

September 30, 2021

**Pennsylvania SERS 401(a)**



**Investment Measurement Service  
Quarterly Review**

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## Table of Contents

### September 30, 2021

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<b>Capital Markets Review</b>	
Capital Markets Overview	2
<b>Active Management Overview</b>	19
<b>Plan Assets and Performance</b>	24
<b>Retirement Date Funds</b>	
Post Retirement Date Fund	48
2025 Retirement Date Fund	51
2030 Retirement Date Fund	54
2035 Retirement Date Fund	57
2040 Retirement Date Fund	60
2045 Retirement Date Fund	63
2050 Retirement Date Fund	66
2055 Retirement Date Fund	69
2060 Retirement Date Fund	72
2065 Retirement Date Fund	74
<b>U.S. Equity</b>	
U.S. Large Company Stock Index Fund	76
U.S. All Company Stock Index Fund	81
U.S. Small/Mid Company Stock Index Fund	86
<b>International Equity</b>	
Global Non-U.S. Stock Index Fund	92
<b>Domestic Fixed Income</b>	
Short Term Investment Fund	99
U.S. Short Term Bond Index Fund	101
U.S. Treasury Inflation Protected Securities Index Fund	105
U.S. Bond Index Fund	108
<b>Definitions</b>	
Market Indicators	113
Database Groups	114
Risk/Reward Statistics	116
<b>Callan Research/Education</b>	117
<b>Disclosures</b>	120



## Is 2% GDP Growth Good or Bad?

### ECONOMY

**2** A drop to 2% growth for GDP in 3Q21 after a 6.7% gain in 2Q is well within expectations for this lurching path toward normally functioning markets. So what about 4Q21? Do we face more of the 2% solution or a rebound? Signs so far point to a rebound.

## Yields Slightly Up; Aggregate Is Flat

### FIXED INCOME

**8** Yields ended a volatile quarter only slightly higher after the Fed signaled it may soon begin tapering its bond buying program. For the Aggregate, minor gains in Treasuries and agency MBS were offset by declines in government-related, CMBS, and corporates.

## Strong Fundraising Buoy Asset Class

### PRIVATE CREDIT

**12** Investors appreciate the yield- and income-generating features of private credit in this low-rate environment. Private credit vintages 2008-18 generated an 8.3% median net IRR with a standard deviation of 6.1%. Fundraising continues to be active given investor interest.

## Flat Returns Now, but Strong Longer Term

### INSTITUTIONAL INVESTORS

**4** While all investor types saw returns hover around 0% in 3Q21, their results over longer periods continue to be robust. And many saw the best fiscal year returns (ending June) in a generation. But there is great unease about the future of portfolios amid lower return expectations.

## Best Quarter for ODCE Ever; REITs Are Mixed

### REAL ESTATE/REAL ASSETS

**10** The NFI-ODCE Index posted its strongest return ever in 3Q21; Industrial was the best performer. Vacancy rates kept compressing in Industrial and Multifamily as demand continued. Global REITs underperformed equities; U.S. REITs rose 1.0%, topping the S&P 500 Index.

## Mixed Results as Volatility Returned

### HEDGE FUNDS/MACs

**13** Hedge funds as a whole ended the quarter higher, driven by commodities-oriented relative value, event-driven, and sector-focused strategies, as well as macro managers with short positions in U.S. interest rates. But credit-focused managers had a more challenging time.

## Indices Stall Over Mounting Worries

### EQUITY

**6** Slowing economic growth, supply chain disruptions, and inflationary pressure, as well as uncertainty around monetary policy, decreased U.S. investors' risk appetite. And in global ex-U.S. markets, Delta variant flare-ups and a slowdown in China weighed on stocks.

## Activity Dips in 3Q21 but Strong Gains YTD

### PRIVATE EQUITY

**11** Most private equity activity measures dipped in 3Q21 compared to the previous quarter; however, all year-to-date comparisons are strongly up. A rough averaging across fundraising and private investments and exits indicates big jumps in transaction count and dollar volume.

## Index Posts Fifth Straight Quarterly Gain

### DEFINED CONTRIBUTION

**15** The Callan DC Index gained 5.8% in 2Q21. Investors continued to transfer assets out of relatively safer asset classes. The index's allocation to equity (72.2%) increased by more than a full percentage point from 1Q21, to its highest level since 4Q07 (72.9%).

## Broad Market Quarterly Returns

**U.S. Equity**  
Russell 3000



**-0.1%**

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



**-3.0%**

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



**0.1%**

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



**-1.6%**

Sources: Bloomberg, FTSE Russell, MSCI

# Is 2% Growth Good or Bad?

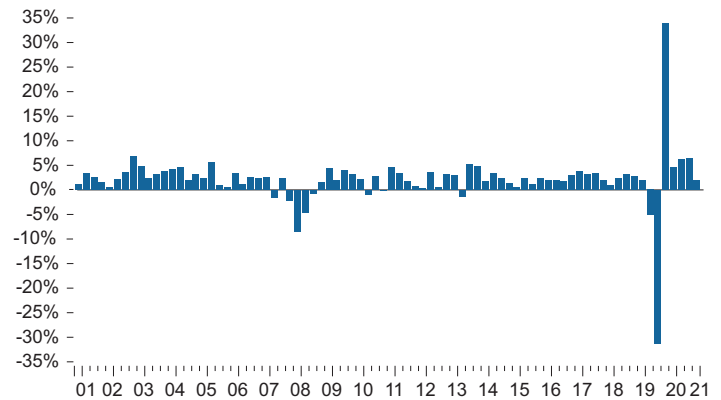
ECONOMY | Jay Kloepfer

Global equity markets hit the pause button in 3Q21. Investors watched nervously as the economic data showed signs of softening: weaker job gains, slower output growth strangled by supply chain issues, a drop in income growth, and signs of waning consumer sentiment. As the quarter unfolded, supply chain issues and fears surrounding the end of fiscal stimulus, the surge in the Delta variant, and the return to a Fed taper slowed economic activity. Spiking inflation stirred even more anxiety, and the equity markets pulled back sharply in September in anticipation of weak reports for the economy. The market's concerns appeared to be well-founded, as U.S. GDP came in at 2% growth for 3Q, down from the torrid 6.7% pace in 2Q and very much in line with reports of growth stalling in the euro zone and in Asia, particularly China.

Does the drop to 2% mean the recovery from the pandemic has been thrown off track? Recall that the global economy suffered disruption and volatility unprecedented in modern times: a stock market decline in the U.S. of 34% in just a handful of trading days, and the complete shutdown of industries such as hospitality, passenger transportation, in-person retail trade, and personal services. Global supply chains ground to a halt, and restarting everything was fully expected to result in a herky-jerky pattern of growth. That the recovery has gone as well as it has is a testament to the impact of the monetary and fiscal policy lavished during the upheaval by countries around the globe. That we are as far along as we are was not really considered likely just a year ago—vaccines were yet to be released; a second, much larger surge in COVID infections was spreading; and the notion of travel, of job recovery, and of a resumption of trade was a pipe dream. All of the supply/demand issues within almost every market—labor, raw materials, commodities, energy, intermediate and finished goods, services, travel capacity, shipping—were fully expected. Price dislocations were also expected, and we have come to see them in goods as disparate as timber products, gasoline, computer chips, automobiles, and consumer goods. A drop to 2%

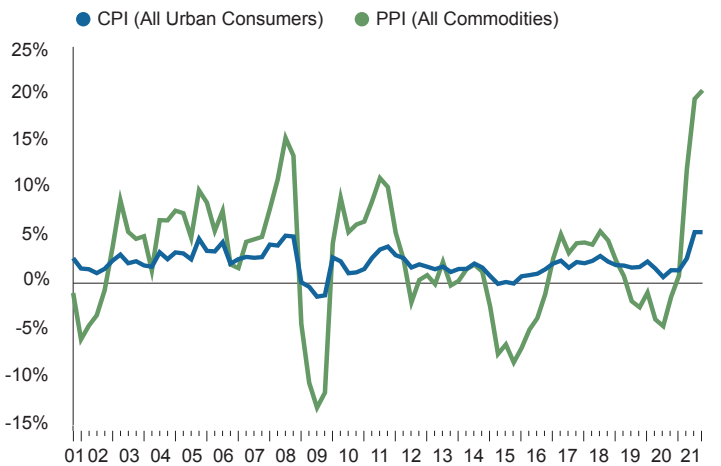
## Quarterly Real GDP Growth

(20 Years)



Source: Bureau of Economic Analysis

## Inflation Year-Over-Year



Source: Bureau of Labor Statistics

growth in 3Q following a robust 6.7% gain in 2Q is well within expectations for this lurching stop/start path toward normally functioning markets.

Unemployment in the U.S. dropped to 4.8% in September, but it is still above the pre-COVID rate of 3.5%. The economy added 194,000 jobs in September, down from 336,000 in August and a whopping 1,091,000 in July, and just one-third of the monthly average of 560,000 during 2021. The dislocation between

employers looking for employees and those looking for work has become extreme. The job market is still almost 5 million jobs below the pre-pandemic peak. Yet employers across sectors and regions of the country struggle to fill positions, particularly in services, retail trade, and hospitality, but also in basic labor within manufacturing, wholesale trade, transportation, and distribution. The end of pandemic unemployment support in September means workers will soon be forced back into the labor market, which may help alleviate its kinks. Uncertainty about the future for those about to lose benefits certainly fed into consumer sentiment in 3Q. Personal income declined in September, even though wages and salaries rose a solid 0.8% in just one month. The rise in wage and salary payments was not enough to offset the loss of social benefits.

So what about 4Q21? Do we face more of the 2% solution or a rebound in growth? Signs point to a rebound: inventory investment has yet to take place, which could be a major driver of growth; the toll from the Delta surge has fallen sharply. High-frequency data in September and into the first month of 4Q suggest robust credit card spending, a renewed surge in air travel, and a rise in gasoline consumption to pre-pandemic seasonal levels. However, hotel revenues and restaurant spending have yet to recover from the flattening that occurred as the Delta variant hit in mid-summer—more fits and starts. The inflation surge that began in early 2021 continued through 3Q with a 5.7% rise; while disconcerting to many, the surge was completely expected. Going back to 4Q19, which takes out the base effect from the low readings in 2020, the price index rose at a 3.1% annual rate. Aggregate demand appears to have regained some strength at the very end of 3Q, as evidenced by a rise in real imports to levels above pre-pandemic levels. Overall, consensus estimates place 4Q GDP back at a 5% annual growth rate.

### The Long-Term View

Index	3Q21	Periods Ended 9/30/21			
		1 Yr	5 Yrs	10 Yrs	25 Yrs
<b>U.S. Equity</b>					
Russell 3000	-0.1	31.9	16.9	16.6	9.7
S&P 500	0.6	30.0	16.9	16.6	9.7
Russell 2000	-4.4	47.7	13.5	14.6	9.1
<b>Global ex-U.S. Equity</b>					
MSCI EAFE	-0.4	25.7	8.8	8.1	5.2
MSCI ACWI ex USA	-3.0	23.9	8.9	7.5	--
MSCI Emerging Markets	-8.1	18.2	9.2	6.1	--
MSCI ACWI ex USA Small Cap	0.0	33.1	10.3	9.4	6.8
<b>Fixed Income</b>					
Bloomberg Agg	0.1	-0.9	2.9	3.0	5.1
90-Day T-Bill	0.0	0.1	1.2	0.6	2.1
Bloomberg Long G/C	0.1	-3.0	5.2	5.8	7.4
Bloomberg GI Agg ex US	-1.6	-1.2	1.1	0.9	3.6
<b>Real Estate</b>					
NCREIF Property	5.2	12.1	6.8	9.0	9.2
FTSE Nareit Equity	1.0	37.4	6.8	11.3	10.0
<b>Alternatives</b>					
CS Hedge Fund	1.2	14.1	5.5	4.9	7.1
Cambridge PE*	11.5	56.9	21.0	15.8	15.6
Bloomberg Commodity	6.6	42.3	4.5	-2.7	1.4
Gold Spot Price	-0.8	-7.3	5.9	0.8	6.3
<b>Inflation – CPI-U</b>	1.0	5.4	2.6	1.9	2.2

\*Data for most recent period lags by a quarter. Data as of 6/30/21.  
Sources: Bloomberg, Bureau of Economic Analysis, Credit Suisse, FTSE Russell, MSCI, NCREIF, Refinitiv/Cambridge, S&P Dow Jones Indices

### Recent Quarterly Economic Indicators

	3Q21	2Q21	1Q21	4Q20	3Q20	2Q20	1Q20	4Q19
Employment Cost–Total Compensation Growth	3.7%	2.9%	2.6%	2.5%	2.4%	2.7%	2.8%	2.7%
Nonfarm Business–Productivity Growth	-5.0%	2.4%	4.3%	-3.4%	4.6%	11.2%	-0.8%	1.6%
GDP Growth	2.0%	6.7%	6.3%	4.5%	33.8%	-31.2%	-5.1%	1.9%
Manufacturing Capacity Utilization	76.4%	75.4%	74.5%	74.0%	71.9%	64.3%	74.4%	75.4%
Consumer Sentiment Index (1966=100)	74.8	85.6	80.2	79.8	75.6	74.0	96.4	97.2

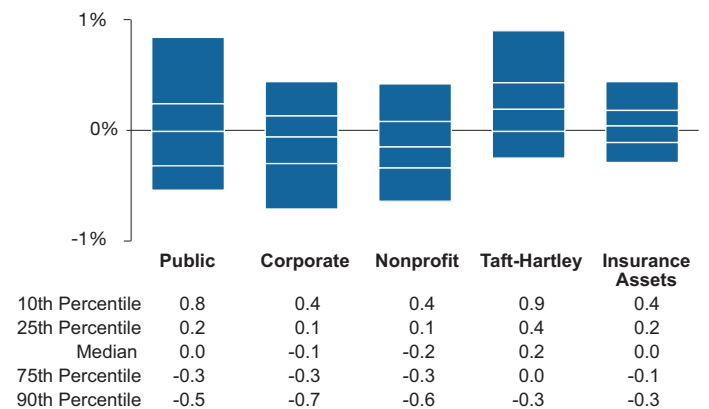
Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve, IHS Economics, Reuters/University of Michigan

# Flat Returns in 3Q21, but Continued Strong Gains Over the Longer Term

## INSTITUTIONAL INVESTORS

- Institutional investors saw essentially flat returns in 3Q21, either slightly above or slightly below 0%.
- By plan size, larger investors outperformed smaller ones.
- Year-to-date and trailing one-year returns are much stronger, reflecting the rebound in the equity markets since the March 2020 pandemic depths.
- All investor types and sizes have shown strong returns over long time periods.
- Through June, many investors had enjoyed the best fiscal year returns in a generation, but their elation is tempered by sobering capital markets assumptions.
- There is also growing concern about a market drawdown, given the heady valuations relative to historical averages.
- As a result, clients are reevaluating the purpose and future of all asset classes, but fixed income remains the primary focus.
- For all the talk about inflation spiking, few investors have taken steps to address it in their portfolios.
- Hedge funds and other absolute return strategies have gained a new appreciation when compared to dismal fixed income expectations as a way to diversify growth risk with less of a return penalty.
- Investors have demonstrated remarkable discipline in rebalancing between growth and value managers, and U.S. and global ex-U.S. equity.
- Fixed income structures focus on the role of the asset class—to diversify equity, as a flight to quality, for liquidity, to help with interest rate exposure—balanced against the desire for return in a very low-yield environment.
- Real assets are under review with the growing concern for inflation. Investors question the inclusion of past real assets stalwarts: natural resources, energy, MLPs, and commodities.

### Quarterly Returns, Callan Database Groups



Source: Callan

### Callan Database Median and Index Returns\* for Periods Ended 9/30/21

Database Group	Quarter	Year-to-Date	1 Year	3 Years	5 Years	10 Years
Public Database	0.0	9.0	20.2	10.2	10.0	9.7
Corporate Database	-0.1	5.8	14.9	10.6	9.4	9.4
Nonprofit Database	-0.2	9.0	21.5	10.6	10.4	9.6
Taft-Hartley Database	0.2	9.4	20.0	10.0	10.1	10.0
Insurance Assets Database	0.0	3.7	8.7	7.0	5.7	5.4
All Institutional Investors	0.0	8.5	19.8	10.4	10.0	9.7
Large (>\$1 billion)	0.2	9.3	20.7	10.9	10.3	9.9
Medium (\$100mm - \$1bn)	0.0	8.2	19.4	10.4	10.1	9.6
Small (<\$100 million)	-0.1	8.5	19.7	10.1	9.8	9.5

\*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.

- In general, plans to return to offices have been delayed amid the Delta variant surge.

**Defined Benefit (DB) Plans**

- An increasing number of corporate and public DB plans have conducted or are starting to conduct asset/liability studies.
- Lower return expectations stress return-on-asset assumptions.
- The American Rescue Plan Act (ARPA) provides a shot in the arm to corporate plans: lower liabilities, higher funded status, and lower required contributions.
- Low projected returns mean ROA assumptions for public DB plans face downward pressure. Weaker return assumptions may derail the expressed desire to bring in risk, spurring further demand for alts exposures and discussions of total fund leverage.
- There is growing interest in 20- and 30-year assumptions to justify more balanced portfolios and lessen pressure to risk up.

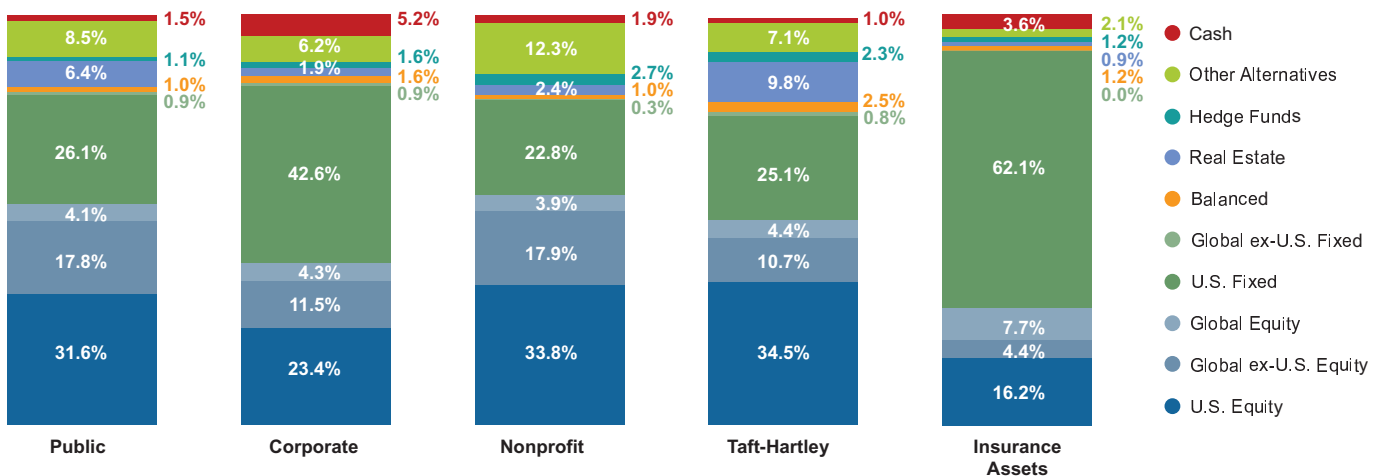
**Defined Contribution (DC) Plans**

- Glidepaths continue to be reassessed in light of lower short-term CMAs.
- Some sponsors are taking a harder look at the diversified real assets option in their plans.
- DC plan litigation remains very active, and plaintiffs continue to identify novel allegations.
- Retirement income, managed accounts, and financial wellness continue to be topical discussion points for plan sponsors.
- With the potential of heightened inflation, a recent topic of discussion with investment structure evaluations involves the possibility of adding an inflation-sensitive fund, either in the form of a diversified real assets (DRA) fund or stand-alone TIPS fund.

**Nonprofits**

- They are focused on meeting return targets.
- Subdued expectations for capital markets returns are challenging their risk tolerance.
- They continue to be dissatisfied with private real assets, hedge funds, and fixed income.

**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 debt, private equity, and real assets. Source: Callan



# Equity

## U.S. Equities

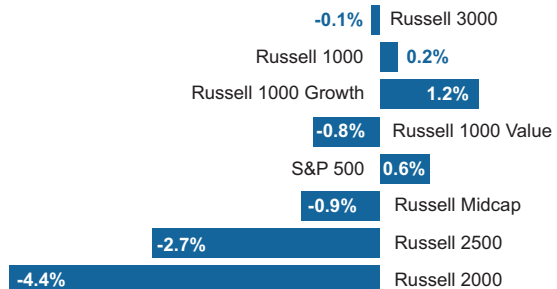
### Returns compress over mounting concerns

- The S&P 500 Index rose 0.6% in 3Q21, and smaller cap growth indices posted their first negative quarter since the March 2020 low.
- Slowing economic growth, supply chain disruptions, and inflationary pressure, as well as uncertainty around monetary policy, decreased investors' risk appetite.
- In general, higher quality topped lower quality in large cap.
- Economically sensitive sectors such as Industrials (-4.2%) lagged; Financials (+2.7%) benefited.
- Growth outperformed value in large cap, and value outperformed growth in small cap.
- YTD, small value outperformed small growth by a whopping 2,000 bps (Russell 2000 Value: 22.9% vs. Russell 2000 Growth: 2.8%), a stark reversal from the prior year.

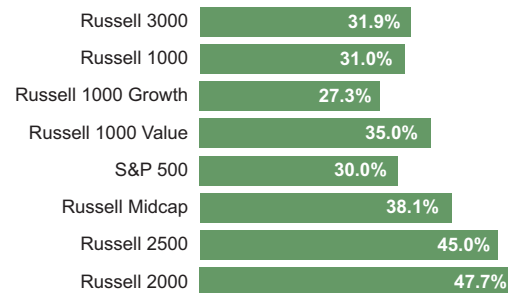
### Diversification and rebalancing are best defense

- Few if any pockets of opportunity remain in the equity markets as valuations have hit or exceeded long-term averages given the recent market run.
- Investors are grappling with exposures to risk assets: What to do? Where to go?
- The whipsaw effect over the last two years illustrates the need to remain committed to a long-term plan that emphasizes diversification and disciplined rebalancing.

## U.S. Equity: Quarterly Returns



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

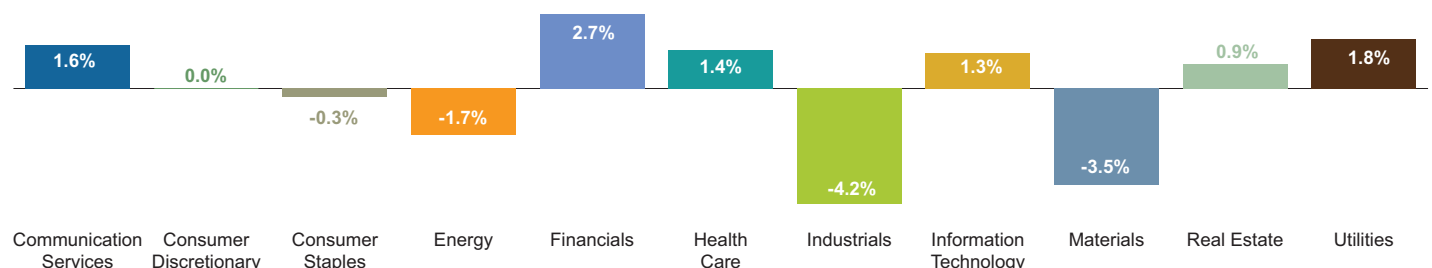


Sources: FTSE Russell and S&P Dow Jones Indices

## Inflation and equity: not so bad, up to a point

- Investors typically fare OK with expected inflation levels but are negatively impacted when inflation is unexpectedly higher.
- Pre-GFC, stocks and interest rate movements (proxy for inflation) were highly correlated until 10-year U.S. Treasury yields reached 4.5%.

## Quarterly Performance of Industry Sectors



Source: S&P Dow Jones Indices

- Post-GFC, stocks and interest rate movements were highly correlated until 10-year yields reached 3.5%.
- The current 10-Year Treasury yield is 1.5%.

## Global Equity

### Fears of stagflation stoke market volatility

- Delta variant flare-ups and slowdown in China weighed on global recovery.
- COVID-driven supply chain disruption continues to push inflation higher.
- Small cap outpaced large as global recovery concerns disproportionately punished large cap companies.
- Emerging markets struggled relative to developed markets as growth prospects were under pressure for China and Brazil.

### Market pivots to cyclicals

- Energy crunch fueled the sector to the highest return in the quarter as demand outstripped supply.
- Financials outperformed; Real Estate and Utilities generally underperformed with higher interest rate expectations.
- Sentiment and momentum signals added value in developed markets but not in emerging markets.

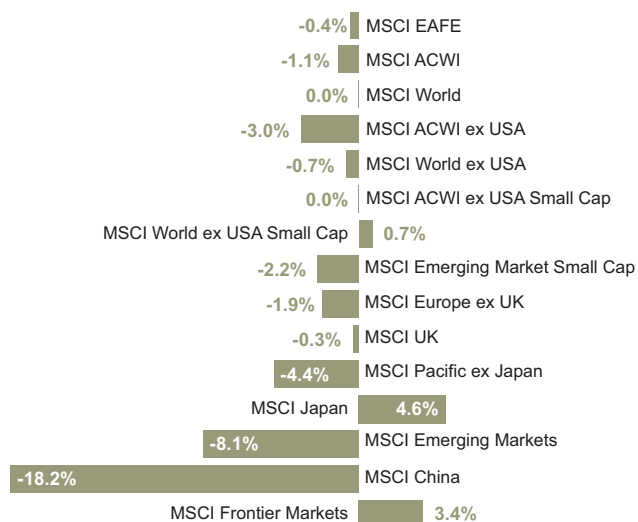
### U.S. dollar vs. other currencies

- The U.S. dollar rose against other major currencies as the Fed signaled tapering is imminent, which notably detracted from global ex-U.S. results.

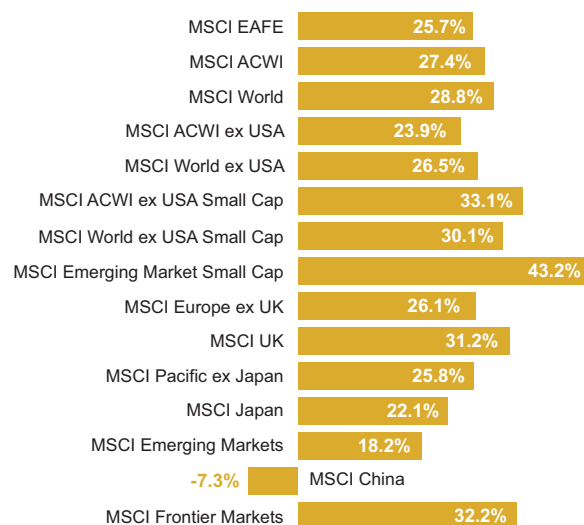
### Growth vs. value

- Value outpaced growth in emerging markets due to the Energy rally, while both were relatively flat in developed markets.

## Global ex-U.S. Equity: Quarterly Returns (U.S. Dollar)



## Global ex-U.S. Equity: One-Year Returns (U.S. Dollar)



Source: MSCI

# Fixed Income

## U.S. Fixed Income

### Treasury yields largely unchanged from 2Q21

- Yields ended a volatile quarter only slightly higher after the Fed signaled it may soon begin tapering its bond buying program.
- 2-year and 10-year Treasury yields rose 3 and 7 bps, respectively.
- TIPS outperformed nominal Treasuries, and 10-year break-even spreads widened 5 bps to 2.37%.

### Bloomberg Aggregate flat as spreads widened

- Minor gains in Treasuries and agency MBS were offset by declines in government-related, CMBS, and corporates.
- IG corporate trailed Treasuries by 15 bps (duration-adjusted) as spreads widened within long bonds.

### High yield and leveraged loans continue rally

- Leveraged loans (+1.1%) outperformed high yield, driven by favorable supply/demand dynamics.
- High yield issuers' default rate declined to 0.9% in September, the lowest since March 2014.

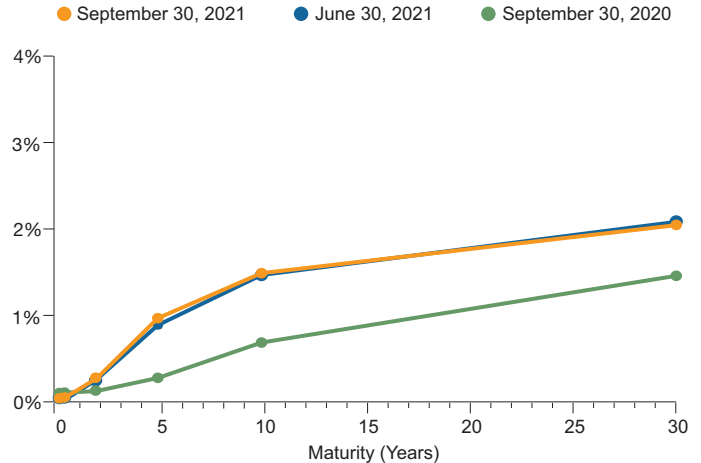
### Munis underperform Treasuries

- Supply was modest and demand was fueled by expectations for higher tax rates and strong credit fundamentals.
- Lower-quality bonds continued their trend of outperformance as investors sought yield.

### Fed reiterates that current price pressures are transitory

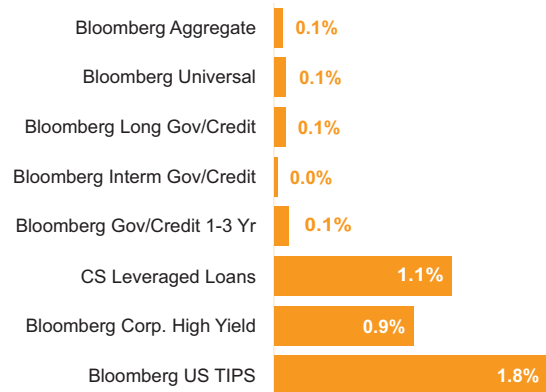
- Inflation is being temporarily influenced by pandemic-related supply bottlenecks (e.g., used cars and housing).
- Used autos spiked (+32% YOY), but rents (with a greater weight in the index) have started to apply price pressure.
- Fed's flexible average inflation targeting (FAIT) allows inflation to overshoot the 2% neutral rate; PCE (Fed's preferred inflation measure) rose 4.3% in August.

## U.S. Treasury Yield Curves



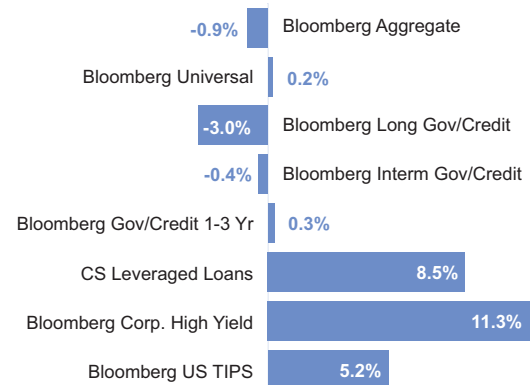
Source: Bloomberg

## U.S. Fixed Income: Quarterly Returns



Sources: Bloomberg and Credit Suisse

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



Sources: Bloomberg and Credit Suisse

## FIXED INCOME (Continued)

### Policy adjustments may be on the horizon

- Fed signaled it would move up its taper announcement.
- Sep '21 Fed Funds rate forecast illustrated a potential rate hike in 2022, with a 25 bps increase; the previous dot plot had no hikes until 2023.

### Global Fixed Income

#### Flat on a hedged basis

- Returns were muted and U.S. dollar strength eroded returns for unhedged U.S. investors.
- The dollar gained roughly 2% vs. a basket of developed market currencies.

#### Emerging market debt falls

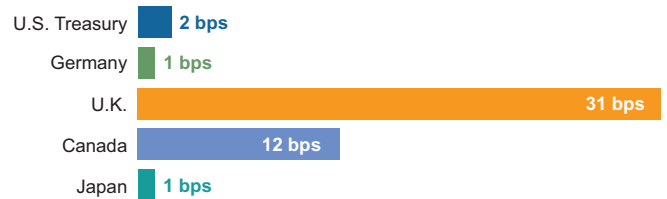
- The U.S. dollar-denominated index (EMBI Global Diversified) declined as the Delta variant in some countries raised concerns, and the local Index (JPM GBI-EM Global Diversified) lost further ground due to currency depreciation.
- Most emerging currencies depreciated versus the dollar. Notables included the Brazil real (-7.9%) and South Africa rand (-5.1%).
- EM corporates fared better amid improving corporate fundamentals and the global economic recovery.

#### Inflation overseas

- Yields have increased as non-U.S. developed market countries also deal with supply bottlenecks and pressure from energy prices.
- Euro zone inflation has been elevated, but not at same level as the U.S.
- Central bank policy is mixed.
- The U.K.'s Bank of England has signaled a potential tightening of its monetary policy by the end of 2021.
- The European Central Bank remains on hold.

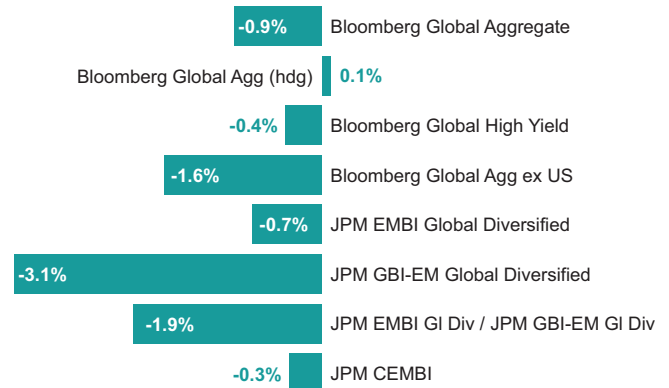
### Change in 10-Year Global Government Bond Yields

2Q21 to 3Q21



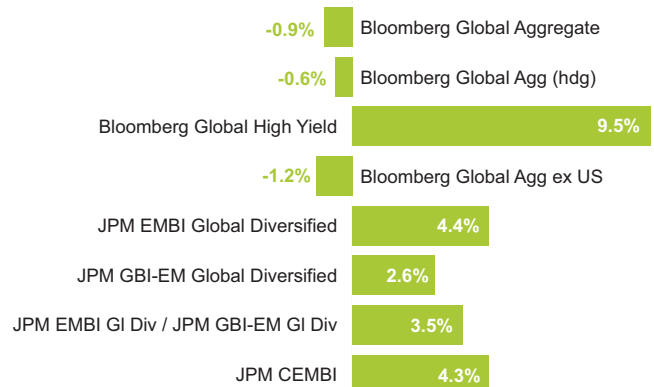
Source: Bloomberg

### Global Fixed Income: Quarterly Returns



Sources: Bloomberg and JPMorgan Chase

### Global Fixed Income: One-Year Returns



Sources: Bloomberg and JPMorgan Chase

# Best Quarter for ODCE Ever; REITs Are Mixed

REAL ESTATE/REAL ASSETS | Munir Iman

## Strongest gains for ODCE in history

- The NFI-ODCE Index posted its best return ever in 3Q21; Industrial was the top performer.
- Income returns were positive except for the Hotel and Retail sectors.
- Appraisers are pricing in a recovery due to strong fundamentals in Industrial and Multifamily.
- Return dispersion by manager within the ODCE Index was due to the composition of underlying portfolios.

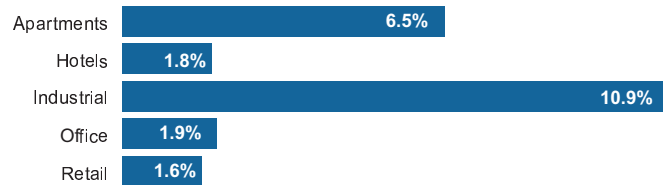
## Compression in vacancy rates

- Vacancy rates kept compressing in Industrial and Multifamily as demand continued.
- Net operating income remained negative for Retail but its recovery continued; pent-up demand is evident through foot traffic in retail centers.
- 3Q21 rent collections have stabilized across all sectors.
- Demand outpaced supply as new construction of preleased Industrial and Multifamily occurred.

## Gains in transaction volume

- Transaction volume increased quarter over quarter led by Multifamily and Industrial assets with strong credit tenants, which are trading at higher values than pre-COVID-19 levels.

## Sector Quarterly Returns by Property Type



Source: NCREIF

## Global REITs trailed equities; U.S. REITs outperformed

- Global REITs underperformed in 3Q21, falling 0.9% compared to 0.0% for global equities (MSCI World).
- U.S. REITs rose 1.0% in 3Q21, beating the S&P 500 Index, which gained 0.6%.
- Global REITs were trading below NAV, except for those in Singapore, Japan, the United States, and Canada.
- Property sectors were mixed between trading at a discount or premium.
- Ongoing volatility in REIT share prices offers opportunities to purchase mispriced securities, individual assets from REIT owners, and discounted debt, as well as to lend to companies and/or execute take-privates of public companies.

## Callan Database Median and Index Returns\* for Periods Ended 9/30/21

Private Real Assets	Quarter	Year to Date	1 Year	3 Years	5 Years	10 Years	15 Years
<b>Real Estate ODCE Style</b>	<b>3.2</b>	<b>10.5</b>	<b>11.5</b>	<b>6.3</b>	<b>6.9</b>	<b>9.1</b>	<b>5.6</b>
NFI-ODCE (value wt net)	6.4	12.4	13.6	6.1	6.6	8.9	5.5
NCREIF Property	5.2	10.9	12.1	6.7	6.8	9.0	7.1
NCREIF Farmland	1.5	3.9	5.5	4.9	5.5	10.2	11.1
NCREIF Timberland	1.9	4.4	5.0	2.4	2.9	4.9	5.2
<b>Public Real Estate</b>							
<b>Global Real Estate Style</b>	<b>-0.2</b>	<b>16.0</b>	<b>29.1</b>	<b>9.5</b>	<b>7.6</b>	<b>10.6</b>	<b>5.6</b>
FTSE EPRA Nareit Developed	-0.9	14.5	29.6	6.2	4.5	8.3	3.8
<b>Global ex-U.S. Real Estate Style</b>	<b>-2.2</b>	<b>7.4</b>	<b>22.3</b>	<b>8.4</b>	<b>6.9</b>	<b>10.3</b>	<b>4.9</b>
FTSE EPRA Nareit Dev ex US	-2.7	6.1	20.8	4.2	4.3	7.1	2.9
<b>U.S. REIT Style</b>	<b>1.3</b>	<b>22.8</b>	<b>34.8</b>	<b>12.5</b>	<b>8.4</b>	<b>12.3</b>	<b>7.4</b>
EPRA Nareit Equity REITs	1.0	23.1	37.4	10.0	6.8	11.3	6.5

\*Returns less than one year are not annualized.

Sources: Callan, FTSE Russell, NCREIF

# Pandemic's Impact Muted

PRIVATE EQUITY | Gary Robertson

Private equity activity measures in 3Q21 backed down slightly from 2Q, although totals were still strong. The IPO market for both venture capital and buyouts showed the largest declines as public equity flattened in 3Q. So far this year, private equity activity has been vigorous, fueled by rapidly rising public equity valuations and very liquid capital markets.

Private equity partnerships holding final closes in 3Q totaled \$165 billion, with 398 new partnerships formed (unless otherwise noted, all data are from PitchBook). The dollar volume fell 32% from 2Q21, and the number of funds holding final closes declined 28%. So far, capital raised is running 24% ahead of YTD 2020. Venture capital and growth equity have been garnering a larger share of overall commitments, while overall private equity commitments continued to rise.

The number of new buyout transactions and dollar volume fell minutely. Funds closed 2,615 company investments with \$160 billion of disclosed deal value, a 7% decrease in count and a 2% drop in dollar value from 2Q21. New financing rounds in venture capital companies totaled 10,208, with \$180 billion of announced value. The number of investments was down 5% from the prior quarter, but announced value rose 8%. The median pre-money valuations of Seed through Series D rounds continued to increase in YTD 2021 over 2020.

## Private Equity Performance (%) (Pooled Horizon IRRs through 6/30/21\*)

Strategy	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years
All Venture	11.1	82.2	35.0	26.3	19.4	15.2	10.4	23.1
Growth Equity	12.1	64.0	28.6	24.3	16.9	15.7	14.0	16.4
All Buyouts	12.6	51.7	21.2	19.9	14.1	12.5	13.6	13.7
Mezzanine	6.3	24.9	11.6	12.4	11.6	11.0	9.8	10.3
Credit Opportunities	5.8	23.3	6.5	8.9	8.2	9.0	9.9	9.9
Control Distressed	10.2	43.3	14.0	13.8	11.6	10.6	11.5	11.8
<b>All Private Equity</b>	<b>11.6</b>	<b>57.7</b>	<b>24.0</b>	<b>21.0</b>	<b>15.0</b>	<b>13.1</b>	<b>12.5</b>	<b>14.7</b>
S&P 500	8.6	40.8	18.7	17.7	14.8	10.7	8.6	9.8
Russell 3000	-0.1	31.9	16.0	16.9	16.6	10.4	9.8	9.7

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

## Funds Closed 1/1/21 to 9/30/21

Strategy	No. of Funds	Amt (\$mm)	Share
Venture Capital	871	166,920	26%
Growth Equity	129	65,232	10%
Buyouts	329	321,149	50%
Mezzanine Debt	16	12,690	2%
Distressed	21	27,852	4%
Energy	4	1,967	0%
Secondary and Other	66	43,340	7%
Fund-of-Funds	22	5,432	1%
<b>Totals</b>	<b>1,458</b>	<b>644,582</b>	<b>100%</b>

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

There were 348 private M&A exits of private equity-backed companies (excluding venture capital), with disclosed values totaling \$174 billion. Exits were down 44% from the prior quarter but announced dollar volume leaped 29%. The year-to-date exit count is up 10%. There were 104 private equity-backed IPOs in 3Q raising \$32 billion, down from 112 totaling \$39 billion in 2Q.

Venture-backed M&A exits totaled 735 transactions with disclosed value of \$57 billion. The number of sales increased 5% and announced dollar volume rose 10%. The year-to-date exit count rose 43%. There were 119 VC-backed IPOs with a combined float of \$43 billion. For comparison, 2Q had 171 IPOs and total issuance of \$73 billion.

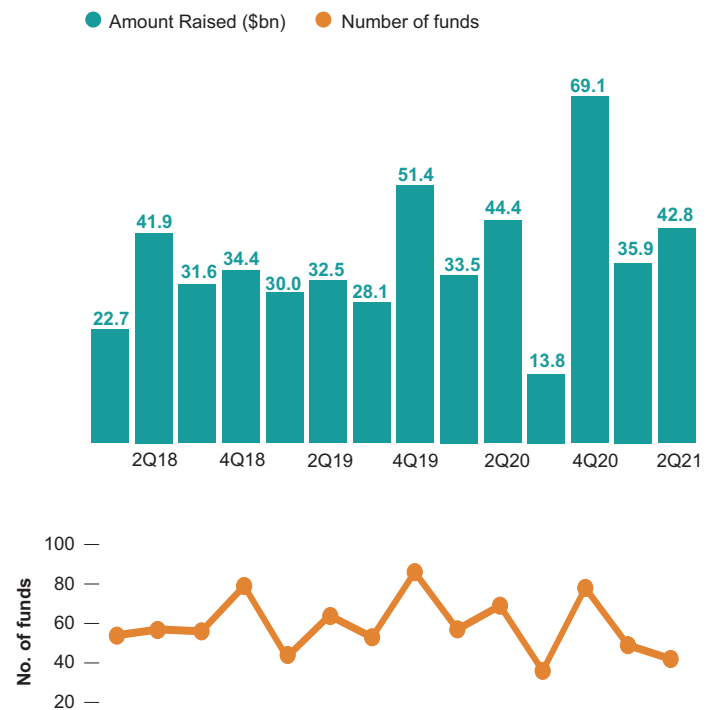
Note: Transaction count and dollar volume figures across all private equity measures are preliminary figures and are subject to update in subsequent versions of the *Capital Markets Review* and other Callan publications.

# Asset Class Remains Attractive and Fundraising Stays Strong

PRIVATE CREDIT | Catherine Beard

- The yield- and income-generating characteristics of private credit remain attractive to institutional investors in a low-rate environment.
  - Private credit vintages 2008-18 generated an 8.3% median net IRR with a standard deviation of 6.1%.
  - Private credit is seen as fairly valued with a view that we are in a rising market.
- Direct lending portfolios proved resilient during the COVID dislocation due to the liquidity injected into the economy.
  - While pricing widened in the early stages of the dislocation, pricing and structures are back to pre-pandemic levels.
  - Direct lending portfolio valuations are back to 2019 levels.
  - New sponsor-backed lending deal flow has been at record levels through 3Q21.
  - Key industries of focus include technology, health care, and business services.
  - The balance has shifted back to borrowers with a return to covenant-lite structures, high leverage, and compressed pricing.
  - Downside has been limited by strong portfolio management during the dislocation coupled with capital available to shore up liquidity for troubled companies.
- Liquidity flowing into the U.S. economy has limited U.S. corporate stress and has muted the corporate distressed opportunity set.
- Areas of opportunity include those that offer diversification through differentiated collateral and/or areas of low correlation to public markets, including specialty finance, asset-backed lending, and niche areas (life sciences lending and artificial intelligence).
- 35% of investors polled by Preqin say they are allocating to private credit. The average target allocation is 6.2%.
- A majority of investors polled say private credit returns have met expectations. 40% intend to commit more capital to private credit over the next 12 months.
- Senior debt and mezzanine capital continue to see strong 2021 fundraising activity.
- There is also a ramp up of fundraising in specialty finance, asset-backed lending, and niche areas such as venture debt.

## Private Credit Fundraising (\$bn)



Source: Preqin



# Mixed Results as Volatility Returned to Markets

HEDGE FUNDS/MACs | Joe McGuane

A variety of macro concerns, including China, inflation, interest rates, and the Delta variant, led to a volatile 3Q21 for financial markets, as investors took chips off the table toward the end of September.

While global markets all suffered a late-quarter drawdown, the S&P 500 (+0.6%) managed to produce a gain, as corporate earnings came in ahead of expectations. The Bloomberg High Yield Index rose 0.8%, as U.S. credit markets remained resilient despite the potential default of China's Evergrande. The MSCI Emerging Markets Index lost 8.1%.

Hedge funds as a whole ended the quarter higher, driven by commodities-oriented relative value, event-driven, and sector-focused strategies, as well as macro managers with short positions in U.S. interest rates. Representing hedge funds reporting performance without implementation costs,

## Hedge Fund Style Group Returns



Sources: Callan, Credit Suisse, Federal Reserve

## Callan Peer Group Median and Index Returns\* for Periods Ended 9/30/21

Hedge Fund Universe	Quarter	Year-to-Date	1 Year	3 Years	5 Years	10 Years
Callan Institutional Hedge Fund Peer Group	1.4	7.4	11.8	6.0	5.8	6.5
Callan Fund-of-Funds Peer Group	0.9	5.6	15.0	6.6	6.1	5.6
Callan Absolute Return FOF Style	2.1	7.1	14.6	5.1	4.9	4.9
Callan Core Diversified FOF Style	1.2	5.3	13.3	6.8	6.1	5.6
Callan Long/Short Equity FOF Style	0.1	5.1	17.0	10.1	8.7	7.5
BB GS Cross Asset Risk Premia 6% Vol Idx	1.3	2.3	3.5	1.6	2.0	4.2
Credit Suisse Hedge Fund	1.2	7.2	14.1	6.1	5.5	4.9
CS Convertible Arbitrage	0.3	4.5	8.9	6.5	5.1	4.6
CS Distressed	0.8	11.3	21.5	4.3	5.1	5.3
CS Emerging Markets	-2.9	4.7	10.5	8.8	6.9	5.9
CS Equity Market Neutral	1.1	4.2	4.9	0.8	1.5	1.8
CS Event-Driven Multi	3.3	14.3	26.6	7.9	6.8	5.3
CS Fixed Income Arb	0.8	4.7	8.1	4.3	4.8	4.7
CS Global Macro	2.6	8.9	15.4	8.0	6.5	4.4
CS Long/Short Equity	0.8	6.1	14.2	6.2	6.7	6.7
CS Managed Futures	1.9	8.2	14.6	5.0	1.8	1.4
CS Multi-Strategy	1.4	5.9	11.2	4.9	5.1	6.2
CS Risk Arbitrage	-0.9	4.3	16.0	7.9	6.3	4.4
HFRI Asset Wtd Composite	0.0	6.2	13.5	4.5	4.8	4.5
90-Day T-Bill + 5%	1.2	3.8	5.1	6.2	6.2	5.6

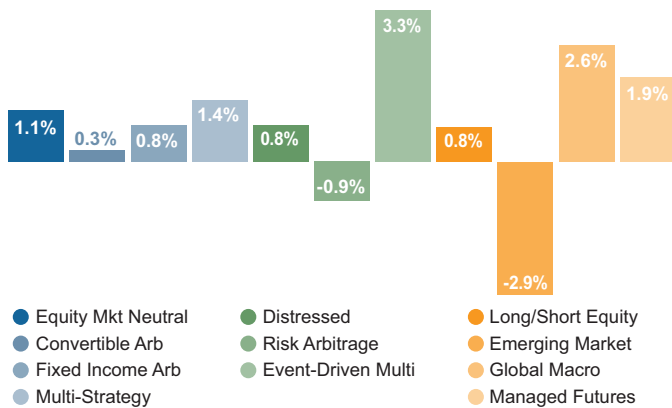
\*Net of fees. Sources: Bloomberg GSAM, Callan, Credit Suisse, Hedge Fund Research



the Credit Suisse Hedge Fund Index (CS HFI) gained 1.2% in 3Q. As an actual hedge fund portfolio net of all fees, the median manager in the Callan Hedge Fund-of-Funds (FOF) Database Group added 0.9%.

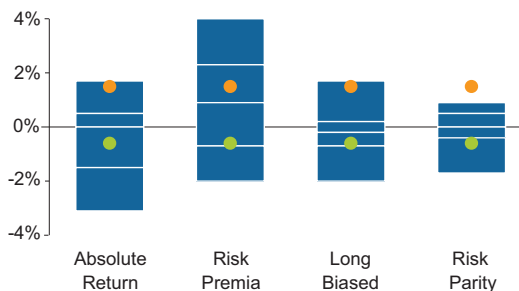
Serving as a proxy for large, broadly diversified hedge funds with low-beta exposure to equity markets, the median Callan Institutional Hedge Fund Peer Group added 1.4%. Within this style group, the average Hedged Equity manager gained the most at 3.7%, driven by managers focused on tech/media/technology (TMT) and event-related deals. Hedged Rates edged ahead only 0.02% as it navigated a bear flattening

### Credit Suisse Hedge Fund Strategy Returns



Source: Credit Suisse

### MAC Style Group Returns



Index	Absolute Return	Risk Premia	Long Biased	Risk Parity
BB GS Cross Asset				
Risk Premia (6%v)	1.3	1.3	1.3	1.3
60% MSCI ACWI/40% Bloomberg Agg	-0.6	-0.6	-0.6	-0.6

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

across the yield curves in the U.S., U.K., and Continental Europe. The average Hedged Credit manager added 1.2%.

Within CS HFI, the best-performing strategy was Event Driven (+3.3%), aided by its exposure to corporate activity. Volatility across interest rates and equities helped Macro funds advance 2.6%. Multi-Strategy funds ended up 1.4%, with gains coming within credit and equity strategies. The laggard was Emerging Market (-2.9%).

Across the Callan Hedge FOF Database, the median Absolute Return FOF gained 2.1%. With exposures to non-directional and directional styles, the Core Diversified FOF rose 1.2%. Long/Short Equity FOF was slightly positive at 0.06%, after a tough September as mega cap tech exposure negatively impacted some managers.

Since the Global Financial Crisis, liquid alternatives to hedge funds have become popular for their attractive risk-adjusted returns uncorrelated with stock and bond investments but offered at a lower cost. Much of that interest is focused on rules-based, long-short strategies that isolate risk premia such as value, momentum, and carry. These alternative risk premia are often embedded in hedge funds as well as other actively managed investment products.

In 3Q, the Bloomberg GSAM Risk Premia Index increased 1.3% based upon a 6% volatility target. Within the underlying styles of the index, Commodity Carry (+2.9%) and Equity Quality (+2.1%) profited off strength in the energy and equity markets. The weakest risk premia was Equity Value L/S (-2.1%), as interest rate volatility and value equities detracted.

The median managers of the Callan Multi-Asset Class (MAC) Style Groups generated mixed returns gross of fees. The Callan Risk Premia MAC rose 0.9% based on its exposures to uncorrelated style premia targeting 5% to 15% portfolio volatility. The Callan Risk Parity MAC, which typically targets an equal risk-weighted allocation to the major asset classes with leverage, was flat. As the most conservative MAC style focused on non-directional strategies of long and short asset class exposures, the Callan Absolute Return MAC was also flat.

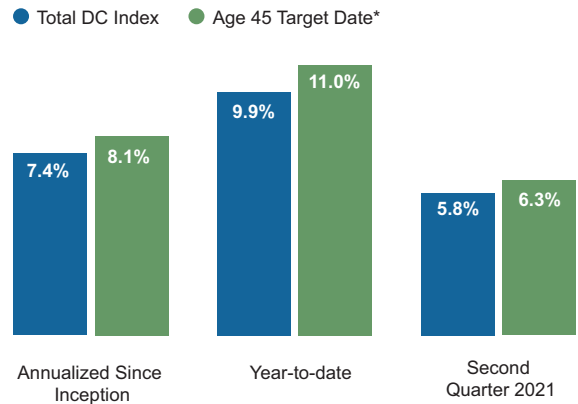
# Index Posts Fifth Straight Quarterly Gain

DEFINED CONTRIBUTION | Patrick Wisdom

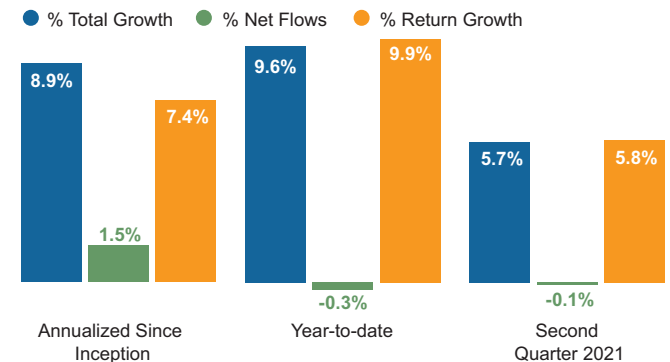
- The Callan DC Index™ rose 5.8% in 2Q21, marking a fifth straight quarter of gains. The Age 45 Target Date Fund posted a larger quarterly gain (6.3%), attributable to its higher allocation to equity, which outperformed fixed income during the quarter.
- Balances within the DC Index rose by 5.7%, the fifth straight quarterly gain.
- For the second straight quarter, target date funds (TDFs) placed atop the leaderboard, receiving 78.0% of net inflows.
- In a continuation from 1Q21, investors transferred assets out of relatively safer asset classes, as stable value (-28.1%) and U.S. fixed income (-17.7%) had sizable net outflows.
- U.S. large cap (-27.5%) also saw net outflows. In contrast, global ex-U.S. equity (8.6%) had the second-largest net inflows for the second straight quarter.
- Turnover (i.e., net transfer activity levels within DC plans) in the DC Index fell to 0.37% from the previous quarter's 0.42%.
- The Index's overall allocation to equity (72.2%) increased by more than a full percentage point from the previous quarter, bringing it to its highest level since 4Q07 (72.9%).
- In a continuation from the previous quarter, U.S. large cap (27.5%) had the largest percentage increase in allocation.
- Stable value (8.1%) saw the largest decrease in allocation, driven by material net outflows and relative underperformance.
- The prevalence of a high yield fixed income offering (7.9%) increased to its highest mark since 3Q16 (14.1%).

*The Callan DC Index is an equally weighted index tracking the cash flows and performance of over 100 plans, representing nearly \$300 billion in assets. The Index is updated quarterly and is available on Callan's website.*

## Investment Performance



## Growth Sources



## Net Cash Flow Analysis (2Q21)

(Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Target Date Funds	78.09%
Global ex-U.S. Equity	8.06%
U.S. Large Cap	-27.54%
Stable Value	-28.12%
<b>Total Turnover**</b>	<b>0.37%</b>

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

Source: Callan DC Index

Note: DC Index inception date is January 2006.

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

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



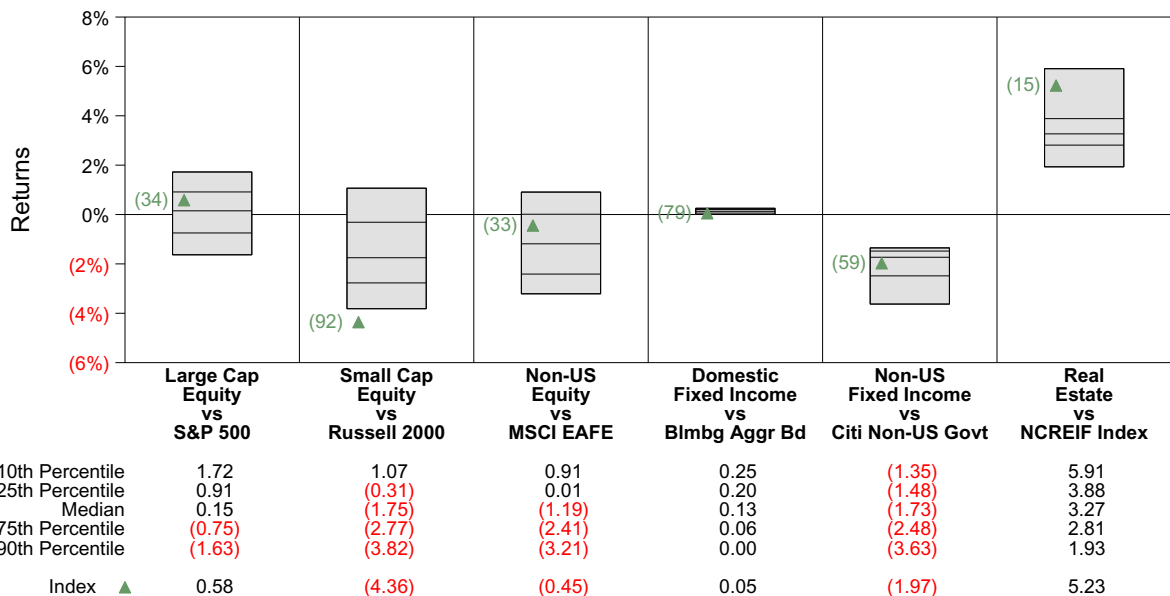
## Market Overview

### Active Management vs Index Returns

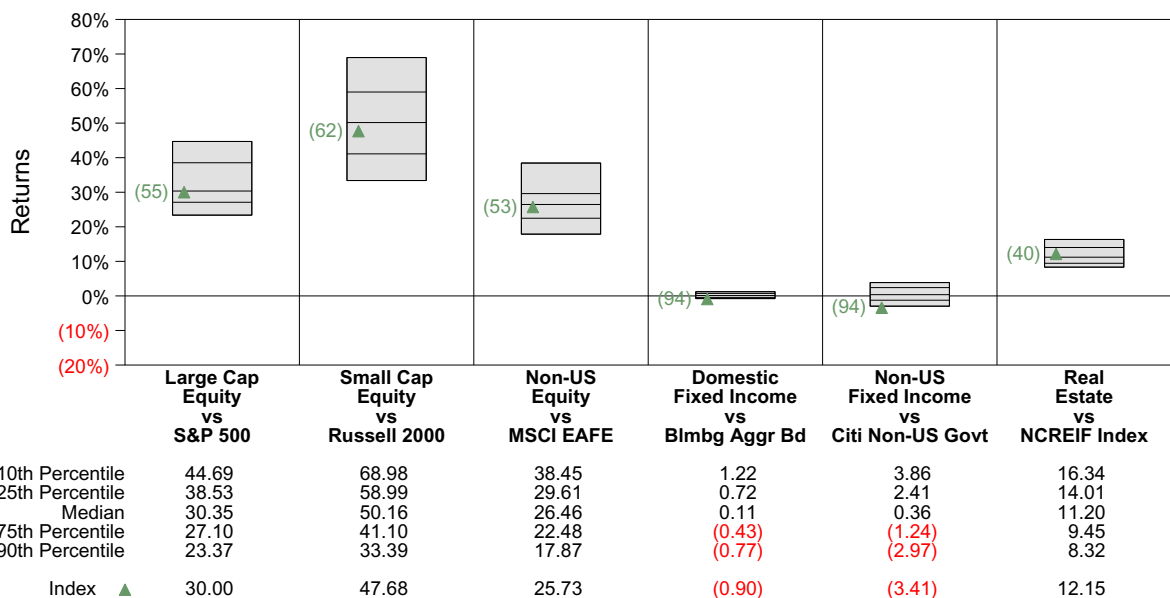
#### Market Overview

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

#### Range of Separate Account Manager Returns by Asset Class One Quarter Ended September 30, 2021



#### Range of Separate Account Manager Returns by Asset Class One Year Ended September 30, 2021

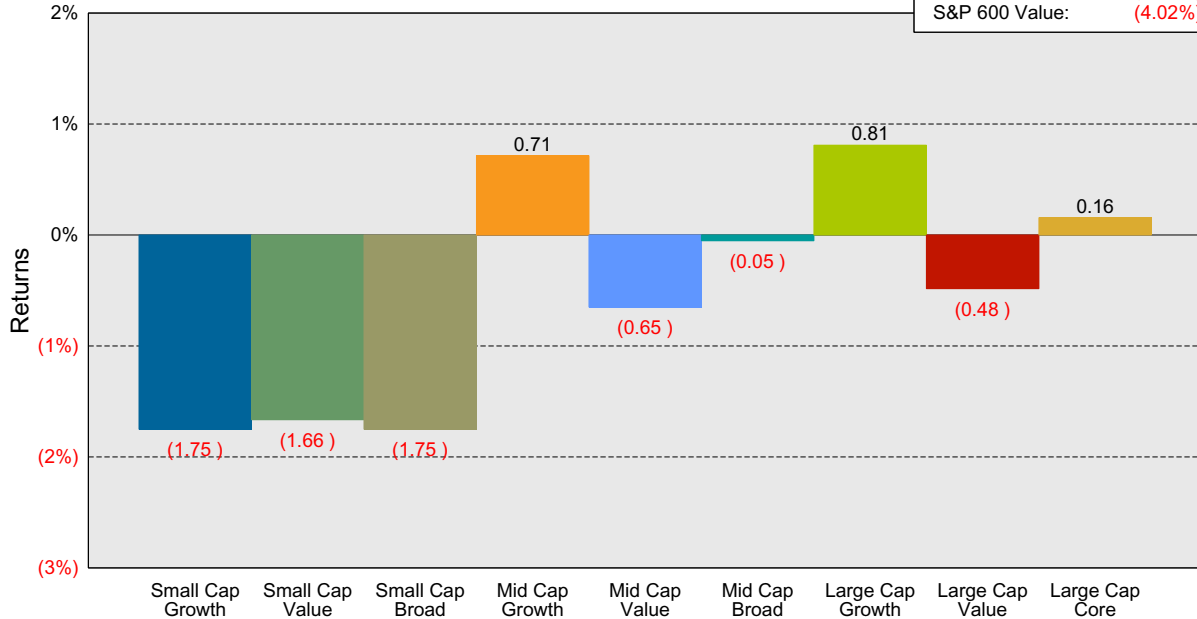


## Domestic Equity Active Management Overview

The S&P 500 Index was up a modest 0.6% in 3Q21, with results mixed across sectors. Industrials (-4.2%) and Materials (-3.5%) were at the bottom of the pack while Financials (+2.7%) was the best-performing sector. Energy (+4.3%) is up the most YTD. In the large cap space, growth stocks outperformed value (R1000 Growth: +1.2%; R1000 Value: -0.8%) but lag YTD (+14.3% vs. +16.1%). In small caps, the reverse occurred (R2000 Growth: -5.7%; R2000 Value: -3.0%), and value is ahead YTD by more than 20 percentage points (R2000 Growth: +2.8%; R2000 Value: +22.9%) as select "meme" stocks posted sharp gains. Small cap underperformed large cap in 3Q (R2000: -4.4% vs. R1000: +0.2%) and now lags YTD (12.4% vs 15.2%).

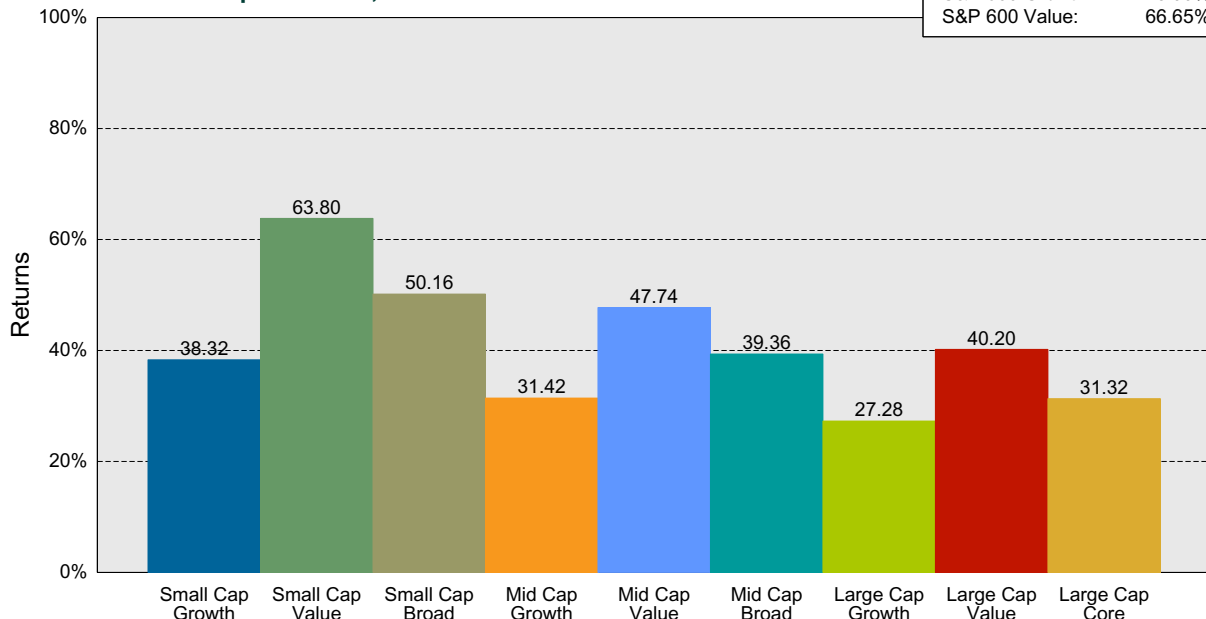
S&P 500:	0.58%
S&P 500 Growth:	1.87%
S&P 500 Value:	(0.85%)
S&P Mid Cap:	(1.76%)
S&P 600:	(2.84%)
S&P 600 Growth:	(1.49%)
S&P 600 Value:	(4.02%)

### Separate Account Style Group Median Returns for Quarter Ended September 30, 2021



S&P 500:	30.00%
S&P 500 Growth:	28.86%
S&P 500 Value:	32.02%
S&P Mid Cap:	43.68%
S&P 600:	57.64%
S&P 600 Growth:	48.99%
S&P 600 Value:	66.65%

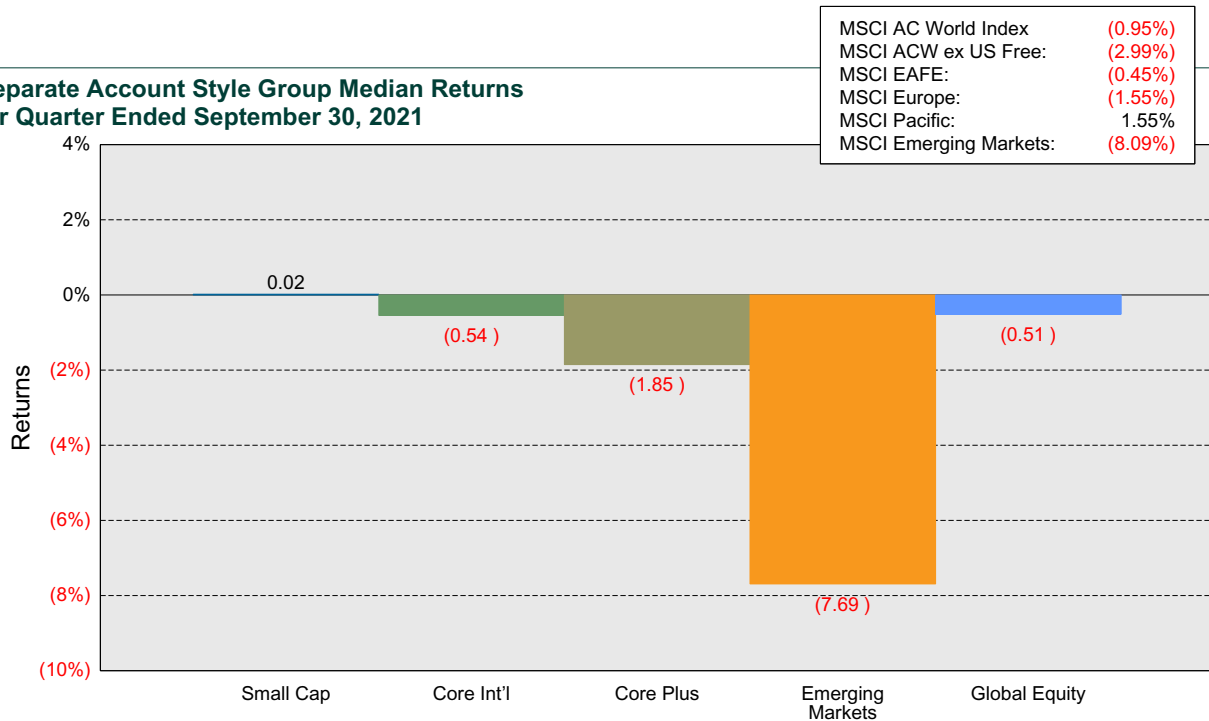
### Separate Account Style Group Median Returns for One Year Ended September 30, 2021



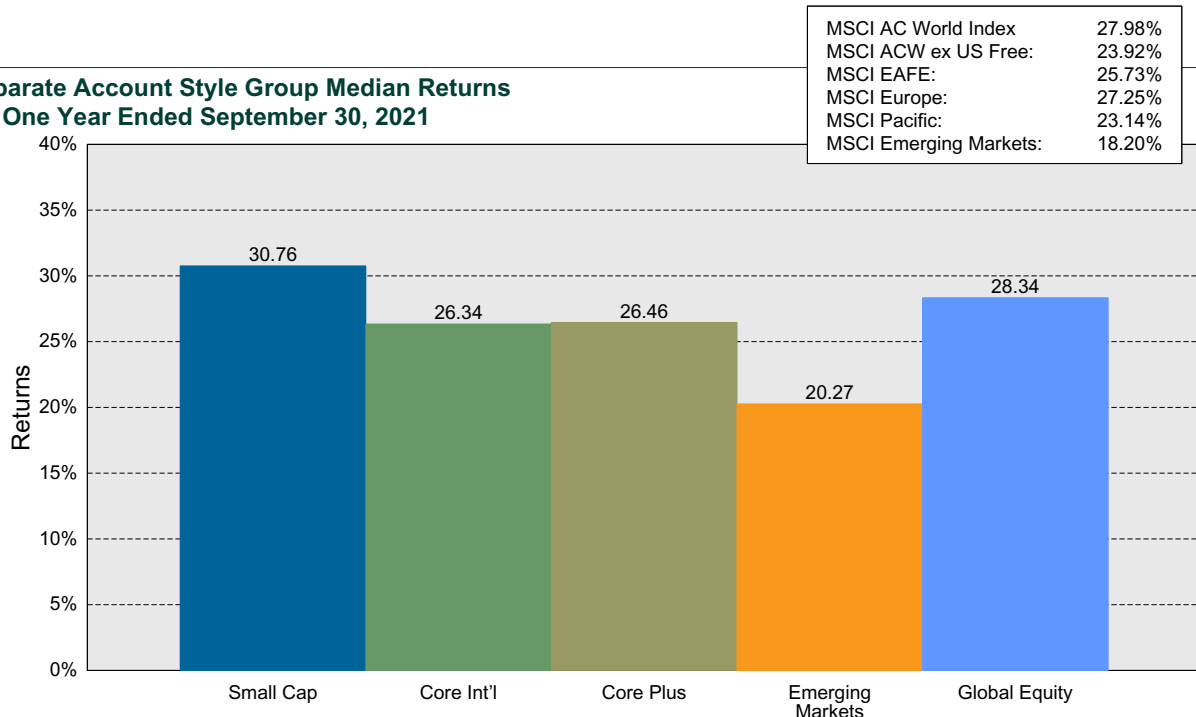
## International Equity Active Management Overview

Developed ex-U.S. stocks had a strong quarter with virtually all developed market countries posting positive returns. The MSCI ACWI ex-USA Index rose 5.5% for the quarter and is up 9.2% YTD. As in the U.S., Utilities (-0.4%) was the lone sector to produce a negative return. Health Care (+9.9%) and Energy (+8.2%) were the top-performing sectors. Canada (+10.0%) was a strong performer and Japan (-0.3%) was notable as one of the few countries to deliver a negative return. The U.S. dollar was mixed against developed market currencies and thus shifts were not a major contributor to relative results. The MSCI EM Index performed in line with developed markets (MSCI EM USD: +5.0% and +7.4% YTD), but country returns were mixed. Brazil (+23%) and Russia (+14%) were top performers while Chile (-14%) was at the bottom of the pack. China was up 2% and China A-shares (+9.2%) did especially well as softer economic data in May appeared to ease investors concerns over potential policy tightening.

### Separate Account Style Group Median Returns for Quarter Ended September 30, 2021



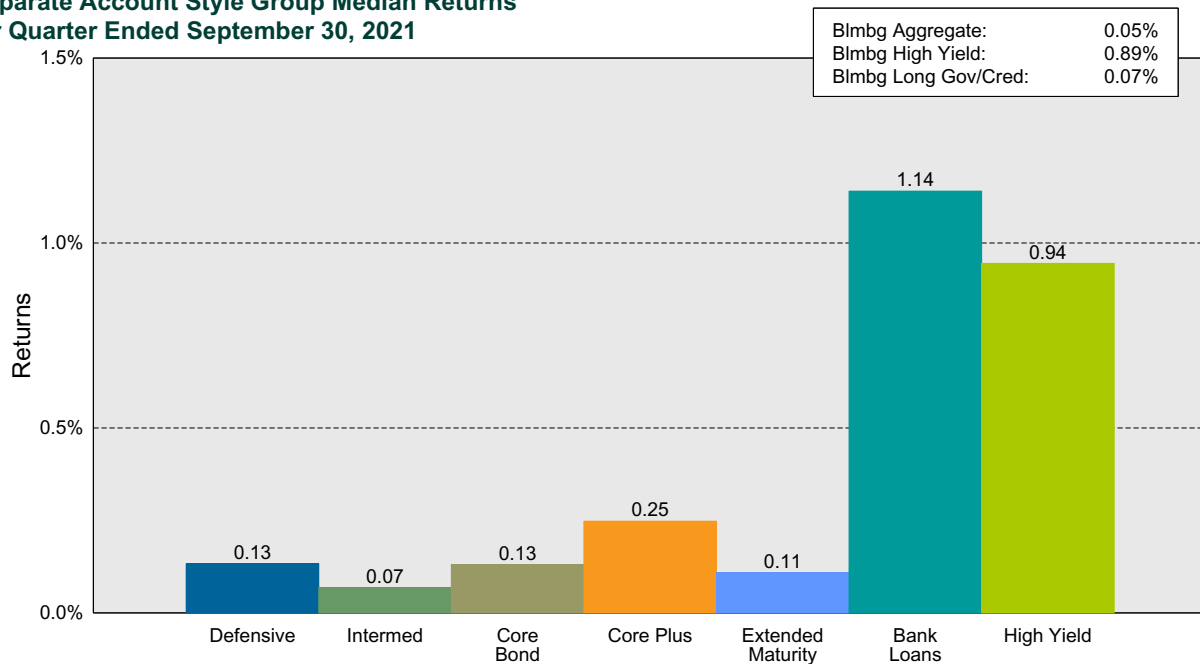
### Separate Account Style Group Median Returns for One Year Ended September 30, 2021



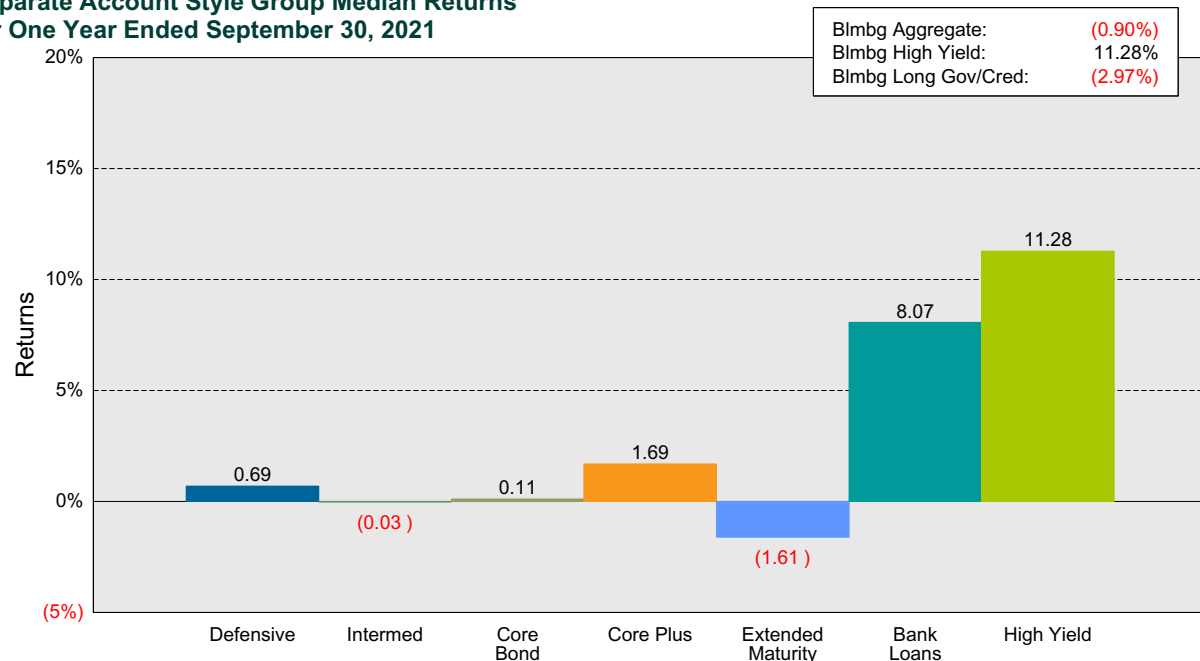
## Domestic Fixed Income Active Management Overview

U.S. Treasury yields were relatively unchanged from 6/30/21, masking intra-quarter volatility. The 10-year U.S. Treasury closed the quarter at 1.52%, up sharply from early August when it traded at 1.19%. The Bloomberg US Aggregate Bond Index returned 0.1% for the quarter. Investment grade corporates underperformed U.S. Treasuries by 15 bps on a duration-adjusted basis as spreads widened modestly. TIPS outperformed nominal Treasuries (Bloomberg US TIPS Index: +1.8%; Bloomberg US Treasury Index: 0.1%) and 10-year breakeven spreads widened 5 bps to 2.37%. The Bloomberg High Yield Index rose 0.9% and leveraged loans (S&P LSTA Lev Loan: +1.1%) also performed well. The high yield default rate declined to 0.9% in September, the lowest since March 2014, according to data from J.P. Morgan.

### Separate Account Style Group Median Returns for Quarter Ended September 30, 2021



### Separate Account Style Group Median Returns for One Year Ended September 30, 2021



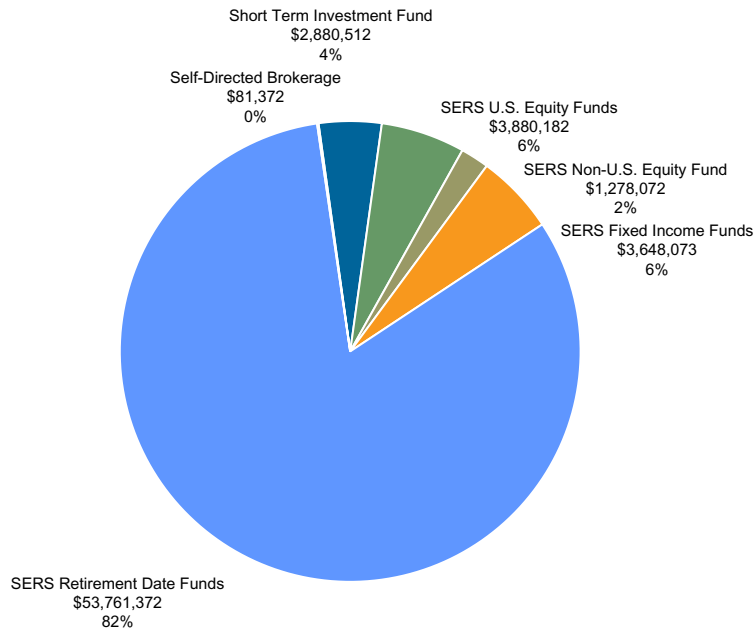




## Changes in Investment Fund Balances Period Ended September 30, 2021

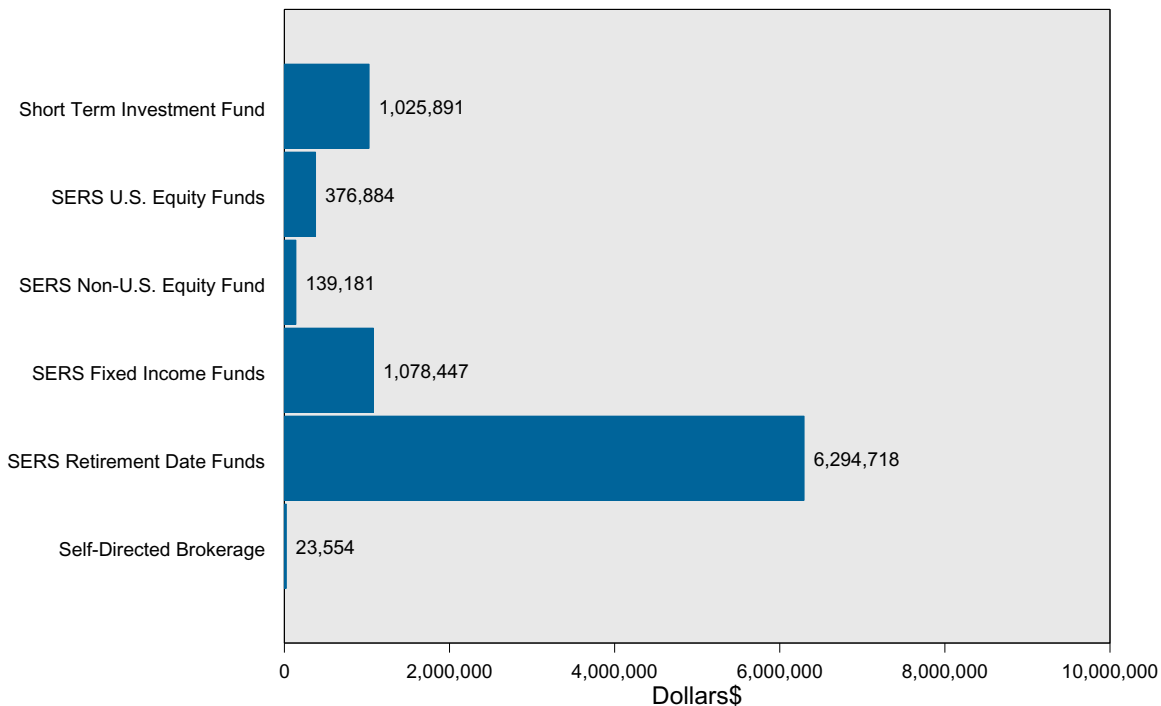
### Allocation Across Investment Options

The chart below illustrates the allocation of the aggregate fund assets across the various investment options for the quarter ended September 30, 2021.



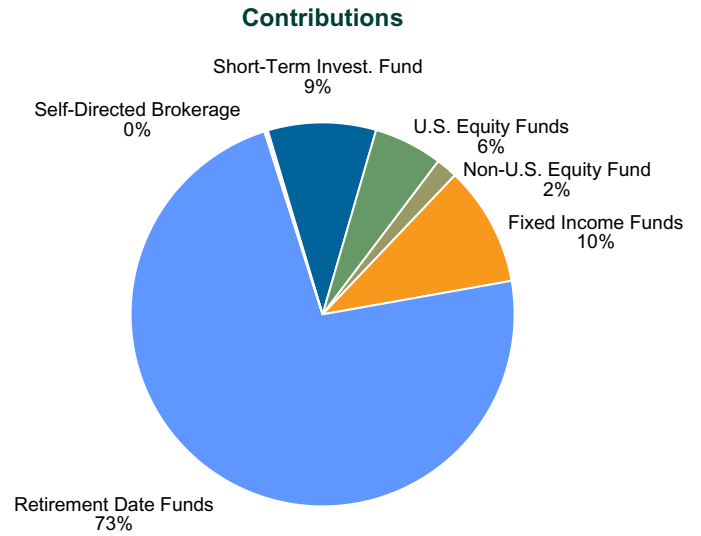
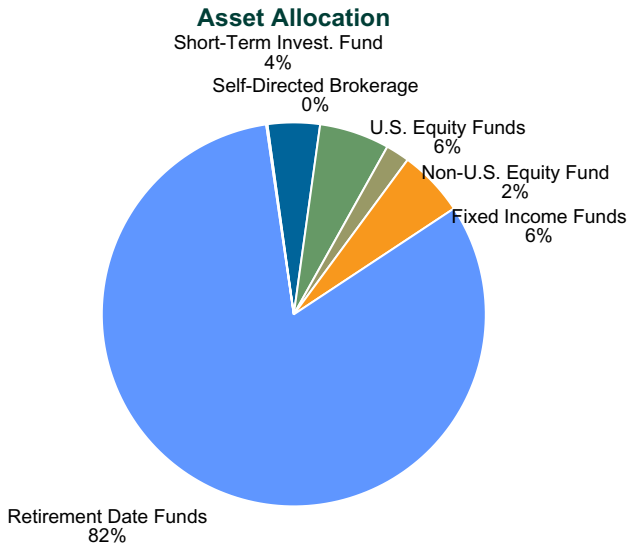
### Changes in Fund Values

The chart below shows the net change in fund values across the various investment options for the quarter ended September 30, 2021. The change in value for each fund is the result of a combination of 3 factors: 1) market movements; 2) contributions or disbursements into or out of the funds by the participants (and any matching done by the company); and 3) transfers between funds by the participants.

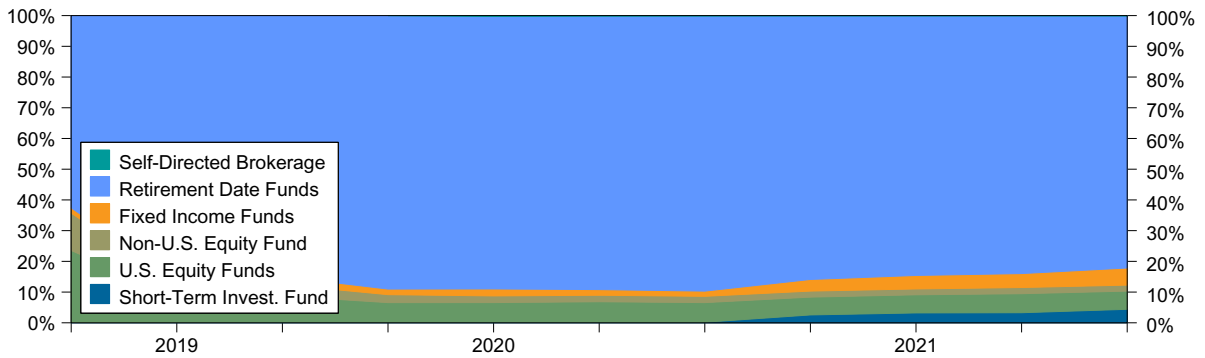


## Asset Allocation

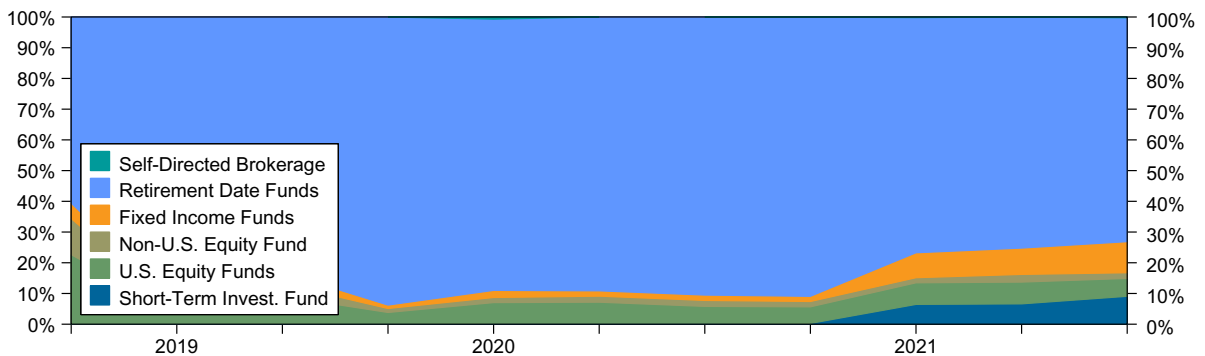
The charts below illustrate the historical asset allocation of the fund as well as the historical allocations of contributions to the fund. The pie charts on the top show the most recent allocations of both assets and contributions which include exchanges and transfers within the plan. The middle chart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



## Historical Asset Allocation



## Historical Allocation of Contributions



## Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of September 30, 2021, with the distribution as of June 30, 2021. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

### Asset Distribution Across Investment Managers

	September 30, 2021			Net New Inv.	Inv. Return	June 30, 2021	
	Market Value	% of Total				Market Value	% of Total
<b>SERS Retirement Date Funds</b>	<b>\$53,761,372</b>	<b>85.81%</b>		<b>\$6,818,915</b>	<b>\$(524,197)</b>	<b>\$47,466,654</b>	<b>86.72%</b>
SERS Post Retirement Fund	933,348	1.49%		116,698	(3,236)	819,886	1.50%
SERS 2025 Retirement Fund	2,580,328	4.12%		312,249	(11,243)	2,279,322	4.16%
SERS 2030 Retirement Fund	5,091,249	8.13%		305,219	(27,052)	4,813,082	8.79%
SERS 2035 Retirement Fund	6,706,579	10.70%		1,724,632	(65,283)	5,047,230	9.22%
SERS 2040 Retirement Fund	5,663,022	9.04%		851,733	(54,181)	4,865,471	8.89%
SERS 2045 Retirement Fund	6,578,874	10.50%		403,593	(62,235)	6,237,516	11.40%
SERS 2050 Retirement Fund	7,448,959	11.89%		913,755	(85,605)	6,620,810	12.10%
SERS 2055 Retirement Fund	7,335,942	11.71%		837,478	(83,428)	6,581,892	12.02%
SERS 2060 Retirement Fund	7,183,866	11.47%		785,862	(81,477)	6,479,480	11.84%
SERS 2065 Retirement Fund	4,239,205	6.77%		567,696	(50,456)	3,721,965	6.80%
<b>SERS U.S. Equity</b>	<b>\$3,880,182</b>	<b>6.19%</b>		<b>\$390,928</b>	<b>\$(14,044)</b>	<b>\$3,503,298</b>	<b>6.40%</b>
SERS U.S. Large Company Idx Fund	2,221,366	3.55%		166,445	8,712	2,046,209	3.74%
SERS U.S. All Company Idx Fund	1,044,740	1.67%		133,888	(4,124)	914,976	1.67%
SERS U.S. SMID Company Idx Fund	614,077	0.98%		90,596	(18,632)	542,112	0.99%
<b>SERS Non-U.S. Equity</b>							
SERS Global Non-U.S. Index Fund	1,278,072	2.04%		182,092	(42,911)	1,138,891	2.08%
<b>SERS Fixed Income</b>	<b>\$3,648,073</b>	<b>5.82%</b>		<b>\$1,076,502</b>	<b>\$1,945</b>	<b>\$2,569,626</b>	<b>4.69%</b>
SERS Short Term Investment Fund	2,880,512	4.60%		1,025,619	273	1,854,621	3.39%
SERS U.S. Short Term Bond Idx Fund	43,396	0.07%		(28,563)	19	71,940	0.13%
SERS U.S. TIPS Index Fund	149,710	0.24%		5,194	2,340	142,177	0.26%
SERS U.S. Bond Index Fund	574,455	0.92%		74,253	(686)	500,889	0.92%
<b>Self-Directed Brokerage</b>							
SERS Self-Directed Brokerage	81,372	0.13%		30,031	(6,477)	57,818	0.11%
<b>Total Fund</b>	<b>\$62,649,071</b>	<b>100.0%</b>		<b>\$8,498,469</b>	<b>\$(585,684)</b>	<b>\$54,736,287</b>	<b>100.0%</b>

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended September 30, 2021. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended September 30, 2021

	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
<b>Net Performance</b>					
<b>Target Date Funds</b>					
SERS Post Retirement Fund	(0.20%)	4.33%	11.39%	8.78%	7.34%
BlackRock Post Retirement Index	(0.19%)	4.32%	11.38%	8.74%	7.29%
Callan Tgt Date 2000-2010	(0.23%)	5.10%	12.65%	8.44%	7.62%
SERS 2025 Retirement Fund	(0.30%)	5.69%	14.55%	9.40%	8.76%
BlackRock 2025 Index	(0.29%)	5.69%	14.54%	9.34%	8.68%
Callan Target Date 2025	(0.45%)	6.23%	15.82%	9.40%	9.14%
SERS 2030 Retirement Fund	(0.45%)	7.20%	18.02%	10.31%	9.85%
BlackRock 2030 Index	(0.43%)	7.22%	18.03%	10.23%	9.75%
Callan Target Date 2030	(0.68%)	7.29%	18.60%	10.18%	10.15%
SERS 2035 Retirement Fund	(0.60%)	8.69%	21.45%	11.17%	10.90%
BlackRock 2035 Index	(0.58%)	8.69%	21.43%	11.09%	10.78%
Callan Target Date 2035	(0.82%)	8.62%	21.62%	10.88%	11.03%
SERS 2040 Retirement Fund	(0.75%)	10.00%	24.58%	11.90%	11.81%
BlackRock 2040 Index	(0.73%)	9.97%	24.52%	11.82%	11.67%
Callan Target Date 2040	(0.97%)	9.75%	24.27%	11.42%	11.73%
SERS 2045 Retirement Fund	(0.88%)	11.06%	27.10%	12.55%	12.48%
BlackRock 2045 Index	(0.86%)	11.03%	27.04%	12.42%	12.31%
Callan Target Date 2045	(1.02%)	10.48%	26.06%	11.78%	12.17%
SERS 2050 Retirement Fund	(0.96%)	11.63%	28.43%	12.88%	12.78%
BlackRock 2050 Index	(0.95%)	11.57%	28.33%	12.77%	12.62%
Callan Target Date 2050	(1.08%)	10.65%	26.78%	11.87%	12.32%
SERS 2055 Retirement Fund	(0.98%)	11.71%	28.62%	12.96%	12.82%
BlackRock 2055 Index	(0.97%)	11.67%	28.59%	12.86%	12.67%
Callan Target Date 2055	(1.08%)	10.76%	27.38%	12.01%	12.54%
SERS 2060 Retirement Fund	(0.98%)	11.69%	28.60%	12.94%	12.80%
BlackRock 2060 Index	(0.97%)	11.67%	28.58%	12.86%	12.67%
Callan Target Date 2060	(1.12%)	10.74%	27.26%	12.15%	12.71%
SERS 2065 Retirement Fund	(0.97%)	11.67%	28.51%	-	-
BlackRock 2065 Index	(0.97%)	11.66%	28.57%	-	-
Callan Target Date 2065	(1.27%)	10.69%	27.32%	12.18%	-

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended September 30, 2021. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended September 30, 2021

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
<b>Net Performance</b>				
<b>Target Date Funds</b>				
SERS Post Retirement Fund	6.24%	6.74%	5.85%	-
BlackRock Post Retirement Index	6.20%	6.69%	5.82%	6.00%
Callan Tgt Date 2000-2010	6.44%	7.87%	5.81%	5.93%
SERS 2025 Retirement Fund	7.29%	8.61%	6.20%	-
BlackRock 2025 Index	7.21%	8.52%	6.14%	6.71%
Callan Target Date 2025	7.53%	9.39%	6.18%	-
SERS 2030 Retirement Fund	8.08%	9.51%	6.56%	-
BlackRock 2030 Index	7.97%	9.40%	6.50%	7.07%
Callan Target Date 2030	8.31%	10.26%	6.83%	6.92%
SERS 2035 Retirement Fund	8.82%	10.34%	6.91%	-
BlackRock 2035 Index	8.70%	10.21%	6.83%	7.39%
Callan Target Date 2035	8.92%	11.15%	7.04%	-
SERS 2040 Retirement Fund	9.46%	11.08%	7.19%	-
BlackRock 2040 Index	9.32%	10.92%	7.09%	7.65%
Callan Target Date 2040	9.43%	11.63%	7.57%	7.31%
SERS 2045 Retirement Fund	9.94%	11.67%	7.38%	-
BlackRock 2045 Index	9.77%	11.51%	7.29%	7.82%
Callan Target Date 2045	9.84%	11.87%	7.52%	-
SERS 2050 Retirement Fund	10.15%	12.07%	-	-
BlackRock 2050 Index	9.99%	11.90%	7.56%	8.43%
Callan Target Date 2050	10.00%	11.97%	7.31%	-
SERS 2055 Retirement Fund	10.18%	12.30%	-	-
BlackRock 2055 Index	10.04%	12.14%	-	-
Callan Target Date 2055	10.11%	12.21%	-	-

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

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended September 30, 2021. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended September 30, 2021

	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
<b>Net Performance</b>					
<b>Domestic Equity</b>					
SERS U.S. Large Company Index Fund	0.58%	15.92%	30.02%	16.01%	16.91%
S&P 500 Index	0.58%	15.92%	30.00%	15.99%	16.90%
Callan Lg Cap Broad MF	0.01%	14.96%	29.28%	15.75%	16.44%
SERS U.S. All Company Index Fund	(0.09%)	14.95%	31.78%	15.94%	16.79%
Russell 3000 Index	(0.10%)	14.99%	31.88%	16.00%	16.85%
Callan Multi Cap Brd MF	(0.45%)	14.57%	30.87%	13.96%	14.83%
SERS U.S. SMID Company Idx Fund	(3.16%)	11.96%	42.74%	15.75%	16.51%
Dow Jones US Completion	(3.29%)	11.61%	42.20%	15.54%	16.30%
Callan SMID Broad MFs	(1.54%)	13.48%	39.99%	12.38%	15.79%
<b>International Equity</b>					
SERS Global Non-U.S. Index Fund	(3.32%)	5.71%	23.64%	8.20%	9.11%
MSCI ACWI ex US	(2.99%)	5.90%	23.92%	8.03%	8.94%
Callan Non US Equity MFs	(1.03%)	7.79%	25.46%	8.46%	8.96%
<b>Domestic Fixed Income</b>					
SERS Short Term Investment Fund	0.01%	0.06%	0.10%	1.21%	1.28%
3-month Treasury Bill	0.01%	0.04%	0.07%	1.18%	1.16%
Callan Cash Database(1)	0.05%	0.18%	0.29%	1.52%	1.49%
SERS U.S. Short Term Bond Idx Fund	0.09%	0.06%	0.26%	2.86%	-
Blmbg Gov/Cred 1-3 Yr	0.09%	0.09%	0.30%	2.87%	1.89%
Callan Short US Govt MFs	(0.03%)	(0.47%)	(0.32%)	2.65%	1.45%
SERS U.S. TIPS Index Fund	1.75%	3.49%	5.16%	7.43%	-
Blmbg US TIPS	1.75%	3.51%	5.19%	7.45%	4.34%
Callan TIPS MFs	1.63%	3.54%	5.43%	6.97%	4.13%
SERS U.S. Bond Index Fund	0.05%	(1.59%)	(0.96%)	5.35%	2.93%
Blmbg Aggregate	0.05%	(1.55%)	(0.90%)	5.36%	2.94%
Callan Core Bond MFs	0.09%	(1.05%)	0.11%	5.97%	3.45%

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

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended September 30, 2021. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended September 30, 2021

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
<b>Net Performance</b>				
<b>Domestic Equity</b>				
SERS U.S. Large Company Index Fund	14.03%	16.65%	10.41%	9.55%
S&P 500 Index	14.01%	16.63%	10.37%	9.51%
Callan Lg Cap Broad MF	13.38%	16.13%	10.23%	9.36%
SERS U.S. All Company Index Fund	13.91%	16.58%	-	-
Russell 3000 Index	13.93%	16.60%	10.44%	9.85%
Callan Multi Cap Brd MF	11.76%	14.95%	9.37%	9.56%
SERS U.S. SMID Company Idx Fund	13.52%	16.39%	11.10%	11.87%
Dow Jones US Completion	13.32%	16.16%	10.88%	11.70%
Callan SMID Broad MFs	13.05%	15.07%	10.54%	11.15%
<b>International Equity</b>				
SERS Global Non-U.S. Index Fund	5.91%	7.77%	-	-
MSCI ACWI ex US	5.69%	7.48%	4.38%	7.15%
Callan Non US Equity MFs	6.04%	8.56%	5.05%	7.06%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	1.00%	0.76%	1.19%	-
3-month Treasury Bill	0.87%	0.63%	1.00%	1.32%
Callan Cash Database(1)	1.27%	1.07%	1.46%	1.73%
Blmbg Gov/Cred 1-3 Yr	1.71%	1.47%	2.35%	2.57%
Callan Short US Govt MFs	1.44%	1.20%	2.28%	2.53%
Blmbg US TIPS	3.90%	3.12%	4.43%	5.13%
Callan TIPS MFs	3.58%	2.87%	4.22%	4.82%
SERS U.S. Bond Index Fund	3.24%	2.97%	4.13%	4.29%
Blmbg Aggregate	3.26%	3.01%	4.17%	4.33%
Callan Core Bond MFs	3.59%	3.50%	4.50%	4.54%

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

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

## Investment Fund Returns

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

	12/2020- 9/2021	2020	2019	2018	2017
<b>Net Performance</b>					
<b>Target Date Funds</b>					
SERS Post Retirement Fund	4.33%	11.97%	15.65%	(3.47%)	10.18%
BlackRock Post Retirement Index	4.32%	11.80%	15.63%	(3.48%)	10.10%
Callan Tgt Date 2000-2010	5.10%	10.59%	14.39%	(3.15%)	10.09%
SERS 2025 Retirement Fund	5.69%	12.19%	18.60%	(4.86%)	13.91%
BlackRock 2025 Index	5.69%	12.01%	18.56%	(4.90%)	13.75%
Callan Target Date 2025	6.23%	12.58%	18.51%	(5.19%)	14.94%
SERS 2030 Retirement Fund	7.20%	12.88%	20.80%	(5.71%)	15.83%
BlackRock 2030 Index	7.22%	12.72%	20.70%	(5.76%)	15.64%
Callan Target Date 2030	7.29%	13.23%	20.43%	(6.12%)	16.77%
SERS 2035 Retirement Fund	8.69%	13.58%	22.84%	(6.50%)	17.72%
BlackRock 2035 Index	8.69%	13.44%	22.72%	(6.58%)	17.48%
Callan Target Date 2035	8.62%	14.28%	22.17%	(7.03%)	18.51%
SERS 2040 Retirement Fund	10.00%	14.14%	24.71%	(7.22%)	19.38%
BlackRock 2040 Index	9.97%	13.98%	24.62%	(7.33%)	19.09%
Callan Target Date 2040	9.75%	14.91%	23.62%	(7.89%)	19.84%
SERS 2045 Retirement Fund	11.06%	14.83%	26.05%	(7.85%)	20.47%
BlackRock 2045 Index	11.03%	14.65%	25.90%	(7.99%)	20.15%
Callan Target Date 2045	10.48%	15.52%	24.60%	(8.21%)	20.63%
SERS 2050 Retirement Fund	11.63%	15.20%	26.60%	(8.11%)	20.85%
BlackRock 2050 Index	11.57%	15.07%	26.48%	(8.26%)	20.55%
Callan Target Date 2050	10.65%	15.71%	24.89%	(8.44%)	20.74%
SERS 2055 Retirement Fund	11.71%	15.32%	26.67%	(8.13%)	20.82%
BlackRock 2055 Index	11.67%	15.18%	26.58%	(8.28%)	20.55%
Callan Target Date 2055	10.76%	15.83%	24.97%	(8.44%)	21.10%
SERS 2060 Retirement Fund	11.69%	15.31%	26.66%	(8.14%)	20.77%
BlackRock 2060 Index	11.67%	15.19%	26.58%	(8.28%)	20.55%
Callan Target Date 2060	10.74%	15.87%	25.08%	(8.35%)	21.15%
SERS 2065 Retirement Fund	11.67%	15.15%	-	-	-
BlackRock 2065 Index	11.66%	15.19%	-	-	-
Callan Target Date 2065	10.69%	16.43%	25.62%	(8.63%)	-



## Investment Fund Returns

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

	12/2020- 9/2021	2020	2019	2018	2017
<b>Net Performance</b>					
<b>Domestic Equity</b>					
SERS U.S. Large Company Index Fund	15.92%	18.43%	31.51%	(4.39%)	21.84%
S&P 500 Index	15.92%	18.40%	31.49%	(4.38%)	21.83%
Callan Lg Cap Broad MF	14.96%	18.47%	30.14%	(4.54%)	23.56%
SERS U.S. All Company Index Fund	14.95%	21.20%	30.52%	(5.29%)	21.09%
Russell 3000 Index	14.99%	20.89%	31.02%	(5.24%)	21.13%
Callan Multi Cap Brd MF	14.57%	17.19%	29.12%	(6.82%)	20.75%
SERS U.S. SMID Company Idx Fund	11.96%	32.03%	28.20%	(9.32%)	18.21%
Dow Jones US Completion	11.61%	32.17%	27.94%	(9.57%)	18.12%
Callan SMID Broad MFs	13.48%	24.00%	29.40%	(8.69%)	17.14%
<b>International Equity</b>					
SERS Global Non-U.S. Index Fund	5.71%	11.15%	21.77%	(13.86%)	27.63%
MSCI ACWI ex US	5.90%	10.65%	21.51%	(14.20%)	27.19%
Callan Non US Equity MFs	7.79%	11.12%	22.83%	(15.04%)	26.90%
<b>Domestic Fixed Income</b>					
SERS Short Term Investment Fund	0.06%	0.67%	2.31%	2.09%	1.08%
3-month Treasury Bill	0.04%	0.67%	2.28%	1.87%	0.86%
Callan Cash Database(1)	0.18%	1.06%	2.67%	2.00%	1.18%
SERS U.S. Short Term Bond Idx Fund	0.06%	3.36%	4.02%	1.58%	-
Blmbg Gov/Cred 1-3 Yr	0.09%	3.33%	4.03%	1.60%	0.84%
Callan Short US Govt MFs	(0.47%)	3.57%	3.52%	1.15%	0.59%
SERS U.S. TIPS Index Fund	3.49%	11.00%	8.40%	-	-
Blmbg US TIPS	3.51%	10.99%	8.43%	(1.26%)	3.01%
Callan TIPS MFs	3.54%	10.29%	8.26%	(1.53%)	3.12%
SERS U.S. Bond Index Fund	(1.59%)	7.56%	8.69%	0.02%	3.53%
Blmbg Aggregate	(1.55%)	7.51%	8.72%	0.01%	3.54%
Callan Core Bond MFs	(1.05%)	8.65%	9.17%	(0.35%)	3.71%

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

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended September 30, 2021. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended September 30, 2021

	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
<b>Gross Performance</b>					
<b>Target Date Funds</b>					
SERS Post Retirement Fund	(0.18%)	4.38%	11.47%	8.86%	7.41%
BlackRock Post Retirement Index	(0.19%)	4.32%	11.38%	8.74%	7.29%
Callan Tgt Date 2000-2010	(0.23%)	5.10%	12.65%	8.44%	7.62%
SERS 2025 Retirement Fund	(0.28%)	5.74%	14.62%	9.48%	8.83%
BlackRock 2025 Index	(0.29%)	5.69%	14.54%	9.34%	8.68%
Callan Target Date 2025	(0.45%)	6.23%	15.82%	9.40%	9.14%
SERS 2030 Retirement Fund	(0.43%)	7.26%	18.10%	10.38%	9.92%
BlackRock 2030 Index	(0.43%)	7.22%	18.03%	10.23%	9.75%
Callan Target Date 2030	(0.68%)	7.29%	18.60%	10.18%	10.15%
SERS 2035 Retirement Fund	(0.58%)	8.74%	21.52%	11.24%	10.97%
BlackRock 2035 Index	(0.58%)	8.69%	21.43%	11.09%	10.78%
Callan Target Date 2035	(0.82%)	8.62%	21.62%	10.88%	11.03%
SERS 2040 Retirement Fund	(0.74%)	10.05%	24.66%	11.98%	11.88%
BlackRock 2040 Index	(0.73%)	9.97%	24.52%	11.82%	11.67%
Callan Target Date 2040	(0.97%)	9.75%	24.27%	11.42%	11.73%
SERS 2045 Retirement Fund	(0.87%)	11.12%	27.19%	12.62%	12.55%
BlackRock 2045 Index	(0.86%)	11.03%	27.04%	12.42%	12.31%
Callan Target Date 2045	(1.02%)	10.48%	26.06%	11.78%	12.17%
SERS 2050 Retirement Fund	(0.94%)	11.68%	28.51%	12.96%	12.86%
BlackRock 2050 Index	(0.95%)	11.57%	28.33%	12.77%	12.62%
Callan Target Date 2050	(1.08%)	10.65%	26.78%	11.87%	12.32%
SERS 2055 Retirement Fund	(0.96%)	11.77%	28.70%	13.03%	12.89%
BlackRock 2055 Index	(0.97%)	11.67%	28.59%	12.86%	12.67%
Callan Target Date 2055	(1.08%)	10.76%	27.38%	12.01%	12.54%
SERS 2060 Retirement Fund	(0.96%)	11.75%	28.68%	13.02%	12.88%
BlackRock 2060 Index	(0.97%)	11.67%	28.58%	12.86%	12.67%
Callan Target Date 2060	(1.12%)	10.74%	27.26%	12.15%	12.71%
SERS 2065 Retirement Fund	(0.96%)	11.73%	28.60%	-	-
BlackRock 2065 Index	(0.97%)	11.66%	28.57%	-	-
Callan Target Date 2065	(1.27%)	10.69%	27.32%	12.18%	-

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended September 30, 2021. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended September 30, 2021

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
<b>Gross Performance</b>				
<b>Target Date Funds</b>				
SERS Post Retirement Fund	6.31%	6.82%	5.92%	-
BlackRock Post Retirement Index	6.20%	6.69%	5.82%	6.00%
Callan Tgt Date 2000-2010	6.44%	7.87%	5.81%	5.93%
SERS 2025 Retirement Fund	7.36%	8.69%	6.27%	-
BlackRock 2025 Index	7.21%	8.52%	6.14%	6.71%
Callan Target Date 2025	7.53%	9.39%	6.18%	-
SERS 2030 Retirement Fund	8.15%	9.58%	6.63%	-
BlackRock 2030 Index	7.97%	9.40%	6.50%	7.07%
Callan Target Date 2030	8.31%	10.26%	6.83%	6.92%
SERS 2035 Retirement Fund	8.89%	10.42%	6.99%	-
BlackRock 2035 Index	8.70%	10.21%	6.83%	7.39%
Callan Target Date 2035	8.92%	11.15%	7.04%	-
SERS 2040 Retirement Fund	9.53%	11.16%	7.26%	-
BlackRock 2040 Index	9.32%	10.92%	7.09%	7.65%
Callan Target Date 2040	9.43%	11.63%	7.57%	7.31%
SERS 2045 Retirement Fund	10.00%	11.75%	7.46%	-
BlackRock 2045 Index	9.77%	11.51%	7.29%	7.82%
Callan Target Date 2045	9.84%	11.87%	7.52%	-
SERS 2050 Retirement Fund	10.22%	12.14%	-	-
BlackRock 2050 Index	9.99%	11.90%	7.56%	8.43%
Callan Target Date 2050	10.00%	11.97%	7.31%	-
SERS 2055 Retirement Fund	10.26%	12.38%	-	-
BlackRock 2055 Index	10.04%	12.14%	-	-
Callan Target Date 2055	10.11%	12.21%	-	-

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

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended September 30, 2021. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended September 30, 2021

	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
<b>Gross Performance</b>					
<b>Domestic Equity</b>					
SERS U.S. Large Company Index Fund	0.58%	15.93%	30.02%	16.02%	16.91%
S&P 500 Index	0.58%	15.92%	30.00%	15.99%	16.90%
Callan Lg Cap Broad MF	0.01%	14.96%	29.28%	15.75%	16.44%
SERS U.S. All Company Index Fund	(0.09%)	14.96%	31.78%	15.95%	16.80%
Russell 3000 Index	(0.10%)	14.99%	31.88%	16.00%	16.85%
Callan Multi Cap Brd MF	(0.45%)	14.57%	30.87%	13.96%	14.83%
SERS U.S. SMID Company Idx Fund	(3.16%)	11.96%	42.75%	15.76%	16.51%
Dow Jones US Completion	(3.29%)	11.61%	42.20%	15.54%	16.30%
Callan SMID Broad MFs	(1.54%)	13.48%	39.99%	12.38%	15.79%
<b>International Equity</b>					
SERS Global Non-U.S. Index Fund	(3.32%)	5.72%	23.65%	8.22%	9.13%
MSCI ACWI ex US	(2.99%)	5.90%	23.92%	8.03%	8.94%
Callan Non US Equity MFs	(1.03%)	7.79%	25.46%	8.46%	8.96%
<b>Domestic Fixed Income</b>					
SERS Short Term Investment Fund	0.01%	0.06%	0.10%	1.21%	1.28%
3-month Treasury Bill	0.01%	0.04%	0.07%	1.18%	1.16%
Callan Cash Database(1)	0.05%	0.18%	0.29%	1.52%	1.49%
SERS U.S. Short Term Bond Idx Fund	0.09%	0.06%	0.27%	2.87%	-
Blmbg Gov/Cred 1-3 Yr	0.09%	0.09%	0.30%	2.87%	1.89%
Callan Short US Govt MFs	(0.03%)	(0.47%)	(0.32%)	2.65%	1.45%
SERS U.S. TIPS Index Fund	1.75%	3.49%	5.16%	7.44%	-
Blmbg US TIPS	1.75%	3.51%	5.19%	7.45%	4.34%
Callan TIPS MFs	1.63%	3.54%	5.43%	6.97%	4.13%
SERS U.S. Bond Index Fund	0.05%	(1.59%)	(0.95%)	5.36%	2.93%
Blmbg Aggregate	0.05%	(1.55%)	(0.90%)	5.36%	2.94%
Callan Core Bond MFs	0.09%	(1.05%)	0.11%	5.97%	3.45%

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

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended September 30, 2021. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended September 30, 2021

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
<b>Gross Performance</b>				
<b>Domestic Equity</b>				
SERS U.S. Large Company Index Fund	14.04%	16.65%	10.41%	9.55%
S&P 500 Index	14.01%	16.63%	10.37%	9.51%
Callan Lg Cap Broad MF	13.38%	16.13%	10.23%	9.36%
SERS U.S. All Company Index Fund	13.91%	16.59%	-	-
Russell 3000 Index	13.93%	16.60%	10.44%	9.85%
Callan Multi Cap Brd MF	11.76%	14.95%	9.37%	9.56%
SERS U.S. SMID Company Idx Fund	13.52%	16.39%	11.10%	11.87%
Dow Jones US Completion	13.32%	16.16%	10.88%	11.70%
Callan SMID Broad MFs	13.05%	15.07%	10.54%	11.15%
<b>International Equity</b>				
SERS Global Non-U.S. Index Fund	5.93%	7.79%	-	-
MSCI ACWI ex US	5.69%	7.48%	4.38%	7.15%
Callan Non US Equity MFs	6.04%	8.56%	5.05%	7.06%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	1.00%	0.76%	1.19%	-
3-month Treasury Bill	0.87%	0.63%	1.00%	1.32%
Callan Cash Database(1)	1.27%	1.07%	1.46%	1.73%
Blmbg Gov/Cred 1-3 Yr	1.71%	1.47%	2.35%	2.57%
Callan Short US Govt MFs	1.44%	1.20%	2.28%	2.53%
Blmbg US TIPS	3.90%	3.12%	4.43%	5.13%
Callan TIPS MFs	3.58%	2.87%	4.22%	4.82%
SERS U.S. Bond Index Fund	3.24%	2.98%	4.13%	4.29%
Blmbg Aggregate	3.26%	3.01%	4.17%	4.33%
Callan Core Bond MFs	3.59%	3.50%	4.50%	4.54%

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

## Investment Fund Returns

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

	12/2020- 9/2021	2020	2019	2018	2017
<b>Gross Performance</b>					
<b>Target Date Funds</b>					
SERS Post Retirement Fund	4.38%	12.04%	15.72%	(3.41%)	10.25%
BlackRock Post Retirement Index	4.32%	11.80%	15.63%	(3.48%)	10.10%
Callan Tgt Date 2000-2010	5.10%	10.59%	14.39%	(3.15%)	10.09%
SERS 2025 Retirement Fund	5.74%	12.26%	18.67%	(4.80%)	13.99%
BlackRock 2025 Index	5.69%	12.01%	18.56%	(4.90%)	13.75%
Callan Target Date 2025	6.23%	12.58%	18.51%	(5.19%)	14.94%
SERS 2030 Retirement Fund	7.26%	12.96%	20.86%	(5.63%)	15.91%
BlackRock 2030 Index	7.22%	12.72%	20.70%	(5.76%)	15.64%
Callan Target Date 2030	7.29%	13.23%	20.43%	(6.12%)	16.77%
SERS 2035 Retirement Fund	8.74%	13.65%	22.93%	(6.43%)	17.77%
BlackRock 2035 Index	8.69%	13.44%	22.72%	(6.58%)	17.48%
Callan Target Date 2035	8.62%	14.28%	22.17%	(7.03%)	18.51%
SERS 2040 Retirement Fund	10.05%	14.22%	24.80%	(7.17%)	19.45%
BlackRock 2040 Index	9.97%	13.98%	24.62%	(7.33%)	19.09%
Callan Target Date 2040	9.75%	14.91%	23.62%	(7.89%)	19.84%
SERS 2045 Retirement Fund	11.12%	14.90%	26.12%	(7.78%)	20.54%
BlackRock 2045 Index	11.03%	14.65%	25.90%	(7.99%)	20.15%
Callan Target Date 2045	10.48%	15.52%	24.60%	(8.21%)	20.63%
SERS 2050 Retirement Fund	11.68%	15.27%	26.70%	(8.05%)	20.94%
BlackRock 2050 Index	11.57%	15.07%	26.48%	(8.26%)	20.55%
Callan Target Date 2050	10.65%	15.71%	24.89%	(8.44%)	20.74%
SERS 2055 Retirement Fund	11.77%	15.40%	26.75%	(8.07%)	20.90%
BlackRock 2055 Index	11.67%	15.18%	26.58%	(8.28%)	20.55%
Callan Target Date 2055	10.76%	15.83%	24.97%	(8.44%)	21.10%
SERS 2060 Retirement Fund	11.75%	15.38%	26.74%	(8.08%)	20.85%
BlackRock 2060 Index	11.67%	15.19%	26.58%	(8.28%)	20.55%
Callan Target Date 2060	10.74%	15.87%	25.08%	(8.35%)	21.15%
SERS 2065 Retirement Fund	11.73%	15.22%	-	-	-
BlackRock 2065 Index	11.66%	15.19%	-	-	-
Callan Target Date 2065	10.69%	16.43%	25.62%	(8.63%)	-

## Investment Fund Returns

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

	12/2020- 9/2021	2020	2019	2018	2017
<b>Gross Performance</b>					
<b>Domestic Equity</b>					
SERS U.S. Large Company Index Fund	15.93%	18.44%	31.51%	(4.38%)	21.85%
S&P 500 Index	15.92%	18.40%	31.49%	(4.38%)	21.83%
Callan Lg Cap Broad MF	14.96%	18.47%	30.14%	(4.54%)	23.56%
SERS U.S. All Company Index Fund	14.96%	21.20%	30.53%	(5.29%)	21.09%
Russell 3000 Index	14.99%	20.89%	31.02%	(5.24%)	21.13%
Callan Multi Cap Brd MF	14.57%	17.19%	29.12%	(6.82%)	20.75%
SERS U.S. SMID Company Idx Fund	11.96%	32.04%	28.21%	(9.32%)	18.21%
Dow Jones US Completion	11.61%	32.17%	27.94%	(9.57%)	18.12%
Callan SMID Broad MFs	13.48%	24.00%	29.40%	(8.69%)	17.14%
<b>International Equity</b>					
SERS Global Non-U.S. Index Fund	5.72%	11.17%	21.79%	(13.85%)	27.65%
MSCI ACWI ex US	5.90%	10.65%	21.51%	(14.20%)	27.19%
Callan Non US Equity MFs	7.79%	11.12%	22.83%	(15.04%)	26.90%
<b>Domestic Fixed Income</b>					
SERS Short Term Investment Fund	0.06%	0.67%	2.31%	2.09%	1.08%
3-month Treasury Bill	0.04%	0.67%	2.28%	1.87%	0.86%
Callan Cash Database(1)	0.18%	1.06%	2.67%	2.00%	1.18%
SERS U.S. Short Term Bond Idx Fund	0.06%	3.37%	4.02%	1.58%	-
Blmbg Gov/Cred 1-3 Yr	0.09%	3.33%	4.03%	1.60%	0.84%
Callan Short US Govt MFs	(0.47%)	3.57%	3.52%	1.15%	0.59%
SERS U.S. TIPS Index Fund	3.49%	11.00%	8.40%	-	-
Blmbg US TIPS	3.51%	10.99%	8.43%	(1.26%)	3.01%
Callan TIPS MFs	3.54%	10.29%	8.26%	(1.53%)	3.12%
SERS U.S. Bond Index Fund	(1.59%)	7.56%	8.69%	0.03%	3.53%
Blmbg Aggregate	(1.55%)	7.51%	8.72%	0.01%	3.54%
Callan Core Bond MFs	(1.05%)	8.65%	9.17%	(0.35%)	3.71%

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

**Pennsylvania SERS 401(a)**  
**Investment Manager Performance Monitoring Summary Report**  
**September 30, 2021**

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	10 Year Return	5 Year Return Consistency	5 Year Risk Quadrant	Expense Ratio
<b>Net of Fee Performance</b>									
<b>Target Date Funds</b>									
<b>SERS Post Retirement Fund</b> Callan Tgt Date Ret Inc	-0.2 57	11.4 29	8.8 10	7.3 16	6.2 15	6.7 20			0.08 81
BlackRock Post Retirement Index	-0.2 55	11.4 29	8.7 12	7.3 18	6.2 16	6.7 20			
<b>SERS 2025 Retirement Fund</b> Callan Target Date 2025	-0.3 27	14.5 71	9.4 50	8.8 61	7.3 58	8.6 75			0.08 80
BlackRock 2025 Index	-0.3 26	14.5 71	9.3 54	8.7 66	7.2 65	8.5 76			
<b>SERS 2030 Retirement Fund</b> Callan Target Date 2030	-0.4 26	18.0 64	10.3 45	9.8 62	8.1 58	9.5 74			0.08 79
BlackRock 2030 Index	-0.4 25	18.0 63	10.2 47	9.7 65	8.0 63	9.4 74			
<b>SERS 2035 Retirement Fund</b> Callan Target Date 2035	-0.6 25	21.4 54	11.2 37	10.9 55	8.8 54	10.3 78			0.08 80
BlackRock 2035 Index	-0.6 24	21.4 55	11.1 40	10.8 61	8.7 65	10.2 79			
<b>SERS 2040 Retirement Fund</b> Callan Target Date 2040	-0.8 27	24.6 43	11.9 33	11.8 45	9.5 49	11.1 68			0.08 79
BlackRock 2040 Index	-0.7 24	24.5 44	11.8 35	11.7 53	9.3 57	10.9 72			
<b>SERS 2045 Retirement Fund</b> Callan Target Date 2045	-0.9 34	27.1 29	12.5 30	12.5 35	9.9 45	11.7 60			0.08 80
BlackRock 2045 Index	-0.9 31	27.0 32	12.4 32	12.3 45	9.8 52	11.5 70			
<b>SERS 2050 Retirement Fund</b> Callan Target Date 2050	-1.0 34	28.4 16	12.9 21	12.8 29	10.1 36	12.1 45			0.08 79
BlackRock 2050 Index	-0.9 33	28.3 18	12.8 25	12.6 39	10.0 51	11.9 53			
<b>SERS 2055 Retirement Fund</b> Callan Target Date 2055	-1.0 32	28.6 18	13.0 20	12.8 30	10.2 42	12.3 46			0.08 83
BlackRock 2055 Index	-1.0 32	28.6 18	12.9 25	12.7 41	10.0 57	12.1 55			
<b>SERS 2060 Retirement Fund</b> Callan Target Date 2060	-1.0 32	28.6 21	12.9 24	12.8 39					0.08 81
BlackRock 2060 Index	-1.0 32	28.6 21	12.9 29	12.7 53					

Returns:  
■ above median  
■ third quartile  
■ fourth quartile

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

Risk Quadrant:  


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



**Pennsylvania SERS 401(a)**  
**Investment Manager Performance Monitoring Summary Report**  
**September 30, 2021**

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	10 Year Return	5 Year Return Consistency	5 Year Risk Quadrant	Expense Ratio
<b>SERS 2065 Retirement Fund</b> Callan Target Date 2065	-1.0 24	28.5 21							0.08 53
BlackRock 2065 Index	-1.0 24	28.6 20							
<b>Domestic Equity</b>									
<b>SERS U.S. Large Company Stock Index Fund</b> Callan Lg Cap Broad MF	0.6 27	30.0 45	16.0 49	16.9 47	14.0 45	16.6 43			0.02 99
S&P 500 Index	0.6 27	30.0 45	16.0 49	16.9 47	14.0 45	16.6 44			
<b>SERS U.S. All Company Index Fund</b> Callan Multi Cap Brd MF	-0.1 39	31.8 46	15.9 38	16.8 37	13.9 32	16.6 30			0.03 99
Russell 3000 Index	-0.1 39	31.9 46	16.0 38	16.9 37	13.9 32	16.6 30			
<b>U.S. Small/Mid Company Stock Index Fund</b> Callan SMID Broad MFs	-3.2 88	42.7 38	15.8 34	16.5 39	13.5 45	16.4 33			0.03 100
Dow Jones US Completion	-3.3 88	42.2 39	15.5 35	16.3 42	13.3 48	16.2 40			
<b>International Equity</b>									
<b>SERS Global Non-U.S. Index Fund</b> Callan Non US Equity MFs	-3.3 79	23.6 66	8.2 52	9.1 48	5.9 55	7.8 66			0.06 99
MSCI ACWI ex US	-3.0 77	23.9 65	8.0 53	8.9 51	5.7 59	7.5 72			
<b>Domestic Fixed Income</b>									
<b>SERS Short Term Investment Fund</b> Callan Cash Database	0.0 99	0.1 90	1.2 88	1.3 85	1.0 86	0.8 86			0.00 100
3-month Treasury Bill	0.0 97	0.1 96	1.2 90	1.2 97	0.9 100	0.6 99			
<b>Comments:</b> Callan Cash Database includes STIF, enhanced cash, and money market funds.									
<b>SERS U.S. Short Term Bond Idx Fund</b> Callan Short US Govt MFs	0.1 8	0.3 16	2.9 30						0.03 99
Blmbg Gov/Cred 1-3 Yr	0.1 8	0.3 15	2.9 29	1.9 12	1.7 17	1.5 24			
<b>SERS U.S. TIPS Index Fund</b> Callan TIPS MFs	1.8 30	5.2 64	7.4 32						0.03 99
Blmbg US TIPS	1.8 30	5.2 63	7.4 29	4.3 42	3.9 27	3.1 28			

Returns:  
 above median  
 third quartile  
 fourth quartile

Return Consistency:  
 above median  
 third quartile  
 fourth quartile

Risk Quadrant:

Expense Ratio:  
 below median  
 second quartile  
 first quartile

**Pennsylvania SERS 401(a)**  
**Investment Manager Performance Monitoring Summary Report**  
**September 30, 2021**

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	10 Year Return	5 Year Return Consistency	5 Year Risk Quadrant	Expense Ratio
<b>SERS U.S. Bond Index Fund</b>	0.1 65	-1.0 94	5.4 91	2.9 94	3.2 85	3.0 95			0.03 98
Callan Core Bond MFs									
Blmbg Aggregate	0.1 65	-0.9 94	5.4 91	2.9 92	3.3 81	3.0 94			

Returns:  
 above median  
 third quartile  
 fourth quartile

Return Consistency:  
 above median  
 third quartile  
 fourth quartile

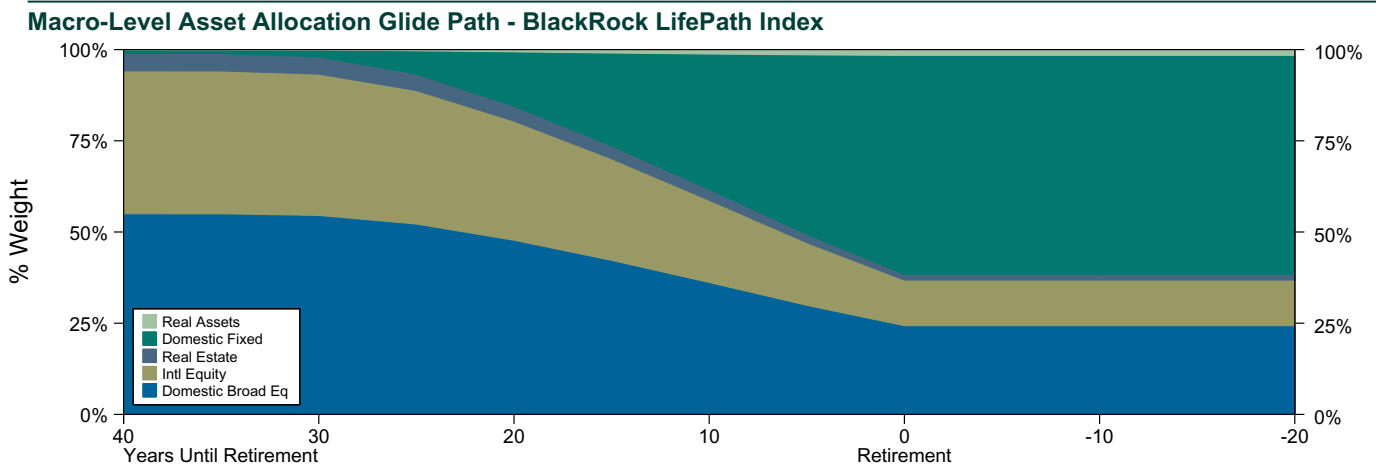
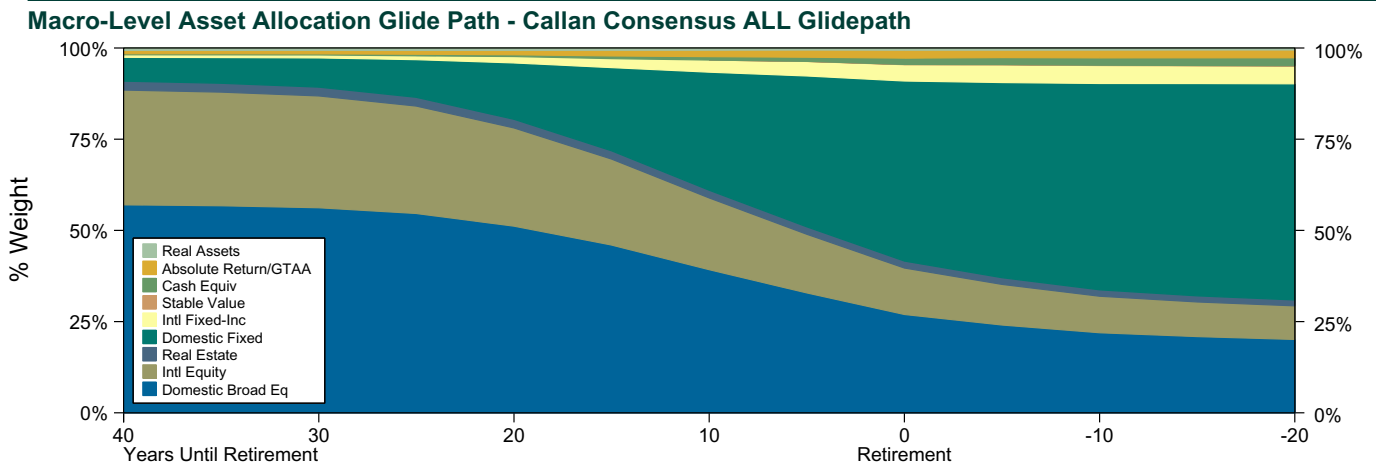
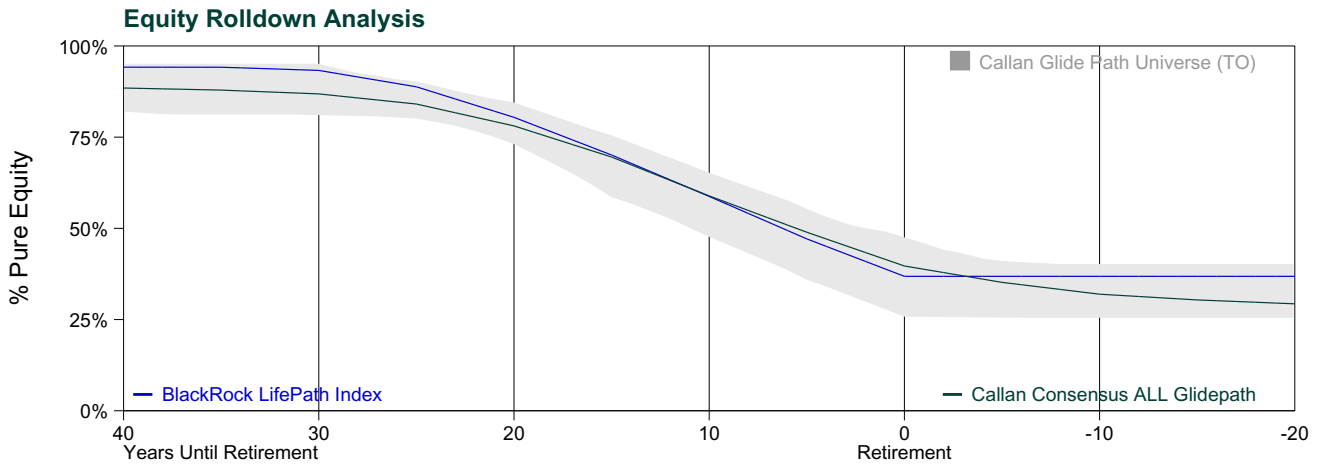
Risk Quadrant:  
 above median, low risk  
 second quartile, low risk  
 second quartile, high risk  
 first quartile, high risk

Expense Ratio:  
 below median  
 second quartile  
 first quartile



# Callan Consensus ALL Glidepath Target Date Glide Path Analysis as of September 30, 2021

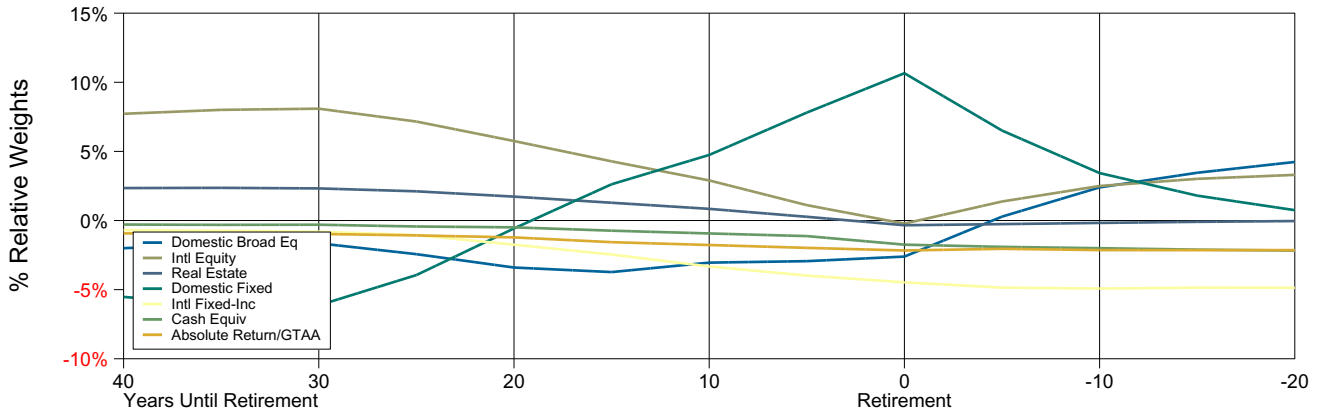
The following charts illustrate the asset allocation "glide path" underlying the relevant suite of target date funds. This analysis covers forty years of investor wealth accumulation up to retirement, as well as twenty years of wealth decumulation following retirement. The top chart shows the "pure"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



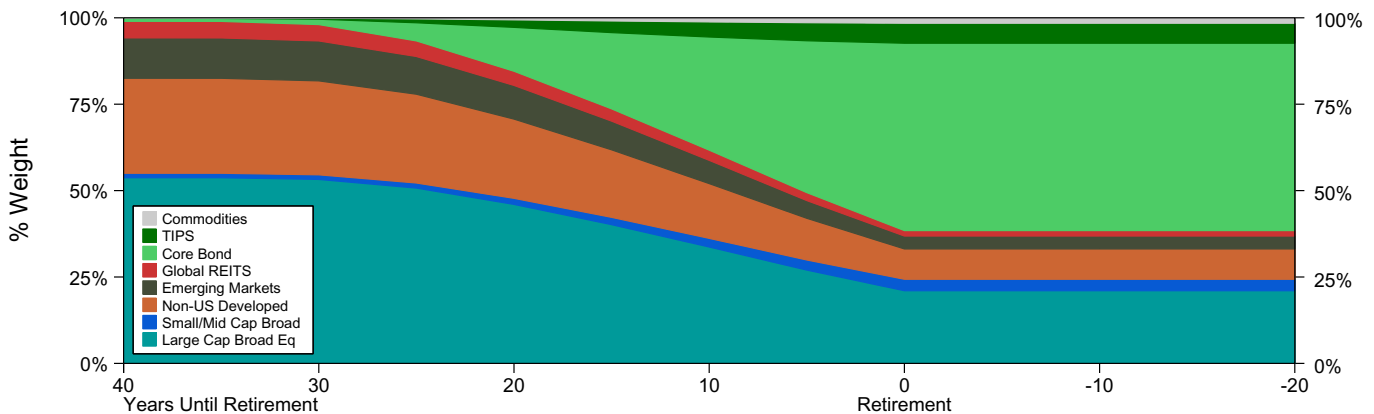
# BlackRock LifePath Index Target Date Glide Path Analysis as of September 30, 2021

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

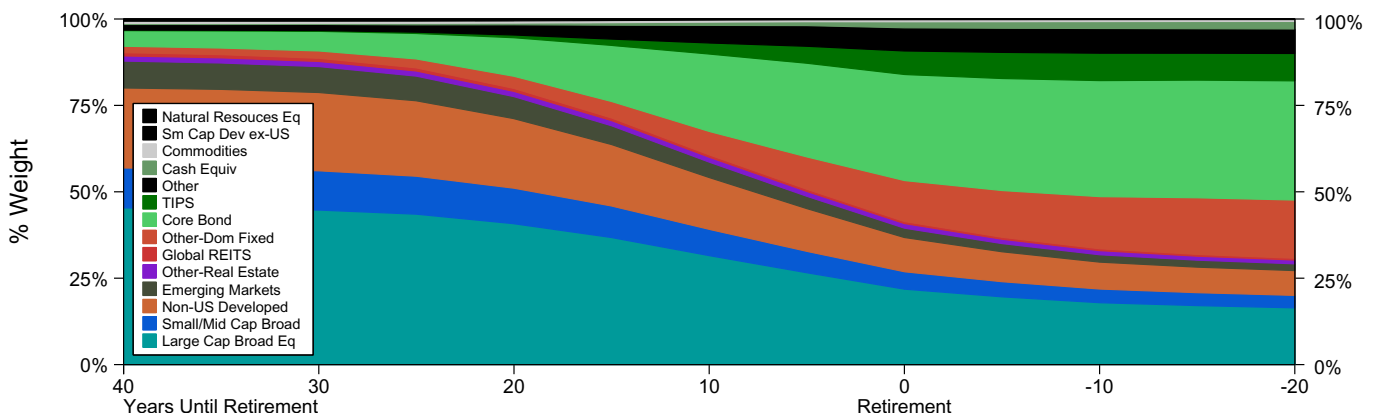
**Relative Macro Asset Allocation - BlackRock LifePath Index vs. Callan Consensus ALL Glidep**



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



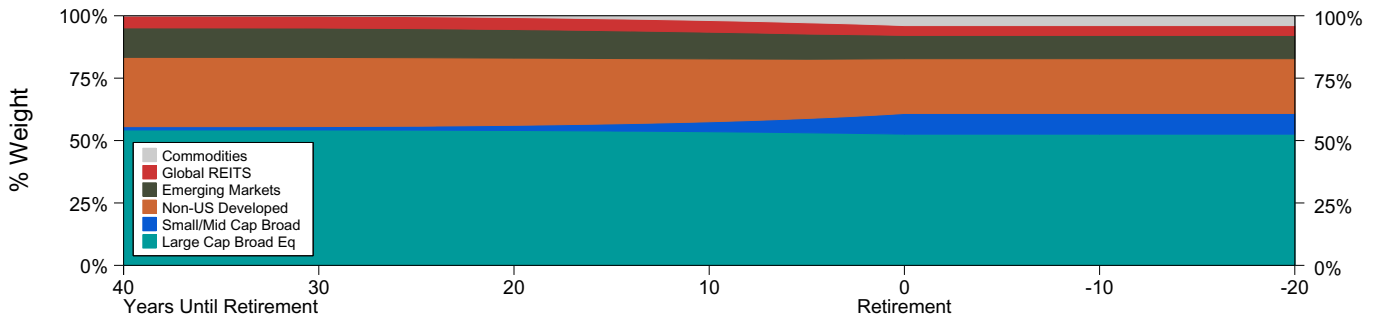
**Micro-Level Asset Allocation Glide Path - Callan Consensus ALL Glidepath**



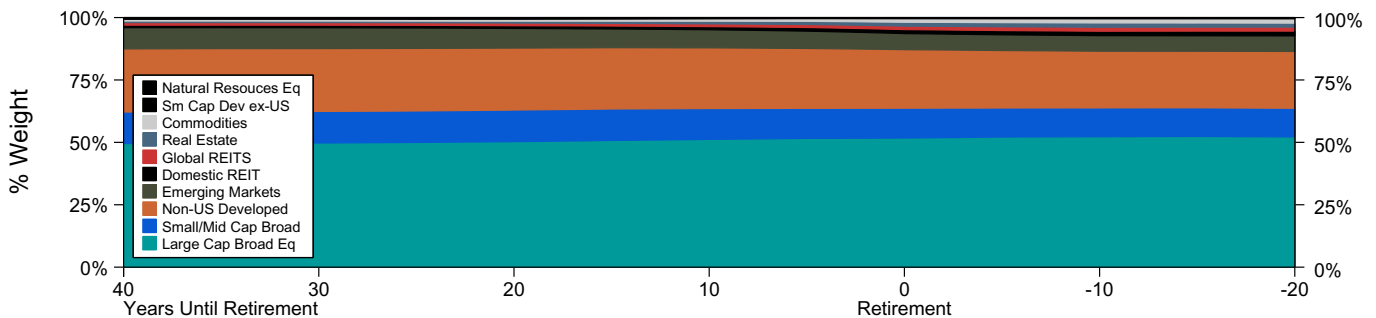
# BlackRock LifePath Index Target Date Glide Path Analysis as of September 30, 2021

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

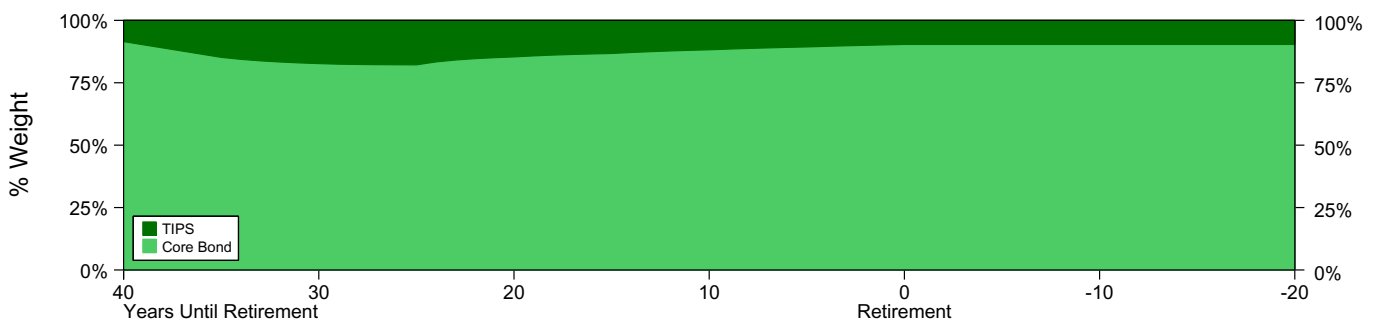
## Micro-Level Equity Allocation Glide Path - BlackRock LifePath Index



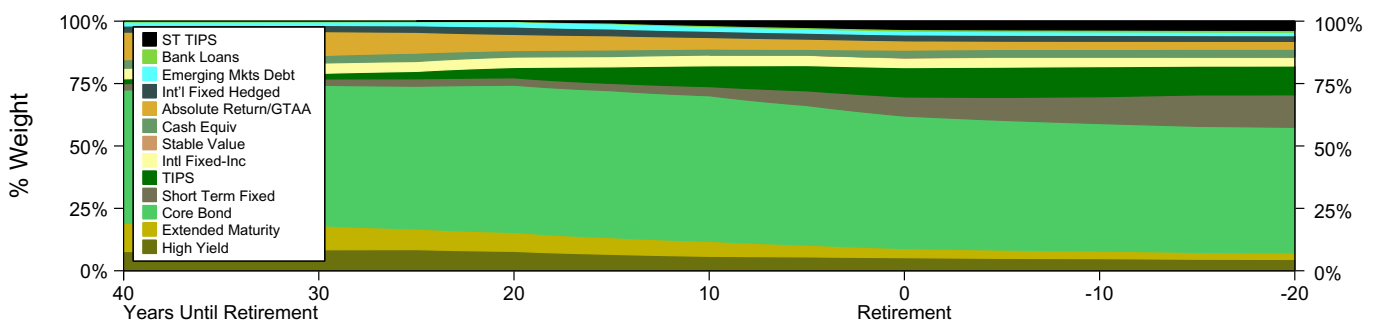
## Micro-Level Equity Asset Allocation Glide Path - Callan Consensus ALL Glidepath



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



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

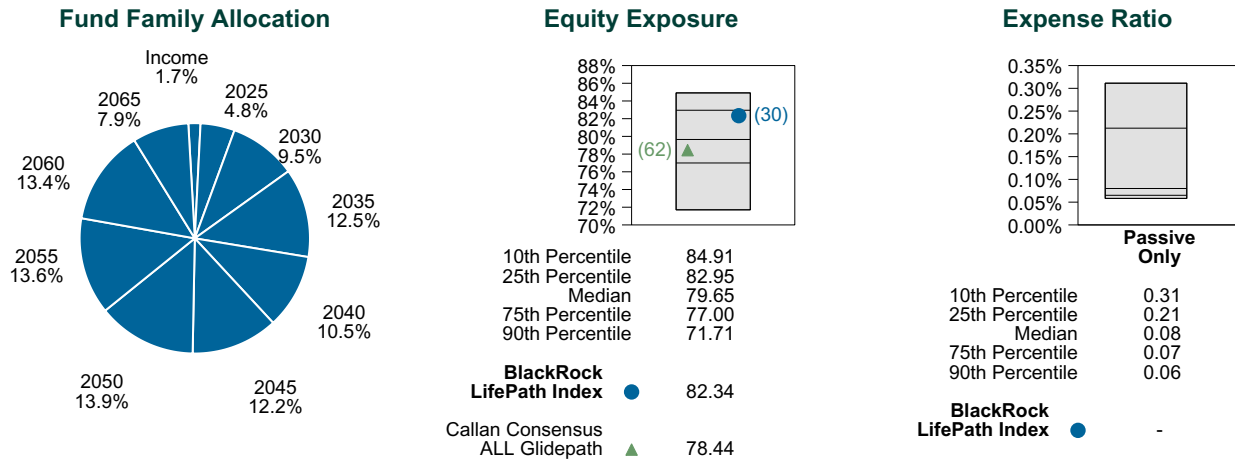


# Pennsylvania SERS 401(a) - BlackRock LifePath Index Target Date Fund Family Analysis as of September 30, 2021

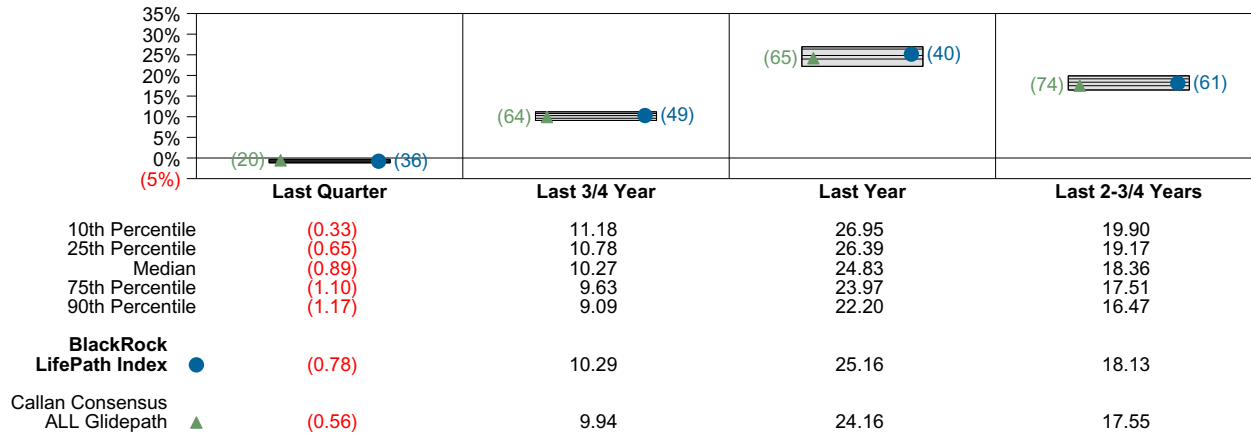
The following is an analysis of the client's suite of target date funds as an aggregated portfolio using actual proportions held by the client's participants. The upper-left pie chart shows the current client weights across target dates. The rest of the charts compare different attributes of the aggregated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

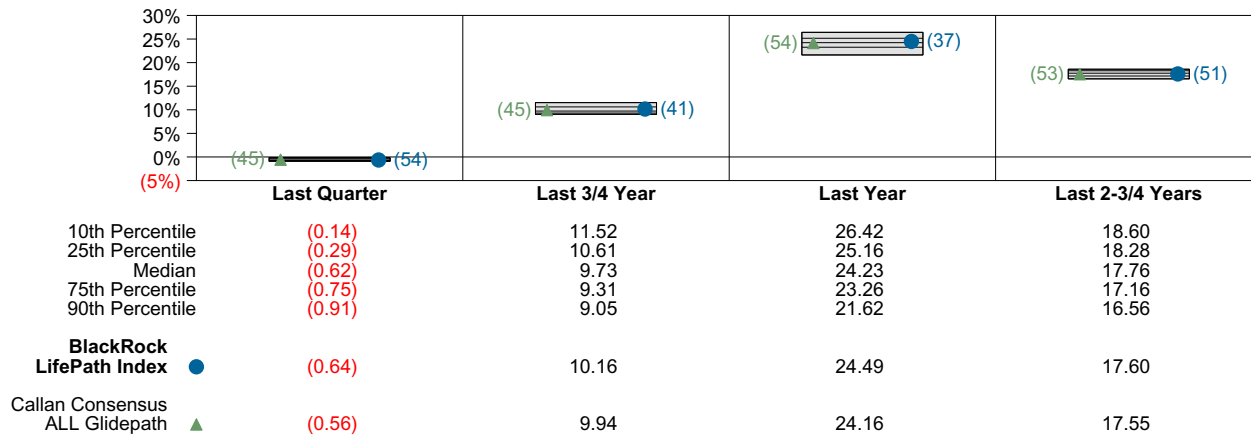
**Fee/Return Type: Gross**



## Target Date Family Performance vs Peer Families



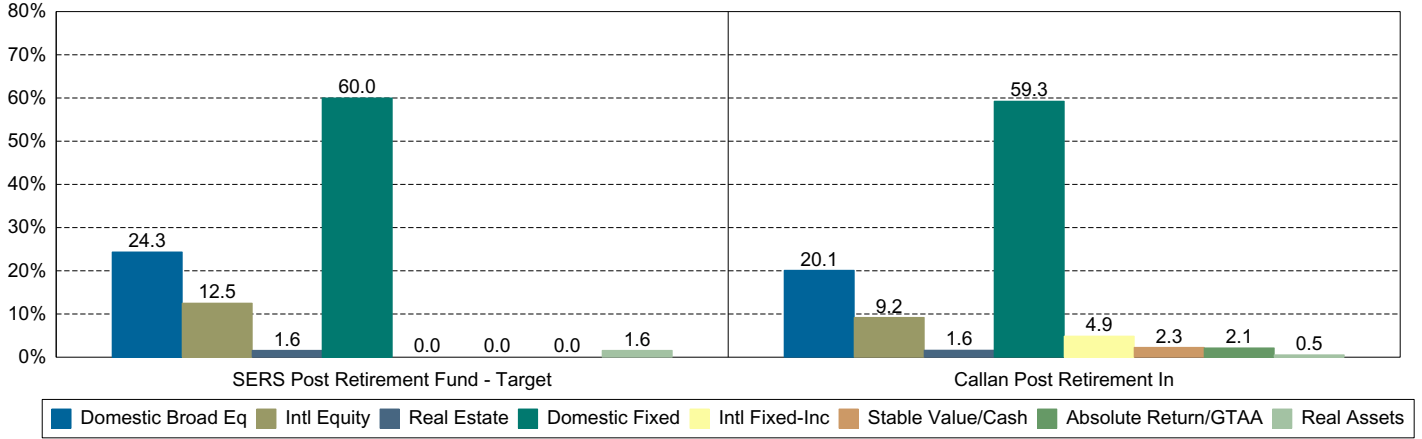
## Target Date Family Glide Path Returns vs Peer Families



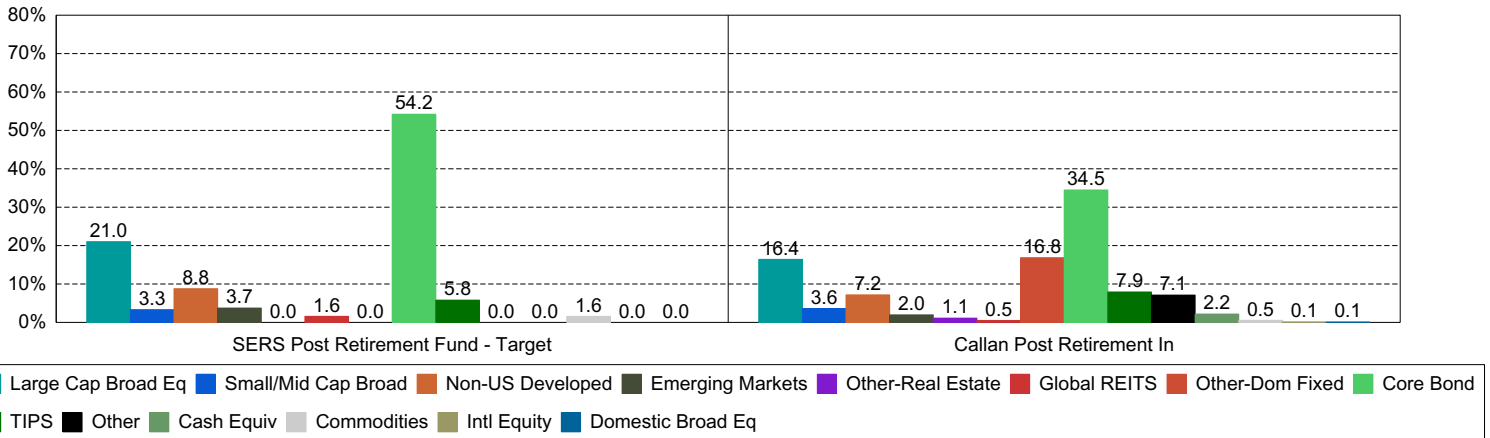
# SERS Post Retirement Fund Target Date Fund Asset Allocation as of September 30, 2021

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.

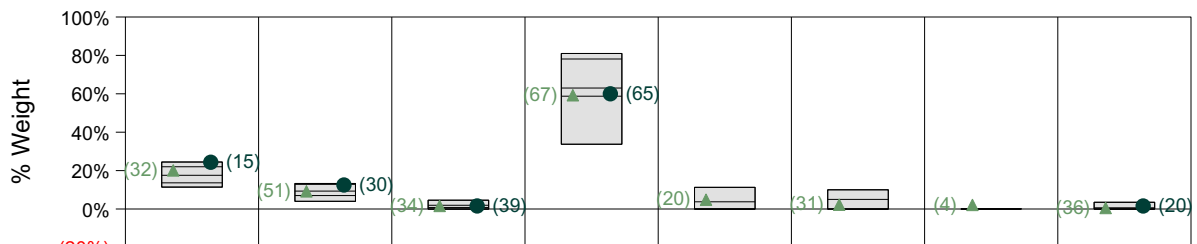
## Macro-Level Asset Allocation



## 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	Real Assets
10th Percentile	24.47	13.29	4.58	81.00	11.28	10.00	0.00	3.50
25th Percentile	22.00	12.83	1.95	78.12	3.75	5.00	0.00	0.62
Median	17.55	9.32	0.80	63.00	0.00	0.00	0.00	0.00
75th Percentile	13.62	7.00	0.00	58.75	0.00	0.00	0.00	0.00
90th Percentile	11.40	4.00	0.00	33.72	0.00	0.00	0.00	0.00

<b>SERS Post Retirement Fund - Target</b>	●	24.34	12.51	1.58	60.00	-	-	1.57
Callan Post Retirement In	▲	20.11	9.20	1.62	59.25	4.87	2.27	2.14



# SERS Post Retirement Fund Period Ended September 30, 2021

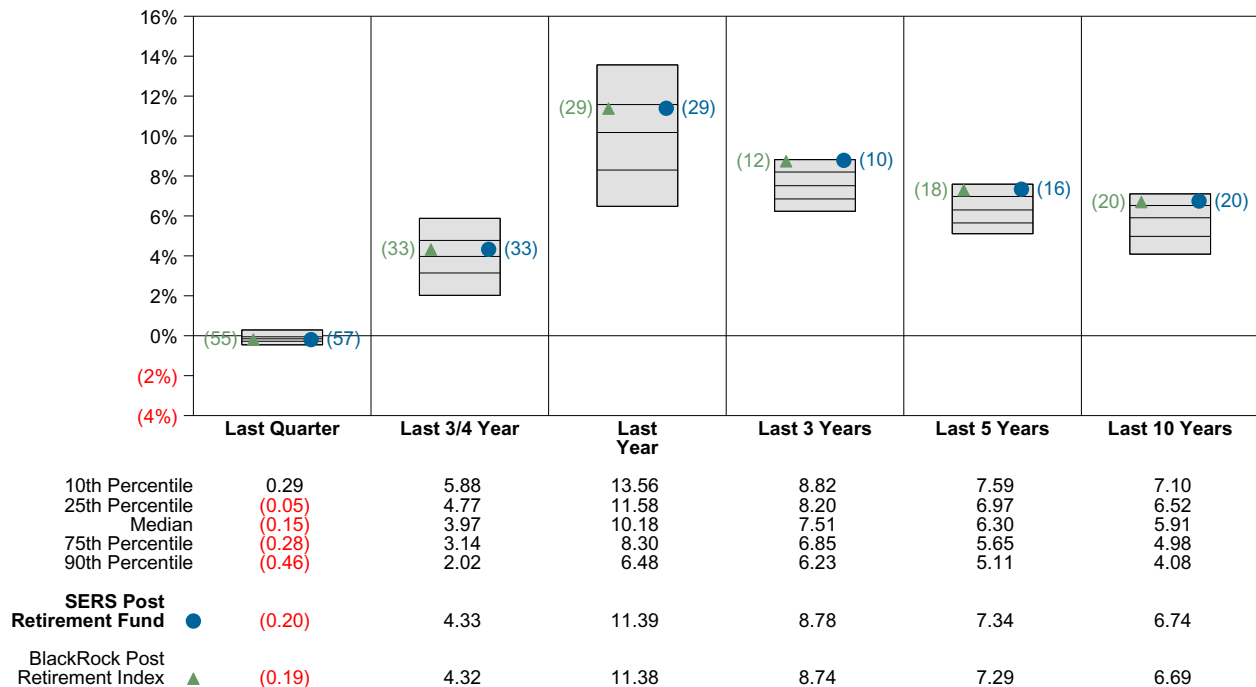
## Investment Philosophy

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

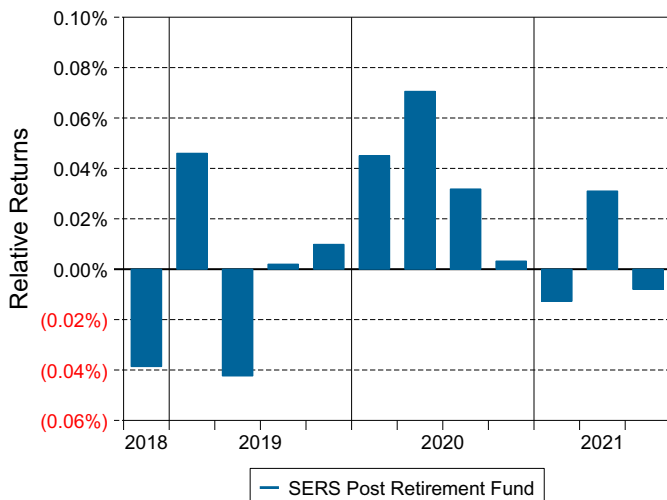
## Quarterly Summary and Highlights

- SERS Post Retirement Fund's portfolio posted a (0.20)% return for the quarter placing it in the 57 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 0.01% for the quarter and outperformed the BlackRock Post Retirement Index for the year by 0.01%.

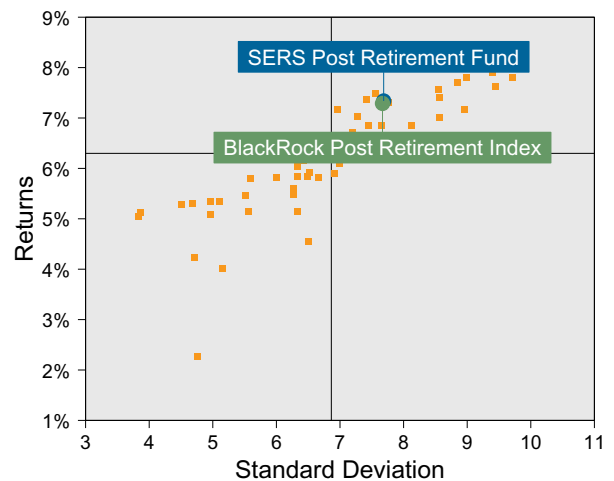
## Performance vs Callan Target Date Retirement Income (Net)



## Relative Returns vs BlackRock Post Retirement Index



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

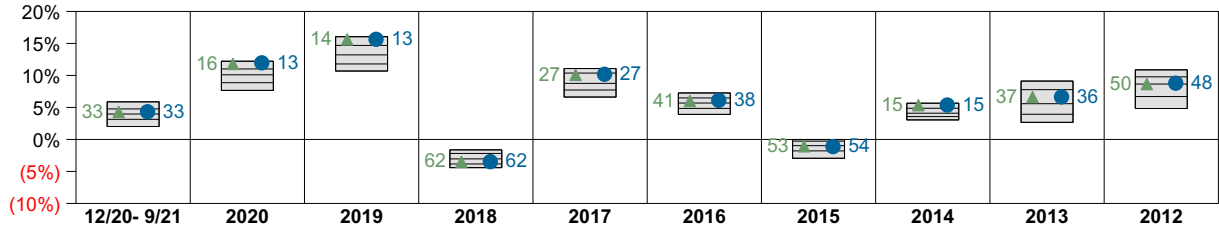


# SERS Post Retirement Fund Return Analysis Summary

## Return Analysis

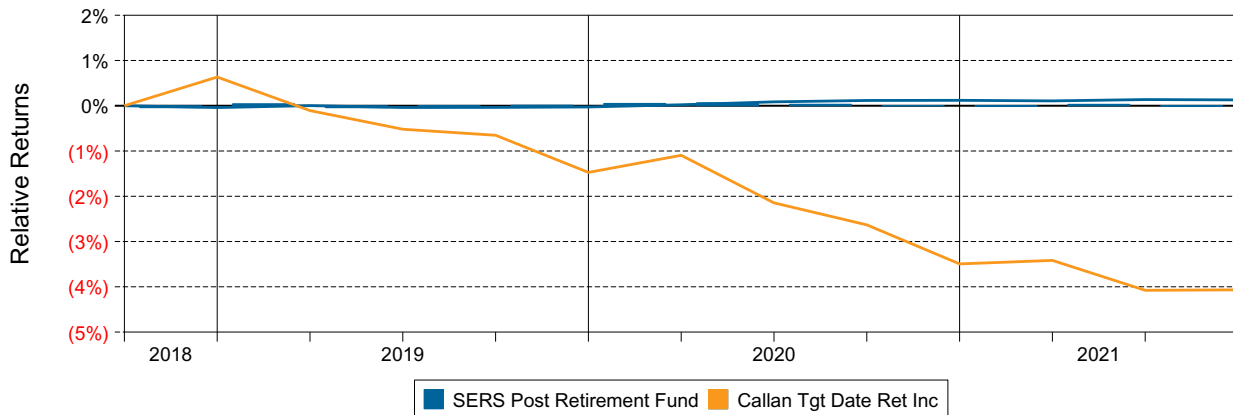
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

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

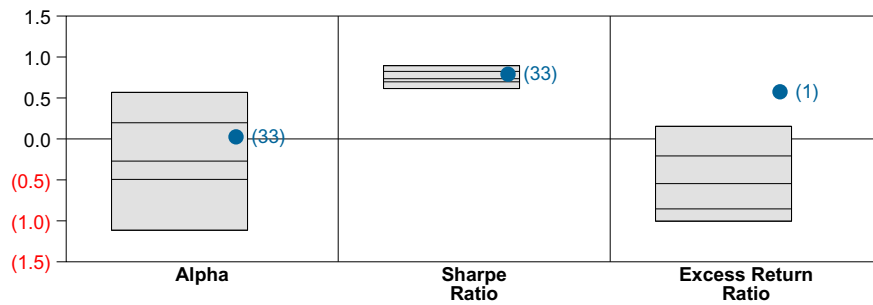


10th Percentile	5.88	12.22	16.05	(1.63)	11.08	7.26	(0.02)	5.66	9.12	10.88
25th Percentile	4.77	11.01	14.69	(2.19)	10.37	6.49	(0.27)	4.87	7.78	9.78
Median	3.97	10.10	13.21	(3.04)	8.76	5.69	(0.97)	4.10	5.58	8.66
75th Percentile	3.14	8.87	11.80	(3.83)	7.72	4.85	(1.79)	3.57	3.94	6.70
90th Percentile	2.02	7.66	10.69	(4.41)	6.62	3.91	(2.95)	3.05	2.67	4.83
<b>SERS Post Retirement Fund</b>	4.33	11.97	15.65	(3.47)	10.18	6.10	(1.12)	5.38	6.64	8.79
<b>BlackRock Post Retirement Index</b>	4.32	11.80	15.63	(3.48)	10.10	6.01	(1.07)	5.36	6.63	8.65

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



### Risk Adjusted Return Measures vs BlackRock Post Retirement Index Rankings Against Callan Target Date Retirement Income (Net) Seven Years Ended September 30, 2021

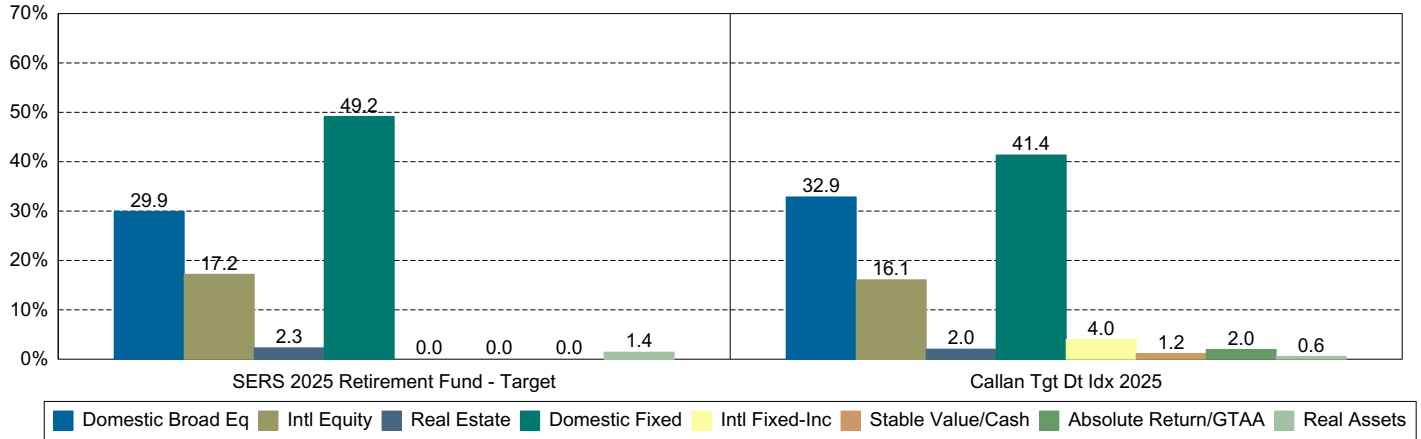


10th Percentile	0.57	0.89	0.15
25th Percentile	0.20	0.82	(0.21)
Median	(0.27)	0.74	(0.55)
75th Percentile	(0.49)	0.70	(0.85)
90th Percentile	(1.11)	0.62	(1.00)
<b>SERS Post Retirement Fund</b>	0.02	0.79	0.58

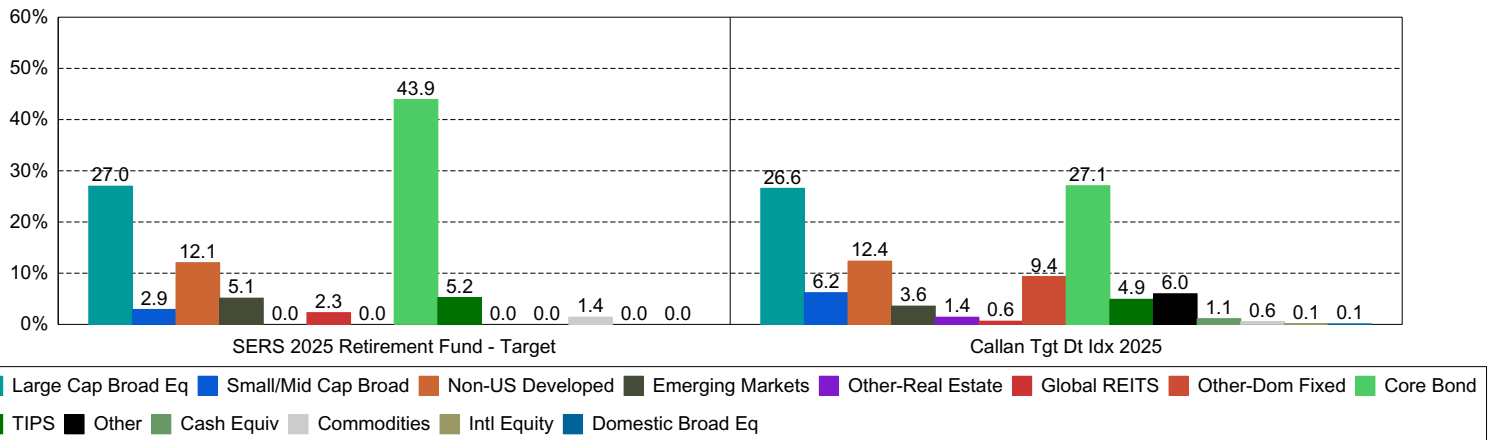
# SERS 2025 Retirement Fund Target Date Fund Asset Allocation as of September 30, 2021

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.

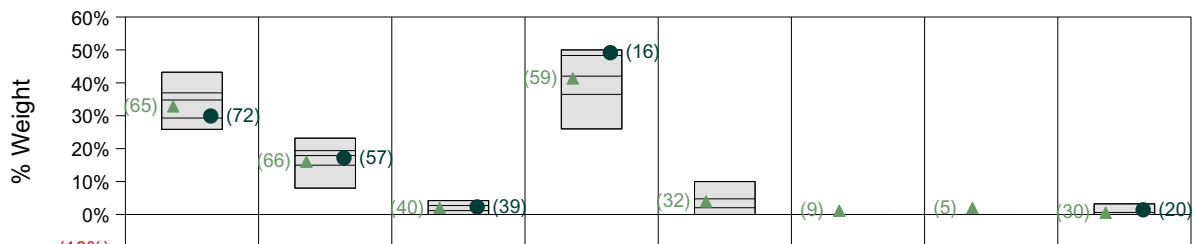
## Macro-Level Asset Allocation



## 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	Real Assets
10th Percentile	43.23	23.19	4.23	50.00	10.00	0.00	0.00	3.24
25th Percentile	36.95	19.40	2.72	48.30	4.74	0.00	0.00	0.62
Median	34.79	17.90	1.18	42.02	2.05	0.00	0.00	0.00
75th Percentile	29.30	14.98	0.00	36.50	0.00	0.00	0.00	0.00
90th Percentile	25.86	8.00	0.00	26.01	0.00	0.00	0.00	0.00

<b>SERS 2025 Retirement Fund - Target</b>	●	29.92	17.19	2.30	49.16	-	-	1.42
Callan Tgt Dt Idx 2025	▲	32.86	16.08	2.03	41.36	3.98	1.16	1.98

# SERS 2025 Retirement Fund Period Ended September 30, 2021

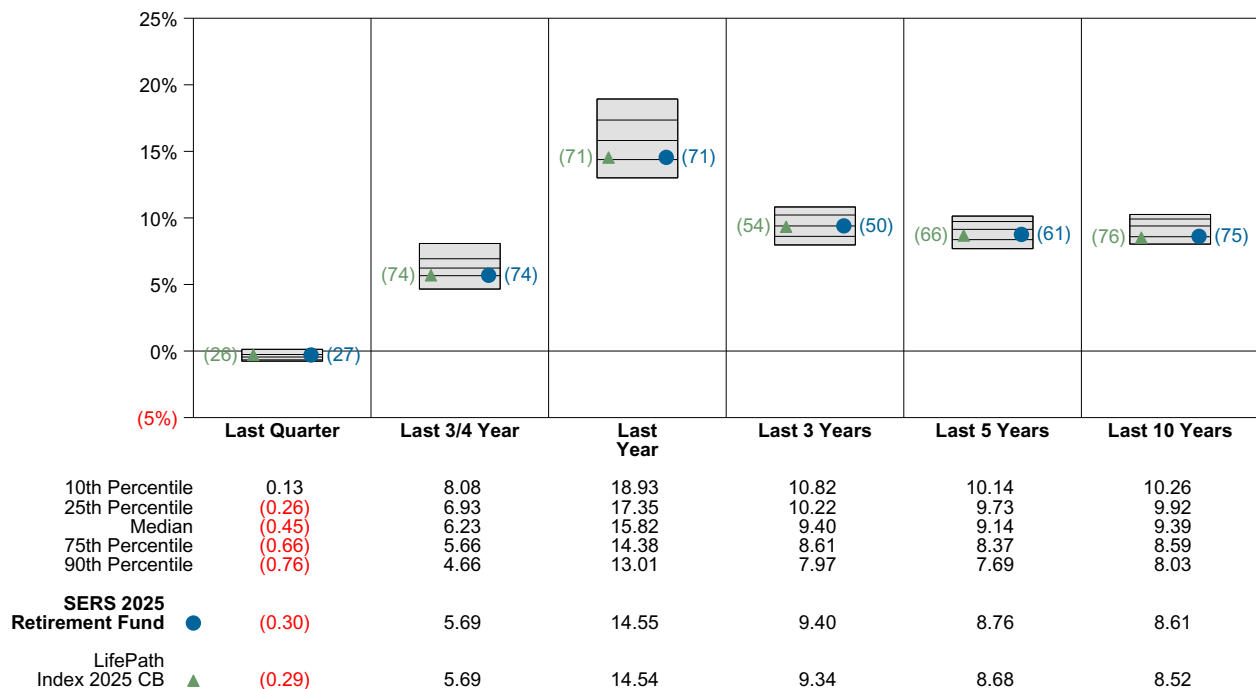
## Investment Philosophy

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

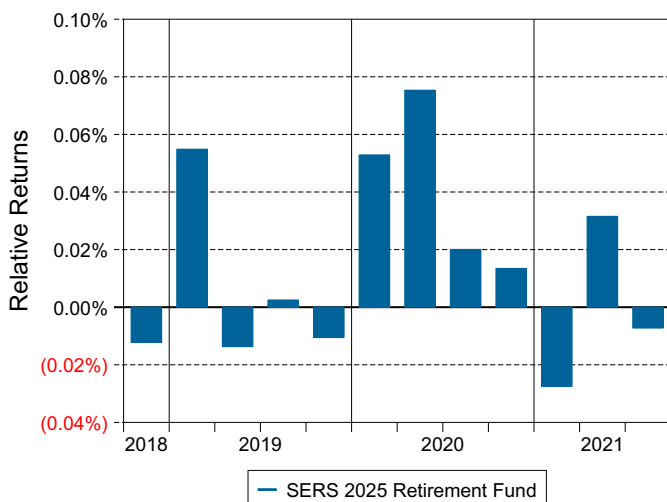
## Quarterly Summary and Highlights

- SERS 2025 Retirement Fund's portfolio posted a (0.30)% return for the quarter placing it in the 27 percentile of the Callan Target Date 2025 group for the quarter and in the 71 percentile for the last year.
- SERS 2025 Retirement Fund's portfolio underperformed the LifePath Index 2025 CB by 0.01% for the quarter and outperformed the LifePath Index 2025 CB for the year by 0.01%.

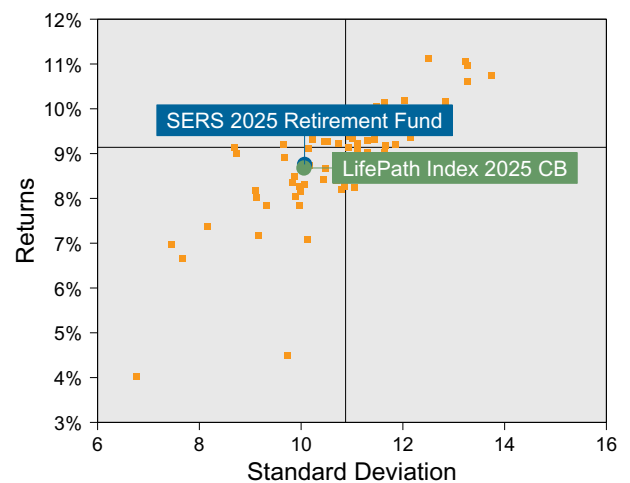
## Performance vs Callan Target Date 2025 (Net)



## Relative Return vs LifePath Index 2025 CB



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

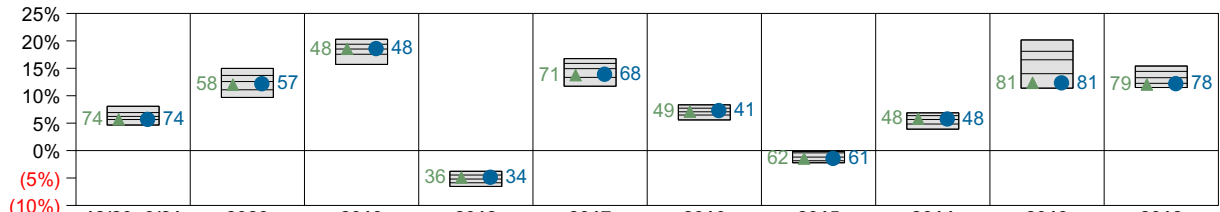


# SERS 2025 Retirement Fund Return Analysis Summary

## Return Analysis

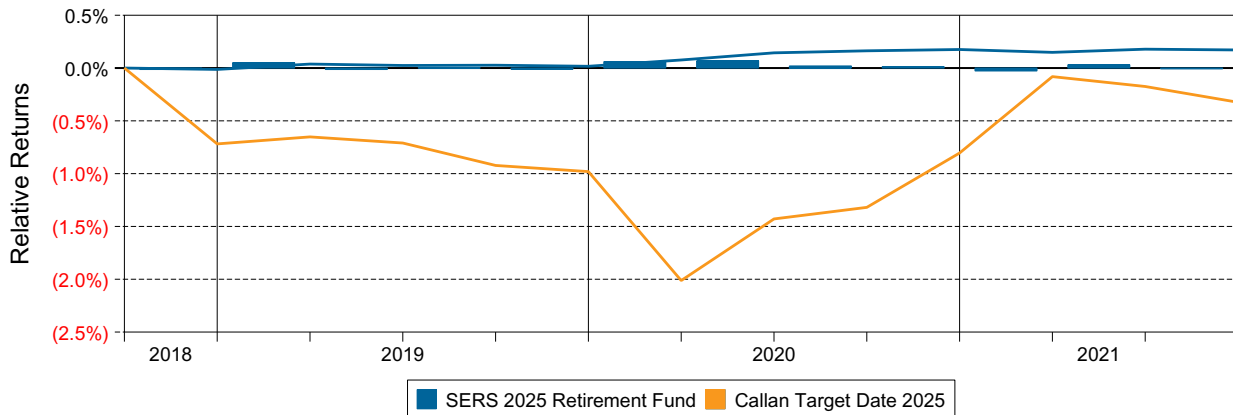
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

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

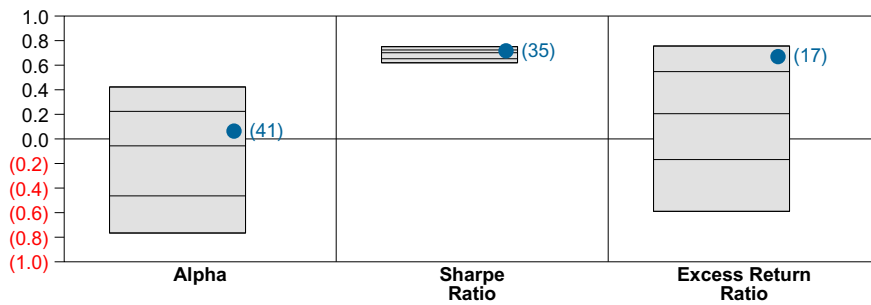


10th Percentile	8.08	14.98	20.30	(3.77)	16.77	8.34	(0.13)	6.88	20.17	15.41
25th Percentile	6.93	13.70	19.39	(4.46)	15.89	7.73	(0.41)	6.37	18.10	14.44
Median	6.23	12.58	18.51	(5.19)	14.94	7.07	(1.19)	5.67	16.55	13.28
75th Percentile	5.66	11.08	17.56	(5.87)	13.34	6.48	(1.85)	4.84	14.02	12.26
90th Percentile	4.66	9.69	15.71	(6.53)	11.73	5.59	(2.22)	3.90	11.38	11.50
<b>SERS 2025 Retirement Fund</b>	● 5.69	12.19	18.60	(4.86)	13.91	7.30	(1.43)	5.77	12.34	12.20
LifePath Index 2025 CB	▲ 5.69	12.01	18.56	(4.90)	13.75	7.10	(1.45)	5.82	12.35	12.04

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



### Risk Adjusted Return Measures vs LifePath Index 2025 CB Rankings Against Callan Target Date 2025 (Net) Seven Years Ended September 30, 2021



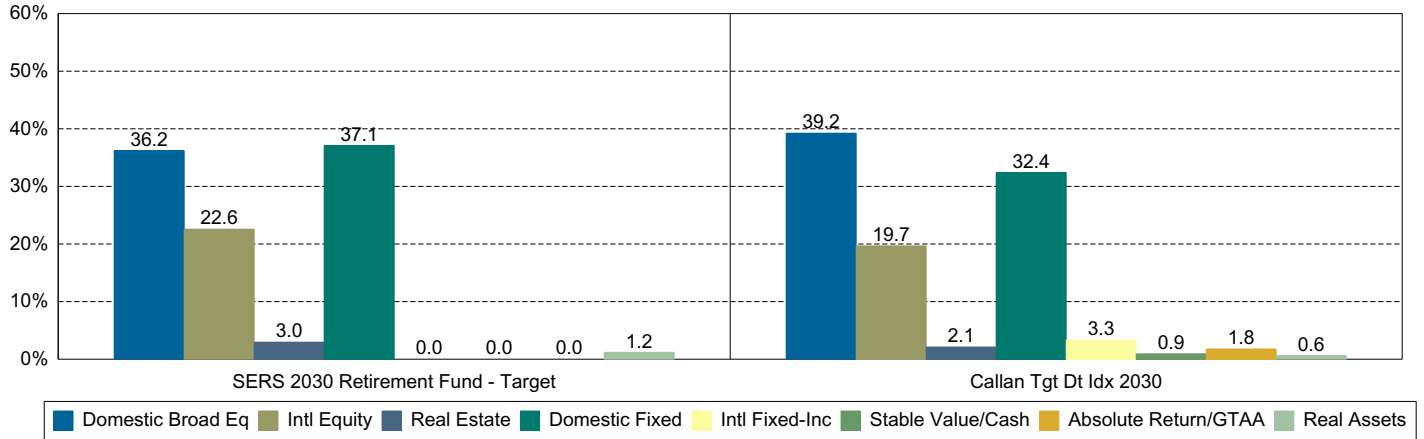
10th Percentile	0.42	0.75	0.76
25th Percentile	0.22	0.72	0.55
Median	(0.06)	0.70	0.21
75th Percentile	(0.46)	0.65	(0.17)
90th Percentile	(0.77)	0.62	(0.59)
<b>SERS 2025 Retirement Fund</b>	● 0.06	0.72	0.67

# SERS 2030 Retirement Fund

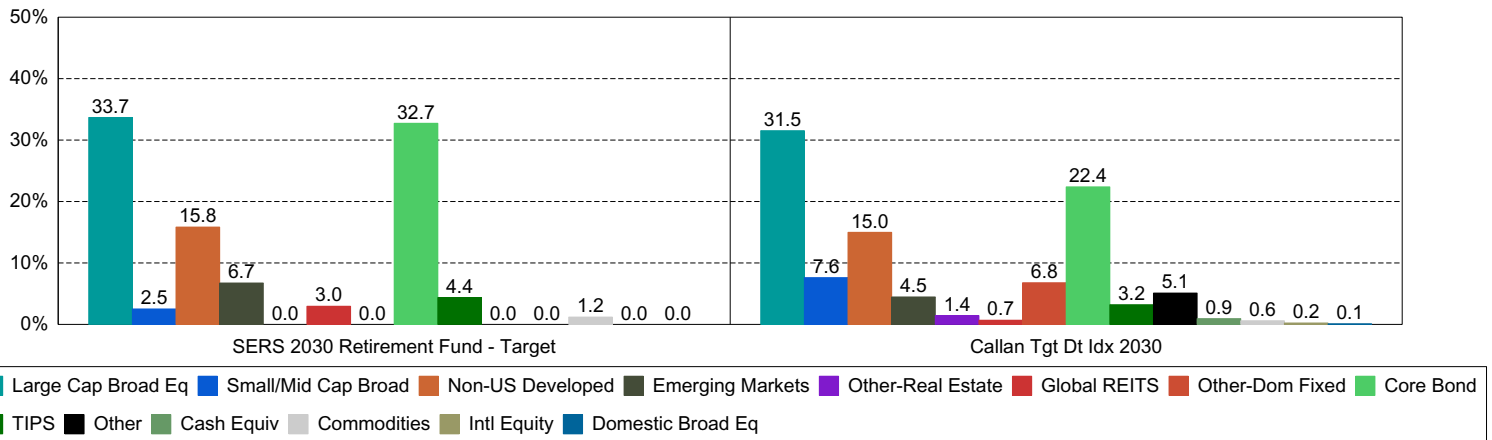
## Target Date Fund Asset Allocation as of September 30, 2021

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.

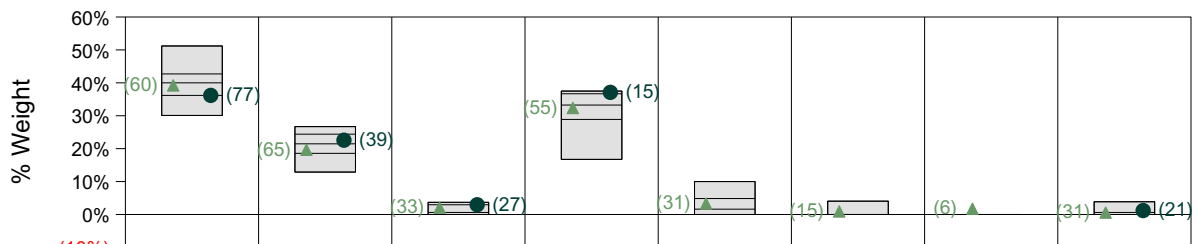
### Macro-Level Asset Allocation



### 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	Real Assets
10th Percentile	51.20	26.70	3.70	37.49	10.00	4.05	0.00	3.87
25th Percentile	42.70	24.40	2.95	36.67	4.84	0.00	0.00	0.62
Median	40.00	21.47	0.62	33.25	1.62	0.00	0.00	0.00
75th Percentile	36.18	18.57	0.00	28.88	0.00	0.00	0.00	0.00
90th Percentile	30.09	12.88	0.00	16.74	0.00	0.00	0.00	0.00

<b>SERS 2030 Retirement Fund - Target</b>	●	36.18	22.57	2.95	37.11	-	-	1.19
Callan Tgt Dt Idx 2030	▲	39.23	19.67	2.11	32.36	3.32	0.94	1.77

# SERS 2030 Retirement Fund Period Ended September 30, 2021

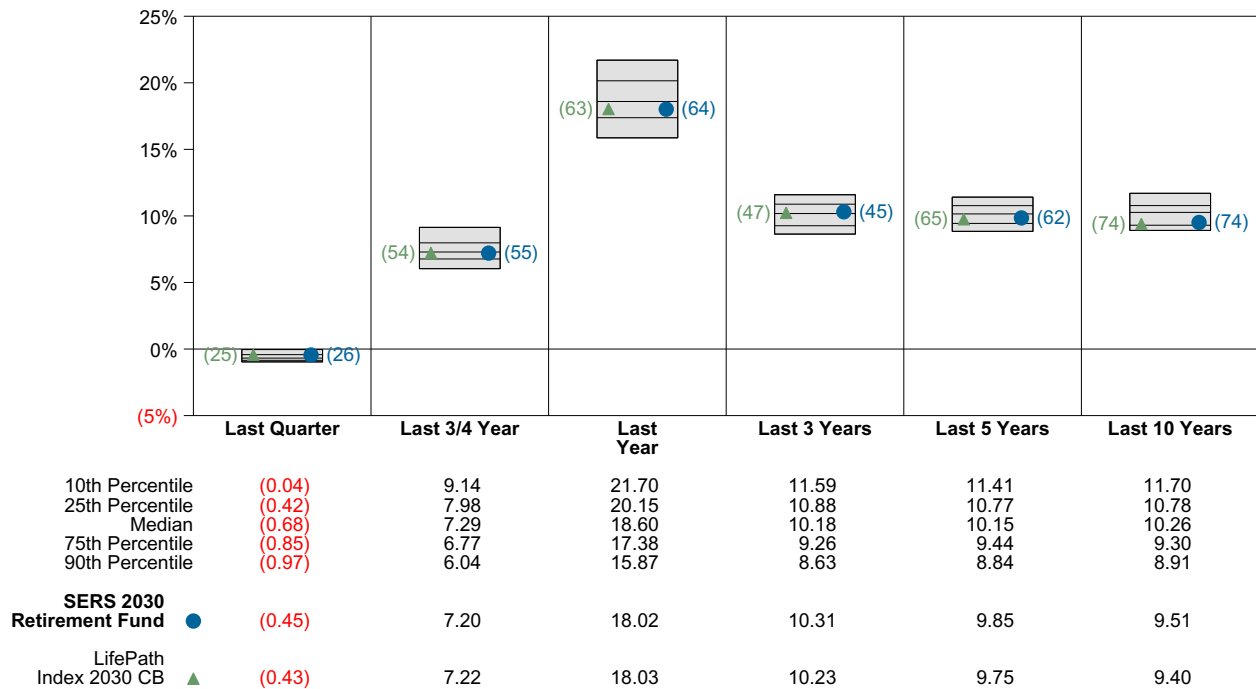
## Investment Philosophy

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

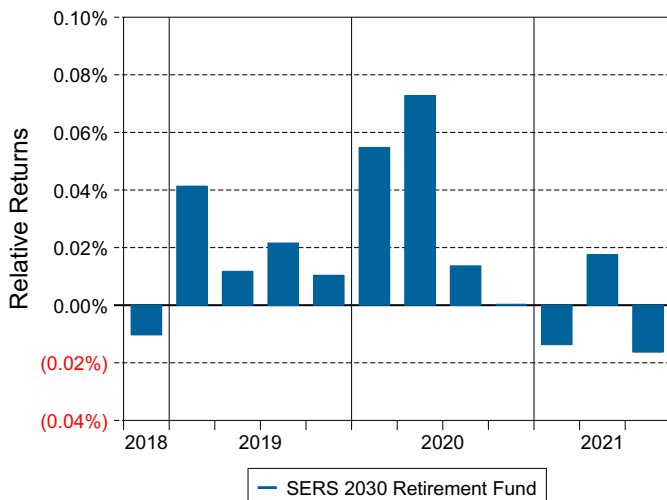
## Quarterly Summary and Highlights

- SERS 2030 Retirement Fund's portfolio posted a (0.45)% return for the quarter placing it in the 26 percentile of the Callan Target Date 2030 group for the quarter and in the 64 percentile for the last year.
- SERS 2030 Retirement Fund's portfolio underperformed the LifePath Index 2030 CB by 0.02% for the quarter and underperformed the LifePath Index 2030 CB for the year by 0.02%.

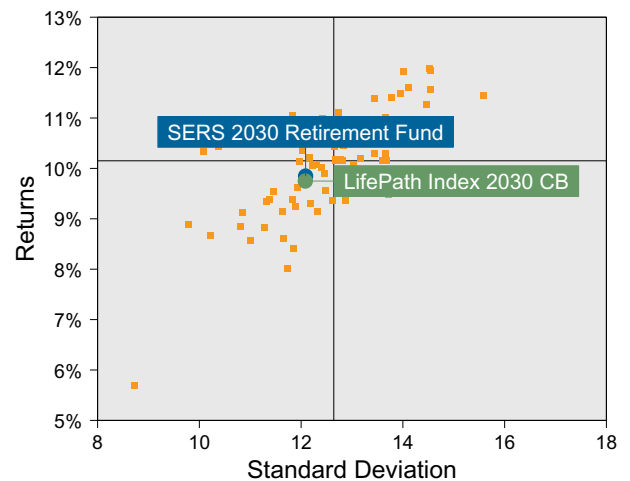
## Performance vs Callan Target Date 2030 (Net)



## Relative Return vs LifePath Index 2030 CB



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

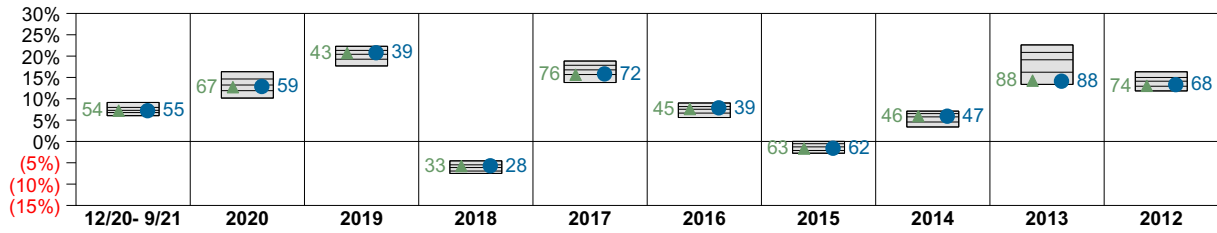


# SERS 2030 Retirement Fund Return Analysis Summary

## Return Analysis

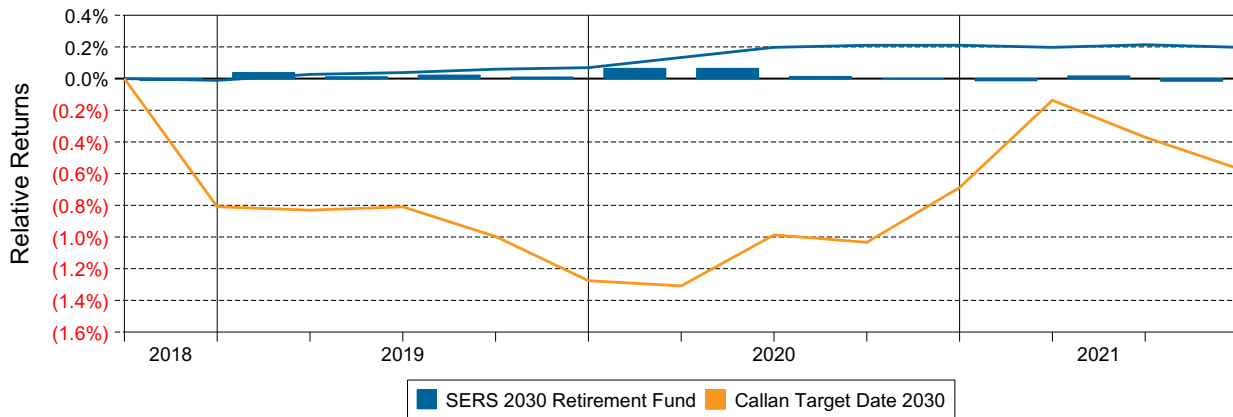
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

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

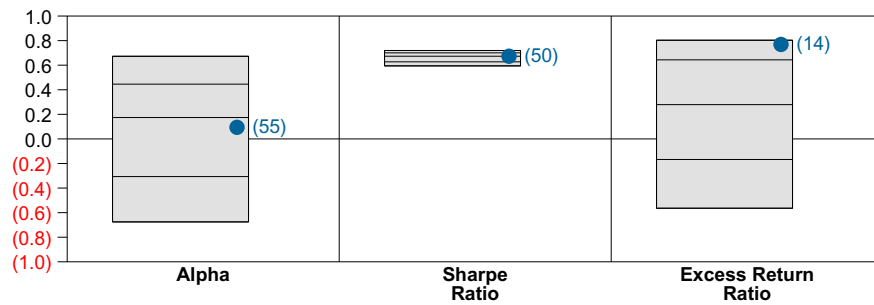


10th Percentile	9.14	16.35	22.30	(4.55)	18.85	9.01	0.01	7.11	22.62	16.33
25th Percentile	7.98	14.64	21.34	(5.48)	17.85	8.17	(0.53)	6.53	20.87	14.99
Median	7.29	13.23	20.43	(6.12)	16.77	7.54	(1.27)	5.76	19.13	14.12
75th Percentile	6.77	11.90	19.28	(6.94)	15.68	6.64	(2.12)	4.56	16.22	12.94
90th Percentile	6.04	10.16	17.70	(7.50)	13.81	5.61	(2.77)	3.39	13.37	11.84
<b>SERS 2030 Retirement Fund</b>	● 7.20	12.88	20.80	(5.71)	15.83	7.88	(1.60)	5.92	14.12	13.31
LifePath Index 2030 CB	▲ 7.22	12.72	20.70	(5.76)	15.64	7.61	(1.66)	5.95	14.26	13.04

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



### Risk Adjusted Return Measures vs LifePath Index 2030 CB Rankings Against Callan Target Date 2030 (Net) Seven Years Ended September 30, 2021



10th Percentile	0.67	0.72	0.80
25th Percentile	0.45	0.70	0.64
Median	0.17	0.67	0.28
75th Percentile	(0.31)	0.63	(0.17)
90th Percentile	(0.68)	0.59	(0.56)
<b>SERS 2030 Retirement Fund</b>	● 0.09	0.67	0.77

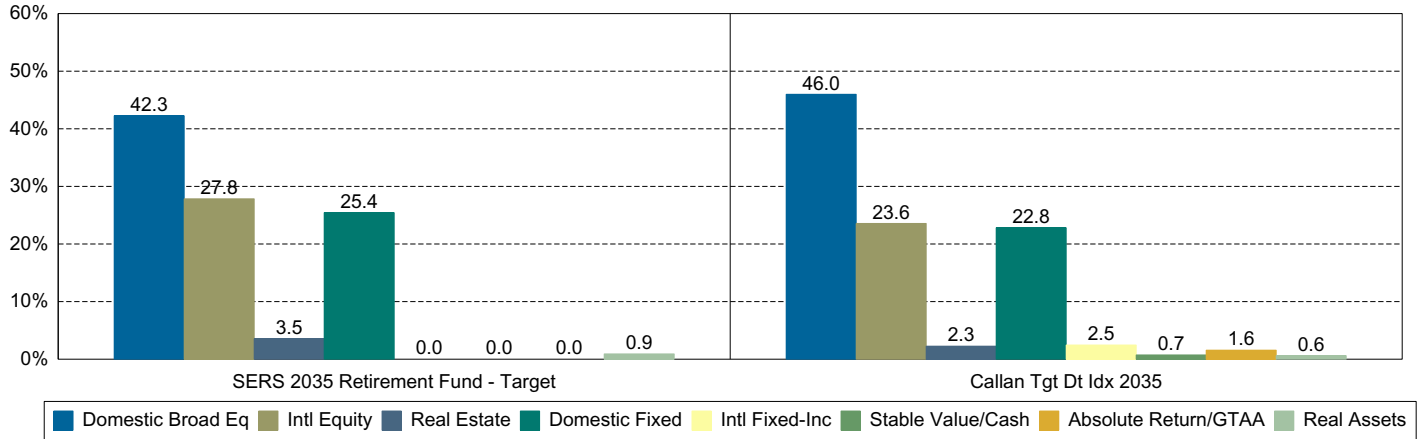


# SERS 2035 Retirement Fund

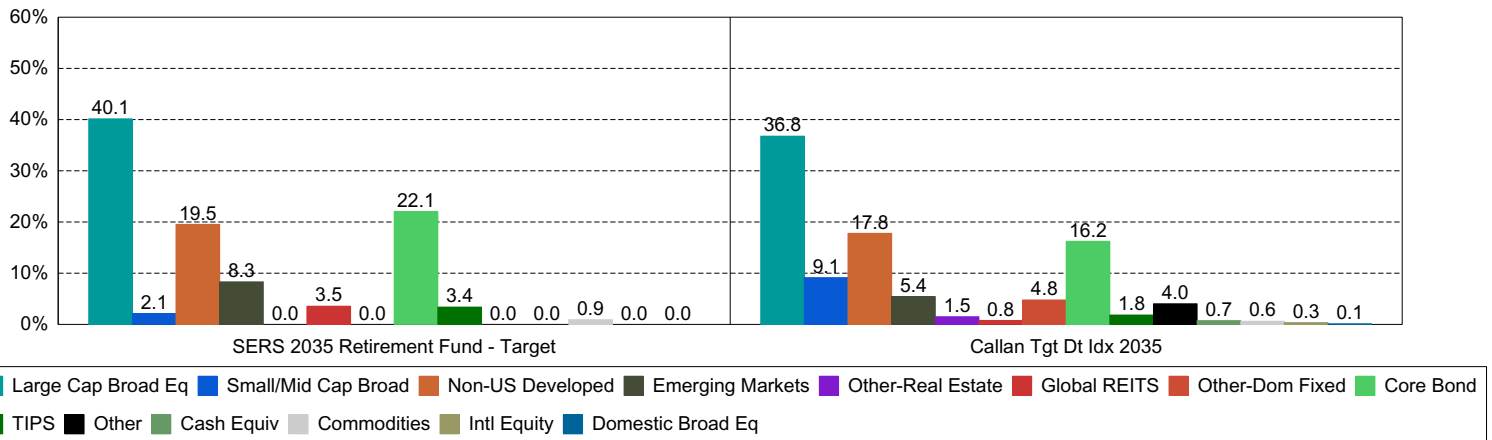
## Target Date Fund Asset Allocation as of September 30, 2021

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.

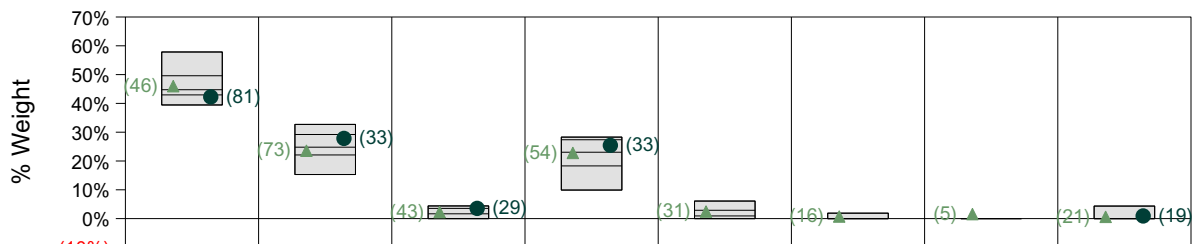
### Macro-Level Asset Allocation



### 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	Real Assets
10th Percentile	57.85	32.70	4.40	28.30	6.09	1.89	0.00	4.35
25th Percentile	49.60	29.20	3.55	27.38	2.89	0.00	0.00	0.00
Median	44.75	24.80	1.67	23.05	0.93	0.00	0.00	0.00
75th Percentile	42.96	22.10	0.00	18.30	0.00	0.00	0.00	0.00
90th Percentile	39.45	15.31	0.00	9.91	0.00	0.00	0.00	0.00

<b>SERS 2035 Retirement Fund - Target</b>	●	42.26	27.84	3.55	25.43	-	-	0.92
Callan Tgt Dt Idx 2035	▲	45.99	23.56	2.26	22.81	2.46	0.74	1.57

# SERS 2035 Retirement Fund Period Ended September 30, 2021

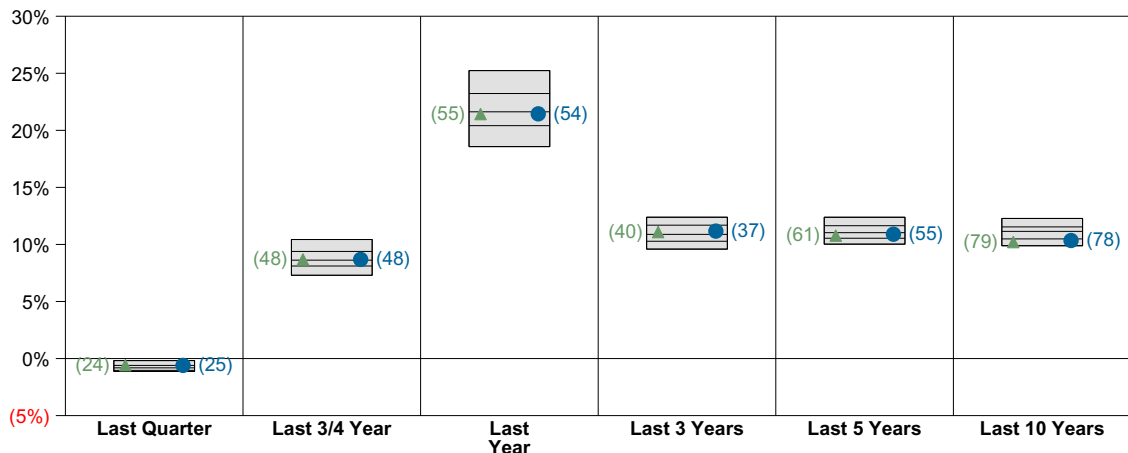
## Investment Philosophy

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

## Quarterly Summary and Highlights

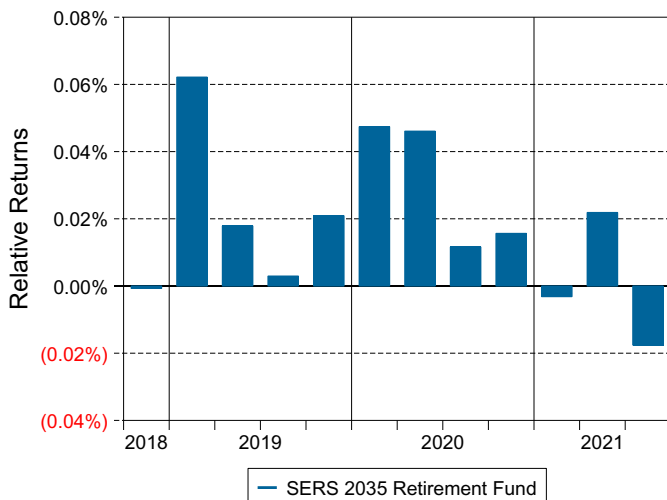
- SERS 2035 Retirement Fund's portfolio posted a (0.60)% return for the quarter placing it in the 25 percentile of the Callan Target Date 2035 group for the quarter and in the 54 percentile for the last year.
- SERS 2035 Retirement Fund's portfolio underperformed the LifePath Index 2035 CB by 0.02% for the quarter and outperformed the LifePath Index 2035 CB for the year by 0.02%.

## Performance vs Callan Target Date 2035 (Net)

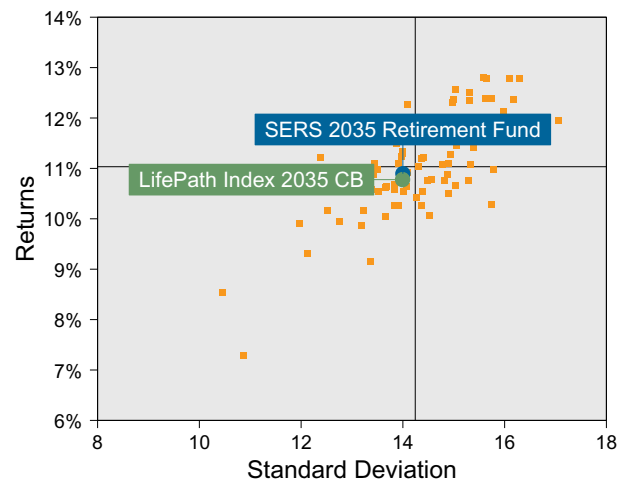


10th Percentile	(0.18)	10.43	25.24	12.39	12.38	12.28
25th Percentile	(0.60)	9.39	23.23	11.69	11.64	11.54
Median	(0.82)	8.62	21.62	10.88	11.03	11.15
75th Percentile	(1.04)	8.11	20.41	10.28	10.54	10.49
90th Percentile	(1.13)	7.30	18.57	9.59	10.03	9.89
<b>SERS 2035 Retirement Fund</b>	<b>● (0.60)</b>	8.69	21.45	11.17	10.90	10.34
LifePath Index 2035 CB	▲ (0.58)	8.69	21.43	11.09	10.78	10.21

## Relative Return vs LifePath Index 2035 CB



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

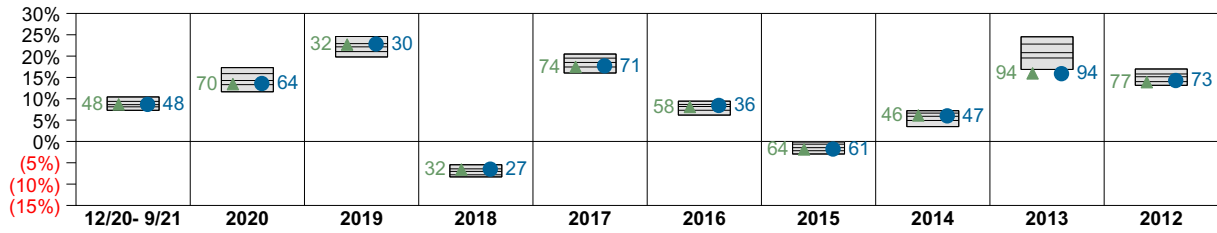


# SERS 2035 Retirement Fund Return Analysis Summary

## Return Analysis

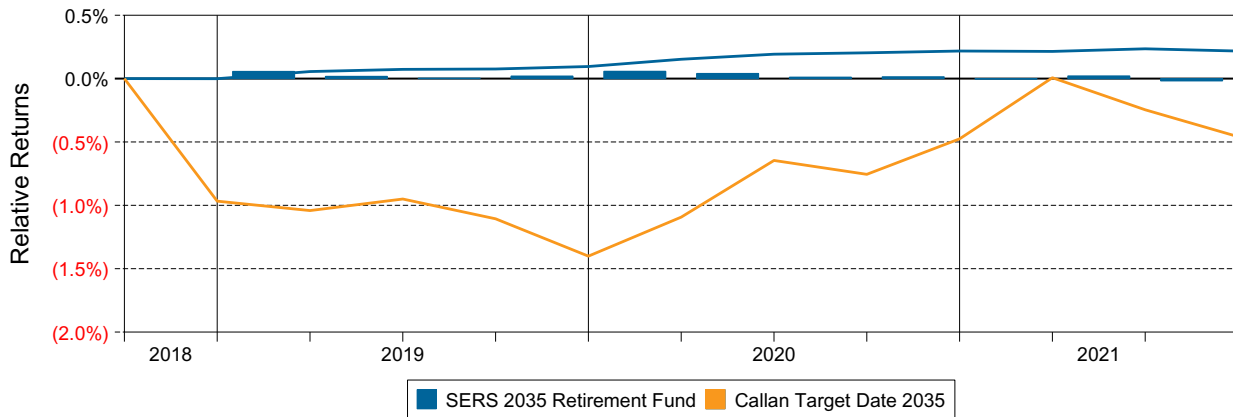
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

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

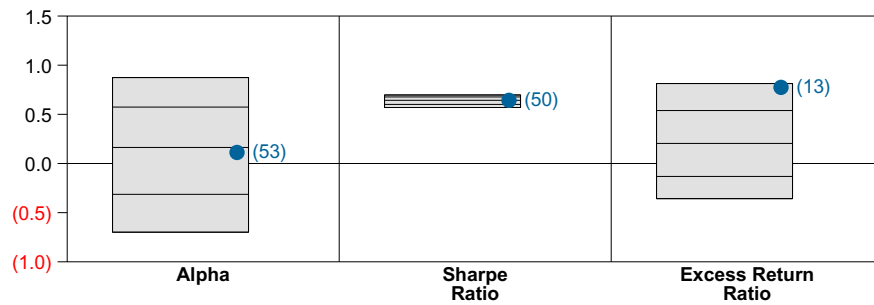


10th Percentile	10.43	17.30	24.59	(5.46)	20.49	9.45	(0.10)	7.21	24.53	16.98
25th Percentile	9.39	15.89	22.92	(6.42)	19.53	8.67	(0.64)	6.63	22.82	15.81
Median	8.62	14.28	22.17	(7.03)	18.51	8.19	(1.46)	5.89	20.81	15.16
75th Percentile	8.11	13.31	21.05	(7.82)	17.45	7.30	(2.17)	4.91	19.56	14.02
90th Percentile	7.30	11.64	19.80	(8.31)	16.04	6.17	(2.95)	3.47	16.87	13.15
<b>SERS 2035 Retirement Fund</b>	● 8.69	13.58	22.84	(6.50)	17.72	8.44	(1.78)	5.99	15.88	14.28
LifePath Index 2035 CB	▲ 8.69	13.44	22.72	(6.58)	17.48	8.08	(1.86)	6.11	15.96	13.90

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



### Risk Adjusted Return Measures vs LifePath Index 2035 CB Rankings Against Callan Target Date 2035 (Net) Seven Years Ended September 30, 2021



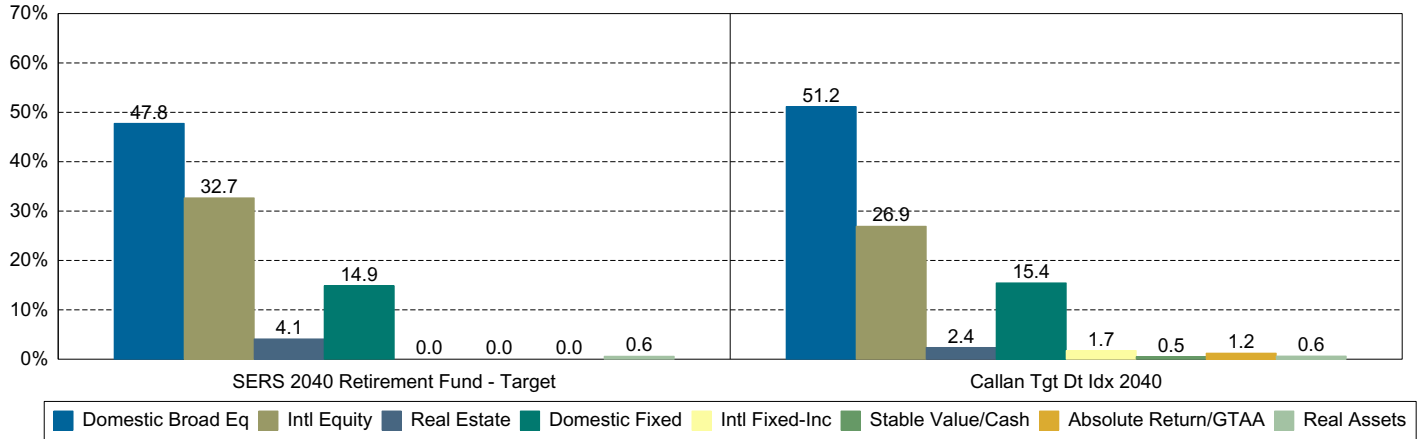
10th Percentile	0.87	0.70	0.81
25th Percentile	0.57	0.68	0.54
Median	0.16	0.64	0.20
75th Percentile	(0.31)	0.60	(0.13)
90th Percentile	(0.70)	0.57	(0.36)
<b>SERS 2035 Retirement Fund</b>	● 0.11	0.64	0.77

# SERS 2040 Retirement Fund

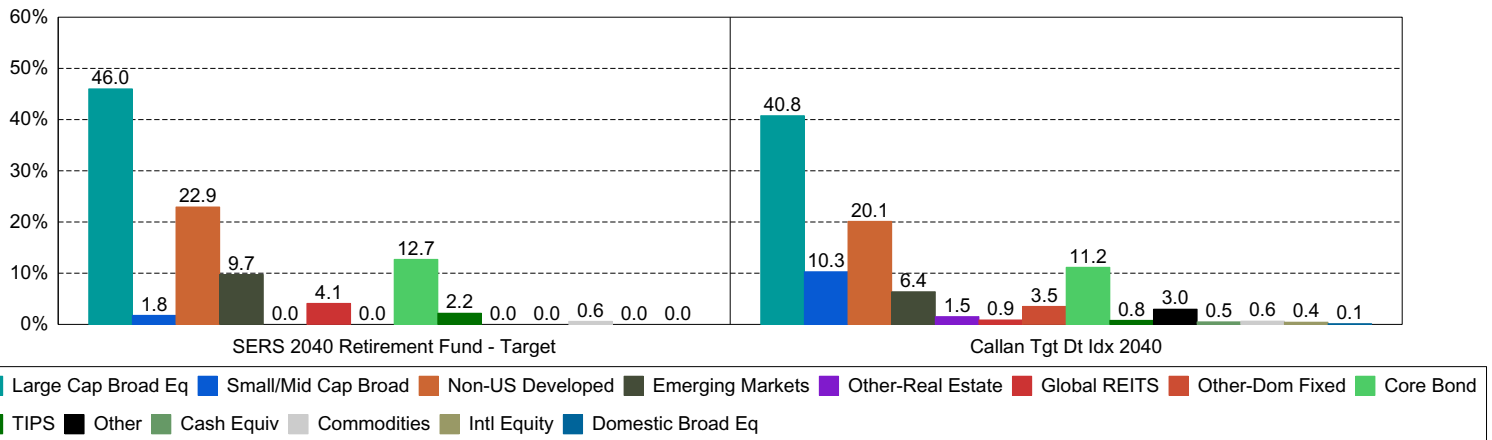
## Target Date Fund Asset Allocation as of September 30, 2021

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.

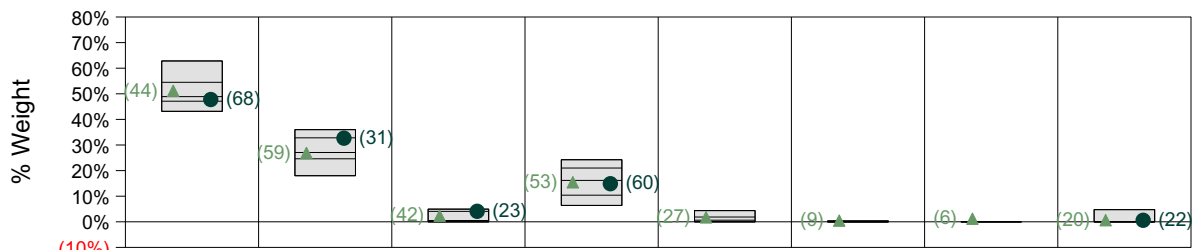
### Macro-Level Asset Allocation



### 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	Real Assets
10th Percentile	62.83	36.00	4.95	24.25	4.38	0.37	0.00	4.75
25th Percentile	54.49	32.80	4.08	21.00	1.87	0.00	0.00	0.00
Median	48.90	27.07	0.50	16.17	0.63	0.00	0.00	0.00
75th Percentile	47.10	24.61	0.00	10.40	0.00	0.00	0.00	0.00
90th Percentile	43.15	18.00	0.00	6.40	0.00	0.00	0.00	0.00

<b>SERS 2040 Retirement Fund - Target</b>	●	47.76	32.67	4.10	14.87	-	-	0.59
Callan Tgt Dt Idx 2040	▲	51.16	26.92	2.37	15.45	1.75	0.49	1.22

# SERS 2040 Retirement Fund Period Ended September 30, 2021

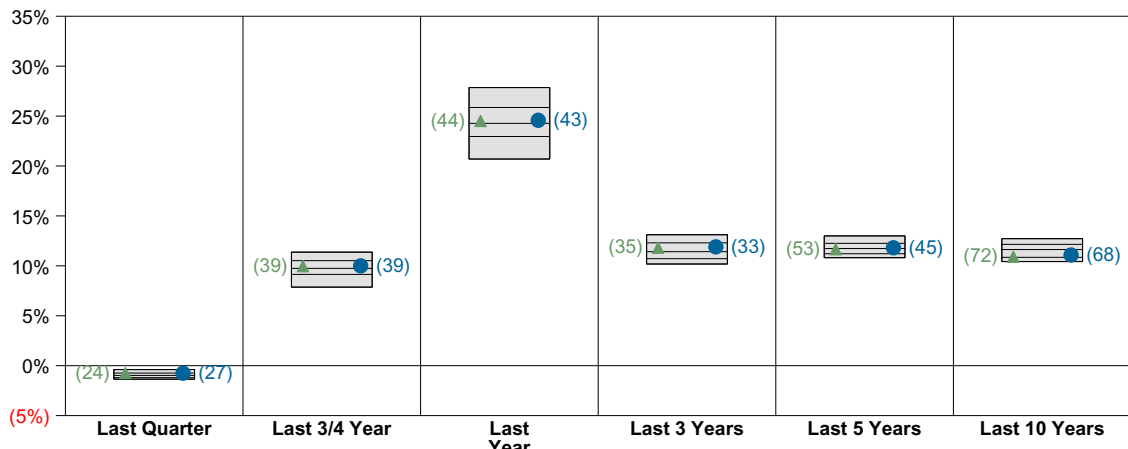
## Investment Philosophy

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

## Quarterly Summary and Highlights

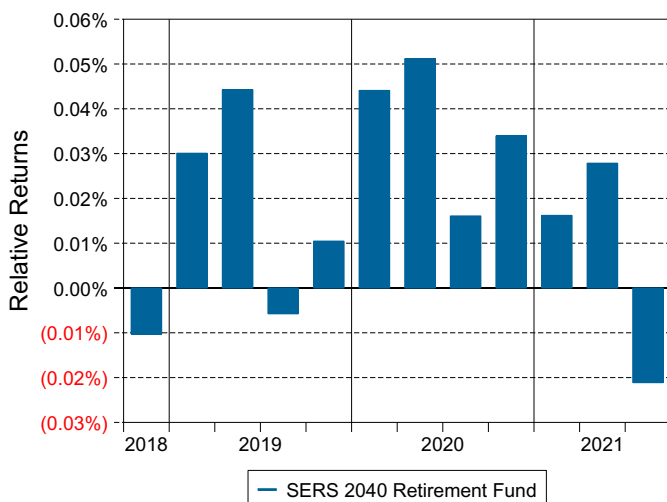
- SERS 2040 Retirement Fund's portfolio posted a (0.75)% return for the quarter placing it in the 27 percentile of the Callan Target Date 2040 group for the quarter and in the 43 percentile for the last year.
- SERS 2040 Retirement Fund's portfolio underperformed the LifePath Index 2040 CB by 0.02% for the quarter and outperformed the LifePath Index 2040 CB for the year by 0.06%.

## Performance vs Callan Target Date 2040 (Net)

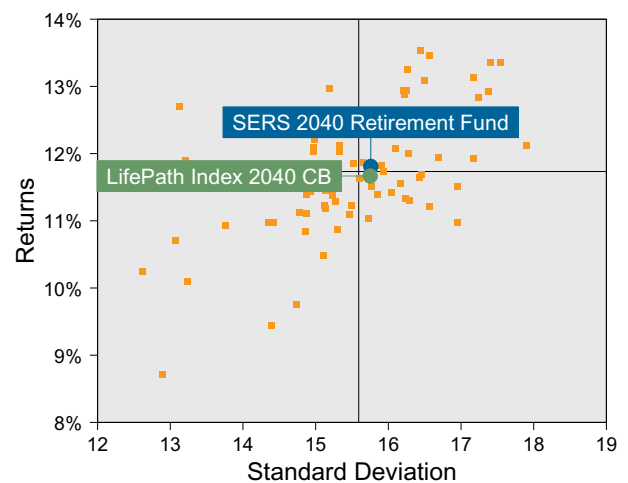


10th Percentile	(0.39)	11.37	27.86	13.12	13.00	12.72
25th Percentile	(0.74)	10.52	25.86	12.30	12.26	12.15
Median	(0.97)	9.75	24.27	11.42	11.73	11.63
75th Percentile	(1.20)	9.14	22.95	10.72	11.21	10.85
90th Percentile	(1.35)	7.87	20.70	10.18	10.81	10.43
<b>SERS 2040 Retirement Fund</b>	<b>● (0.75)</b>	10.00	24.58	11.90	11.81	11.08
LifePath Index 2040 CB	▲ (0.73)	9.97	24.52	11.82	11.67	10.92

## Relative Return vs LifePath Index 2040 CB



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

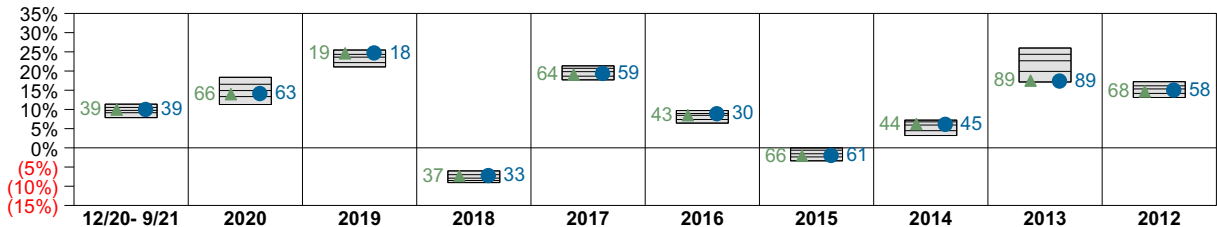


# SERS 2040 Retirement Fund Return Analysis Summary

## Return Analysis

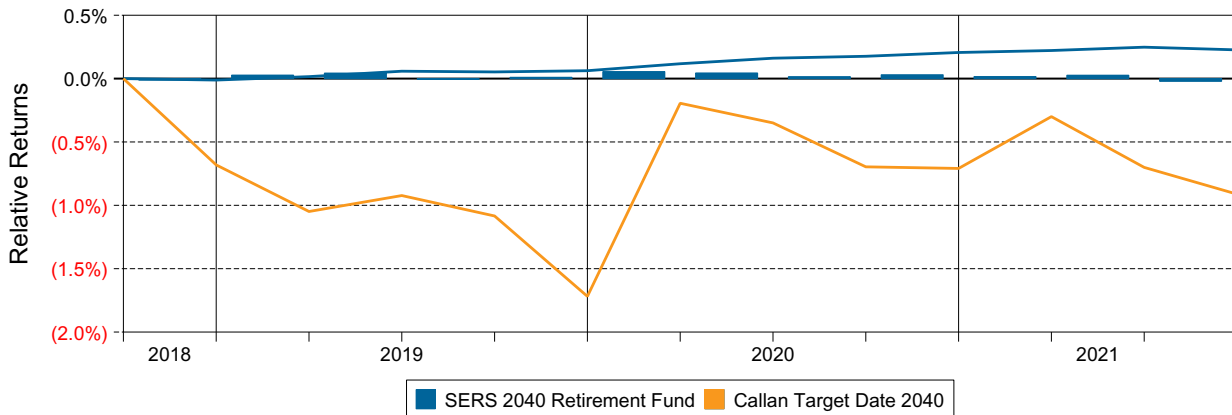
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

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

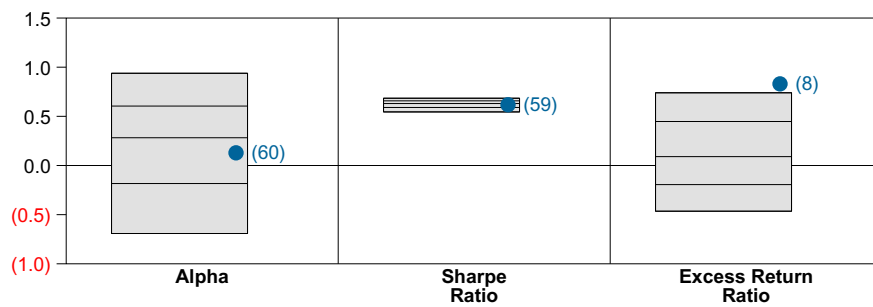


	12/20- 9/21	2020	2019	2018	2017	2016	2015	2014	2013	2012
<b>SERS 2040 Retirement Fund</b>	● 10.00	14.14	24.71	(7.22)	19.38	8.88	(1.98)	6.12	17.39	15.04
LifePath Index 2040 CB	▲ 9.97	13.98	24.62	(7.33)	19.09	8.51	(2.08)	6.21	17.52	14.70

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



### Risk Adjusted Return Measures vs LifePath Index 2040 CB Rankings Against Callan Target Date 2040 (Net) Seven Years Ended September 30, 2021



10th Percentile	0.94	0.68	0.74
25th Percentile	0.60	0.66	0.45
Median	0.28	0.63	0.09
75th Percentile	(0.18)	0.59	(0.19)
90th Percentile	(0.69)	0.54	(0.46)

**SERS 2040 Retirement Fund** ● 0.13

0.62

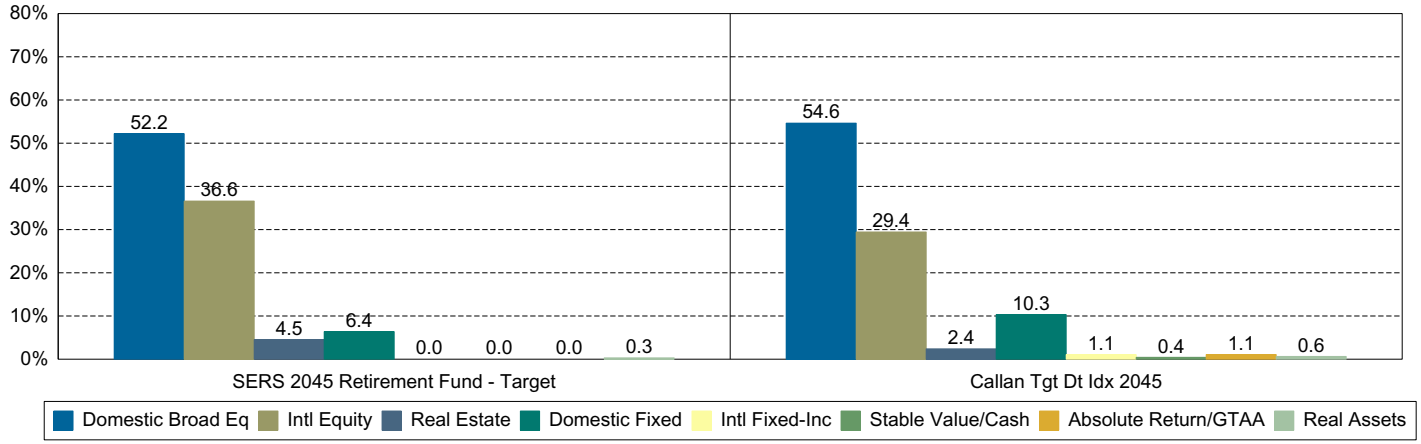
0.83

# SERS 2045 Retirement Fund

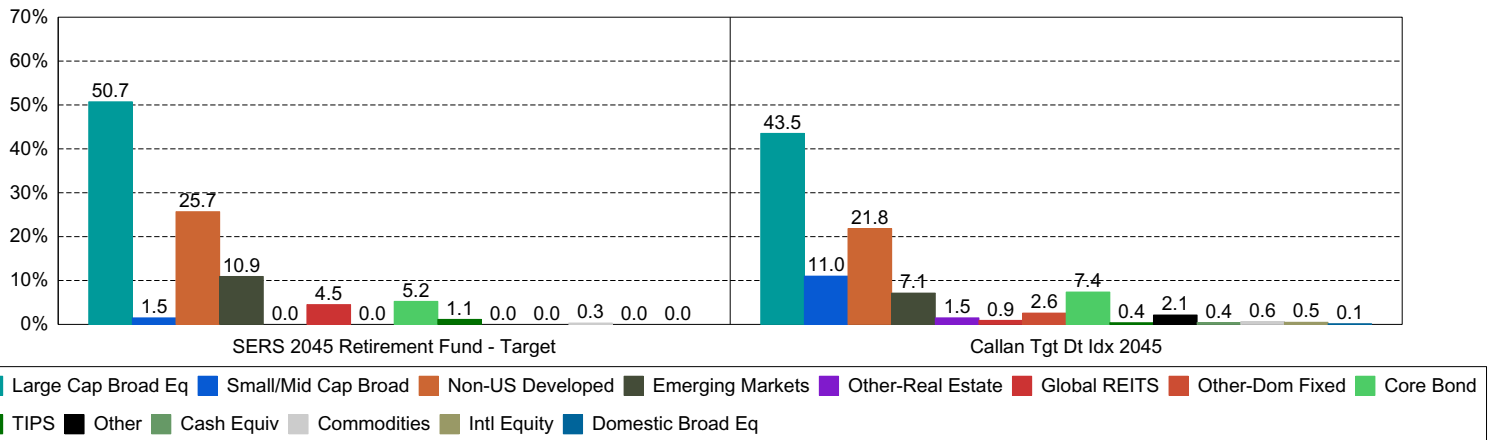
## Target Date Fund Asset Allocation as of September 30, 2021

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.

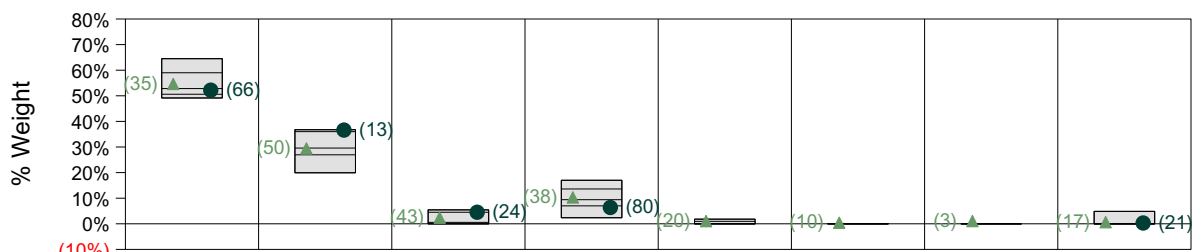
### Macro-Level Asset Allocation



### 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	Real Assets
10th Percentile	64.50	36.75	5.45	17.00	1.81	0.12	0.00	4.85
25th Percentile	59.00	36.00	4.51	13.60	0.96	0.00	0.00	0.00
Median	52.83	29.58	0.56	9.42	0.00	0.00	0.00	0.00
75th Percentile	50.60	26.95	0.00	7.01	0.00	0.00	0.00	0.00
90th Percentile	49.15	19.93	0.00	2.36	0.00	0.00	0.00	0.00

<b>SERS 2045 Retirement Fund - Target</b>	●	52.20	36.60	4.51	6.38	-	-	0.31
Callan Tgt Dt Idx 2045	▲	54.63	29.44	2.40	10.32	1.06	0.43	1.08

# SERS 2045 Retirement Fund Period Ended September 30, 2021

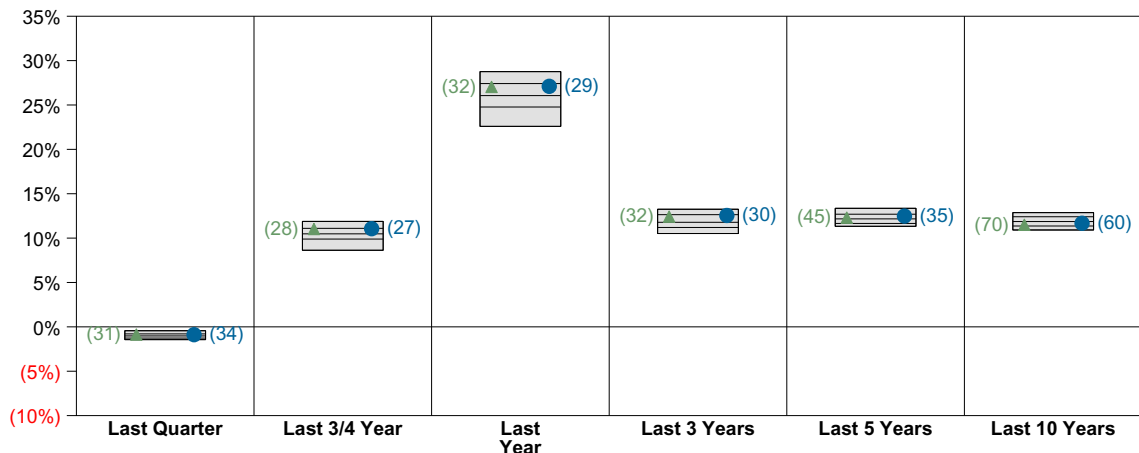
## Investment Philosophy

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

## Quarterly Summary and Highlights

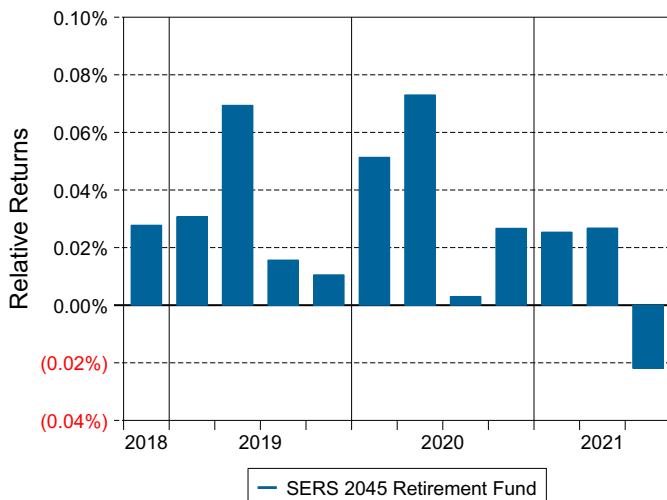
- SERS 2045 Retirement Fund's portfolio posted a (0.88)% return for the quarter placing it in the 34 percentile of the Callan Target Date 2045 group for the quarter and in the 29 percentile for the last year.
- SERS 2045 Retirement Fund's portfolio underperformed the LifePath Index 2045 CB by 0.02% for the quarter and outperformed the LifePath Index 2045 CB for the year by 0.06%.

## Performance vs Callan Target Date 2045 (Net)

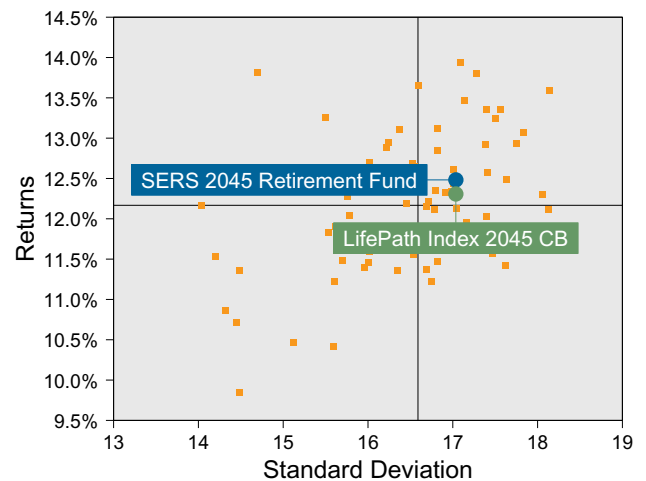


Period	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile	SERS 2045 Retirement Fund	LifePath Index 2045 CB
Last Quarter	(0.44)	(0.79)	(1.02)	(1.27)	(1.44)	(0.88)	(0.86)
Last 3/4 Year	11.88	11.10	10.48	9.89	8.63	11.06	11.03
Last Year	28.76	27.41	26.06	24.77	22.59	27.10	27.04
Last 3 Years	13.25	12.64	11.78	11.20	10.52	12.55	12.42
Last 5 Years	13.36	12.69	12.17	11.65	11.33	12.48	12.31
Last 10 Years	12.87	12.41	11.87	11.36	10.91	11.67	11.51

## Relative Return vs LifePath Index 2045 CB



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



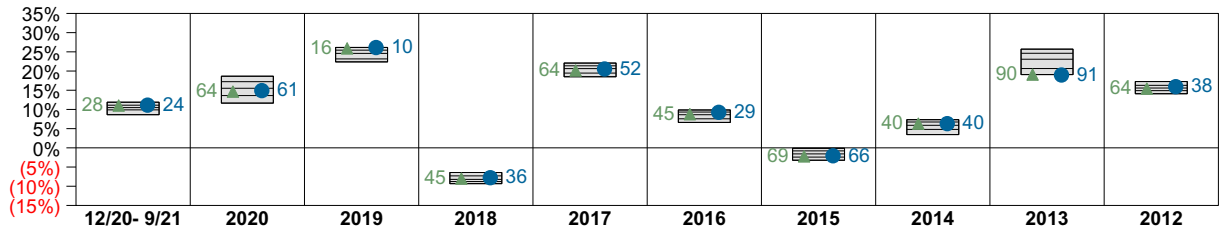


# SERS 2045 Retirement Fund Return Analysis Summary

## Return Analysis

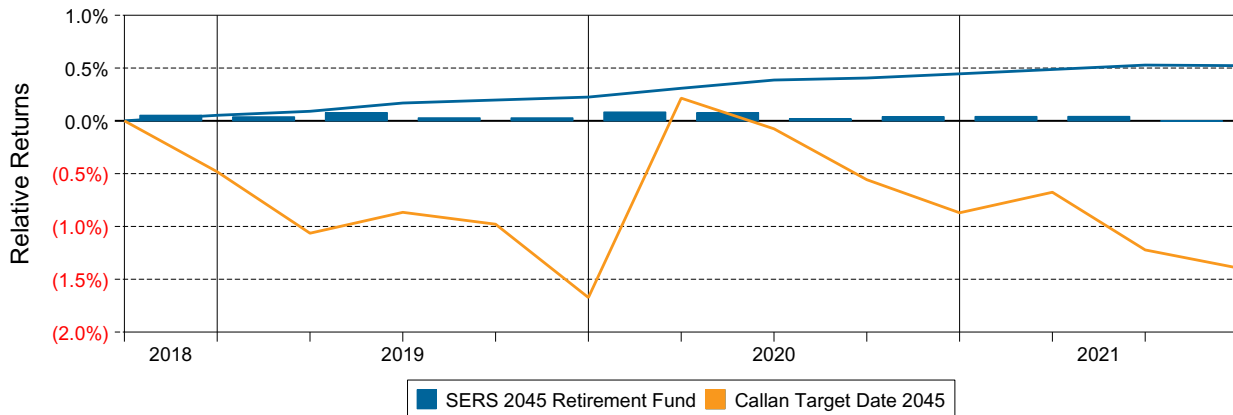
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

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

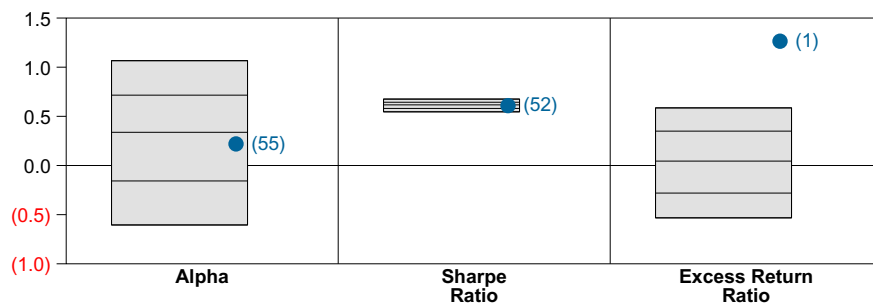


	12/20-9/21	2020	2019	2018	2017	2016	2015	2014	2013	2012
10th Percentile	11.88	18.65	26.14	(6.43)	22.08	9.86	(0.12)	7.33	25.70	17.26
25th Percentile	11.10	17.23	25.44	(7.30)	21.36	9.32	(0.79)	6.73	24.63	16.28
Median	10.48	15.52	24.60	(8.21)	20.63	8.63	(1.57)	5.87	23.08	15.58
75th Percentile	9.89	13.61	23.16	(8.78)	19.47	7.56	(2.41)	4.80	20.66	14.90
90th Percentile	8.63	11.64	22.38	(9.33)	18.51	6.62	(3.23)	3.45	19.08	14.09
<b>SERS 2045 Retirement Fund</b>	● 11.12	14.90	26.12	(7.78)	20.54	9.25	(2.07)	6.30	18.97	15.92
LifePath Index 2045 CB	▲ 11.03	14.65	25.90	(7.99)	20.15	8.77	(2.22)	6.31	19.09	15.43

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



### Risk Adjusted Return Measures vs LifePath Index 2045 CB Rankings Against Callan Target Date 2045 (Net) Seven Years Ended September 30, 2021

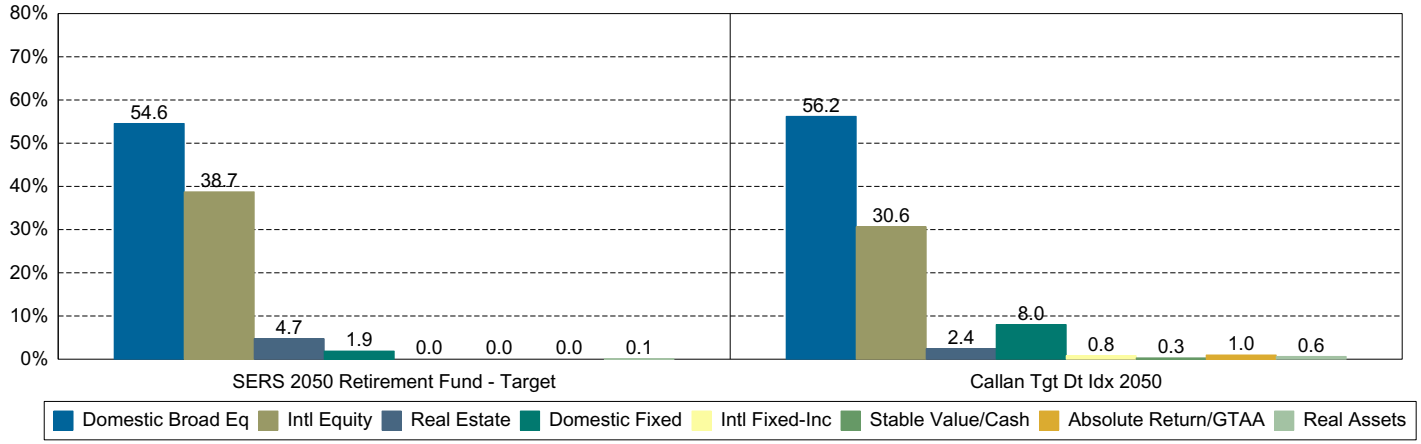


	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	1.07	0.68	0.59
25th Percentile	0.72	0.64	0.35
Median	0.34	0.62	0.04
75th Percentile	(0.16)	0.58	(0.28)
90th Percentile	(0.60)	0.55	(0.53)
<b>SERS 2045 Retirement Fund</b>	● 0.22	0.61	1.26

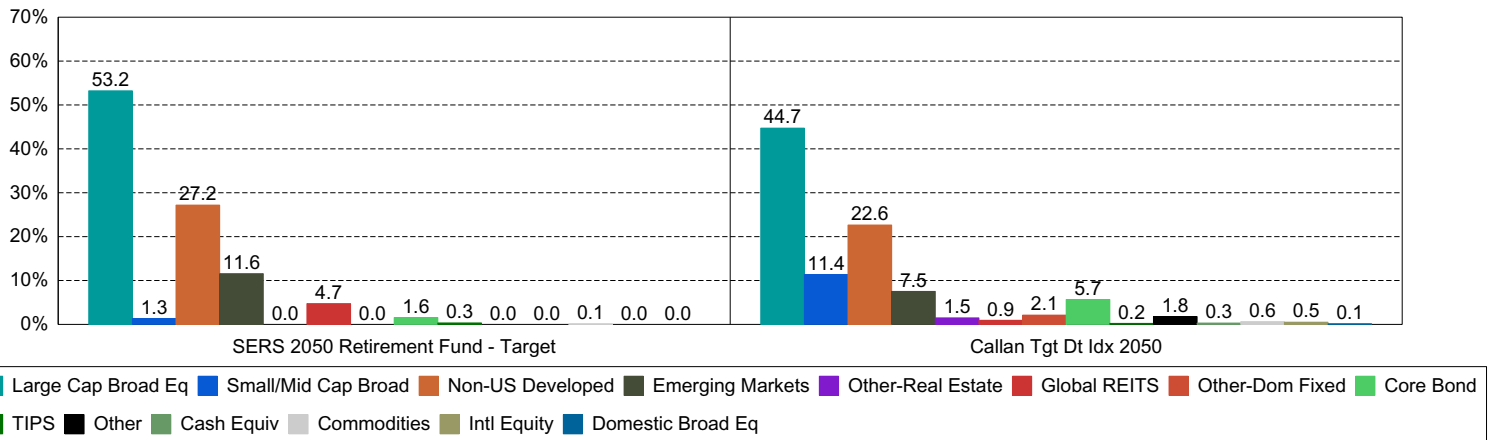
# SERS 2050 Retirement Fund Target Date Fund Asset Allocation as of September 30, 2021

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.

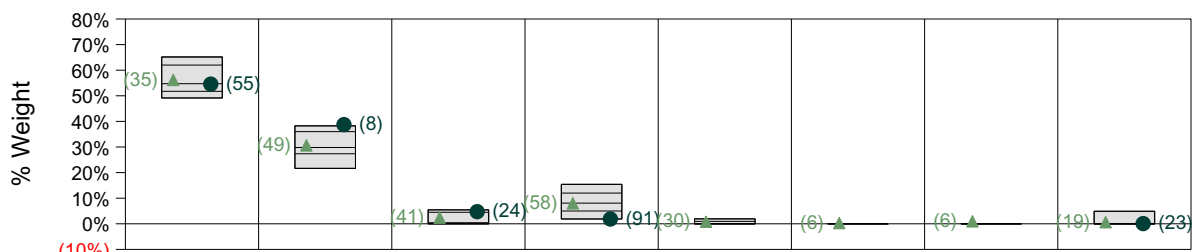
## Macro-Level Asset Allocation



## 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	Real Assets
10th Percentile	65.17	38.26	5.45	15.42	1.92	0.00	0.00	4.90
25th Percentile	62.00	36.00	4.50	12.00	0.95	0.00	0.00	0.00
Median	54.73	29.80	0.42	8.08	0.00	0.00	0.00	0.00
75th Percentile	51.75	27.36	0.00	5.00	0.00	0.00	0.00	0.00
90th Percentile	49.15	21.66	0.00	1.88	0.00	0.00	0.00	0.00
<b>SERS 2050 Retirement Fund - Target</b>	● 54.56	38.74	4.73	1.88	-	-	-	0.09
Callan Tgt Dt Idx 2050	▲ 56.21	30.65	2.41	8.01	0.81	0.30	0.97	0.63

# SERS 2050 Retirement Fund Period Ended September 30, 2021

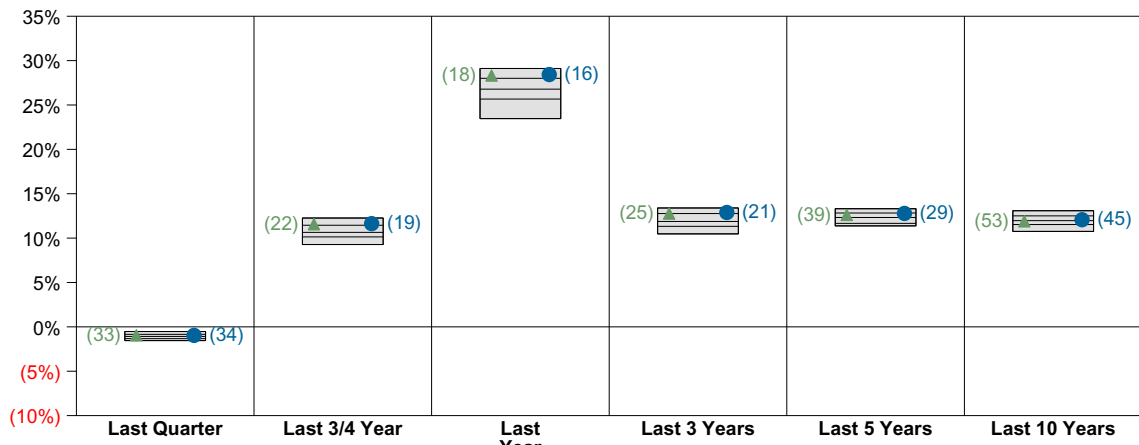
## Investment Philosophy

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

## Quarterly Summary and Highlights

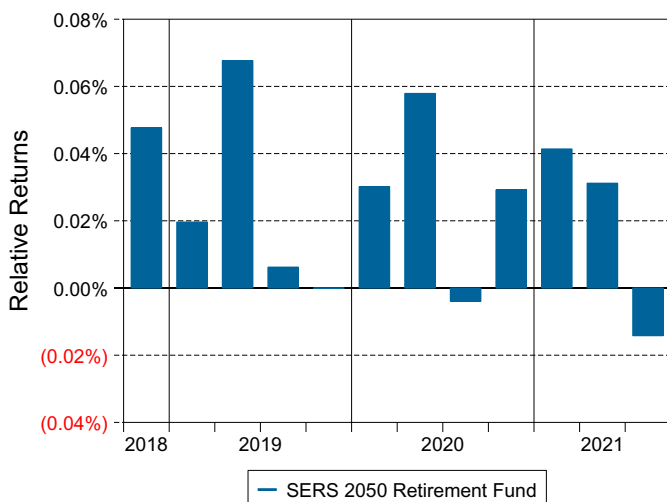
- SERS 2050 Retirement Fund's portfolio posted a (0.96)% return for the quarter placing it in the 34 percentile of the Callan Target Date 2050 group for the quarter and in the 16 percentile for the last year.
- SERS 2050 Retirement Fund's portfolio underperformed the LifePath Index 2050 CB by 0.01% for the quarter and outperformed the LifePath Index 2050 CB for the year by 0.10%.

## Performance vs Callan Target Date 2050 (Net)

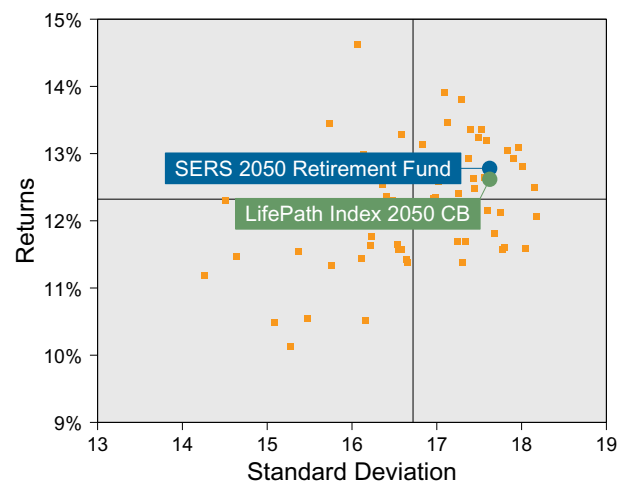


	Last Quarter	Last 3/4 Year	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	(0.53)	12.26	29.12	13.40	13.31	13.09
25th Percentile	(0.84)	11.45	28.01	12.77	12.83	12.51
Median	(1.08)	10.65	26.78	11.87	12.32	11.97
75th Percentile	(1.33)	10.14	25.67	11.32	11.66	11.53
90th Percentile	(1.55)	9.27	23.46	10.48	11.38	10.75
<b>SERS 2050 Retirement Fund</b>	<b>(0.96)</b>	11.63	28.43	12.88	12.78	12.07
LifePath Index 2050 CB	(0.95)	11.57	28.33	12.77	12.62	11.90

## Relative Return vs LifePath Index 2050 CB



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

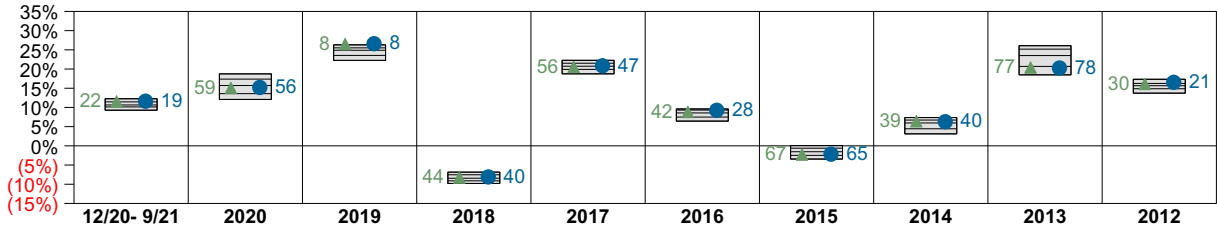


# SERS 2050 Retirement Fund Return Analysis Summary

## Return Analysis

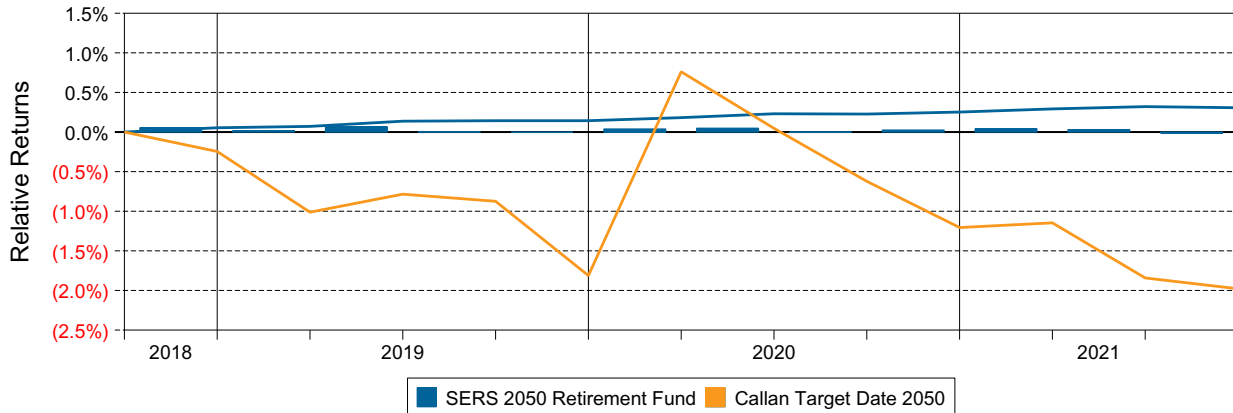
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

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

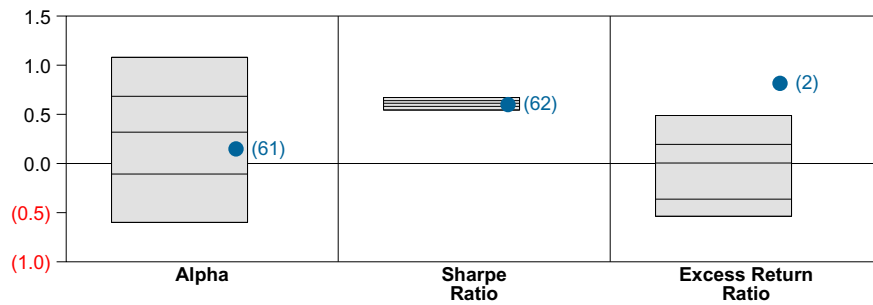


	12/20- 9/21	2020	2019	2018	2017	2016	2015	2014	2013	2012
<b>SERS 2050 Retirement Fund</b>	● 11.63	15.20	26.60	(8.11)	20.85	9.26	(2.17)	6.28	20.26	16.54
LifePath Index 2050 CB	▲ 11.57	15.07	26.48	(8.26)	20.55	8.82	(2.26)	6.41	20.40	16.12

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



### Risk Adjusted Return Measures vs LifePath Index 2050 CB Rankings Against Callan Target Date 2050 (Net) Seven Years Ended September 30, 2021



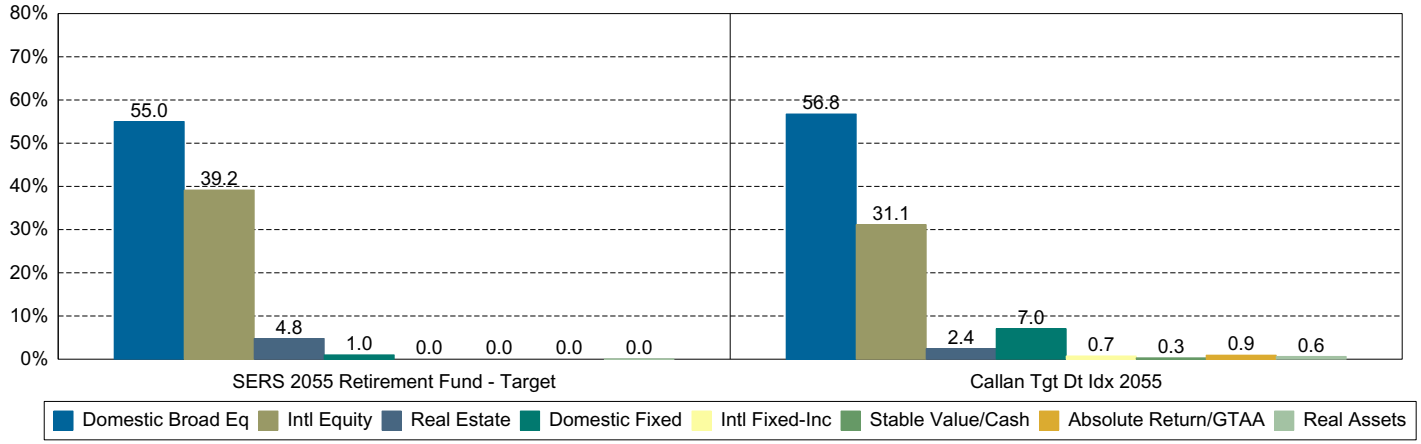
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	1.08	0.67	0.49
25th Percentile	0.68	0.64	0.19
Median	0.32	0.61	0.00
75th Percentile	(0.11)	0.58	(0.36)
90th Percentile	(0.60)	0.54	(0.54)
<b>SERS 2050 Retirement Fund</b>	● 0.15	0.60	0.82

# SERS 2055 Retirement Fund

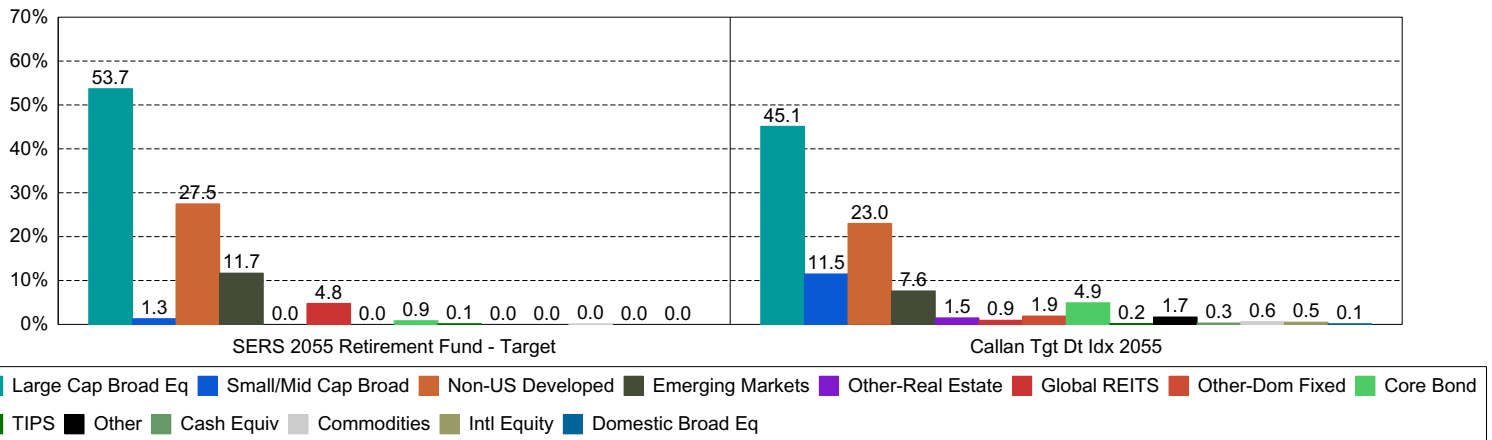
## Target Date Fund Asset Allocation as of September 30, 2021

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.

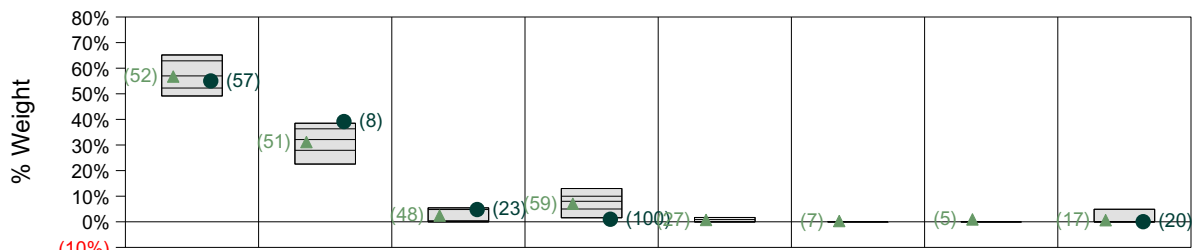
### Macro-Level Asset Allocation



### 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	Real Assets
10th Percentile	65.17	38.50	5.45	13.00	1.68	0.00	0.00	4.90
25th Percentile	62.88	36.33	4.79	9.99	0.88	0.00	0.00	0.00
Median	56.99	32.12	0.42	8.01	0.00	0.00	0.00	0.00
75th Percentile	52.25	27.93	0.00	5.00	0.00	0.00	0.00	0.00
90th Percentile	49.15	22.55	0.00	1.57	0.00	0.00	0.00	0.00

<b>SERS 2055 Retirement Fund - Target</b>	●	55.02	39.15	4.79	1.00	-	-	-	0.04
Callan Tgt Dt Idx 2055	▲	56.75	31.15	2.43	7.05	0.74	0.31	0.93	0.63

# SERS 2055 Retirement Fund Period Ended September 30, 2021

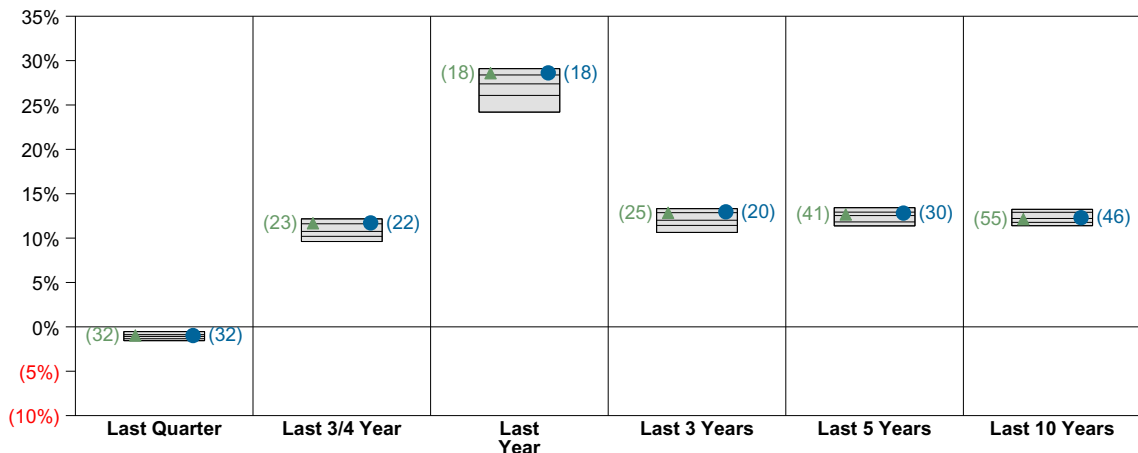
## Investment Philosophy

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

## Quarterly Summary and Highlights

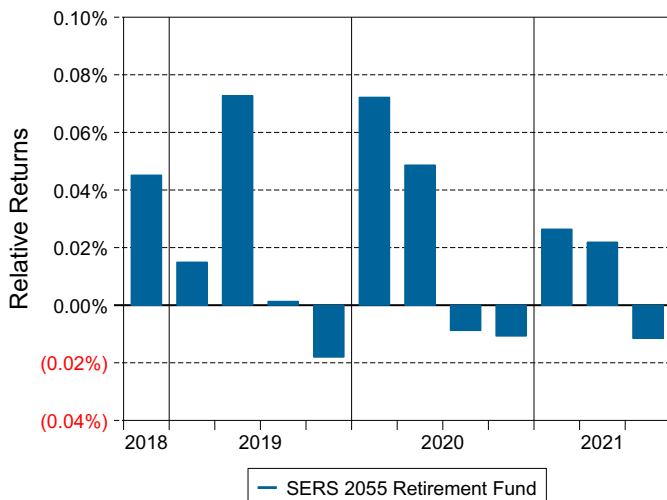
- SERS 2055 Retirement Fund's portfolio posted a (0.98)% return for the quarter placing it in the 32 percentile of the Callan Target Date 2055 group for the quarter and in the 18 percentile for the last year.
- SERS 2055 Retirement Fund's portfolio underperformed the LifePath Index 2055 CB by 0.01% for the quarter and outperformed the LifePath Index 2055 CB for the year by 0.03%.

## Performance vs Callan Target Date 2055 (Net)

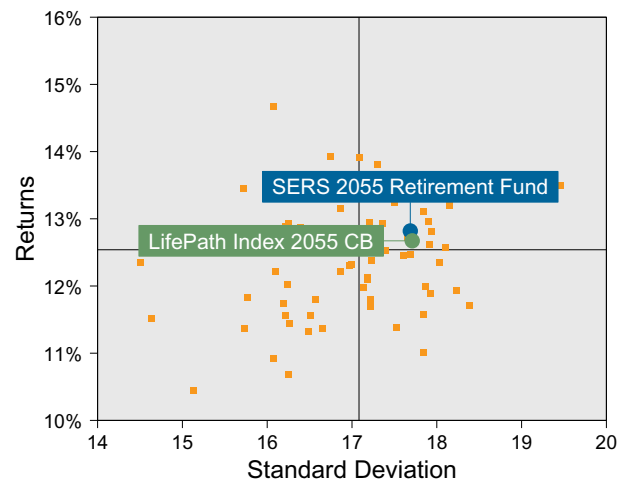


10th Percentile	(0.53)	12.17	29.09	13.32	13.43	13.24
25th Percentile	(0.88)	11.61	28.38	12.87	12.93	12.91
Median	(1.08)	10.76	27.38	12.01	12.54	12.21
75th Percentile	(1.34)	10.20	26.08	11.43	11.82	11.77
90th Percentile	(1.56)	9.62	24.20	10.64	11.38	11.40
<b>SERS 2055 Retirement Fund</b>	<b>(0.98)</b>	11.71	28.62	12.96	12.82	12.30
LifePath Index 2055 CB	(0.97)	11.67	28.59	12.86	12.67	12.14

## Relative Return vs LifePath Index 2055 CB



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

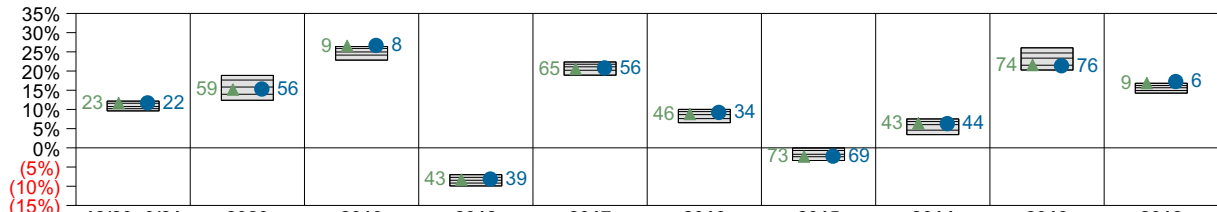


# SERS 2055 Retirement Fund Return Analysis Summary

## Return Analysis

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

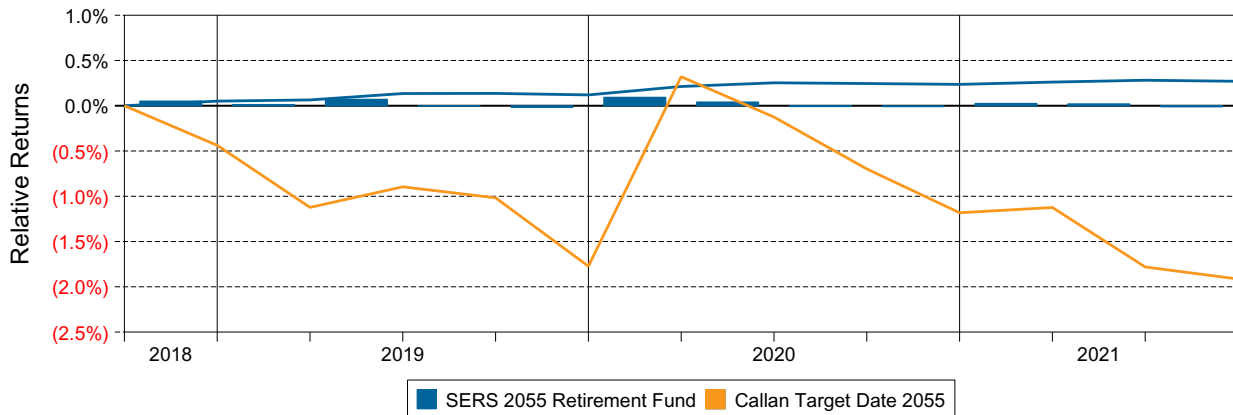
### Performance vs Callan Target Date 2055 (Net)



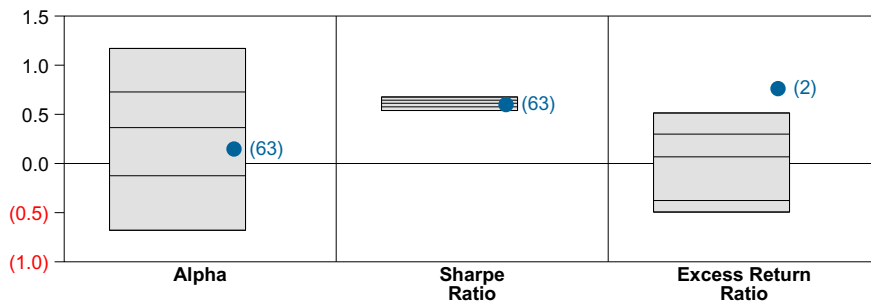
10th Percentile	12.17	18.86	26.39	(6.99)	22.36	10.01	(0.05)	7.53	26.05	16.82
25th Percentile	11.61	17.65	25.90	(7.69)	21.77	9.44	(0.69)	6.85	24.70	16.22
Median	10.76	15.83	24.97	(8.44)	21.10	8.65	(1.68)	6.04	23.36	15.65
75th Percentile	10.20	13.95	24.15	(9.18)	20.20	7.61	(2.31)	4.60	21.51	14.93
90th Percentile	9.62	12.38	22.84	(9.93)	18.92	6.55	(3.30)	3.44	20.26	14.25

<b>SERS 2055 Retirement Fund</b>	● 11.71	15.32	26.67	(8.13)	20.82	9.22	(2.17)	6.31	21.37	17.27
LifePath Index 2055 CB	▲ 11.67	15.18	26.58	(8.28)	20.55	8.82	(2.26)	6.41	21.58	16.87

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



### Risk Adjusted Return Measures vs LifePath Index 2055 CB Rankings Against Callan Target Date 2055 (Net) Seven Years Ended September 30, 2021



10th Percentile	1.17	0.68	0.51
25th Percentile	0.73	0.64	0.30
Median	0.36	0.61	0.07
75th Percentile	(0.12)	0.58	(0.38)
90th Percentile	(0.68)	0.54	(0.49)
<b>SERS 2055 Retirement Fund</b>	● 0.15	0.60	0.76

# SERS 2060 Retirement Fund

## Period Ended September 30, 2021

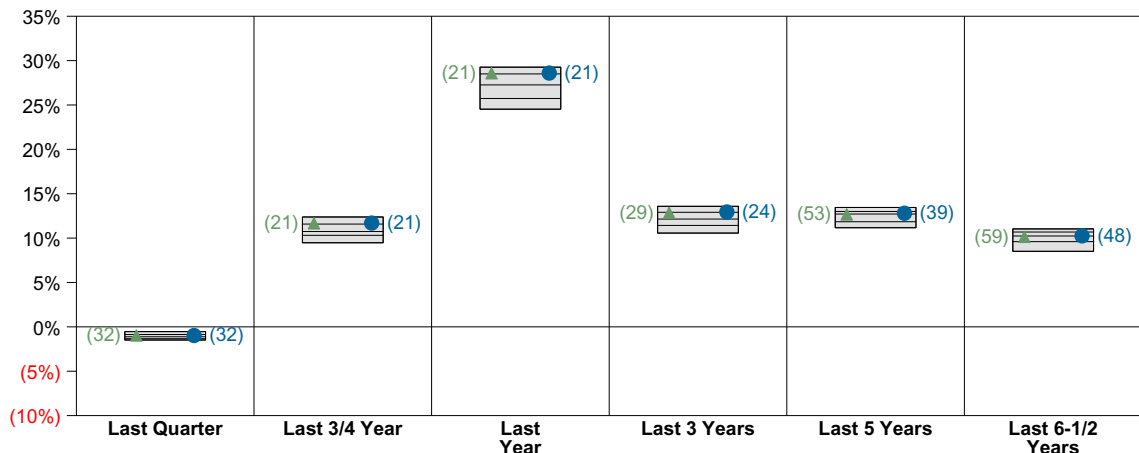
### Investment Philosophy

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

### Quarterly Summary and Highlights

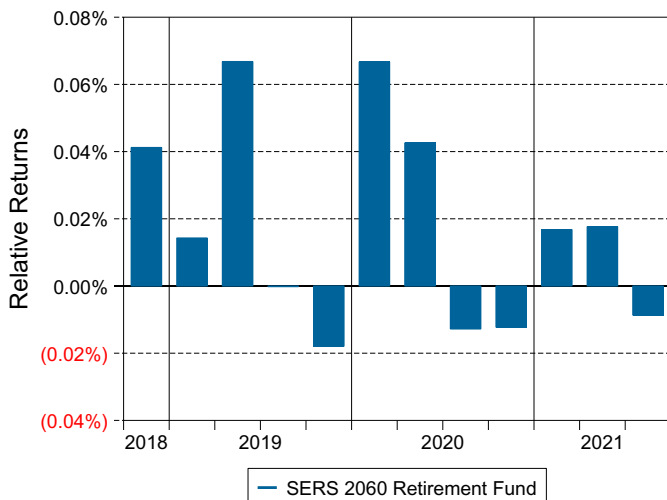
- SERS 2060 Retirement Fund's portfolio posted a (0.98)% return for the quarter placing it in the 32 percentile of the Callan Target Date 2060 group for the quarter and in the 21 percentile for the last year.
- SERS 2060 Retirement Fund's portfolio underperformed the LifePath Index 2060 CB by 0.01% for the quarter and outperformed the LifePath Index 2060 CB for the year by 0.02%.

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

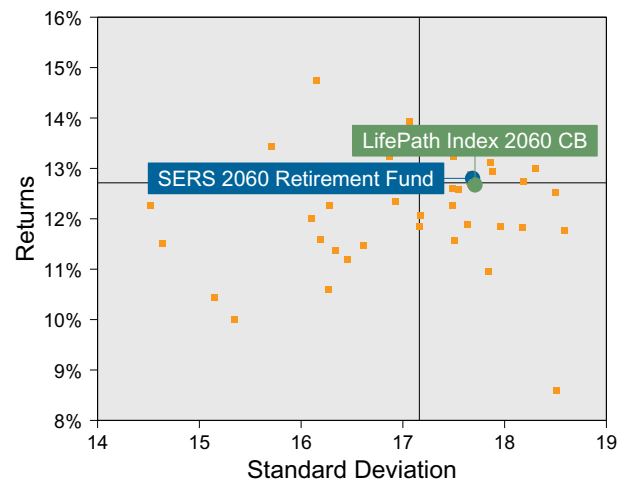


10th Percentile	(0.54)	12.38	29.26	13.58	13.45	11.04
25th Percentile	(0.86)	11.58	28.50	12.91	13.00	10.69
Median	(1.12)	10.74	27.26	12.15	12.71	10.24
75th Percentile	(1.33)	10.31	25.73	11.43	11.85	9.60
90th Percentile	(1.48)	9.47	24.53	10.57	11.17	8.51
<b>SERS 2060 Retirement Fund</b>	<b>● (0.98)</b>	11.69	28.60	12.94	12.80	10.25
LifePath Index 2060 CB	▲ (0.97)	11.67	28.58	12.86	12.67	10.15

### Relative Return vs LifePath Index 2060 CB



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



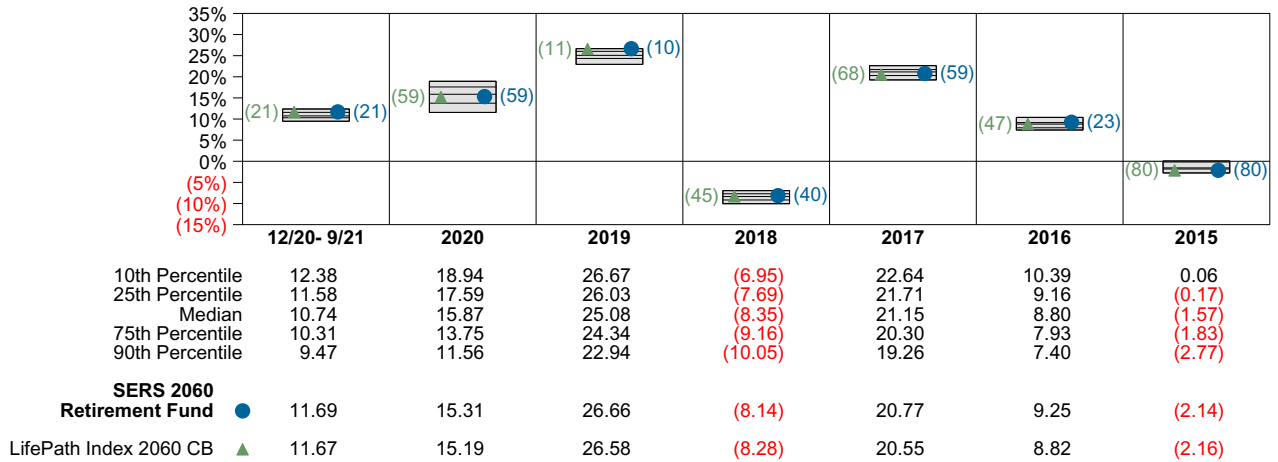


# SERS 2060 Retirement Fund Return Analysis Summary

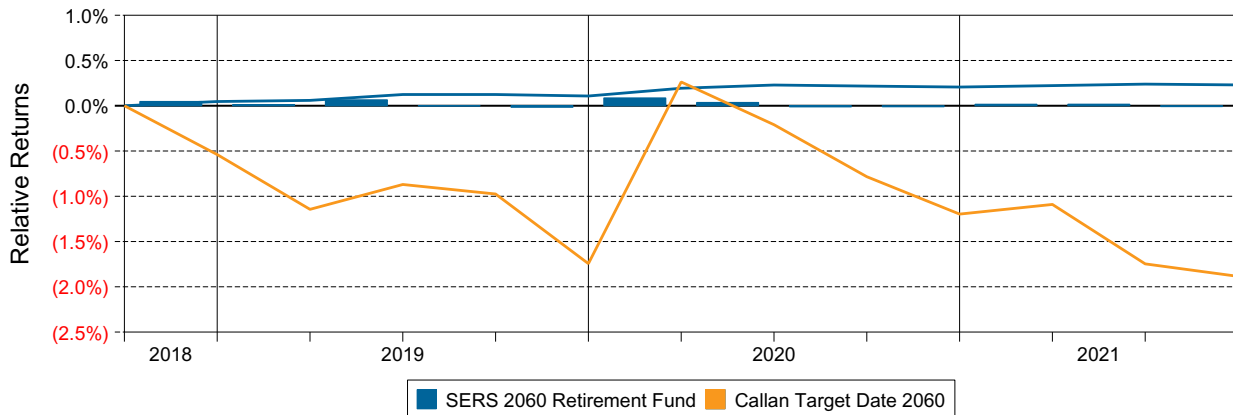
## Return Analysis

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

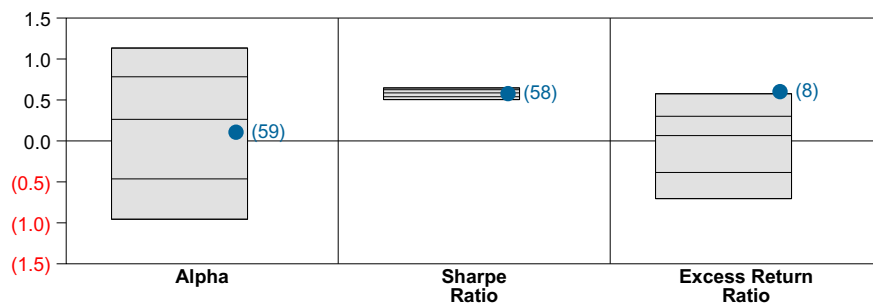
### Performance vs Callan Target Date 2060 (Net)



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



### Risk Adjusted Return Measures vs LifePath Index 2060 CB Rankings Against Callan Target Date 2060 (Net) Six and One-Half Years Ended September 30, 2021



# SERS 2065 Retirement Fund

## Period Ended September 30, 2021

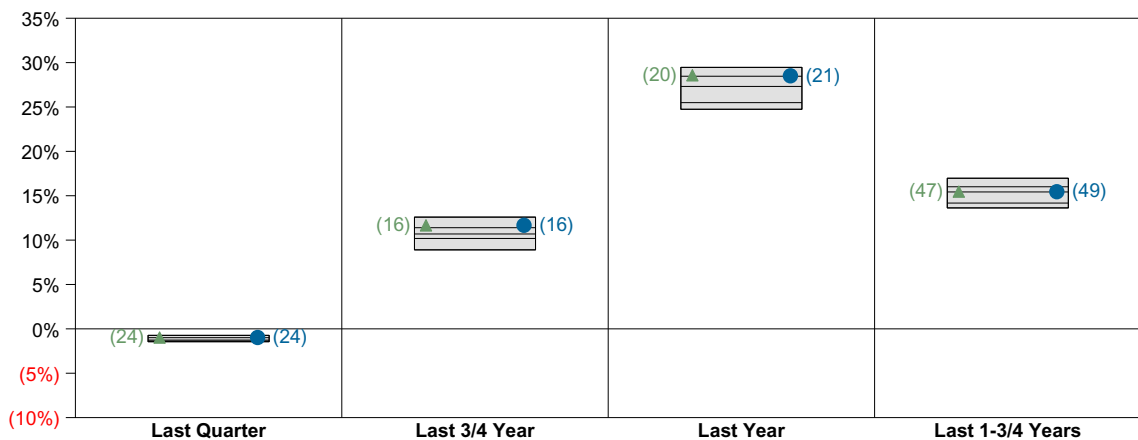
### Investment Philosophy

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

### Quarterly Summary and Highlights

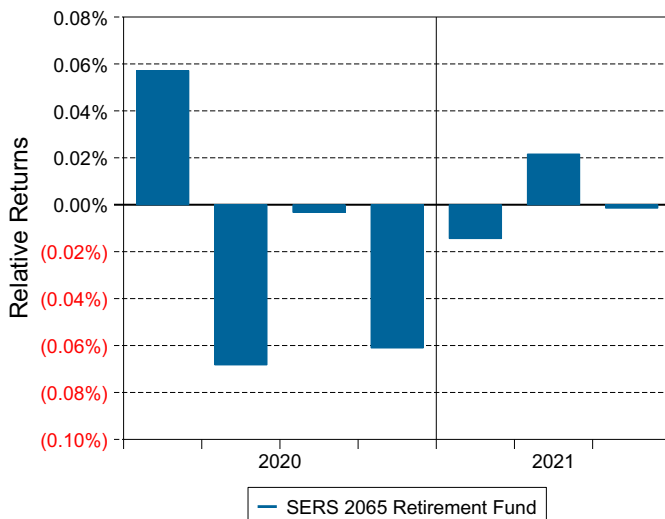
- SERS 2065 Retirement Fund's portfolio posted a (0.97)% return for the quarter placing it in the 24 percentile of the Callan Target Date 2065 group for the quarter and in the 21 percentile for the last year.
- SERS 2065 Retirement Fund's portfolio underperformed the LifePath Index 2065 CB by 0.00% for the quarter and underperformed the LifePath Index 2065 CB for the year by 0.06%.

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

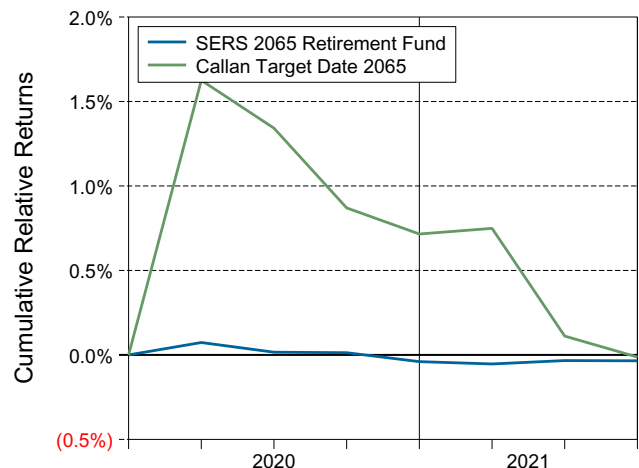


	Last Quarter	Last 3/4 Year	Last Year	Last 1-3/4 Years
10th Percentile	(0.73)	12.59	29.46	16.97
25th Percentile	(1.00)	11.40	28.46	16.01
Median	(1.27)	10.69	27.32	15.43
75th Percentile	(1.38)	10.19	25.49	14.17
90th Percentile	(1.45)	8.90	24.74	13.63
<b>SERS 2065 Retirement Fund</b>	<b>(0.97)</b>	<b>11.67</b>	<b>28.51</b>	<b>15.45</b>
LifePath Index 2065 CB	(0.97)	11.66	28.57	15.47

### Relative Return vs LifePath Index 2065 CB



### Cumulative Returns vs LifePath Index 2065 CB





# SERS U.S. Large Company Index Period Ended September 30, 2021

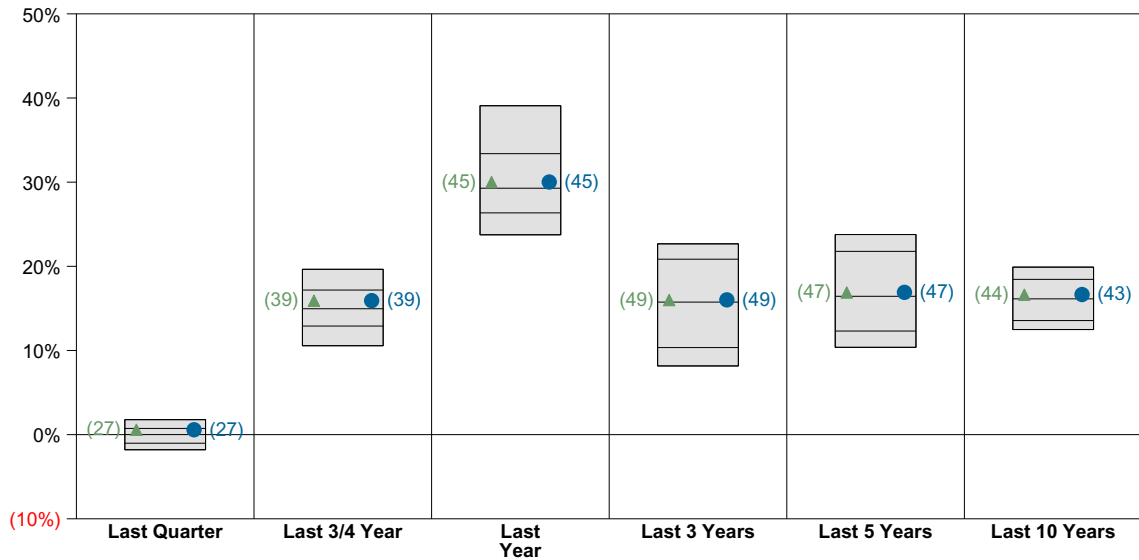
## Investment Philosophy

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

## Quarterly Summary and Highlights

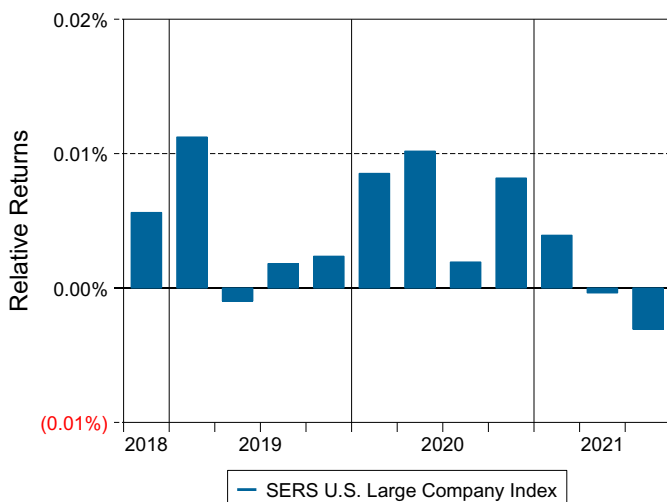
- SERS U.S. Large Company Index's portfolio posted a 0.58% return for the quarter placing it in the 27 percentile of the Callan Large Cap Broad Equity Mut Funds group for the quarter and in the 45 percentile for the last year.
- SERS U.S. Large Company Index's portfolio underperformed the S&P 500 Index by 0.00% for the quarter and outperformed the S&P 500 Index for the year by 0.01%.

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

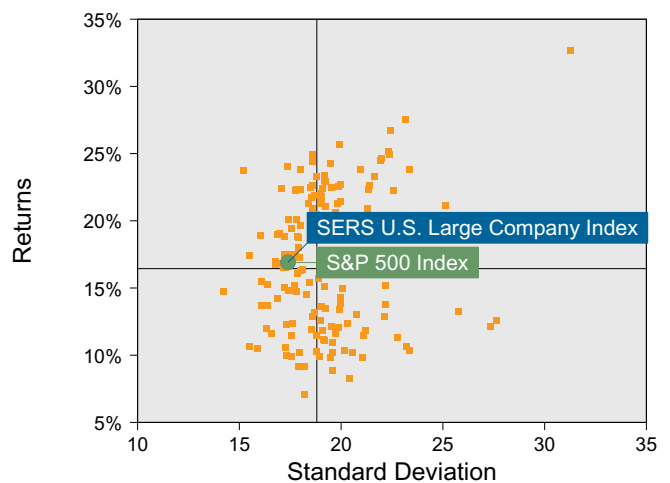


10th Percentile	1.78	19.65	39.08	22.67	23.78	19.90
25th Percentile	0.74	17.18	33.39	20.85	21.78	18.45
Median	0.01	14.96	29.28	15.75	16.44	16.13
75th Percentile	(1.02)	12.90	26.35	10.34	12.31	13.56
90th Percentile	(1.80)	10.56	23.74	8.16	10.37	12.49
<b>SERS U.S. Large Company Index</b>	● 0.58	15.92	30.02	16.01	16.91	16.65
<b>S&amp;P 500 Index</b>	▲ 0.58	15.92	30.00	15.99	16.90	16.63

## Relative Return vs S&P 500 Index



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

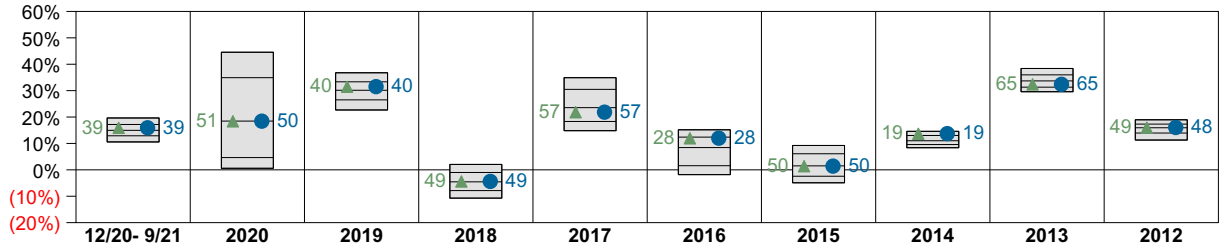


# SERS U.S. Large Company Index Return Analysis Summary

## Return Analysis

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

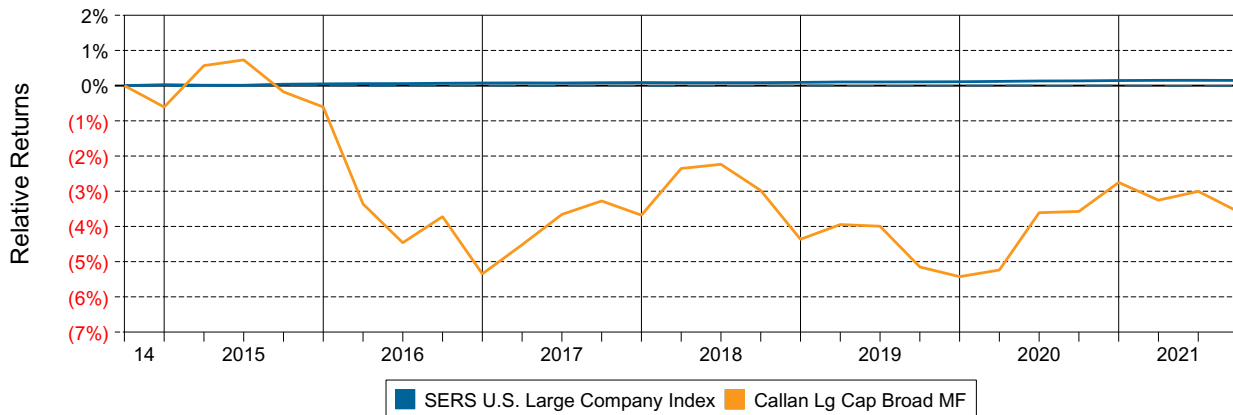
### Performance vs Callan Large Cap Broad Equity Mut Funds (Institutional Net)



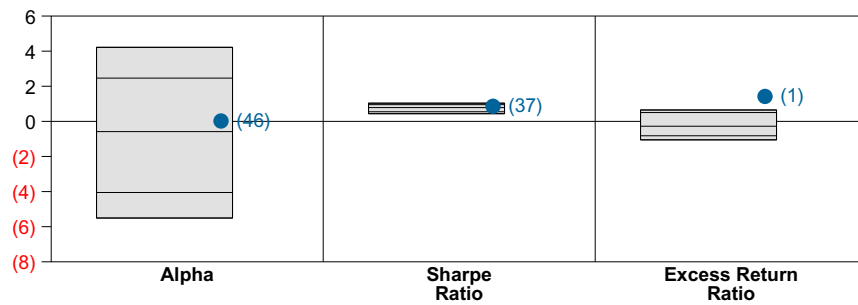
	12/20- 9/21	2020	2019	2018	2017	2016	2015	2014	2013	2012
10th Percentile	19.65	44.54	36.76	2.05	34.91	15.17	9.23	14.58	38.40	18.96
25th Percentile	17.18	34.90	33.34	(1.00)	30.48	12.39	6.09	13.01	35.98	17.33
Median	14.96	18.47	30.14	(4.54)	23.56	8.43	1.50	11.02	33.69	15.94
75th Percentile	12.90	4.64	26.51	(7.86)	18.33	1.56	(2.42)	9.59	31.31	13.94
90th Percentile	10.56	0.58	22.66	(10.72)	14.82	(1.82)	(4.91)	8.38	29.58	11.29

	12/20- 9/21	2020	2019	2018	2017	2016	2015	2014	2013	2012
<b>SERS U.S. Large Company Index</b>	● 15.93	18.44	31.51	(4.38)	21.85	11.99	1.41	13.72	32.39	16.04
S&P 500 Index	▲ 15.92	18.40	31.49	(4.38)	21.83	11.96	1.38	13.69	32.39	16.00

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



### Risk Adjusted Return Measures vs S&P 500 Index Rankings Against Callan Large Cap Broad Equity Mut Funds (Institutional Net) Seven Years Ended September 30, 2021



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	4.22	1.04	0.65
25th Percentile	2.46	0.95	0.50
Median	(0.58)	0.78	(0.28)
75th Percentile	(4.05)	0.55	(0.82)
90th Percentile	(5.51)	0.44	(1.05)

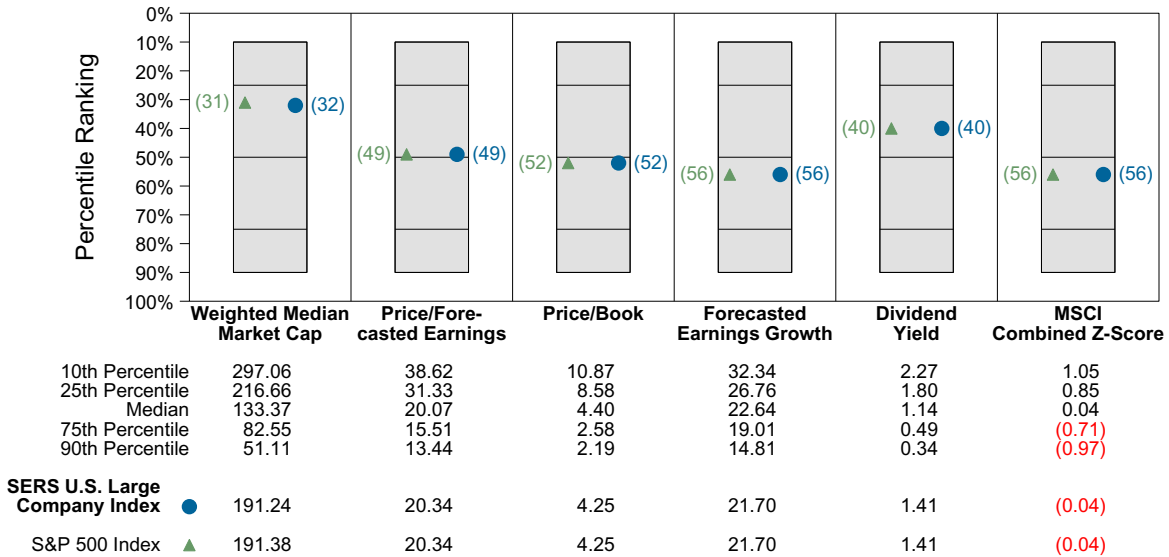
<b>SERS U.S. Large Company Index</b>	● 0.02	0.86	1.42
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# SERS U.S. Large Company Index Equity Characteristics Analysis Summary

## Portfolio Characteristics

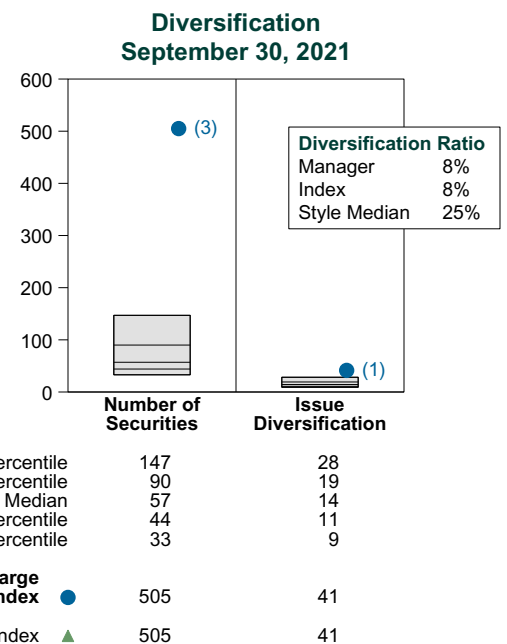
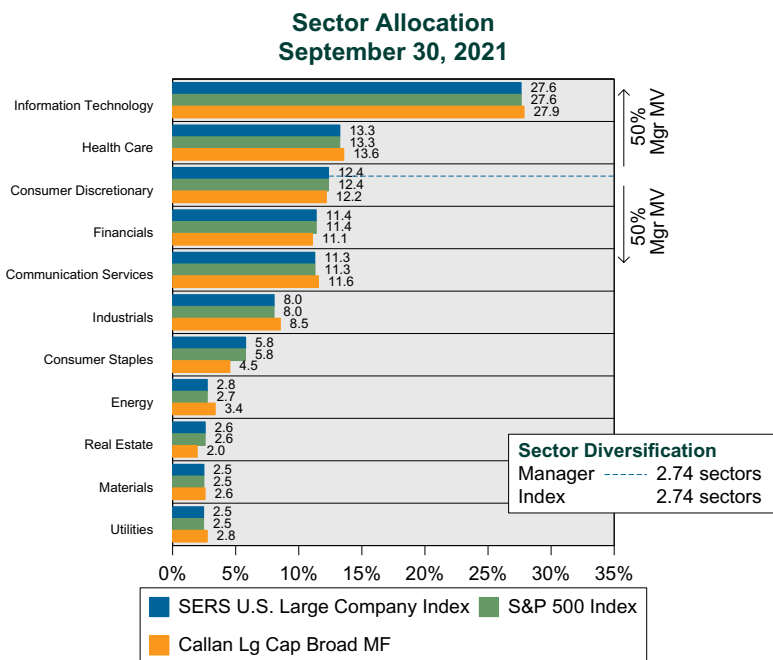
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Broad Equity Mut Funds as of September 30, 2021



## Sector Weights

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



## SERS U.S. Large Company Index Top 10 Portfolio Holdings Characteristics as of September 30, 2021

### 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	\$135,005	6.1%	3.47%	2339.02	24.91	0.62%	21.72%
Microsoft Corp	Information Technology	\$128,718	5.8%	4.27%	2118.60	30.91	0.88%	14.90%
Amazon.Com	Consumer Discretionary	\$86,927	3.9%	(4.51)%	1663.68	52.05	0.00%	38.60%
Facebook Inc Cl A	Communication Services	\$49,152	2.2%	(2.39)%	809.04	21.76	0.00%	28.60%
Alphabet Inc Cl A	Communication Services	\$48,903	2.2%	9.49%	804.96	25.48	0.00%	24.41%
Alphabet Inc Cl C	Communication Services	\$45,622	2.1%	6.34%	853.35	25.49	0.00%	24.41%
Tesla Mtrs Inc	Consumer Discretionary	\$38,228	1.7%	14.09%	767.74	115.99	0.00%	51.76%
Nvidia Corp	Information Technology	\$31,362	1.4%	3.59%	517.90	46.13	0.08%	32.60%
Berkshire Hathaway Inc Del Cl B New	Financials	\$30,736	1.4%	(1.79)%	361.75	22.14	0.00%	47.93%
JPMorgan Chase & Co	Financials	\$29,714	1.3%	5.85%	489.13	13.19	2.44%	8.25%

### 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
Moderna Inc	Health Care	\$8,154	0.4%	63.78%	155.35	13.92	0.00%	-
Paycom Software Inc	Information Technology	\$1,459	0.1%	36.39%	29.79	93.70	0.00%	27.00%
Albemarle Corp	Materials	\$1,563	0.1%	30.20%	25.61	44.94	0.71%	9.31%
Monolithic Pwr Sys Inc	Information Technology	\$1,276	0.1%	29.95%	22.26	61.10	0.50%	25.00%
Dexcom Inc	Health Care	\$3,223	0.1%	28.07%	52.91	167.39	0.00%	16.40%
Quanta Services Common	Industrials	\$967	0.0%	25.74%	15.84	21.51	0.21%	15.44%
Cabot Oil & Gas Corp	Energy	\$535	0.0%	25.47%	8.70	9.98	2.02%	33.27%
Gartner Inc	Information Technology	\$1,557	0.1%	25.47%	25.42	43.60	0.00%	16.40%
Devon Energy Corp	Energy	\$1,359	0.1%	23.77%	24.04	9.41	4.28%	(14.64)%
Catalent Inc	Health Care	\$1,385	0.1%	23.08%	22.74	36.90	0.00%	18.10%

### 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
Gap	Consumer Discretionary	\$289	0.0%	(32.29)%	8.54	9.39	2.11%	(5.20)%
Wynn Resorts Ltd	Consumer Discretionary	\$547	0.0%	(30.70)%	9.80	(49.19)	0.00%	(114.90)%
Las Vegas Sands Corp	Consumer Discretionary	\$765	0.0%	(30.54)%	27.96	34.76	0.00%	271.80%
Fedex Corp	Industrials	\$3,283	0.1%	(26.29)%	58.25	10.61	1.37%	11.70%
Ipg Photonics	Information Technology	\$355	0.0%	(24.85)%	8.47	26.78	0.00%	8.19%
Lamb Weston Hldgs Inc Com	Consumer Staples	\$553	0.0%	(23.64)%	8.91	21.91	1.53%	17.25%
Nielsen Hldgs Plc Shs Eur	Industrials	\$426	0.0%	(22.00)%	6.89	11.14	1.25%	(14.93)%
Western Digital Corp	Information Technology	\$1,063	0.0%	(20.70)%	17.43	5.35	0.00%	47.80%
Activision Blizzard Inc	Communication Services	\$3,652	0.2%	(18.91)%	60.19	18.24	0.61%	13.90%
Newell Brands Inc	Consumer Discretionary	\$521	0.0%	(18.67)%	9.42	11.95	4.16%	4.16%

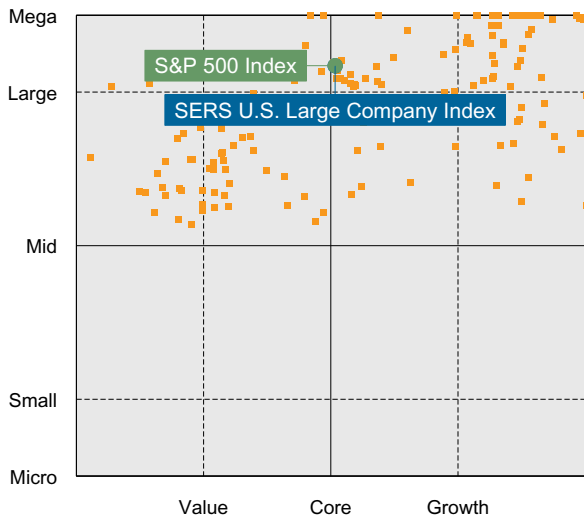
# Historical Holdings Based Style Analysis

## SERS U.S. Large Company Index

### For Three Years Ended September 30, 2021

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

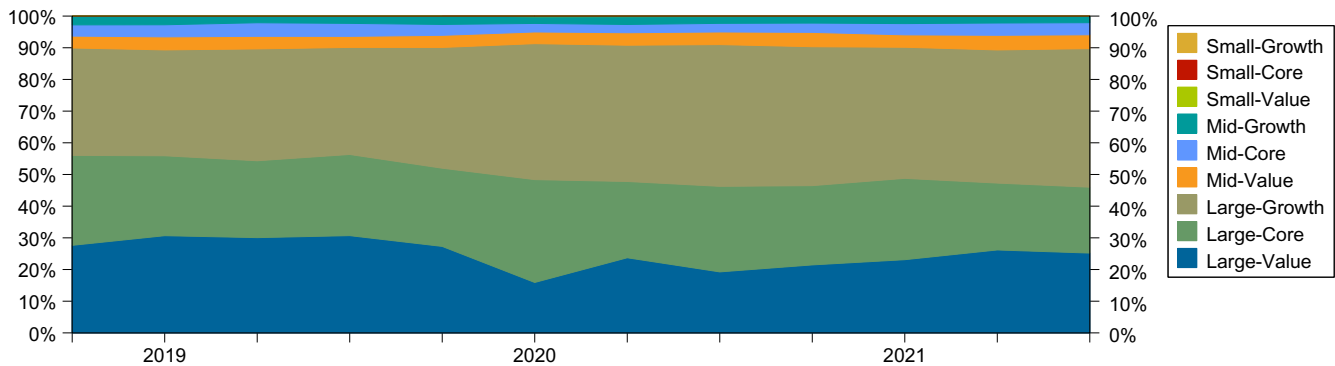
**Average Style Map vs Callan Lg Cap Broad MF Holdings for Three Years Ended September 30, 2021**



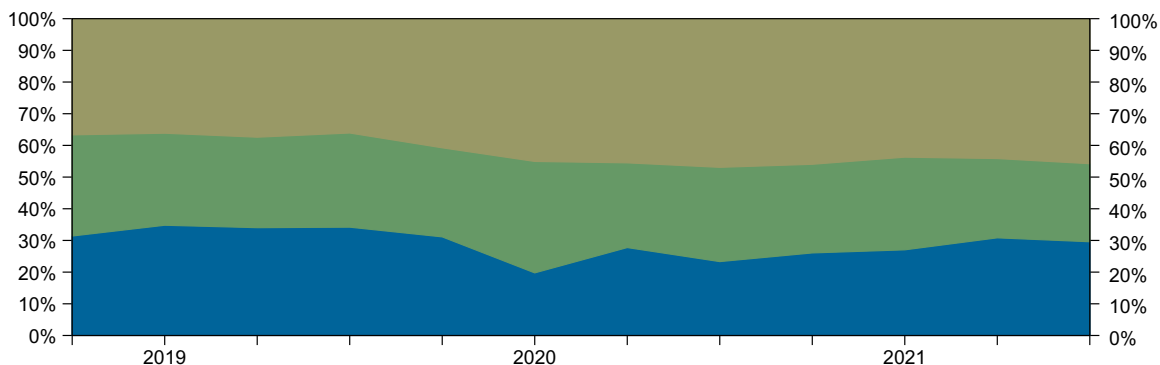
**Average Style Exposure Matrix Holdings for Three Years Ended September 30, 2021**

Large	25.1% (96)	25.4% (96)	39.7% (86)	90.1% (278)
	25.1% (96)	25.4% (96)	39.7% (86)	90.2% (278)
Mid	4.0% (98)	3.4% (76)	2.3% (46)	9.8% (220)
	4.0% (98)	3.4% (76)	2.3% (46)	9.7% (220)
Small	0.0% (4)	0.0% (2)	0.0% (1)	0.1% (7)
	0.0% (4)	0.0% (2)	0.0% (2)	0.1% (8)
Micro	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Total	29.2% (198)	28.8% (174)	42.0% (133)	100.0% (505)
	29.1% (198)	28.8% (174)	42.1% (134)	100.0% (506)
	Value	Core	Growth	Total

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



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





# SERS U.S. All Company Index Fund

## Period Ended September 30, 2021

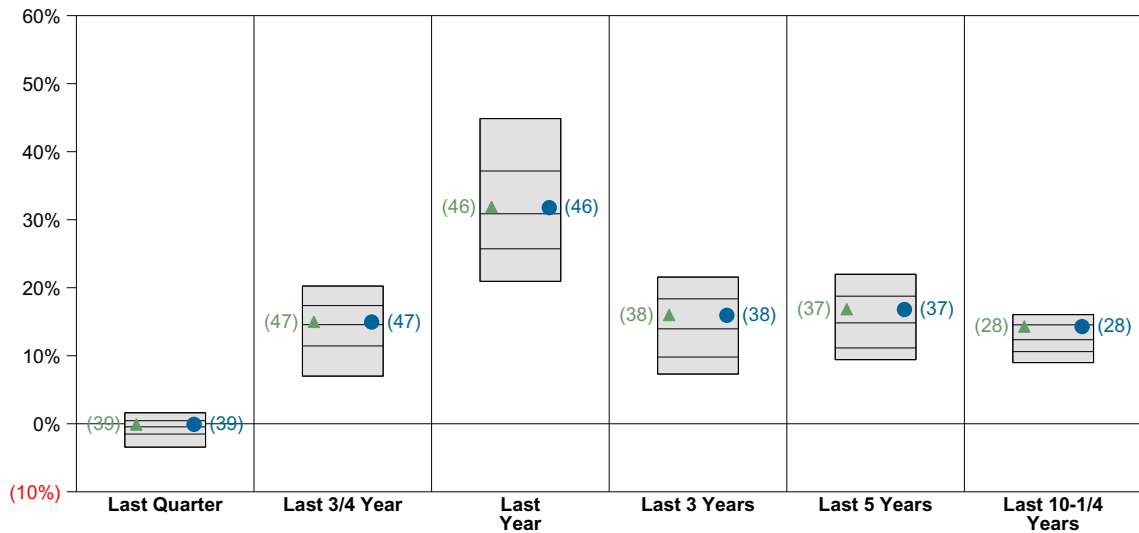
### Investment Philosophy

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

### Quarterly Summary and Highlights

- SERS U.S. All Company Index Fund's portfolio posted a (0.09)% return for the quarter placing it in the 39 percentile of the Callan Multi Cap Broad Mutual Funds group for the quarter and in the 46 percentile for the last year.
- SERS U.S. All Company Index Fund's portfolio outperformed the Russell 3000 Index by 0.01% for the quarter and underperformed the Russell 3000 Index for the year by 0.10%.

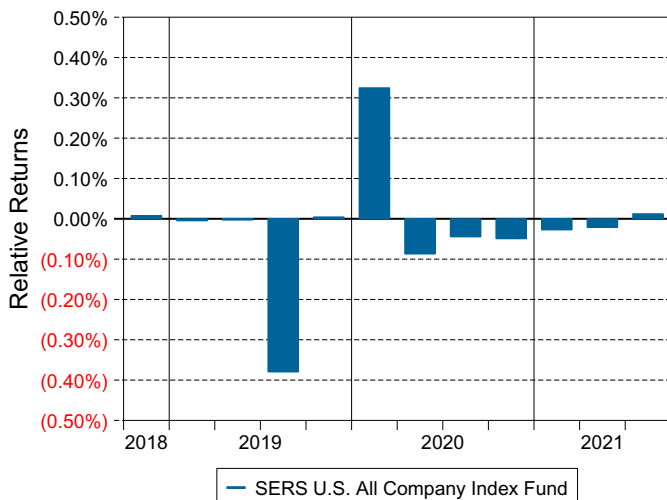
### Performance vs Callan Multi Cap Broad Mutual Funds (Institutional Net)



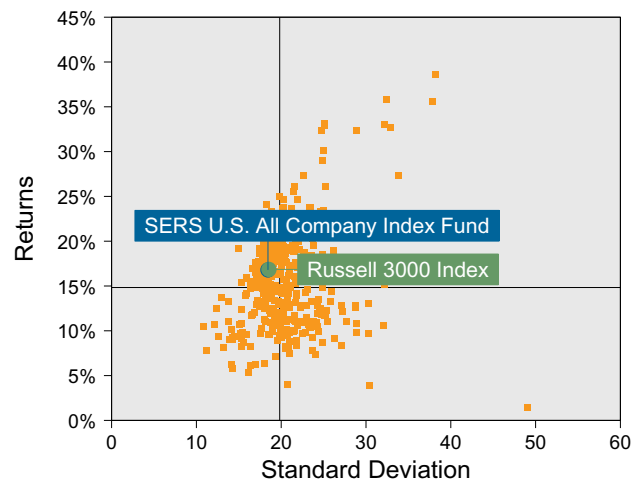
10th Percentile	1.62	20.25	44.86	21.57	21.98	16.04
25th Percentile	0.45	17.37	37.16	18.37	18.76	14.54
Median	(0.45)	14.57	30.87	13.96	14.83	12.36
75th Percentile	(1.51)	11.44	25.72	9.81	11.15	10.61
90th Percentile	(3.44)	7.01	20.94	7.31	9.42	8.99

<b>SERS U.S. All Company Index Fund</b>	● (0.09)	14.95	31.78	15.94	16.79	14.28
Russell 3000 Index	▲ (0.10)	14.99	31.88	16.00	16.85	14.30

### Relative Return vs Russell 3000 Index



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

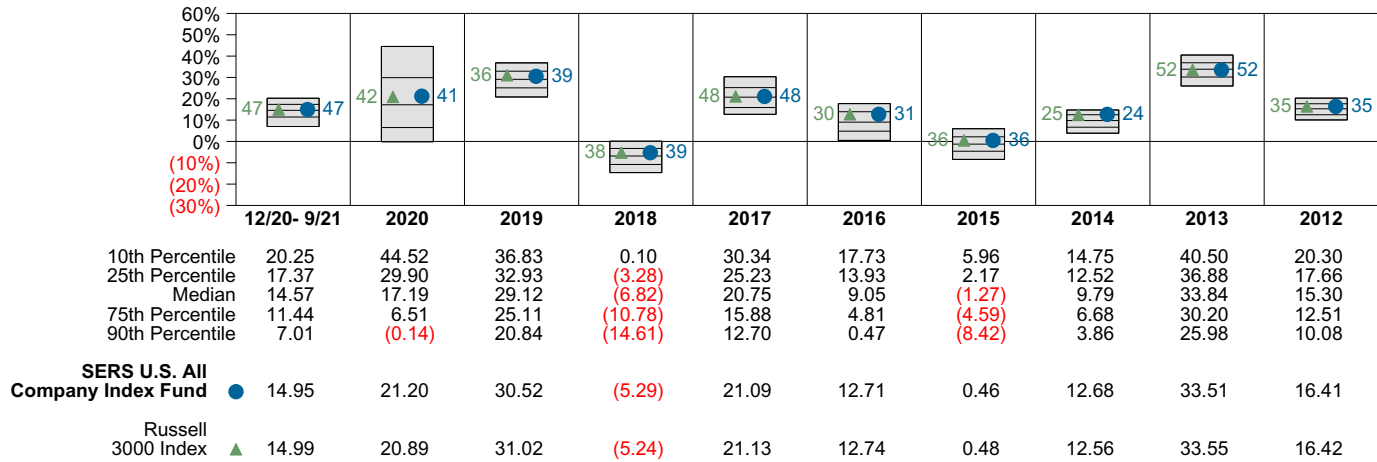


# SERS U.S. All Company Index Fund Return Analysis Summary

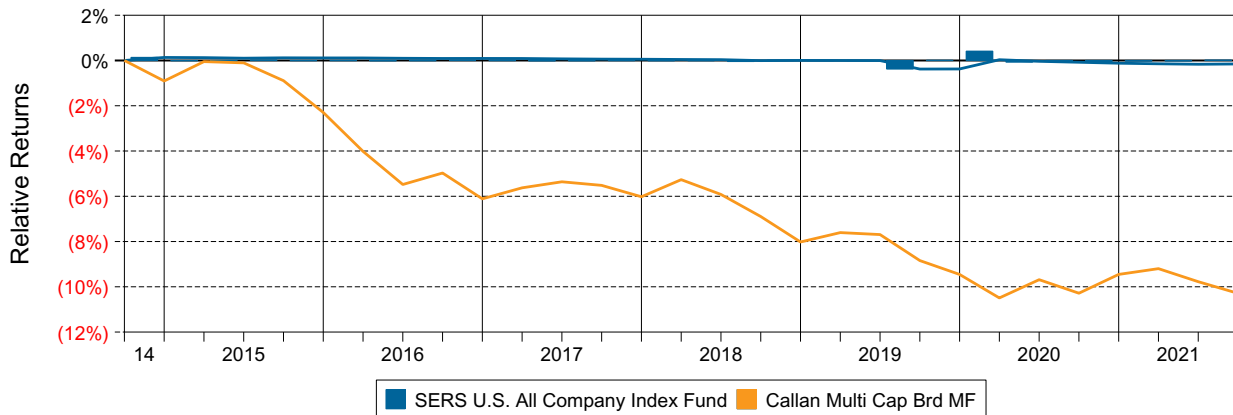
## Return Analysis

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

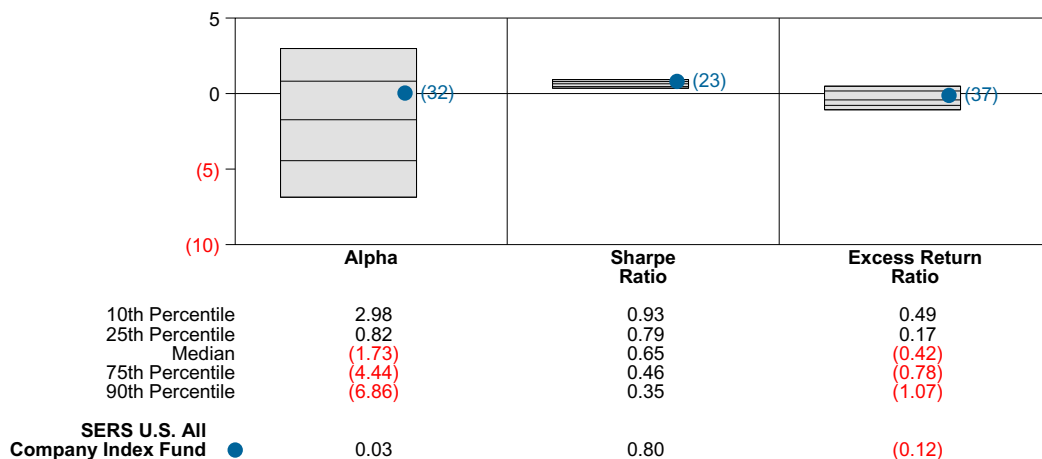
### Performance vs Callan Multi Cap Broad Mutual Funds (Institutional Net)



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



### Risk Adjusted Return Measures vs Russell 3000 Index Rankings Against Callan Multi Cap Broad Mutual Funds (Institutional Net) Seven Years Ended September 30, 2021

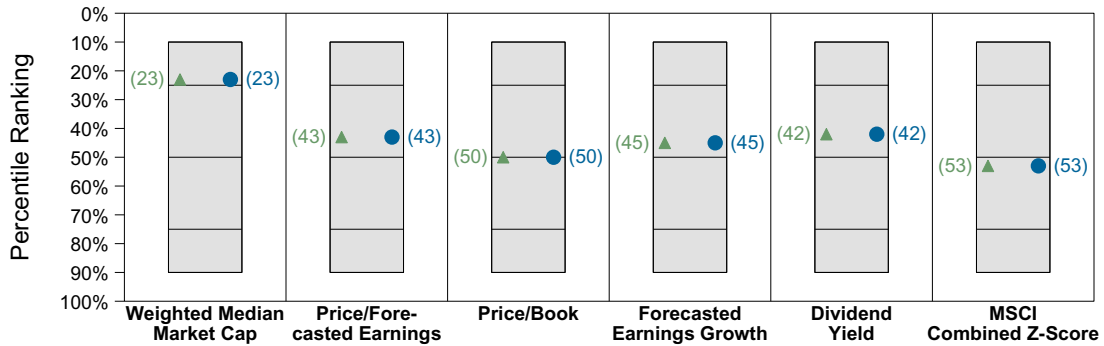


# SERS U.S. All Company Index Fund Equity Characteristics Analysis Summary

## Portfolio Characteristics

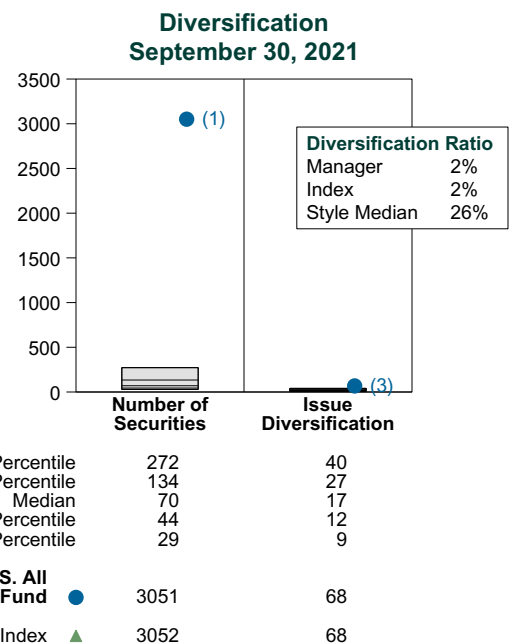
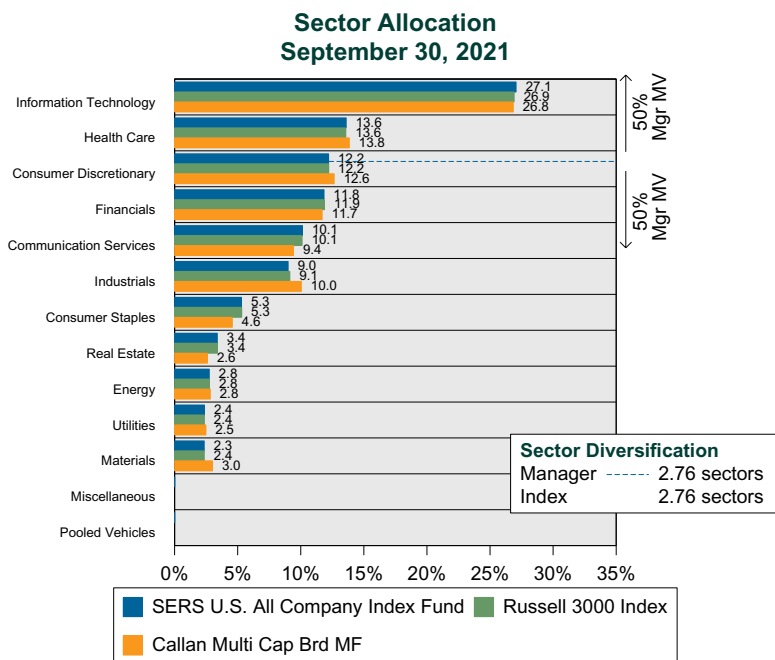
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Multi Cap Broad Mutual Funds as of September 30, 2021



## Sector Weights

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



## SERS U.S. All Company Index Fund Top 10 Portfolio Holdings Characteristics as of September 30, 2021

### 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	\$52,723	5.0%	3.47%	2339.02	24.91	0.62%	21.72%
Microsoft Corp	Information Technology	\$50,422	4.8%	4.27%	2118.60	30.91	0.88%	14.90%
Amazon.Com	Consumer Discretionary	\$33,836	3.2%	(4.51)%	1663.68	52.05	0.00%	38.60%
Facebook Inc Cl A	Communication Services	\$19,273	1.8%	(2.39)%	809.04	21.76	0.00%	28.60%
Alphabet Inc Cl A	Communication Services	\$19,084	1.8%	9.49%	804.96	25.48	0.00%	24.41%
Alphabet Inc Cl C	Communication Services	\$17,749	1.7%	6.34%	853.35	25.49	0.00%	24.41%
Tesla Mtrs Inc	Consumer Discretionary	\$14,668	1.4%	14.09%	767.74	115.99	0.00%	51.76%
Berkshire Hathaway Inc Del Cl B New	Financials	\$12,024	1.2%	(1.79)%	361.75	22.14	0.00%	47.93%
Nvidia Corp	Information Technology	\$11,757	1.1%	3.59%	517.90	46.13	0.08%	32.60%
JPMorgan Chase & Co	Financials	\$11,532	1.1%	5.85%	489.13	13.19	2.44%	8.25%

### 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
State Auto Finl Corp	Financials	\$21	0.0%	198.19%	2.25	45.70	0.79%	(0.52)%
Fulcrum Therapeutics Inc	Health Care	\$17	0.0%	169.18%	1.11	(10.48)	0.00%	-
Iveric Bio Inc	Health Care	\$38	0.0%	157.40%	1.69	(14.33)	0.00%	-
Upstart Hldgs Inc	Information Technology	\$315	0.0%	153.36%	24.61	194.97	0.00%	127.50%
Kadmon Hldgs Inc	Health Care	\$36	0.0%	125.04%	1.51	(13.20)	0.00%	-
Greensky Inc Cl A	Information Technology	\$19	0.0%	101.43%	0.91	18.76	0.00%	(9.28)%
Dynavax Technologies Corp	Health Care	\$49	0.0%	95.04%	2.20	15.05	0.00%	-
Grid Dynamics Hldgs Inc Class A	Information Technology	\$29	0.0%	94.41%	1.81	87.22	0.00%	-
Peabody Energy Corp New Com Par	Energy	\$27	0.0%	86.52%	1.87	(121.23)	3.92%	(26.67)%
Trillium Therapeutics Inc	Health Care	\$41	0.0%	81.13%	1.84	(22.07)	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
Chicken Soup For The Soul Entmt Inc	Communication Services	\$4	0.0%	(94.48)%	0.20	(14.47)	0.00%	-
Forte Biosciences Inc	Health Care	\$1	0.0%	(91.17)%	0.04	(3.20)	0.00%	-
Eargo Inc	Health Care	\$3	0.0%	(83.14)%	0.26	(5.23)	0.00%	59.20%
Sesen Bio Inc	Health Care	\$3	0.0%	(82.83)%	0.16	(1.84)	0.00%	-
Ardelyx Inc	Health Care	\$3	0.0%	(82.58)%	0.14	(1.06)	0.00%	-
Medavail Holdings Inc	Consumer Staples	\$1	0.0%	(76.16)%	0.10	(2.21)	0.00%	-
Seres Therapeutics Inc	Health Care	\$12	0.0%	(70.82)%	0.64	(4.66)	0.00%	-
Ontrak Inc	Health Care	\$2	0.0%	(69.23)%	0.19	(4.90)	0.00%	-
Ashford Hospitality Tr Inc Com Shs	Real Estate	\$5	0.0%	(67.72)%	0.41	(4.00)	0.00%	57.69%
Silverback Therapeutics Inc Com	Health Care	\$4	0.0%	(67.69)%	0.35	(3.28)	0.00%	-

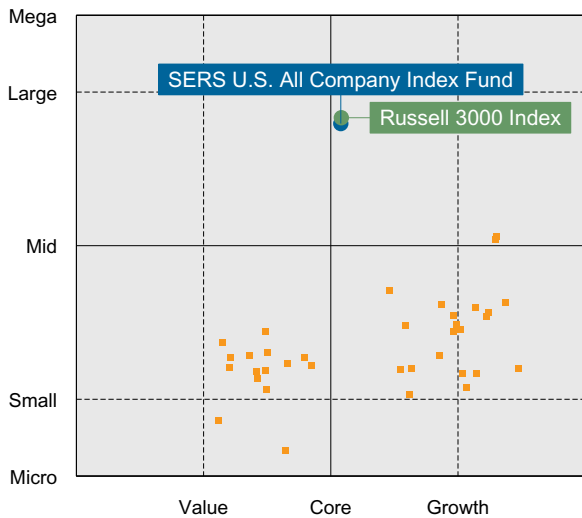
# Historical Holdings Based Style Analysis

## SERS U.S. All Company Index Fund

### For Three Years Ended September 30, 2021

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

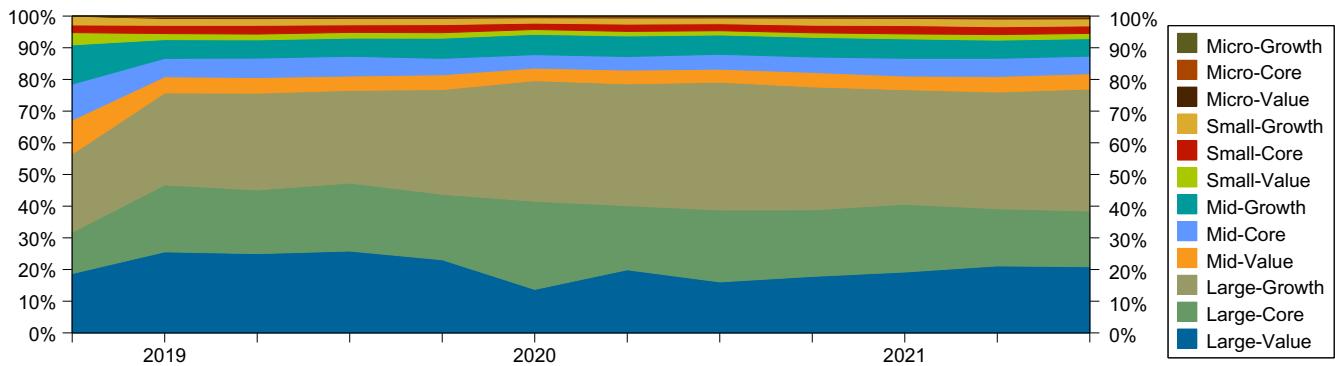
**Average Style Map vs Callan SMID Broad MFs Holdings for Three Years Ended September 30, 2021**



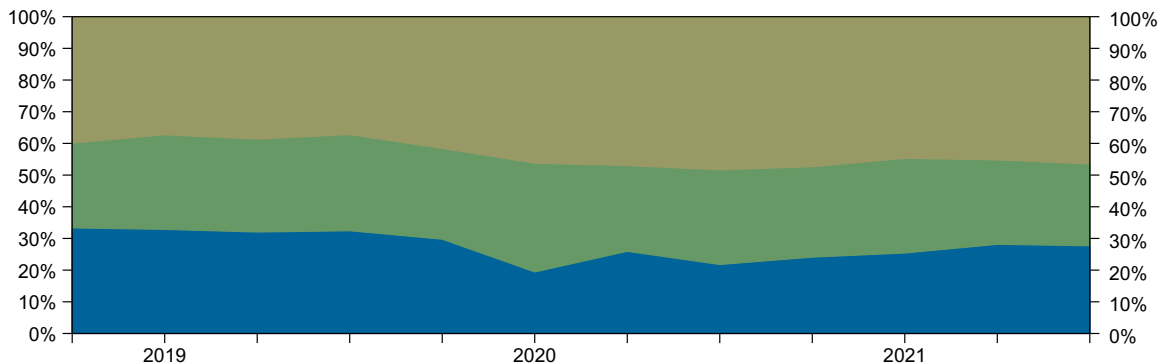
**Average Style Exposure Matrix Holdings for Three Years Ended September 30, 2021**

	20.6% (92)	20.4% (94)	34.5% (98)	<b>75.5% (284)</b>
Large	21.0% (97)	21.3% (99)	34.9% (103)	<b>77.2% (299)</b>
Mid	5.1% (162)	5.8% (200)	6.6% (226)	<b>17.5% (588)</b>
	4.6% (164)	5.3% (204)	6.1% (230)	<b>15.9% (598)</b>
Small	1.8% (294)	2.4% (466)	2.1% (367)	<b>6.4% (1127)</b>
	1.6% (311)	2.4% (496)	2.1% (391)	<b>6.2% (1198)</b>
Micro	0.2% (306)	0.3% (356)	0.1% (159)	<b>0.6% (821)</b>
	0.3% (330)	0.3% (392)	0.2% (176)	<b>0.7% (898)</b>
<b>Total</b>	<b>27.7% (854)</b>	<b>28.9% (1116)</b>	<b>43.3% (850)</b>	<b>100.0% (2820)</b>
	<b>27.5% (902)</b>	<b>29.3% (1191)</b>	<b>43.2% (900)</b>	<b>100.0% (2993)</b>
	Value	Core	Growth	<b>Total</b>

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



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



# SERS U.S. SMID Company Index Period Ended September 30, 2021

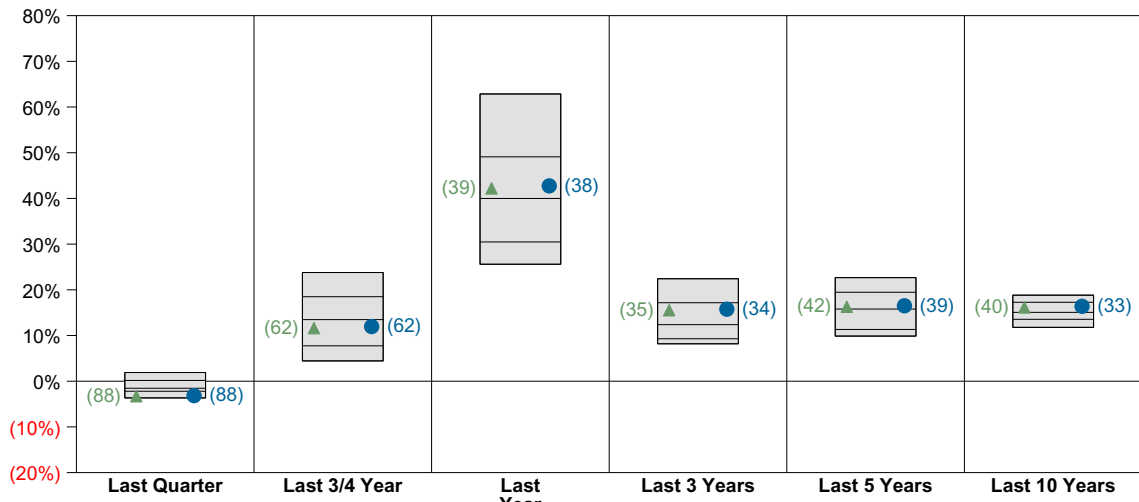
## Investment Philosophy

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

## Quarterly Summary and Highlights

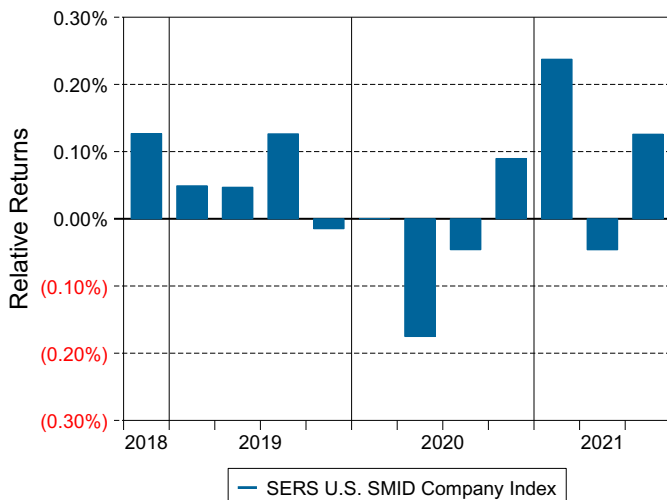
- SERS U.S. SMID Company Index's portfolio posted a (3.16)% return for the quarter placing it in the 88 percentile of the Callan Small/MidCap Broad Mutual Funds group for the quarter and in the 38 percentile for the last year.
- SERS U.S. SMID Company Index's portfolio outperformed the Dow Jones US Completion by 0.13% for the quarter and outperformed the Dow Jones US Completion for the year by 0.54%.

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

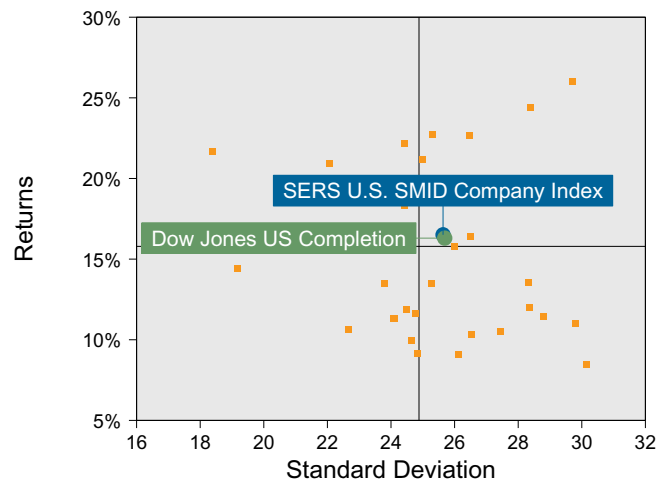


10th Percentile	1.90	23.78	62.86	22.42	22.67	18.83
25th Percentile	0.17	18.49	49.10	17.17	19.47	17.27
Median	(1.54)	13.48	39.99	12.38	15.79	15.07
75th Percentile	(2.20)	7.74	30.47	9.29	11.33	13.54
90th Percentile	(3.66)	4.44	25.59	8.19	9.87	11.78
<b>SERS U.S. SMID Company Index</b>	<b>● (3.16)</b>	11.96	42.74	15.75	16.51	16.39
Dow Jones US Completion	▲ (3.29)	11.61	42.20	15.54	16.30	16.16

## Relative Return vs Dow Jones US Completion



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

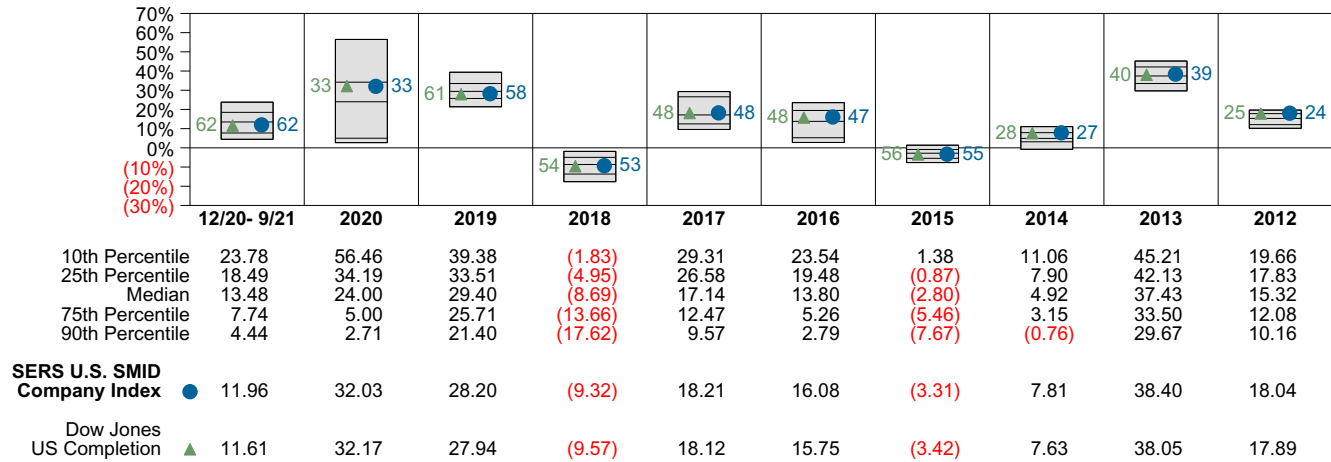


# SERS U.S. SMID Company Index Return Analysis Summary

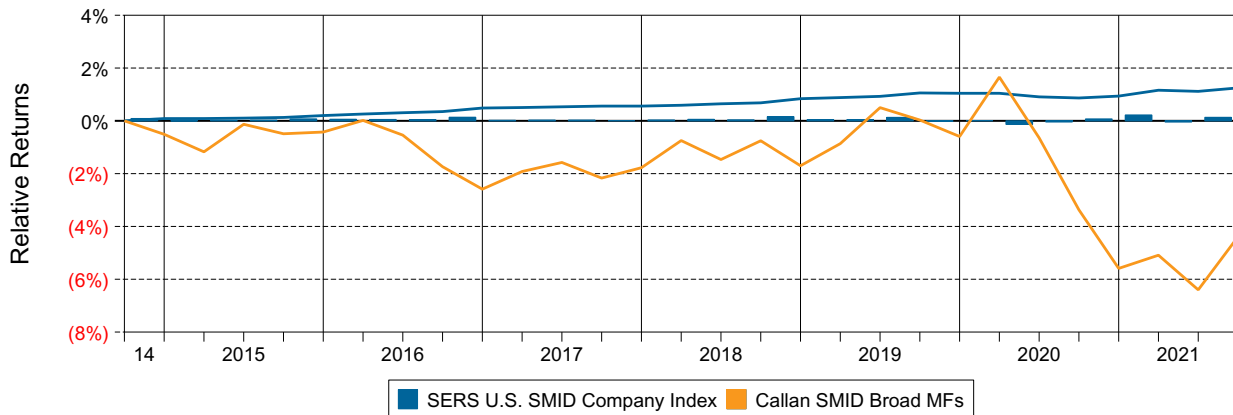
## Return Analysis

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

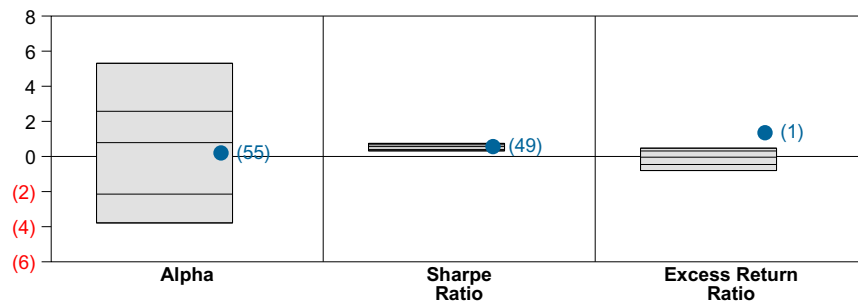
### Performance vs Callan Small/MidCap Broad Mutual Funds (Institutional Net)



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



### Risk Adjusted Return Measures vs Dow Jones US Completion Rankings Against Callan Small/MidCap Broad Mutual Funds (Institutional Net) Seven Years Ended September 30, 2021



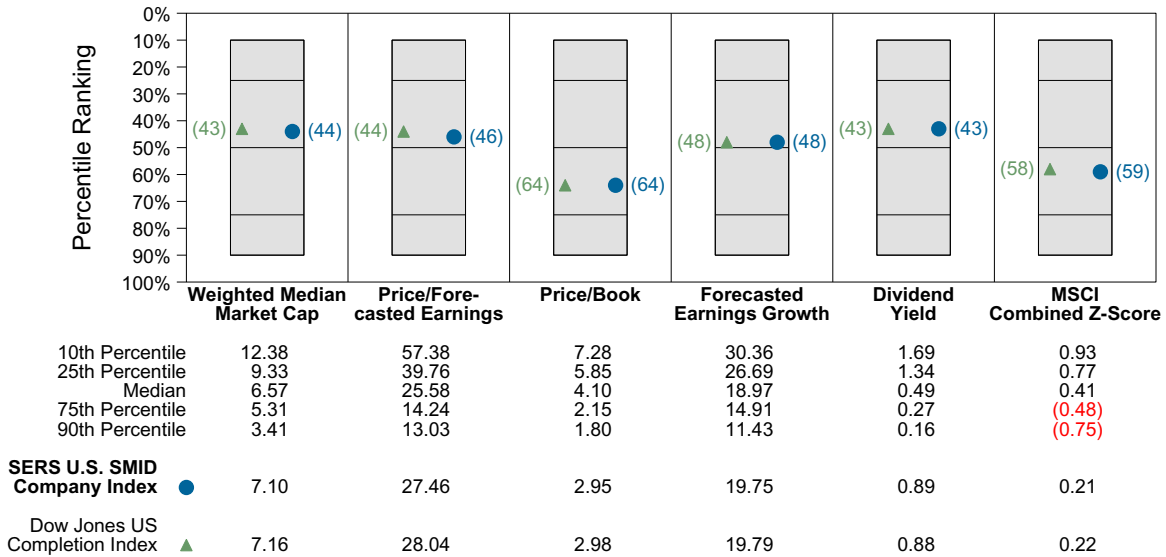
10th Percentile	5.31	0.74	0.47
25th Percentile	2.57	0.67	0.31
Median	0.79	0.56	(0.04)
75th Percentile	(2.14)	0.40	(0.46)
90th Percentile	(3.79)	0.32	(0.80)
<b>SERS U.S. SMID Company Index</b>	● 0.20	0.56	1.35

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

## Portfolio Characteristics

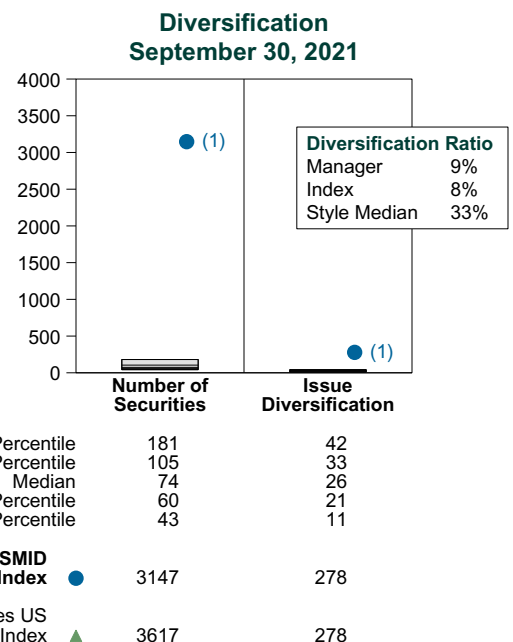
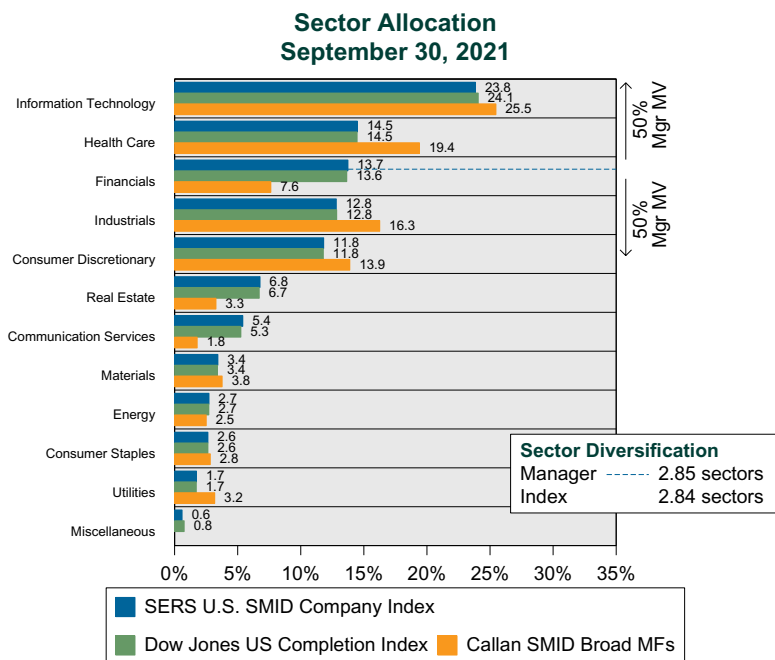
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Small/MidCap Broad Mutual Funds as of September 30, 2021



## Sector Weights

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





## SERS U.S. SMID Company Index Top 10 Portfolio Holdings Characteristics as of September 30, 2021

### 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
Square Inc Cl A	Information Technology	\$7,192	1.2%	(1.62)%	95.31	106.31	0.00%	53.91%
Blackstone Group Inc Com Cl A	Financials	\$6,022	1.0%	20.49%	79.80	27.43	2.91%	(11.09)%
Snap Inc Cl A	Communication Services	\$5,805	0.9%	8.41%	97.94	106.90	0.00%	-
Uber Technologies Inc	Industrials	\$5,459	0.9%	(10.62)%	84.42	(91.62)	0.00%	64.80%
Snowflake Inc Cl A	Information Technology	\$5,177	0.8%	25.08%	91.00	(1447.03)	0.00%	(0.14)%
Zoom Video Communications Inc Cl A	Information Technology	\$4,268	0.7%	(32.43)%	62.95	54.12	0.00%	13.58%
Airbnb Inc Cl A Com Usd0.0001 Cl A	Consumer Discretionary	\$4,232	0.7%	9.53%	56.46	(3494.79)	0.00%	-
Twilio Inc Cl A	Information Technology	\$4,020	0.7%	(19.06)%	53.26	(18767.65)	0.00%	-
Docusign Inc	Information Technology	\$3,787	0.6%	(7.92)%	50.64	125.51	0.00%	46.80%
Marvell Technology Group Ltd	Information Technology	\$3,732	0.6%	3.51%	49.67	34.84	0.40%	36.10%

### 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
Aehr Test Systems	Information Technology	\$36	0.0%	394.60%	0.33	186.99	0.00%	65.08%
Mediaco Hldg Inc Cl A	Financials	\$3	0.0%	223.89%	0.04	(10.19)	0.00%	-
State Auto Finl Corp	Financials	\$74	0.0%	198.19%	2.25	45.70	0.79%	(0.52)%
Fulcrum Therapeutics Inc	Health Care	\$49	0.0%	169.18%	1.11	(10.48)	0.00%	-
Iveric Bio Inc	Health Care	\$124	0.0%	157.40%	1.69	(14.33)	0.00%	-
Upstart Hldgs Inc	Information Technology	\$1,029	0.2%	153.36%	24.61	194.97	0.00%	127.50%
Leap Therapeutics Inc Com	Health Care	\$25	0.0%	144.47%	0.35	(7.57)	0.00%	-
Kadmon Hldgs Inc	Health Care	\$106	0.0%	125.04%	1.51	(13.20)	0.00%	-
Sandridge Energy Inc	Energy	\$38	0.0%	107.14%	0.48	12.20	0.00%	40.15%
Greensky Inc Cl A	Information Technology	\$49	0.0%	101.43%	0.91	18.76	0.00%	(9.28)%

### 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
Microbot Med Inc	Health Care	\$1	0.0%	-	0.05	(4.87)	0.00%	-
Comstock Mng Inc	Materials	\$14	0.0%	-	0.14	(89.00)	0.00%	-
Chicken Soup For The Soul Entmt Inc	Communication Services	\$15	0.0%	(94.48)%	0.20	(14.47)	0.00%	-
Forte Biosciences Inc	Health Care	\$3	0.0%	(91.17)%	0.04	(3.20)	0.00%	-
Eargo Inc	Health Care	\$11	0.0%	(83.14)%	0.26	(5.23)	0.00%	59.20%
Sesen Bio Inc	Health Care	\$11	0.0%	(82.83)%	0.16	(1.84)	0.00%	-
Ardelyx Inc	Health Care	\$8	0.0%	(82.58)%	0.14	(1.06)	0.00%	-
Intrusion Inc	Information Technology	\$3	0.0%	(73.65)%	0.07	(6.82)	0.00%	13.51%
Seres Therapeutics Inc	Health Care	\$31	0.0%	(70.82)%	0.64	(4.66)	0.00%	-
Ontrak Inc	Health Care	\$6	0.0%	(69.23)%	0.19	(4.90)	0.00%	-

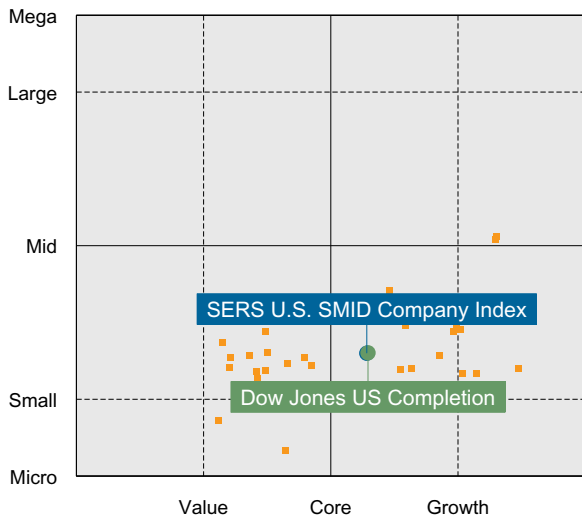
# Historical Holdings Based Style Analysis

## SERS U.S. SMID Company Index

### For Three Years Ended September 30, 2021

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

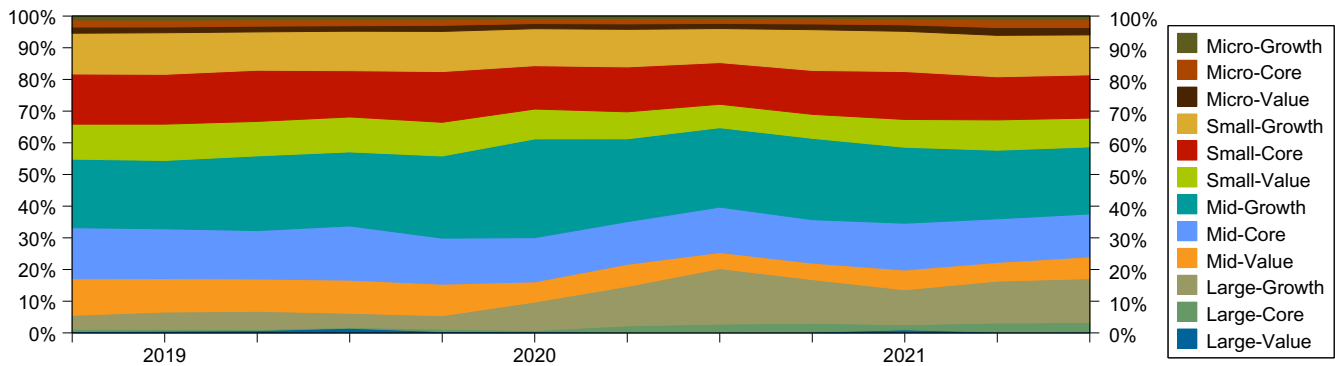
**Average Style Map vs Callan SMID Broad MFs Holdings for Three Years Ended September 30, 2021**



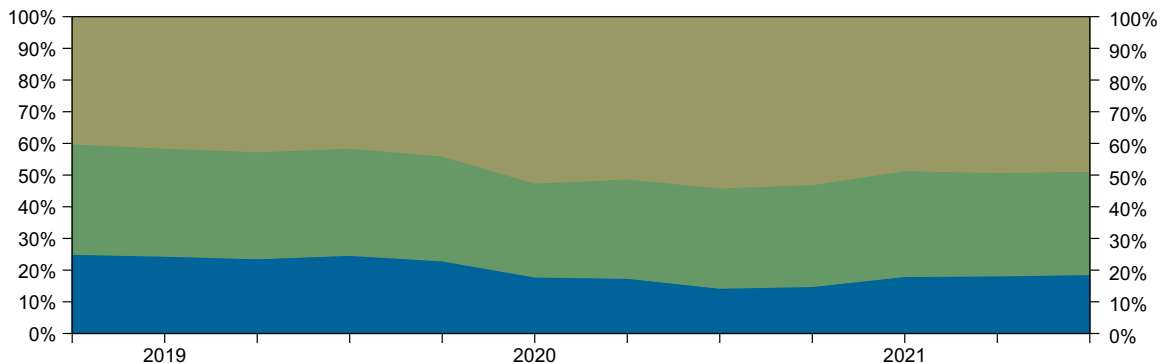
**Average Style Exposure Matrix Holdings for Three Years Ended September 30, 2021**

	0.5% (2)	1.5% (4)	9.6% (17)	<b>11.6% (23)</b>
Large	0.5% (2)	1.5% (4)	9.6% (17)	<b>11.6% (23)</b>
Mid	8.0% (69)	14.7% (133)	24.2% (183)	<b>46.9% (385)</b>
	7.9% (69)	14.7% (132)	24.3% (184)	<b>46.9% (385)</b>
Small	9.6% (302)	14.6% (509)	12.4% (394)	<b>36.6% (1205)</b>
	9.5% (301)	14.6% (506)	12.4% (397)	<b>36.5% (1204)</b>
Micro	1.9% (508)	2.0% (538)	1.0% (210)	<b>4.9% (1256)</b>
	1.8% (647)	2.1% (790)	1.0% (263)	<b>4.9% (1700)</b>
<b>Total</b>	<b>20.0% (881)</b>	<b>32.8% (1184)</b>	<b>47.2% (804)</b>	<b>100.0% (2869)</b>
	19.8% (1019)	32.9% (1432)	47.4% (861)	100.0% (3312)
	Value	Core	Growth	Total

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



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





# SERS Global Non-U.S. Index Fund

## Period Ended September 30, 2021

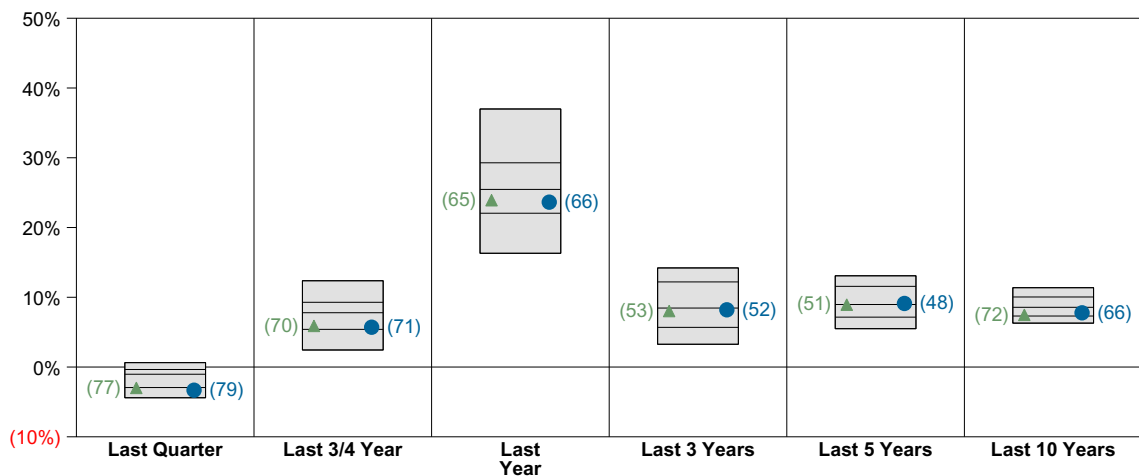
### Investment Philosophy

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

### Quarterly Summary and Highlights

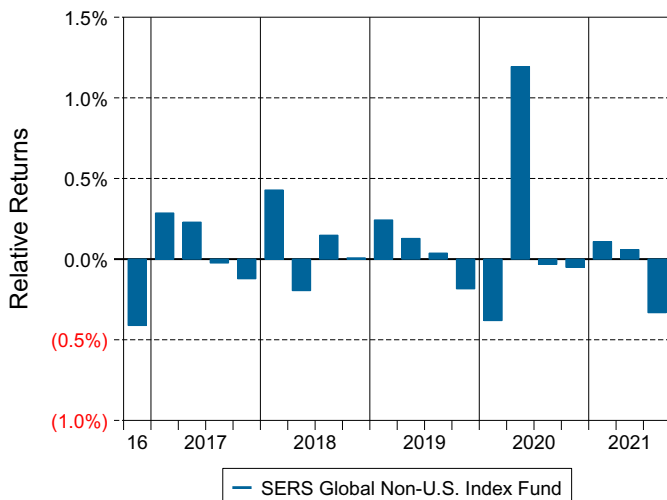
- SERS Global Non-U.S. Index Fund's portfolio posted a (3.32)% return for the quarter placing it in the 79 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 66 percentile for the last year.
- SERS Global Non-U.S. Index Fund's portfolio underperformed the MSCI ACWI ex US by 0.33% for the quarter and underperformed the MSCI ACWI ex US for the year by 0.28%.

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

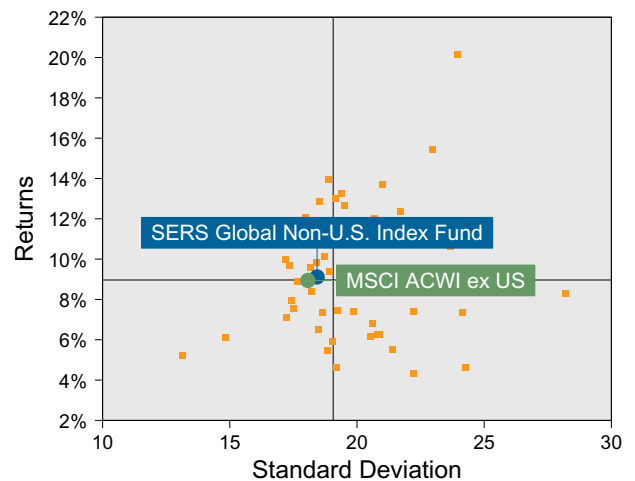


10th Percentile	0.63	12.37	36.99	14.21	13.08	11.37
25th Percentile	(0.35)	9.28	29.28	12.20	11.57	10.04
Median	(1.03)	7.79	25.46	8.46	8.96	8.56
75th Percentile	(2.94)	5.40	22.05	5.69	7.15	7.31
90th Percentile	(4.40)	2.44	16.31	3.26	5.50	6.29
<b>SERS Global Non-U.S. Index Fund</b>	<b>● (3.32)</b>	5.71	23.64	8.20	9.11	7.77
MSCI ACWI ex US	<b>▲ (2.99)</b>	5.90	23.92	8.03	8.94	7.48

### Relative Return vs MSCI ACWI ex US



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

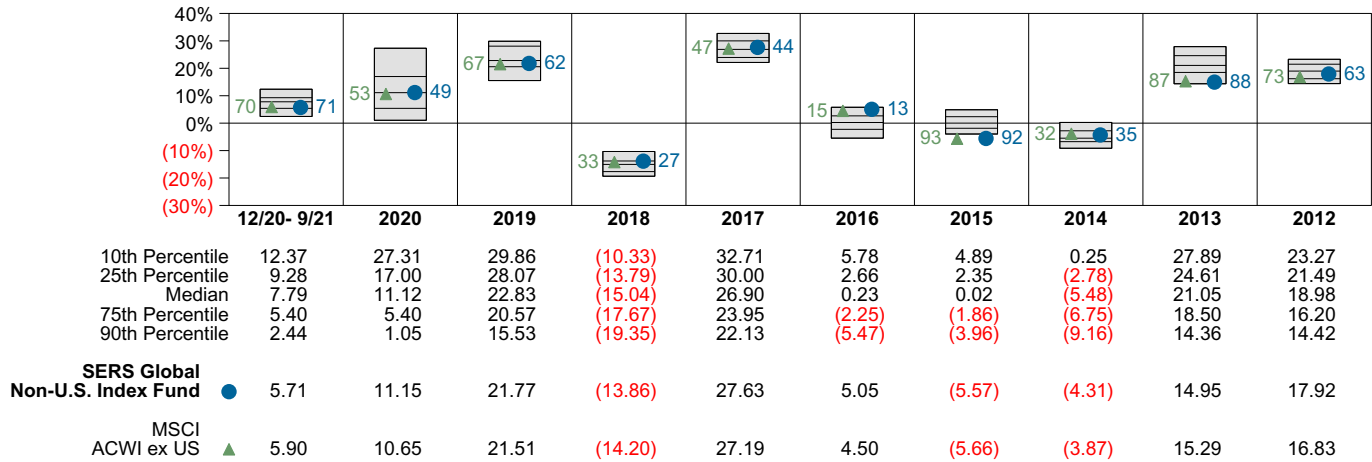


# SERS Global Non-U.S. Index Fund Return Analysis Summary

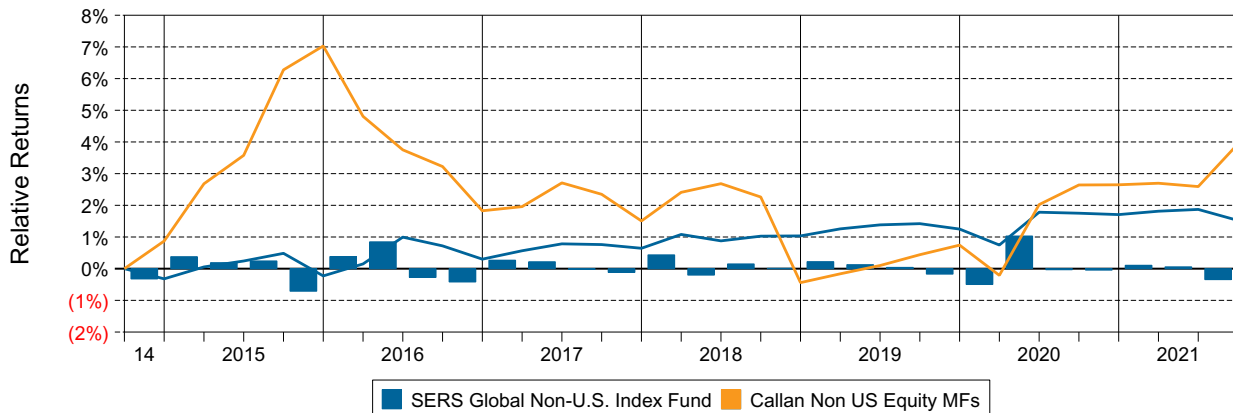
## Return Analysis

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

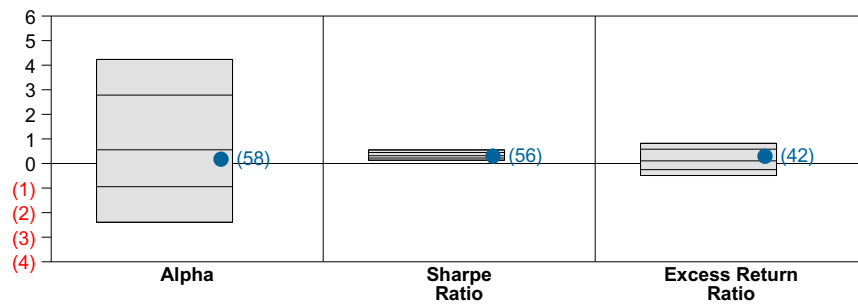
### Performance vs Callan Non US Equity Mutual Funds (Institutional Net)



### Cumulative and Quarterly Relative Return vs MSCI ACWI ex US



### Risk Adjusted Return Measures vs MSCI ACWI ex US Rankings Against Callan Non US Equity Mutual Funds (Institutional Net) Seven Years Ended September 30, 2021



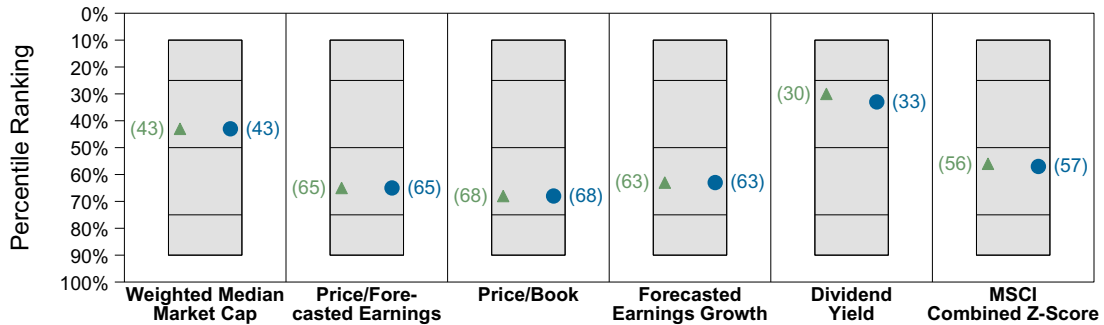
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	4.23	0.55	0.82
25th Percentile	2.78	0.45	0.58
Median	0.56	0.32	0.11
75th Percentile	(0.94)	0.22	(0.25)
90th Percentile	(2.39)	0.13	(0.49)
<b>SERS Global Non-U.S. Index Fund</b>	● 0.18	0.30	0.29

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

## Portfolio Characteristics

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

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Non US Equity Mutual Funds as of September 30, 2021

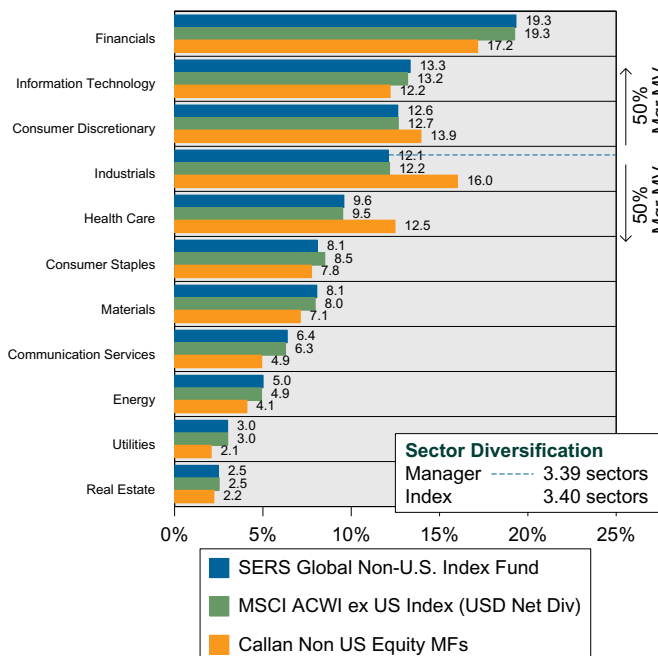


	Weighted Median Market Cap	Price/Forecasted Earnings	Price/Book	Forecasted Earnings Growth	Dividend Yield	MSCI Combined Z-Score
10th Percentile	63.14	27.33	4.66	23.43	2.84	0.87
25th Percentile	55.94	21.08	3.32	20.76	2.53	0.45
Median	39.99	16.35	2.33	17.43	2.09	0.12
75th Percentile	30.01	13.20	1.60	15.17	1.55	(0.24)
90th Percentile	14.79	11.12	1.29	14.15	1.04	(0.63)
<b>SERS Global Non-U.S. Index Fund</b>	41.95	14.35	1.81	16.39	2.36	(0.01)
MSCI ACWI ex US Index (USD Net Div)	42.77	14.43	1.81	16.44	2.44	0.00

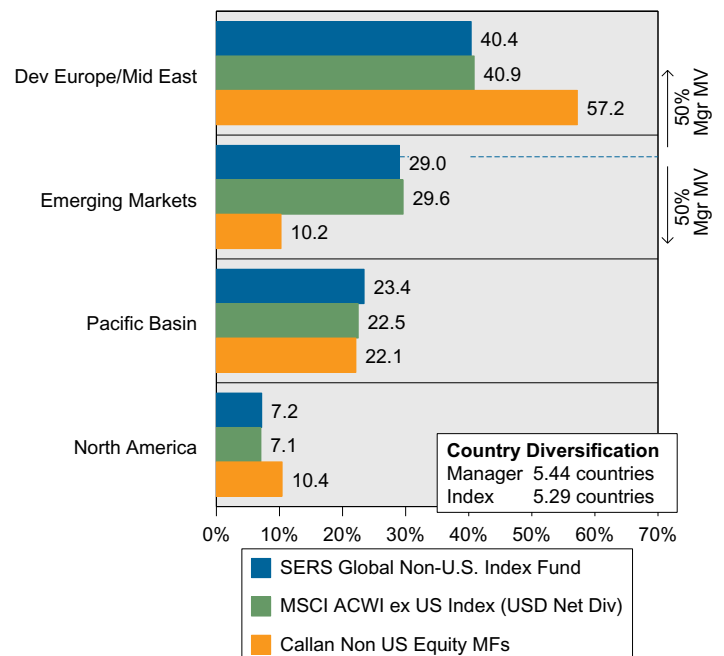
## Sector Weights

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.

### Sector Allocation September 30, 2021



### Regional Allocation September 30, 2021



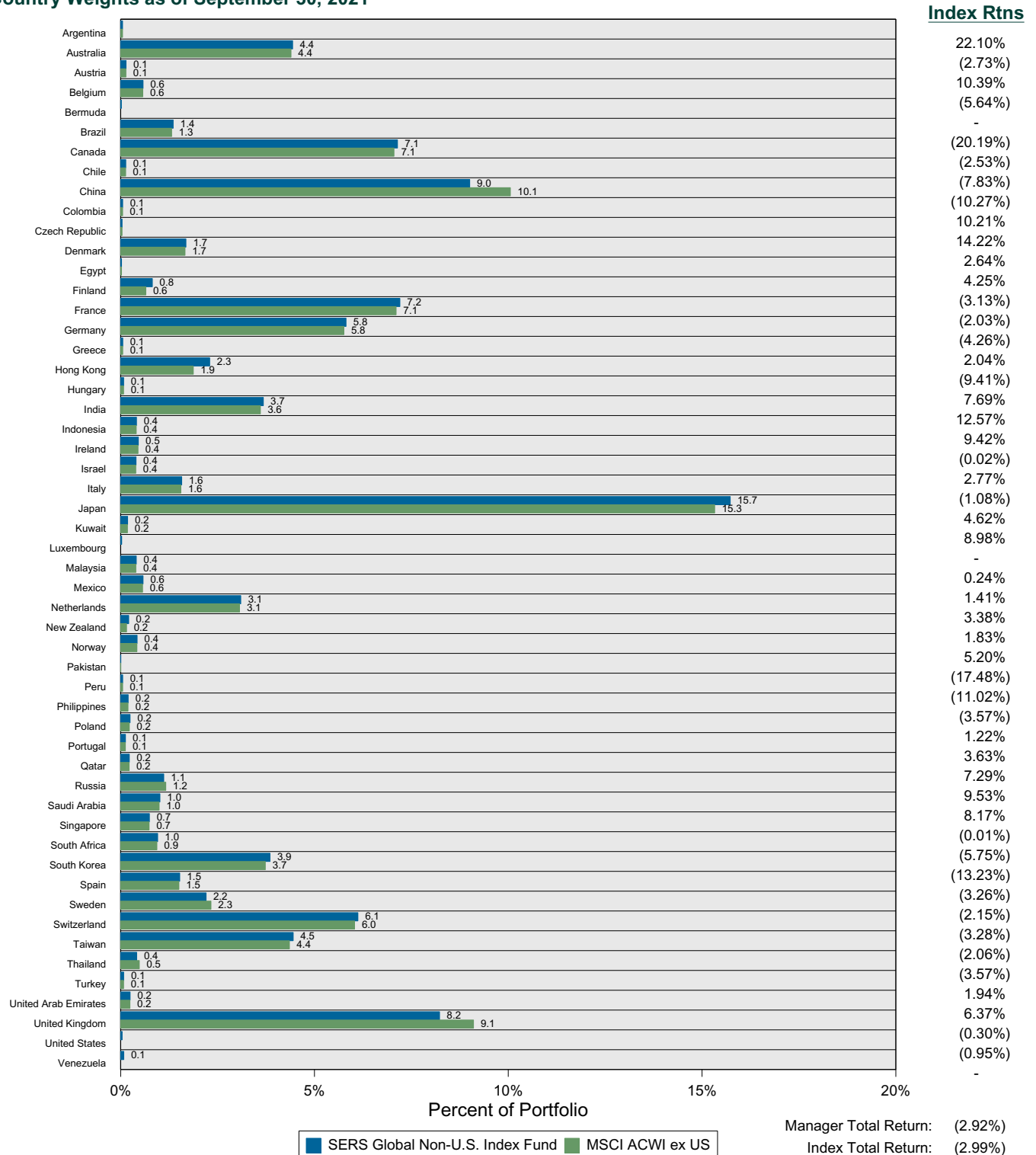
# Country Allocation

## SERS Global Non-U.S. Index Fund VS MSCI ACWI ex US Index (USD Net Div)

### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of September 30, 2021. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.

Country Weights as of September 30, 2021



## SERS Global Non-U.S. Index Fund Top 10 Portfolio Holdings Characteristics as of September 30, 2021

### 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	\$25,203	2.0%	(2.07)%	539.82	22.68	1.81%	15.57%
Nestle S A Shs Nom New	Consumer Staples	\$16,946	1.3%	(3.08)%	340.09	24.14	2.44%	5.52%
Tencent Holdings Limited Shs Par Hkd	Communication Services	\$16,707	1.3%	(20.91)%	568.78	23.28	0.35%	27.34%
Asml Holding N V Asml Rev Stk Spl	Information Technology	\$15,289	1.2%	8.94%	309.41	41.10	0.43%	30.76%
Samsung Electronics Co Ltd Ord	Information Technology	\$14,685	1.1%	(12.28)%	373.62	10.76	4.05%	27.30%
Alibaba Group Holding Ltd	Consumer Discretionary	\$13,578	1.1%	(35.29)%	396.19	14.17	0.00%	16.87%
Roche Hldgs Ag Basel Div Rts Ctf	Health Care	\$12,540	1.0%	(2.79)%	257.54	16.99	2.66%	6.10%
Lvmh Moet Hennessy Lou Vuitt Ord	Consumer Discretionary	\$9,716	0.8%	(8.36)%	362.76	27.88	1.13%	35.33%
Toyota Motor Corp	Consumer Discretionary	\$9,349	0.7%	2.45%	292.45	9.65	2.35%	17.61%
Astrazeneca Plc Ord	Health Care	\$9,112	0.7%	1.48%	187.11	18.89	2.26%	21.65%

### 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
China Power Intl Hkd1	Utilities	\$96	0.0%	143.20%	5.20	15.17	3.76%	(24.44)%
China Resources Power Hldgs Shs	Utilities	\$277	0.0%	114.68%	13.87	10.41	2.92%	19.07%
Ecopro Bm	Industrials	\$210	0.0%	109.42%	8.49	75.13	0.10%	23.44%
Yanzhou Coal Mining A	Energy	\$13	0.0%	99.99%	13.34	11.45	2.07%	45.38%
Xinjiang Tebian Elec. Apparatus A	Industrials	\$7	0.0%	88.92%	13.94	17.77	0.87%	(13.35)%
Zhejiang Chint Electrics 'a'	Industrials	\$8	0.0%	72.47%	18.83	23.36	0.88%	4.63%
Dongfang Elect.Mch.A	Industrials	\$6	0.0%	69.57%	7.87	22.28	0.98%	1.38%
Zhejiang Juhua Co. A	Materials	\$15	0.0%	69.07%	6.24	38.50	0.67%	46.49%
Sk Bioscience	Health Care	\$208	0.0%	62.32%	17.48	15.68	0.00%	-
Wisetech Global	Information Technology	\$271	0.0%	61.79%	12.59	103.62	0.11%	34.49%

### 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
Banco Espirito Santo E Comer Ord	Financials	\$0	0.0%	(91.12)%	0.00	-	0.00%	-
Tal Ed Group Ads Repstg Com	Consumer Discretionary	\$96	0.0%	(80.80)%	2.15	7.55	0.00%	40.65%
Gsx Techedu Inc	Consumer Discretionary	\$18	0.0%	(79.20)%	0.35	(8.32)	0.00%	-
New Oriental Ed & Tech Grp I Spon Ad	Consumer Discretionary	\$152	0.0%	(74.94)%	3.48	8.23	0.00%	14.81%
China Evergrande Group Shs	Real Estate	\$36	0.0%	(70.82)%	5.02	1.82	6.05%	50.16%
Oneconnect Finl Technology C Sponsor	Information Technology	\$22	0.0%	(65.85)%	1.60	(11.48)	0.00%	-
Up Fintech Hldg Ltd Sponsored Ads	Financials	\$39	0.0%	(63.42)%	1.38	17.68	0.00%	-
Mascotte Holdings	Consumer Discretionary	\$38	0.0%	(62.66)%	2.74	16.50	0.00%	(11.54)%
Ke Hldgs Inc Sposored Ad	Real Estate	\$320	0.0%	(61.66)%	16.36	27.50	0.00%	20.61%
Kuaidu Technology	Communication Services	\$144	0.0%	(57.49)%	36.23	(17.47)	0.00%	-



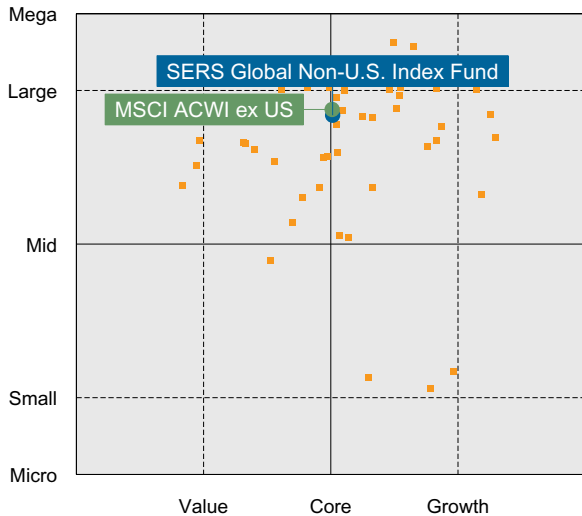
# Historical Holdings Based Style Analysis

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

### For Three Years Ended September 30, 2021

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

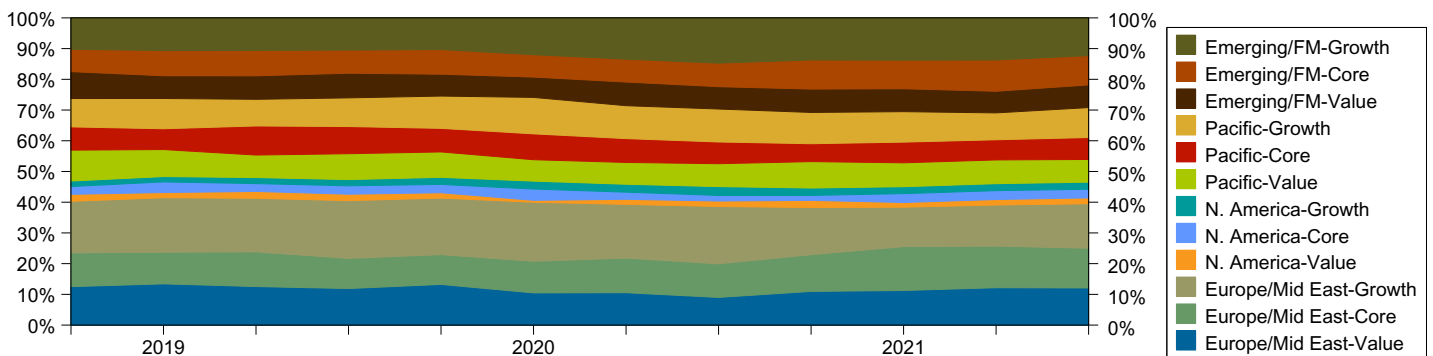
**Average Style Map vs Callan Non US Equity MFs Holdings for Three Years Ended September 30, 2021**



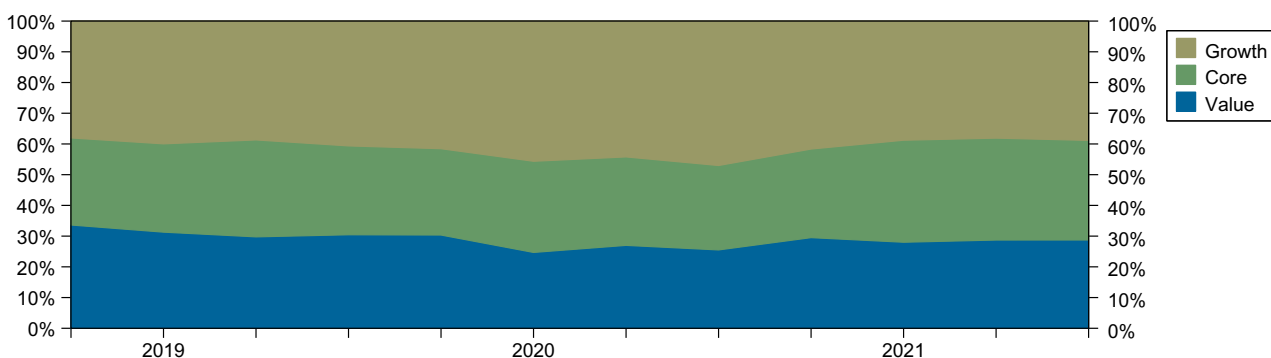
**Average Style Exposure Matrix Holdings for Three Years Ended September 30, 2021**

Europe/ Mid East	11.7% (127)	11.4% (120)	16.7% (162)	<b>39.8% (409)</b>
	12.2% (141)	11.3% (124)	17.0% (178)	<b>40.5% (443)</b>
N. America	1.8% (25)	2.7% (29)	2.3% (29)	<b>6.7% (83)</b>
	1.8% (27)	2.7% (31)	2.3% (33)	<b>6.8% (91)</b>
Pacific	8.0% (150)	7.5% (140)	10.0% (158)	<b>25.4% (448)</b>
	7.7% (151)	7.2% (141)	9.5% (158)	<b>24.4% (450)</b>
Emerging/ FM	7.5% (412)	8.4% (339)	12.2% (337)	<b>28.0% (1088)</b>
	7.7% (471)	8.4% (405)	12.3% (399)	<b>28.4% (1275)</b>
<b>Total</b>	<b>29.0% (714)</b>	<b>29.9% (628)</b>	<b>41.1% (686)</b>	<b>100.0% (2028)</b>
	<b>29.4% (790)</b>	<b>29.5% (701)</b>	<b>41.2% (768)</b>	<b>100.0% (2259)</b>
	Value	Core	Growth	Total

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



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





# SERS Short Term Investment Fund Period Ended September 30, 2021

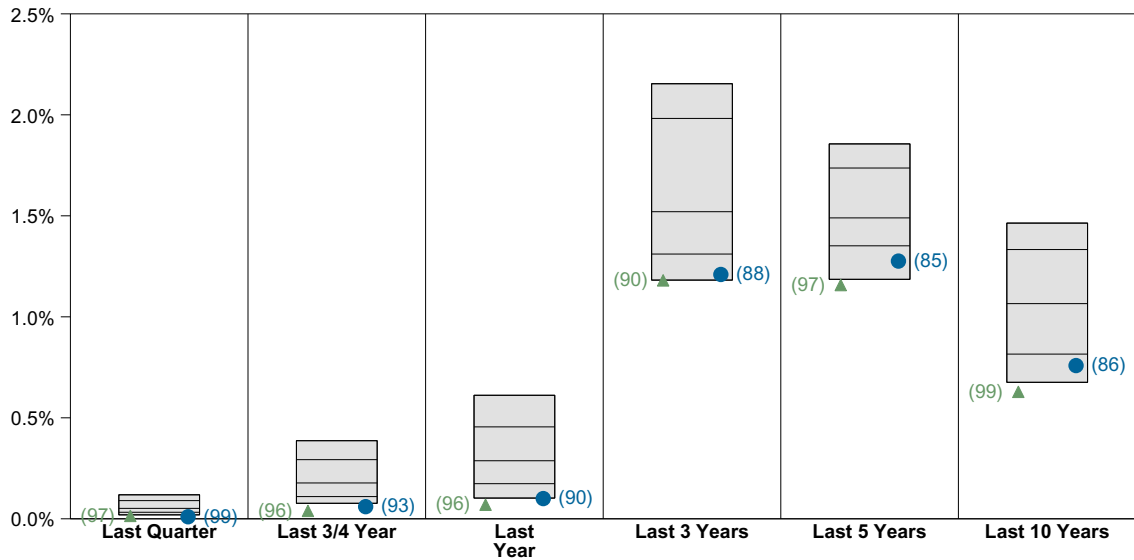
## Investment Philosophy

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

## Quarterly Summary and Highlights

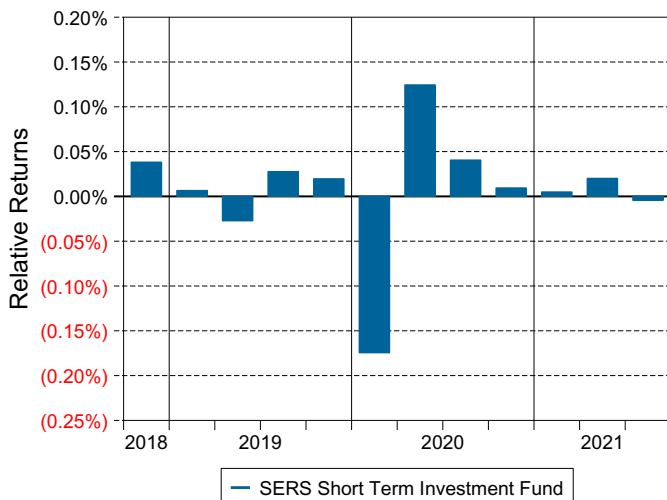
- SERS Short Term Investment Fund's portfolio posted a 0.01% return for the quarter placing it in the 99 percentile of the Callan Cash Database group for the quarter and in the 90 percentile for the last year.
- SERS Short Term Investment Fund's portfolio underperformed the 3-month Treasury Bill by 0.00% for the quarter and outperformed the 3-month Treasury Bill for the year by 0.03%.

## Performance vs Callan Cash Database (Gross)

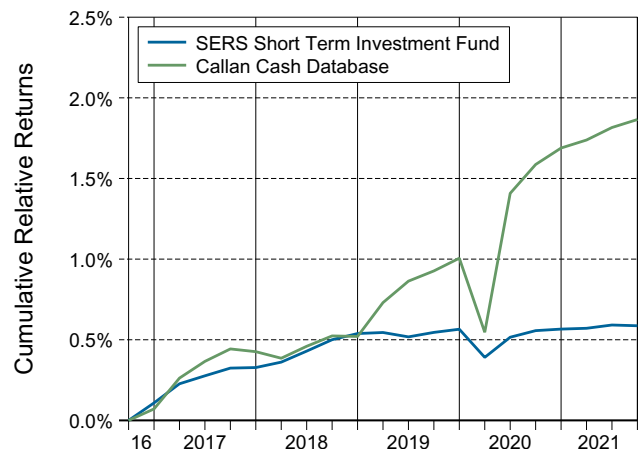


10th Percentile	0.12	0.39	0.61	2.15	1.86	1.46
25th Percentile	0.09	0.29	0.46	1.98	1.74	1.33
Median	0.05	0.18	0.29	1.52	1.49	1.07
75th Percentile	0.03	0.11	0.17	1.31	1.35	0.82
90th Percentile	0.02	0.08	0.10	1.18	1.19	0.68
<b>SERS Short Term Investment Fund</b>	● 0.01	0.06	0.10	1.21	1.28	0.76
3-month Treasury Bill	▲ 0.01	0.04	0.07	1.18	1.16	0.63

## Relative Return vs 3-month Treasury Bill



## Cumulative Returns vs 3-month Treasury Bill

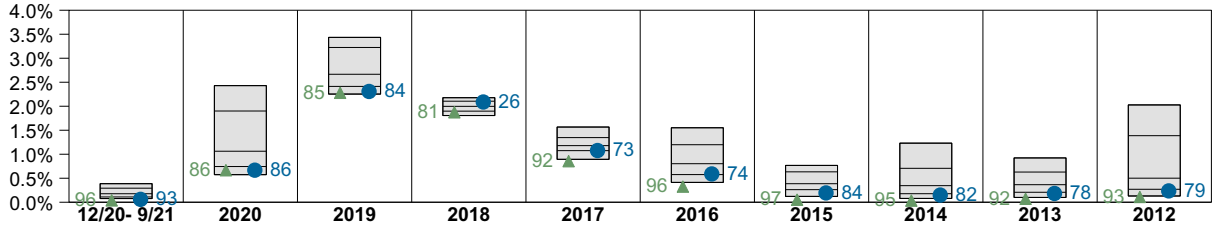


# SERS Short Term Investment Fund Return Analysis Summary

## Return Analysis

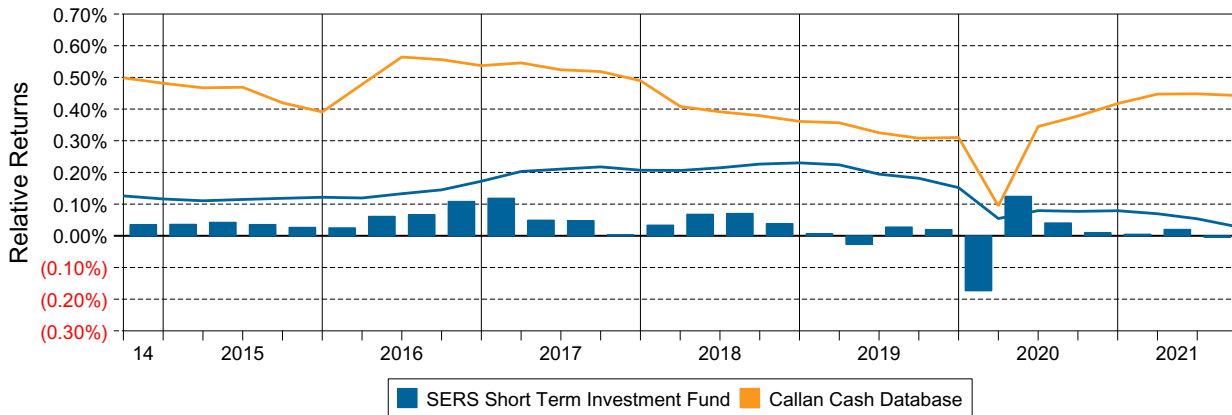
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and 12 quarter rolling manager returns versus the appropriate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

### Performance vs Callan Cash Database (Gross)

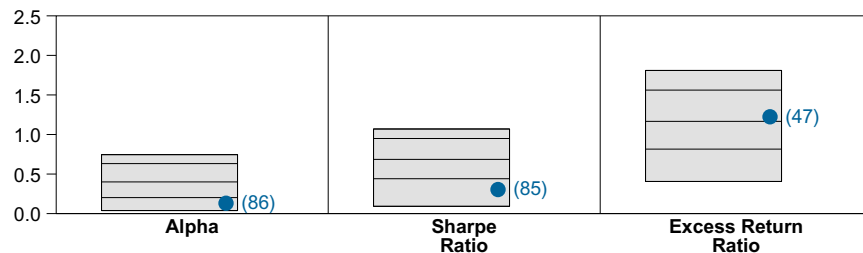


Period	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile	SERS Short Term Investment Fund	3-month Treasury Bill
12/20-9/21	0.39	0.29	0.18	0.11	0.08	0.06	0.04
2020	2.43	1.90	1.06	0.74	0.57	0.67	0.67
2019	3.43	3.22	2.67	2.41	2.25	2.31	2.28
2018	2.18	2.10	2.00	1.90	1.81	2.09	1.87
2017	1.57	1.35	1.18	1.08	0.89	1.08	0.86
2016	1.55	1.20	0.80	0.58	0.41	0.59	0.33
2015	0.77	0.63	0.39	0.26	0.12	0.19	0.05
2014	1.23	0.71	0.35	0.18	0.08	0.15	0.03
2013	0.92	0.63	0.37	0.21	0.10	0.18	0.07
2012	2.03	1.39	0.50	0.27	0.13	0.24	0.11

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



### Risk Adjusted Return Measures vs 3-month Treasury Bill Rankings Against Callan Cash Database (Gross) Seven Years Ended September 30, 2021



Measure	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile	SERS Short Term Investment Fund
Alpha	0.75	0.63	0.40	0.20	0.04	0.13
Sharpe Ratio	1.07	0.95	0.69	0.44	0.09	0.30
Excess Return Ratio	1.81	1.56	1.17	0.82	0.41	1.22

# SERS U.S. Short Term Bond Idx Fund

## Period Ended September 30, 2021

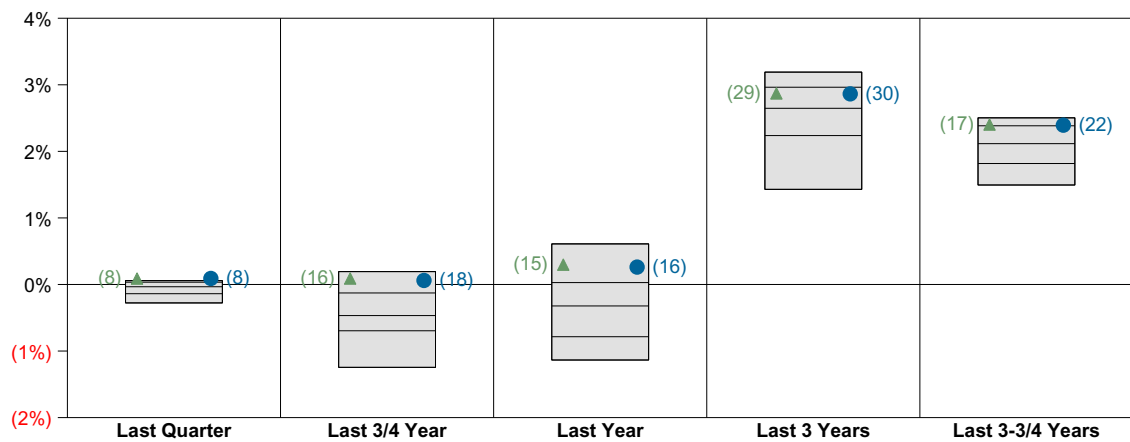
### Investment Philosophy

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

### Quarterly Summary and Highlights

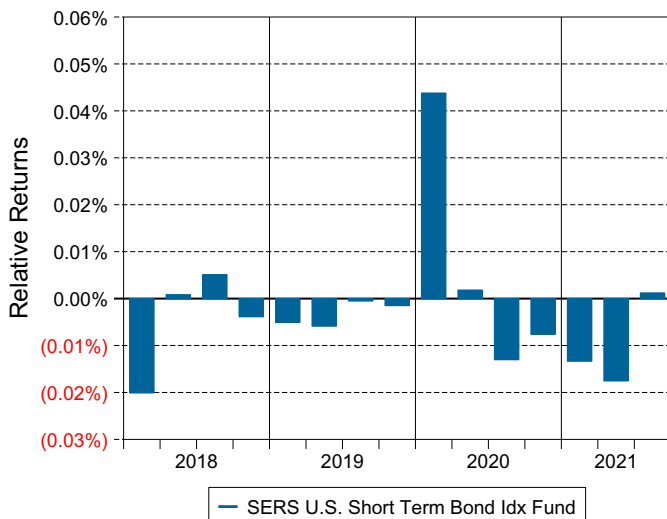
- SERS U.S. Short Term Bond Idx Fund's portfolio posted a 0.09% return for the quarter placing it in the 8 percentile of the Callan Short US Gov Bond Mut Funds group for the quarter and in the 16 percentile for the last year.
- SERS U.S. Short Term Bond Idx Fund's portfolio outperformed the Blmbg Gov/Cred 1-3 Yr by 0.00% for the quarter and underperformed the Blmbg Gov/Cred 1-3 Yr for the year by 0.04%.

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

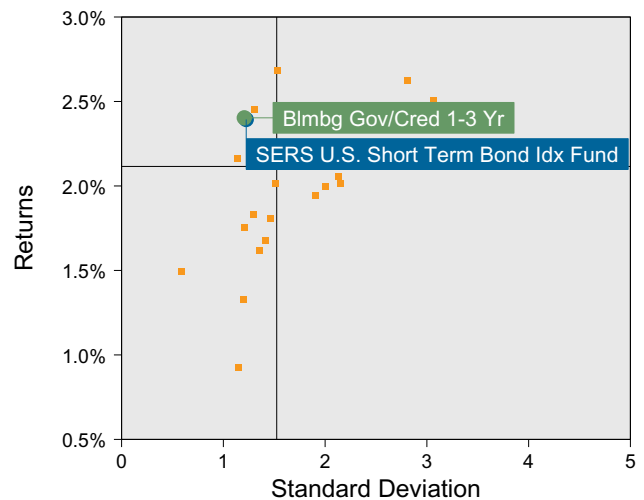


	Last Quarter	Last 3/4 Year	Last Year	Last 3 Years	Last 3-3/4 Years
10th Percentile	0.06	0.19	0.61	3.19	2.50
25th Percentile	0.03	(0.13)	0.03	2.96	2.38
Median	(0.03)	(0.47)	(0.32)	2.65	2.12
75th Percentile	(0.14)	(0.70)	(0.78)	2.24	1.82
90th Percentile	(0.28)	(1.25)	(1.13)	1.43	1.49
<b>SERS U.S. Short Term Bond Idx Fund</b>	0.09	0.06	0.26	2.86	2.39
<b>Blmbg Gov/Cred 1-3 Yr</b>	0.09	0.09	0.30	2.87	2.40

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



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



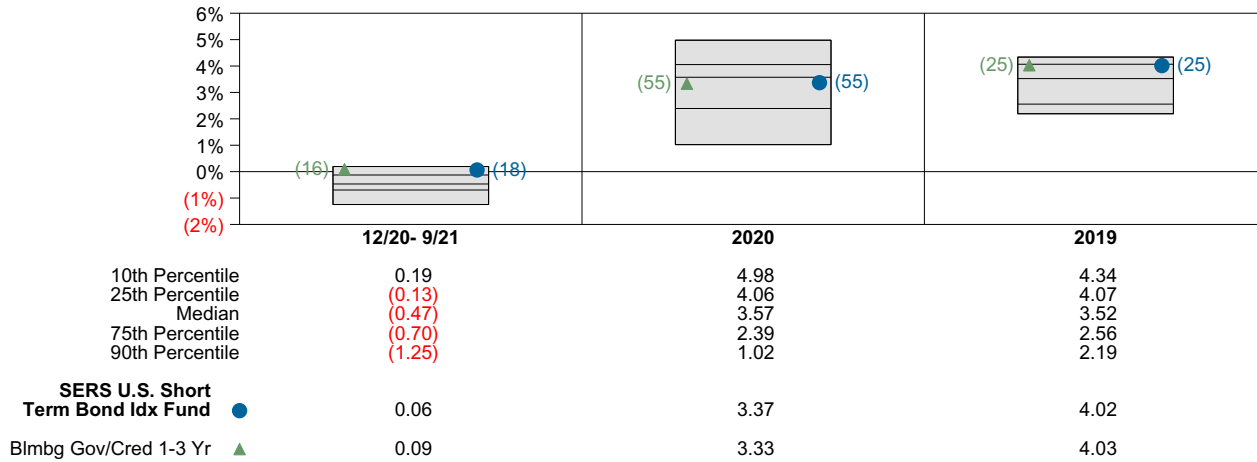
# SERS U.S. Short Term Bond Idx Fund

## Return Analysis Summary

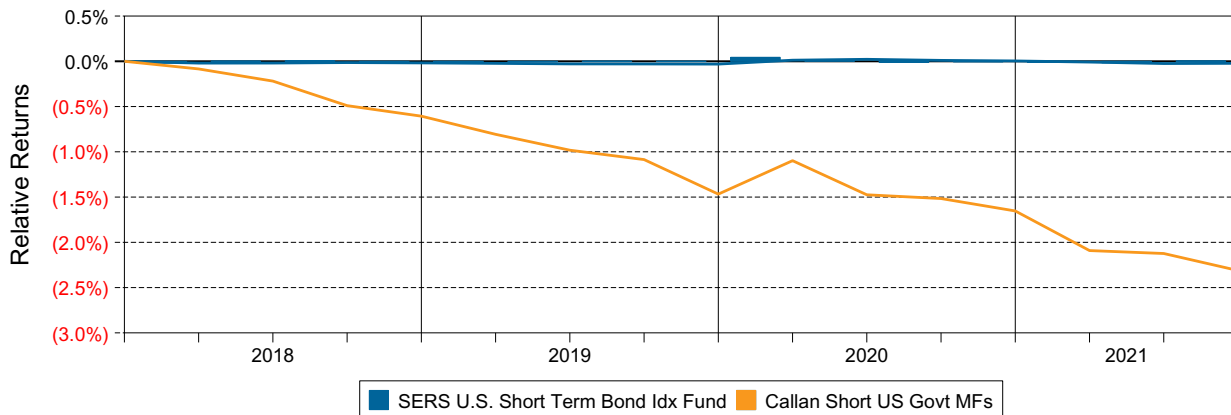
### Return Analysis

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

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



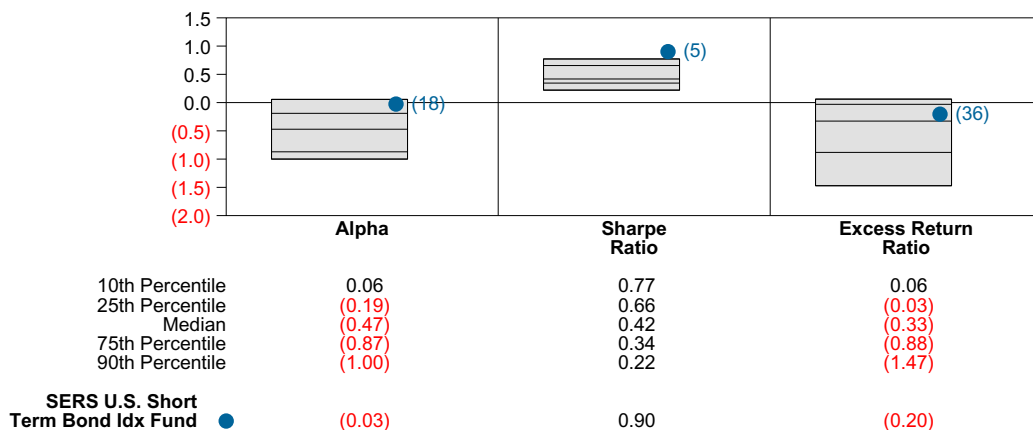
### Cumulative and Quarterly Relative Return vs Blmbg Gov/Cred 1-3 Yr



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

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

#### Three and Three-Quarter Years Ended September 30, 2021



# SERS U.S. Short Term Bond Idx Fund

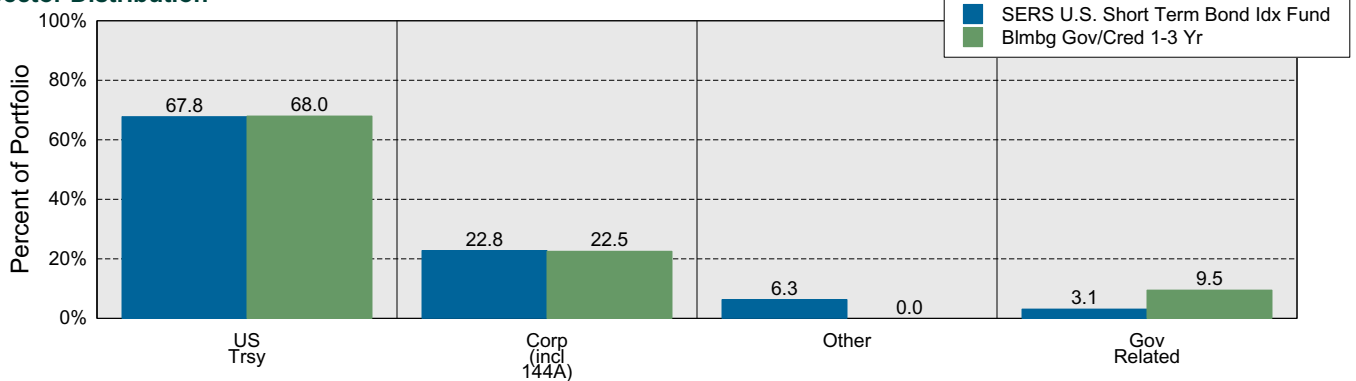
## Portfolio Characteristics Summary

### As of September 30, 2021

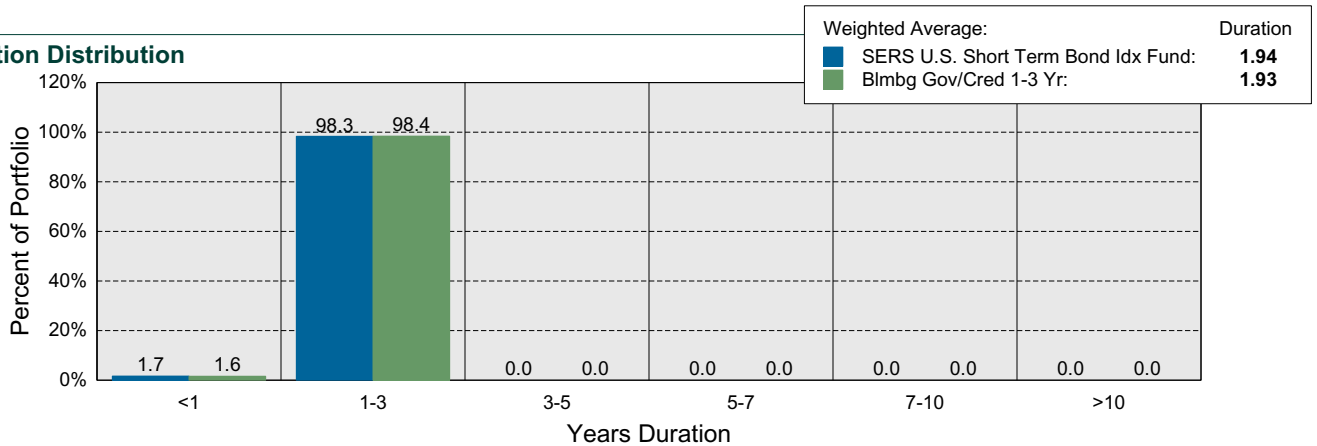
#### Portfolio Structure Comparison

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

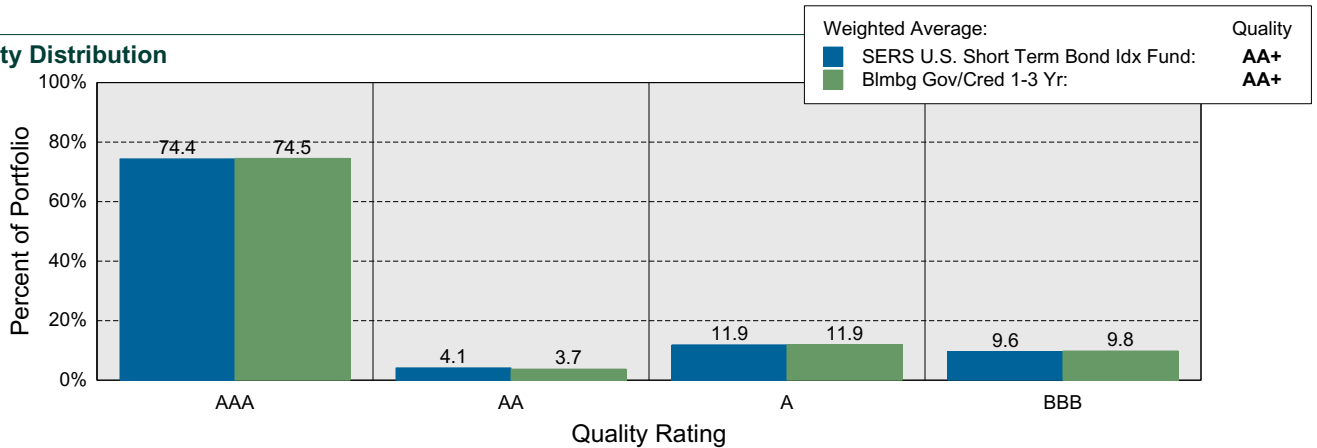
#### Sector Distribution



#### Duration Distribution



#### Quality Distribution



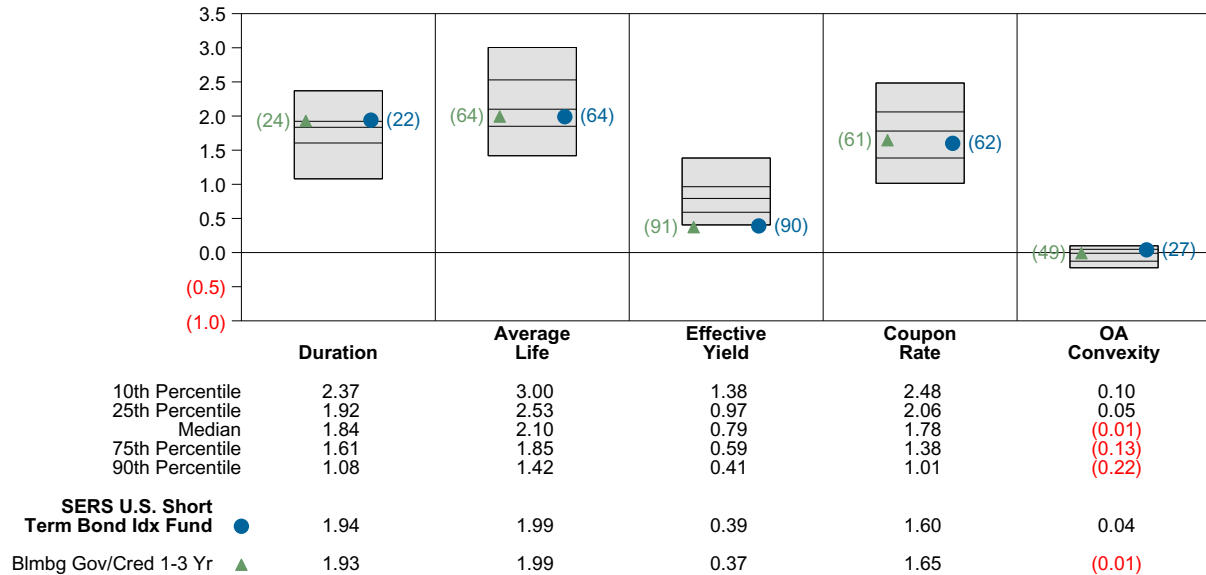
# SERS U.S. Short Term Bond Idx Fund

## Bond Characteristics Analysis Summary

### Portfolio Characteristics

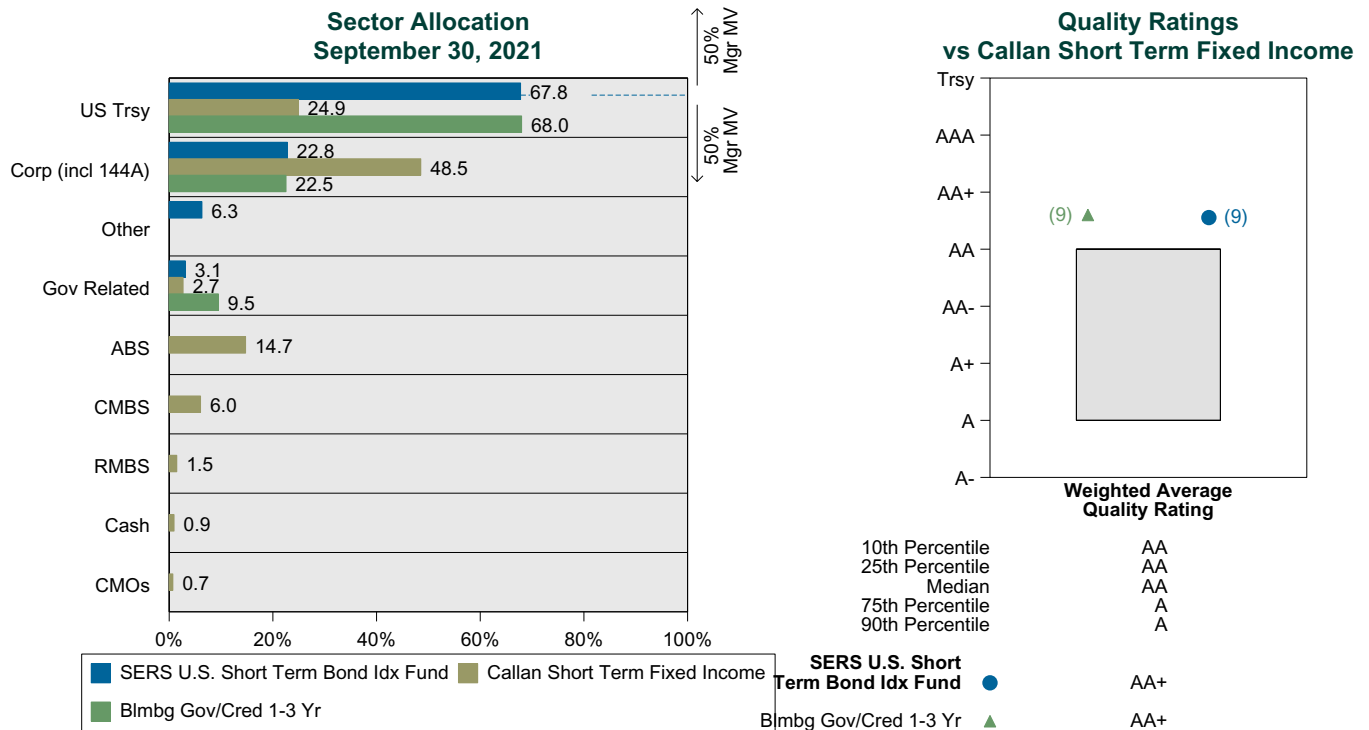
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

### Fixed Income Portfolio Characteristics Rankings Against Callan Short Term Fixed Income as of September 30, 2021



### Sector Allocation and Quality Ratings

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





# SERS U.S. TIPS Index Fund

## Period Ended September 30, 2021

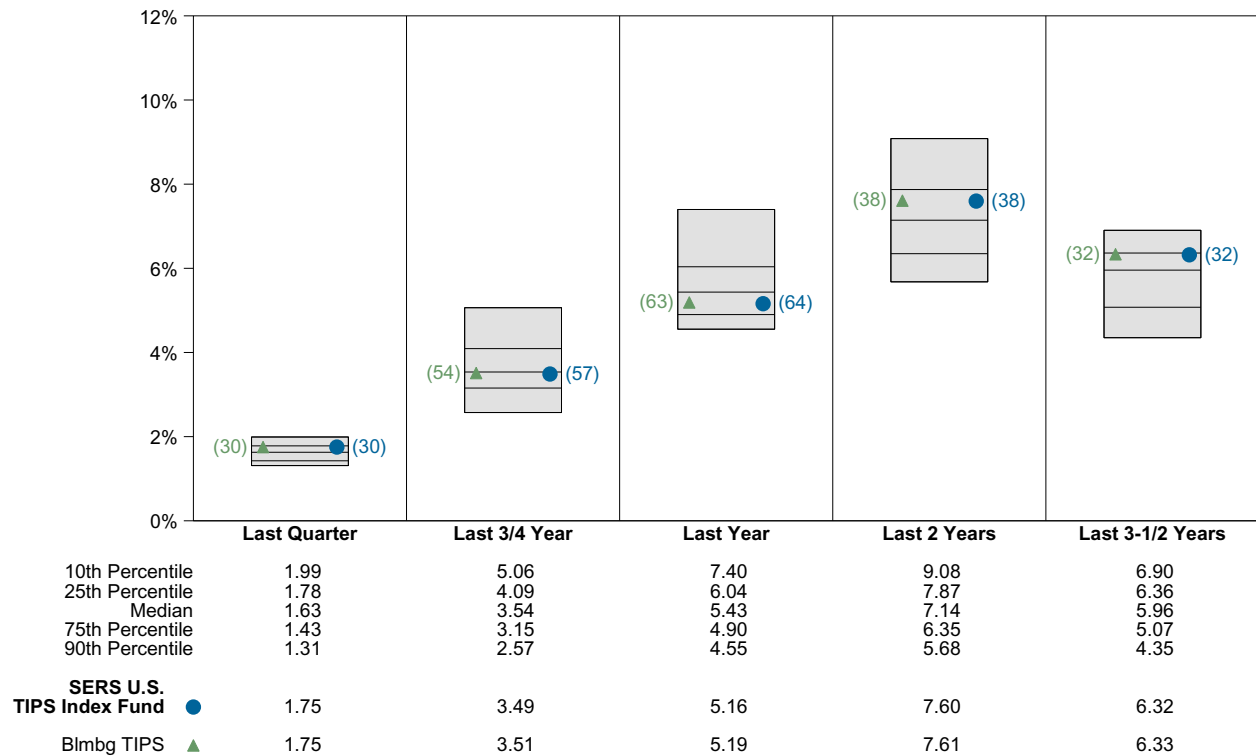
### Investment Philosophy

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

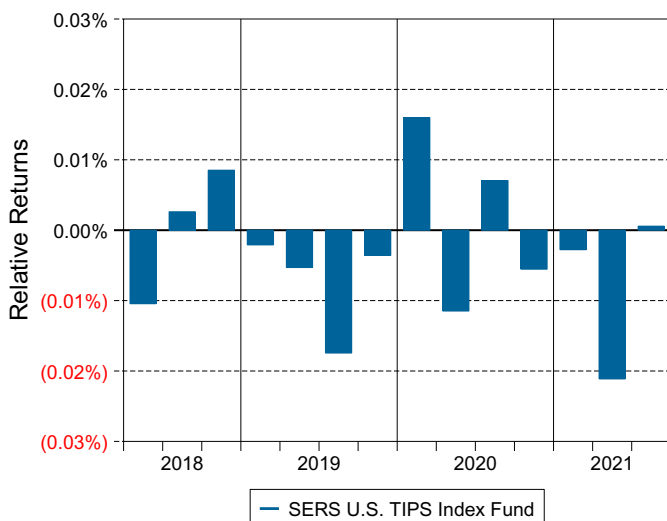
### Quarterly Summary and Highlights

- SERS U.S. TIPS Index Fund's portfolio posted a 1.75% return for the quarter placing it in the 30 percentile of the Callan Treas Infl Prot Securities MFs group for the quarter and in the 64 percentile for the last year.
- SERS U.S. TIPS Index Fund's portfolio outperformed the Blmbg TIPS by 0.00% for the quarter and underperformed the Blmbg TIPS for the year by 0.03%.

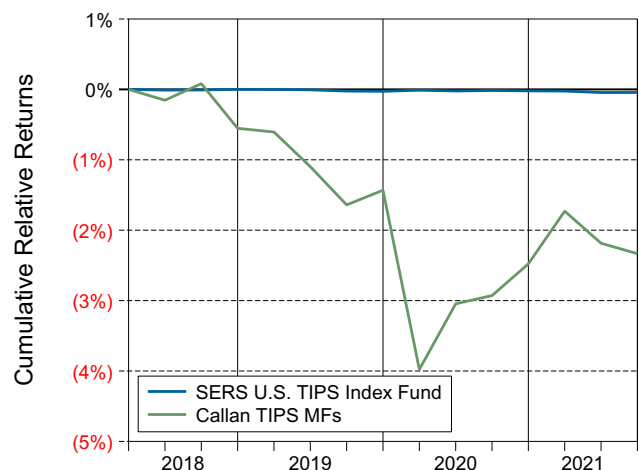
### Performance vs Callan Treas Infl Prot Securities MFs (Institutional Net)



### Relative Return vs Blmbg TIPS



### Cumulative Returns vs Blmbg TIPS



# SERS U.S. TIPS Index Fund

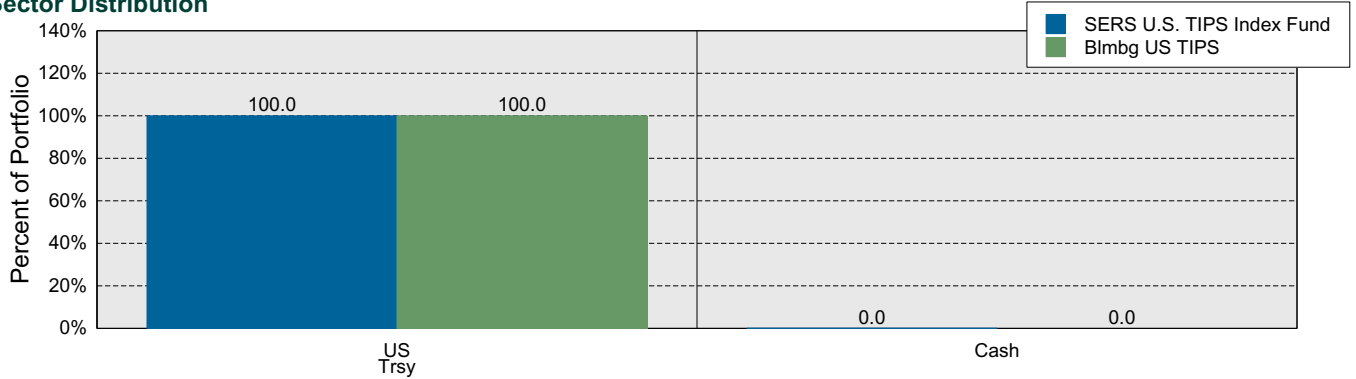
## Portfolio Characteristics Summary

### As of September 30, 2021

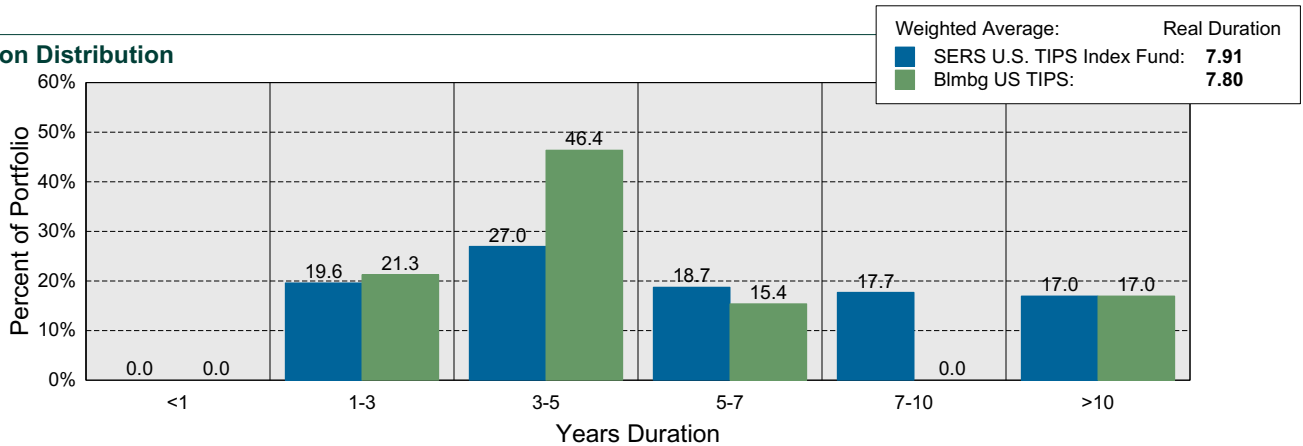
#### Portfolio Structure Comparison

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

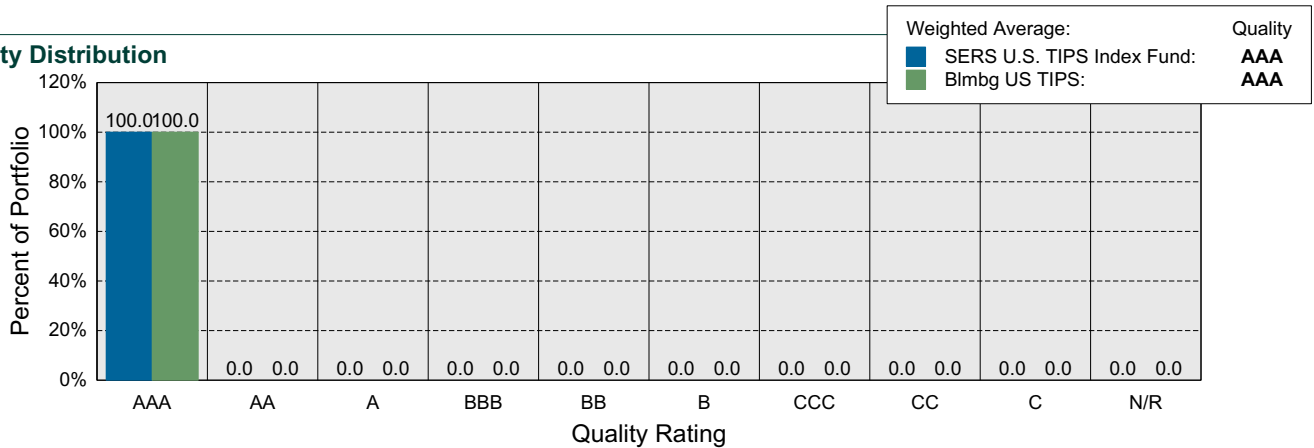
#### Sector Distribution



#### Duration Distribution



#### Quality Distribution

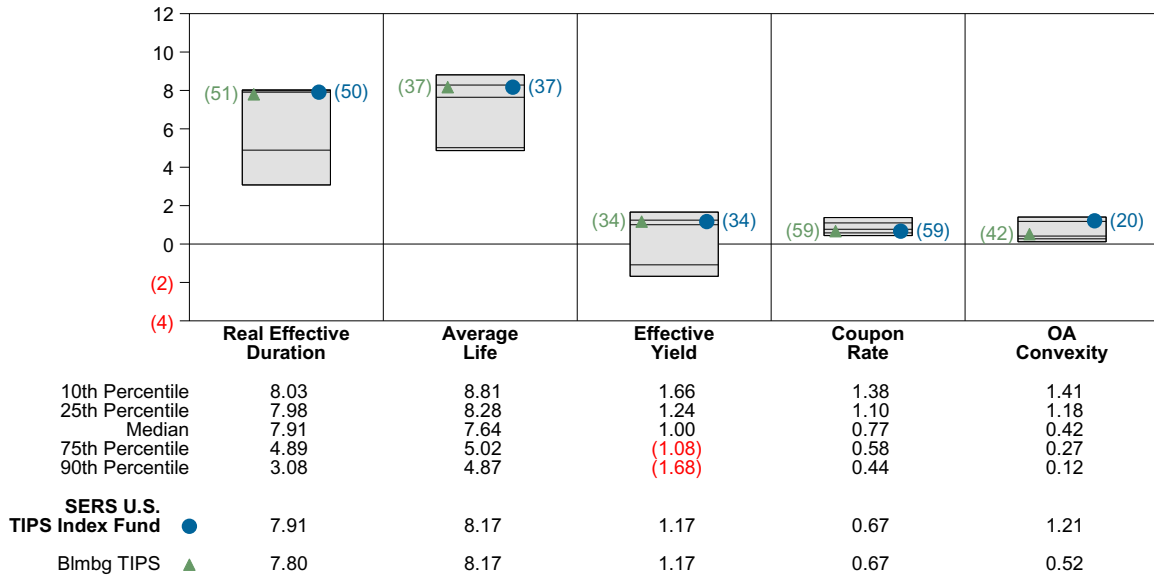


# SERS U.S. TIPS Index Fund Bond Characteristics Analysis Summary

## Portfolio Characteristics

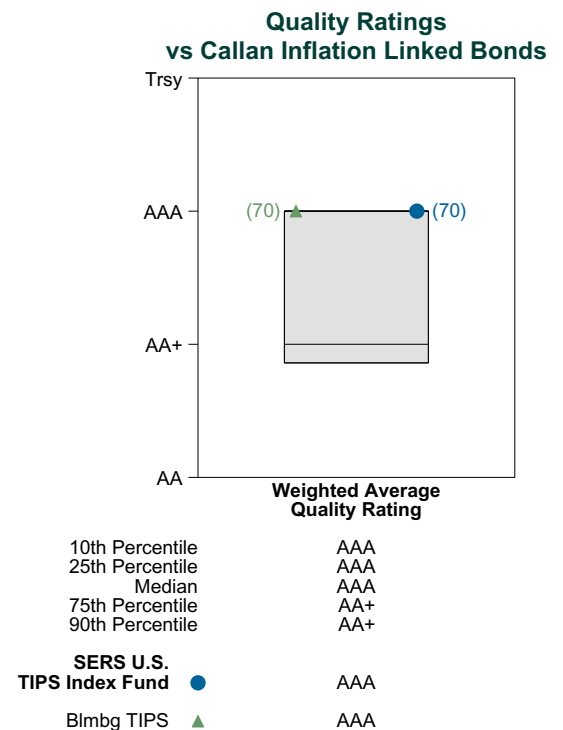
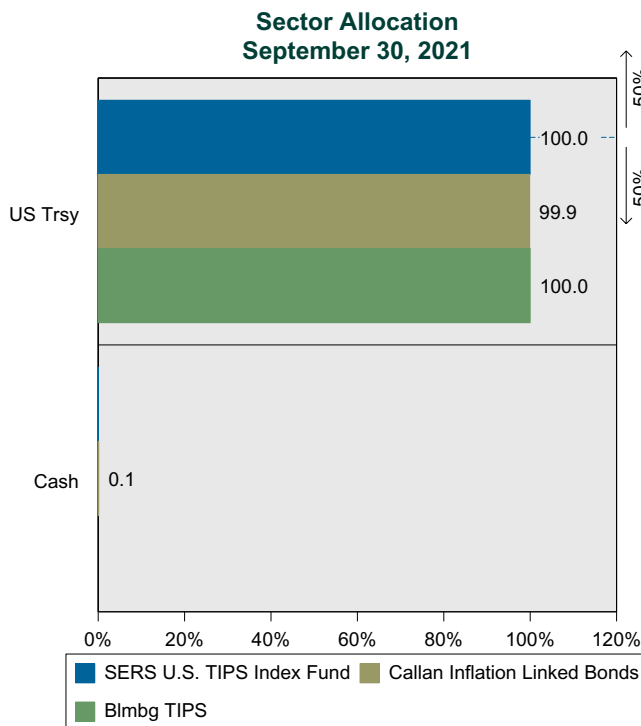
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of September 30, 2021



## Sector Allocation and Quality Ratings

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



# SERS U.S. Bond Index Fund

## Period Ended September 30, 2021

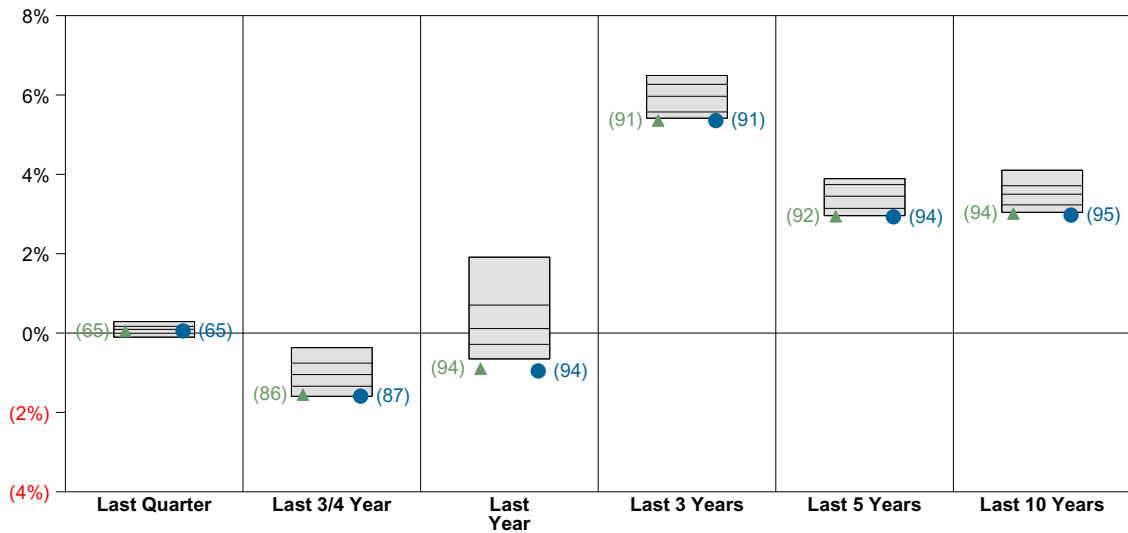
### Investment Philosophy

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

### Quarterly Summary and Highlights

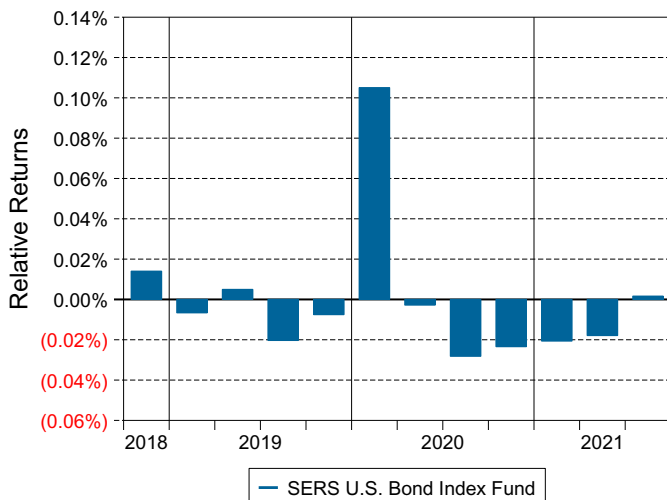
- SERS U.S. Bond Index Fund's portfolio posted a 0.05% return for the quarter placing it in the 65 percentile of the Callan Core Bond Mutual Funds group for the quarter and in the 94 percentile for the last year.
- SERS U.S. Bond Index Fund's portfolio outperformed the Blmbg Aggregate by 0.00% for the quarter and underperformed the Blmbg Aggregate for the year by 0.06%.

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

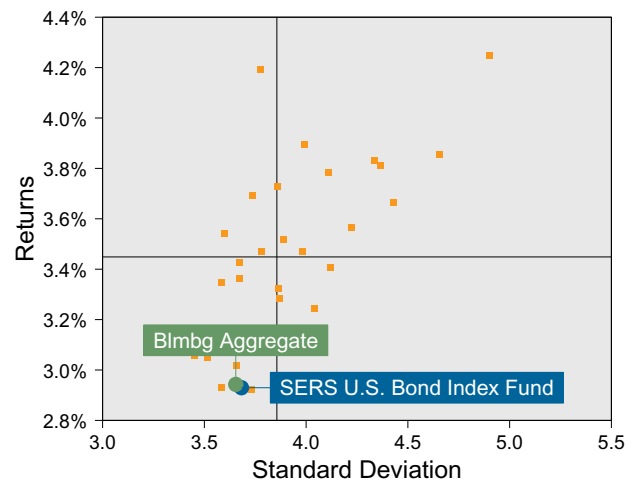


10th Percentile	0.29	(0.37)	1.91	6.49	3.89	4.10
25th Percentile	0.17	(0.76)	0.71	6.27	3.74	3.71
Median	0.09	(1.05)	0.11	5.97	3.45	3.50
75th Percentile	(0.00)	(1.34)	(0.28)	5.57	3.14	3.23
90th Percentile	(0.10)	(1.59)	(0.65)	5.41	2.96	3.04
<b>SERS U.S. Bond Index Fund</b>	● 0.05	(1.59)	(0.96)	5.35	2.93	2.97
Blmbg Aggregate	▲ 0.05	(1.55)	(0.90)	5.36	2.94	3.01

### Relative Return vs Blmbg Aggregate



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

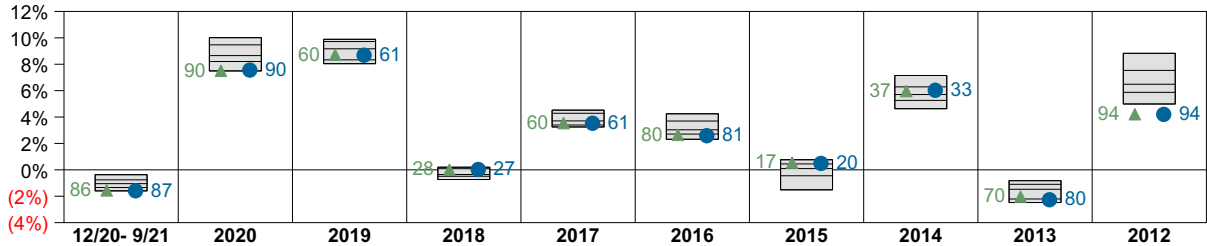


# SERS U.S. Bond Index Fund Return Analysis Summary

## Return Analysis

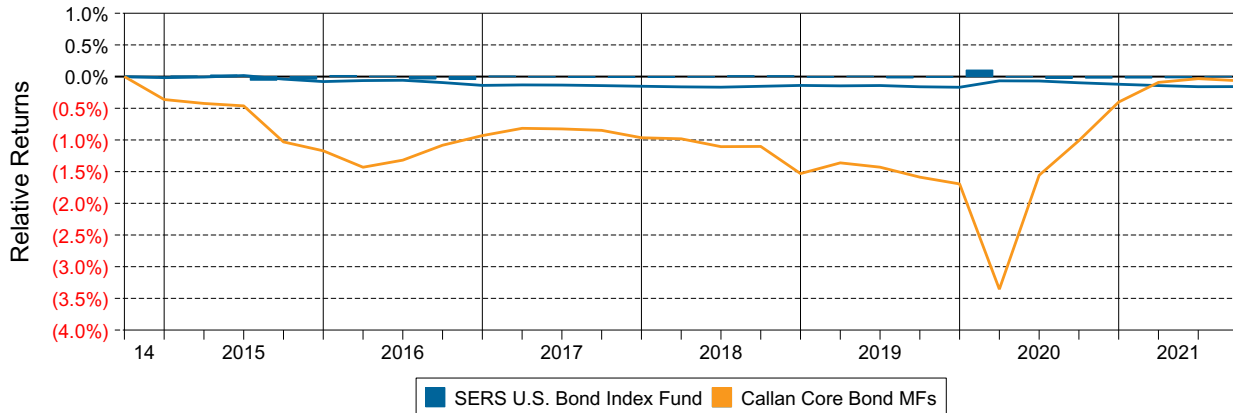
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

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

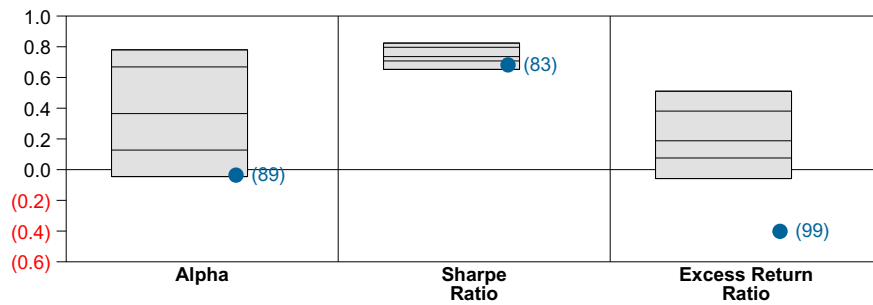


	12/20- 9/21	2020	2019	2018	2017	2016	2015	2014	2013	2012
10th Percentile	(0.37)	10.01	9.89	0.20	4.52	4.25	0.77	7.15	(0.82)	8.83
25th Percentile	(0.76)	9.47	9.72	0.09	4.28	3.70	0.45	6.29	(1.10)	7.53
Median	(1.05)	8.65	9.17	(0.35)	3.71	3.03	0.10	5.71	(1.47)	6.49
75th Percentile	(1.34)	8.21	8.33	(0.49)	3.40	2.71	(0.45)	5.26	(2.21)	5.87
90th Percentile	(1.59)	7.49	8.04	(0.73)	3.25	2.31	(1.52)	4.63	(2.48)	4.99
<b>SERS U.S. Bond Index Fund</b>	● (1.59)	7.56	8.69	0.02	3.53	2.59	0.49	6.03	(2.26)	4.20
<b>Blmbg Aggregate</b>	▲ (1.55)	7.51	8.72	0.01	3.54	2.65	0.55	5.97	(2.02)	4.21

### Cumulative and Quarterly Relative Return vs Blmbg Aggregate



### Risk Adjusted Return Measures vs Blmbg Aggregate Rankings Against Callan Core Bond Mutual Funds (Institutional Net) Seven Years Ended September 30, 2021



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.78	0.82	0.51
25th Percentile	0.67	0.80	0.38
Median	0.36	0.74	0.19
75th Percentile	0.13	0.71	0.08
90th Percentile	(0.05)	0.65	(0.06)
<b>SERS U.S. Bond Index Fund</b>	● (0.04)	0.68	(0.40)

# SERS U.S. Bond Index Fund

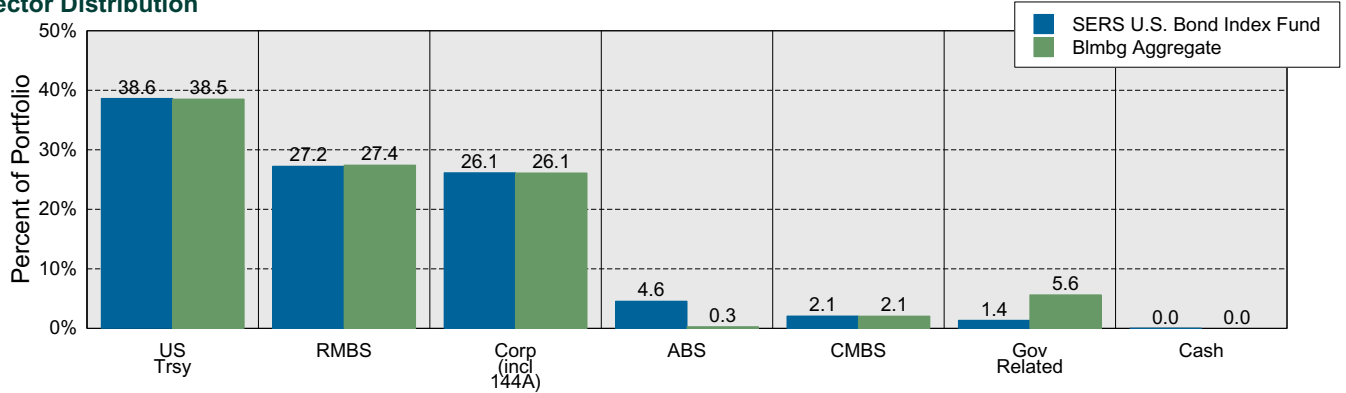
## Portfolio Characteristics Summary

### As of September 30, 2021

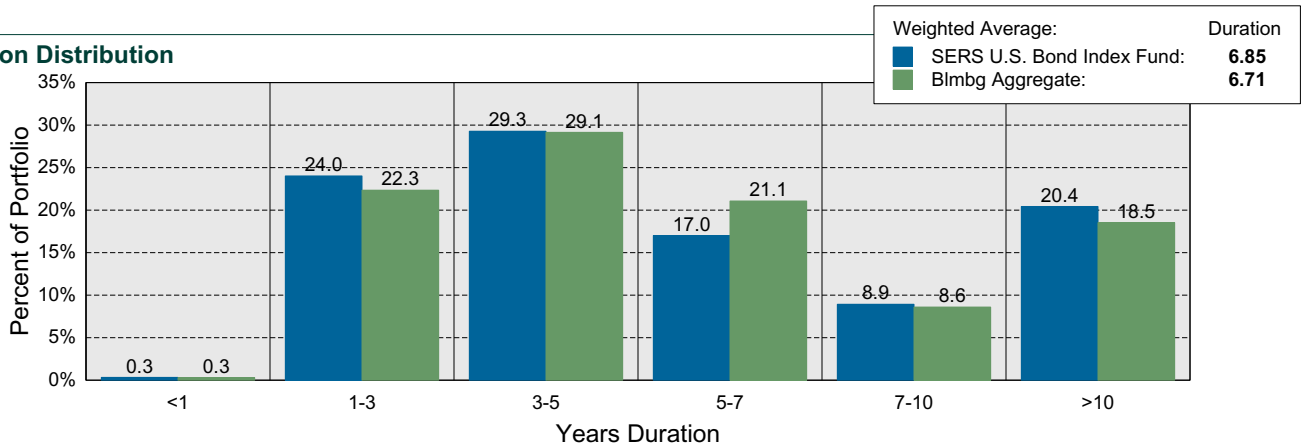
#### Portfolio Structure Comparison

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

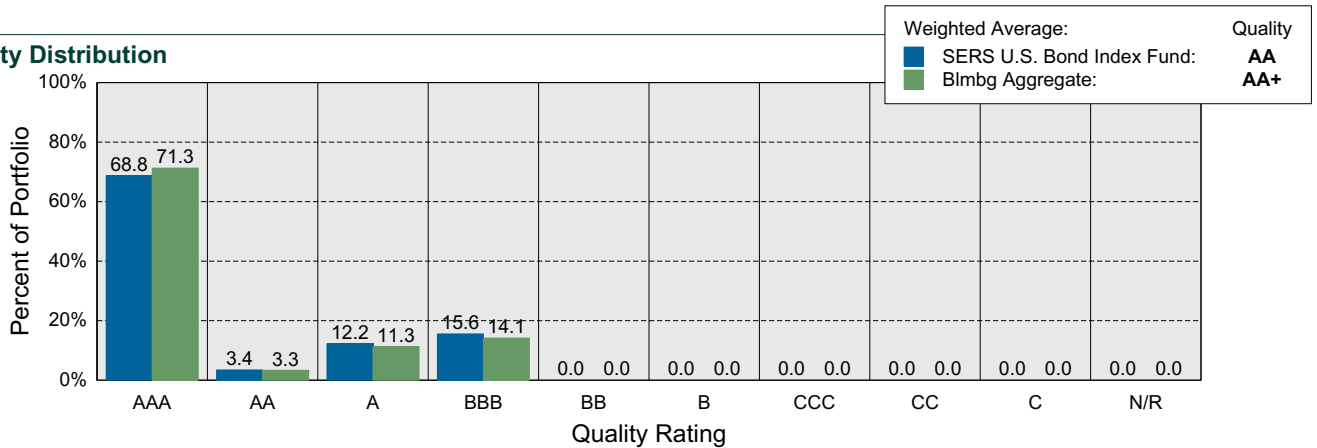
#### Sector Distribution



#### Duration Distribution



#### Quality Distribution



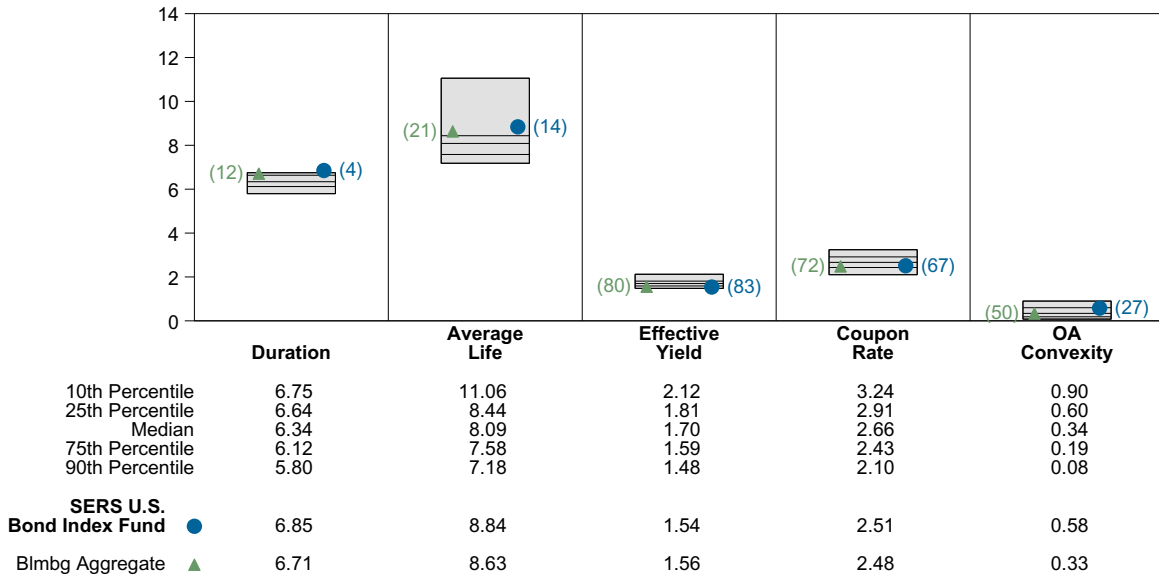
# SERS U.S. Bond Index Fund

## Bond Characteristics Analysis Summary

### Portfolio Characteristics

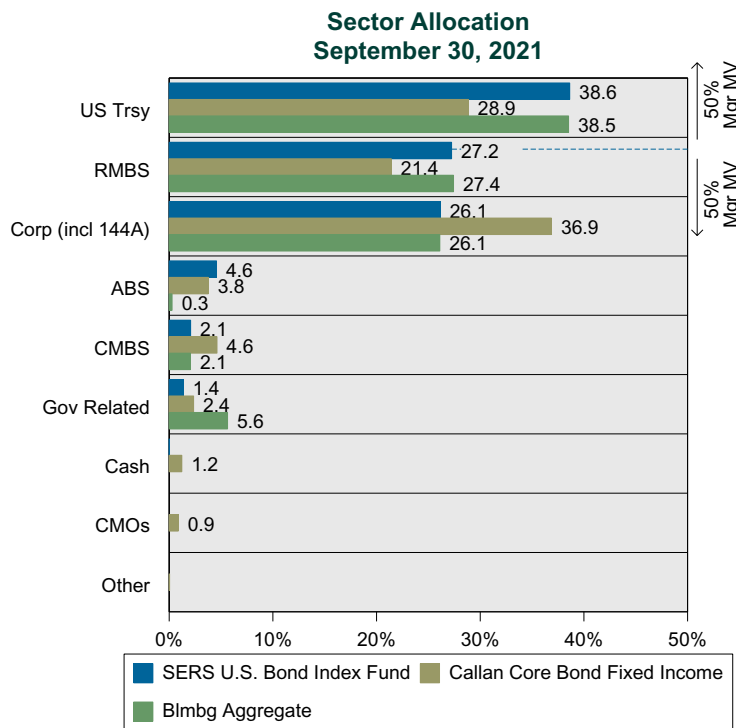
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

### Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of September 30, 2021

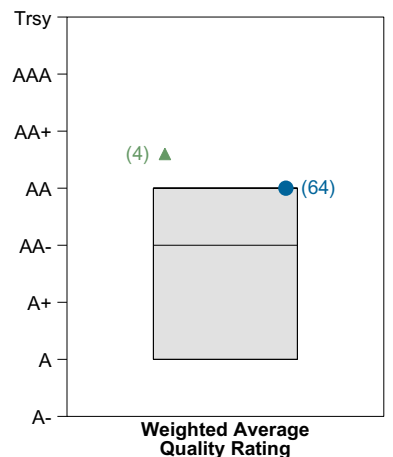


### Sector Allocation and Quality Ratings

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



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



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

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





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## Equity Market Indicators

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

**Standard & Poor's 500 Index** is designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries. The index is capitalization-weighted, with each stock weighted by its proportion of the total market value of all 500 issues. Thus, larger companies have a greater effect on the index.

## Fixed Income Market Indicators

**90-Day U.S. Treasury Bills** provide 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** is a combination of the Mortgage Backed Securities Index and the intermediate and long-term components of the Government/Credit Bond Index.

## International Equity Market Indicators

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

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## Callan Databases

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

### Equity Funds

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

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

### Fixed Income Funds

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

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

### Balanced Funds

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

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

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## Risk/Reward Statistics

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

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

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

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

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

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

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

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

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

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## Risk/Reward Statistics

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

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

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

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

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

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

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

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



## Quarterly Highlights

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

## New Research from Callan's Experts

**[Comparing Actuarial vs. Consultant Rates of Return](#)** | In this paper, Callan's Brady O'Connell and John Pirone review the differences between actuarial discount rates and consultant return forecasts. They remind fiduciaries of the importance of these two assumptions, why the numbers vary in practice and use, and why setting asset-allocation strategy is not simply an act of making the consultant return expectation match the actuarial discount rate.

**[The Role of Real Estate and Infrastructure Debt in a Portfolio](#)** | As capital markets assumptions have declined, institutional investors are increasingly interested in real estate and infrastructure debt as they pursue return-seeking assets. In this article, Jan Mende and Munir Iman discuss key aspects of these options.

**[Now What? The Role of Target Date Funds in Retirement](#)** | Much of the attention on the rise of TDFs focused on their role during the "accumulation" phase, as participants build up assets during their career. Now that sponsors have successfully incorporated TDFs into their DC plans to help participants build up assets, the time is right to focus on the potential role of TDFs during retirement by examining the makeup and income-generating possibilities of the post-retirement glidepath.

## Blog Highlights

**[GPs Take 'Credit' for Higher IRRs](#)** | Subscription credit facilities are used to finance activities that would otherwise be funded by capital calls from the limited partners in a private markets fund. These "sub lines" give the general partner the flexibility to call capital less frequently by combining multiple cash flows into a single capital call, and they also can delay initial capital calls until a large capital outlay is required. But investors should note that this increases the internal rate of return (IRR) as it shortens the effective investment period.

**[Seeking Yield in All the Right Places](#)** | One potential solution to help insurance investors meet their return goals without disproportionately adding risk is investment-grade private placements. This strategy presents opportunities to increase portfolio yields with higher spreads compared to other types of fixed income for similar levels of required capital.

**[PCE and CPI: What's the Difference?](#)** | The CPI is released by the Bureau of Labor Statistics and the PCE by the Bureau of Economic Analysis. While both measure inflation based on a basket of goods, they have subtle differences, including the sources of data, what they cover, and the formulas they use.

## Quarterly Periodicals

**[Private Equity Trends, 2Q21](#)** | A high-level summary of private equity activity in the quarter through all the investment stages

**[Active vs. Passive Charts, 2Q21](#)** | A comparison of active managers alongside relevant benchmarks over the long term

**[Market Pulse Flipbook, 2Q21](#)** | 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, 2Q21](#)** | Analysis and a broad overview of the economy and public and private market activity each quarter across a wide range of asset classes

**[Hedge Fund Quarterly, 2Q21](#)** | Commentary on developments for hedge funds and multi-asset class (MAC) strategies

**[Real Assets Reporter, 2Q21](#)** | A summary of market activity for real assets and private real estate during the quarter

## Events

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

Please mark your calendar and look forward to upcoming invitations:

**Research Café: DOL Cybersecurity Tips**  
November 10, 2021 – 9:30 am (PST)

**National Conference**  
April 25-27, 2022, in San Francisco

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

## Education: By the Numbers

**50+** Unique pieces of research the Institute generates each year

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

**3,700** Total attendees of the "Callan College" since 1994

## Education

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

**Introduction to Investments**  
December 1-2, 2021 - Chicago

This program familiarizes institutional investor trustees and staff and asset management advisers with basic investment theory, terminology, and practices. Our virtual session is held over three days with virtual modules of 2.5-3 hours, while the in-person session lasts one-and-a-half days. This course is designed for individuals with less than two years of experience with asset-management oversight and/or support responsibilities. Virtual tuition is \$950 per person and includes instruction and digital materials. In-person tuition is \$2,350 per person and includes instruction, all materials, breakfast and lunch on each day, and dinner on the first evening with the instructors.

Additional information including registration can be found at: [callan.com/events-education](https://callan.com/events-education)

**Introductory Workshop for DC Plan Fiduciaries**  
March 23, 2022 - San Francisco

This one-day workshop centers on the fundamentals of administering a defined contribution (DC) plan. Designed primarily for ERISA fiduciaries and supporting staff members, attendees will gain a better understanding of the key responsibilities of an ERISA fiduciary and best practices for executing those responsibilities. Additionally, we will cover the basics of capital markets theory and DC investment menu design principles; investment manager evaluation, selection, and monitoring; best practices for evaluating fees; the regulatory and legal landscape; and industry trends. This workshop is complimentary and open to institutional investor clients.

Additional information including dates and registration can be found at: [callan.com/events/mar-dc-college/](https://callan.com/events/mar-dc-college/)



"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









