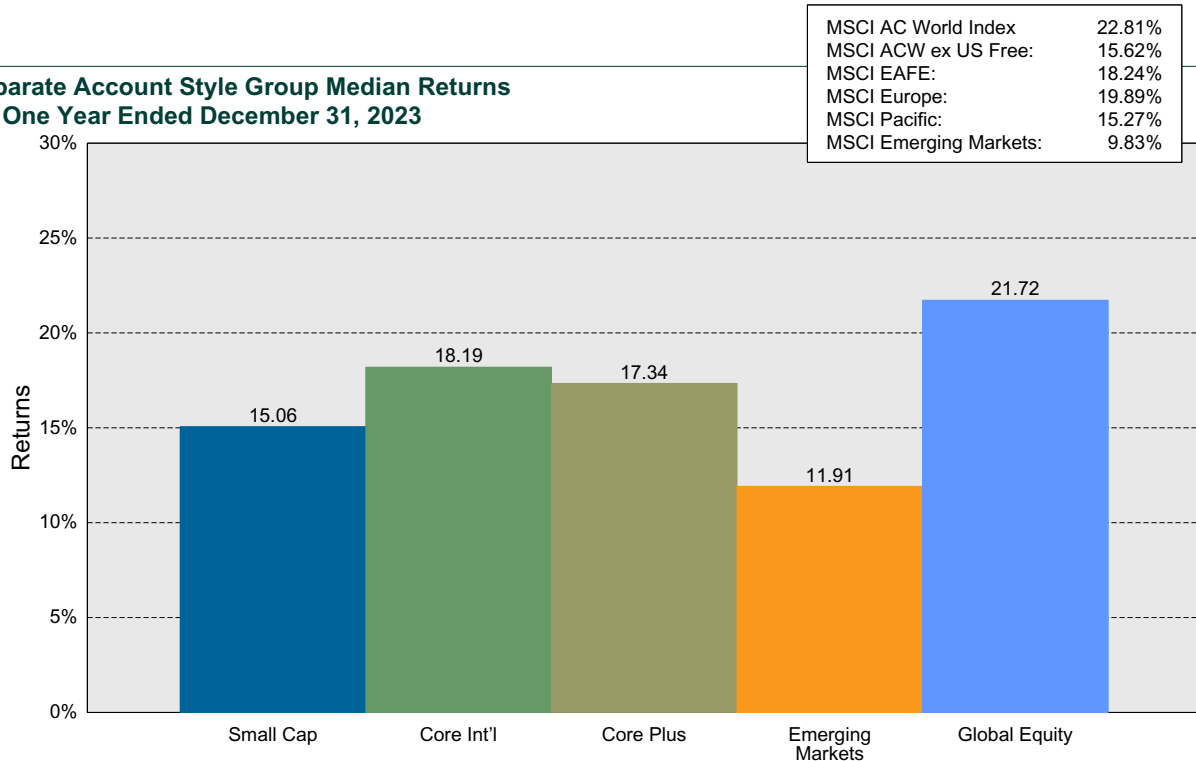
International Equity Active Management Overview

Global ex-U.S. equities (MSCI ACWI ex USA: +9.8%) performed well in 4Q and for the year (+15.6%) but lagged the U.S. Weakness in the U.S. dollar helped 4Q returns across developed markets (MSCI EAFE: +10.4%; MSCI EAFE Local: +5.0%). As in the U.S., growth outperformed value in the quarter (MSCI ACWI ex USA Growth: +11.1%; MSCI ACWI ex USA Value: +8.4%). However, value outperformed growth for the full year (MSCI ACWI ex USA Growth: +14.0%; MSCI ACWI ex USA Value: +17.3%). Mirroring the U.S., Technology was the strongest sector for both the quarter and the year (MSCI ACWI ex USA Information Technology: +20.0%; +36.3%).

**Separate Account Style Group Median Returns
for Quarter Ended December 31, 2023**



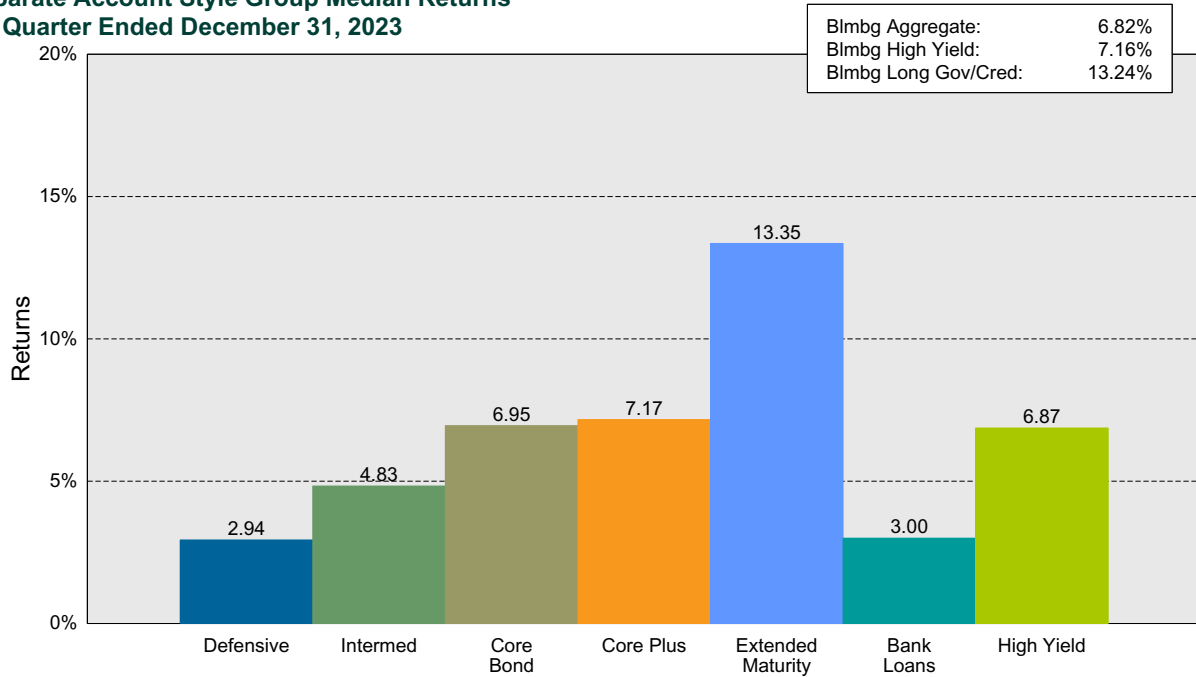
**Separate Account Style Group Median Returns
for One Year Ended December 31, 2023**



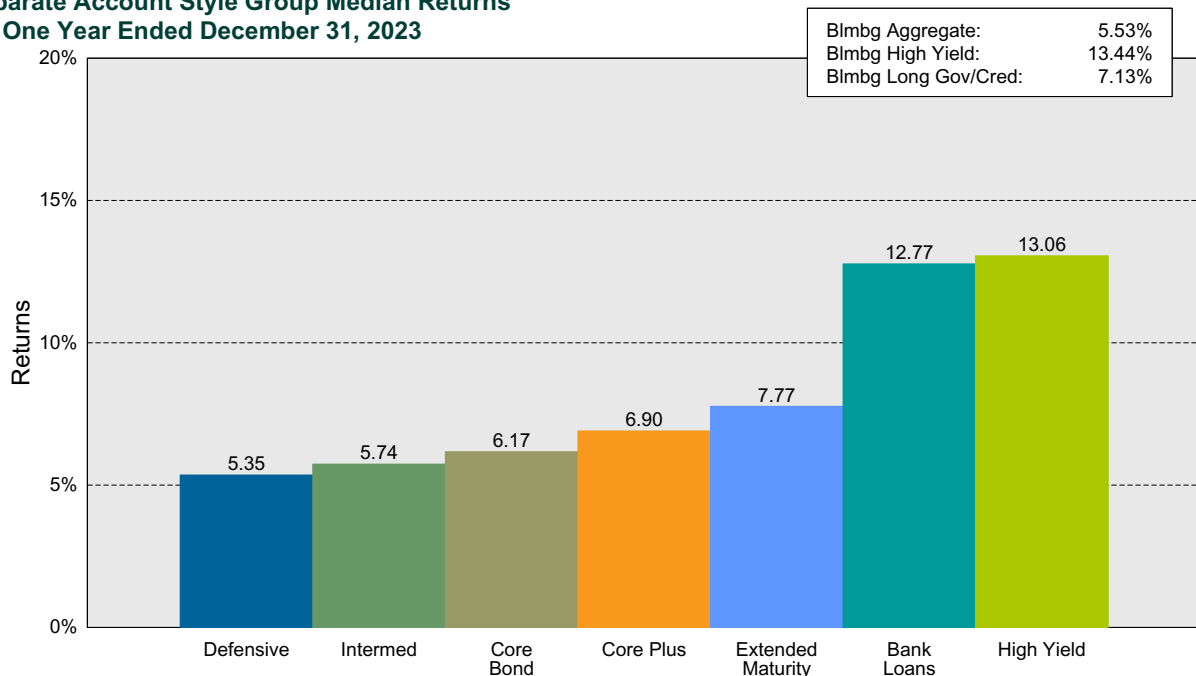
Domestic Fixed Income Active Management Overview

The 10-year U.S. Treasury yield was volatile in 2023. It began the year at 3.88%; the same place it closed at the end of 2022. During 2023, it hit an April low of 3.31% post the regional banking crisis and a high in October of 4.99%. Falling rates in November and December drove returns for the Bloomberg US Aggregate to a lofty +6.8% in 4Q and a solid +5.5% for the year. Corporate credit strongly outperformed U.S. Treasuries in 4Q (excess returns of 203 bps) and for the year (455 bps). High yield (Bloomberg US High Yield Corporate Index) climbed 7.2% for the quarter and was up an equity-like 13.4% for the year. Credit spreads for investment grade and high yield corporates ended the year below 10-year averages.

Separate Account Style Group Median Returns for Quarter Ended December 31, 2023



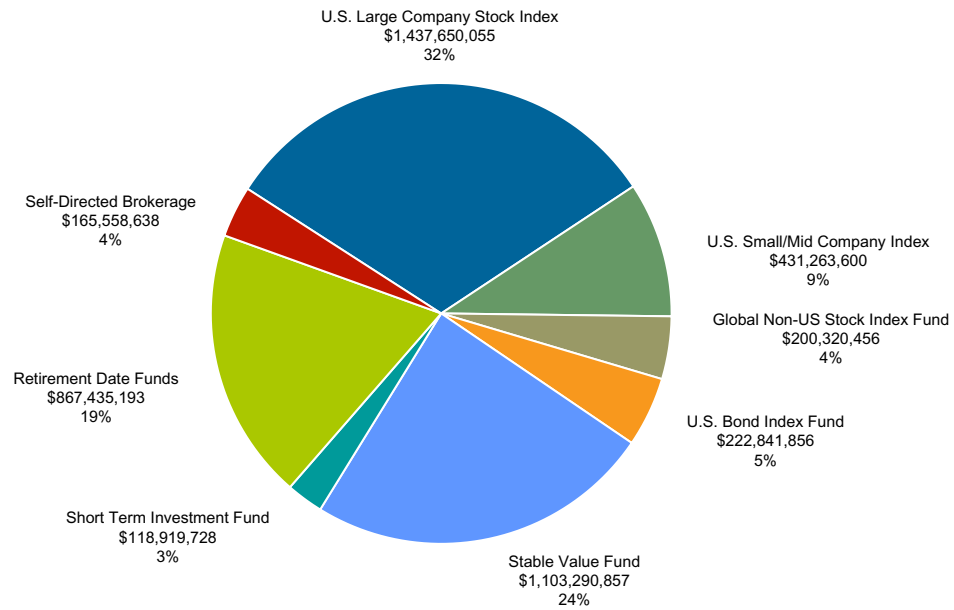
Separate Account Style Group Median Returns for One Year Ended December 31, 2023



Changes in Investment Fund Balances Period Ended December 31, 2023

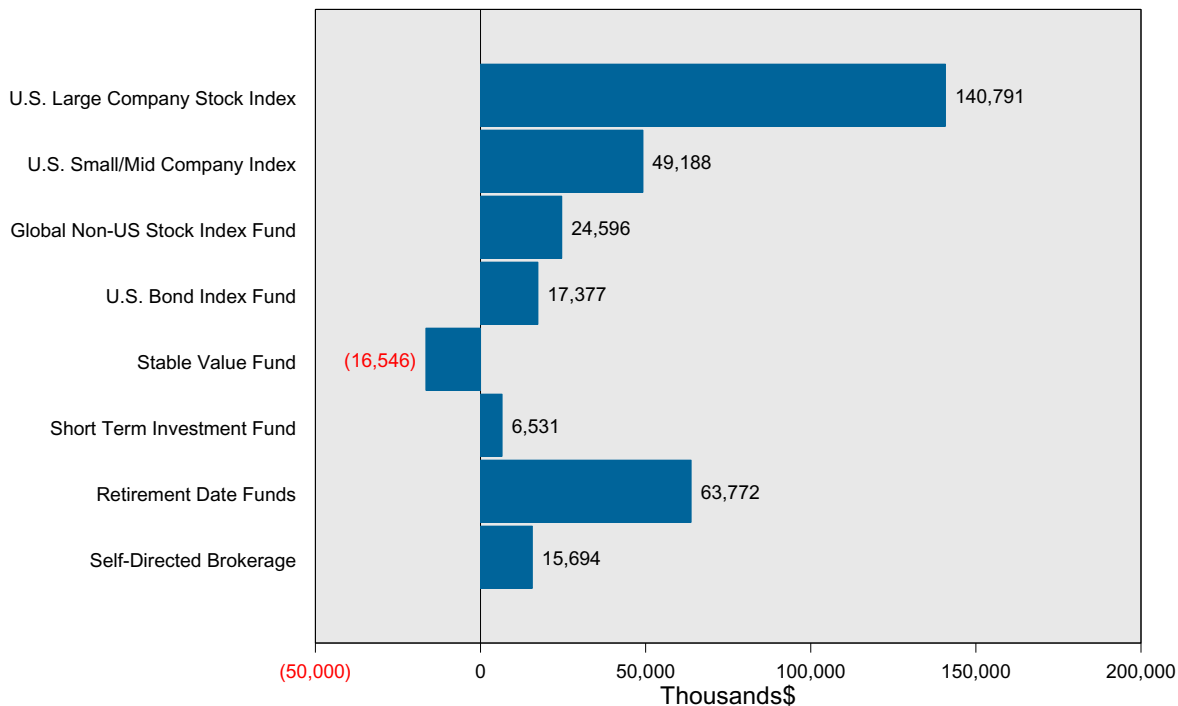
Allocation Across Investment Options

The chart below illustrates the allocation of the aggregate fund assets across the various investment options for the quarter ended December 31, 2023.



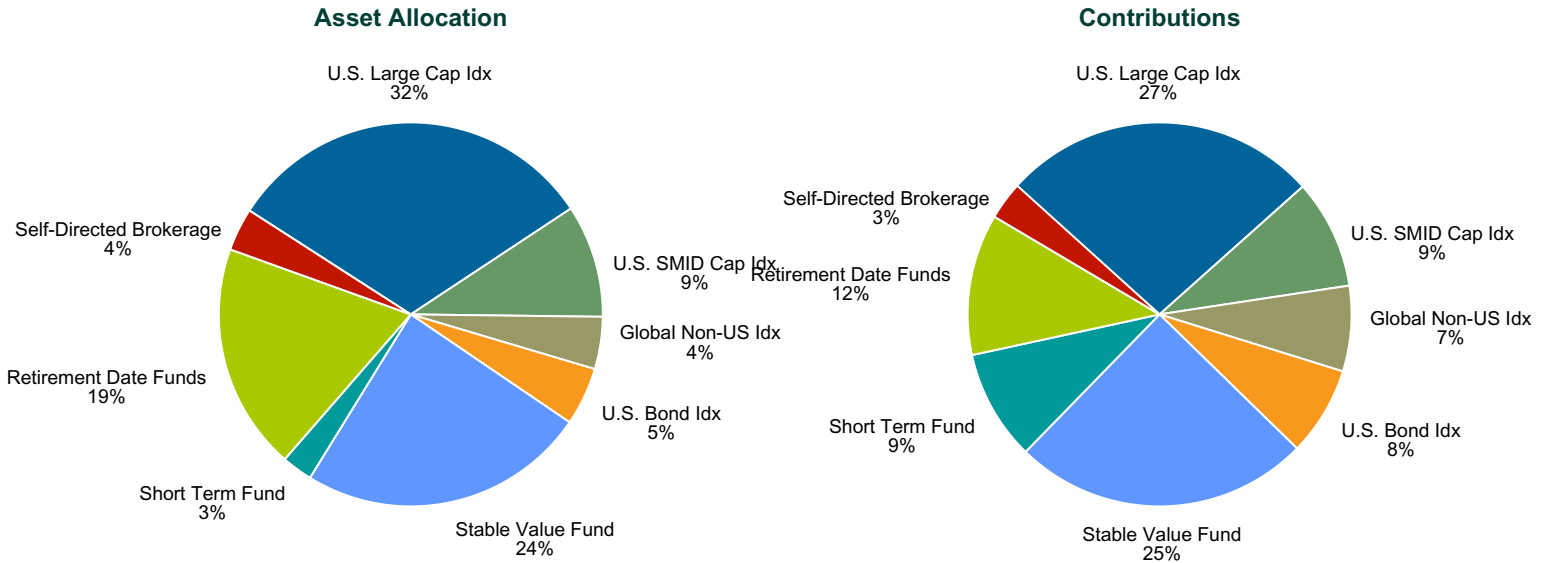
Changes in Fund Values

The chart below shows the net change in fund values across the various investment options for the quarter ended December 31, 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.

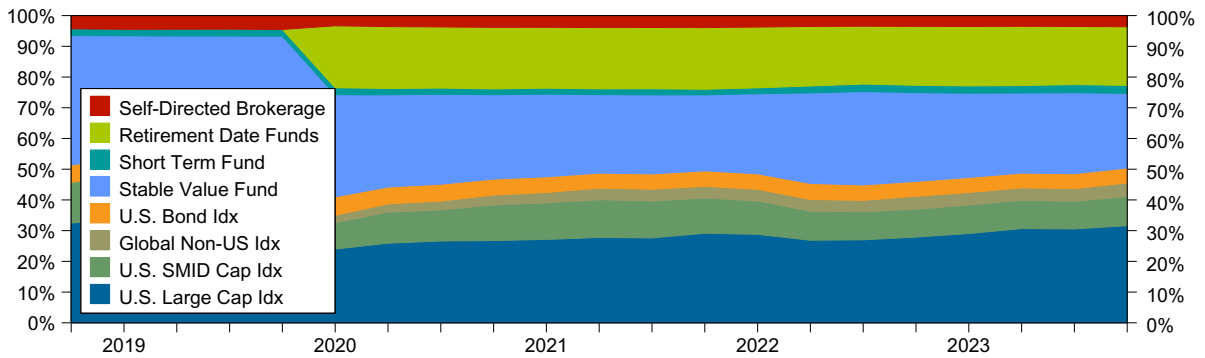


Asset Allocation

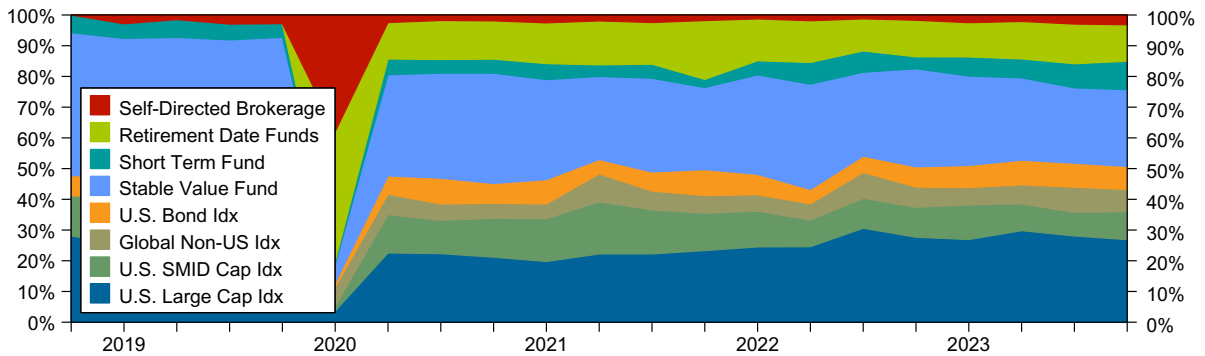
The charts below illustrate the historical asset allocation of the fund as well as the historical allocations of contributions to the fund. The pie charts on the top show the most recent allocations of both assets and contributions which include exchanges and transfers within the plan. The middle chart 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 December 31, 2023, with the distribution as of September 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

	December 31, 2023			September 30, 2023		
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
SERS Retirement Date Funds	\$867,435,193	19.08%	\$(12,094,323)	\$75,866,204	\$803,663,312	18.93%
SERS Post Retirement Fund	210,801,358	4.64%	(8,256,662)	16,216,432	202,841,589	4.78%
SERS 2025 Retirement Fund	137,104,337	3.02%	(5,098,278)	10,942,995	131,259,620	3.09%
SERS 2030 Retirement Fund	143,130,644	3.15%	(276,014)	12,308,399	131,098,258	3.09%
SERS 2035 Retirement Fund	132,192,046	2.91%	(1,066,448)	12,085,441	121,173,053	2.85%
SERS 2040 Retirement Fund	87,918,716	1.93%	403,016	8,483,872	79,031,827	1.86%
SERS 2045 Retirement Fund	73,947,572	1.63%	122,916	7,443,394	66,381,262	1.56%
SERS 2050 Retirement Fund	50,224,786	1.10%	669,449	5,140,105	44,415,231	1.05%
SERS 2055 Retirement Fund	19,104,164	0.42%	437,714	1,946,444	16,720,005	0.39%
SERS 2060 Retirement Fund	8,078,098	0.18%	489,715	816,795	6,771,589	0.16%
SERS 2065 Retirement Fund	4,933,472	0.11%	480,270	482,326	3,970,877	0.09%
SERS U.S. Equity	\$1,868,913,655	41.10%	\$(17,717,641)	\$207,696,017	\$1,678,935,279	39.54%
SERS U.S. Large Company Index Fund	1,437,650,055	31.62%	(10,079,583)	150,870,430	1,296,859,208	30.54%
SERS U.S. SMID Company Index Fund	431,263,600	9.48%	(7,638,059)	56,825,587	382,076,072	9.00%
SERS Non-U.S. Equity	\$200,320,456	4.41%	\$6,846,021	\$17,749,710	\$175,724,725	4.14%
SERS Global Non-US Index Fund	200,320,456	4.41%	6,846,021	17,749,710	175,724,725	4.14%
SERS Fixed Income	\$1,445,052,441	31.78%	\$(15,309,386)	\$22,670,441	\$1,437,691,386	33.86%
SERS Short Term Investment Fund	118,919,728	2.62%	5,078,193	1,452,392	112,389,142	2.65%
SERS Stable Value Fund	1,103,290,857	24.26%	(23,787,626)	7,241,189	1,119,837,294	26.37%
SERS U.S. Bond Index Fund	222,841,856	4.90%	3,400,047	13,976,859	205,464,949	4.84%
Self-Directed Brokerage Account	\$165,558,638	3.64%	\$401,303	\$15,293,147	\$149,864,187	3.53%
Total Fund	\$4,547,280,383	100.0%	\$(37,874,025)	\$339,275,519	\$4,245,878,889	100.0%

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended December 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended December 31, 2023

	Last Quarter	Last 1 Year	Last 3 Years	Last 5 Years
Net Performance				
Retirement Date Funds				
SERS Post Retirement Fund	8.31%	11.13%	0.49%	5.61%
BlackRock Post Retirement Index	8.37%	11.11%	0.54%	5.61%
Callan Tgt Date Ret Inc	7.46%	10.57%	0.58%	4.83%
SERS 2025 Retirement Fund	8.67%	12.00%	1.15%	6.60%
BlackRock 2025 Index	8.71%	11.94%	1.17%	6.58%
Callan Target Date 2025	8.60%	12.85%	1.86%	7.13%
SERS 2030 Retirement Fund	9.46%	14.24%	2.27%	7.84%
BlackRock 2030 Index	9.51%	14.23%	2.31%	7.82%
Callan Target Date 2030	9.34%	14.56%	2.54%	8.18%
SERS 2035 Retirement Fund	10.10%	16.29%	3.32%	9.00%
BlackRock 2035 Index	10.12%	16.29%	3.33%	8.96%
Callan Target Date 2035	9.93%	16.37%	3.33%	9.16%
SERS 2040 Retirement Fund	10.71%	18.30%	4.28%	10.05%
BlackRock 2040 Index	10.71%	18.29%	4.26%	9.99%
Callan Target Date 2040	10.41%	18.04%	4.23%	9.95%
SERS 2045 Retirement Fund	11.26%	20.14%	5.11%	10.94%
BlackRock 2045 Index	11.22%	20.12%	5.07%	10.86%
Callan Target Date 2045	10.80%	19.31%	4.71%	10.55%
SERS 2050 Retirement Fund	11.50%	21.25%	5.58%	11.41%
BlackRock 2050 Index	11.44%	21.23%	5.52%	11.33%
Callan Target Date 2050	10.95%	19.94%	4.87%	10.67%
SERS 2055 Retirement Fund	11.49%	21.56%	5.69%	11.51%
BlackRock 2055 Index	11.43%	21.56%	5.64%	11.44%
Callan Target Date 2055	11.03%	20.05%	4.94%	10.79%
SERS 2060 Retirement Fund	11.50%	21.57%	5.68%	11.51%
BlackRock 2060 Index	11.44%	21.57%	5.64%	11.44%
Callan Target Date 2060	11.05%	20.09%	4.98%	10.82%
SERS 2065 Retirement Fund	11.51%	21.62%	5.68%	-
BlackRock 2065 Index	11.45%	21.59%	5.63%	-
Callan Target Date 2065	11.16%	20.27%	4.81%	11.04%

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

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended December 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended December 31, 2023

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
Net Performance				
Retirement Date Funds				
SERS Post Retirement Fund	4.90%	4.45%	6.03%	-
BlackRock Post Retirement Index	4.88%	4.43%	6.04%	5.11%
Callan Tgt Date Ret Inc	4.27%	3.87%	5.51%	4.19%
SERS 2025 Retirement Fund	5.88%	5.26%	7.58%	-
BlackRock 2025 Index	5.84%	5.21%	7.57%	5.76%
Callan Target Date 2025	6.31%	5.56%	8.15%	6.21%
SERS 2030 Retirement Fund	6.88%	6.00%	8.35%	-
BlackRock 2030 Index	6.83%	5.94%	8.33%	6.20%
Callan Target Date 2030	7.12%	6.17%	8.93%	6.22%
SERS 2035 Retirement Fund	7.82%	6.70%	9.07%	-
BlackRock 2035 Index	7.75%	6.61%	9.03%	6.59%
Callan Target Date 2035	7.89%	6.77%	9.51%	7.00%
SERS 2040 Retirement Fund	8.65%	7.31%	9.70%	-
BlackRock 2040 Index	8.56%	7.20%	9.64%	6.91%
Callan Target Date 2040	8.52%	7.27%	9.97%	6.76%
SERS 2045 Retirement Fund	9.32%	7.79%	10.22%	-
BlackRock 2045 Index	9.20%	7.67%	10.16%	7.19%
Callan Target Date 2045	8.92%	7.59%	10.13%	-
SERS 2050 Retirement Fund	9.65%	8.03%	10.61%	-
BlackRock 2050 Index	9.53%	7.91%	10.55%	7.51%
Callan Target Date 2050	9.04%	7.64%	10.21%	-
SERS 2055 Retirement Fund	9.72%	8.08%	-	-
BlackRock 2055 Index	9.61%	7.96%	-	-
Callan Target Date 2055	9.14%	7.79%	10.96%	-
SERS 2060 Retirement Fund	9.71%	-	-	-
BlackRock 2060 Index	9.61%	-	-	-
Callan Target Date 2060	9.16%	7.97%	-	-

*Funds not listed do not have longer term history.

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

Investment Fund Returns

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

	2023	2022	2021	2020	2019
Net Performance					
Retirement Date Funds					
SERS Post Retirement Fund	11.13%	(14.63%)	6.95%	11.97%	15.65%
BlackRock Post Retirement Index	11.11%	(14.54%)	7.02%	11.80%	15.63%
Callan Tgt Date Ret Inc	10.57%	(12.88%)	6.31%	10.02%	13.21%
SERS 2025 Retirement Fund	12.00%	(15.23%)	8.99%	12.19%	18.60%
BlackRock 2025 Index	11.94%	(15.17%)	9.07%	12.01%	18.56%
Callan Target Date 2025	12.85%	(15.14%)	10.04%	12.58%	18.53%
SERS 2030 Retirement Fund	14.24%	(15.97%)	11.43%	12.88%	20.80%
BlackRock 2030 Index	14.23%	(15.92%)	11.50%	12.72%	20.70%
Callan Target Date 2030	14.56%	(16.04%)	11.63%	13.23%	20.43%
SERS 2035 Retirement Fund	16.29%	(16.67%)	13.80%	13.58%	22.84%
BlackRock 2035 Index	16.29%	(16.67%)	13.85%	13.44%	22.72%
Callan Target Date 2035	16.37%	(16.79%)	13.92%	14.28%	22.16%
SERS 2040 Retirement Fund	18.30%	(17.35%)	15.96%	14.14%	24.71%
BlackRock 2040 Index	18.29%	(17.38%)	15.97%	13.98%	24.62%
Callan Target Date 2040	18.04%	(17.40%)	15.85%	14.91%	23.62%
SERS 2045 Retirement Fund	20.14%	(17.89%)	17.72%	14.83%	26.05%
BlackRock 2045 Index	20.12%	(17.96%)	17.70%	14.65%	25.90%
Callan Target Date 2045	19.31%	(17.94%)	16.83%	15.52%	24.60%
SERS 2050 Retirement Fund	21.25%	(18.20%)	18.67%	15.20%	26.60%
BlackRock 2050 Index	21.23%	(18.30%)	18.62%	15.07%	26.48%
Callan Target Date 2050	19.94%	(18.07%)	17.17%	15.73%	24.89%
SERS 2055 Retirement Fund	21.56%	(18.27%)	18.83%	15.32%	26.67%
BlackRock 2055 Index	21.56%	(18.38%)	18.81%	15.18%	26.58%
Callan Target Date 2055	20.05%	(18.21%)	17.27%	15.83%	24.97%
SERS 2060 Retirement Fund	21.57%	(18.28%)	18.82%	15.31%	26.66%
BlackRock 2060 Index	21.57%	(18.39%)	18.81%	15.19%	26.58%
Callan Target Date 2060	20.09%	(18.27%)	17.41%	15.90%	25.08%
SERS 2065 Retirement Fund	21.62%	(18.30%)	18.77%	15.15%	-
BlackRock 2065 Index	21.59%	(18.40%)	18.80%	15.19%	-
Callan Target Date 2065	20.27%	(18.61%)	17.54%	16.47%	25.62%

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

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended December 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended December 31, 2023

	Last Quarter	Last 1 Year	Last 3 Years	Last 5 Years
Net Performance				
Domestic Equity				
SERS U.S. Large Company Index	11.69%	26.29%	10.00%	15.69%
S&P 500 Index	11.69%	26.29%	10.00%	15.69%
Callan Lg Cap Broad MF	12.05%	25.85%	8.52%	14.44%
SERS U.S. SMID Company Index	15.14%	25.39%	1.50%	12.10%
Dow Jones US Completion	14.92%	24.99%	1.04%	11.77%
Callan SMID Broad MFs	11.63%	16.85%	3.90%	11.62%
International Equity				
SERS Global Non-US Index	9.92%	16.07%	1.76%	7.36%
MSCI ACWI ex US	9.75%	15.62%	1.55%	7.08%
Callan Non US Equity MFs	10.36%	17.70%	2.99%	8.27%
Domestic Fixed Income				
SERS Short Term Investment Fund	1.32%	5.00%	2.20%	1.91%
3-month Treasury Bill	1.37%	5.01%	2.15%	1.88%
Callan Cash Database(1)	1.53%	5.32%	2.25%	2.07%
SERS Stable Value Fund	0.69%	2.66%	2.01%	2.19%
3-month Treasury Bill	1.37%	5.01%	2.15%	1.88%
Callan Stable Value SA	0.71%	2.75%	2.20%	2.32%
SERS U.S. Bond Index Fund	6.82%	5.54%	(3.32%)	1.10%
Blmbg Aggregate	6.82%	5.53%	(3.31%)	1.10%
Callan Core Bond MFs	6.88%	5.98%	(3.16%)	1.47%

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

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

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended December 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

	Returns for Periods Ended December 31, 2023			
	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
Net Performance				
Domestic Equity				
SERS U.S. Large Company Index	13.42%	12.04%	14.00%	9.73%
S&P 500 Index	13.42%	12.03%	13.97%	9.69%
Callan Lg Cap Broad MF	12.89%	11.13%	13.37%	9.57%
SERS U.S. SMID Company Index	9.58%	8.67%	13.18%	9.59%
Dow Jones US Completion	9.29%	8.41%	12.94%	9.35%
Callan SMID Broad MFs	8.85%	7.87%	12.76%	9.09%
International Equity				
SERS Global Non-US Index	6.64%	4.06%	-	-
MSCI ACWI ex US	6.33%	3.83%	6.74%	5.68%
Callan Non US Equity MFs	6.82%	4.14%	7.27%	6.03%
Domestic Fixed Income				
SERS Short Term Investment Fund	1.82%	1.36%	1.01%	1.60%
3-month Treasury Bill	1.73%	1.25%	0.87%	1.46%
Callan Cash Database(1)	1.95%	1.54%	1.24%	1.83%
SERS Stable Value Fund	2.16%	2.16%	2.57%	-
3-month Treasury Bill	1.73%	1.25%	0.87%	1.46%
Callan Stable Value SA	2.30%	2.22%	2.52%	3.10%
SERS U.S. Bond Index Fund	1.29%	1.80%	2.61%	3.14%
Blmbg Aggregate	1.29%	1.81%	2.68%	3.17%
Callan Core Bond MFs	1.56%	2.00%	3.39%	3.39%

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

*Funds not listed do not have longer term history.

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

Investment Fund Returns

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

	2023	2022	2021	2020	2019
Net Performance					
Domestic Equity					
SERS U.S. Large Company Index	26.29%	(18.12%)	28.70%	18.43%	31.51%
S&P 500 Index	26.29%	(18.11%)	28.71%	18.40%	31.49%
Callan Lg Cap Broad MF	25.85%	(18.55%)	25.50%	18.47%	30.14%
SERS U.S. SMID Company Index	25.39%	(26.13%)	12.89%	32.03%	28.20%
Dow Jones US Completion	24.99%	(26.56%)	12.36%	32.17%	27.94%
Callan SMID Broad MFs	16.85%	(20.87%)	19.19%	22.70%	29.17%
International Equity					
SERS Global Non-US Index	16.07%	(15.92%)	7.97%	11.15%	21.77%
MSCI ACWI ex US	15.62%	(16.00%)	7.82%	10.65%	21.51%
Callan Non US Equity MFs	17.70%	(15.77%)	9.47%	11.12%	22.83%
Domestic Fixed Income					
SERS Short Term Investment Fund	5.00%	1.59%	0.07%	0.67%	2.31%
3-month Treasury Bill	5.01%	1.46%	0.05%	0.67%	2.28%
Callan Cash Database(1)	5.32%	1.16%	0.13%	1.03%	2.59%
SERS Stable Value Fund	2.66%	1.73%	1.64%	2.32%	2.59%
3-month Treasury Bill	5.01%	1.46%	0.05%	0.67%	2.28%
Callan Stable Value SA	2.75%	1.94%	1.84%	2.40%	2.62%
SERS U.S. Bond Index Fund	5.54%	(12.94%)	(1.65%)	7.56%	8.69%
Bimbg Aggregate	5.53%	(13.01%)	(1.54%)	7.51%	8.72%
Callan Core Bond MFs	5.98%	(13.48%)	(1.17%)	8.65%	9.17%

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

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

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended December 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended December 31, 2023

	Last Quarter	Last 1 Year	Last 3 Years	Last 5 Years
Gross Performance				
Retirement Date Funds				
SERS Post Retirement Fund	8.33%	11.21%	0.56%	5.68%
BlackRock Post Retirement Index	8.37%	11.11%	0.54%	5.61%
Callan Tgt Date Ret Inc	7.46%	10.57%	0.58%	4.83%
SERS 2025 Retirement Fund	8.69%	12.08%	1.21%	6.68%
BlackRock 2025 Index	8.71%	11.94%	1.17%	6.58%
Callan Target Date 2025	8.60%	12.85%	1.86%	7.13%
SERS 2030 Retirement Fund	9.48%	14.32%	2.34%	7.91%
BlackRock 2030 Index	9.51%	14.23%	2.31%	7.82%
Callan Target Date 2030	9.34%	14.56%	2.54%	8.18%
SERS 2035 Retirement Fund	10.11%	16.37%	3.39%	9.07%
BlackRock 2035 Index	10.12%	16.29%	3.33%	8.96%
Callan Target Date 2035	9.93%	16.37%	3.33%	9.16%
SERS 2040 Retirement Fund	10.73%	18.38%	4.35%	10.12%
BlackRock 2040 Index	10.71%	18.29%	4.26%	9.99%
Callan Target Date 2040	10.41%	18.04%	4.23%	9.95%
SERS 2045 Retirement Fund	11.28%	20.22%	5.18%	11.01%
BlackRock 2045 Index	11.22%	20.12%	5.07%	10.86%
Callan Target Date 2045	10.80%	19.31%	4.71%	10.55%
SERS 2050 Retirement Fund	11.52%	21.33%	5.65%	11.49%
BlackRock 2050 Index	11.44%	21.23%	5.52%	11.33%
Callan Target Date 2050	10.95%	19.94%	4.87%	10.67%
SERS 2055 Retirement Fund	11.51%	21.64%	5.76%	11.59%
BlackRock 2055 Index	11.43%	21.56%	5.64%	11.44%
Callan Target Date 2055	11.03%	20.05%	4.94%	10.79%
SERS 2060 Retirement Fund	11.52%	21.65%	5.75%	11.58%
BlackRock 2060 Index	11.44%	21.57%	5.64%	11.44%
Callan Target Date 2060	11.05%	20.09%	4.98%	10.82%
SERS 2065 Retirement Fund	11.53%	21.70%	5.75%	-
BlackRock 2065 Index	11.45%	21.59%	5.63%	-
Callan Target Date 2065	11.16%	20.27%	4.81%	11.04%

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

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended December 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended December 31, 2023

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
Gross Performance				
Retirement Date Funds				
SERS Post Retirement Fund	4.97%	4.52%	6.10%	-
BlackRock Post Retirement Index	4.88%	4.43%	6.04%	5.11%
Callan Tgt Date Ret Inc	4.27%	3.87%	5.51%	4.19%
SERS 2025 Retirement Fund	5.95%	5.33%	7.65%	-
BlackRock 2025 Index	5.84%	5.21%	7.57%	5.76%
Callan Target Date 2025	6.31%	5.56%	8.15%	6.21%
SERS 2030 Retirement Fund	6.95%	6.07%	8.42%	-
BlackRock 2030 Index	6.83%	5.94%	8.33%	6.20%
Callan Target Date 2030	7.12%	6.17%	8.93%	6.22%
SERS 2035 Retirement Fund	7.89%	6.77%	9.14%	-
BlackRock 2035 Index	7.75%	6.61%	9.03%	6.59%
Callan Target Date 2035	7.89%	6.77%	9.51%	7.00%
SERS 2040 Retirement Fund	8.73%	7.38%	9.77%	-
BlackRock 2040 Index	8.56%	7.20%	9.64%	6.91%
Callan Target Date 2040	8.52%	7.27%	9.97%	6.76%
SERS 2045 Retirement Fund	9.39%	7.86%	10.30%	-
BlackRock 2045 Index	9.20%	7.67%	10.16%	7.19%
Callan Target Date 2045	8.92%	7.59%	10.13%	-
SERS 2050 Retirement Fund	9.73%	8.10%	10.68%	-
BlackRock 2050 Index	9.53%	7.91%	10.55%	7.51%
Callan Target Date 2050	9.04%	7.64%	10.21%	-
SERS 2055 Retirement Fund	9.79%	8.15%	-	-
BlackRock 2055 Index	9.61%	7.96%	-	-
Callan Target Date 2055	9.14%	7.79%	10.96%	-
SERS 2060 Retirement Fund	9.78%	-	-	-
BlackRock 2060 Index	9.61%	-	-	-
Callan Target Date 2060	9.16%	7.97%	-	-

*Funds not listed do not have longer term history.

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

Investment Fund Returns

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

	2023	2022	2021	2020	2019
Gross Performance					
Retirement Date Funds					
SERS Post Retirement Fund	11.21%	(14.57%)	7.03%	12.04%	15.72%
BlackRock Post Retirement Index	11.11%	(14.54%)	7.02%	11.80%	15.63%
Callan Tgt Date Ret Inc	10.57%	(12.88%)	6.31%	10.02%	13.21%
SERS 2025 Retirement Fund	12.08%	(15.17%)	9.06%	12.26%	18.67%
BlackRock 2025 Index	11.94%	(15.17%)	9.07%	12.01%	18.56%
Callan Target Date 2025	12.85%	(15.14%)	10.04%	12.58%	18.53%
SERS 2030 Retirement Fund	14.32%	(15.91%)	11.50%	12.96%	20.86%
BlackRock 2030 Index	14.23%	(15.92%)	11.50%	12.72%	20.70%
Callan Target Date 2030	14.56%	(16.04%)	11.63%	13.23%	20.43%
SERS 2035 Retirement Fund	16.37%	(16.61%)	13.88%	13.65%	22.93%
BlackRock 2035 Index	16.29%	(16.67%)	13.85%	13.44%	22.72%
Callan Target Date 2035	16.37%	(16.79%)	13.92%	14.28%	22.16%
SERS 2040 Retirement Fund	18.38%	(17.29%)	16.04%	14.22%	24.80%
BlackRock 2040 Index	18.29%	(17.38%)	15.97%	13.98%	24.62%
Callan Target Date 2040	18.04%	(17.40%)	15.85%	14.91%	23.62%
SERS 2045 Retirement Fund	20.22%	(17.84%)	17.79%	14.90%	26.12%
BlackRock 2045 Index	20.12%	(17.96%)	17.70%	14.65%	25.90%
Callan Target Date 2045	19.31%	(17.94%)	16.83%	15.52%	24.60%
SERS 2050 Retirement Fund	21.33%	(18.15%)	18.75%	15.27%	26.70%
BlackRock 2050 Index	21.23%	(18.30%)	18.62%	15.07%	26.48%
Callan Target Date 2050	19.94%	(18.07%)	17.17%	15.73%	24.89%
SERS 2055 Retirement Fund	21.64%	(18.22%)	18.91%	15.40%	26.75%
BlackRock 2055 Index	21.56%	(18.38%)	18.81%	15.18%	26.58%
Callan Target Date 2055	20.05%	(18.21%)	17.27%	15.83%	24.97%
SERS 2060 Retirement Fund	21.65%	(18.23%)	18.90%	15.38%	26.74%
BlackRock 2060 Index	21.57%	(18.39%)	18.81%	15.19%	26.58%
Callan Target Date 2060	20.09%	(18.27%)	17.41%	15.90%	25.08%
SERS 2065 Retirement Fund	21.70%	(18.25%)	18.85%	15.22%	-
BlackRock 2065 Index	21.59%	(18.40%)	18.80%	15.19%	-
Callan Target Date 2065	20.27%	(18.61%)	17.54%	16.47%	25.62%

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

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended December 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended December 31, 2023

	Last Quarter	Last 1 Year	Last 3 Years	Last 5 Years
Gross Performance				
Domestic Equity				
SERS U.S. Large Company Index	11.69%	26.29%	10.00%	15.70%
S&P 500 Index	11.69%	26.29%	10.00%	15.69%
Callan Lg Cap Broad MF	12.05%	25.85%	8.52%	14.44%
SERS U.S. SMID Company Index	15.14%	25.40%	1.51%	12.10%
Dow Jones US Completion	14.92%	24.99%	1.04%	11.77%
Callan SMID Broad MFs	11.63%	16.85%	3.90%	11.62%
International Equity				
SERS Global Non-US Index	9.93%	16.09%	1.77%	7.37%
MSCI ACWI ex US	9.75%	15.62%	1.55%	7.08%
Callan Non US Equity MFs	10.36%	17.70%	2.99%	8.27%
Domestic Fixed Income				
SERS Short Term Investment Fund	1.32%	5.00%	2.20%	1.91%
3-month Treasury Bill	1.37%	5.01%	2.15%	1.88%
Callan Cash Database(1)	1.53%	5.32%	2.25%	2.07%
SERS Stable Value Fund	0.71%	2.71%	2.07%	2.25%
3-month Treasury Bill	1.37%	5.01%	2.15%	1.88%
Callan Stable Value SA	0.71%	2.75%	2.20%	2.32%
SERS U.S. Bond Index Fund	6.83%	5.54%	(3.32%)	1.11%
Blmbg Aggregate	6.82%	5.53%	(3.31%)	1.10%
Callan Core Bond MFs	6.88%	5.98%	(3.16%)	1.47%

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

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

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended December 31, 2023. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

	Returns for Periods Ended December 31, 2023			
	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
Gross Performance				
Domestic Equity				
SERS U.S. Large Company Index	13.43%	12.05%	14.00%	9.74%
S&P 500 Index	13.42%	12.03%	13.97%	9.69%
Callan Lg Cap Broad MF	12.89%	11.13%	13.37%	9.57%
SERS U.S. SMID Company Index	9.59%	8.67%	13.18%	9.59%
Dow Jones US Completion	9.29%	8.41%	12.94%	9.35%
Callan SMID Broad MFs	8.85%	7.87%	12.76%	9.09%
International Equity				
SERS Global Non-US Index	6.65%	4.07%	-	-
MSCI ACWI ex US	6.33%	3.83%	6.74%	5.68%
Callan Non US Equity MFs	6.82%	4.14%	7.27%	6.03%
Domestic Fixed Income				
SERS Short Term Investment Fund	1.82%	1.36%	1.01%	1.60%
3-month Treasury Bill	1.73%	1.25%	0.87%	1.46%
Callan Cash Database(1)	1.95%	1.54%	1.24%	1.83%
SERS Stable Value Fund	2.26%	2.33%	2.80%	-
3-month Treasury Bill	1.73%	1.25%	0.87%	1.46%
Callan Stable Value SA	2.30%	2.22%	2.52%	3.10%
SERS U.S. Bond Index Fund	1.30%	1.81%	2.62%	3.14%
Blmbg Aggregate	1.29%	1.81%	2.68%	3.17%
Callan Core Bond MFs	1.56%	2.00%	3.39%	3.39%

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

*Funds not listed do not have longer term history.

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

Investment Fund Returns

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

	2023	2022	2021	2020	2019
Gross Performance					
Domestic Equity					
SERS U.S. Large Company Index	26.29%	(18.11%)	28.71%	18.44%	31.51%
S&P 500 Index	26.29%	(18.11%)	28.71%	18.40%	31.49%
Callan Lg Cap Broad MF	25.85%	(18.55%)	25.50%	18.47%	30.14%
SERS U.S. SMID Company Index	25.40%	(26.12%)	12.90%	32.04%	28.21%
Dow Jones US Completion	24.99%	(26.56%)	12.36%	32.17%	27.94%
Callan SMID Broad MFs	16.85%	(20.87%)	19.19%	22.70%	29.17%
International Equity					
SERS Global Non-US Index	16.09%	(15.91%)	7.98%	11.17%	21.79%
MSCI ACWI ex US	15.62%	(16.00%)	7.82%	10.65%	21.51%
Callan Non US Equity MFs	17.70%	(15.77%)	9.47%	11.12%	22.83%
Domestic Fixed Income					
SERS Short Term Investment Fund	5.00%	1.59%	0.07%	0.67%	2.31%
3-month Treasury Bill	5.01%	1.46%	0.05%	0.67%	2.28%
Callan Cash Database(1)	5.32%	1.16%	0.13%	1.03%	2.59%
SERS Stable Value Fund	2.71%	1.79%	1.72%	2.38%	2.66%
3-month Treasury Bill	5.01%	1.46%	0.05%	0.67%	2.28%
Callan Stable Value SA	2.75%	1.94%	1.84%	2.40%	2.62%
SERS U.S. Bond Index Fund	5.54%	(12.93%)	(1.64%)	7.56%	8.69%
Bimbg Aggregate	5.53%	(13.01%)	(1.54%)	7.51%	8.72%
Callan Core Bond MFs	5.98%	(13.48%)	(1.17%)	8.65%	9.17%

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

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

Pennsylvania SERS 457(b)
Investment Manager Performance Monitoring Summary Report
December 31, 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									
Retirement Date Funds									
SERS Post Retirement Fund Callan Tgt Date Ret Inc	8.3 16	11.1 29	0.5 56	5.6 18	4.9 16	4.4 13			0.08 73
BlackRock Post Retirement Index	8.4 15	11.1 30	0.5 53	5.6 18	4.9 16	4.4 13			
SERS 2025 Retirement Fund Callan Target Date 2025	8.7 44	12.0 66	1.1 81	6.6 73	5.9 70	5.3 68			0.08 72
BlackRock 2025 Index	8.7 42	11.9 69	1.2 78	6.6 73	5.8 71	5.2 69			
SERS 2030 Retirement Fund Callan Target Date 2030	9.5 44	14.2 62	2.3 69	7.8 66	6.9 63	6.0 66			0.08 70
BlackRock 2030 Index	9.5 41	14.2 62	2.3 67	7.8 70	6.8 71	5.9 70			
SERS 2035 Retirement Fund Callan Target Date 2035	10.1 40	16.3 53	3.3 53	9.0 57	7.8 52	6.7 55			0.08 72
BlackRock 2035 Index	10.1 39	16.3 53	3.3 50	9.0 57	7.7 57	6.6 63			
SERS 2040 Retirement Fund Callan Target Date 2040	10.7 33	18.3 41	4.3 46	10.0 43	8.7 35	7.3 48			0.08 68
BlackRock 2040 Index	10.7 34	18.3 41	4.3 48	10.0 47	8.6 43	7.2 52			
SERS 2045 Retirement Fund Callan Target Date 2045	11.3 12	20.1 20	5.1 25	10.9 26	9.3 26	7.8 32			0.08 72
BlackRock 2045 Index	11.2 15	20.1 22	5.1 27	10.9 29	9.2 32	7.7 43			
SERS 2050 Retirement Fund Callan Target Date 2050	11.5 10	21.2 10	5.6 18	11.4 12	9.7 17	8.0 26			0.08 68
BlackRock 2050 Index	11.4 16	21.2 10	5.5 20	11.3 16	9.5 24	7.9 36			
SERS 2055 Retirement Fund Callan Target Date 2055	11.5 16	21.6 8	5.7 14	11.5 10	9.7 11	8.1 27			0.08 72
BlackRock 2055 Index	11.4 26	21.6 8	5.6 16	11.4 14	9.6 23	8.0 43			
SERS 2060 Retirement Fund Callan Target Date 2060	11.5 18	21.6 10	5.7 14	11.5 18	9.7 21				0.08 75
BlackRock 2060 Index	11.4 25	21.6 10	5.6 17	11.4 20	9.6 30				

Returns:
■ above median
■ third quartile
■ fourth quartile

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

Risk Quadrant:


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

Pennsylvania SERS 457(b)
Investment Manager Performance Monitoring Summary Report
December 31, 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	11.5 25	21.6 13	5.7 20						0.08 47
BlackRock 2065 Index	11.5 32	21.6 15	5.6 22						
Domestic Equity									
SERS U.S. Large Company Index Callan Lg Cap Broad MF	11.7 57	26.3 49	10.0 30	15.7 38	13.4 48	12.0 36			0.02 100
S&P 500 Index	11.7 57	26.3 49	10.0 30	15.7 38	13.4 48	12.0 36			
SERS U.S. Small/Mid Company Index Callan SMID Broad MFs	15.1 7	25.4 8	1.5 58	12.1 37	9.6 44	8.7 32			0.03 100
Dow Jones US Completion	14.9 8	25.0 13	1.0 60	11.8 46	9.3 48	8.4 39			
International Equity									
SERS Global Non-U.S. Index Fund Callan Non US Equity MFs	9.9 60	16.1 67	1.8 61	7.4 68	6.6 55	4.1 55			0.05 99
MSCI ACWI ex US	9.8 61	15.6 75	1.5 63	7.1 72	6.3 61	3.8 61			
Domestic Fixed Income									
SERS Short Term Investment Fund Callan Cash Database	1.3 96	5.0 89	2.2 57	1.9 84	1.8 72	1.4 75			0.00 100
3-month Treasury Bill	1.4 85	5.0 89	2.2 58	1.9 85	1.7 89	1.3 91			
Comments: Callan Cash Database includes STIF, enhanced cash, and money market funds.									
SERS Stable Value Fund Callan Stable Value SA	0.7 81	2.7 77	2.0 75	2.2 70	2.2 69	2.2 67			0.25 65
3-month Treasury Bill	1.4 2	5.0 2	2.2 57	1.9 90	1.7 92	1.3 96			
SERS U.S. Bond Index Fund Callan Core Bond MFs	6.8 57	5.5 86	-3.3 60	1.1 88	1.3 83	1.8 79			0.02 98
Blmbg Aggregate	6.8 58	5.5 86	-3.3 60	1.1 88	1.3 83	1.8 78			

Returns:
 above median
 third quartile
 fourth quartile

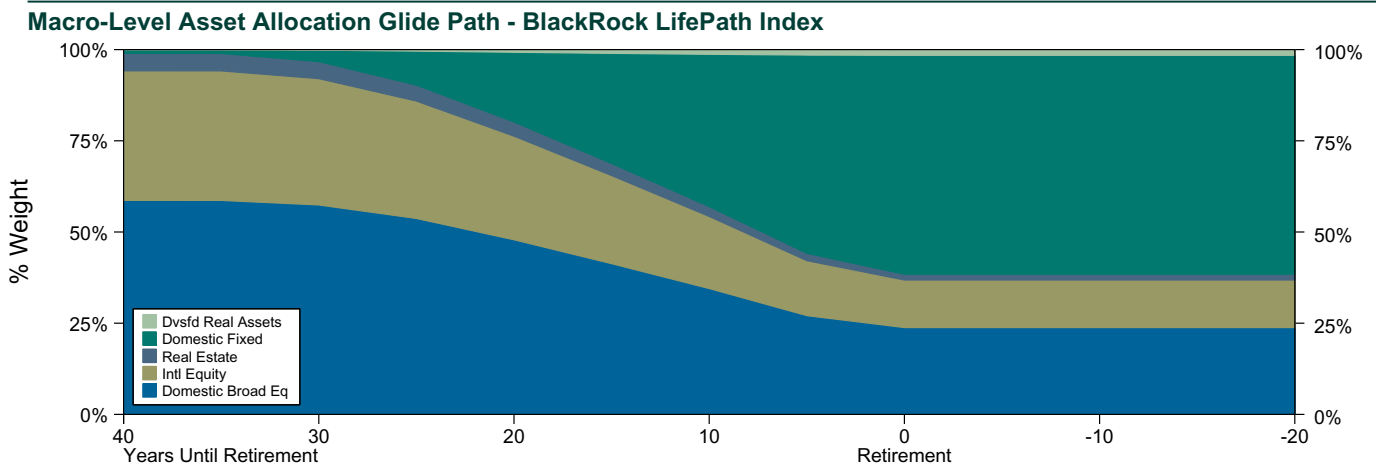
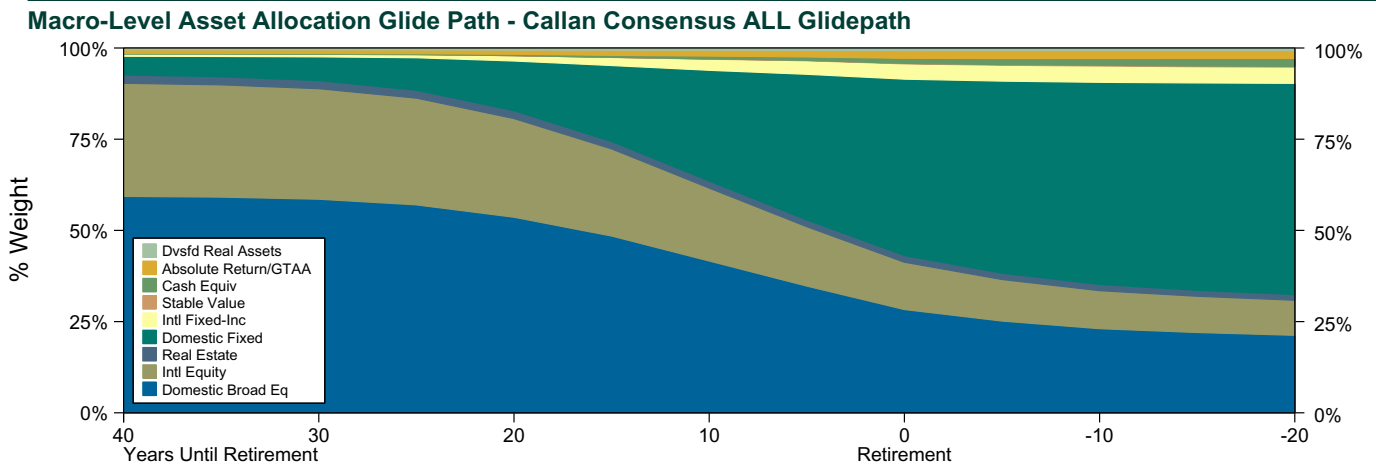
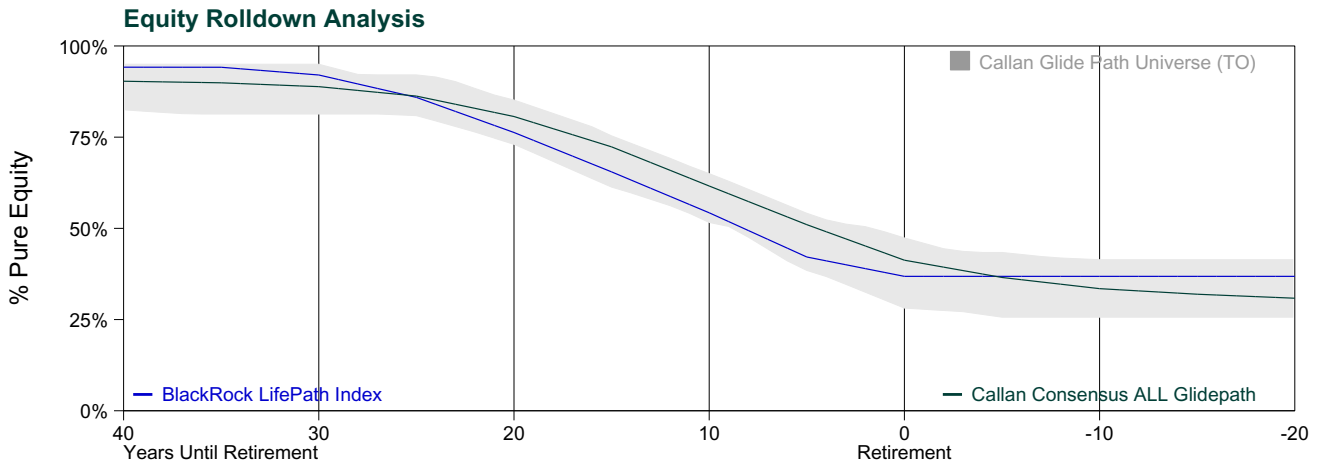
Return Consistency:
 above median
 third quartile
 fourth quartile

Risk Quadrant:

Expense Ratio:
 below median
 second quartile
 first quartile

Callan Consensus ALL Glidepath Target Date Glide Path Analysis as of December 31, 2023

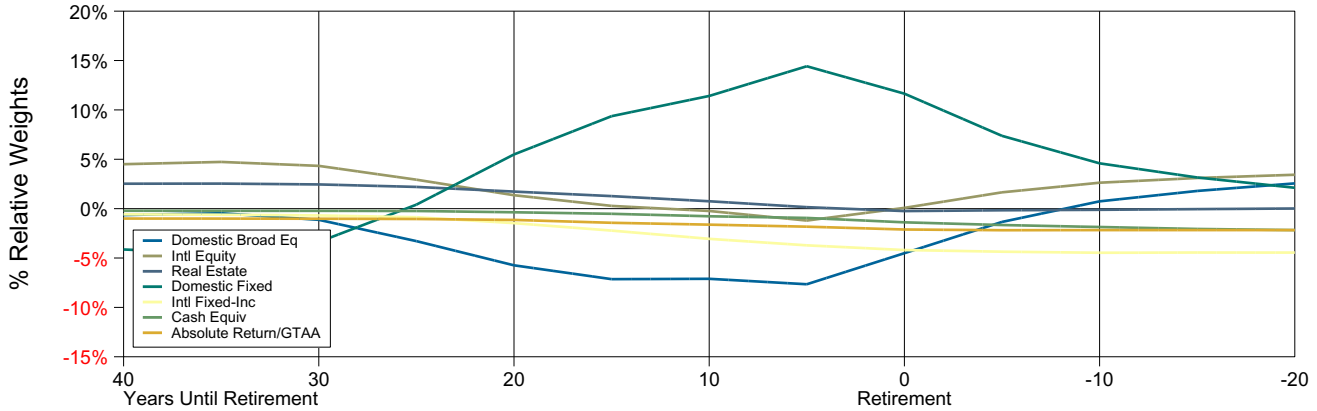
The following charts illustrate the asset allocation "glide path" underlying the relevant suite of target date funds. This analysis covers forty years of investor wealth accumulation up to retirement, as well as twenty years of wealth decumulation following retirement. The top chart shows the "pure"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



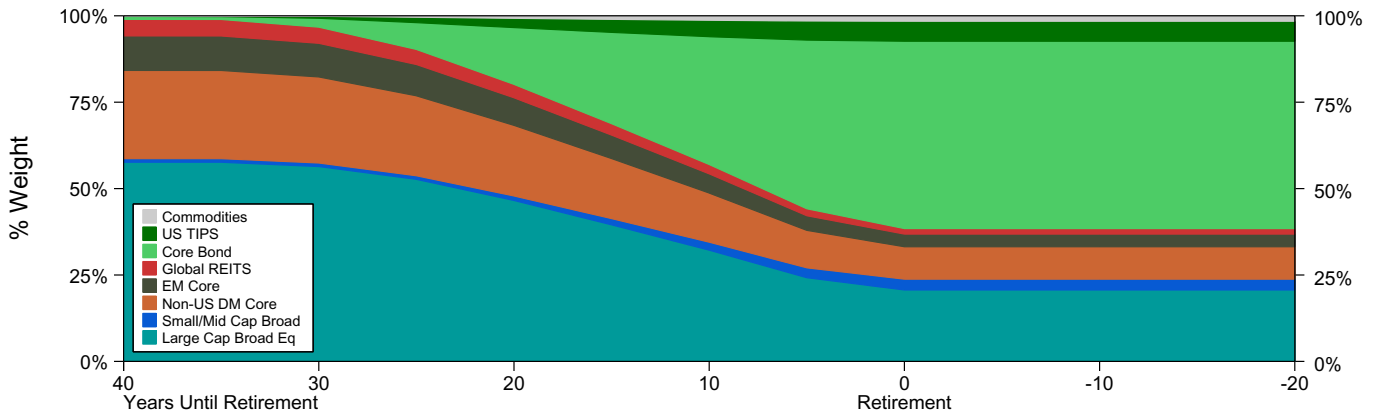
BlackRock LifePath Index Target Date Glide Path Analysis as of December 31, 2023

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.

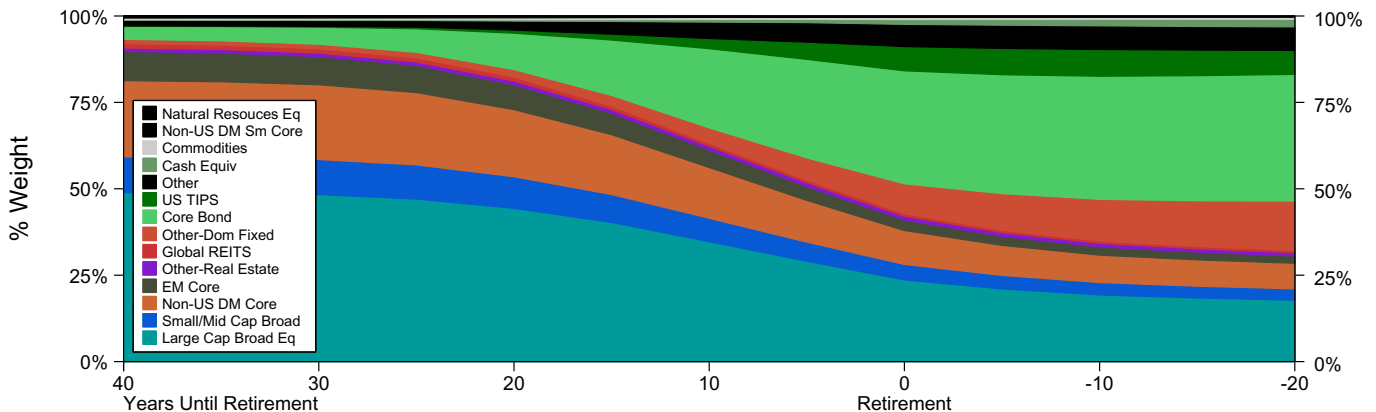
Relative Macro Asset Allocation - BlackRock LifePath Index vs. Callan Consensus ALL Glidep



Micro-Level Asset Allocation Glide Path - BlackRock LifePath Index



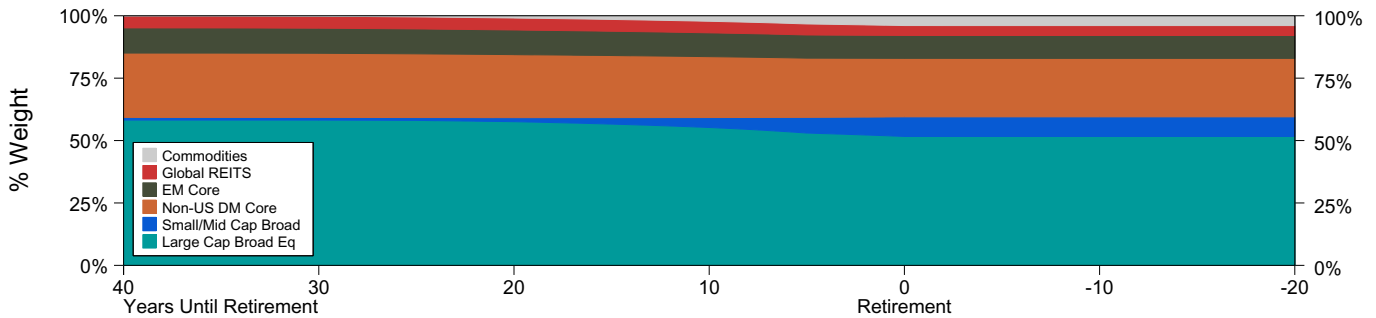
Micro-Level Asset Allocation Glide Path - Callan Consensus ALL Glidepath



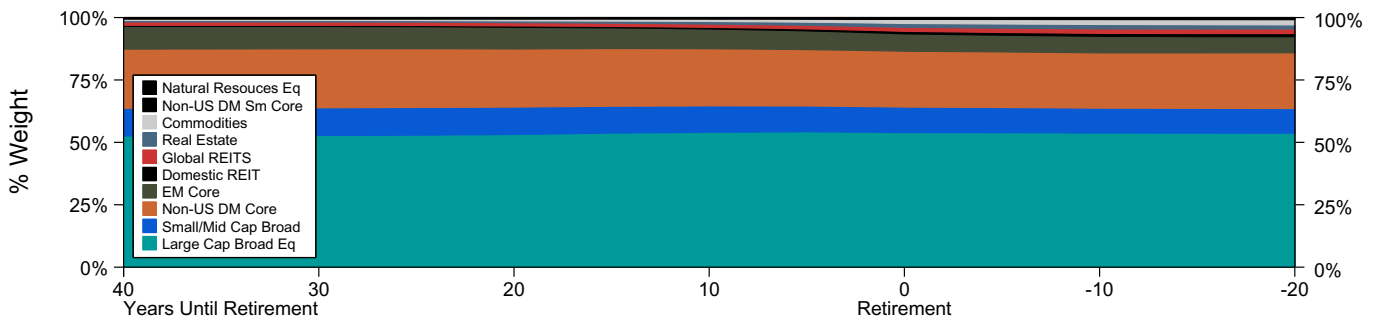
BlackRock LifePath Index Target Date Glide Path Analysis as of December 31, 2023

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.

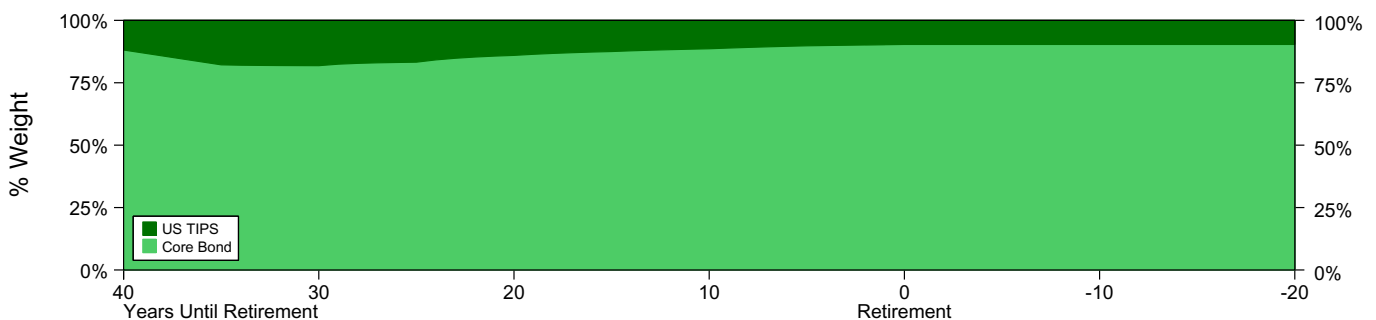
Micro-Level Equity Allocation Glide Path - BlackRock LifePath Index



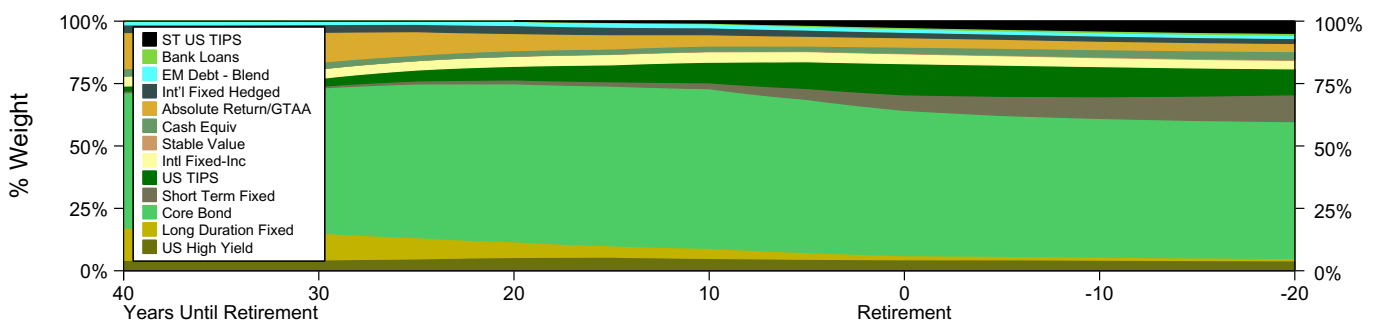
Micro-Level Equity Asset Allocation Glide Path - Callan Consensus ALL Glidepath



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



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



Pennsylvania SERS 457(b) - BlackRock LifePath Index Target Date Fund Family Analysis as of December 31, 2023

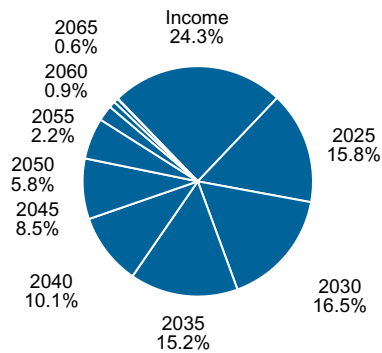
The following is an analysis of the client's suite of target date funds as an aggregated portfolio using actual proportions held by the client's participants. The upper-left pie chart shows the current client weights across target dates. The rest of the charts compare different attributes of the aggregated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

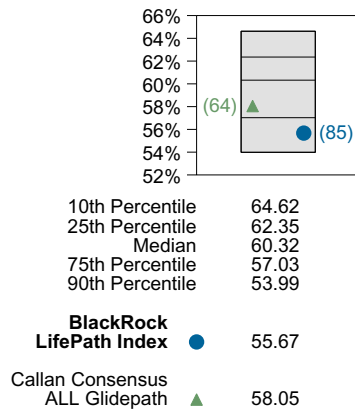
Passive and Non-Passive

Fee/Return Type: Gross

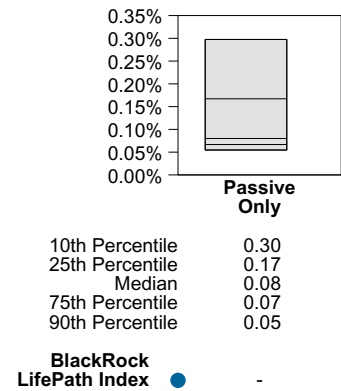
Fund Family Allocation



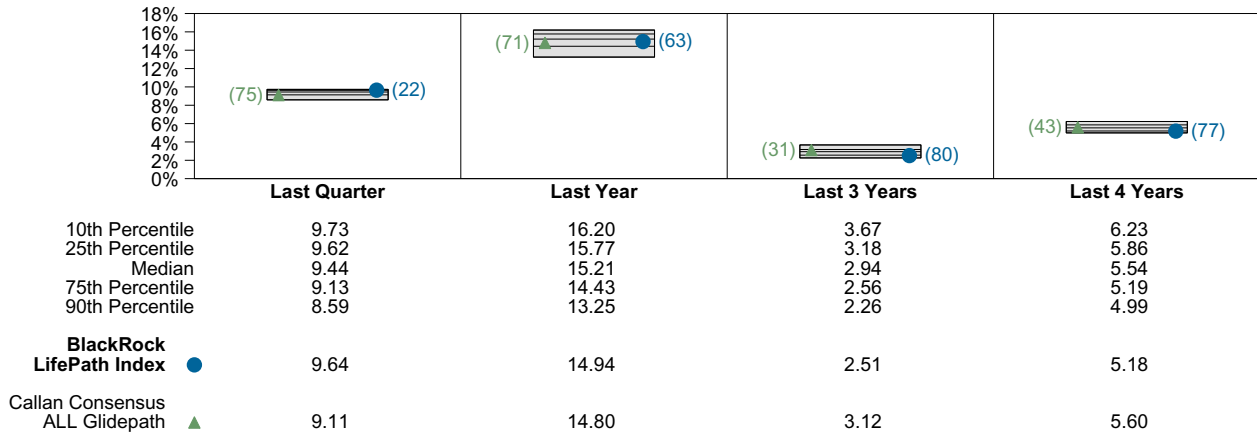
Equity Exposure



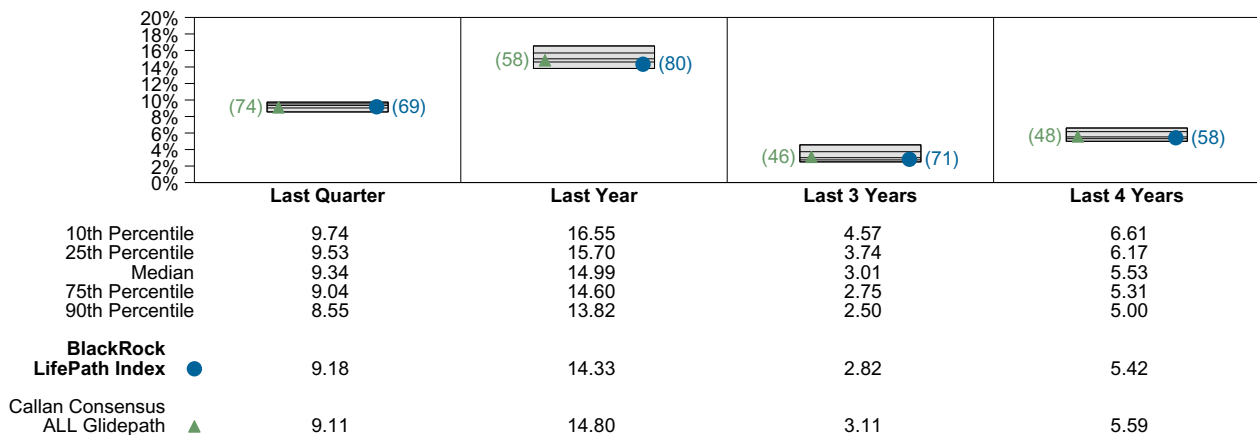
Expense Ratio



Target Date Family Performance vs Peer Families



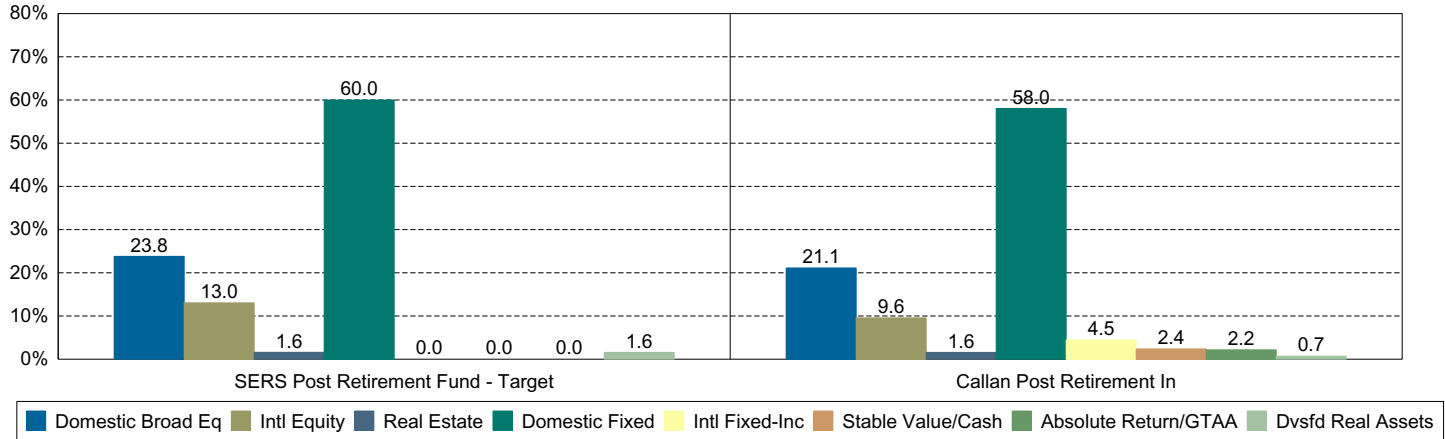
Target Date Family Glide Path Returns vs Peer Families



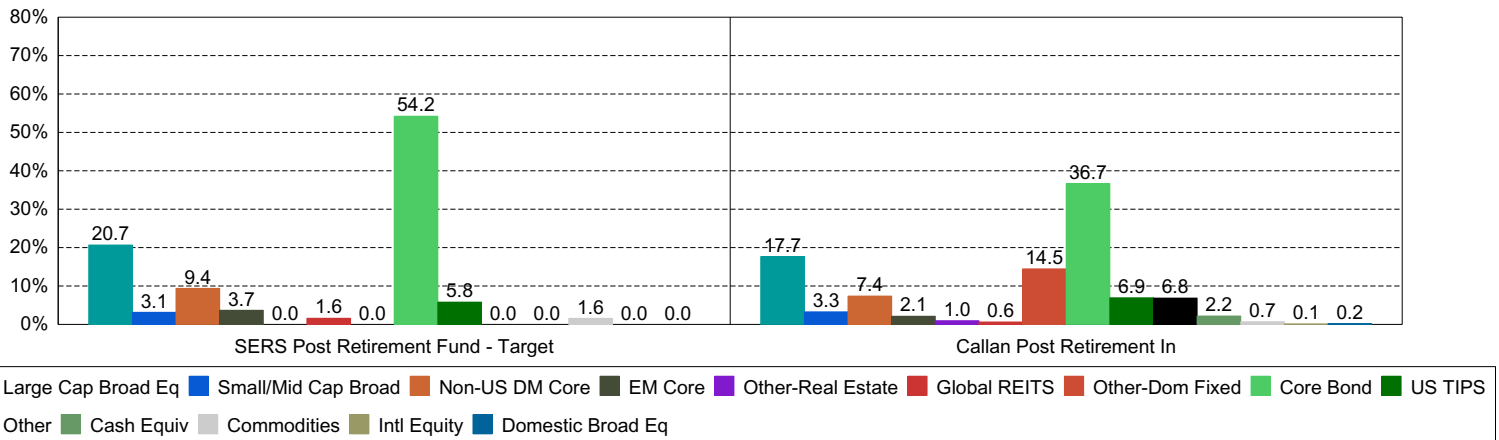
SERS Post Retirement Fund Target Date Fund Asset Allocation as of December 31, 2023

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.

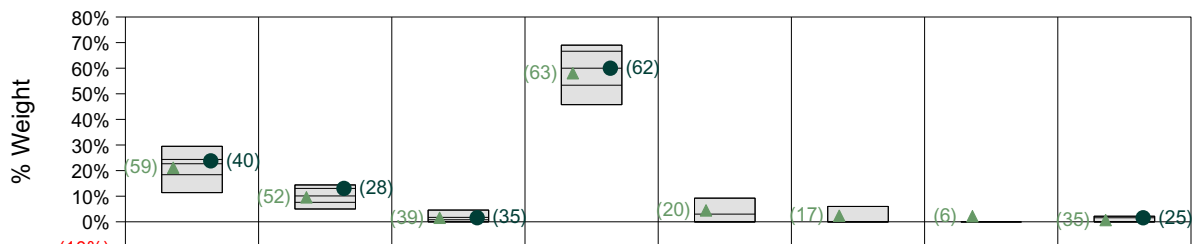
Macro-Level Asset Allocation



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	18.40	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	2.17	0.69

SERS Post Retirement Fund

Period Ended December 31, 2023

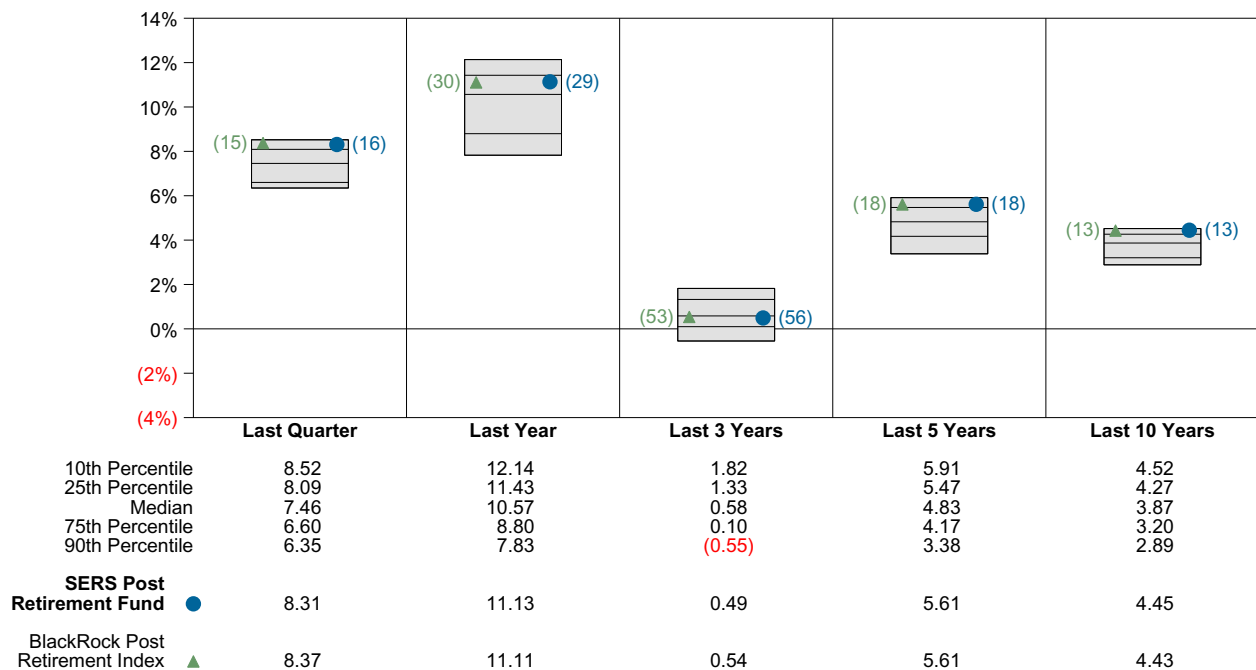
Investment Philosophy

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

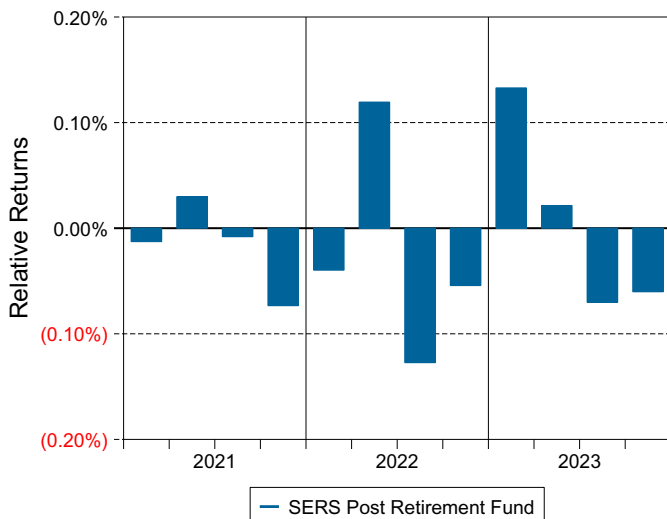
Quarterly Summary and Highlights

- SERS Post Retirement Fund's portfolio posted a 8.31% return for the quarter placing it in the 16 percentile of the Callan Target Date Retirement Income group for the quarter and in the 29 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%.

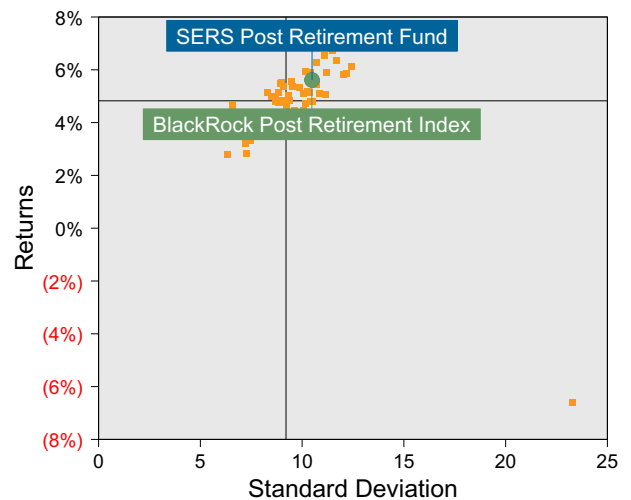
Performance vs Callan Target Date Retirement Income (Net)



Relative Returns vs BlackRock Post Retirement Index



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

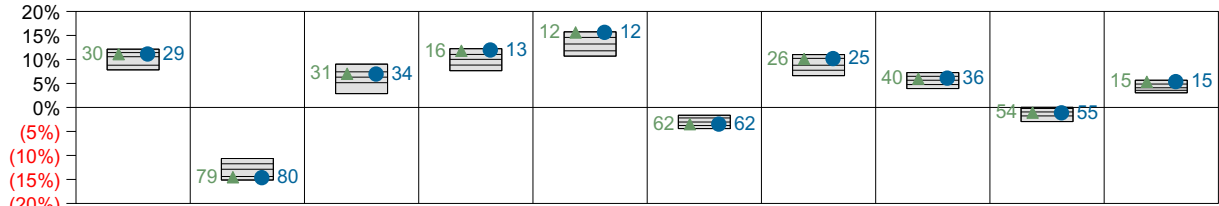


SERS Post Retirement Fund Return Analysis Summary

Return Analysis

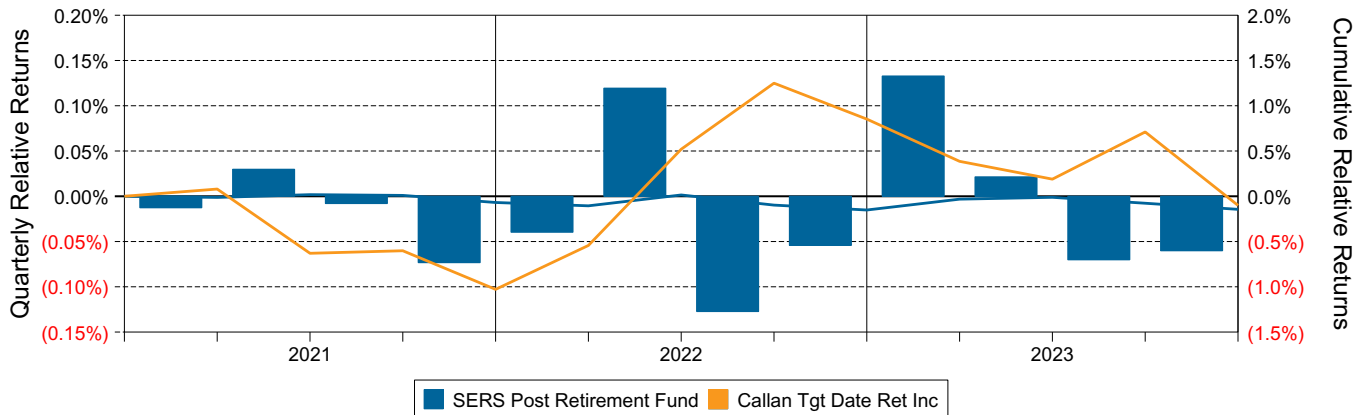
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

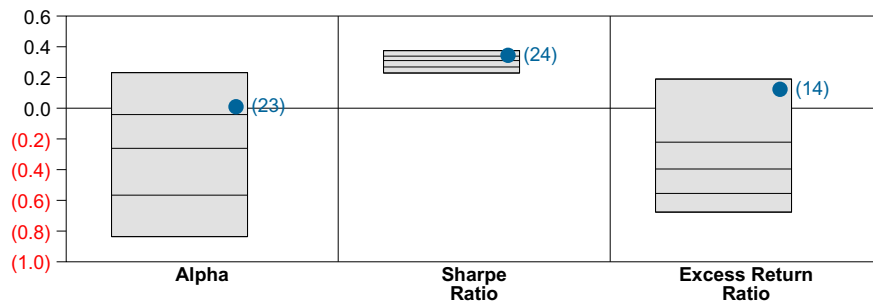


	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
10th Percentile	12.14	(10.64)	9.02	12.24	15.75	(1.63)	11.01	7.26	0.02	5.66
25th Percentile	11.43	(11.74)	7.42	11.04	14.59	(2.19)	10.22	6.48	(0.22)	4.87
Median	10.57	(12.88)	6.31	10.02	13.21	(3.04)	8.80	5.67	(0.94)	4.10
75th Percentile	8.80	(14.39)	5.16	8.83	11.79	(3.77)	7.75	4.77	(1.77)	3.57
90th Percentile	7.83	(15.12)	2.88	7.66	10.69	(4.41)	6.62	3.93	(2.94)	3.05
SERS Post Retirement Fund	● 11.13	(14.63)	6.95	11.97	15.65	(3.47)	10.18	6.10	(1.12)	5.38
BlackRock Post Retirement Index	▲ 11.11	(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 December 31, 2023



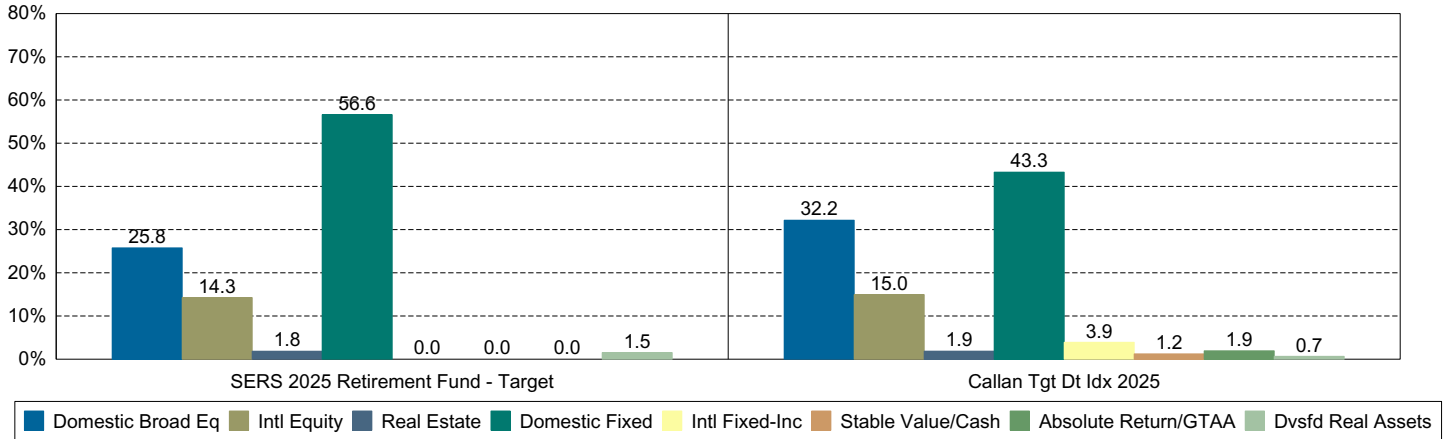
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.23	0.37	0.19
25th Percentile	(0.04)	0.34	(0.22)
Median	(0.26)	0.31	(0.40)
75th Percentile	(0.57)	0.27	(0.55)
90th Percentile	(0.84)	0.23	(0.68)
SERS Post Retirement Fund	● 0.01	0.34	0.12

SERS 2025 Retirement Fund

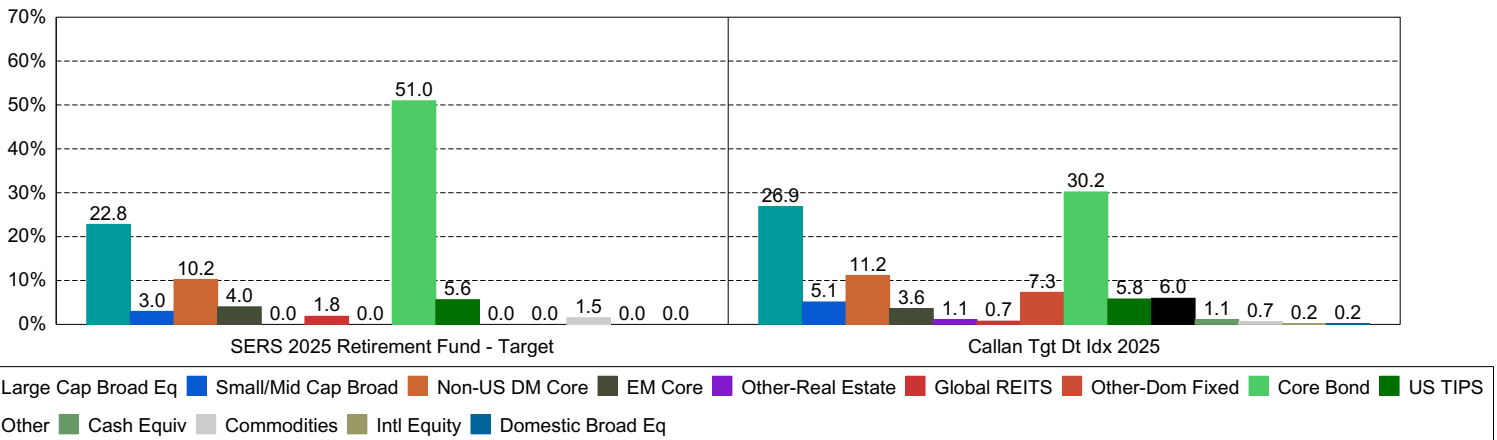
Target Date Fund Asset Allocation as of December 31, 2023

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.

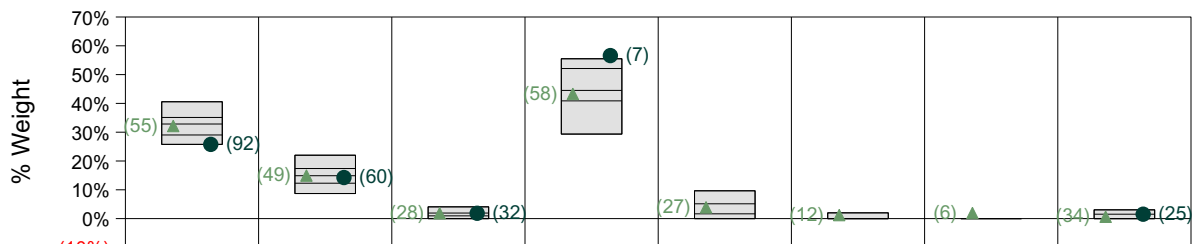
Macro-Level Asset Allocation



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	22.01	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	1.65	0.00	0.00	0.00
75th Percentile	29.04	12.29	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 December 31, 2023

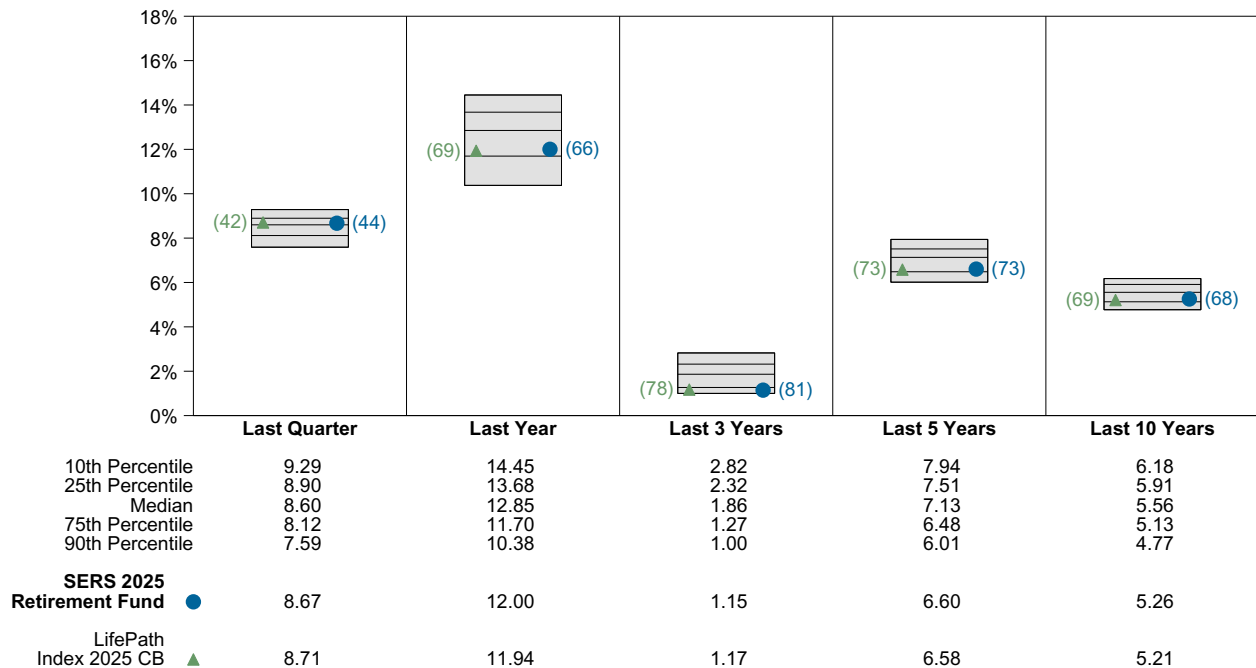
Investment Philosophy

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

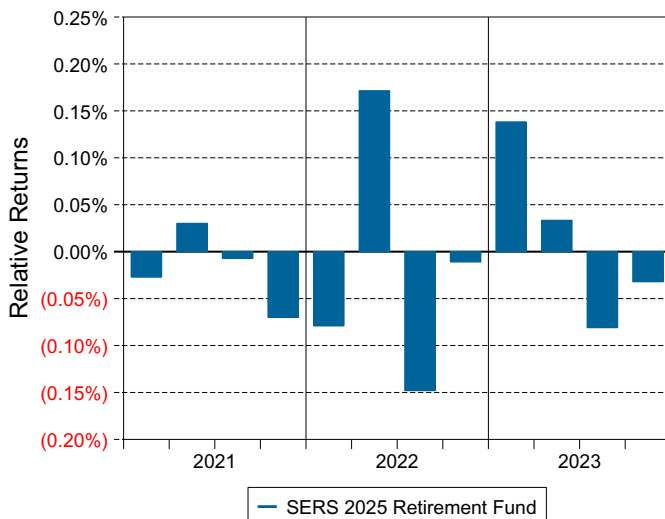
Quarterly Summary and Highlights

- SERS 2025 Retirement Fund's portfolio posted a 8.67% return for the quarter placing it in the 44 percentile of the Callan Target Date 2025 group for the quarter and in the 66 percentile for the last year.
- SERS 2025 Retirement Fund's portfolio underperformed the LifePath Index 2025 CB by 0.03% for the quarter and outperformed the LifePath Index 2025 CB for the year by 0.07%.

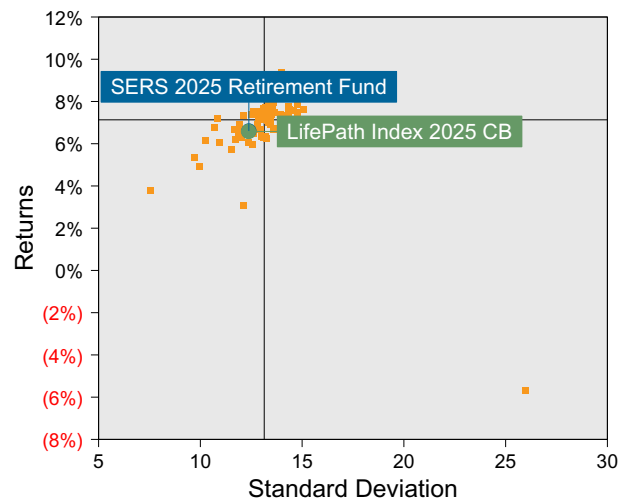
Performance vs Callan Target Date 2025 (Net)



Relative Return vs LifePath Index 2025 CB



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

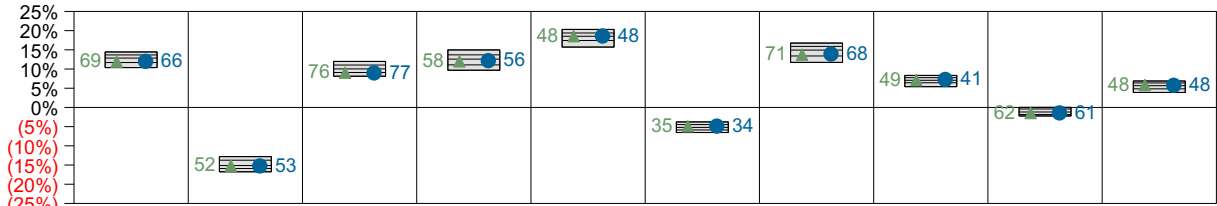


SERS 2025 Retirement Fund Return Analysis Summary

Return Analysis

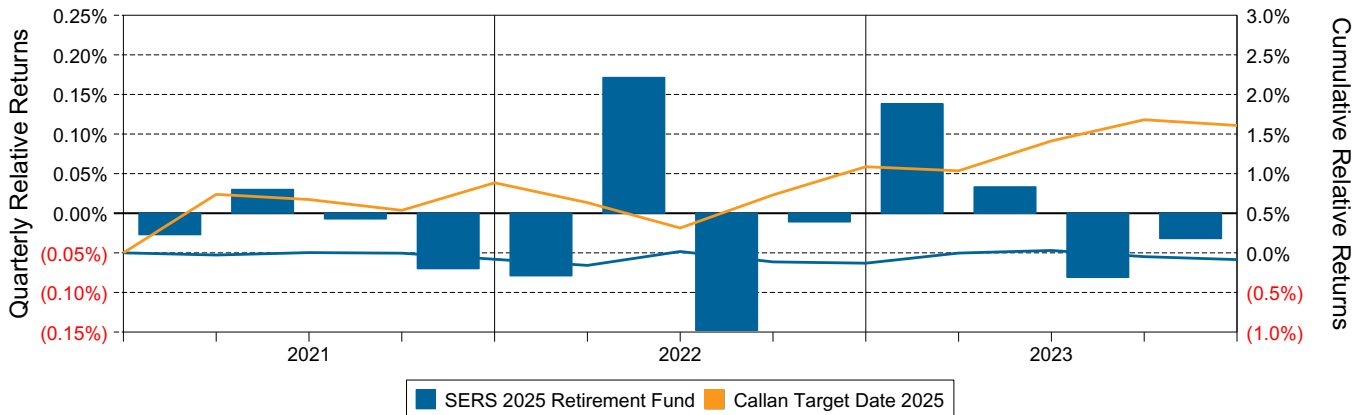
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

Performance vs Callan Target Date 2025 (Net)

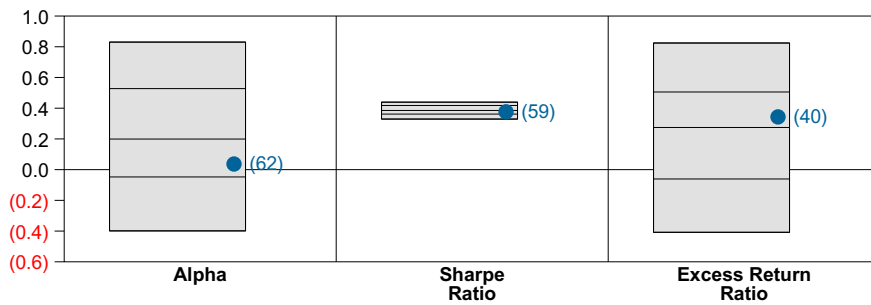


	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
10th Percentile	14.45	(12.80)	11.99	14.98	20.32	(3.77)	16.77	8.34	0.02	6.88
25th Percentile	13.68	(13.74)	11.04	13.70	19.39	(4.46)	15.90	7.76	(0.39)	6.37
Median	12.85	(15.14)	10.04	12.58	18.53	(5.20)	14.94	7.07	(1.19)	5.67
75th Percentile	11.70	(15.90)	9.10	11.08	17.43	(5.87)	13.41	6.43	(1.85)	4.84
90th Percentile	10.38	(16.76)	8.13	9.69	15.71	(6.53)	11.73	5.41	(2.22)	3.90
SERS 2025 Retirement Fund	● 12.00	(15.23)	8.99	12.19	18.60	(4.86)	13.91	7.30	(1.43)	5.77
BlackRock 2025 Index	▲ 11.94	(15.17)	9.07	12.01	18.56	(4.90)	13.75	7.10	(1.45)	5.82

Cumulative and Quarterly Relative Returns vs BlackRock 2025 Index



Risk Adjusted Return Measures vs BlackRock 2025 Index Rankings Against Callan Target Date 2025 (Net) Seven Years Ended December 31, 2023



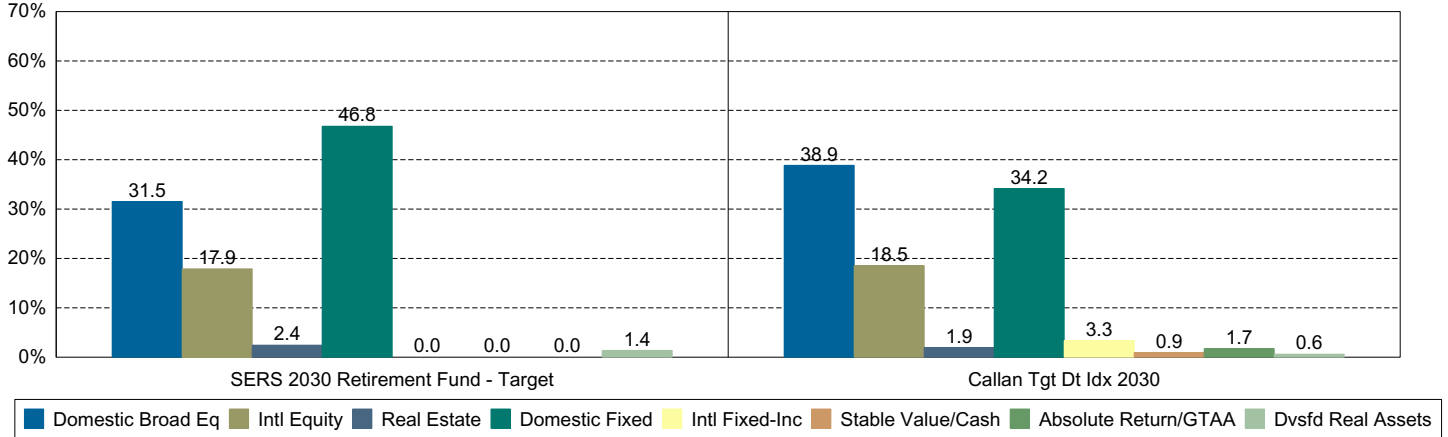
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.83	0.44	0.82
25th Percentile	0.53	0.42	0.51
Median	0.20	0.39	0.27
75th Percentile	(0.05)	0.36	(0.06)
90th Percentile	(0.40)	0.33	(0.41)
SERS 2025 Retirement Fund	● 0.04	● 0.38	● 0.34

SERS 2030 Retirement Fund

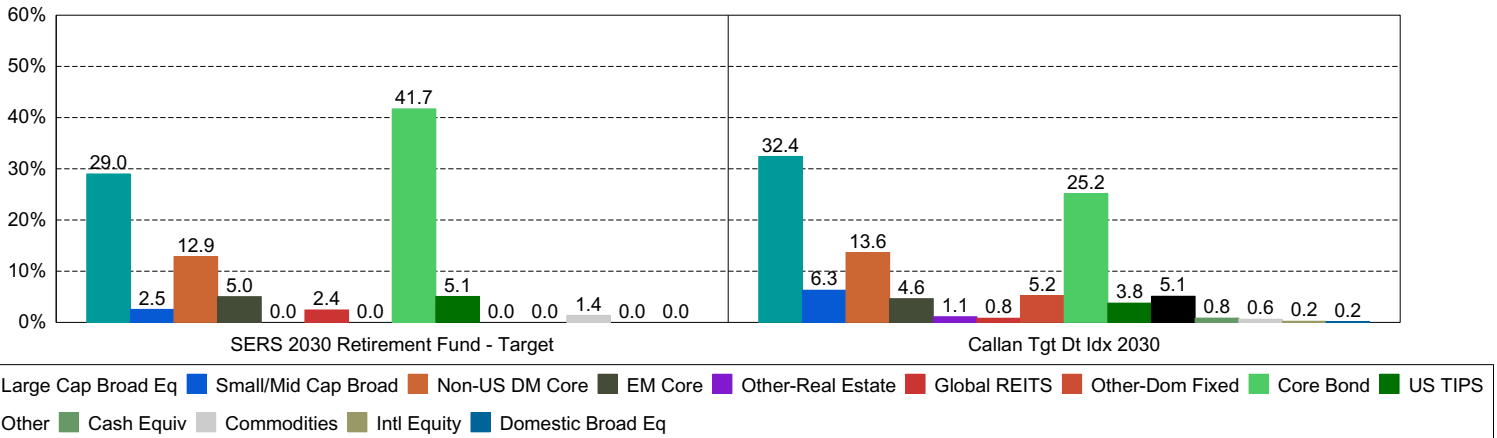
Target Date Fund Asset Allocation as of December 31, 2023

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.

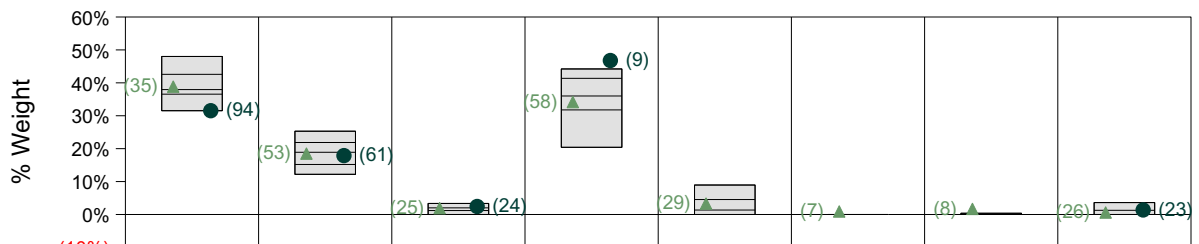
Macro-Level Asset Allocation



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	0.37	3.62
25th Percentile	42.58	21.87	2.01	41.36	4.54	0.00	0.00	1.27
Median	37.95	18.90	1.20	36.00	1.35	0.00	0.00	0.00
75th Percentile	36.55	15.20	0.00	31.77	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

SERS 2030 Retirement Fund

Period Ended December 31, 2023

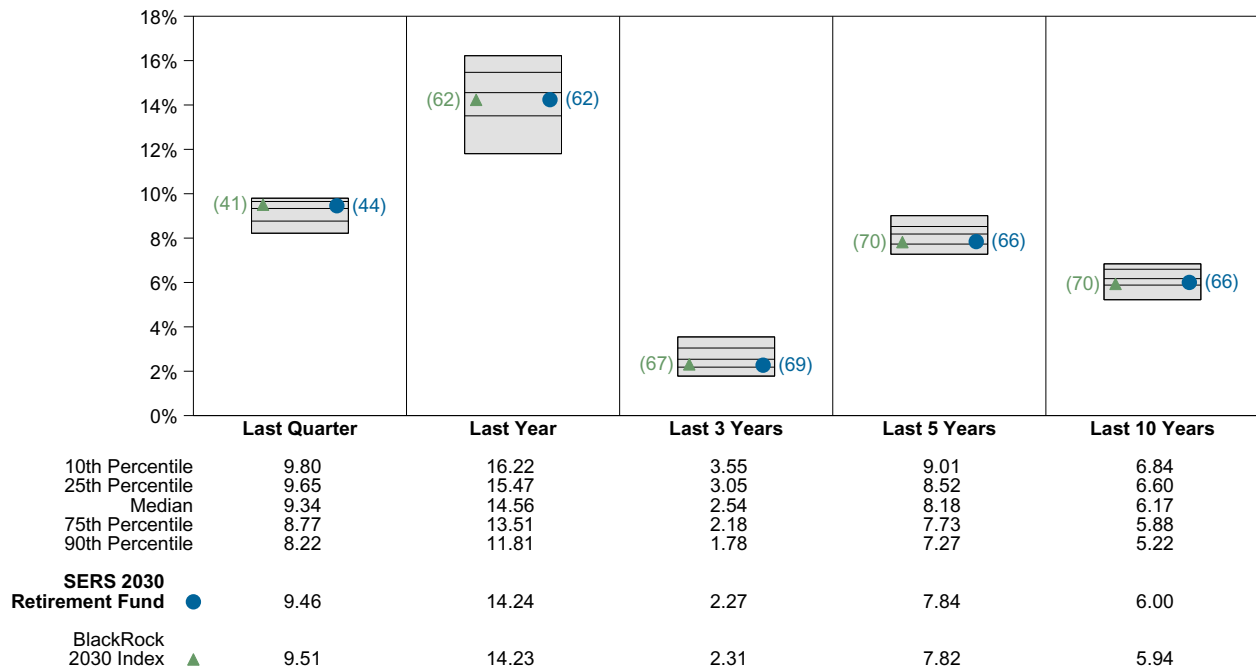
Investment Philosophy

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

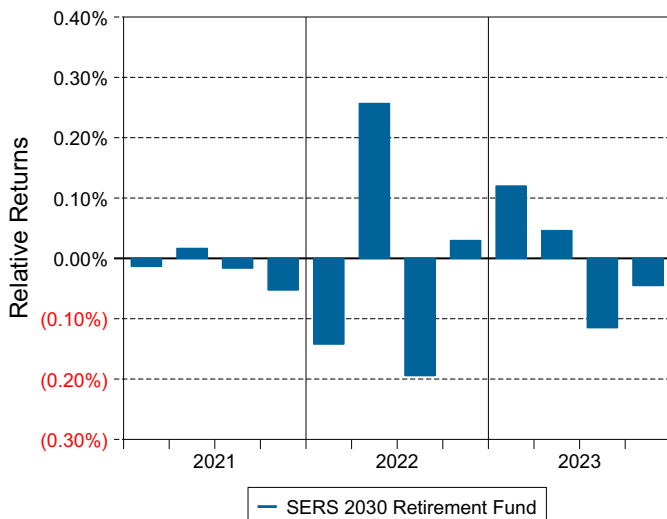
Quarterly Summary and Highlights

- SERS 2030 Retirement Fund's portfolio posted a 9.46% return for the quarter placing it in the 44 percentile of the Callan Target Date 2030 group for the quarter and in the 62 percentile for the last year.
- SERS 2030 Retirement Fund's portfolio underperformed the BlackRock 2030 Index by 0.05% for the quarter and outperformed the BlackRock 2030 Index for the year by 0.01%.

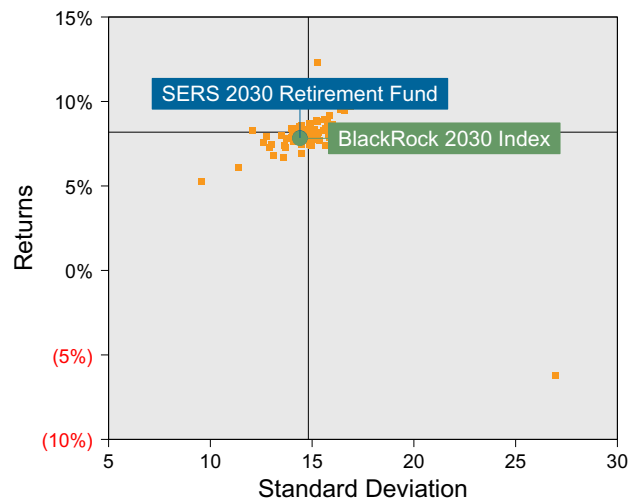
Performance vs Callan Target Date 2030 (Net)



Relative Return vs BlackRock 2030 Index



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

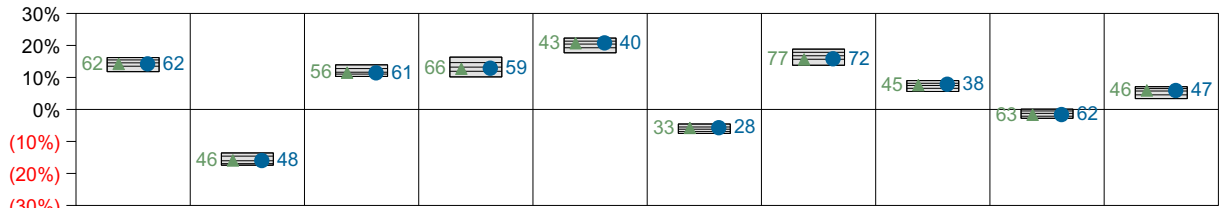


SERS 2030 Retirement Fund Return Analysis Summary

Return Analysis

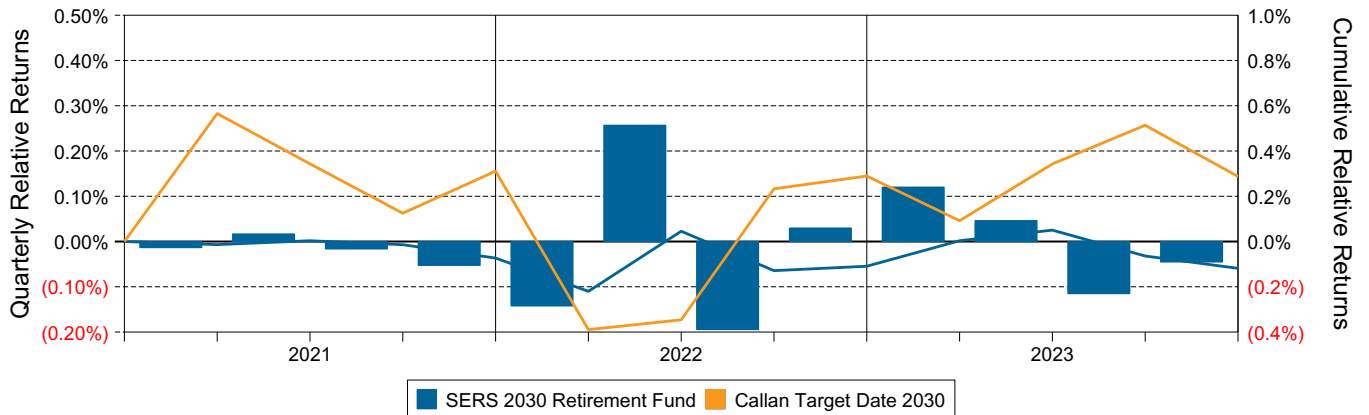
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

Performance vs Callan Target Date 2030 (Net)

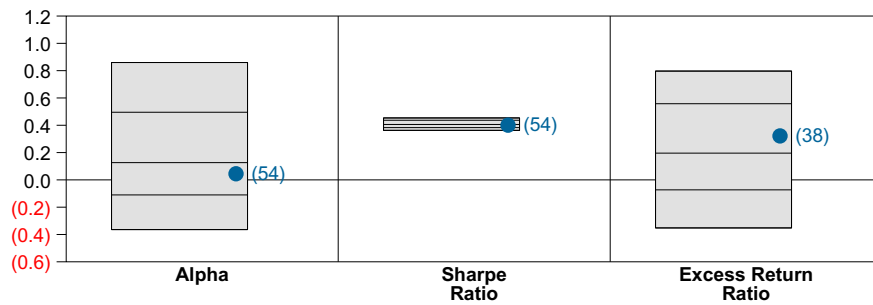


	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
10th Percentile	16.22	(13.59)	13.94	16.35	22.30	(4.55)	18.85	9.02	0.09	7.11
25th Percentile	15.47	(14.60)	12.77	14.64	21.34	(5.48)	17.85	8.17	(0.48)	6.52
Median	14.56	(16.04)	11.63	13.23	20.43	(6.17)	16.77	7.49	(1.22)	5.76
75th Percentile	13.51	(16.94)	11.05	11.92	19.28	(6.93)	15.68	6.60	(2.12)	4.56
90th Percentile	11.81	(17.42)	10.31	10.16	17.70	(7.50)	13.81	5.61	(2.77)	3.39
SERS 2030 Retirement Fund	● 14.24	(15.97)	11.43	12.88	20.80	(5.71)	15.83	7.88	(1.60)	5.92
BlackRock 2030 Index	▲ 14.23	(15.92)	11.50	12.72	20.70	(5.76)	15.64	7.61	(1.66)	5.95

Cumulative and Quarterly Relative Returns vs BlackRock 2030 Index



Risk Adjusted Return Measures vs BlackRock 2030 Index Rankings Against Callan Target Date 2030 (Net) Seven Years Ended December 31, 2023



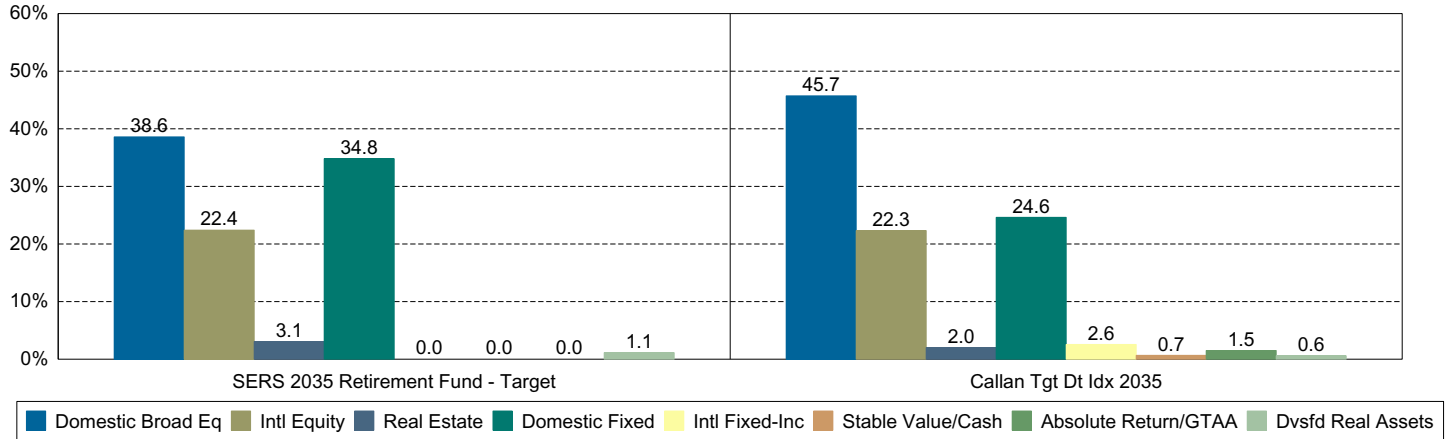
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.86	0.45	0.80
25th Percentile	0.50	0.44	0.56
Median	0.13	0.41	0.20
75th Percentile	(0.11)	0.38	(0.07)
90th Percentile	(0.36)	0.36	(0.35)
SERS 2030 Retirement Fund	● 0.04	● 0.40	● 0.32

SERS 2035 Retirement Fund

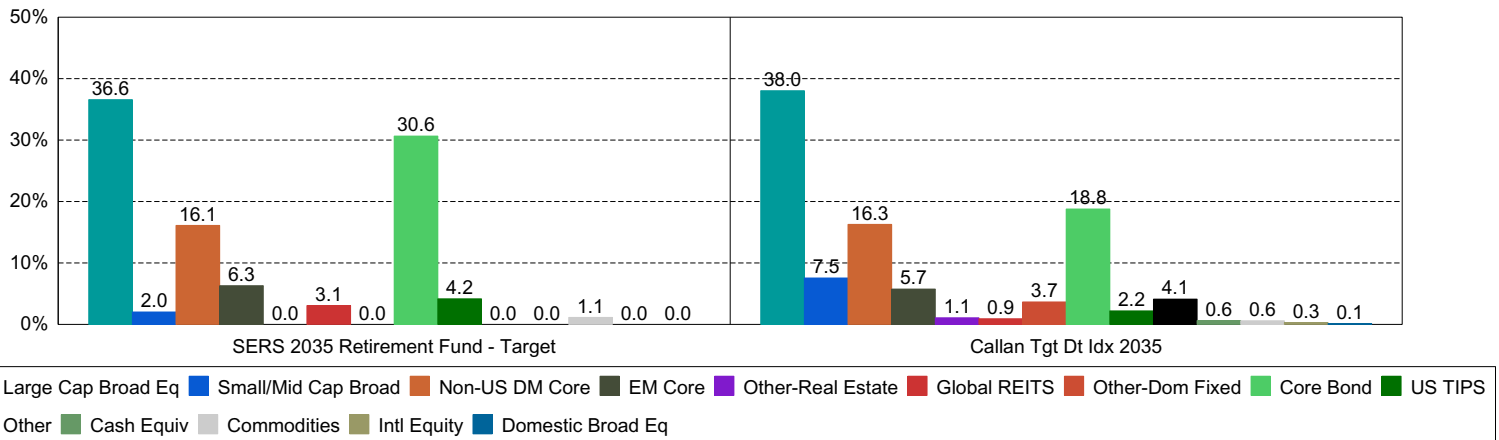
Target Date Fund Asset Allocation as of December 31, 2023

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.

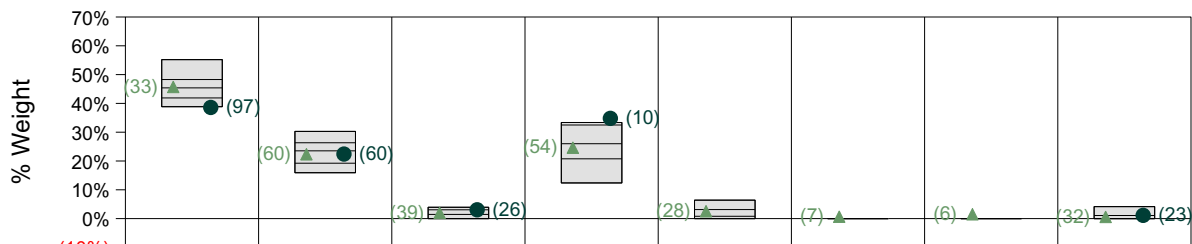
Macro-Level Asset Allocation



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	33.37	6.41	0.00	0.00	4.16
25th Percentile	48.29	26.33	3.06	32.50	3.14	0.00	0.00	1.08
Median	45.39	23.53	1.45	26.00	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 December 31, 2023

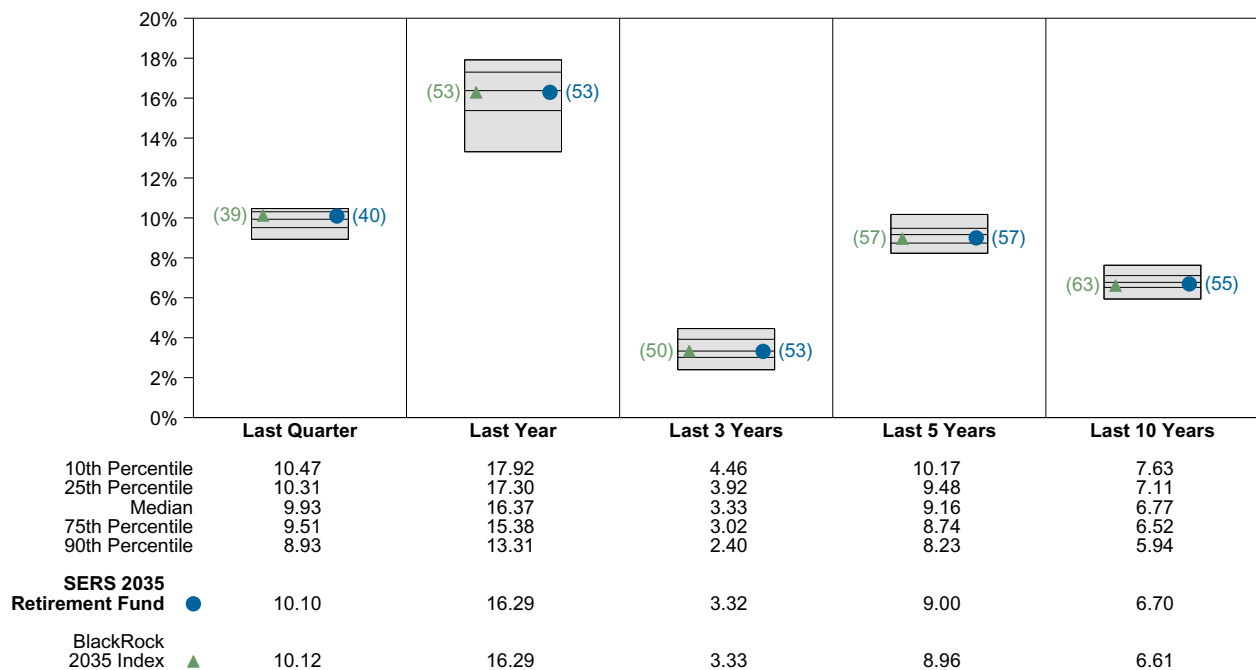
Investment Philosophy

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

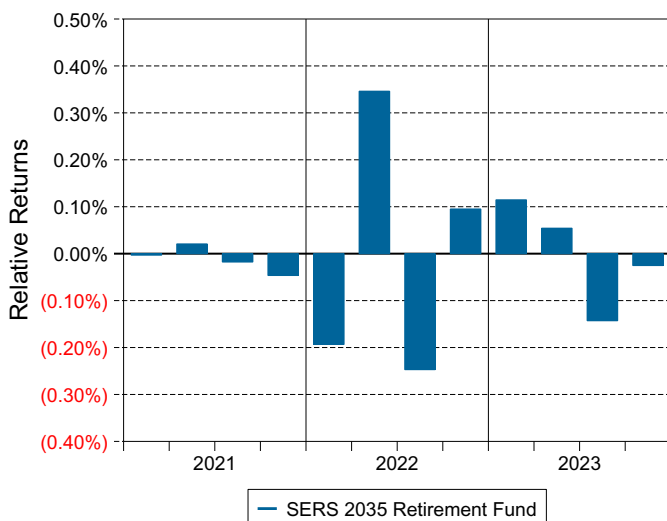
Quarterly Summary and Highlights

- SERS 2035 Retirement Fund's portfolio posted a 10.10% return for the quarter placing it in the 40 percentile of the Callan Target Date 2035 group for the quarter and in the 53 percentile for the last year.
- SERS 2035 Retirement Fund's portfolio underperformed the BlackRock 2035 Index by 0.03% for the quarter and outperformed the BlackRock 2035 Index for the year by 0.00%.

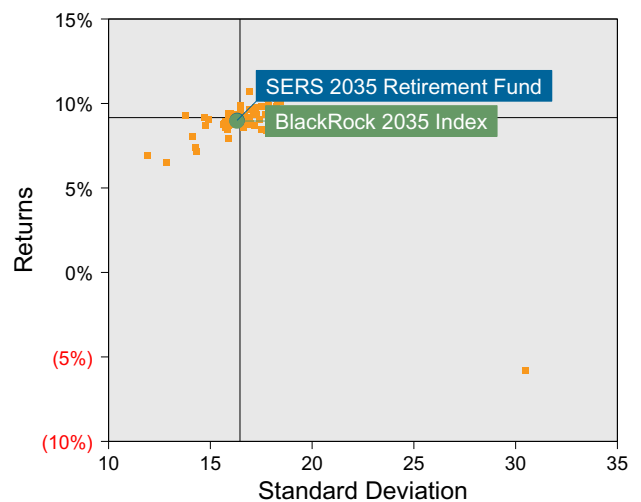
Performance vs Callan Target Date 2035 (Net)



Relative Return vs BlackRock 2035 Index



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

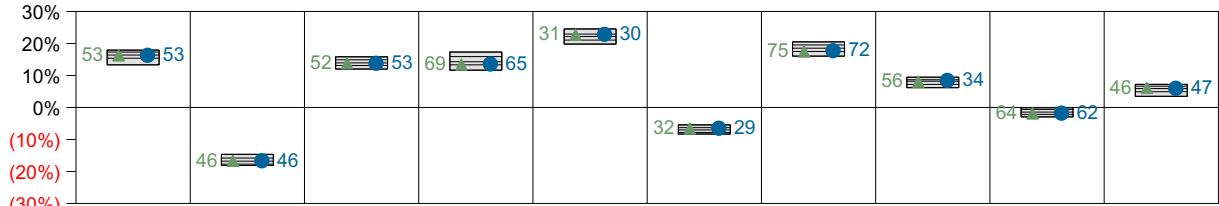


SERS 2035 Retirement Fund Return Analysis Summary

Return Analysis

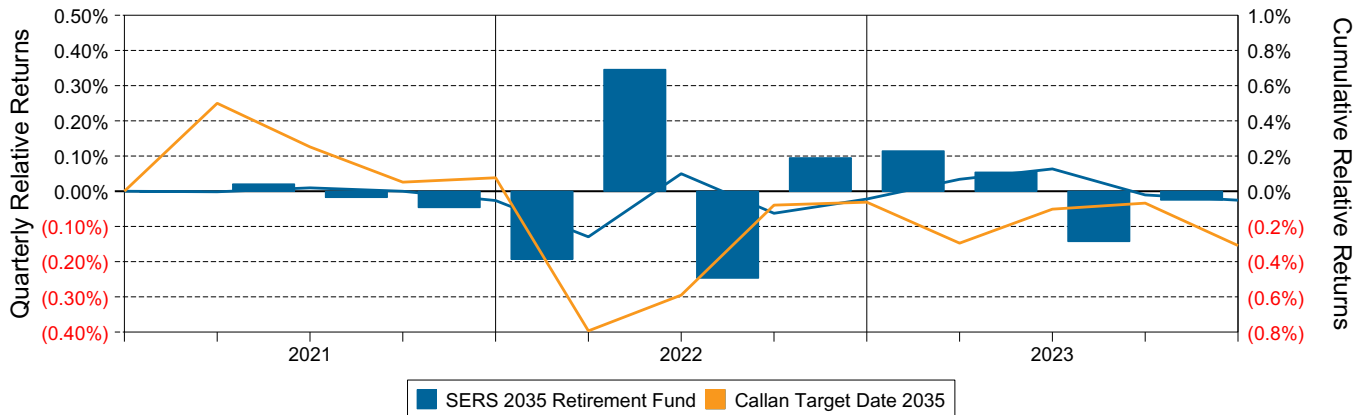
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

Performance vs Callan Target Date 2035 (Net)

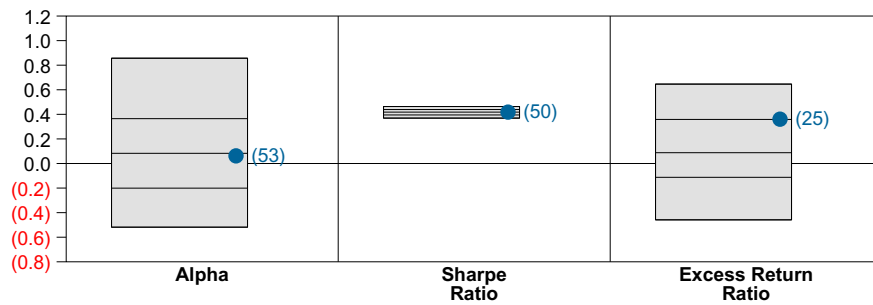


	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
10th Percentile	17.92	(14.66)	15.82	17.32	24.52	(5.46)	20.49	9.45	(0.09)	7.21
25th Percentile	17.30	(15.82)	14.88	15.89	22.92	(6.32)	19.53	8.65	(0.61)	6.63
Median	16.37	(16.79)	13.92	14.28	22.16	(7.03)	18.51	8.19	(1.46)	5.89
75th Percentile	15.38	(17.71)	13.11	13.31	21.05	(7.82)	17.48	7.20	(2.17)	4.91
90th Percentile	13.31	(18.13)	12.00	11.64	19.80	(8.31)	16.04	6.17	(2.95)	3.47
SERS 2035 Retirement Fund	● 16.29	(16.67)	13.80	13.58	22.84	(6.50)	17.72	8.44	(1.78)	5.99
BlackRock 2035 Index	▲ 16.29	(16.67)	13.85	13.44	22.72	(6.58)	17.48	8.08	(1.86)	6.11

Cumulative and Quarterly Relative Returns vs BlackRock 2035 Index



Risk Adjusted Return Measures vs BlackRock 2035 Index Rankings Against Callan Target Date 2035 (Net) Seven Years Ended December 31, 2023



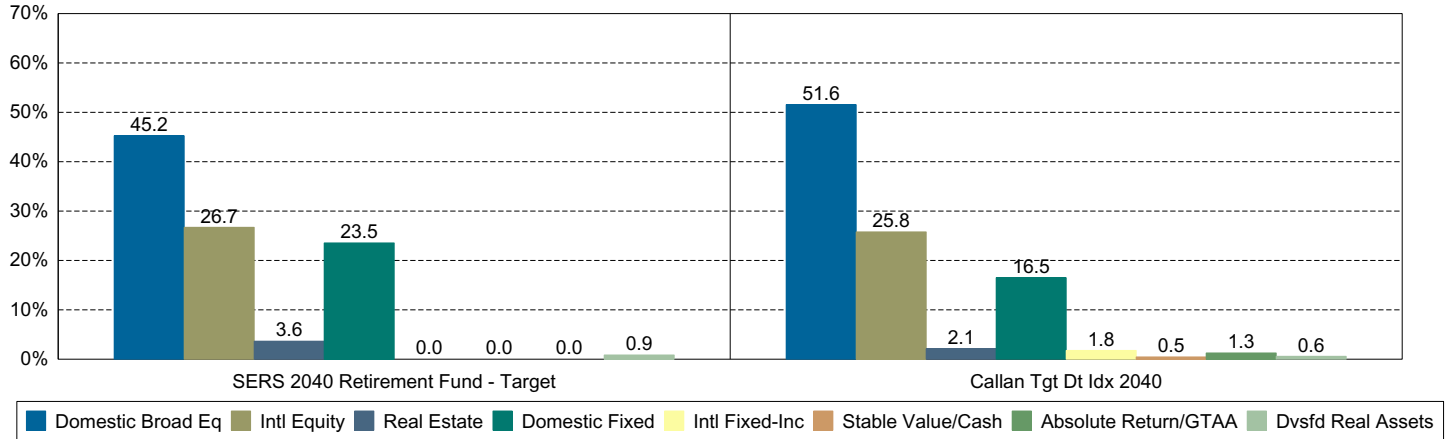
10th Percentile	0.86	0.46	0.65
25th Percentile	0.36	0.44	0.36
Median	0.08	0.42	0.09
75th Percentile	(0.20)	0.39	(0.11)
90th Percentile	(0.52)	0.37	(0.46)
SERS 2035 Retirement Fund	● 0.06	0.42	0.36

SERS 2040 Retirement Fund

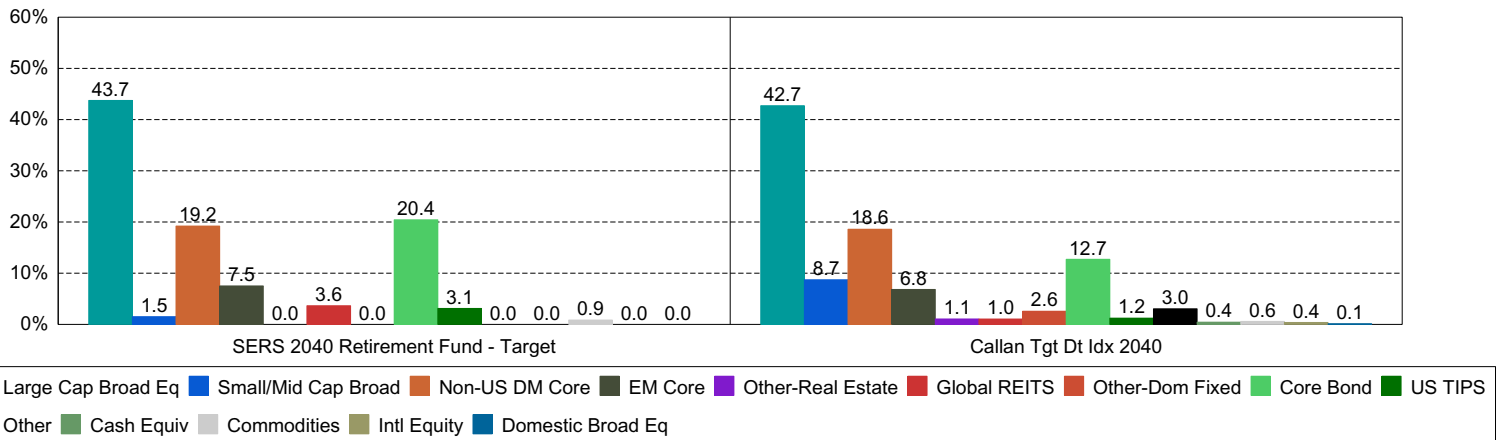
Target Date Fund Asset Allocation as of December 31, 2023

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.

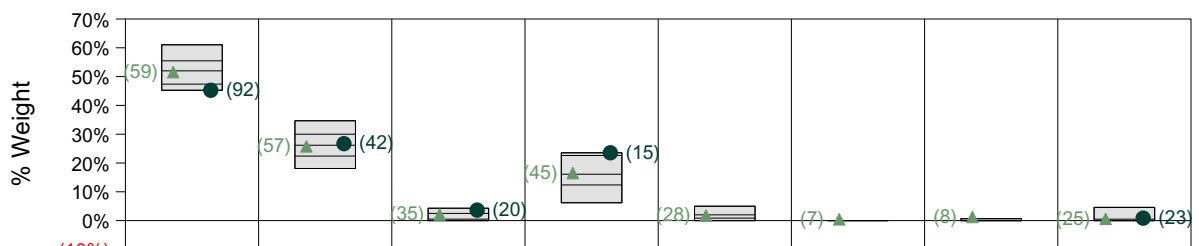
Macro-Level Asset Allocation



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	23.55	5.00	0.00	0.66	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	0.85	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	0.58

SERS 2040 Retirement Fund

Period Ended December 31, 2023

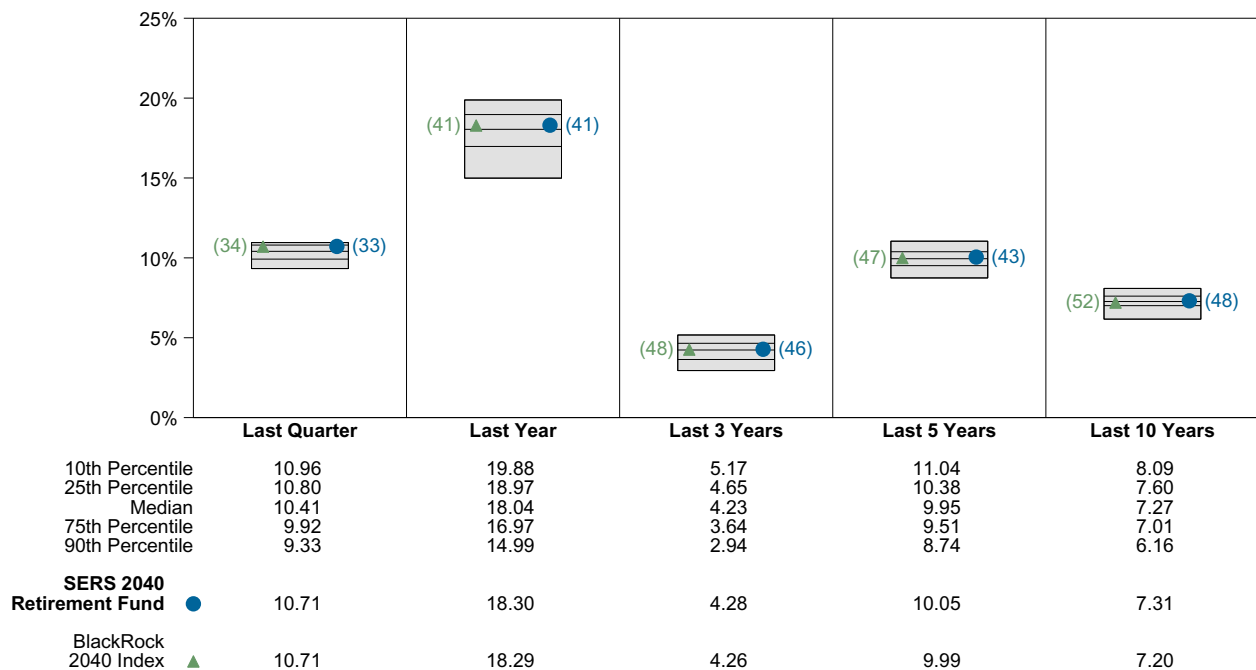
Investment Philosophy

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

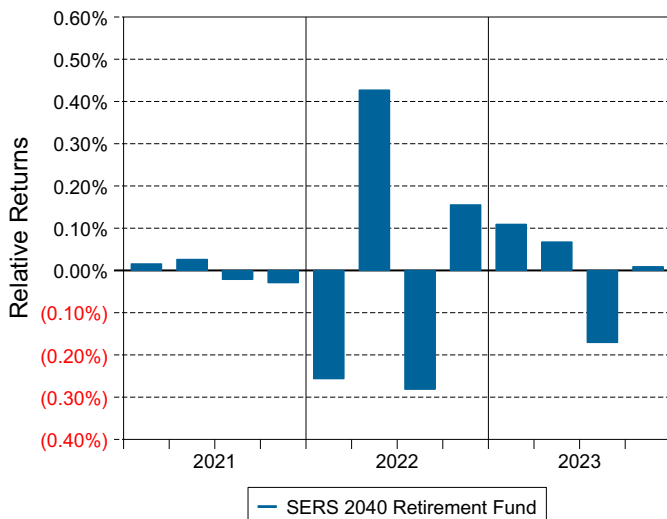
Quarterly Summary and Highlights

- SERS 2040 Retirement Fund's portfolio posted a 10.71% return for the quarter placing it in the 33rd percentile of the Callan Target Date 2040 group for the quarter and in the 41st percentile for the last year.
- SERS 2040 Retirement Fund's portfolio outperformed the BlackRock 2040 Index by 0.01% for the quarter and outperformed the BlackRock 2040 Index for the year by 0.02%.

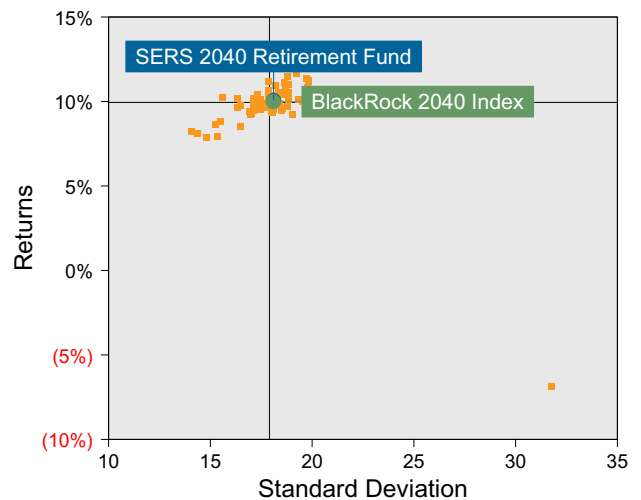
Performance vs Callan Target Date 2040 (Net)



Relative Return vs BlackRock 2040 Index



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

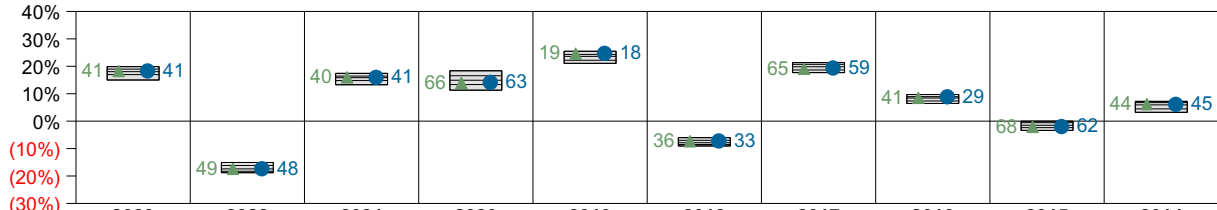


SERS 2040 Retirement Fund Return Analysis Summary

Return Analysis

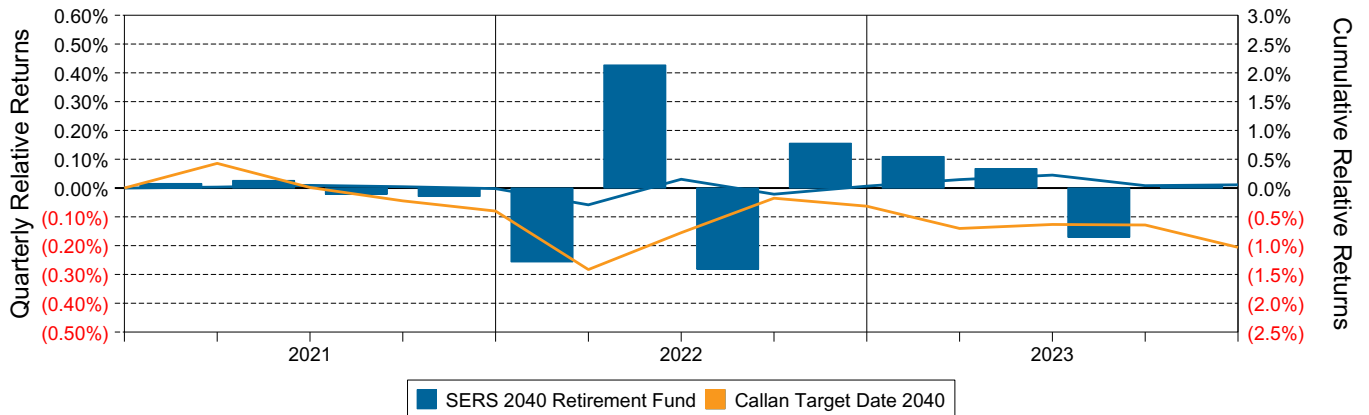
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

Performance vs Callan Target Date 2040 (Net)

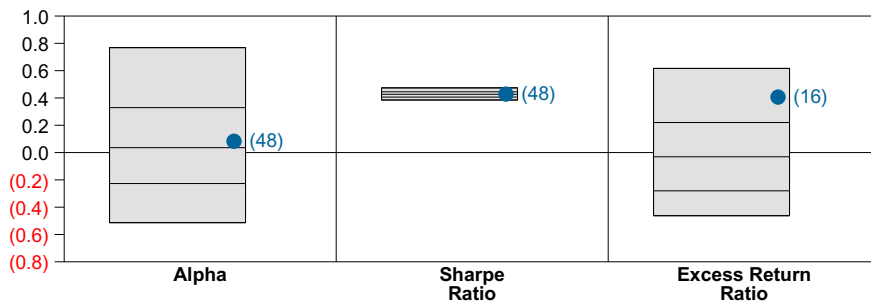


	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
10th Percentile	19.88	(15.07)	17.43	18.37	25.47	(6.01)	21.35	9.71	(0.03)	7.22
25th Percentile	18.97	(16.16)	16.42	16.56	24.33	(6.99)	20.71	8.93	(0.55)	6.76
Median	18.04	(17.40)	15.85	14.91	23.62	(7.87)	19.84	8.44	(1.51)	5.94
75th Percentile	16.97	(18.28)	14.80	13.35	22.20	(8.52)	18.66	7.35	(2.36)	4.47
90th Percentile	14.99	(18.79)	13.27	11.29	21.07	(9.05)	17.70	6.44	(3.38)	3.21
SERS 2040 Retirement Fund	● 18.30	(17.35)	15.96	14.14	24.71	(7.22)	19.38	8.88	(1.98)	6.12
BlackRock 2040 Index	▲ 18.29	(17.38)	15.97	13.98	24.62	(7.33)	19.09	8.51	(2.08)	6.21

Cumulative and Quarterly Relative Returns vs BlackRock 2040 Index



Risk Adjusted Return Measures vs BlackRock 2040 Index Rankings Against Callan Target Date 2040 (Net) Seven Years Ended December 31, 2023



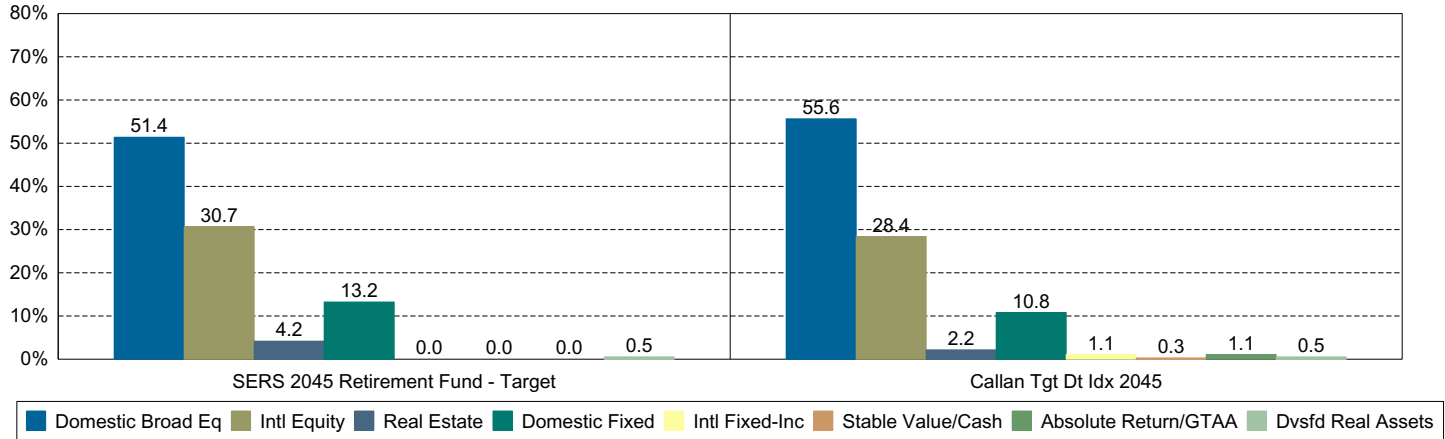
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.77	0.47	0.62
25th Percentile	0.33	0.45	0.22
Median	0.04	0.43	(0.03)
75th Percentile	(0.23)	0.41	(0.28)
90th Percentile	(0.51)	0.38	(0.46)
SERS 2040 Retirement Fund	● 0.08	0.43	0.41

SERS 2045 Retirement Fund

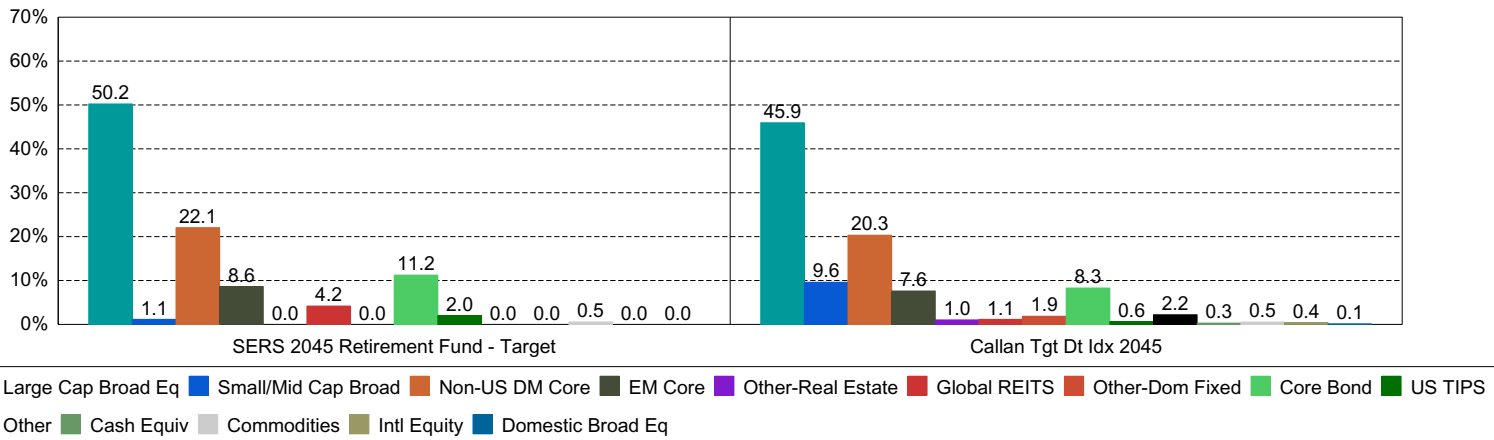
Target Date Fund Asset Allocation as of December 31, 2023

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.

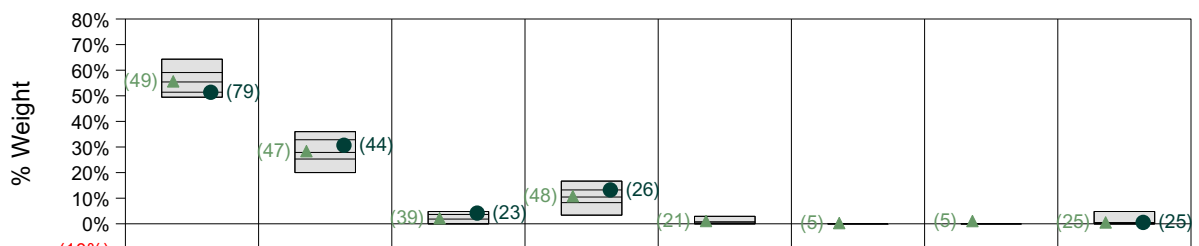
Macro-Level Asset Allocation



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	64.30	36.00	4.80	16.68	2.91	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	51.41	25.30	0.00	8.27	0.00	0.00	0.00	0.00
90th Percentile	49.45	20.02	0.00	3.38	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 December 31, 2023

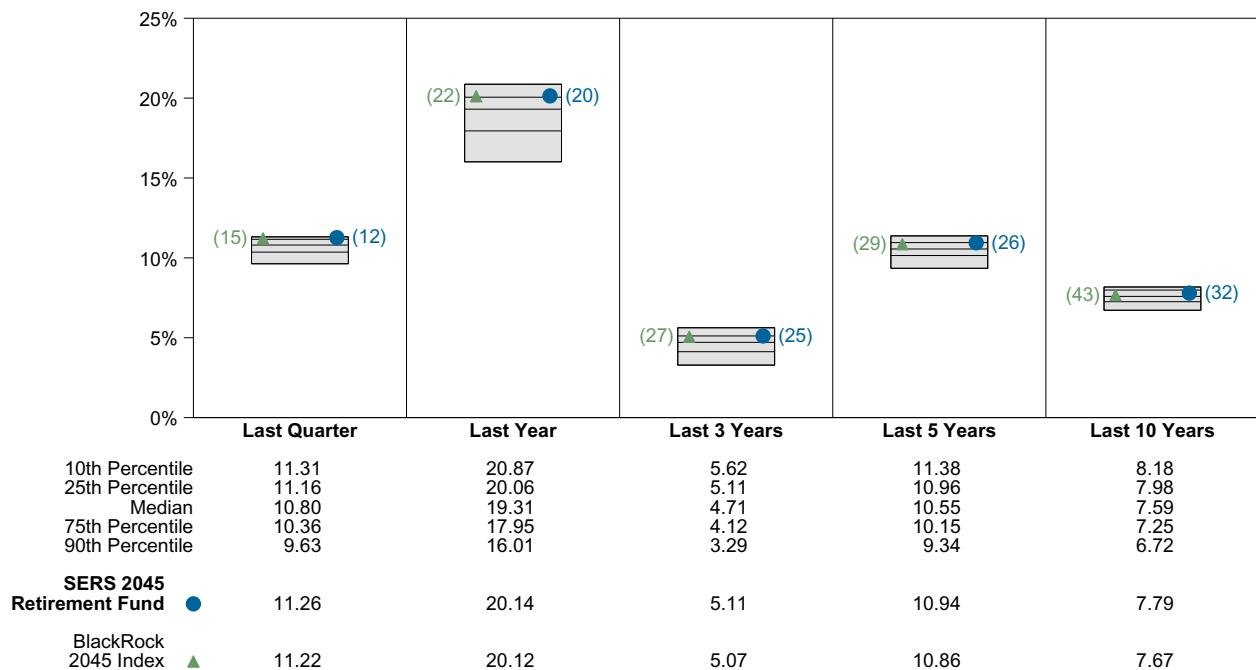
Investment Philosophy

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

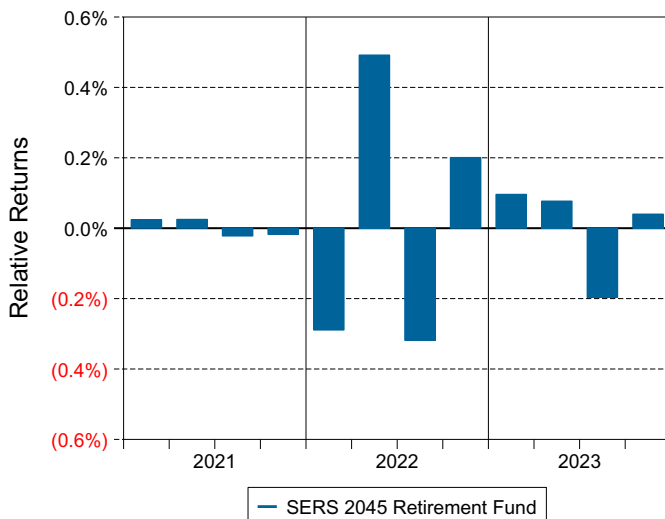
Quarterly Summary and Highlights

- SERS 2045 Retirement Fund's portfolio posted a 11.26% return for the quarter placing it in the 12 percentile of the Callan Target Date 2045 group for the quarter and in the 20 percentile for the last year.
- SERS 2045 Retirement Fund's portfolio outperformed the BlackRock 2045 Index by 0.04% for the quarter and outperformed the BlackRock 2045 Index for the year by 0.02%.

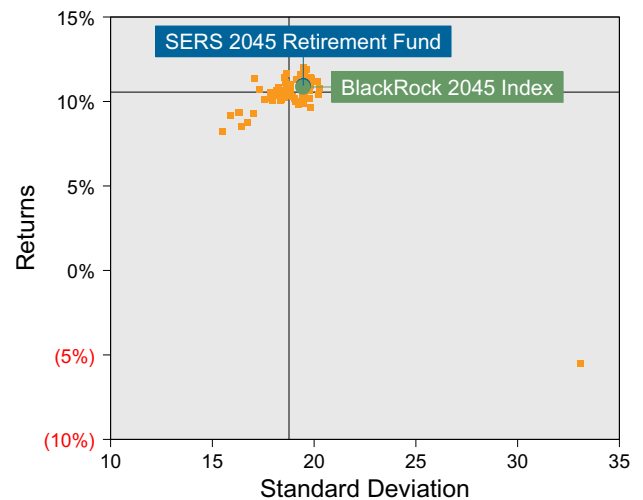
Performance vs Callan Target Date 2045 (Net)



Relative Return vs BlackRock 2045 Index



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

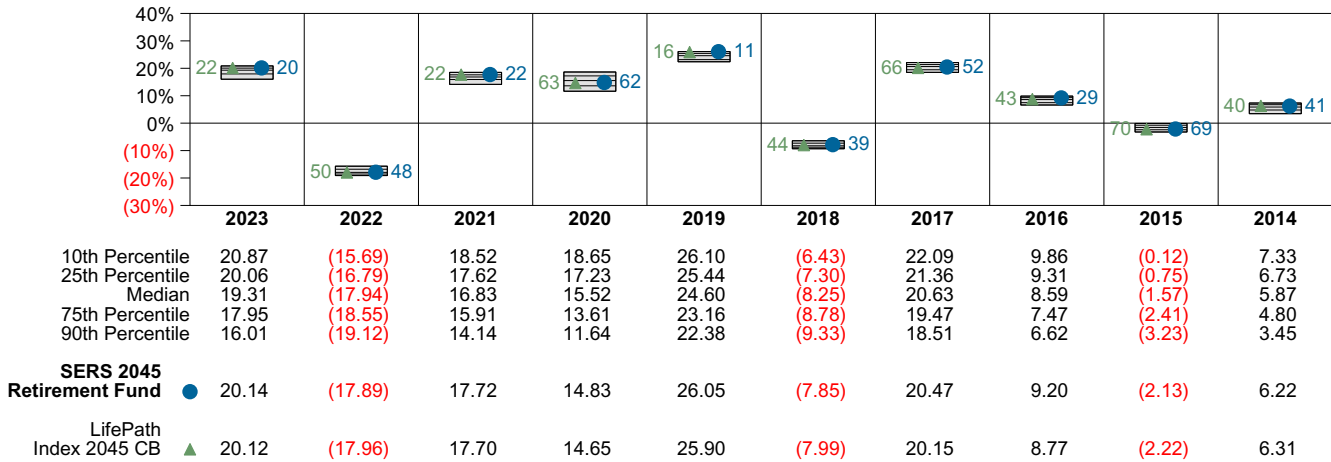


SERS 2045 Retirement Fund Return Analysis Summary

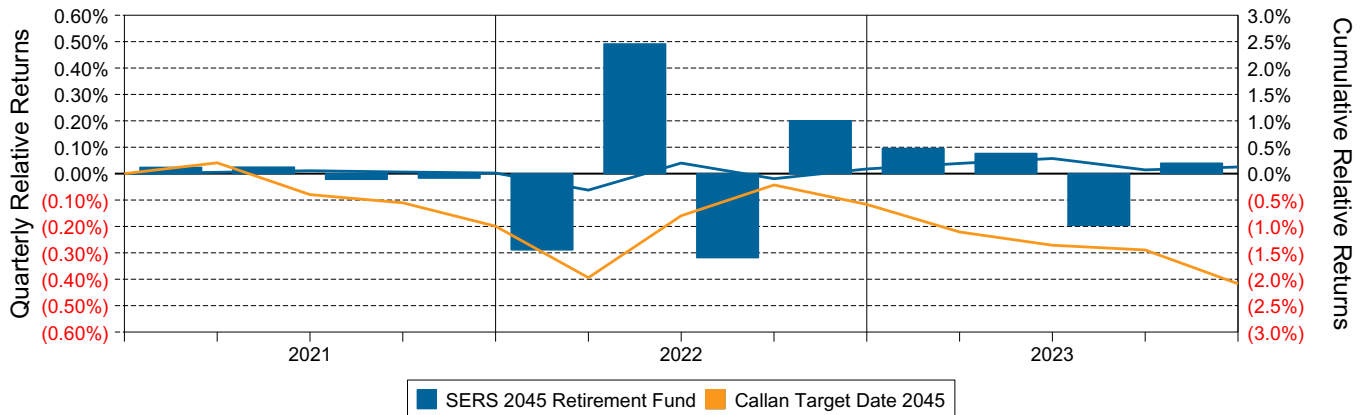
Return Analysis

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

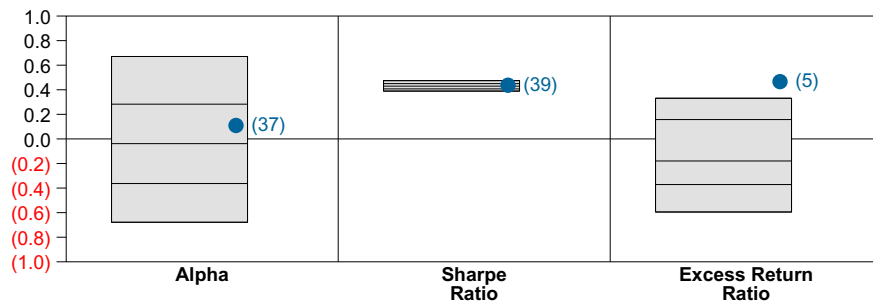
Performance vs Callan Target Date 2045 (Net)



Cumulative and Quarterly Relative Returns vs LifePath Index 2045 CB



Risk Adjusted Return Measures vs LifePath Index 2045 CB Rankings Against Callan Target Date 2045 (Net) Seven Years Ended December 31, 2023



10th Percentile	0.67	0.47	0.33
25th Percentile	0.28	0.45	0.16
Median	(0.04)	0.43	(0.18)
75th Percentile	(0.36)	0.41	(0.37)
90th Percentile	(0.68)	0.39	(0.59)

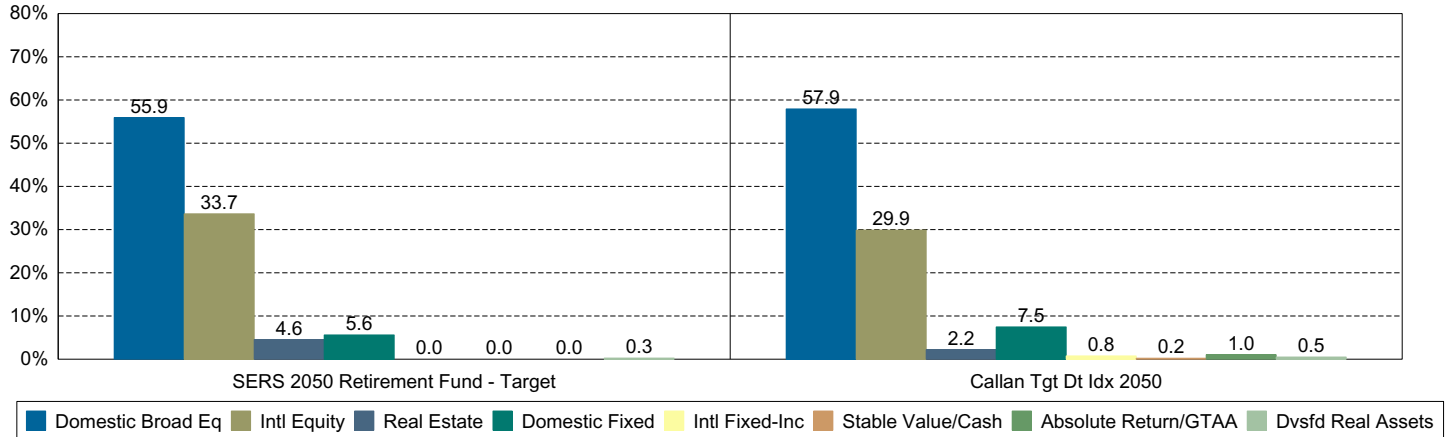
SERS 2045 Retirement Fund ● 0.11 0.44 0.47

SERS 2050 Retirement Fund

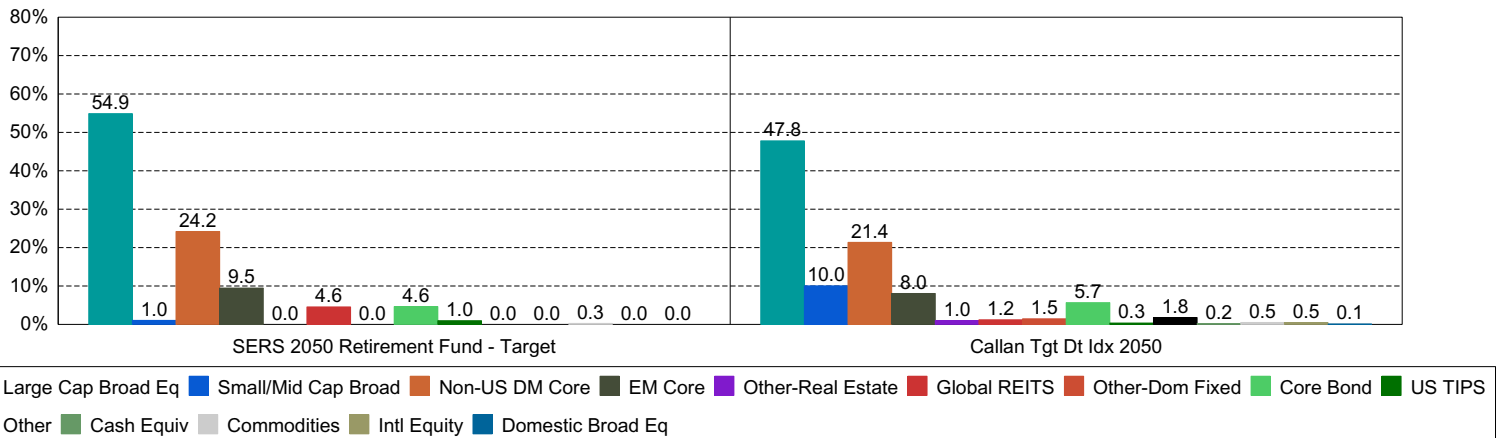
Target Date Fund Asset Allocation as of December 31, 2023

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.

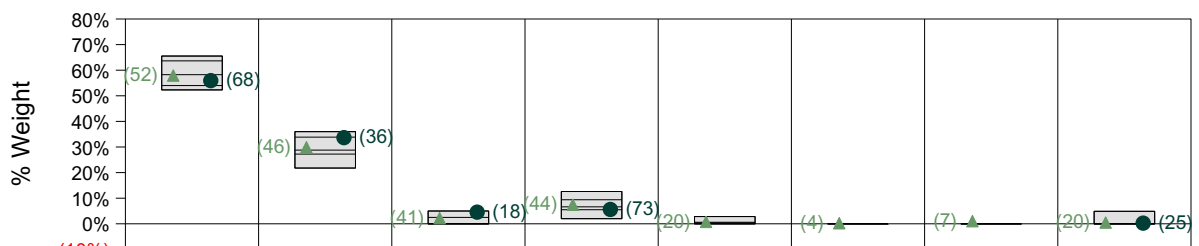
Macro-Level Asset Allocation



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 December 31, 2023

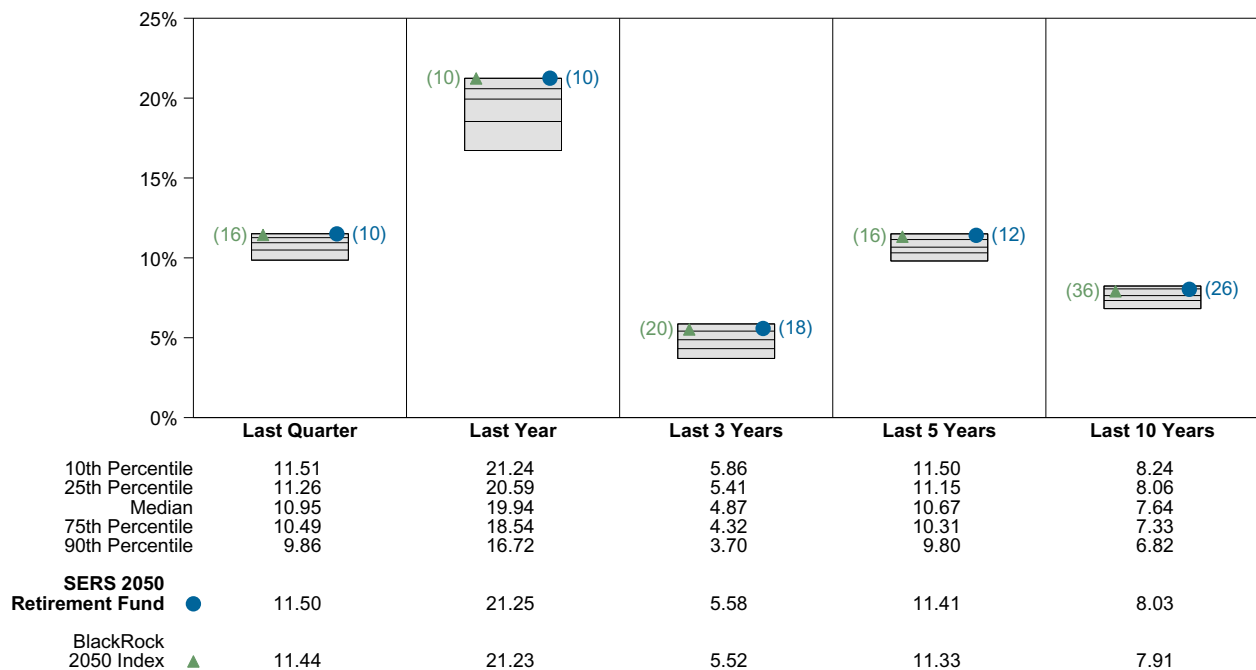
Investment Philosophy

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

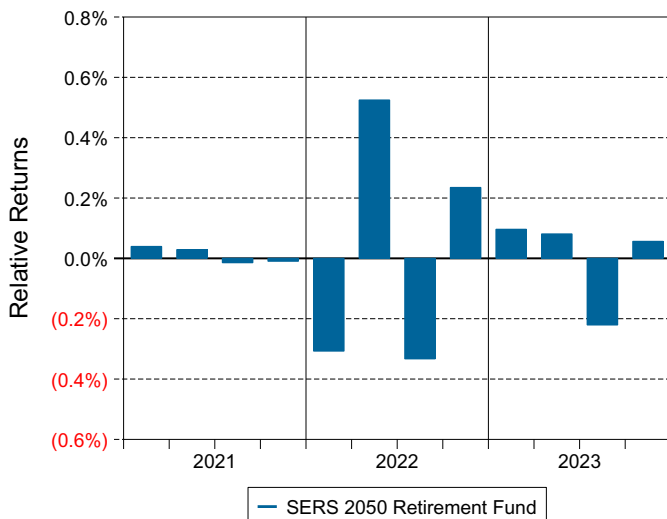
Quarterly Summary and Highlights

- SERS 2050 Retirement Fund's portfolio posted a 11.50% return for the quarter placing it in the 10 percentile of the Callan Target Date 2050 group for the quarter and in the 10 percentile for the last year.
- SERS 2050 Retirement Fund's portfolio outperformed the BlackRock 2050 Index by 0.06% for the quarter and outperformed the BlackRock 2050 Index for the year by 0.02%.

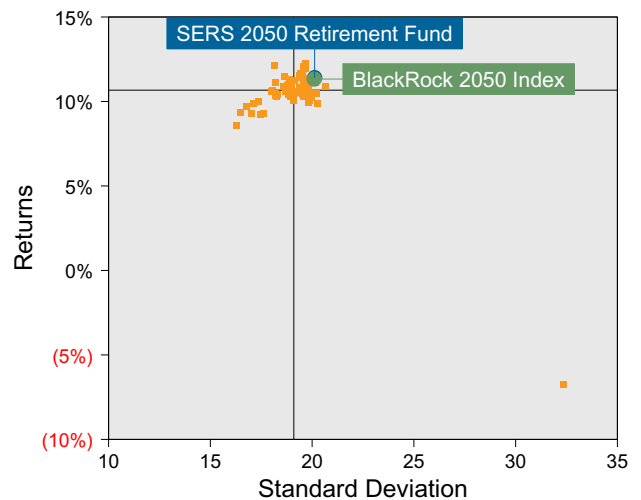
Performance vs Callan Target Date 2050 (Net)



Relative Return vs BlackRock 2050 Index



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

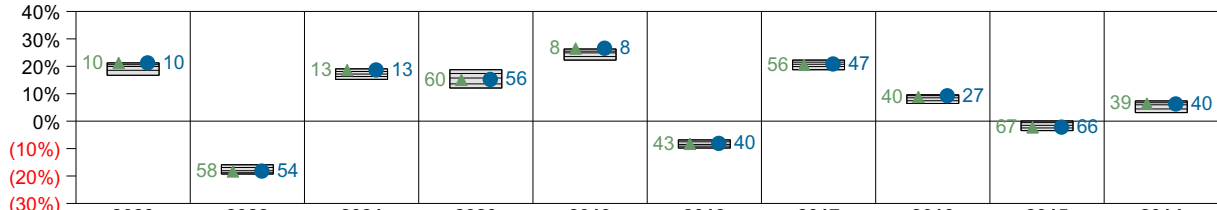


SERS 2050 Retirement Fund Return Analysis Summary

Return Analysis

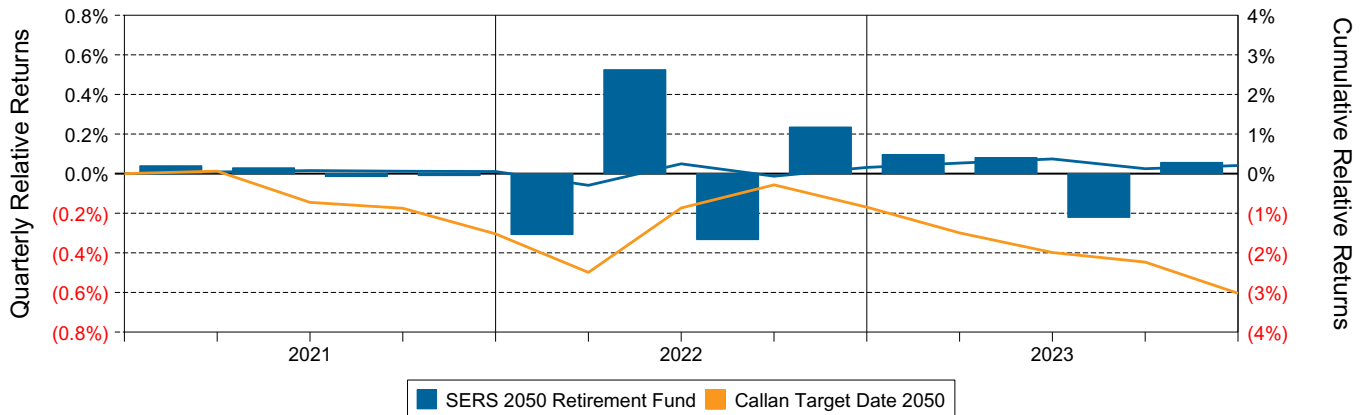
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

Performance vs Callan Target Date 2050 (Net)

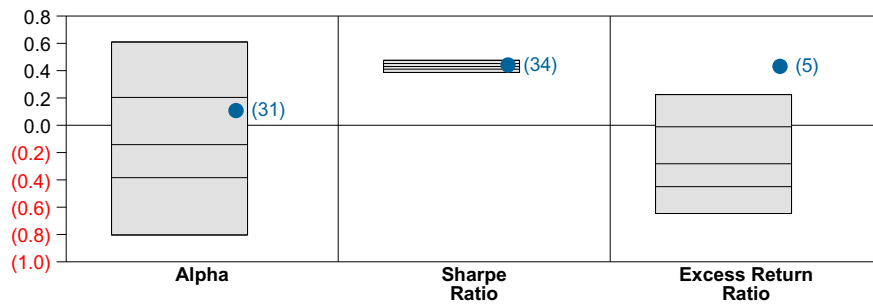


	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
10th Percentile	21.24	(15.90)	19.07	18.76	26.30	(6.84)	22.27	9.60	0.05	7.37
25th Percentile	20.59	(16.89)	18.10	17.38	25.51	(7.53)	21.51	9.29	(0.54)	6.72
Median	19.94	(18.07)	17.17	15.73	24.89	(8.48)	20.74	8.51	(1.53)	5.96
75th Percentile	18.54	(18.80)	16.27	13.59	23.55	(9.11)	19.91	7.45	(2.48)	4.45
90th Percentile	16.72	(19.28)	15.23	12.08	22.26	(9.80)	18.75	6.44	(3.45)	3.12
SERS 2050 Retirement Fund	21.25	(18.20)	18.67	15.20	26.60	(8.11)	20.85	9.26	(2.17)	6.28
BlackRock 2050 Index	21.23	(18.30)	18.62	15.07	26.48	(8.26)	20.55	8.82	(2.26)	6.41

Cumulative and Quarterly Relative Returns vs BlackRock 2050 Index



Risk Adjusted Return Measures vs BlackRock 2050 Index Rankings Against Callan Target Date 2050 (Net) Seven Years Ended December 31, 2023



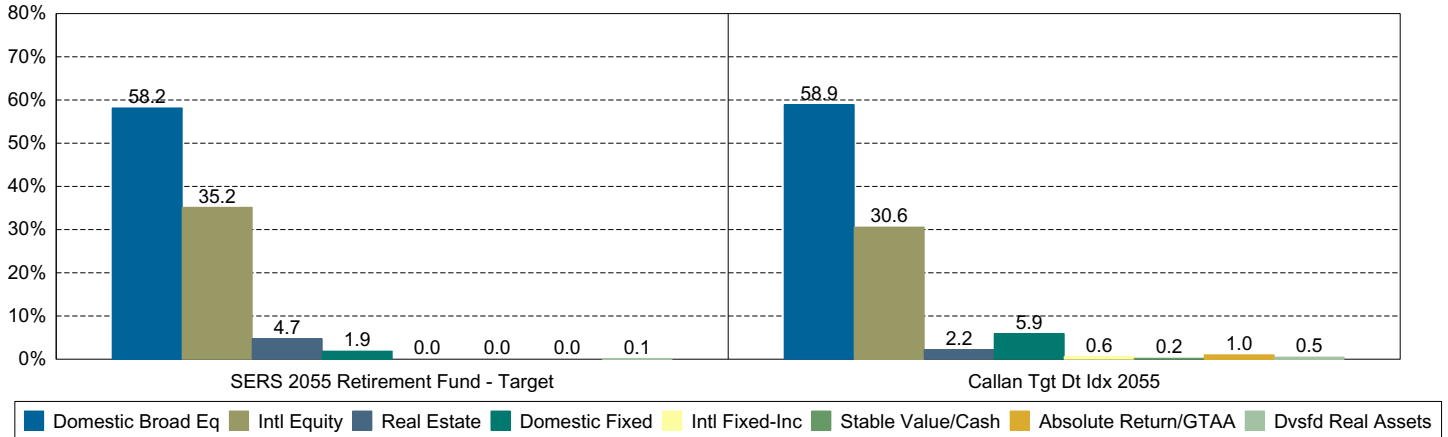
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.61	0.48	0.22
25th Percentile	0.20	0.45	(0.01)
Median	(0.14)	0.43	(0.28)
75th Percentile	(0.38)	0.41	(0.45)
90th Percentile	(0.80)	0.39	(0.65)
SERS 2050 Retirement Fund	0.11	0.44	0.43

SERS 2055 Retirement Fund

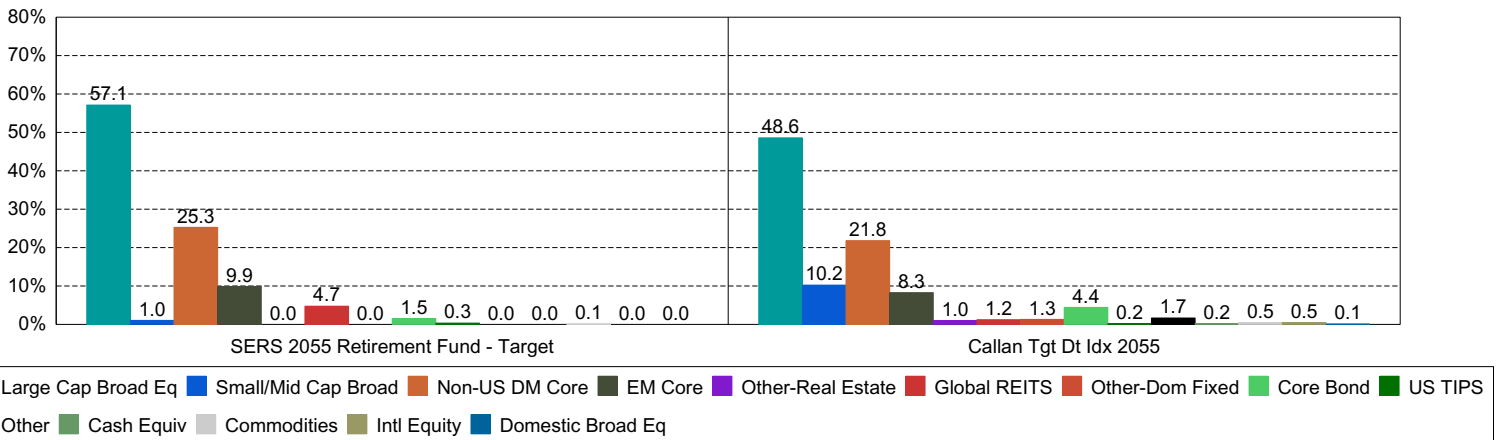
Target Date Fund Asset Allocation as of December 31, 2023

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.

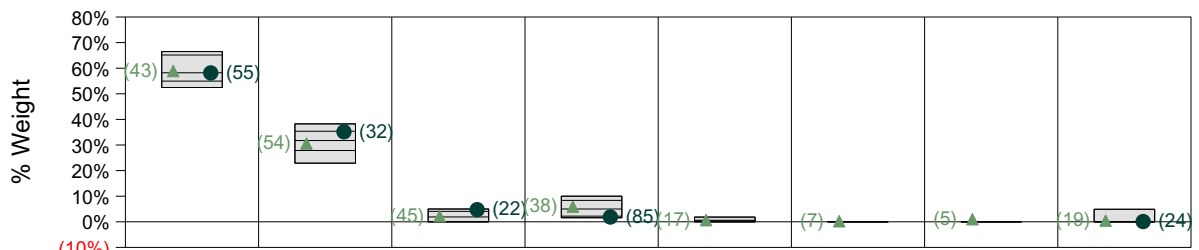
Macro-Level Asset Allocation



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	4.08	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	1.01	0.48

SERS 2055 Retirement Fund

Period Ended December 31, 2023

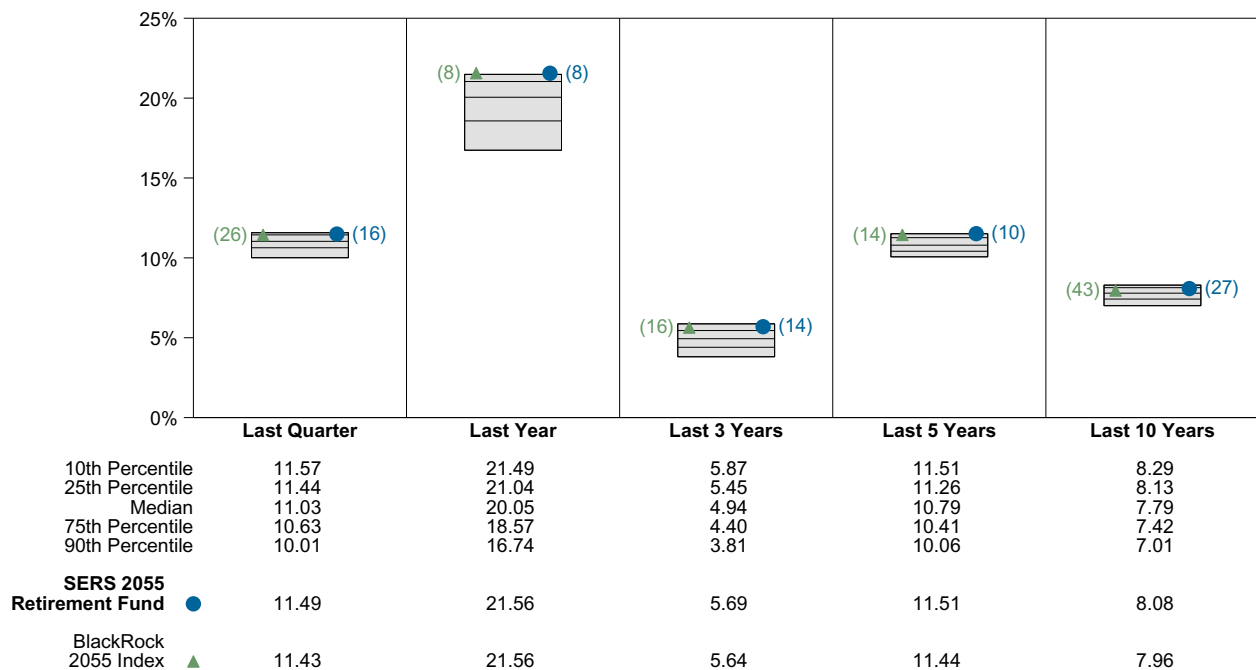
Investment Philosophy

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

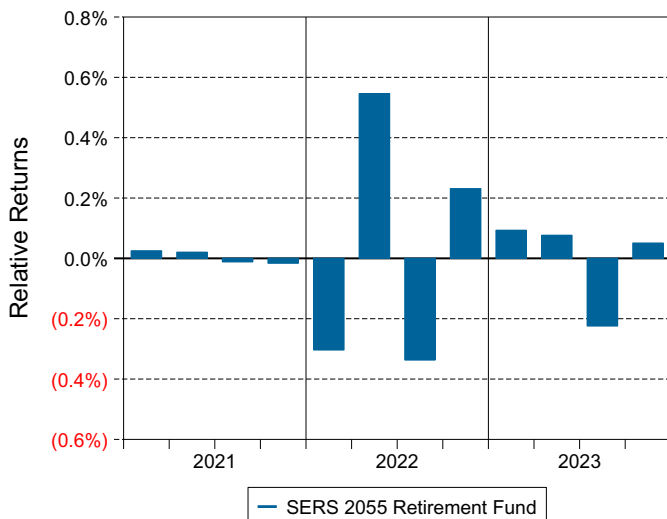
Quarterly Summary and Highlights

- SERS 2055 Retirement Fund's portfolio posted a 11.49% return for the quarter placing it in the 16 percentile of the Callan Target Date 2055 group for the quarter and in the 8 percentile for the last year.
- SERS 2055 Retirement Fund's portfolio outperformed the BlackRock 2055 Index by 0.06% for the quarter and underperformed the BlackRock 2055 Index for the year by 0.01%.

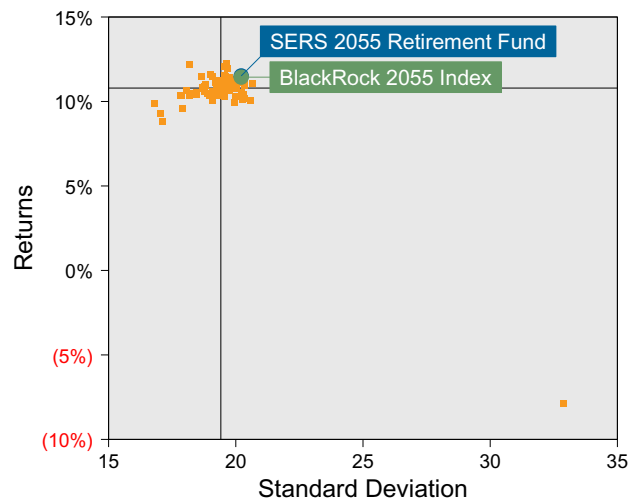
Performance vs Callan Target Date 2055 (Net)



Relative Return vs BlackRock 2055 Index



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

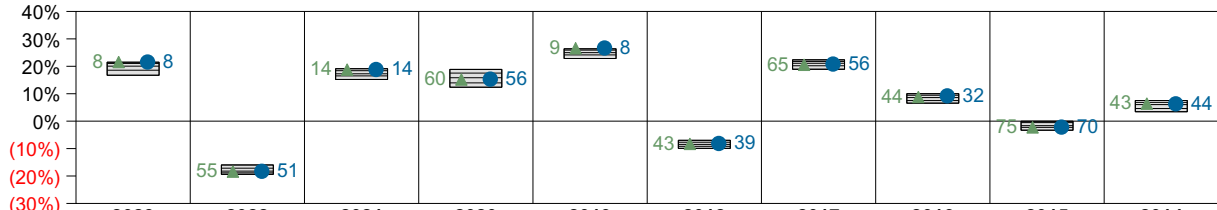


SERS 2055 Retirement Fund Return Analysis Summary

Return Analysis

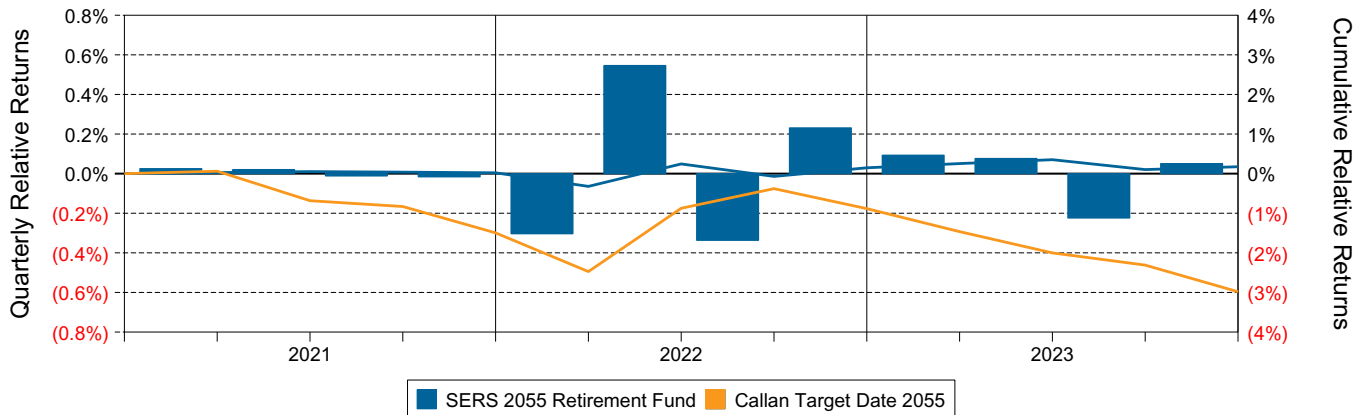
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

Performance vs Callan Target Date 2055 (Net)

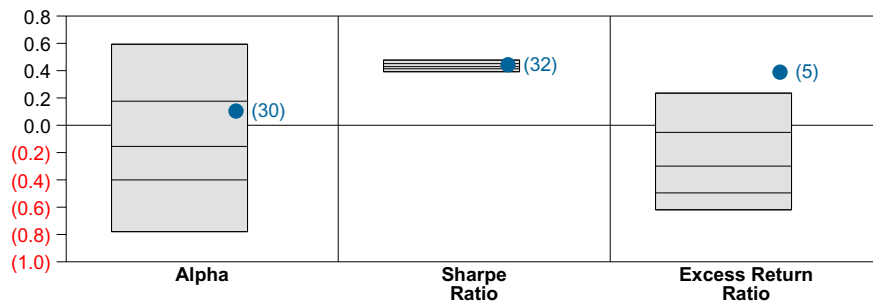


	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
10th Percentile	21.49	(15.97)	19.12	18.86	26.37	(6.99)	22.36	10.01	(0.05)	7.53
25th Percentile	21.04	(17.15)	18.40	17.52	25.90	(7.69)	21.77	9.44	(0.53)	6.85
Median	20.05	(18.21)	17.27	15.83	24.97	(8.47)	21.10	8.60	(1.64)	6.04
75th Percentile	18.57	(18.85)	16.50	13.95	24.15	(9.18)	20.20	7.51	(2.26)	4.60
90th Percentile	16.74	(19.38)	15.20	12.37	22.84	(9.93)	18.92	6.55	(3.30)	3.44
SERS 2055 Retirement Fund	21.56	(18.27)	18.83	15.32	26.67	(8.13)	20.82	9.22	(2.17)	6.31
BlackRock 2055 Index	21.56	(18.38)	18.81	15.18	26.58	(8.28)	20.55	8.82	(2.26)	6.41

Cumulative and Quarterly Relative Returns vs BlackRock 2055 Index



Risk Adjusted Return Measures vs BlackRock 2055 Index Rankings Against Callan Target Date 2055 (Net) Seven Years Ended December 31, 2023



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.59	0.48	0.24
25th Percentile	0.18	0.45	(0.05)
Median	(0.15)	0.43	(0.30)
75th Percentile	(0.40)	0.41	(0.50)
90th Percentile	(0.78)	0.39	(0.62)
SERS 2055 Retirement Fund	0.10	0.44	0.39

SERS 2060 Retirement Fund

Period Ended December 31, 2023

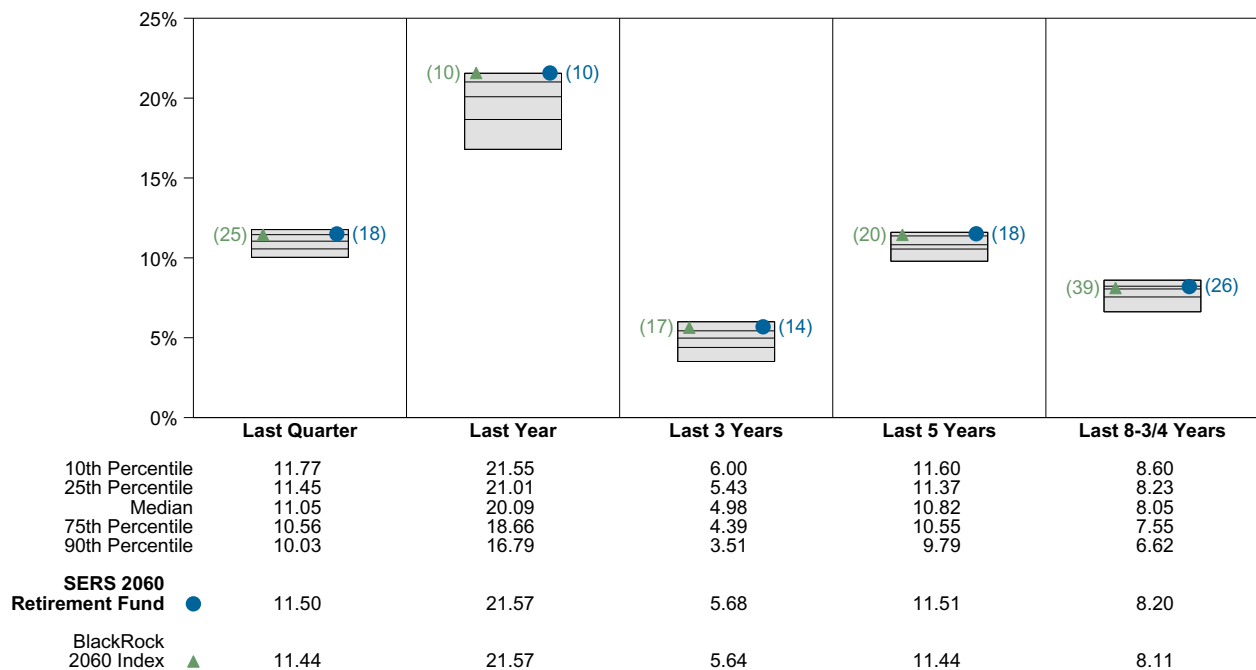
Investment Philosophy

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

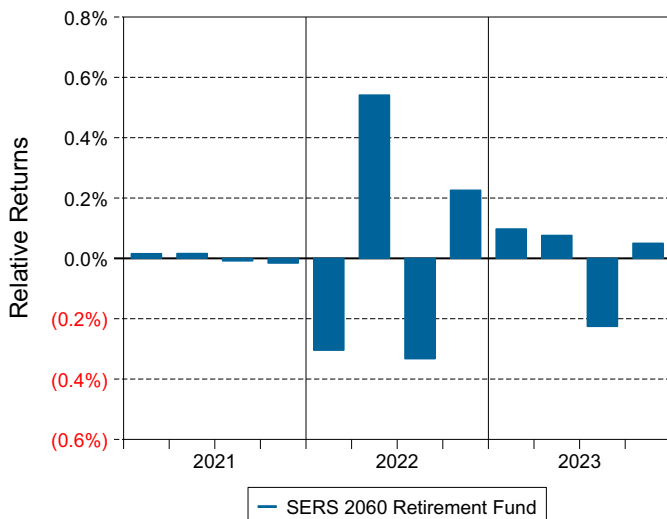
Quarterly Summary and Highlights

- SERS 2060 Retirement Fund's portfolio posted a 11.50% return for the quarter placing it in the 18 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 outperformed the BlackRock 2060 Index by 0.06% for the quarter and underperformed the BlackRock 2060 Index for the year by 0.00%.

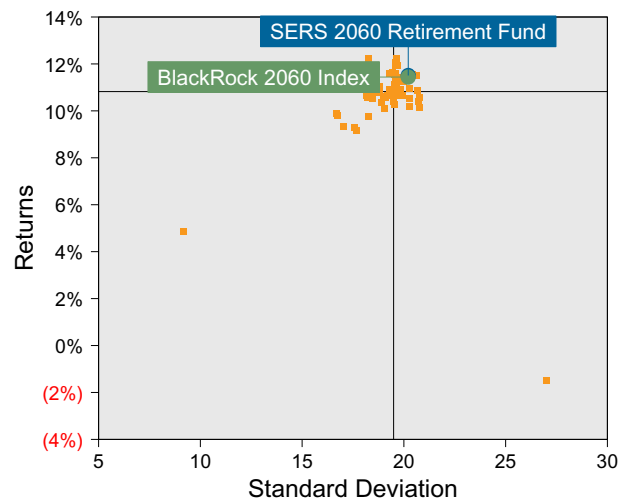
Performance vs Callan Target Date 2060 (Net)



Relative Return vs BlackRock 2060 Index



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

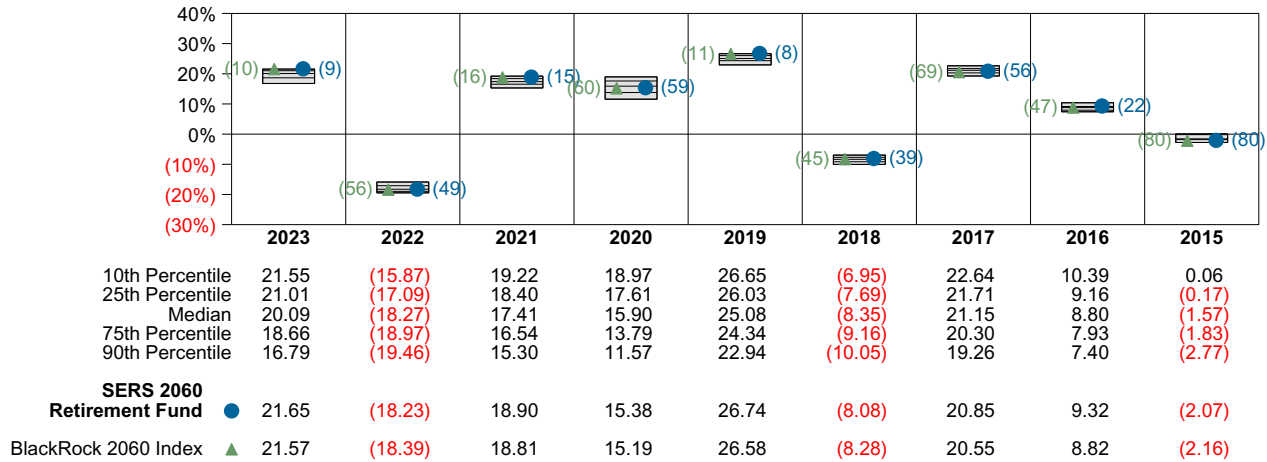


SERS 2060 Retirement Fund Return Analysis Summary

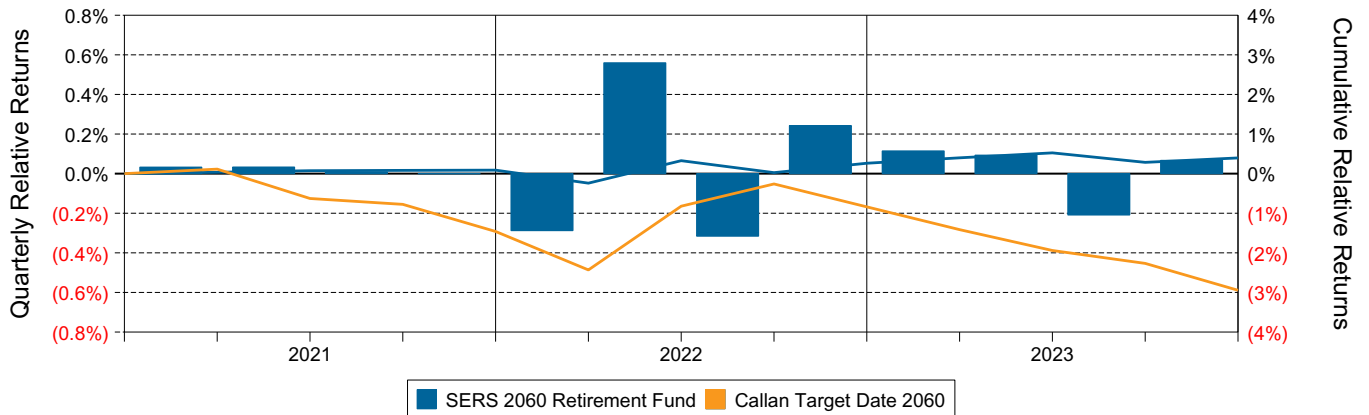
Return Analysis

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

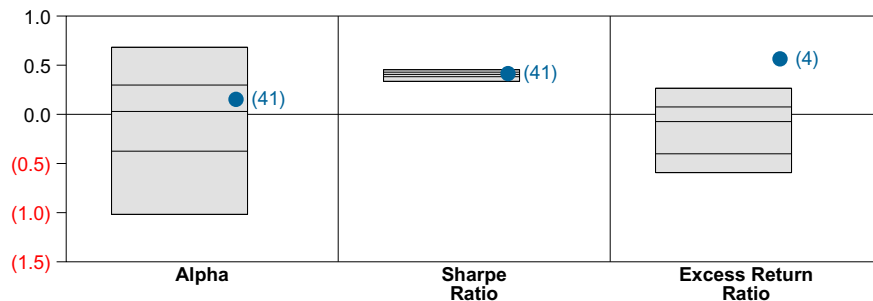
Performance vs Callan Target Date 2060 (Net)



Cumulative and Quarterly Relative Returns vs BlackRock 2060 Index



Risk Adjusted Return Measures vs BlackRock 2060 Index Rankings Against Callan Target Date 2060 (Net) Eight and Three-Quarter Years Ended December 31, 2023



SERS 2065 Retirement Fund

Period Ended December 31, 2023

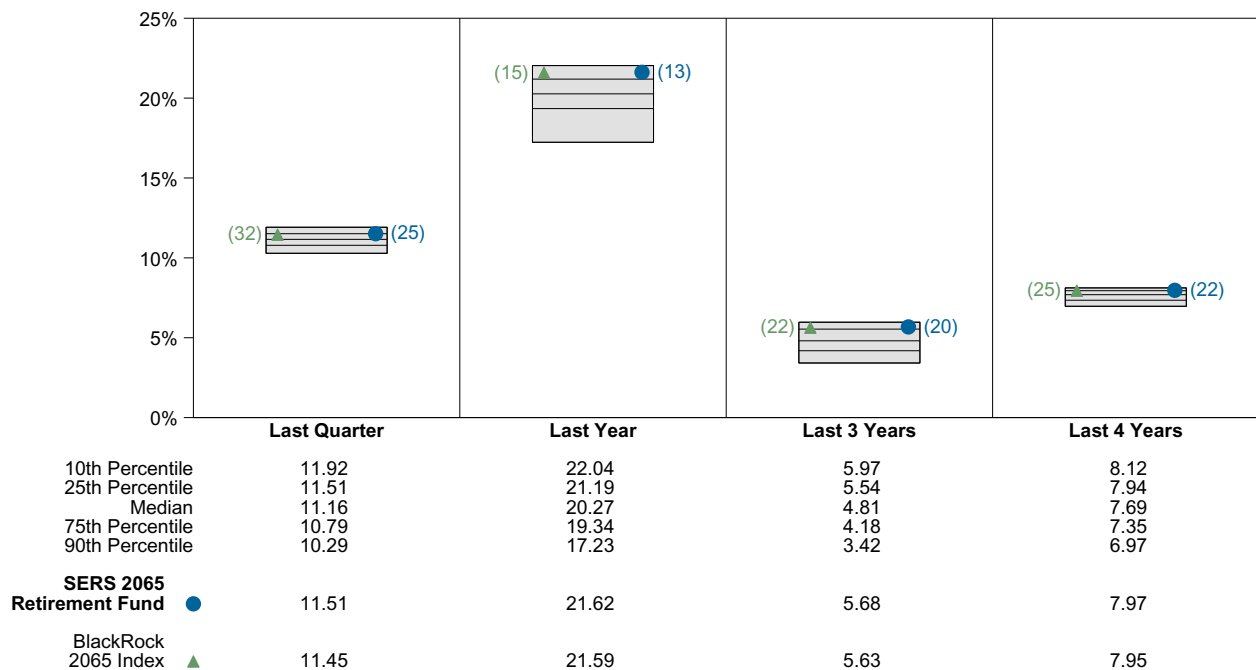
Investment Philosophy

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

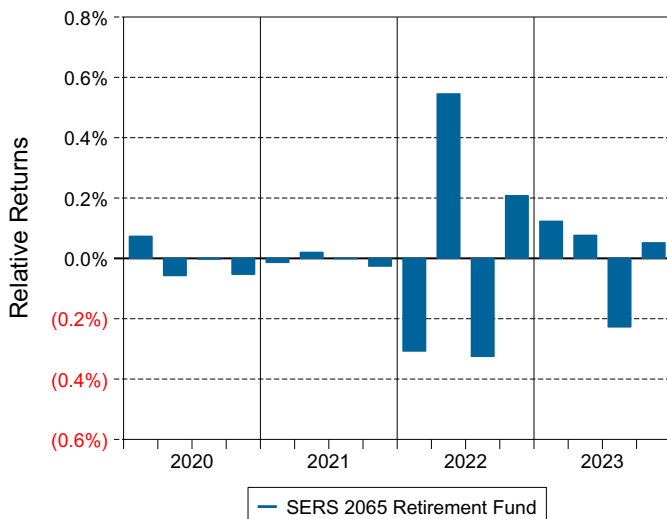
Quarterly Summary and Highlights

- SERS 2065 Retirement Fund's portfolio posted a 11.51% return for the quarter placing it in the 25 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 outperformed the BlackRock 2065 Index by 0.06% for the quarter and outperformed the BlackRock 2065 Index for the year by 0.03%.

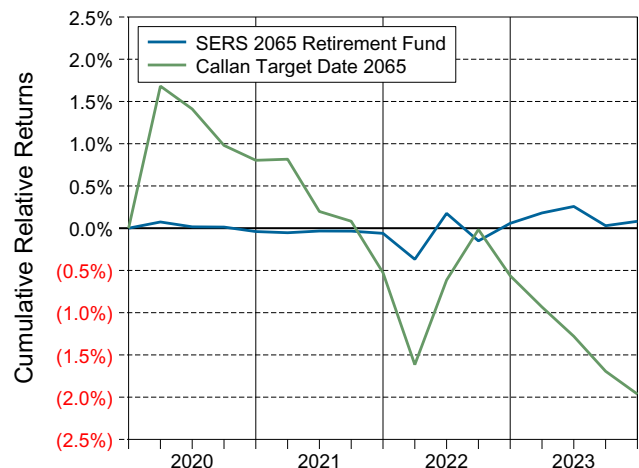
Performance vs Callan Target Date 2065 (Net)



Relative Return vs BlackRock 2065 Index



Cumulative Returns vs BlackRock 2065 Index



SERS U.S. Large Company Index Fund

Period Ended December 31, 2023

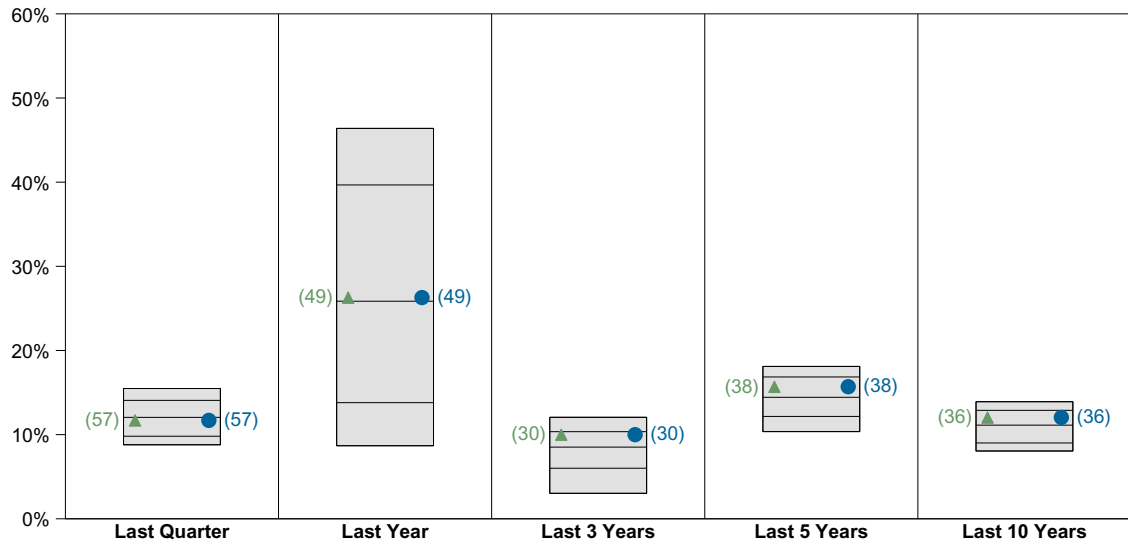
Investment Philosophy

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 Fund's portfolio posted a 11.69% 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 49 percentile for the last year.
- SERS U.S. Large Company Index Fund's portfolio underperformed the S&P 500 Index by 0.00% for the quarter and outperformed the S&P 500 Index for the year by 0.00%.

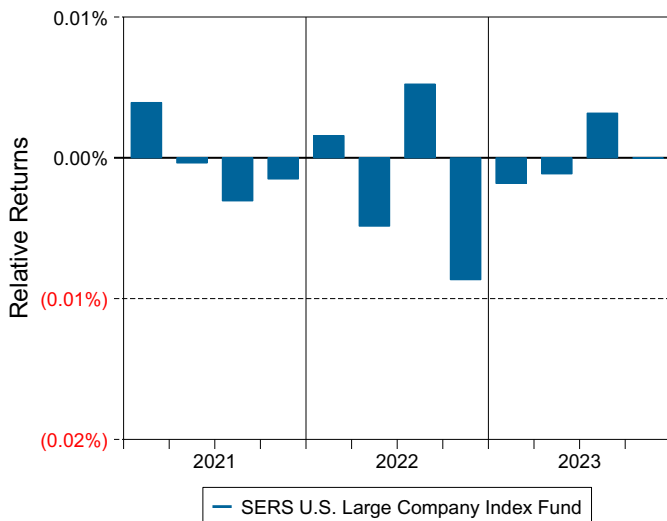
Performance vs Callan Large Cap Broad Equity Mut Funds (Institutional Net)



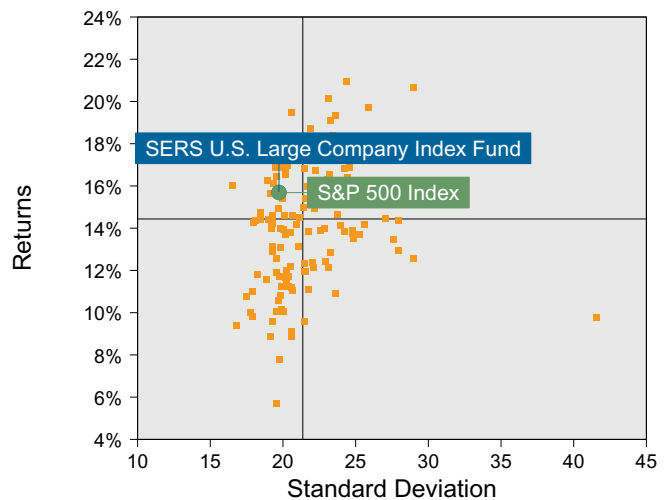
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	15.48	46.39	12.06	18.10	13.91
25th Percentile	14.07	39.67	10.35	16.85	12.89
Median	12.05	25.85	8.52	14.44	11.13
75th Percentile	9.81	13.80	6.01	12.16	9.01
90th Percentile	8.80	8.68	3.03	10.36	8.05
SERS U.S. Large Company Index Fund	11.69	26.29	10.00	15.69	12.04
S&P 500 Index	11.69	26.29	10.00	15.69	12.03

SERS U.S. Large Company Index Fund ●
S&P 500 Index ▲

Relative Return vs S&P 500 Index



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

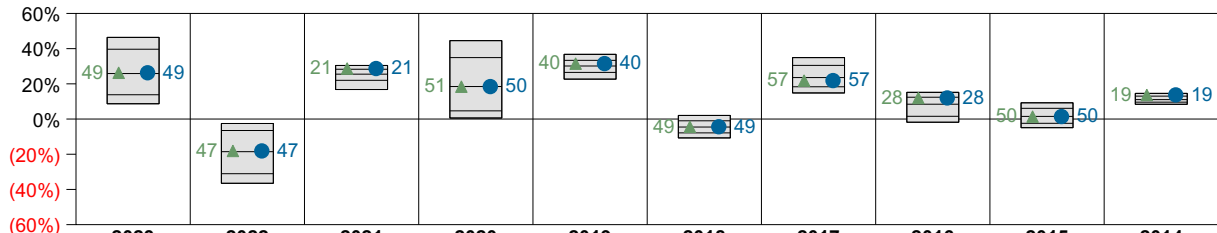


SERS U.S. Large Company Index Fund Return Analysis Summary

Return Analysis

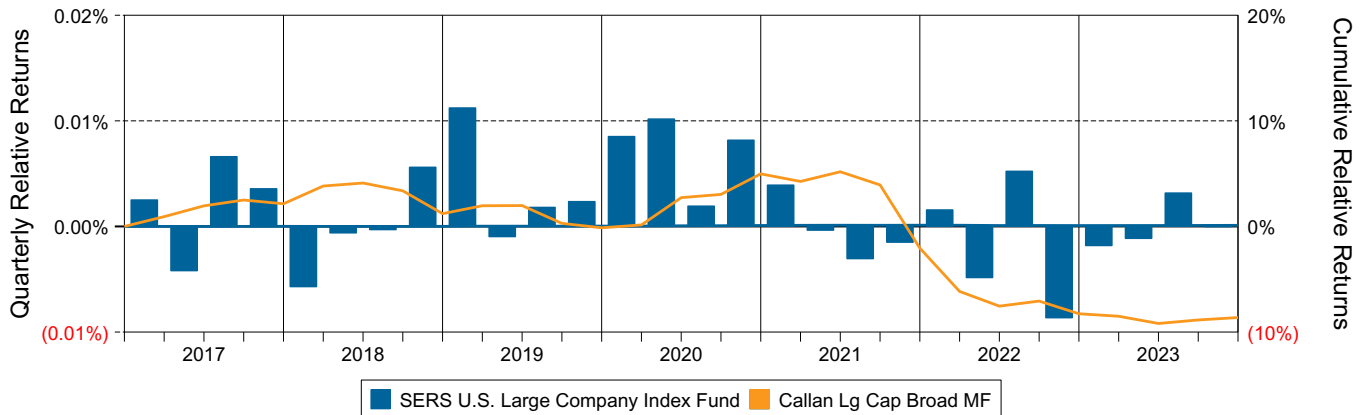
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

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

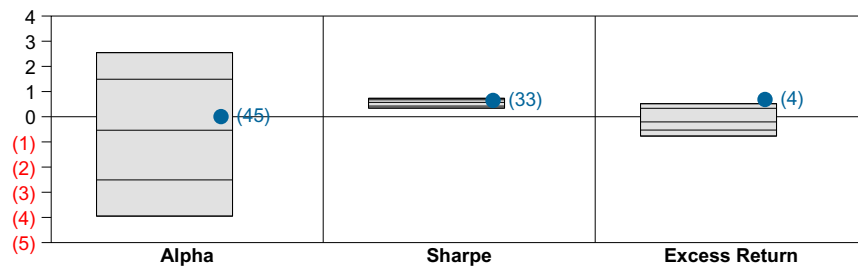


	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
10th Percentile	46.39	(2.53)	30.44	44.54	36.76	2.05	34.91	15.17	9.23	14.58
25th Percentile	39.67	(6.52)	28.29	34.90	33.34	(1.00)	30.48	12.39	6.09	13.01
Median	25.85	(18.55)	25.50	18.47	30.14	(4.54)	23.56	8.43	1.50	11.02
75th Percentile	13.80	(31.06)	22.00	4.64	26.51	(7.86)	18.33	1.56	(2.42)	9.59
90th Percentile	8.68	(36.52)	16.77	0.58	22.66	(10.72)	14.82	(1.82)	(4.91)	8.38
SERS U.S. Large Company Index Fund	26.29	(18.12)	28.70	18.43	31.51	(4.39)	21.84	11.98	1.40	13.71
S&P 500 Index	26.29	(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 December 31, 2023



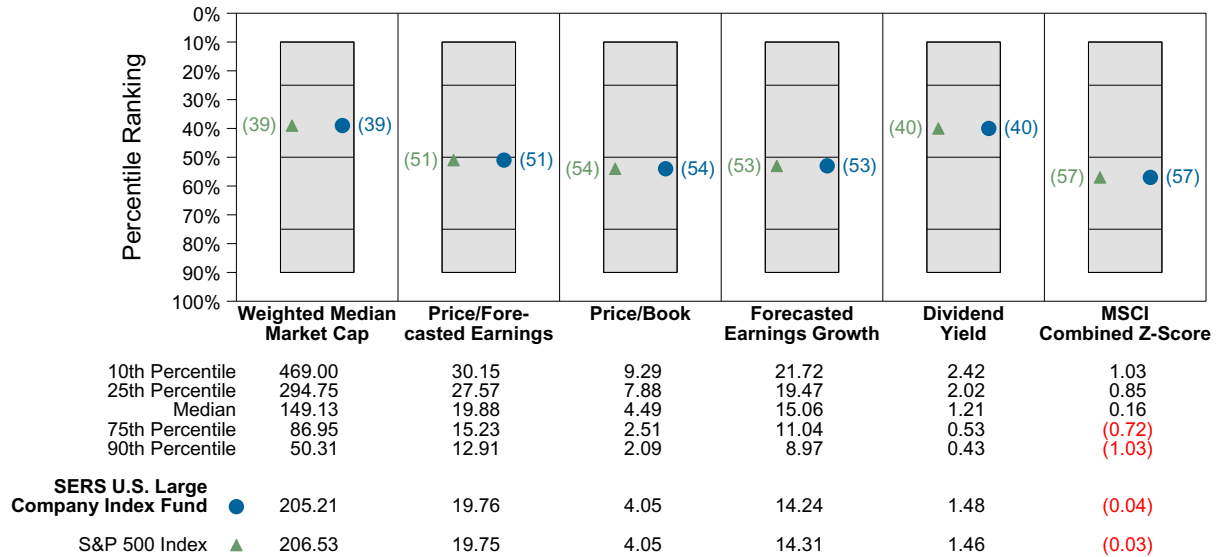
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	2.55	0.73	0.52
25th Percentile	1.49	0.67	0.34
Median	(0.54)	0.57	(0.21)
75th Percentile	(2.51)	0.42	(0.53)
90th Percentile	(3.95)	0.34	(0.77)
SERS U.S. Large Company Index Fund	0.01	0.65	0.69

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

Portfolio Characteristics

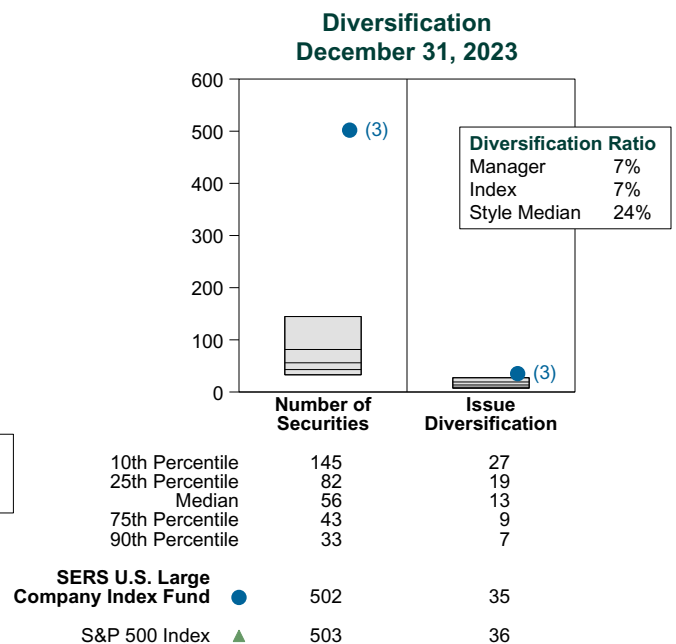
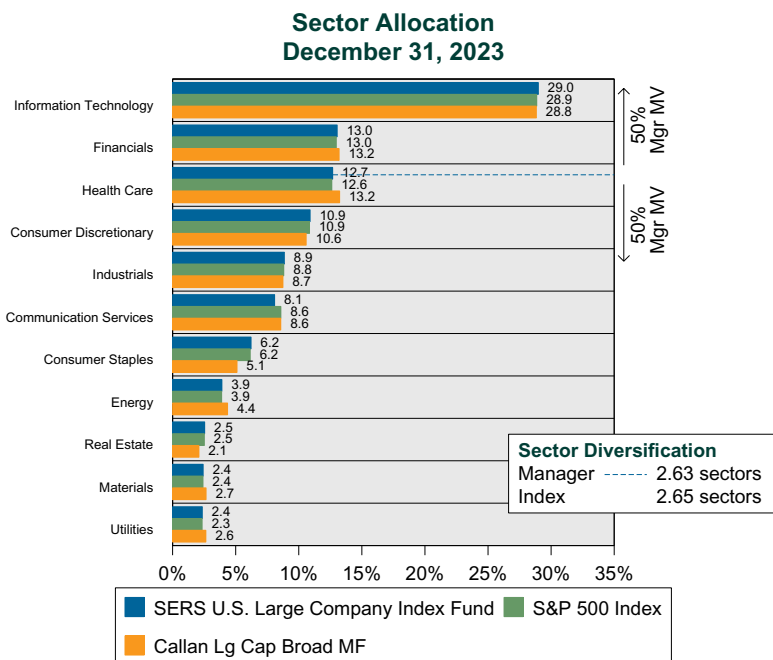
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Broad Equity Mut Funds as of December 31, 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 Fund Top 10 Portfolio Holdings Characteristics as of December 31, 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	\$101,509,694	7.1%	12.60%	2994.37	28.67	0.50%	6.14%
Microsoft Corp	Information Technology	\$100,792,692	7.0%	19.34%	2794.83	31.10	0.80%	16.20%
Amazon.Com	Consumer Discretionary	\$49,830,879	3.5%	19.52%	1570.15	42.23	0.00%	7.27%
Nvidia Corp	Information Technology	\$44,113,250	3.1%	13.86%	1223.19	24.99	0.03%	102.46%
Alphabet Inc Cl A	Communication Services	\$29,813,589	2.1%	6.75%	826.69	20.89	0.00%	19.30%
Meta Platforms Inc	Communication Services	\$28,333,764	2.0%	17.90%	785.65	20.19	0.00%	32.00%
Alphabet Inc Cl C	Communication Services	\$25,314,664	1.8%	6.89%	806.82	21.27	0.00%	19.30%
Tesla Mtrs Inc	Consumer Discretionary	\$24,783,599	1.7%	(0.70)%	789.90	65.37	0.00%	1.78%
Berkshire Hathaway Inc Del Cl B New	Financials	\$23,402,747	1.6%	1.82%	466.66	19.71	0.00%	12.33%
JPMorgan Chase & Co	Financials	\$17,734,853	1.2%	18.16%	491.76	10.92	2.47%	17.53%

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
Expedia Group Inc	Consumer Discretionary	\$730,932	0.1%	47.27%	20.24	12.37	0.00%	24.70%
Advanced Micro Devices Inc	Information Technology	\$8,589,222	0.6%	43.37%	238.14	39.48	0.00%	12.85%
Intel Corp	Information Technology	\$7,643,882	0.5%	41.82%	211.85	26.63	1.00%	10.62%
D.R. Horton	Consumer Discretionary	\$1,653,961	0.1%	41.75%	50.61	10.57	0.79%	5.34%
Royal Caribbean Cruises Ltd	Consumer Discretionary	\$1,100,215	0.1%	40.54%	33.18	14.16	0.00%	(31.43)%
Pulte Group Inc	Consumer Discretionary	\$802,079	0.1%	39.67%	22.25	9.04	0.77%	34.84%
Fifth Third Bancorp	Financials	\$855,772	0.1%	37.53%	23.49	10.78	4.06%	11.61%
Marketaxess Hldgs Inc	Financials	\$401,442	0.0%	37.53%	11.10	39.12	0.98%	9.56%
Monolithic Pwr Sys Inc	Information Technology	\$1,093,501	0.1%	36.75%	30.22	48.63	0.64%	25.00%
Keycorp	Financials	\$485,475	0.0%	36.16%	13.48	11.21	5.70%	(0.47)%

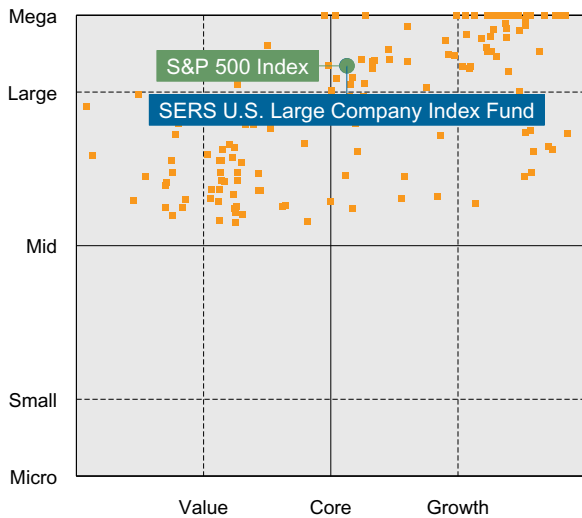
10 Worst Performers

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Hasbro Inc	Consumer Discretionary	\$238,161	0.0%	(21.60)%	7.09	12.84	5.48%	(7.41)%
Paycom Software Inc	Industrials	\$365,086	0.0%	(20.10)%	12.45	25.34	0.73%	15.20%
Hormel Foods Corp	Consumer Staples	\$333,328	0.0%	(14.84)%	17.56	20.41	3.51%	8.20%
Albemarle Corp	Materials	\$614,489	0.0%	(14.80)%	16.96	10.98	1.11%	37.75%
Exxon Mobil Corp	Energy	\$14,443,185	1.0%	(14.19)%	396.21	10.76	3.80%	35.92%
Apa Corp	Energy	\$396,124	0.0%	(12.18)%	11.01	6.37	2.79%	0.00%
Pfizer	Health Care	\$5,862,574	0.4%	(12.01)%	162.56	12.97	5.69%	(14.70)%
Charter Communications Inc N Cl A	Communication Services	\$1,407,865	0.1%	(11.63)%	57.49	10.50	0.00%	10.86%
Borgwarner Inc	Consumer Discretionary	\$305,905	0.0%	(10.91)%	8.43	8.40	1.23%	11.00%
Bristol-Myers Squibb Co	Health Care	\$3,762,385	0.3%	(10.70)%	104.40	7.08	4.45%	(0.90)%

Historical Holdings Based Style Analysis SERS U.S. Large Company Index Fund For Three Years Ended December 31, 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.

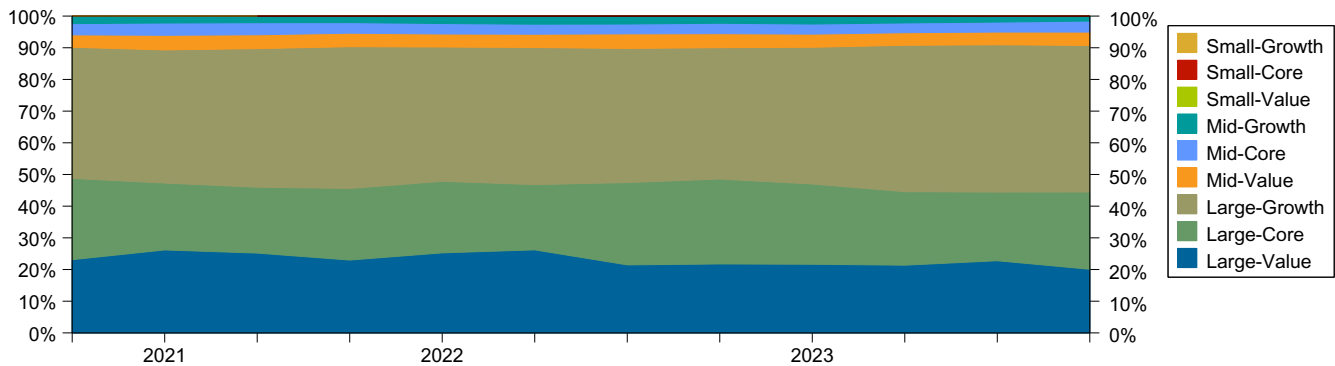
Average Style Map vs Callan Lg Cap Broad MF Holdings for Three Years Ended December 31, 2023



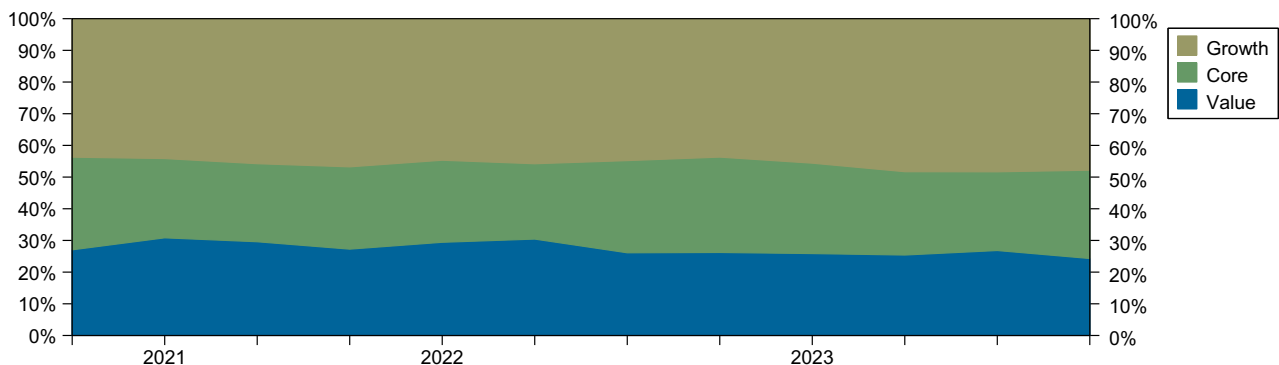
Average Style Exposure Matrix Holdings for Three Years Ended December 31, 2023

	Value	Core	Growth	Total
Large	23.2% (98)	23.4% (93)	43.6% (84)	90.2% (275)
Mid	4.2% (101)	3.4% (78)	2.2% (45)	9.8% (224)
Small	0.0% (3)	0.0% (2)	0.0% (0)	0.1% (5)
Micro	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Total	27.4% (202)	26.8% (173)	45.8% (129)	100.0% (504)

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



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



SERS U.S. SMID Company Stock Idx Period Ended December 31, 2023

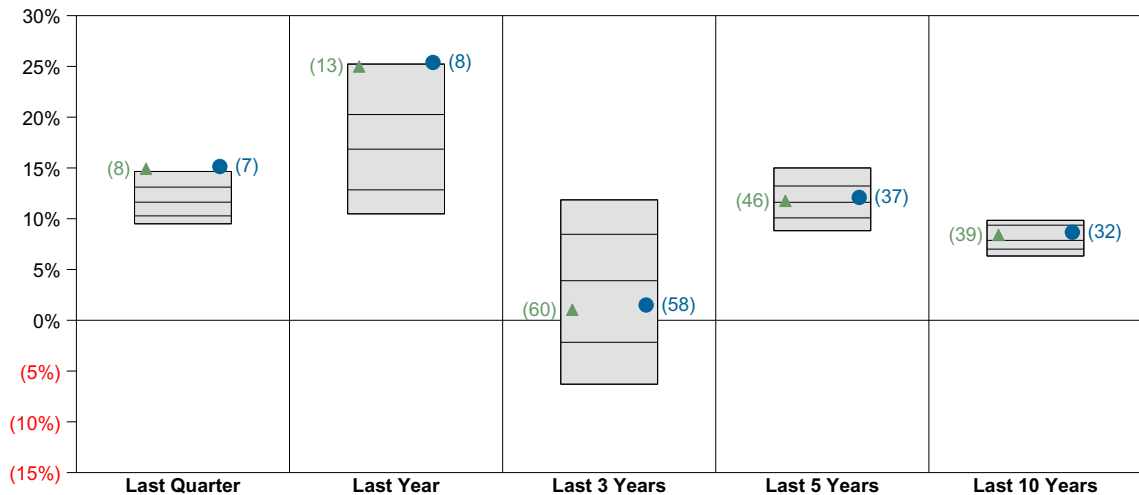
Investment Philosophy

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

Quarterly Summary and Highlights

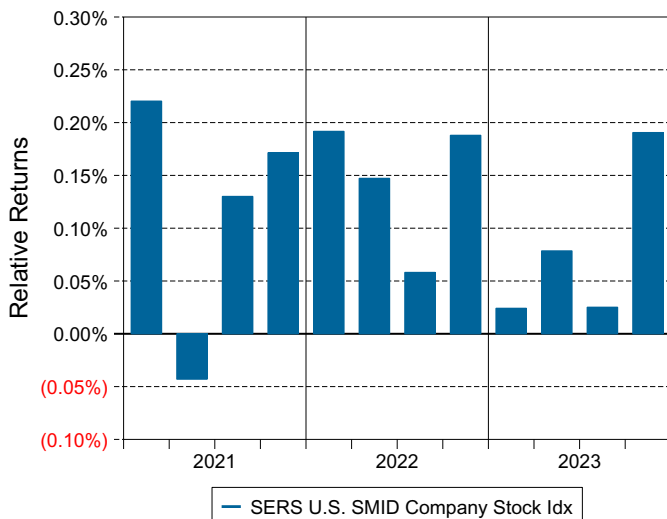
- SERS U.S. SMID Company Stock Idx's portfolio posted a 15.14% return for the quarter placing it in the 7 percentile of the Callan Small/MidCap Broad Mutual Funds group for the quarter and in the 8 percentile for the last year.
- SERS U.S. SMID Company Stock Idx's portfolio outperformed the Dow Jones US Completion by 0.22% for the quarter and outperformed the Dow Jones US Completion for the year by 0.40%.

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

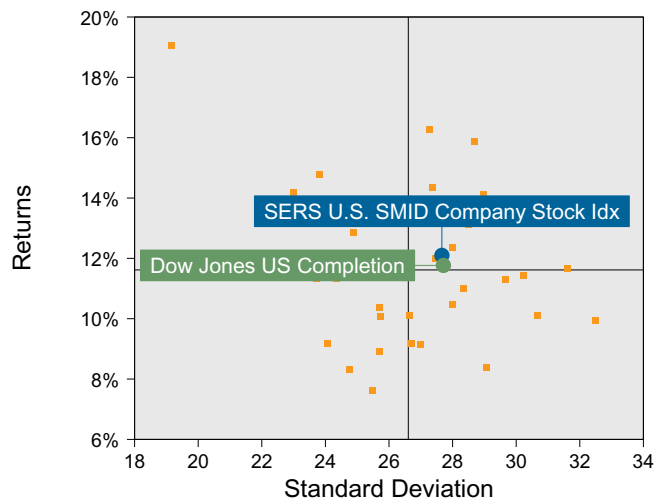


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	14.65	25.23	11.86	15.00	9.84
25th Percentile	13.11	20.26	8.47	13.22	9.37
Median	11.63	16.85	3.90	11.62	7.87
75th Percentile	10.28	12.84	(2.17)	10.09	7.01
90th Percentile	9.50	10.48	(6.30)	8.82	6.33
SERS U.S. SMID Company Stock Idx	15.14	25.39	1.50	12.10	8.67
Dow Jones US Completion	14.92	24.99	1.04	11.77	8.41

Relative Return vs Dow Jones US Completion



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

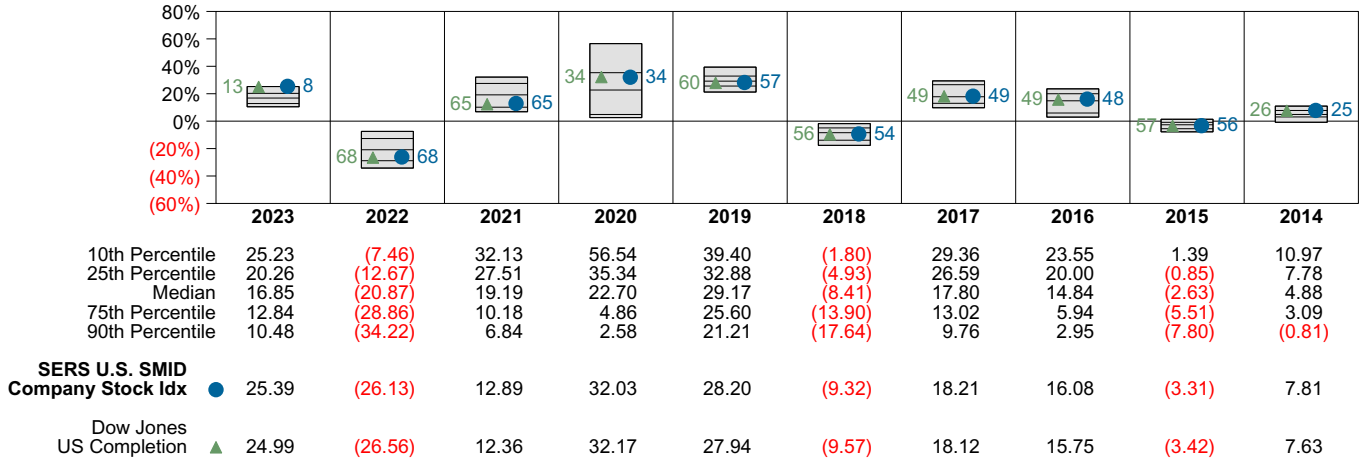


SERS U.S. SMID Company Stock Idx Return Analysis Summary

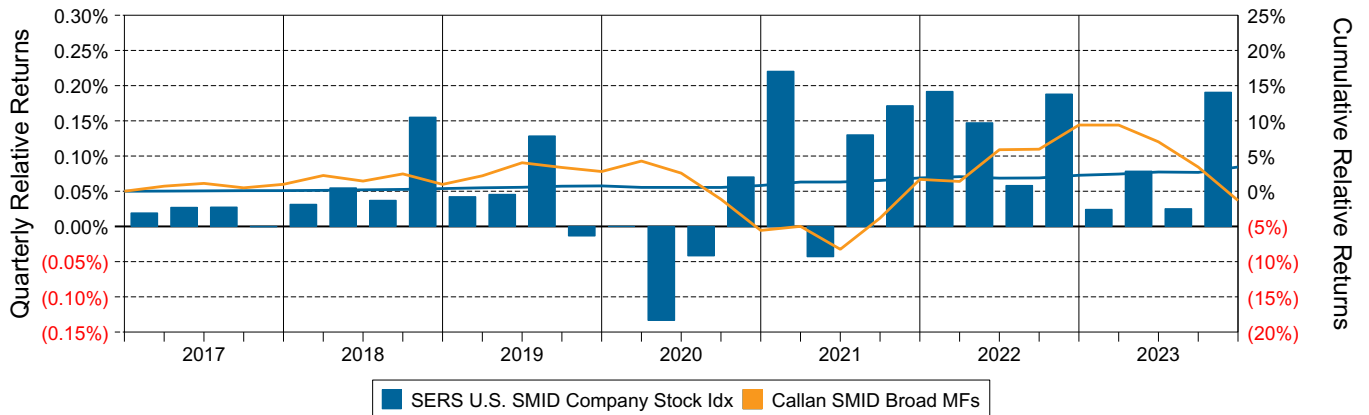
Return Analysis

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

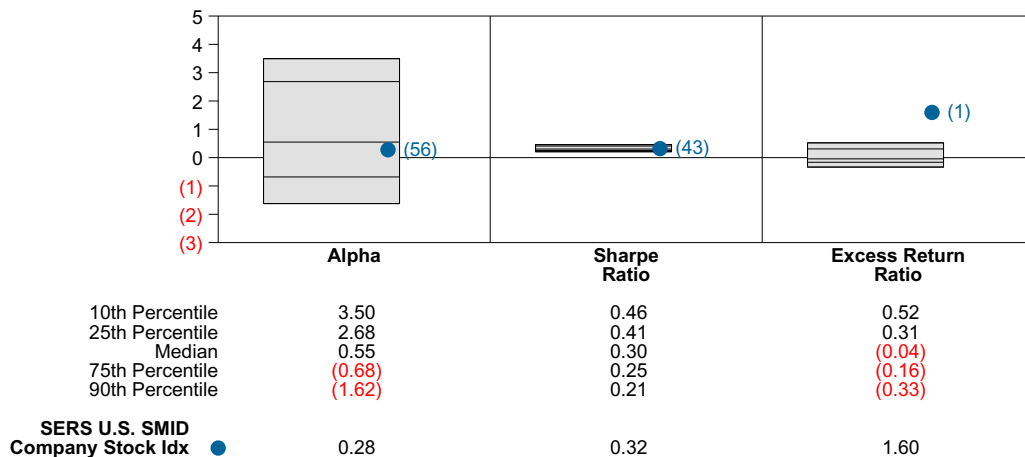
Performance vs Callan Small/MidCap Broad Mutual Funds (Institutional Net)



Cumulative and Quarterly Relative Returns vs Dow Jones US Completion



Risk Adjusted Return Measures vs Dow Jones US Completion Rankings Against Callan Small/MidCap Broad Mutual Funds (Institutional Net) Seven Years Ended December 31, 2023

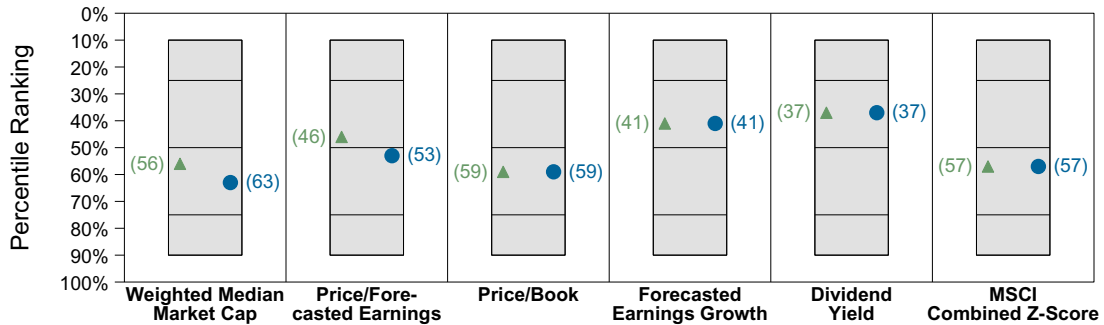


SERS U.S. SMID Company Idx Fund Equity Characteristics Analysis Summary

Portfolio Characteristics

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

Portfolio Characteristics Percentile Rankings Rankings Against Callan Small/MidCap Broad Mutual Funds as of December 31, 2023

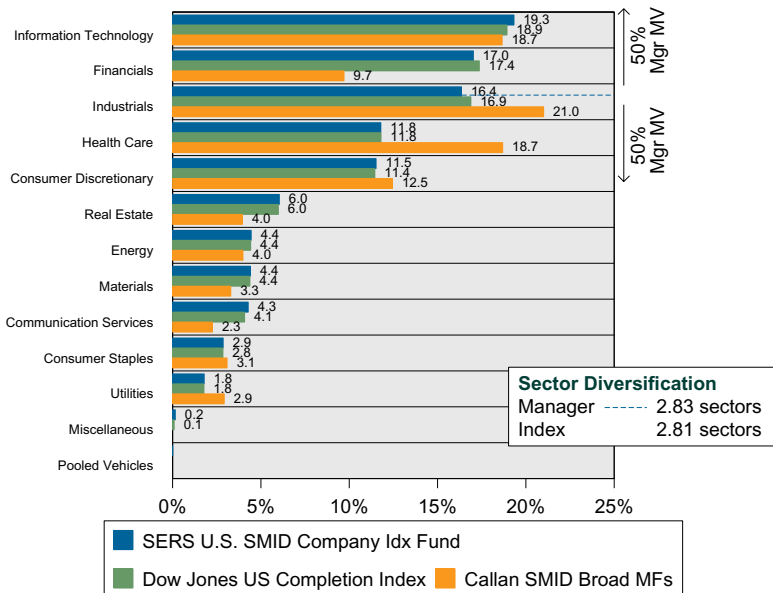


	Weighted Median Market Cap	Price/Forecasted Earnings	Price/Book	Forecasted Earnings Growth	Dividend Yield	MSCI Combined Z-Score
10th Percentile	14.04	35.88	5.13	23.04	1.99	0.85
25th Percentile	8.53	29.46	4.78	20.94	1.72	0.70
Median	6.88	22.12	3.10	15.54	0.61	0.28
75th Percentile	5.73	14.57	2.02	11.91	0.44	(0.45)
90th Percentile	3.23	12.70	1.62	7.12	0.26	(0.71)
SERS U.S. SMID Company Idx Fund	6.41	21.96	2.29	17.01	1.23	0.09
Dow Jones US Completion Index	6.62	22.27	2.32	17.02	1.23	0.10

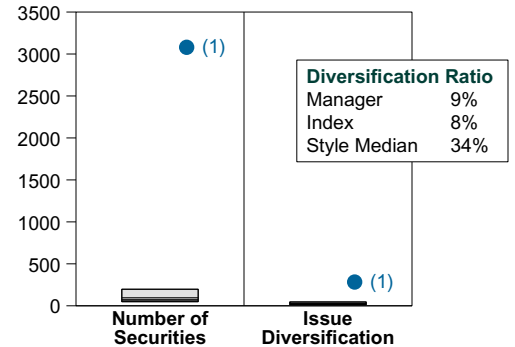
Sector Weights

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

Sector Allocation December 31, 2023



Diversification December 31, 2023



	Number of Securities	Issue Diversification
10th Percentile	197	46
25th Percentile	96	31
Median	77	26
75th Percentile	60	20
90th Percentile	49	14
SERS U.S. SMID Company Idx Fund	3080	283
Dow Jones US Completion Index	3614	281

SERS U.S. SMID Company Idx Fund Top 10 Portfolio Holdings Characteristics as of December 31, 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
Snowflake Inc Cl A	Information Technology	\$4,337,808	1.0%	30.27%	65.53	180.25	0.00%	-
CrowdStrike Hldgs Inc Cl A	Information Technology	\$3,815,934	0.9%	52.54%	58.12	69.80	0.00%	41.74%
Workday Inc Cl A	Information Technology	\$3,778,090	0.9%	28.49%	72.60	42.02	0.00%	27.10%
Kkr & Co Inc Cl A	Financials	\$3,635,819	0.8%	34.83%	73.32	17.25	0.80%	10.80%
Marvell Technology Group Ltd	Information Technology	\$3,440,329	0.8%	11.54%	52.14	30.63	0.40%	12.27%
Square Inc Cl A	Financials	\$2,830,954	0.7%	74.76%	42.82	25.29	0.00%	68.96%
Apollo Global Mgmt Inc	Financials	\$2,692,576	0.6%	4.34%	52.89	11.70	1.85%	19.70%
Cheniere Energy Inc	Energy	\$2,689,047	0.6%	3.13%	40.67	16.90	1.02%	23.30%
Atlassian A	Information Technology	\$2,437,698	0.6%	24.80%	36.87	86.78	0.00%	23.96%
Datadog Inc Cl A Com	Information Technology	\$2,424,875	0.6%	33.26%	36.68	66.66	0.00%	33.30%

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
Nkarta Inc Common Stock	Health Care	\$13,127	0.0%	375.17%	0.32	(2.79)	0.00%	-
Shattuck Labs Inc Com	Health Care	\$12,124	0.0%	368.84%	0.34	(3.73)	0.00%	-
Myomo Inc	Health Care	\$8,568	0.0%	352.00%	0.13	(32.75)	0.00%	-
Altimmune Inc	Health Care	\$47,975	0.0%	330.61%	0.60	(7.18)	0.00%	-
Porch Group Inc	Information Technology	\$17,748	0.0%	283.60%	0.30	(3.78)	0.00%	-
Absci Corp Common Stock Usd.0001	Health Care	\$20,367	0.0%	218.33%	0.39	(5.69)	0.00%	-
Alx Oncology Holdings Inc	Health Care	\$29,643	0.0%	210.19%	0.74	(4.37)	0.00%	-
Esperion Therapeutics Inc Ne	Health Care	\$28,291	0.0%	205.03%	0.34	(87.94)	0.00%	-
Pulse Biosciences Inc	Health Care	\$12,036	0.0%	203.74%	0.67	(18.46)	0.00%	-
C4 Therapeutics Inc	Health Care	\$17,198	0.0%	203.42%	0.28	(2.28)	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
Xwell Inc	Consumer Discretionary	\$860	0.0%	-	0.01	(0.66)	0.00%	-
T2 Biosystems Inc	Health Care	\$1,661	0.0%	-	0.03	(0.74)	0.00%	-
Qualigen Therapeutics Inc	Health Care	\$149	0.0%	-	0.00	(0.55)	0.00%	-
Ventyx Biosciences Inc Common Stock	Health Care	\$7,610	0.0%	(92.89)%	0.15	(0.86)	0.00%	-
Wheeler Real Estate Inv Tr	Real Estate	\$17	0.0%	(90.68)%	0.02	(0.01)	0.00%	-
Enviva Inc	Energy	\$1,992	0.0%	(86.68)%	0.07	(0.45)	0.00%	(3.83)%
Aclaris Therapeutics Inc	Health Care	\$3,523	0.0%	(84.67)%	0.07	(0.80)	0.00%	-
Faraday Futre Intlgt Elctr I Com Cl	Consumer Discretionary	\$166	0.0%	(82.35)%	0.03	(0.05)	0.00%	-
Reneo Pharmaceuticals	Health Care	\$2,726	0.0%	(78.99)%	0.05	(1.44)	0.00%	-
Sientra Inc	Health Care	\$270	0.0%	(78.31)%	0.01	(0.33)	0.00%	-

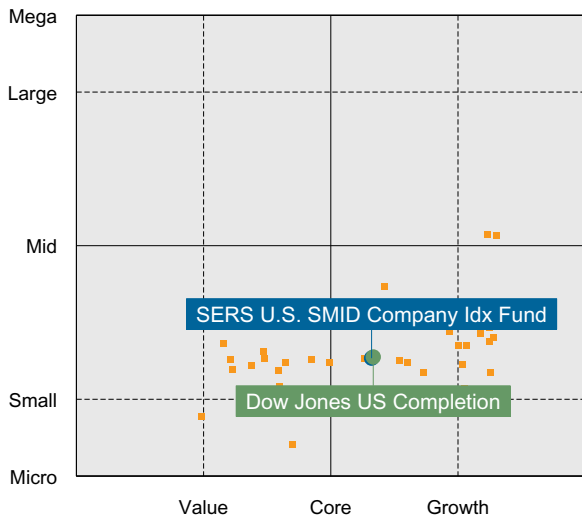
Historical Holdings Based Style Analysis

SERS U.S. SMID Company Idx Fund

For Three Years Ended December 31, 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.

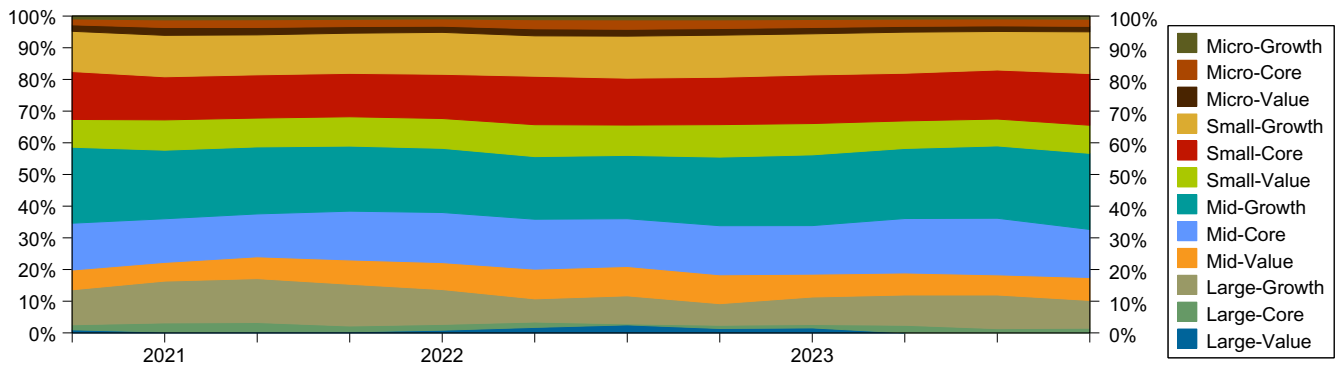
Average Style Map vs Callan SMID Broad MFs Holdings for Three Years Ended December 31, 2023



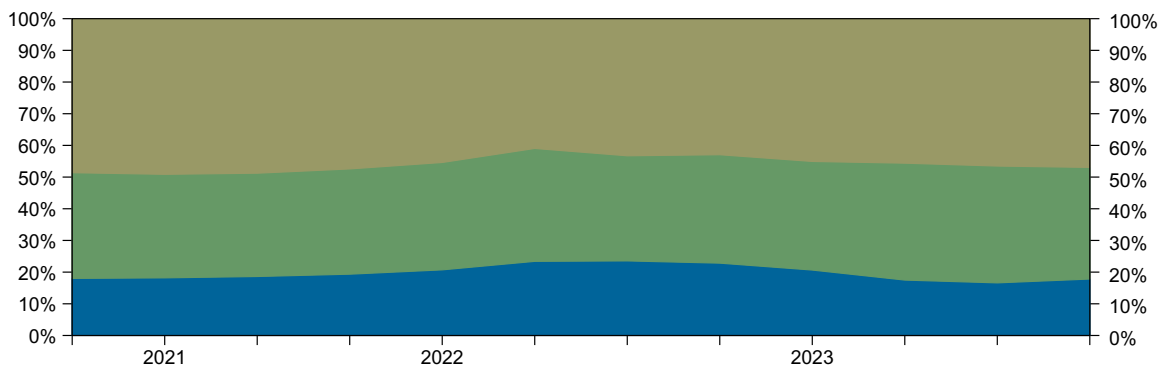
Average Style Exposure Matrix Holdings for Three Years Ended December 31, 2023

	0.8% (2)	1.7% (4)	10.2% (18)	12.8% (24)
Large	0.9% (2)	1.9% (4)	10.4% (18)	13.1% (24)
Mid	7.6% (66)	15.4% (139)	21.7% (168)	44.7% (373)
Small	9.3% (288)	14.8% (529)	12.9% (383)	37.0% (1200)
Micro	2.1% (556)	2.4% (728)	1.0% (238)	5.5% (1522)
Total	19.8% (912)	34.3% (1400)	45.9% (807)	100.0% (3119)
	19.5% (1067)	34.5% (1703)	46.0% (869)	100.0% (3639)
	Value	Core	Growth	Total

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



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



SERS Global Non-U.S. Index Fund

Period Ended December 31, 2023

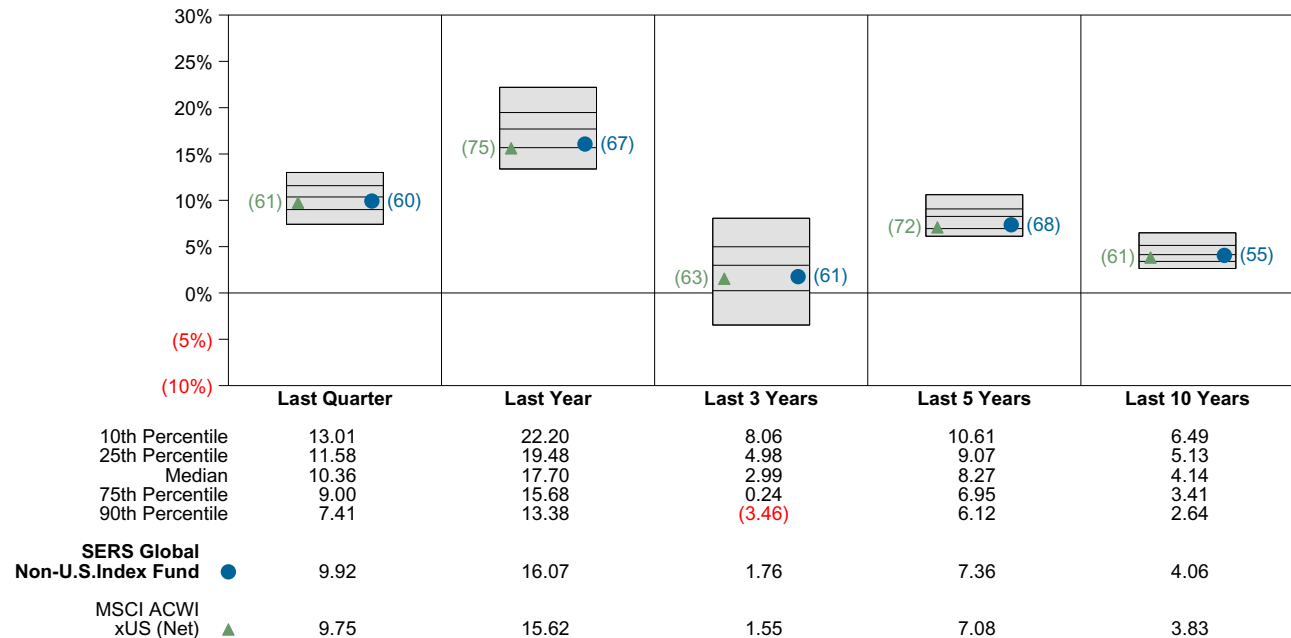
Investment Philosophy

The Global Non-U.S. Stock Index Fund seeks to track the performance of the MSCI All Country World Index (ACWI) ex-U.S. Index. In meeting this objective, the assets of the Fund may be invested in securities, and a combination of other collective funds that are designed to track the performance of such Index. The Fund will principally invest in a combination of other affiliated bank collective funds, equity securities and derivatives, including common stock of foreign companies, depository receipts, financial futures and over-the-counter derivatives that represent developed and emerging market equity securities. This fund is managed by Mellon Capital Management. The Global Non-U.S. Stock Index Fund replaced the International Company Stock Index Fund in 1Q20.

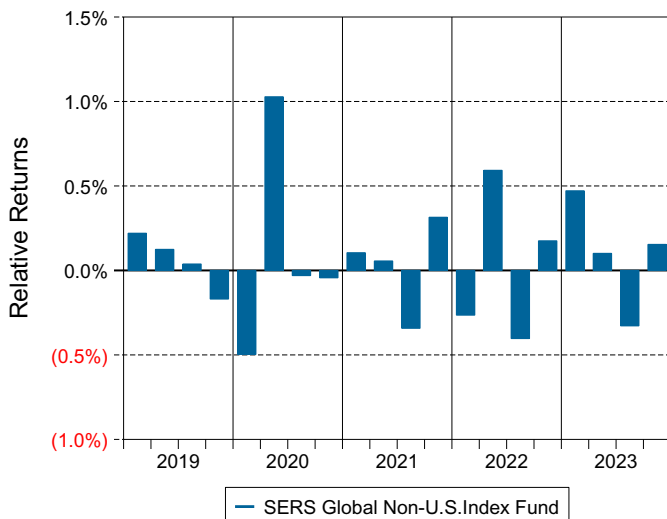
Quarterly Summary and Highlights

- SERS Global Non-U.S. Index Fund's portfolio posted a 9.92% return for the quarter placing it in the 60 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 67 percentile for the last year.
- SERS Global Non-U.S. Index Fund's portfolio outperformed the MSCI ACWI xUS (Net) by 0.17% for the quarter and outperformed the MSCI ACWI xUS (Net) for the year by 0.46%.

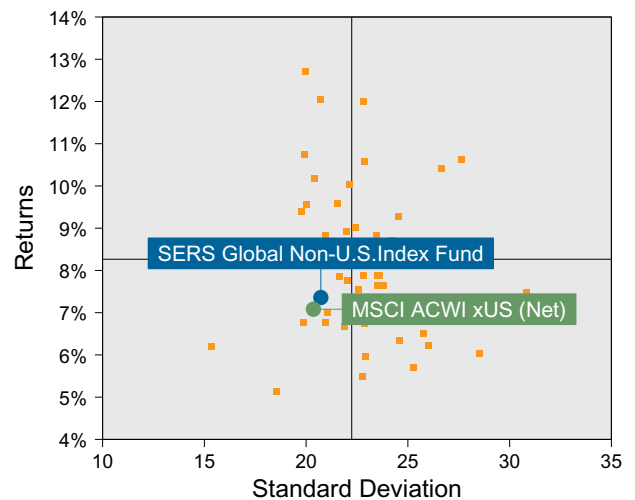
Performance vs Callan Non US Equity Mutual Funds (Institutional Net)



Relative Return vs MSCI ACWI xUS (Net)



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

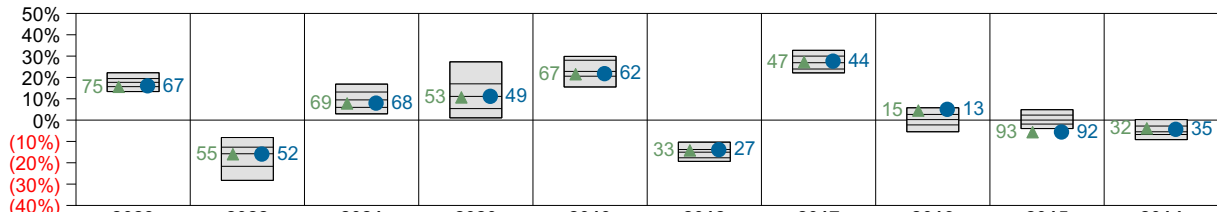


SERS Global Non-U.S.Index Fund Return Analysis Summary

Return Analysis

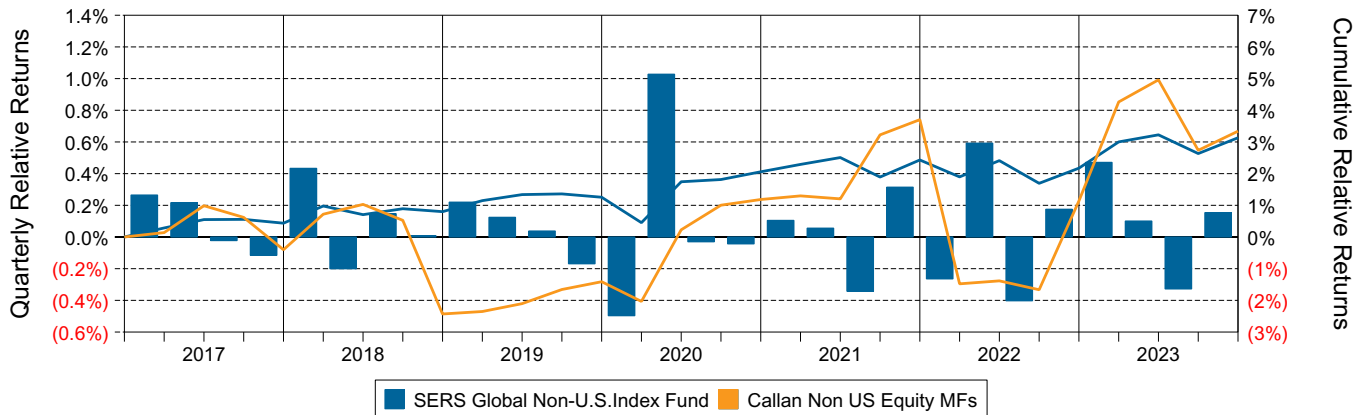
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

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

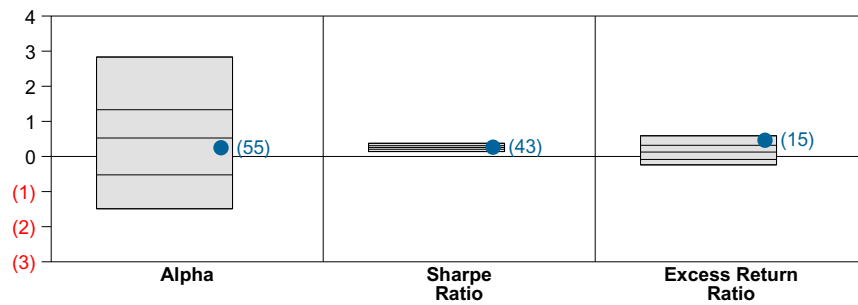


	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
10th Percentile	22.20	(8.17)	16.88	27.31	29.86	(10.33)	32.71	5.78	4.89	0.25
25th Percentile	19.48	(12.68)	13.17	17.00	28.07	(13.79)	30.00	2.66	2.35	(2.78)
Median	17.70	(15.77)	9.47	11.12	22.83	(15.04)	26.90	0.23	0.02	(5.48)
75th Percentile	15.68	(21.67)	5.98	5.40	20.57	(17.67)	23.95	(2.25)	(1.86)	(6.75)
90th Percentile	13.38	(28.25)	2.94	1.05	15.53	(19.35)	22.13	(5.47)	(3.96)	(9.16)
SERS Global Non-U.S.Index Fund	● 16.07	(15.92)	7.97	11.15	21.77	(13.86)	27.63	5.05	(5.57)	(4.31)
MSCI ACWI xUS (Net)	▲ 15.62	(16.00)	7.82	10.65	21.51	(14.20)	27.19	4.50	(5.66)	(3.87)

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



Risk Adjusted Return Measures vs MSCI ACWI xUS (Net) Rankings Against Callan Non US Equity Mutual Funds (Institutional Net) Seven Years Ended December 31, 2023



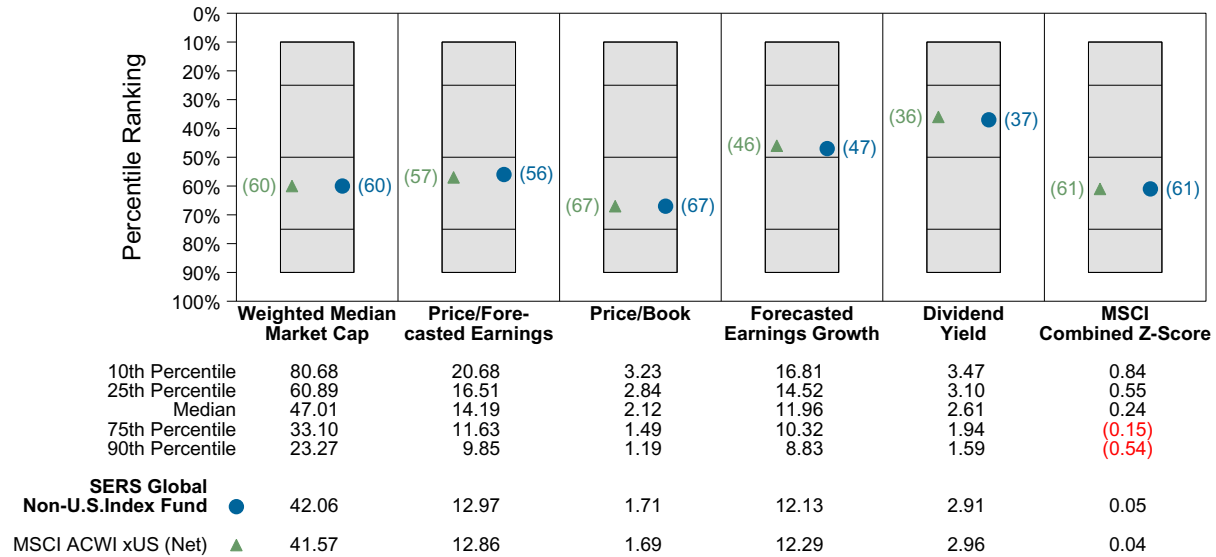
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	2.83	0.38	0.59
25th Percentile	1.33	0.31	0.32
Median	0.53	0.26	0.13
75th Percentile	(0.52)	0.21	(0.08)
90th Percentile	(1.49)	0.14	(0.24)
SERS Global Non-U.S.Index Fund	● 0.25	0.26	0.46

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

Portfolio Characteristics

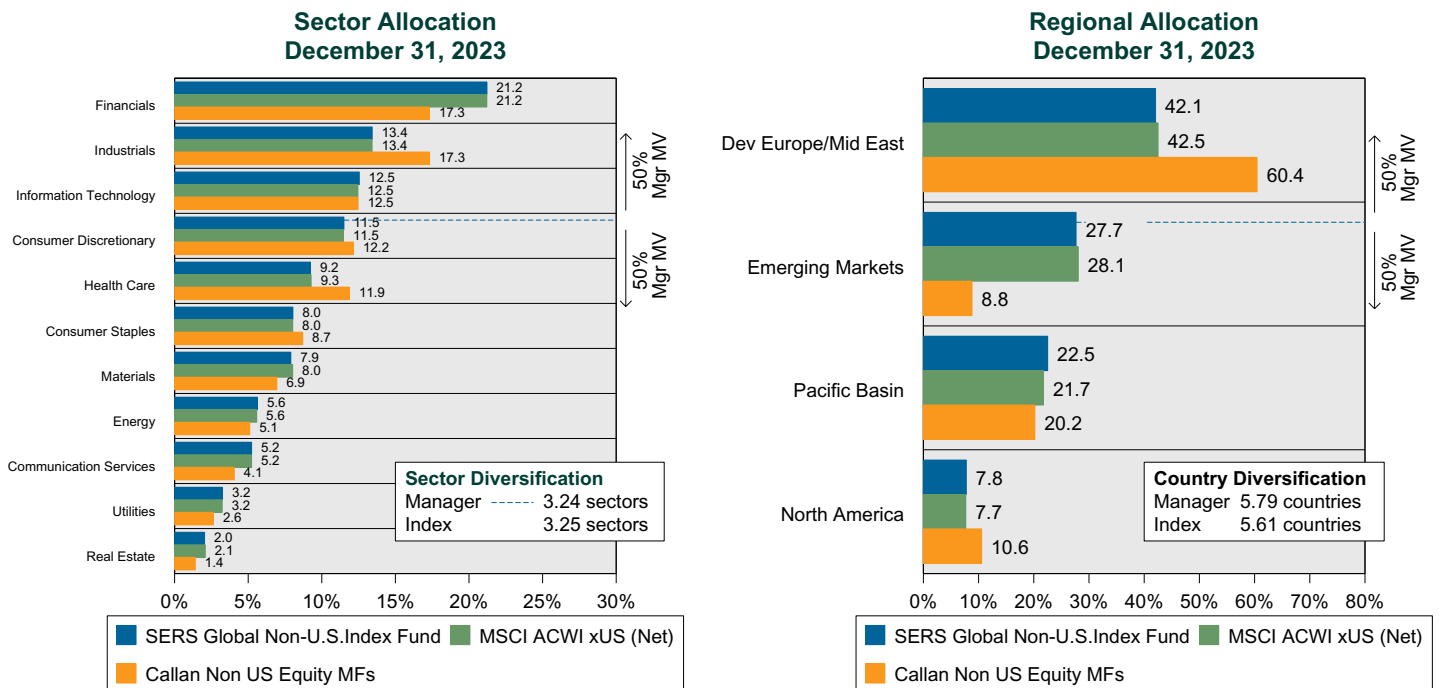
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan Non US Equity Mutual Funds as of December 31, 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.



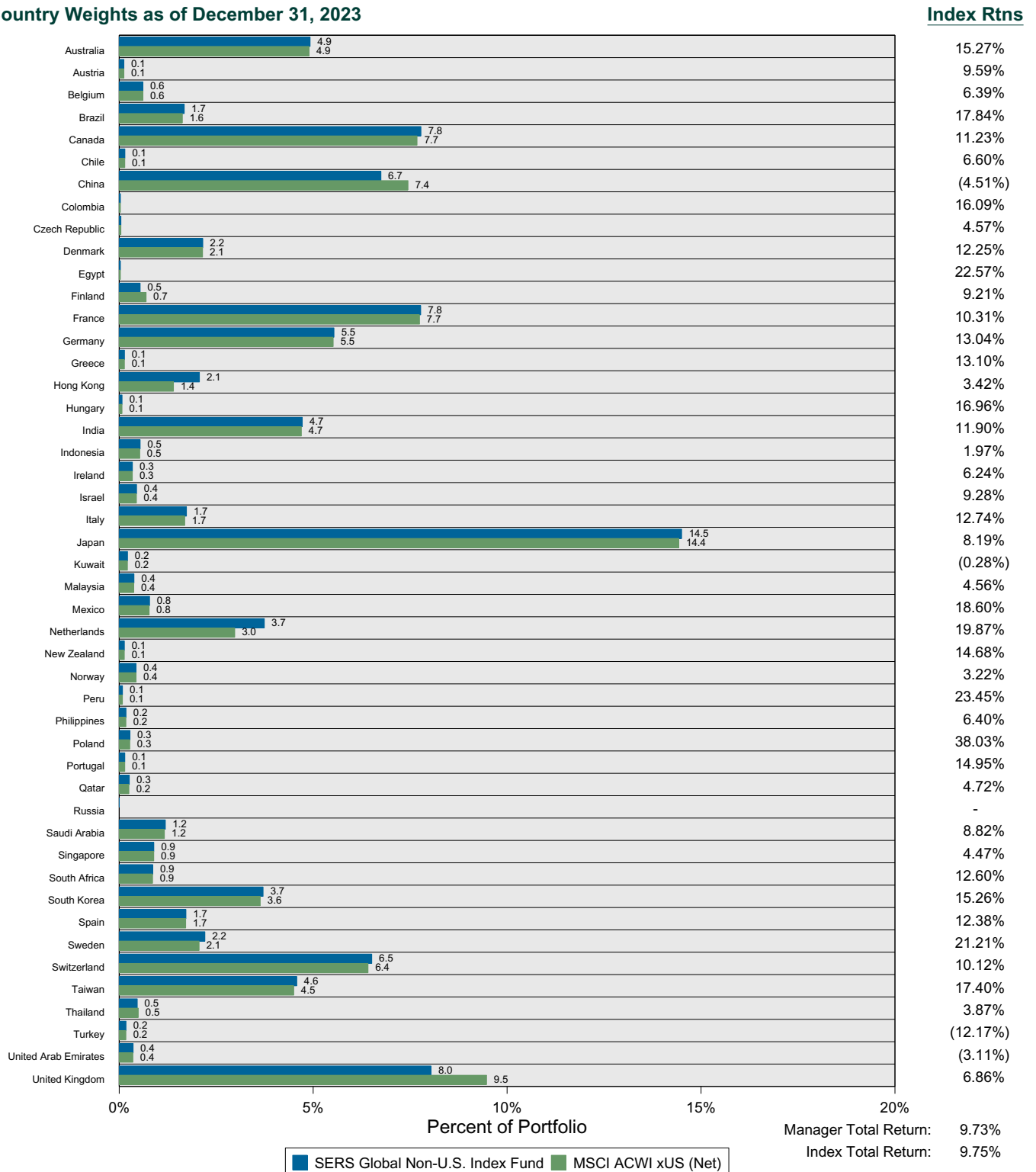
Country Allocation

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 December 31, 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 December 31, 2023



SERS Global Non-U.S. Index Fund Top 10 Portfolio Holdings Characteristics as of December 31, 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	\$3,859,798	1.9%	19.87%	501.06	15.76	2.03%	4.70%
Nestle S A Shs Nom New	Consumer Staples	\$2,469,006	1.2%	2.16%	309.33	19.17	2.93%	4.95%
Asml Holding N V Asml Rev Stk Spl	Information Technology	\$2,423,065	1.2%	27.54%	303.59	34.70	0.87%	20.64%
Samsung Electronics Co Ltd Ord	Information Technology	\$2,359,223	1.2%	20.88%	363.87	17.26	1.83%	(6.00)%
Tencent Holdings Limited Shs Par Hkd	Communication Services	\$2,023,079	1.0%	(1.89)%	356.56	14.15	0.82%	27.00%
Lvmh Moet Hennessy Lou Vuitt Ord	Consumer Discretionary	\$1,784,263	0.9%	7.68%	406.86	22.09	1.68%	6.99%
Astrazeneca Plc Ord	Health Care	\$1,668,870	0.8%	(0.28)%	209.44	16.16	2.24%	11.60%
Novartis	Health Care	\$1,648,106	0.8%	3.68%	242.30	14.11	3.65%	10.96%
Roche Hldgs Ag Basel Div Rts Ctf	Health Care	\$1,629,018	0.8%	6.11%	204.09	12.27	3.76%	2.25%
Toyota Motor Corp	Consumer Discretionary	\$1,553,779	0.8%	3.54%	299.79	8.40	2.40%	24.60%

10 Best Performers

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Compania De Minas Buenaventu Sponsor	Materials	\$25,887	0.0%	83.54%	3.70	119.51	0.51%	-
Aac Technologies Holdings In Shs New	Information Technology	\$17,745	0.0%	77.15%	3.56	21.37	0.52%	(31.22)%
Harmony Gold Mining Co	Materials	\$29,388	0.0%	74.99%	4.05	8.06	0.78%	44.45%
Companhia Siderurgica Nacion Ord	Materials	\$21,608	0.0%	74.78%	5.62	13.73	12.46%	(11.05)%
Silergy	Information Technology	\$43,083	0.0%	72.71%	6.25	66.76	0.89%	12.75%
Adyen NV Common Stock	Financials	\$222,302	0.1%	72.48%	39.98	46.58	0.00%	21.52%
Lasertec	Information Technology	\$158,500	0.1%	69.41%	24.86	49.38	0.46%	65.37%
Bank of Polska Kasa Opieki Shs	Financials	\$57,723	0.0%	67.20%	10.15	7.57	2.37%	21.90%
Adani Green Energy Ltd	Utilities	\$49,187	0.0%	61.44%	30.40	158.60	0.00%	-
Pko Bank Polski	Financials	\$90,269	0.0%	60.88%	16.00	7.77	3.58%	6.36%

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
First Quantum Minerals Ltd	Materials	\$38,844	0.0%	(65.33)%	5.71	18.29	1.88%	(17.00)%
Hellofresh	Consumer Staples	\$19,928	0.0%	(46.83)%	2.75	13.04	0.00%	31.24%
Alstom	Industrials	\$30,666	0.0%	(43.78)%	5.17	7.34	2.03%	(10.79)%
Worldline	Financials	\$34,123	0.0%	(38.65)%	4.90	7.57	0.00%	10.29%
Xtep International Holding L Shs	Consumer Discretionary	\$6,845	0.0%	(37.85)%	1.49	8.07	4.71%	(1.05)%
Sany Heavy Equip Intl Hldg L Shs	Industrials	\$9,203	0.0%	(37.60)%	3.08	7.44	2.52%	12.38%
Koza Altin Isletmeleri	Materials	\$4,960	0.0%	(37.01)%	2.12	9.85	2.10%	47.06%
Li Ning Company Limited Shs	Consumer Discretionary	\$50,916	0.0%	(35.10)%	7.03	11.02	3.35%	5.20%
Tofas Turk Otomobil Fabrikas Shs	Consumer Discretionary	\$7,546	0.0%	(34.03)%	3.56	5.06	2.93%	77.93%
China Overseas Property Hold Common	Real Estate	\$7,957	0.0%	(32.17)%	2.47	9.15	2.30%	19.80%

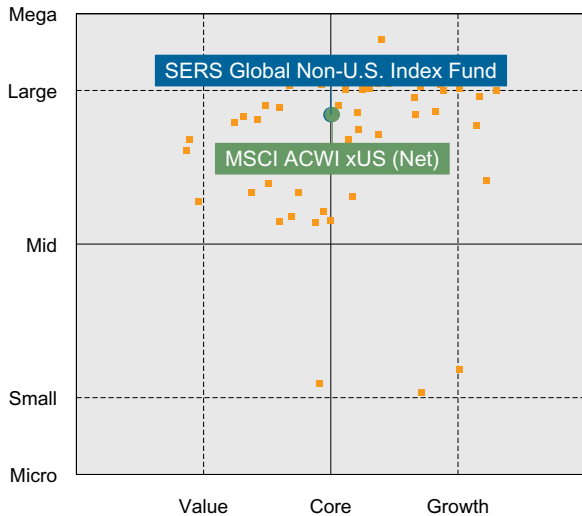
Historical Holdings Based Style Analysis

SERS Global Non-U.S. Index Fund

For Three Years Ended December 31, 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.

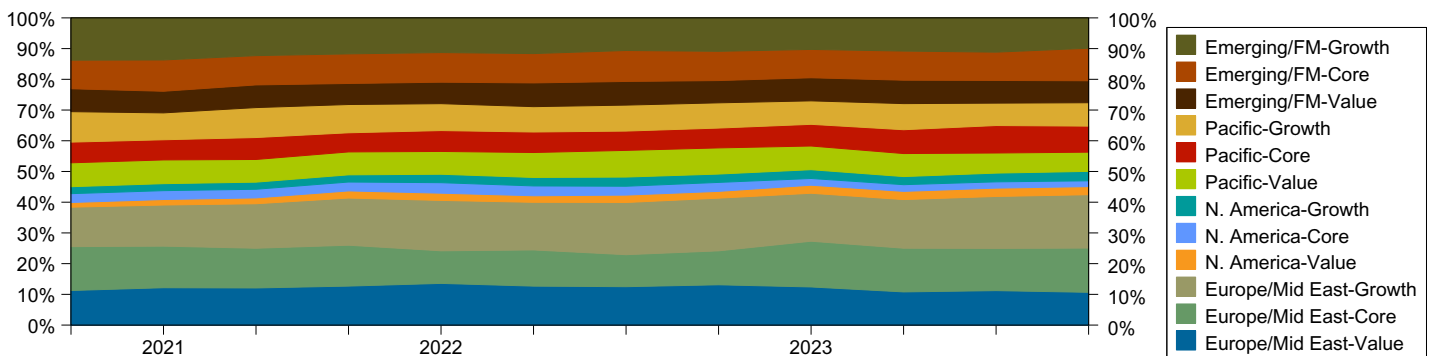
Average Style Map vs Callan Non US Equity MFs Holdings for Three Years Ended December 31, 2023



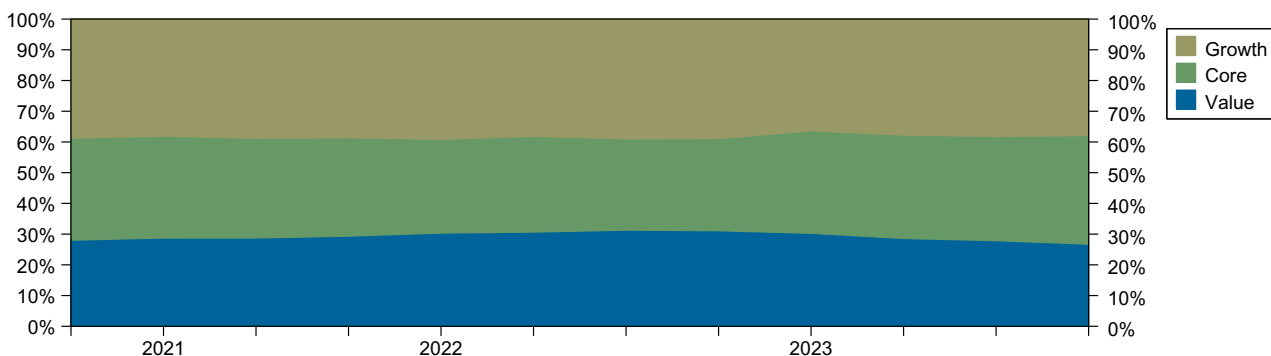
Average Style Exposure Matrix Holdings for Three Years Ended December 31, 2023

Europe/ Mid East	12.1% (141)	12.9% (127)	15.7% (145)	40.7% (413)
	12.1% (150)	12.5% (129)	16.0% (159)	40.5% (438)
N. America	2.3% (25)	2.7% (28)	2.7% (30)	7.6% (83)
	2.4% (27)	2.6% (30)	2.7% (33)	7.7% (90)
Pacific	7.6% (135)	7.1% (116)	8.5% (122)	23.2% (373)
	7.5% (136)	7.1% (116)	8.3% (122)	22.8% (374)
Emerging/ FM	7.3% (408)	9.7% (390)	11.5% (411)	28.5% (1209)
	7.4% (441)	9.8% (432)	11.8% (463)	29.0% (1336)
Total	29.3% (709)	32.4% (661)	38.3% (708)	100.0% (2078)
	29.3% (754)	32.0% (707)	38.7% (777)	100.0% (2238)
	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 December 31, 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: a group that contains STIF, enhanced cash, and money market funds.

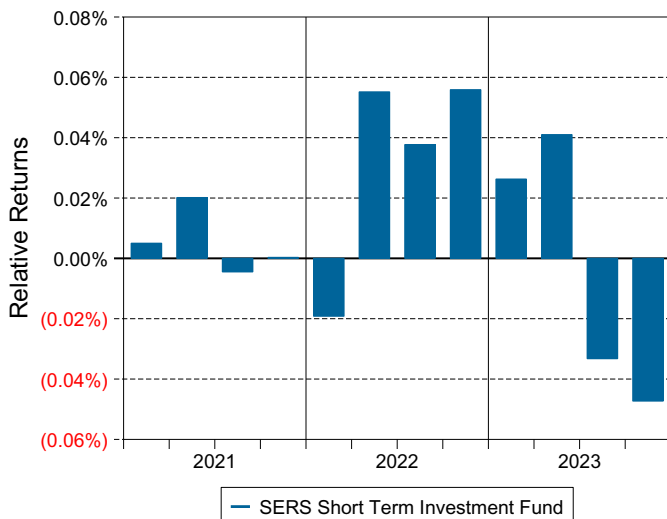
Quarterly Summary and Highlights

- SERS Short Term Investment Fund's portfolio posted a 1.32% return for the quarter placing it in the 96 percentile of the Callan Cash Database group for the quarter and in the 89 percentile for the last year.
- SERS Short Term Investment Fund's portfolio underperformed the 3-month Treasury Bill by 0.05% for the quarter and underperformed the 3-month Treasury Bill for the year by 0.01%.

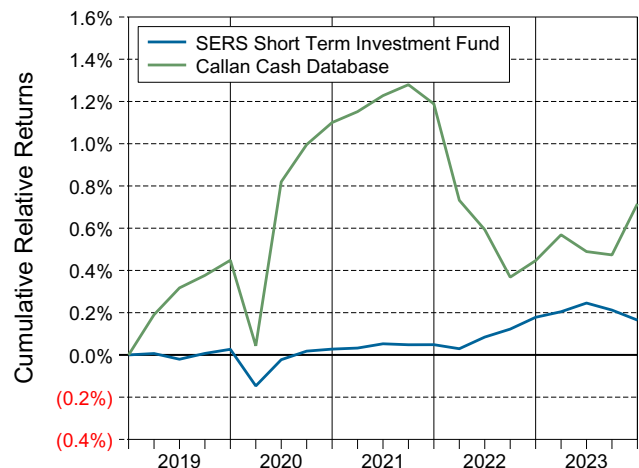
Performance vs Callan Cash Database (Gross)



Relative Return vs 3-month Treasury Bill



Cumulative Returns vs 3-month Treasury Bill

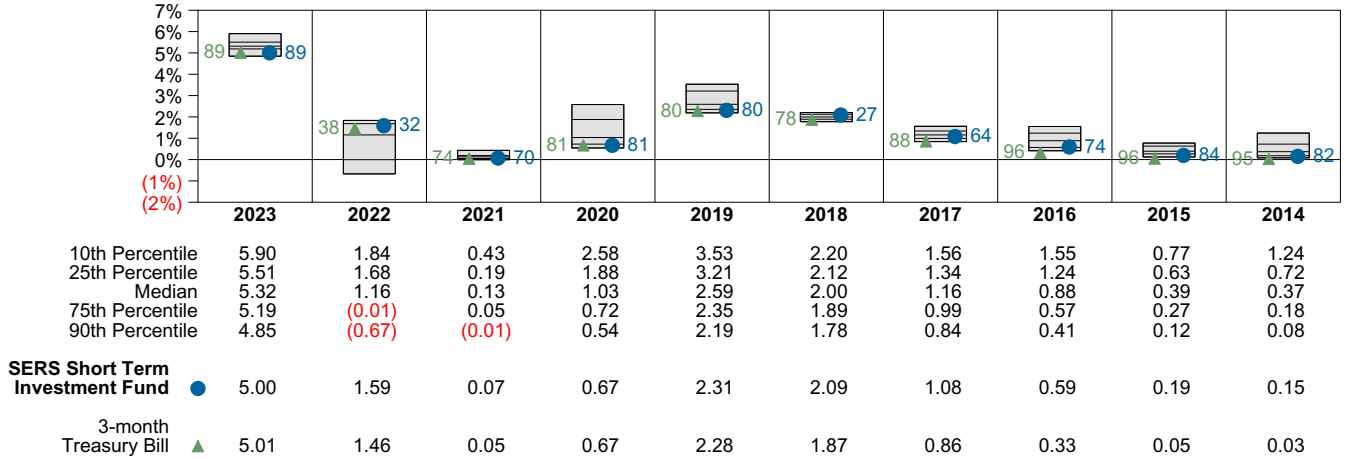


SERS Short Term Investment Fund Return Analysis Summary

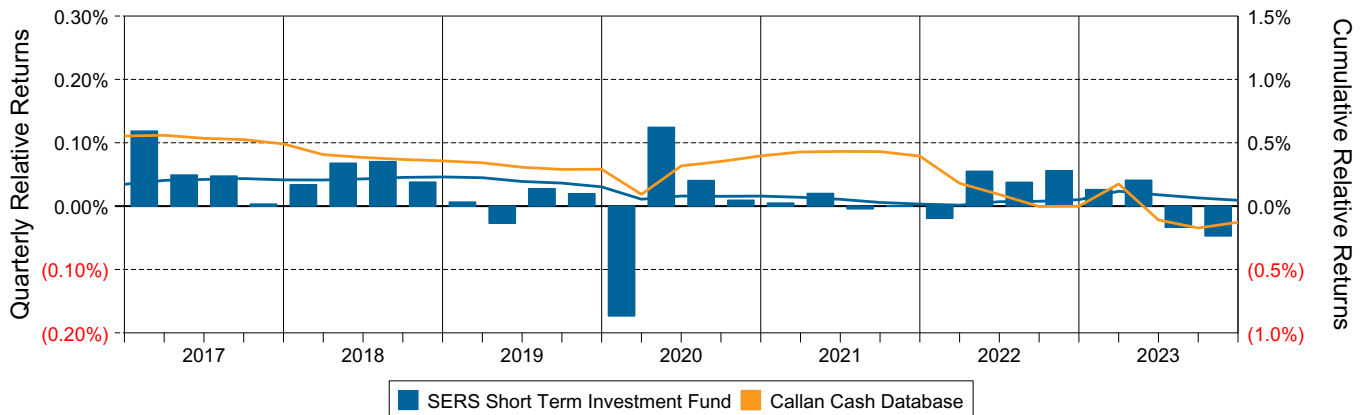
Return Analysis

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

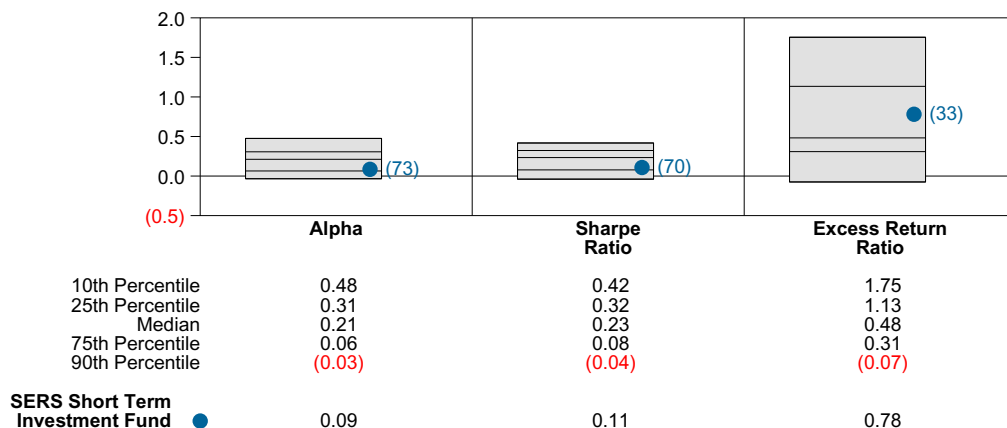
Performance vs Callan Cash Database (Gross)



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



Risk Adjusted Return Measures vs 3-month Treasury Bill Rankings Against Callan Cash Database (Gross) Seven Years Ended December 31, 2023



SERS Stable Value Fund

Period Ended December 31, 2023

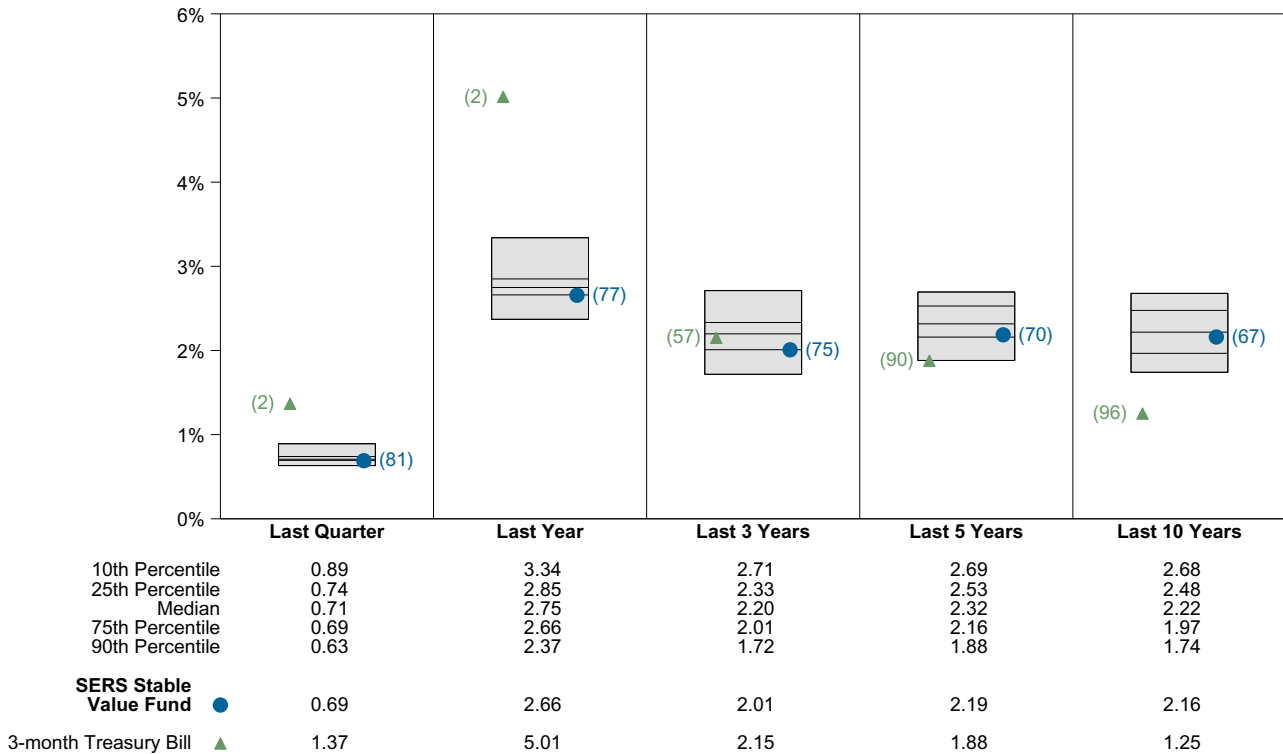
Investment Philosophy

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

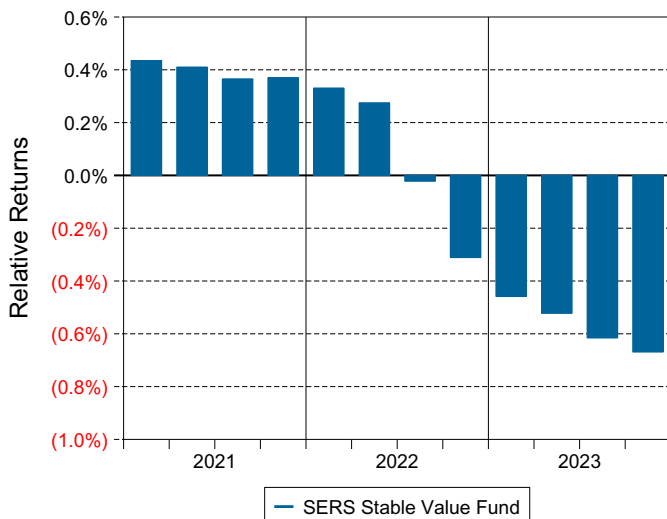
Quarterly Summary and Highlights

- SERS Stable Value Fund's portfolio posted a 0.69% return for the quarter placing it in the 81 percentile of the Callan Stable Value SA group for the quarter and in the 77 percentile for the last year.
- SERS Stable Value Fund's portfolio underperformed the 3-month Treasury Bill by 0.68% for the quarter and underperformed the 3-month Treasury Bill for the year by 2.36%.

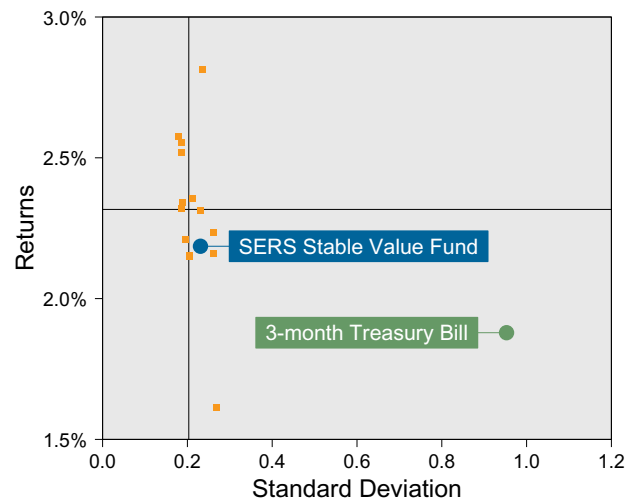
Performance vs Callan Stable Value SA (Gross)



Relative Return vs 3-month Treasury Bill



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

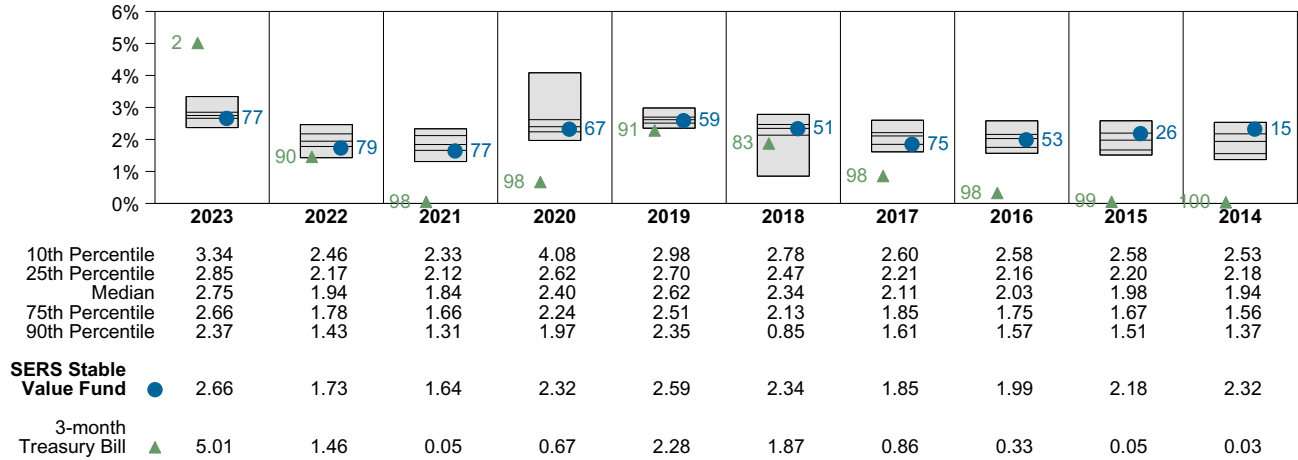


SERS Stable Value Fund Return Analysis Summary

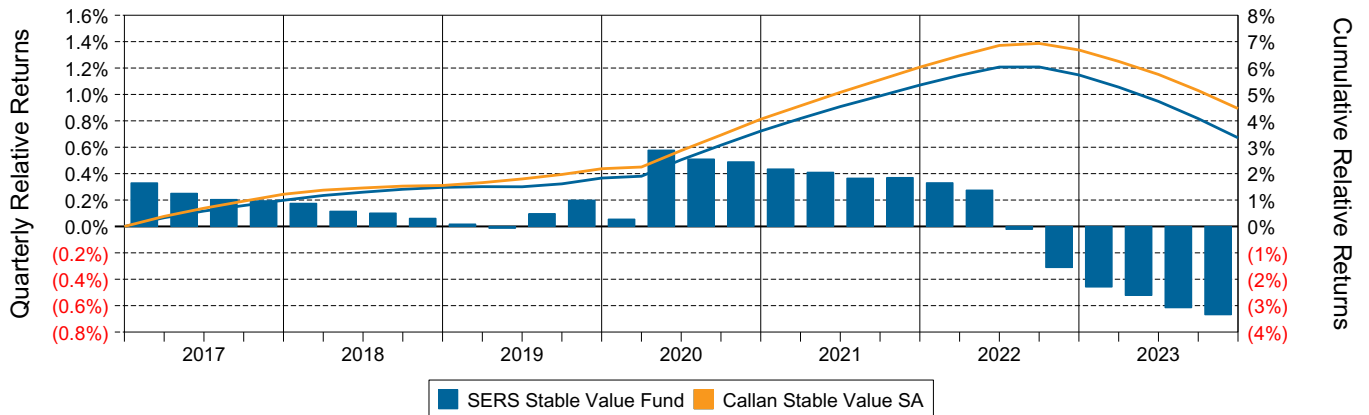
Return Analysis

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

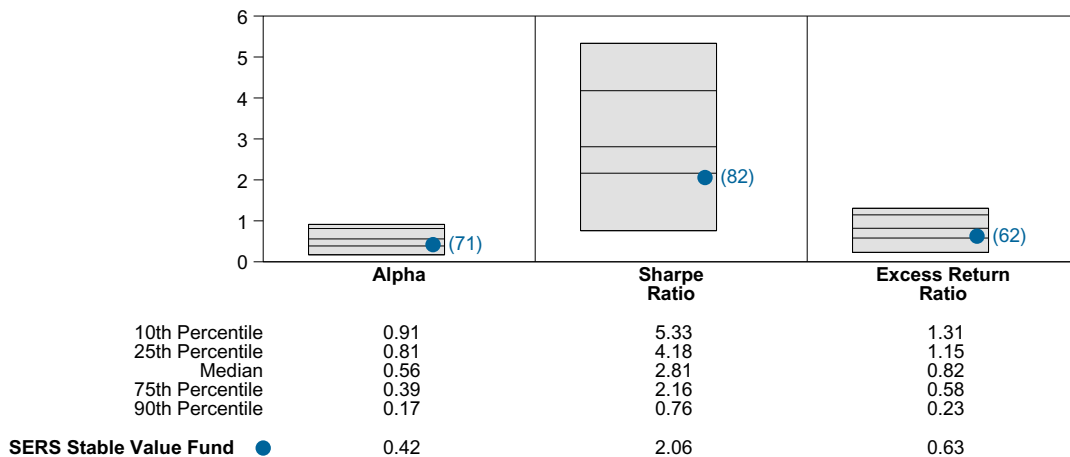
Performance vs Callan Stable Value SA (Gross)



Cumulative and Quarterly Relative Returns vs 3-month Treasury Bill



Risk Adjusted Return Measures vs 3-month Treasury Bill Rankings Against Callan Stable Value SA (Gross) Seven Years Ended December 31, 2023



SERS U.S. Bond Index Fund

Period Ended December 31, 2023

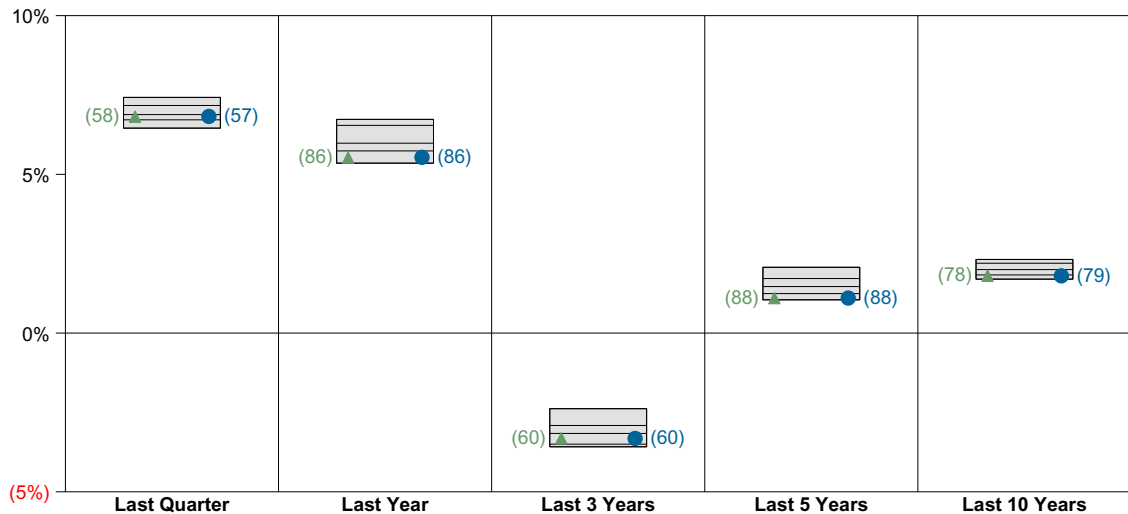
Investment Philosophy

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 6.82% return for the quarter placing it in the 57 percentile of the Callan Core Bond Mutual Funds group for the quarter and in the 86 percentile for the last year.
- SERS U.S. Bond Index Fund's portfolio outperformed the Blmbg:Aggregate by 0.01% for the quarter and outperformed the Blmbg:Aggregate for the year by 0.01%.

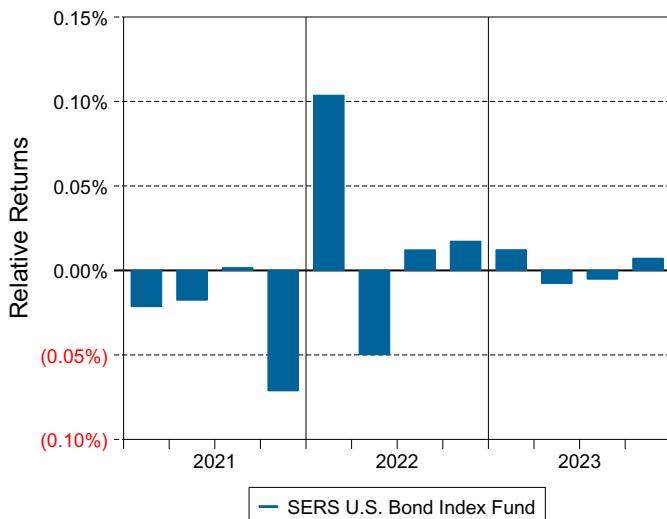
Performance vs Callan Core Bond Mutual Funds (Institutional Net)



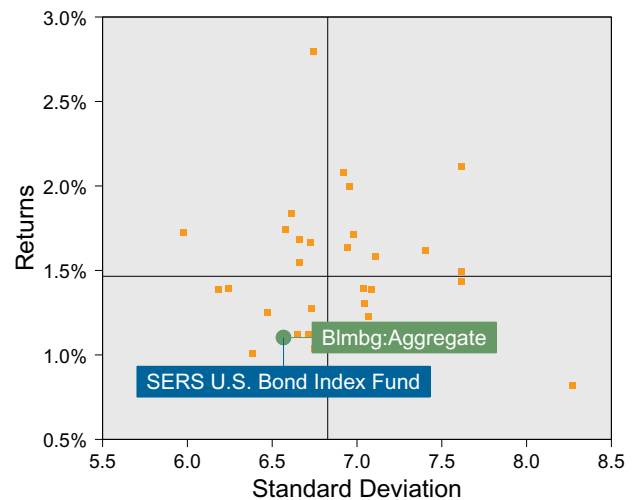
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	7.42	6.73	(2.38)	2.07	2.32
25th Percentile	7.17	6.54	(2.91)	1.72	2.20
Median	6.88	5.98	(3.16)	1.47	2.00
75th Percentile	6.72	5.74	(3.50)	1.24	1.83
90th Percentile	6.46	5.35	(3.58)	1.05	1.70
SERS U.S. Bond Index Fund	6.82	5.54	(3.32)	1.10	1.80
Blmbg:Aggregate	6.82	5.53	(3.31)	1.10	1.81

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
SERS U.S. Bond Index Fund	6.82	5.54	(3.32)	1.10	1.80
Blmbg:Aggregate	6.82	5.53	(3.31)	1.10	1.81

Relative Return vs Blmbg:Aggregate



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

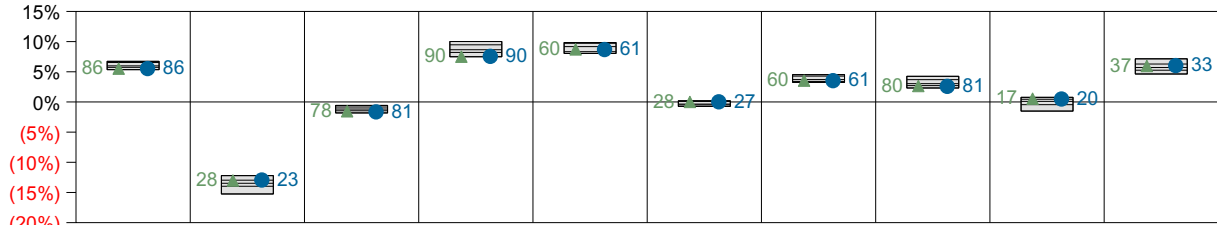


SERS U.S. Bond Index Fund Return Analysis Summary

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.

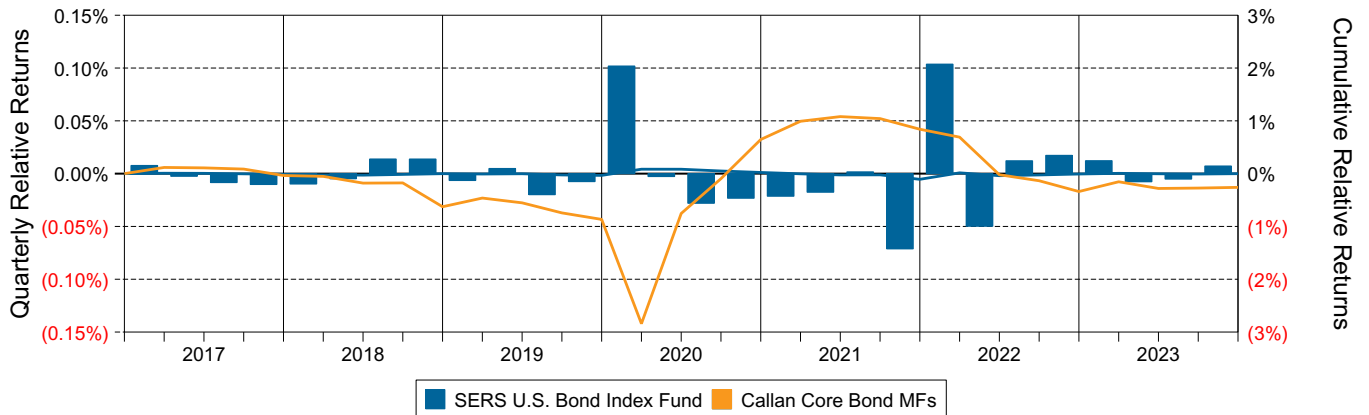
Performance vs Callan Core Bond Mutual Funds (Institutional Net)



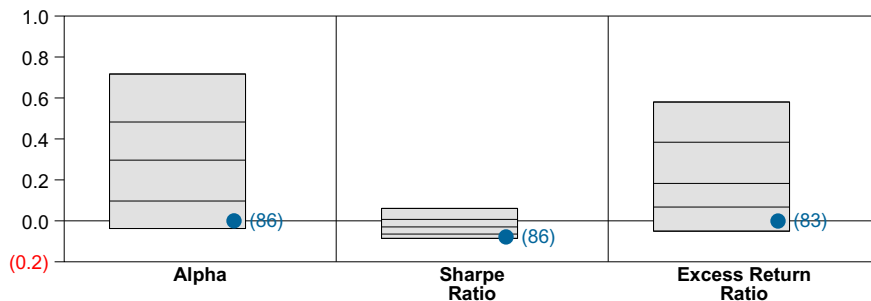
10th Percentile	6.73	(12.21)	(0.57)	10.01	9.85	0.20	4.52	4.25	0.77	7.15
25th Percentile	6.54	(12.96)	(0.84)	9.47	9.72	0.09	4.28	3.70	0.45	6.29
Median	5.98	(13.48)	(1.17)	8.65	9.17	(0.35)	3.71	3.03	0.10	5.71
75th Percentile	5.74	(13.97)	(1.46)	8.21	8.33	(0.49)	3.40	2.71	(0.45)	5.26
90th Percentile	5.35	(15.25)	(1.82)	7.49	8.04	(0.73)	3.25	2.31	(1.52)	4.63

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
SERS U.S. Bond Index Fund	5.54	(12.94)	(1.65)	7.56	8.69	0.02	3.53	2.59	0.49	6.03
Blmbg:Aggregate	5.53	(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 December 31, 2023



10th Percentile	0.72	0.06	0.58
25th Percentile	0.48	0.01	0.38
Median	0.30	(0.03)	0.18
75th Percentile	0.10	(0.06)	0.07
90th Percentile	(0.04)	(0.09)	(0.05)
SERS U.S. Bond Index Fund	(0.00)	(0.08)	(0.00)

SERS U.S. Bond Index Fund

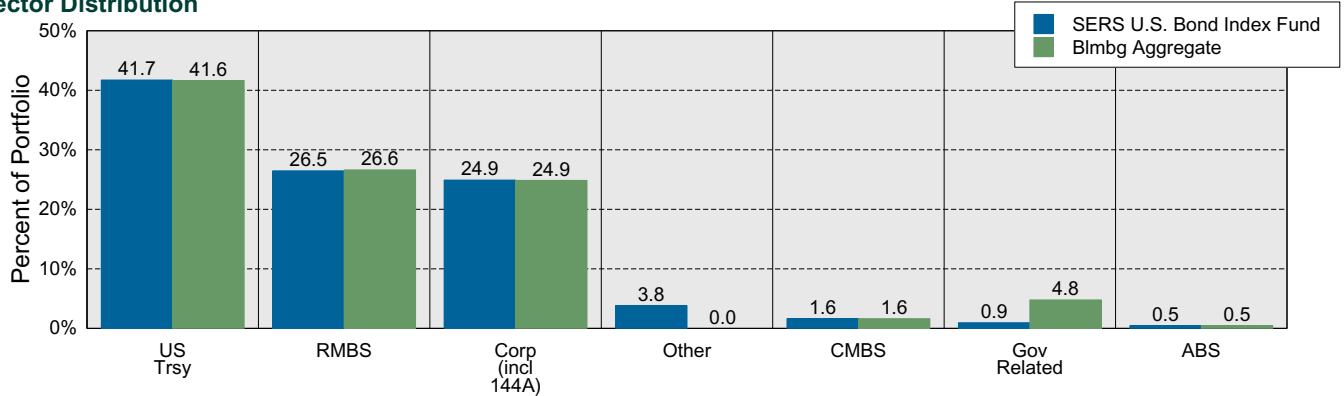
Portfolio Characteristics Summary

As of December 31, 2023

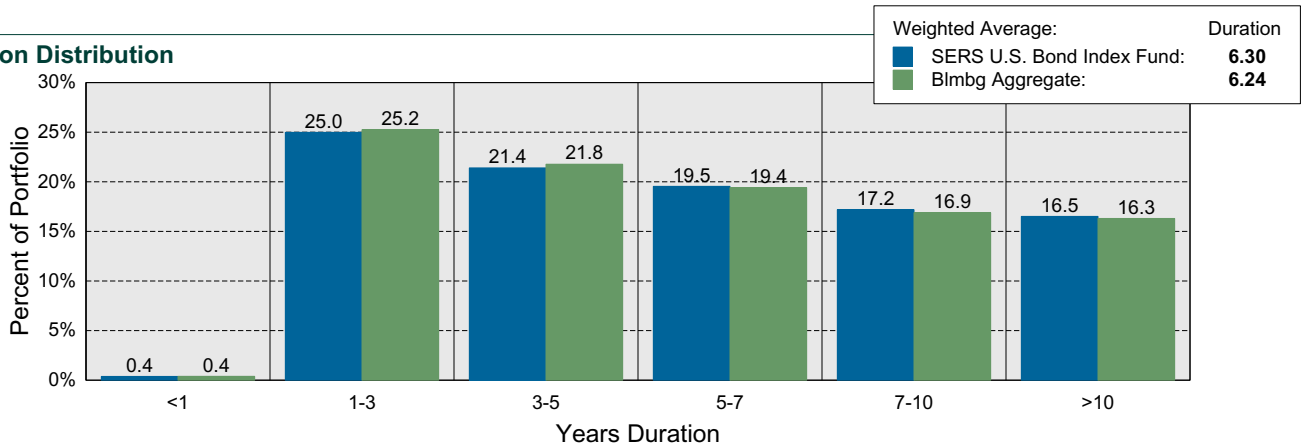
Portfolio Structure Comparison

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.

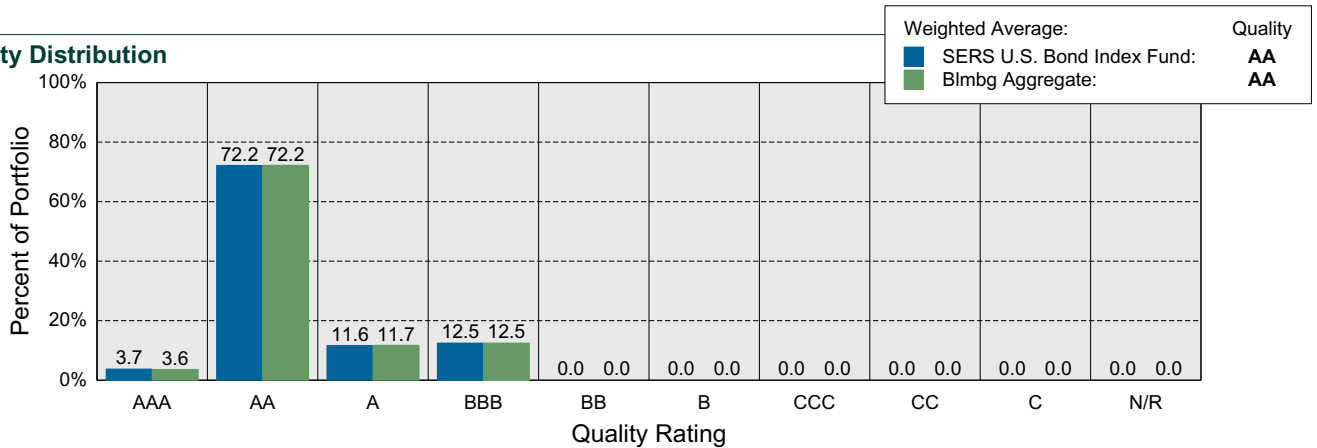
Sector Distribution



Duration Distribution



Quality Distribution



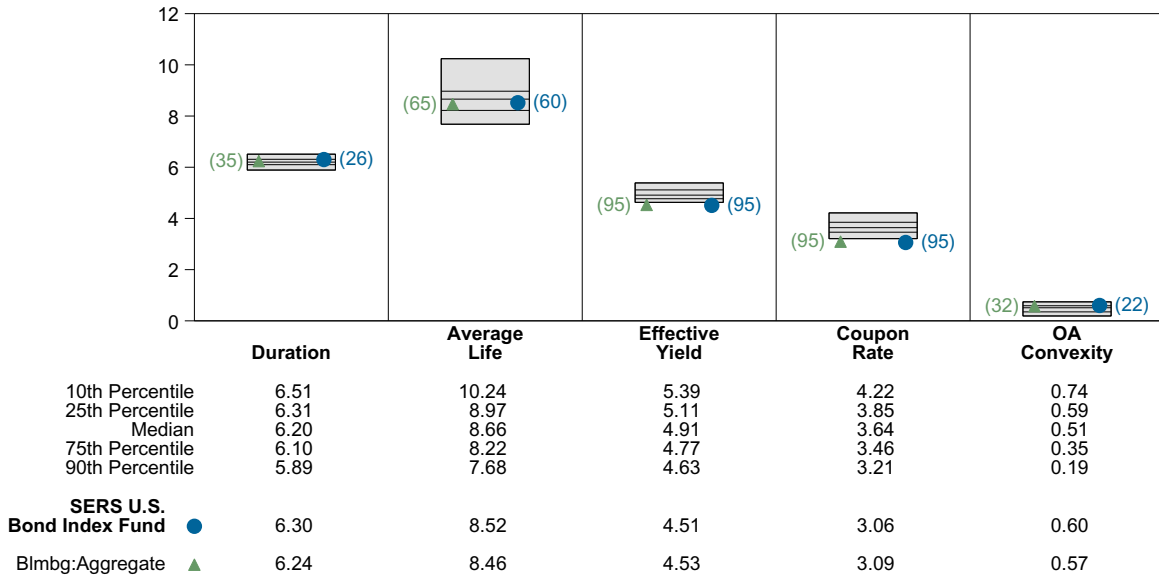
SERS U.S. Bond Index Fund

Bond Characteristics Analysis Summary

Portfolio Characteristics

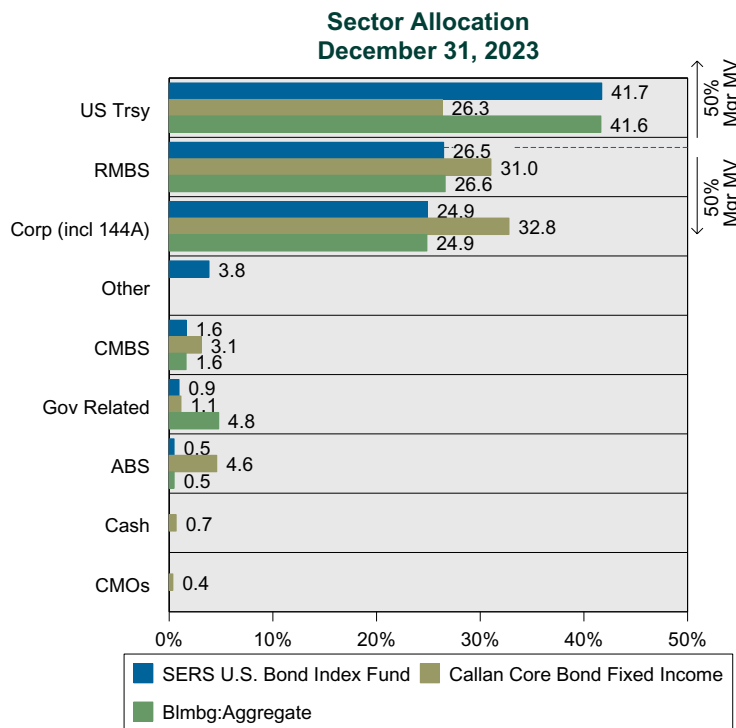
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of December 31, 2023

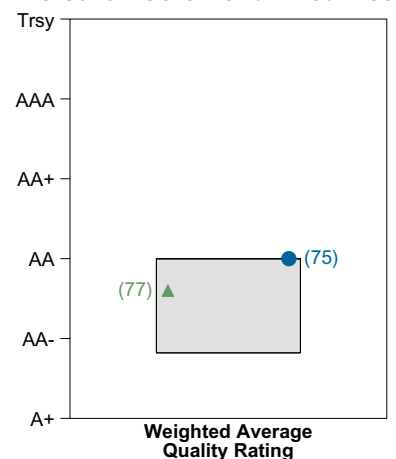


Sector Allocation and Quality Ratings

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.



Quality Ratings vs Callan Core Bond Fixed Income



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, carefully structured educational programs to enhance the knowledge of industry professionals, and events to enhance dialogue among investing professionals. Visit www.callan.com/research-library 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

[2023 Nuclear Decommissioning Funding Study](#) | Callan's annual study offers key insights into the status of nuclear decommissioning funding to make peer comparisons more accurate and relevant.

[2023 Investment Management Fee Study](#) | The purpose of the study is to provide a detailed analysis on fee levels and trends across multiple asset classes and mandate sizes, for both active and passive management.

[2023 Asset Manager ESG Study](#) | Callan's inaugural ESG Study analyzes responses to various environmental, social, and governance questions in Callan's manager database by firm size, asset class, country of domicile, and ownership structure.

Webinar Replays

[Research Cafe: Office-to-Residential Conversions](#) | During this interview, Callan specialists Aaron Quach and Christine Mays of Callan's Real Assets Consulting Group discuss office-to-residential conversions.

[Webinar: Callan's Retirement Conundrum](#) | During this discussion, representatives from Callan and October Three (a human resource and actuarial consulting firm) discuss how a small provision in SECURE 2.0 has paved the way for cash-balance pension plans to meet retirement income needs.

Blog Highlights

[How Your Public DB Plan's Returns Compare](#) | This 3Q23 update to our quarterly series of blog posts provides context for public defined benefit (DB) plans about their returns over time.

[ILS on Pace for Banner Year in 2023](#) | When reviewing hedge fund portfolios, those investing in insurance-linked securities (ILS) are finding that this oft-overlooked strategy is buoying performance.

Quarterly Updates

[Private Equity Update, 3Q23](#) | A high-level summary of private equity activity in the quarter through all the investment stages

[Active vs. Passive Charts, 3Q23](#) | A comparison of active managers alongside relevant benchmarks over the long term

[Market Pulse, 3Q23](#) | 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, 3Q23](#) | 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, 3Q23](#) | Commentary on developments for hedge funds and multi-asset class (MAC) strategies

[Real Assets Update, 3Q23](#) | A summary of market activity for real assets and private real estate during the quarter

[Private Credit Update, 3Q23](#) | A review of performance and fundraising activity for private credit during the quarter

[Callan Target Date Index™, 3Q23](#) | Tracks the performance and asset allocation of available target date mutual funds and CITs

[Callan DC Index™, 3Q23](#) | 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:

2024 National Conference

April 8-10, 2024 – San Francisco

June Regional Workshops

June 25, 2024 – Atlanta

June 27, 2024 – San Francisco

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

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

4,845

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 19-21, 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.

Manager Name
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Manager Name
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Manager Name

Table with 2 columns: Manager Name, [Redacted]

Manager Name

Table with 2 columns: Manager Name, [Redacted]

Important Disclosures

Information contained in this document may include confidential, trade secret and/or proprietary information of Callan and the client. It is incumbent upon the user to maintain such information in strict confidence. Neither this document nor any specific information contained herein is to be used other than by the intended recipient for its intended purpose.

The content of this document is particular to the client and should not be relied upon by any other individual or entity. There can be no assurance that the performance of any account or investment will be comparable to the performance information presented in this document.

Certain information herein has been compiled by Callan from a variety of sources believed to be reliable but for which Callan has not necessarily verified for accuracy or completeness. Information contained herein may not be current. Callan has no obligation to bring current the information contained herein.

Callan's performance measurement service reports returns for a portfolio and compares them against relevant benchmarks and peer groups, as appropriate; such service may also report on historical portfolio holdings, comparing them to holdings of relevant benchmarks and peer groups, as appropriate ("portfolio holdings analysis"). To the extent that Callan's performance measurement service includes portfolio holdings analysis, Callan relies entirely on holdings data provided by third parties including custodian banks, record keepers and investment managers. Callan reports the performance and holdings data as received and does not attempt to audit or verify the holdings data. Callan is not responsible for the accuracy or completeness of the performance or holdings data received from third parties and such data may not have been verified for accuracy or completeness. Callan does not perform forward-looking risk analysis or guideline compliance analysis based on the performance or portfolio holdings data.

In no event should performance measurement service provided by Callan be used in the calculation, deliberation, policy determination, or any other action of the client as it pertains to determining contribution or funding amounts, timing or activity, benefit payments or distribution amounts, timing or activity, or performance-based fee amounts, timing or activity.

The content of this document may consist of statements of opinion, which are made as of the date they are expressed and are not statements of fact. The opinions expressed herein may change based upon changes in economic, market, financial and political conditions and other factors. Callan has no obligation to bring current the opinions expressed herein.

The information contained herein may include forward-looking statements regarding future results. The forward-looking statements herein: (i) are best estimations consistent with the information available as of the date hereof and (ii) involve known and unknown risks and uncertainties. Actual results may vary, perhaps materially, from the future results projected in this document. Undue reliance should not be placed on forward-looking statements.

Callan is not responsible for reviewing the risks of individual securities or the compliance/non-compliance of individual security holdings with a client's investment policy guidelines.

This document should not be construed as legal or tax advice on any matter. You should consult with legal and tax advisers before applying any of this information to your particular situation.

Reference to, or inclusion in this document of, any product, service or entity should not necessarily be construed as recommendation, approval, or endorsement or such product, service or entity by Callan. This document is provided in connection with Callan's consulting services and should not be viewed as an advertisement of Callan, or of the strategies or products discussed or referenced herein.

The issues considered and risks highlighted herein are not comprehensive and other risks may exist that the user of this document may deem material regarding the enclosed information. Please see any applicable full performance report or annual communication for other important disclosures.

Unless Callan has been specifically engaged to do so, Callan does not conduct background checks or in-depth due diligence of the operations of any investment manager search candidate or investment vehicle, as may be typically performed in an operational due diligence evaluation assignment and in no event does Callan conduct due diligence beyond what is described in its report to the client.

Any decision made on the basis of this document is sole responsibility of the client, as the intended recipient, and it is incumbent upon the client to make an independent determination of the suitability and consequences of such a decision.

Callan undertakes no obligation to update the information contained herein except as specifically requested by the client.

Past performance is no guarantee of future results.