

March 31, 2021

**Pennsylvania SERS 401(a)**



**Investment Measurement Service  
Quarterly Review**

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## The U.S. Economy: Open for Business

### ECONOMY

**2** U.S. GDP notched a solid 6.4% gain in 1Q21, and the U.S. economy may be on track for a truly eye-opening expansion. Initial projections are pointing to growth rates of 9% or even higher for 2Q. At that rate, GDP is now likely to return to its pre-pandemic peak by midyear.

## U.S., Global Bonds Fall as Rates Head Up

### FIXED INCOME

**8** The 10-year U.S. Treasury yield closed 1Q21 at 1.74%, up 81 bps from 4Q20. The Bloomberg Barclays US Aggregate Bond Index fell 3.4%. Global fixed income dropped as developed market rates rose and the U.S. dollar strengthened.

## Continued Interest as Yields Remain Low

### PRIVATE CREDIT

**12** Private credit remains attractive in a low-yield environment. Spreads for high yield and leveraged loans have snapped back. Fundraising slowed down in 2020 due to the pandemic; senior debt and mezzanine capital represented the bulk of the capital that was raised.

## Sharp Gains After Steep Plunge in 1Q20

### INSTITUTIONAL INVESTORS

**4** All institutional investor types saw robust gains for the four quarters ending 1Q21. And all but corporate DB plans exceeded a 60% stocks/40% bonds benchmark. Investors are elated following an incredible year, but that is tempered by sobering expectations for the capital markets.

## Signs of Stability Amid Virus Challenges

### REAL ESTATE/REAL ASSETS

**10** The Hotel and Retail sectors face continued headwinds. The outlook for the Office sector is uncertain while Industrial remains the best performer. Net operating income for private real estate declined. Global REITs and U.S. REITs outpaced equities in the quarter.

## Damn the Margin Calls, Full Risk Ahead

### HEDGE FUNDS/MACs

**13** The Credit Suisse Hedge Fund Index gained 2.9% in 1Q21. The median fund in the Callan Hedge Fund-of-Funds Database earned 2.1%; over the last year, the median rebounded 27.1%. The average Callan Institutional Hedge Fund manager earned 4.1%, net of fees.

## Another Rebound Around the World

### EQUITY

**6** The S&P 500 Index hit record highs in 1Q21, and since the prior peak (February 2020) it is up over 19.6%. Global markets responded positively to the rollout of the COVID-19 vaccine; small cap outperformed large on continued economic optimism.

## Market Is Riding a Wave of Momentum

### PRIVATE EQUITY

**11** The strong start to 1Q21 was fueled by stimulus, optimism, and positive investor sentiment. Preliminary numbers show that fundraising and exits (particularly IPOs) were generally up, but new investments declined slightly from the prior quarter.

## Third Straight Quarterly Gain

### DEFINED CONTRIBUTION

**15** The Callan DC Index™ gained 11.2% in 4Q20, slightly below the increase of the Age 45 Target Date Fund (+13.4%) but the third straight quarter of gains for both. Investors expressed an appetite for relatively safer asset classes, based on net flows in plans.

## Broad Market Quarterly Returns

U.S. Equity  
Russell 3000



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



U.S. Fixed Income  
Bloomberg Barclays Agg



Global ex-U.S. Fixed Income  
Bloomberg Barclays Gbl ex US



Sources: Bloomberg Barclays, FTSE Russell, MSCI

# Now Open for Business

ECONOMY | Jay Kloepfer

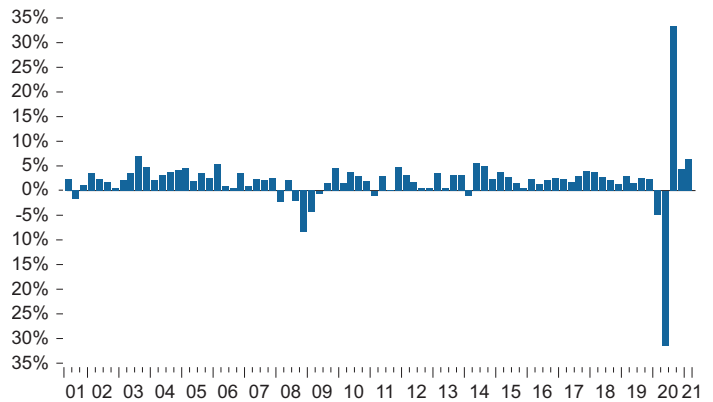
U.S. GDP notched a solid 6.4% gain in 1Q21. The U.S. economy may be on track for a truly eye-opening expansion, with initial projections from high-frequency GDP trackers such as GDPNow pointing to growth rates of 9% or even higher for 2Q. At that rate, GDP is likely to return to its pre-pandemic peak by midyear. For context, after the Global Financial Crisis (2008-09), it took 3½ years before real GDP reclaimed its pre-recession highs. At the start of the pandemic, the level of real GDP dropped more than 10% from March to June 2020. But the recovery in the second half of the year meant annual GDP growth measured -3.5% compared to 2019, although that is still the worst annual loss in 75 years. The steep decline and the rapid recovery surrounding the pandemic have been unprecedented.

The robust 1Q21 result reflects the grand reopening enabled by the expansion of vaccinations against COVID-19 and improvements in containing the spread of the virus in the United States. After a faltering start to the vaccination roll-out, supplies and distribution methods began catching up to demand as the quarter came to a close. Expectations that a majority of American adults will be vaccinated by the end of June have fueled sustained optimism by consumers and a move toward a full economic reopening by all businesses, particularly those most affected by the pandemic: travel, hospitality, passenger transportation. As the country moves toward the reopening of places of work and the retreat from work-from-home orders, expect a surge in demand for business and personal services as well. This reopening will not be without hitches, as supply chains have been seriously impacted around the globe, and the mismatch of the supply of labor and demand to fill jobs may take the rest of the year (or longer) to be sorted out.

Around the globe, the move toward reopening has been far less even and sustained, as the rollout and availability of the vaccine has been much less robust than in the U.S. Spikes in COVID infection rates in India, Brazil, Canada, and many European countries constrain both business and consumer confidence, and health care systems are under even greater stress in India

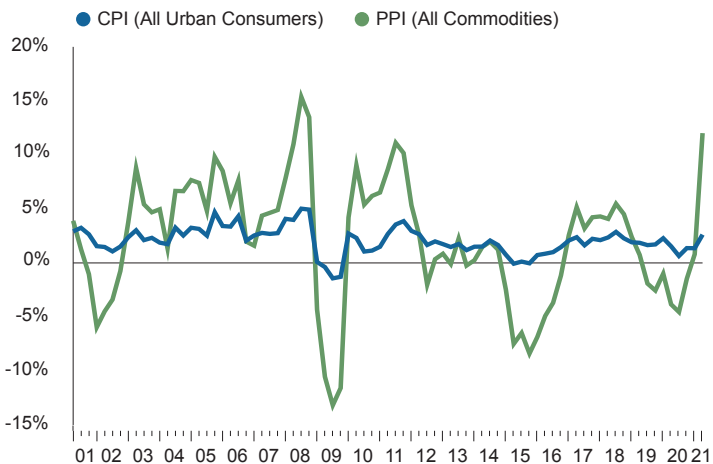
## Quarterly Real GDP Growth

(20 Years)



Source: Bureau of Economic Analysis

## Inflation Year-Over-Year



Source: Bureau of Labor Statistics

and Brazil than at any time since the start of the global pandemic. The lagging distribution of vaccines to many countries may hinder their reopening and recovery well into 2022, as well as travel into and out of these regions.

The biggest hole to fill in the U.S. economy is in the job market. We lost over 22 million jobs in March and April last year, and recovered just 13 million by the end of the year. After a weak January, however, key metrics of the U.S. job market have perked up substantially. Monthly job creation climbed to 558,000

in February and 780,000 in March, for a total of 1.5 million new jobs in the first quarter. The unemployment rate fell to 6.0% in March and is expected to continue moving down toward 5%, while the number of initial unemployment claims, which has remained stubbornly high at more than triple the “normal” rate of 200,000 per week, fell below 600,000 at the start of April, as the pace of job formation has picked up.

Massive fiscal stimulus is clearly the major contributor to rapid growth in 2021, fueling consumer optimism alongside the vaccine and the reopening of state and local economies. The U.S. Treasury reported that \$339 billion in stimulus payments were distributed in March, which boosted personal income by a stunning 21%. Personal consumption expenditures drove GDP growth, rising by 10.7% in the quarter, along with surges in investment in housing, equipment, and intellectual property. Pent-up demand and stimulus payments spurred spending on durable goods (motor vehicles), nondurable goods (led by food and beverages), and services (led by food services and accommodations). In addition to the stimulus, federal government spending jumped to cover administration of the Paycheck Protection Program as well as purchases of the vaccines for distribution to the public.

Amid the general optimism in the U.S., one concern has emerged: inflation. As the hitches in supply and demand for goods, services, and labor are worked out, CPI rose 2.6% and the producer price index jumped 12% in the quarter. However, investors should be cautious when interpreting annual comparisons to temporarily depressed prices at the start of the pandemic. For instance, both of these price indices reflect a sharp recovery in energy prices, which fell through the floor last year.

### The Long-Term View

Index	1Q21	Periods Ended 3/31/21			
		1Yr	5Yrs	10Yrs	25Yrs
<b>U.S. Equity</b>					
Russell 3000	6.3	62.5	16.6	13.8	9.7
S&P 500	6.2	56.4	16.3	13.9	9.6
Russell 2000	12.7	94.8	16.4	11.7	9.4
<b>Global ex-U.S. Equity</b>					
MSCI EAFE	3.5	44.6	8.8	5.5	5.0
MSCI ACWI ex USA	3.5	49.4	9.8	4.9	--
MSCI Emerging Markets	2.3	58.4	12.1	3.7	--
MSCI ACWI ex USA Small Cap	5.5	69.8	10.4	6.3	6.5
<b>Fixed Income</b>					
Bloomberg Barclays Agg	-3.4	0.7	3.1	3.4	5.1
90-Day T-Bill	0.0	0.1	1.2	0.6	2.2
Bloomberg Barclays Long G/C	-10.4	-2.1	5.5	7	7.2
Bloomberg Barclays GI Agg ex US	-5.3	7.2	2.1	1.3	3.8
<b>Real Estate</b>					
NCREIF Property	1.7	2.6	5.8	8.8	9.1
FTSE Nareit Equity	8.9	37.8	5.3	8.6	9.9
<b>Alternatives</b>					
CS Hedge Fund	2.9	20.2	5.1	3.9	7.2
Cambridge PE*	10.5	18.1	13.9	13.9	14.1
Bloomberg Commodity	6.9	35	2.3	-6.3	1.0
Gold Spot Price	-9.5	7.5	6.8	1.8	6.0
<b>Inflation – CPI-U</b>	1.7	2.6	2.2	1.7	2.1

\*Data for most recent period lags by a quarter. Data as of 9/30/20.

Sources: Bloomberg, Bloomberg Barclays, Bureau of Economic Analysis, Credit Suisse, FTSE Russell, MSCI, NCREIF, Refinitiv/Cambridge, S&P Dow Jones Indices

### Recent Quarterly Economic Indicators

	1Q21	4Q20	3Q20	2Q20	1Q20	4Q19	3Q19	2Q19
Employment Cost–Total Compensation Growth	2.6%	2.5%	2.4%	2.7%	2.8%	2.7%	2.8%	2.7%
Nonfarm Business–Productivity Growth	5.4%	-3.8%	4.2%	11.2%	-0.8%	1.6%	0.3%	2.0%
GDP Growth	6.4%	4.3%	33.4%	-31.4%	-5.0%	2.4%	2.6%	1.5%
Manufacturing Capacity Utilization	73.4%	73.1%	70.9%	63.2%	73.9%	75.0%	75.4%	75.5%
Consumer Sentiment Index (1966=100)	80.2	79.8	75.6	74.0	96.4	97.2	93.8	98.4

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

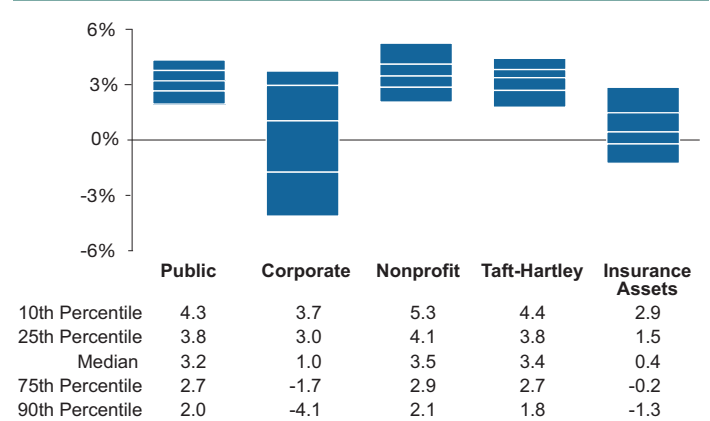
# Returns Up Sharply Over One Year, and Most Types Top Benchmark

## INSTITUTIONAL INVESTORS

### Performance

- Most institutional investor types saw robust gains for the four quarters ending 1Q21.
- All but corporate DB plans and insurance assets comfortably exceeded a 60% stocks/40% bonds benchmark.
- Nonprofits saw the highest increases for the trailing one year, and the gains were strong enough to boost their returns over the trailing three and five years and make them the top performers.
- Over the trailing 20 years, public DB plans have performed the best but most investor types saw returns on par with the 60%/40% benchmark.
- Institutional investors are evaluating the path forward in terms of strategic allocations and portfolio re-assessment. Following an exceptionally strong year for stocks, plan sponsors are re-evaluating how to generate returns in a low-yield environment with lowered capital markets assumptions.
- Inflation is becoming a concern, with questions about whether to adjust portfolios to address it, and whether it is a short-term issue or longer-term problem.
- There is renewed worry about the likelihood of another market drawdown, given the incredible market recovery since last March and the heady valuations relative to historical averages.

### Quarterly Returns, Callan Database Groups



Source: Callan

- Investors are having sharper-edged conversations about what to do regarding:
  - Fixed income exposure, and what can serve as an equity diversifier equal to bonds with the return of zero interest rates
  - De-risking and the new yield environment
- Investors have demonstrated discipline in rebalancing between growth and value managers, and U.S. and global ex-U.S. equity.

### Callan Database Median and Index Returns\* for Periods Ended 3/31/21

Database Group	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years
Public Database	3.2	32.3	9.4	10.0	8.2	6.9
Corporate Database	1.0	27.9	9.7	9.8	8.1	7.0
Nonprofit Database	3.5	37.0	9.8	10.3	8.0	7.0
Taft-Hartley Database	3.4	33.0	9.6	10.1	8.5	6.8
Insurance Assets Database	0.4	15.8	6.4	5.7	5.2	5.4
All Institutional Investors	3.1	33.2	9.6	10.1	8.2	7.0
Large (>\$1 billion)	3.2	31.1	9.8	10.1	8.5	7.1
Medium (\$100mm - \$1bn)	3.0	33.1	9.7	10.1	8.2	6.9
Small (<\$100 million)	3.2	34.8	9.5	9.9	8.0	6.8

\*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.

- Fixed income structures focus on its role—to diversify equity, to serve as a flight to quality and as a source of liquidity, and to provide interest rate exposure—balanced against the desire for return in a very low-yield environment.
  - Creative reconstruction of “core” fixed income away from lower-returning segments of the Aggregate, using private credit, securitized debt, high yield bonds, bank loans, private placements, global fixed income, and TIPS
- Real assets see renewed interest with growing concern for inflation.
  - Investors are questioning the continued inclusion of past real assets stalwarts: natural resources, energy, MLPs, and commodities.
  - They are focused on what truly diversifies the growth and risk-mitigating assets.

**Defined Benefit Plans**

- Funded status is a top concern for public and corporate DB plans.
- For public DB plans, liquidity needs and drawdown risks are another concern.
- Lower capital markets assumptions challenge expectations for funding and solvency.
- The plunge in rates did not derail the commitment to de-risking, but glidepaths are being reset for those farther from

full funding. Duration paid off, but moves to STRIPS for extra duration are now in question. Funded status for corporate DB plans farther down their LDI glidepaths did just fine in 2020.

- There has been an increase in global equity focus for corporate plans.

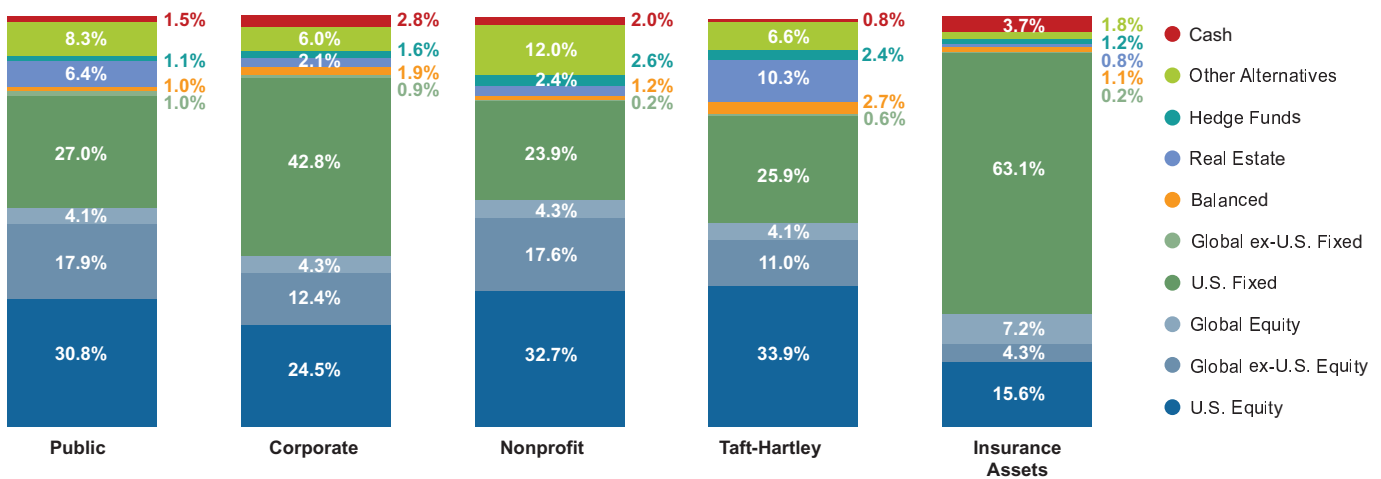
**Defined Contribution Plans**

- Fees remain the top issue for DC plan sponsors, although there is a renewed focus on investment structures.
- Glidepaths are being reassessed in light of lower short-term capital markets assumptions. The long-term equilibrium did not change, but it is coming from a lower starting point. The impact on replacement ratios is small, and there are modest changes if any.
- Recordkeeper consolidation activity picked up in 4Q20. This will likely point to an increase in recordkeeper searches in the near term.

**Nonprofits**

- The focus is on meeting return targets.
- Subdued expectations for capital markets returns are a challenge for the sustainability of established spending rates.
- Nonprofits increased ESG activity, with a number starting to ask due diligence questions of investment managers.

**Average Asset Allocation, Callan Database Groups**



Note: charts may not sum to 100% due to rounding  
Source: Callan



# Equity

## U.S. Equities

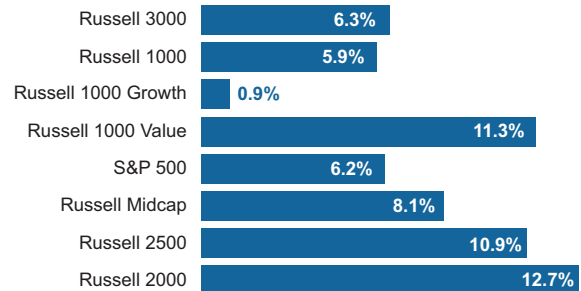
### Markets continue setting all-time highs

- The S&P 500 Index hit record highs in 1Q21, gaining 6.2%.
- Since the prior peak (February 2020) the S&P is up over 19.6%, with only Energy (-4.7%) and Utilities (-4.9%) declining from peak-to-peak.
- Since the March 2020 market low, the S&P is up over 80.7%, with all sectors posting gains over 40%; Energy +116.2%
- 1Q21 top sectors were Energy and Financials, while Industrials and Consumer Staples underperformed.
- “Re-opening” industries (airlines, retail REITs, hospitality) outperformed while “work from home” industries (online retail, home improvement) lagged.

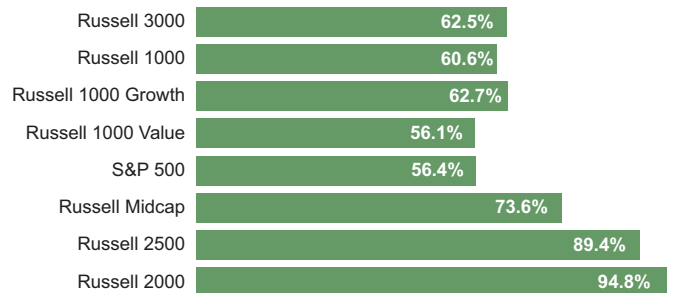
### Value and small cap trends continue through 1Q21

- Value outperformed growth across the market cap spectrum.
- Small caps outperformed large.
- Small value was the top-performing asset class for the quarter (+21.2%) and from the March 2020 low (+127.7%).
- Russell 2000 gained 12.7%, extending the rally from 4Q20 when the index experienced its best quarterly return on record (+31.4%).
- Small cap stocks surged on stronger GDP and economic recovery forecasts due to higher exposure to cyclical sectors relative to large cap indices.
- Industrials, Financials, and Real Estate sectors benefit most from expectations of GDP expansion.
- Small cap stocks have historically outperformed in recoveries following market crashes.

## U.S. Equity: Quarterly Returns



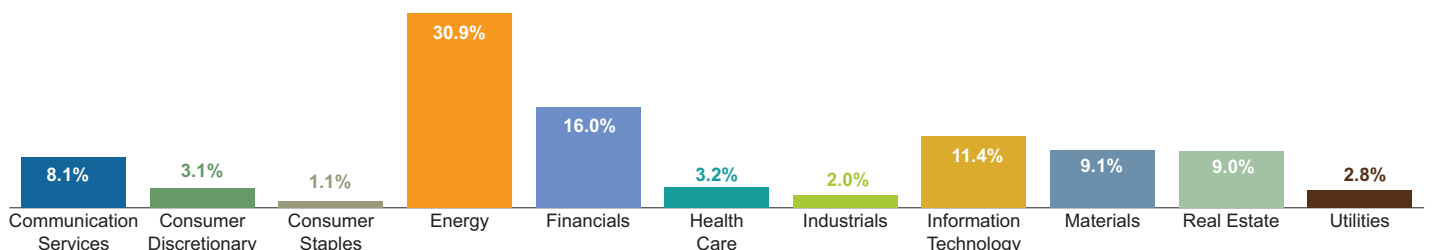
## U.S. Equity: One-Year Returns



Sources: FTSE Russell and S&P Dow Jones Indices

- Cyclical sectors and industries (Energy, Financials, Industrials, Materials) continued to outperform their growth counterparts as GDP forecasts improved, stimulus was enacted, and vaccinations progressed.
- November 2020 vaccine data news was a catalyst for the market rotation into value/cyclicals.

## Quarterly Performance of Industry Sectors



Source: S&P Dow Jones Indices

## Global Equity

### Nearly 100 million people fully vaccinated worldwide

- Markets responded positively to the global rollout of the COVID-19 vaccine.
- Most risk assets continued to outperform as global businesses reopen.
- Small cap outperformed large over the quarter on continued economic optimism.
- Emerging markets trailed developed markets; COVID-19 outbreaks and vaccination challenges hindered EM results.

### Market continues to favor cyclicals

- Market recovery and rising interest rates buoyed cyclicals; Energy, Financials, and Industrials drove the gains.
- Factor performance showed a preference for beta and volatility, similar to 4Q20.

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

- The U.S. stimulus package announcement, combined with yields rising on economic confidence, fueled the U.S. dollar.

### Growth vs. value

- Value outpaced growth for the second consecutive quarter.
- Vaccination rollout has stoked style rotation.
- Value outperformed growth by 17.0% and 10.5% in developed and emerging markets over the past two quarters, respectively.
- The rotation to value in 4Q20 was sharp and narrow.
- Cheap, low-quality factors were rewarded, favoring fundamental deep value managers.
- Quantitative value managers struggled as market rotation yielded a severe momentum reversal.

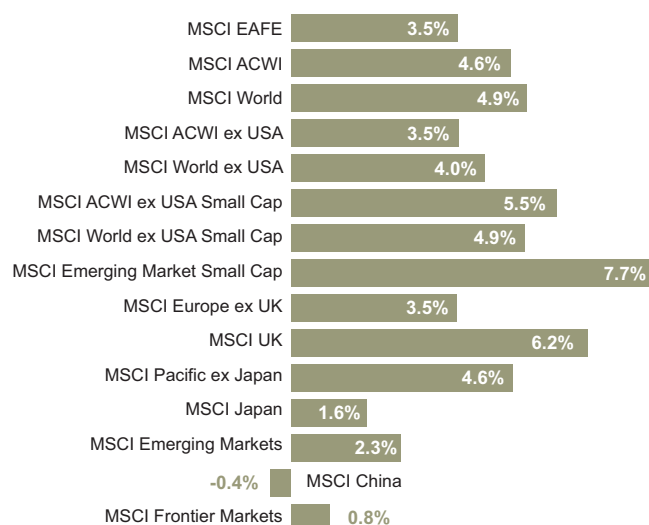
### Factor payoffs may hinge on macroeconomy

- Over the past 20 years, small cap and value thrived in recoveries, momentum in expansions, low volatility in slowdowns, and low volatility and quality in contractions.
- As the market continues its recovery and transitions to expansion, value run may persist.
- Furthermore, relative value and quantitative managers are expected to participate as the value rally broadens out.

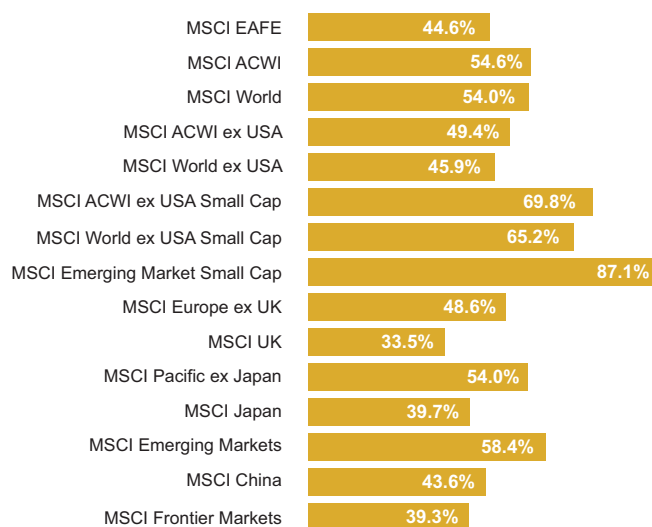
## COVID-19 resurgence may delay EM recovery

- Although daily COVID-19 fatalities for developed markets have declined dramatically by 70% from the peak in January, they are notably increasing in emerging markets.
- China, South Korea, and Taiwan have by and large contained the pandemic, while pockets of developing economies are challenged with rising infections.

## 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

### U.S. Treasury yield curve steepens

- The 10-year U.S. Treasury yield closed 1Q21 at 1.74%, up 81 bps from 4Q20.
- The short-end of the curve remained anchored, with no rate hikes expected until at least 2023, steepening the yield curve.
- TIPS outperformed nominal U.S. Treasuries as 10-year breakeven spreads widened from 1.99% to 2.37%.

### Bloomberg Barclays Aggregate falls

- The Bloomberg Barclays US Aggregate Bond Index dropped 3.4%, with spread sectors outperforming treasuries.
- Demand for corporate credit remains strong, and spreads did not change meaningfully over the quarter

### High yield bonds gain as rally extends

- High yield bonds outperformed investment grade in 1Q, gaining 0.8% amid a wave of new issuance.
- Leveraged loans rose 2.0% during the quarter, driven by favorable supply/demand dynamics, floating rate coupons, and relatively short durations.

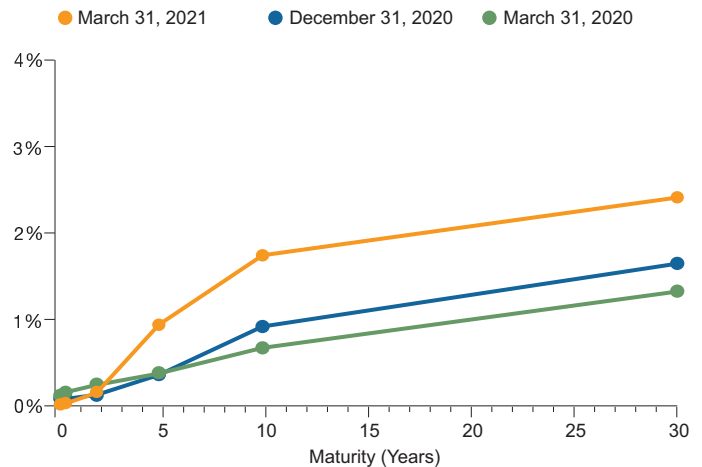
### Stimulus boosts munis

- Municipals outperformed treasuries for the quarter, as municipal yields rose less than treasury yields.
- The municipal market was supported by the American Rescue Act.

### Fixed income outlook

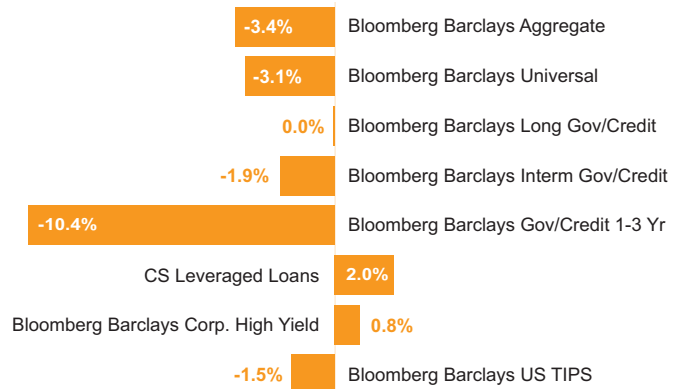
- High demand, low and negative interest rates globally, and improving growth should continue to support spread product.
- The Federal Reserve continues to support U.S. fixed income markets.
- Private credit remains a compelling, actionable opportunity.
- Bond pickers stay constructive on select COVID-sensitive sectors.

## U.S. Treasury Yield Curves



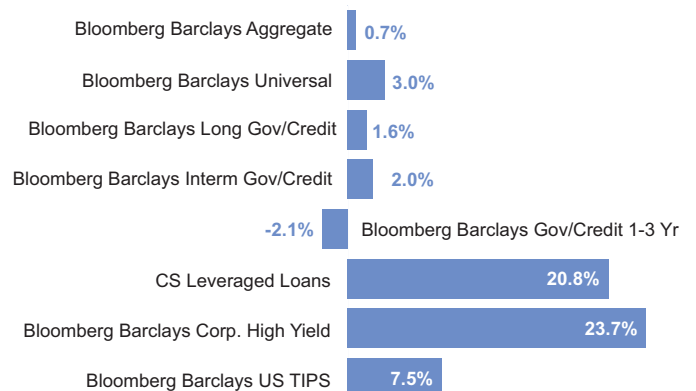
Source: Bloomberg

## U.S. Fixed Income: Quarterly Returns



Sources: Bloomberg Barclays and Credit Suisse

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



Sources: Bloomberg Barclays and Credit Suisse

**Growth and inflation expectations**

- In 1Q21, the Treasury curve steepened 78 bps as the market anticipated stronger economic growth after another round of fiscal stimulus.
- The 10-year breakeven inflation rate rose 38 bps, reaching levels last seen in 2014 and 60 bps above pre-pandemic levels, implying the market expects the economy to heat-up.

**Market expectations diverge from Fed guidance**

- The Fed dot plot continues to indicate the central bank should keep its policy rate low until 2023.
- Inflation (PCE) is estimated to tick up in 2021, but the policy shift to average inflation targeting in 2020 allows for inflation to rise above the 2% target during economic expansions, letting the Fed keep rates lower for longer.

**Bond market response**

- The common sentiment among managers is a near-term inflation increase. However, the front-end should remain anchored as unemployment and savings rates remain elevated, bank lending activity is muted, and secular forces persist.
- Recent and additional curve steepening provides opportunities along the curve and better roll down.

**Global Fixed Income**

**Global fixed income posts negative returns**

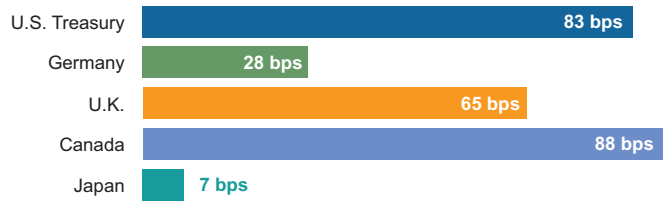
- Global fixed income fell as developed market rates rose and the U.S. dollar strengthened.
- The U.S. dollar gained nearly 4% versus a basket of currencies, 6.6% versus the yen, and nearly 4% versus the euro.

**Emerging market debt sells off**

- Emerging market debt indices fell in 1Q21, with EM corporates faring better than hard and local currency sovereigns amid improving corporate fundamentals.
- U.S. dollar-denominated index (EMBI Global Diversified) fell 4.5% as rising U.S. rates spilled into emerging markets; returns were largely negative across the 70+ constituents.
- Local currency index (GBI-EM Global Diversified) fared worse than hard currency, as real yields rose higher than in the U.S.

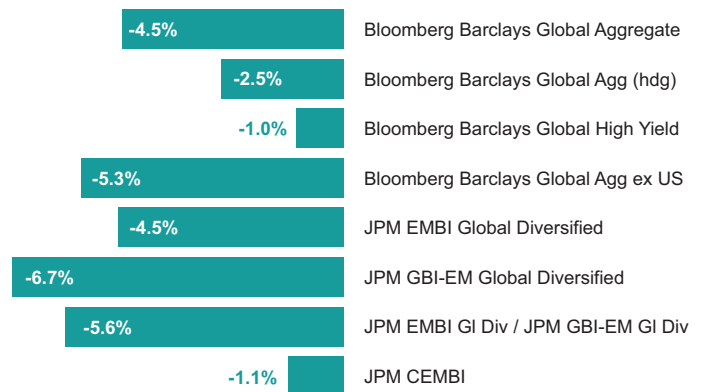
**Change in 10-Year Global Government Bond Yields**

4Q20 to 1Q21



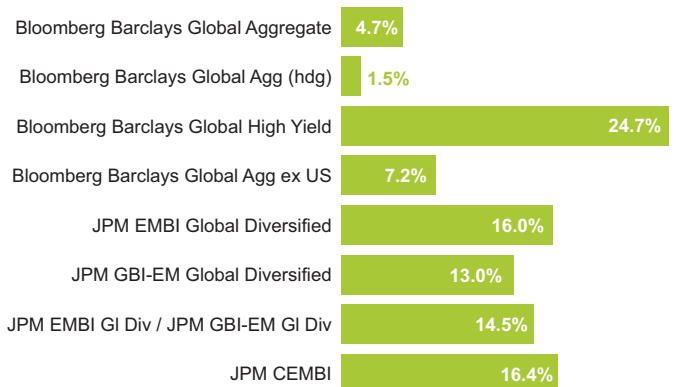
Source: Bloomberg Barclays

**Global Fixed Income: Quarterly Returns**



Sources: Bloomberg Barclays and JPMorgan Chase

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



Sources: Bloomberg Barclays and JPMorgan Chase

# Signs of Stability Amid Continued Virus Challenges

REAL ESTATE/REAL ASSETS | Munir Iman

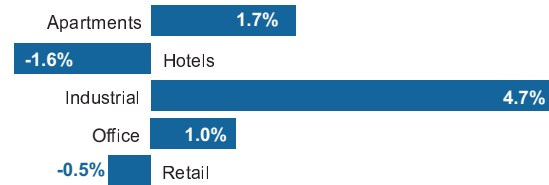
## Pandemic affects all sectors

- Hotel and Retail are the most challenged sectors of private real estate, while Office faces uncertainty; Industrial remains the best performer.
- Income remains positive except for the Hotel sector.
- Vacancy rates for all property types are or will be impacted.

## NOI declines as Retail suffers

- Net operating income (NOI) declined as Retail continues to suffer.
- 1Q21 rent collections showed relatively stable income throughout the quarter in the Industrial, Apartment, and Office sectors. But the pandemic's impact on regional malls has hindered Retail.
- Class A/B urban apartments were relatively strong, followed by Industrial and Office.
- Transaction volume has dropped off during the quarter with the exception of multifamily and industrial assets with strong-credit tenants, which are trading at pre-COVID-19 levels.
- Cap rates remained steady during the quarter. The spread between cap rates and 10-year Treasuries is relatively high, leading some market participants to speculate that cap rates will not adjust much. Price discovery is happening and there are limited transactions.

## Sector Quarterly Returns by Property Type and Region



Source: NCREIF

## Global REITs outpace equities

- Global REITs outperformed in 1Q21, gaining 5.8% compared to 4.9% for global equities (MSCI World).
- U.S. REITs rose 8.9% in 1Q21, beating the S&P 500 Index, which gained 6.2%.
- Globally, REITs are trading above NAV with the exception of those in Hong Kong, the United Kingdom, and continental Europe.
- Property sectors are 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 3/31/21

Private Real Assets	Quarter	Year to Date	1 Year	3 Years	5 Years	10 Years	15 Years
<b>Real Estate ODCE Style</b>	<b>1.6</b>	<b>1.6</b>	<b>2.1</b>	<b>4.8</b>	<b>5.7</b>	<b>8.8</b>	<b>5.3</b>
NFI-ODCE (value wt net)	1.9	1.9	1.5	4.0	5.3	8.7	5.3
NCREIF Property	1.7	1.7	2.6	4.9	5.8	8.8	7.0
NCREIF Farmland	0.6	0.6	2.4	3.7	4.8	9.9	11.0
NCREIF Timberland	0.8	0.8	1.5	1.7	2.5	4.5	5.3
<b>Public Real Estate</b>							
<b>Global Real Estate Style</b>	<b>5.6</b>	<b>5.6</b>	<b>34.7</b>	<b>8.0</b>	<b>6.2</b>	<b>7.8</b>	<b>5.4</b>
FTSE EPRA Nareit Developed	5.8	5.8	34.6	5.1	3.9	5.7	--
<b>Global ex-U.S. Real Estate Style</b>	<b>2.3</b>	<b>2.3</b>	<b>33.6</b>	<b>7.5</b>	<b>6.4</b>	<b>7.4</b>	<b>5.1</b>
FTSE EPRA Nareit Dev ex US	2.0	2.0	31.0	2.6	4.4	4.7	--
<b>U.S. REIT Style</b>	<b>8.3</b>	<b>8.3</b>	<b>36.0</b>	<b>11.2</b>	<b>6.8</b>	<b>9.5</b>	<b>7.0</b>
EPRA Nareit Equity REITs	8.9	8.9	37.8	9.5	5.3	8.6	6.1

\*Returns less than one year are not annualized.

Sources: Callan, FTSE Russell, NCREIF

# Roller-Coaster Ride Ends on a High Note

PRIVATE EQUITY | Gary Robertson

Ebullience in the capital markets is facilitating strong liquidity for private equity, with investors reaping robust distributions and returns. The key negative is that new investment prices have risen into uncharted territory, particularly for the “COVID-19 resistant” Technology sector. If opening up the economy proceeds without major setbacks, we expect 2021 may set new records in volumes and private equity industry growth.

**Fundraising** ► Based on preliminary data, 1Q21 private equity partnerships holding final closes totaled \$212 billion, up 6% from 4Q20. New partnerships formed dropped 17% to 385 as the trend toward more capital concentrated in larger funds continued. Callan expects fundraising to remain vigorous as 2021 advances. (Unless otherwise noted, all data come from PitchBook.)

**Buyouts** ► Funds closed 2,472 investments with \$85 billion in disclosed deal value, a 15% decline in count and a 44% drop in dollar value from 4Q. The largest investment was the \$4.3 billion carve-out of BlueTriton Brands, Nestle’s bottled water division, by One Rock and Metropoulos & Co. The lack of any notably large investments explains the quarter’s announced value decline.

**VC Investments** ► New investments in venture capital companies totaled 8,608 rounds of financing, up 19%, with \$135

## Funds Closed 1/1/21 to 3/31/21

Strategy	No. of Funds	Amt (\$mm)	Share
Venture Capital	211	46,734	22%
Growth Equity	31	14,062	7%
Buyouts	109	111,612	53%
Mezzanine Debt	4	602	0%
Distressed	4	8,282	4%
Energy	0	0	0%
Secondary and Other	20	27,922	13%
Fund-of-Funds	6	2,312	1%
<b>Totals</b>	<b>385</b>	<b>211,526</b>	<b>100%</b>

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

billion of announced value, up 41%. The largest investment was a \$3.4 billion 10th round in online brokerage Robinhood by a syndicate of 13 investors including Sequoia, NEA, and Andreessen Horowitz.

**Exits** ► There were 453 private M&A exits of private equity-backed companies, a drop of 7%. Disclosed values declined 13% to \$102 billion. There were 82 private equity-backed IPOs, up 32%, which raised an aggregate \$26 billion, up 8%.

Venture-backed M&A exits totaled 434 with disclosed value of \$18 billion. The number of sales declined 8% from 4Q, and announced value fell 61%. There were 147 VC-backed IPOs, up 24%, and the combined float totaled \$39 billion, a 50% increase.

## Private Equity Performance (%) (Pooled Horizon IRRs through 9/30/20\*)

Strategy	3 Months	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years
All Venture	11.1	27.9	20.8	14.6	16.6	12.3	6.0	26.6
Growth Equity	12.4	25.8	19.2	16.4	14.7	13.5	11.3	15.1
All Buyouts	10.8	15.6	13.4	14.3	14.0	12.4	11.9	13.2
Mezzanine	5.5	7.5	9.0	10.0	11.5	10.5	8.4	9.8
Credit Opportunities	3.5	-1.8	2.7	5.6	8.2	8.5	9.4	9.5
Control Distressed	7.8	5.9	5.8	8.5	10.3	9.6	10.3	10.7
<b>All Private Equity</b>	<b>10.5</b>	<b>18.1</b>	<b>14.7</b>	<b>13.9</b>	<b>13.9</b>	<b>12.1</b>	<b>10.0</b>	<b>14.1</b>
S&P 500	8.9	15.2	12.3	14.2	13.7	9.2	6.4	9.3
Russell 3000	14.7	20.9	14.5	15.4	13.8	10.0	7.8	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

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.

# Strong Demand and Favorable Pricing for Direct Lending

PRIVATE CREDIT | Catherine Beard

## Attractive in a low-rate environment

- The yield and income-generating characteristics of private credit remain attractive in a low-rate environment.
- Alpha generation can be magnified through strategies that extract a complexity premium.
- In the early phases of the dislocation, nimble multi-strategy private credit managers were able to purchase high-quality securities at steep discounts.

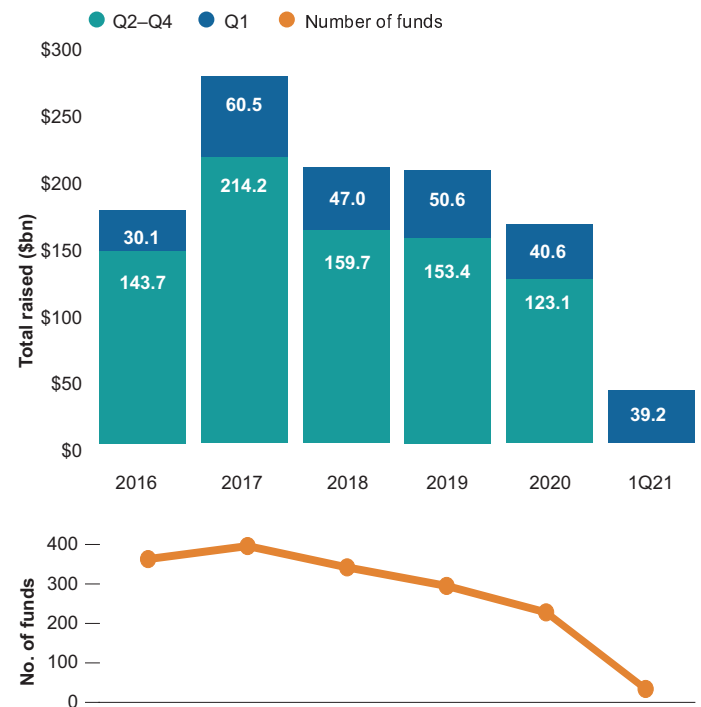
## Favorable direct lending pricing trends

- Unlevered direct lending historically generated premiums of 150-200 bps over traditional high yield bonds and leveraged loans, with downside protection.
- Direct lenders are seeing a premium in new deals with less-risky structures, but trends are reverting to pre-pandemic levels. Most existing portfolios weathered the dislocation well. Deal flow is robust as sponsors are particularly active in funding leveraged buyouts in the health care, technology, and business services sectors.

## Spreads snap back

- Government stimulus has driven a snap-back in leveraged loan and high yield spreads despite continued high levels of unemployment and economic uncertainty.
- Early pandemic pricing premiums of 200-300 bps for newly underwritten deals have compressed to 50-100 bps, with structures approaching pre-pandemic levels.
- While the Phase I dislocation opportunity to purchase quality paper in liquid markets has passed for the time being, longer-term Phase II and III opportunities are evolving but somewhat muted as businesses benefit from the reopening of the U.S. economy.
- An injection of significant liquidity into the credit markets may mute the corporate distressed opportunity in the U.S.

## Year-On-Year Fundraising (\$bn)



Source: Private Debt Investor

## Recent slowing in fundraising

- Private credit fundraising tapered off in 2020 due primarily to COVID-related market disruptions.
- Senior debt and mezzanine capital fundraising were the bulk of private credit capital raised in 2020.
- Significant distressed capital was raised leading up to the dislocation but has since tapered off.
- In the first part of 2021, fundraising in opportunistic credit, specialty finance, and asset-based lending strategies has ramped up.

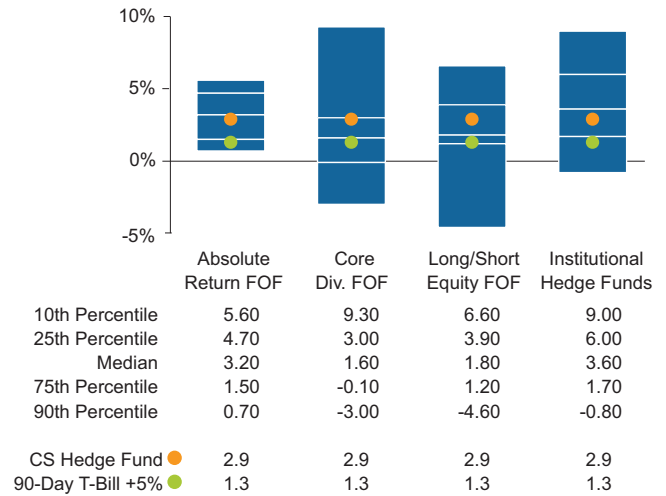
# Damn the Shorts and Margin Calls, Full Risk Ahead

HEDGE FUNDS/MACs | Jim McKee

Emboldened by more injections of vaccines, central bank liquidity, and fiscal stimulus in 1Q21, investors' risk appetites grew again, particularly among equities, commodities, and lower-rated credits. However, growing fears of inflation stemming from a stronger-than-expected economic outlook caused some violent side effects elsewhere. Risk assets leaning on benign interest rate assumptions, like growth stocks, longer-dated bonds, and gold, suffered indigestion from the prior year's strong advance.

Below the surface of these capital markets, shifting economic currents created notable turbulence within the hedge fund community. In January, retail investors dominated headlines with their social media-coordinated trades to upend short sellers in certain stocks like GameStop. At the end of March, a concentrated and levered equity bet by Archegos suffered massive losses from a margin call. However, Archegos was more of a non-event for the hedge fund community.

## Hedge Fund Style Group Returns



Sources: Callan, Credit Suisse, Federal Reserve

## Callan Peer Group Median and Index Returns\* for Periods Ended 3/31/21

Hedge Fund Universe	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years
Callan Institutional Hedge Fund Peer Group	3.6	19.4	5.5	6.9	6.1	7.4
Callan Fund-of-Funds Peer Group	2.1	27.1	5.6	6.0	4.8	4.6
Callan Absolute Return FOF Style	3.2	19.3	4.5	5.0	4.0	3.9
Callan Core Diversified FOF Style	1.6	25.5	5.3	5.8	4.7	4.5
Callan Long/Short Equity FOF Style	1.8	33.7	8.9	8.6	6.3	5.5
BB GS Cross Asset Risk Premia 6% Vol Idx	0.1	-2.0	0.3	1.6	4.7	5.7
Credit Suisse Hedge Fund	2.9	20.2	4.8	5.1	3.9	4.5
CS Convertible Arbitrage	2.7	19.5	5.9	6.1	3.9	4.6
CS Distressed	6.2	23.6	3.1	5.1	4.0	4.5
CS Emerging Markets	2.6	28.7	5.1	7.7	4.8	5.3
CS Equity Market Neutral	0.9	8.3	-0.6	0.6	1.4	-1.0
CS Event-Driven Multi	6.8	40.6	6.6	6.5	2.8	4.8
CS Fixed Income Arb	2.1	12.3	3.7	5.0	4.6	4.0
CS Global Macro	2.8	19.1	6.3	5.5	4.3	5.8
CS Long/Short Equity	2.4	24.3	5.4	6.1	5.0	5.2
CS Managed Futures	2.3	4.1	3.2	-0.5	0.9	2.6
CS Multi-Strategy	2.1	15.3	4.0	5.1	5.4	5.4
CS Risk Arbitrage	2.0	26.9	7.7	6.4	3.9	4.4
HFRI Asset Wtd Composite	2.7	18.5	3.7	4.7	3.7	--
90-Day T-Bill + 5%	1.3	5.1	6.5	6.2	5.6	6.2

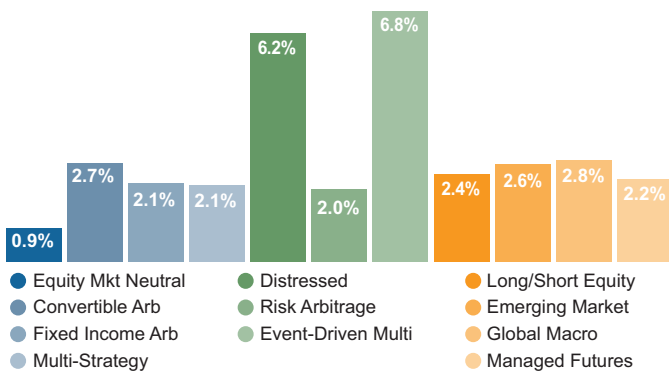
\*Net of fees. Sources: Bloomberg Barclays GSAM, Callan, Credit Suisse, Hedge Fund Research



Looking past these distracting headlines, the first quarter was broadly good, or at least benign, for hedge funds. Illustrating hedge fund performance without implementation costs, the Credit Suisse Hedge Fund Index (CS HFI) gained 2.9% in 1Q. As a proxy for live hedge fund portfolios, net of all fees, the median fund in the Callan Hedge Fund-of-Funds Database earned 2.1%. Over the last year, the median fund rebounded 27.1%.

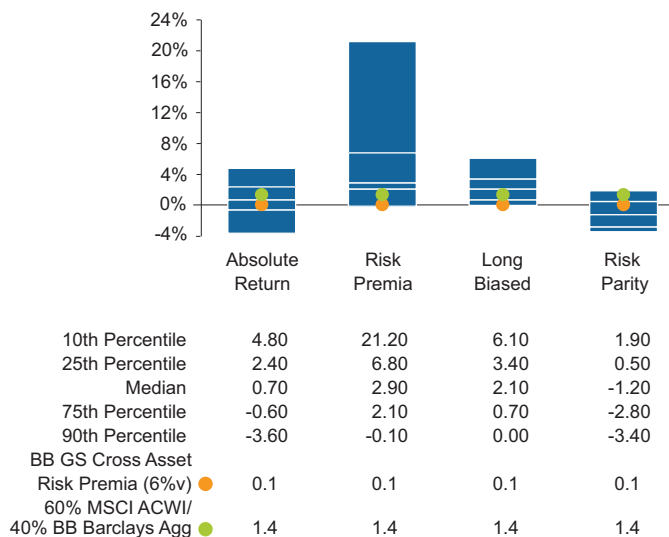
During this year's first quarter, all of CS HFI's underlying strategies added value. The best-performing strategy was Event-Driven Multi-Strategy (+6.8%), aided by unusually strong

### Credit Suisse Hedge Fund Strategy Returns



Source: Credit Suisse

### MAC Style Group Returns



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

issuance of IPOs, SPACs, and convertibles along with resilient M&A activity. Another strong-performing strategy was Distressed (+6.2%), which derived support from recovering market values in stressed industry assets. Strategies hedged against equity and rate risks yielded more modest, however less stressful, profits, such as Convertible Arb (+2.7%), Fixed Income Arb (+2.1%), and Risk Arb (+2.0%).

Representing 50 of the largest, broadly diversified hedge funds with low-beta exposure to equity markets, the average Callan Institutional Hedge Fund (CIHF) manager for the quarter earned 4.1%, net of fees. Within this peer group, the average Hedged Credit fund gained 6.1% while the average Hedged Cross-Asset fund advanced 3.7%. With minimal net equity exposure, the average Hedged Equity fund yielded 2.2%. The weakest sub-peer group was Hedged Rates (+1.5%).

Within the Callan Hedge Fund-of-Funds Database, market exposures did not notably differentiate a hedge fund portfolio's performance in the first quarter. Despite a strong U.S. equity rally, the median Callan Long/Short Equity FOF (+1.8%) lagged the Callan Absolute Return FOF (+3.2%) that benefited more from corporate events and recovering credits. With diversifying exposures to both non-directional and directional styles, the Core Diversified FOF netted 1.6%.

Within Callan's database of liquid alternative solutions, three of the four Multi-Asset Class (MAC) style groups generated positive returns, gross of fees, consistent with their underlying risk exposures. For example, the median Callan Risk Premia MAC rose 2.9%, aided by the rebounding value factor. Given a usually long equity bias within its dynamic asset allocation mandate, the Callan Long-Biased MAC (+2.1%) marginally outperformed the traditional benchmark of 60% MSCI ACWI and 40% Bloomberg Barclays US Aggregate Bond Index (+1.4%). Typically targeting equal risk-weighted allocations to major asset classes with leverage, the Callan Risk Parity MAC lost 1.2%, given its outsized dollar weight to bonds. As the most conservative MAC style focused on non-directional strategies of long and short asset class exposures, the Callan Absolute Return MAC edged ahead 0.7%.

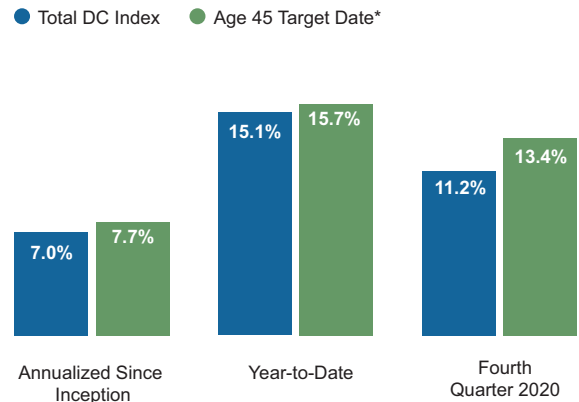
# Index Caps off 2020 with Third Straight Quarterly Gain

DEFINED CONTRIBUTION | Patrick Wisdom

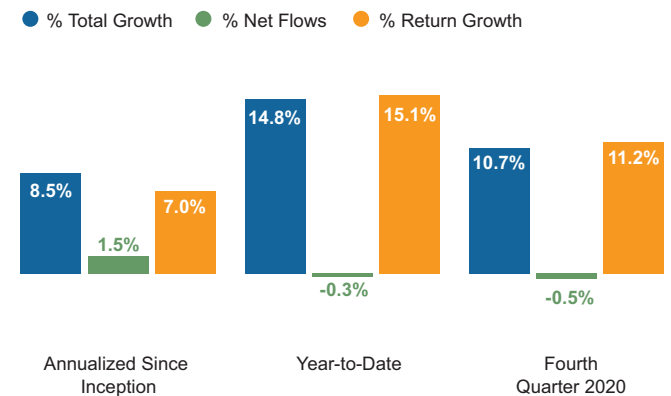
- The Callan DC Index™ rose 11.2% in 4Q20, the third straight quarter of gains after a 15.0% 1Q20 plunge, and increased 15.1% for the year. The Age 45 Target Date Fund (analogous to the 2040 vintage) posted a larger gain (13.4%), attributable to its higher allocation to equity, which outperformed fixed income during the quarter.
- Balances rose by 10.7%, the third straight quarter of gains. Robust investment returns (11.2%) were the sole driver of the growth; quarterly net flows (-0.5%) had a negative effect.
- Target date funds, uncharacteristically, saw low quarterly net inflows of only 0.6%.
- Relatively safer asset classes, such as stable value (66.5%) and U.S. fixed income (9.8%), received sizable net inflows.
- Global equity received its largest-ever quarterly net inflows (6.5%). Conversely, U.S. large cap (-47.1%) and U.S. small/mid cap (-26.4%) had the largest percentage of net outflows.
- Turnover (i.e., net transfer activity levels within DC plans) declined from the previous quarter's 0.75% to 0.14%, the lowest figure since 3Q18.
- The overall allocation to equity increased to 70.5% from the previous quarter's 68.8%, despite the net outflows in U.S. large cap and small/mid cap.
- After the largest percentage decrease in allocation the previous quarter, U.S. small/mid cap had the biggest increase in 4Q, bringing the overall allocation to 8.2%.
- Despite sizable net inflows, stable value (9.1%) experienced the largest decrease in allocation, signaling the asset class was a relative underperformer. Similarly, U.S. fixed income (6.3%) had the second-largest decrease, while money market funds (1.4%) saw a modest reduction.
- The prevalence of a money market offering (47.4%) decreased by 1.7 percentage points after rising by a similar amount the previous quarter. Many more DC plans continue to offer a stable value option (75.9%).

*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 (4Q20)

(Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Stable Value	66.54%
U.S. Fixed Income	9.77%
U.S. Smid Cap	-26.40%
U.S. Large Cap	-47.10%
<b>Total Turnover**</b>	<b>0.14%</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.



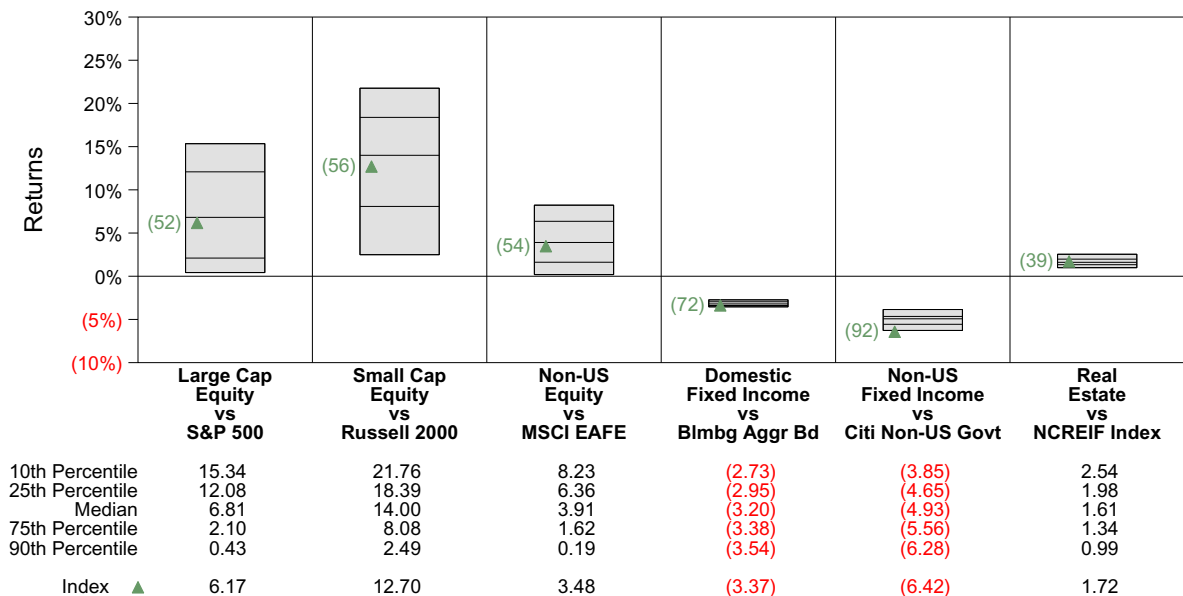
## Market Overview

### Active Management vs Index Returns

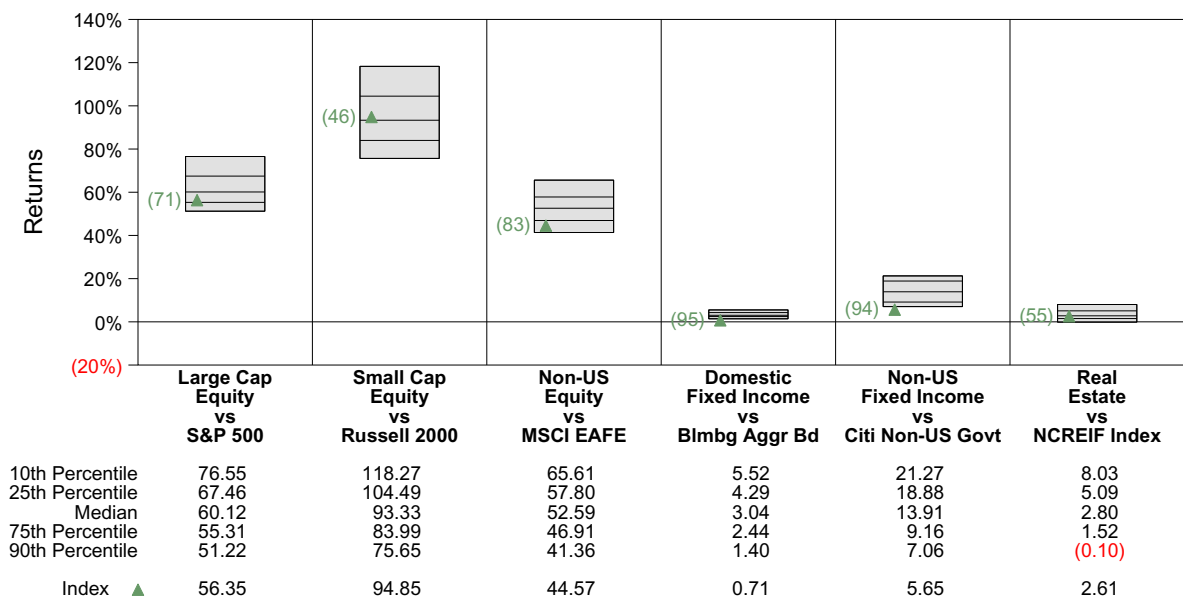
#### Market Overview

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 March 31, 2021



#### Range of Separate Account Manager Returns by Asset Class One Year Ended March 31, 2021

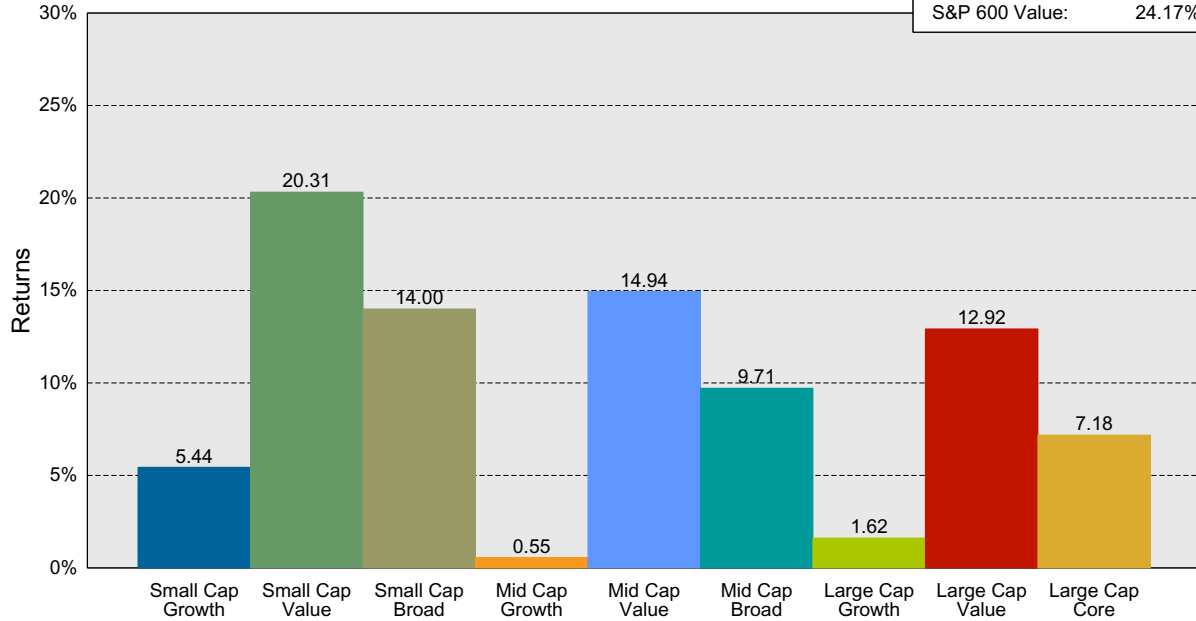


## Domestic Equity Active Management Overview

U.S. equity indices delivered mostly positive results during the first quarter; the Russell MidCap Growth was the lone exception with a 0.6% loss. The S&P 500 Index (+6.2%) was led by Energy (+30.9%) and Financials (+16.0%), while Information Technology (+2.0%) and Consumer Staples (+1.1%) lagged. Value sharply outperformed growth; R1000V: +11.3%; R1000G: +0.9%. Value stocks have underperformed growth stocks since the market peak in February 2020, but the gap has narrowed significantly over the last two quarters. Small cap stocks sharply outperformed large cap during the quarter (R2000: +12.7%; R1000: +5.9%), benefiting from less exposure to the Technology sector as well as strong performance from Retail.

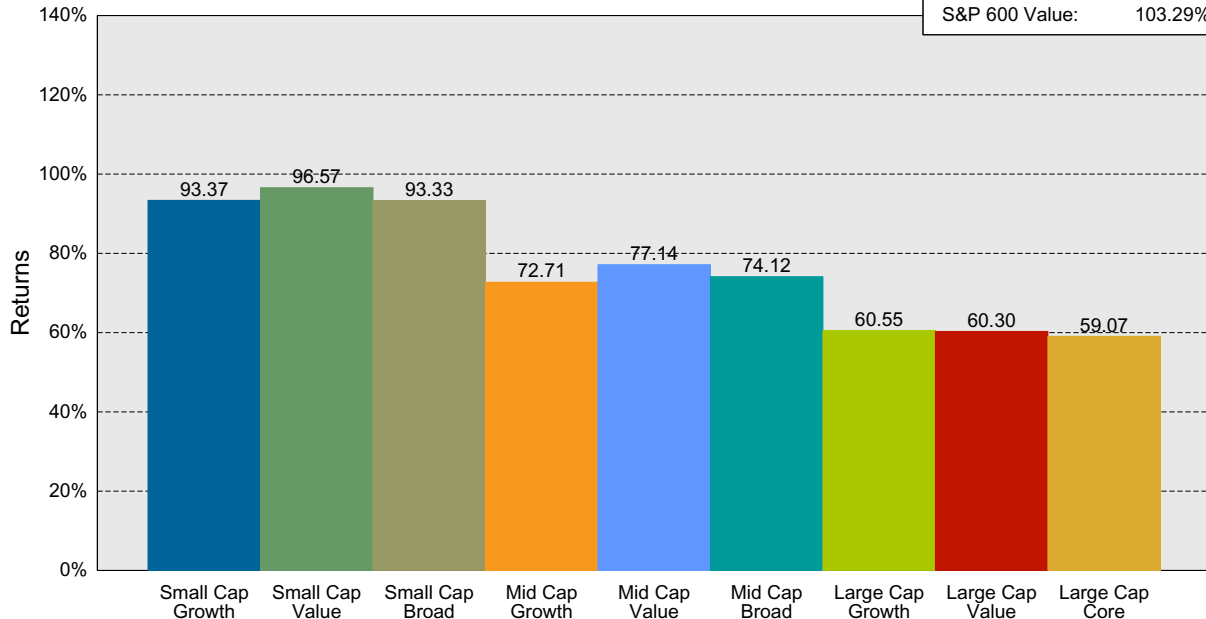
S&P 500:	6.17%
S&P 500 Growth:	2.12%
S&P 500 Value:	10.77%
S&P Mid Cap:	13.47%
S&P 600:	18.24%
S&P 600 Growth:	12.27%
S&P 600 Value:	24.17%

### Separate Account Style Group Median Returns for Quarter Ended March 31, 2021



S&P 500:	56.35%
S&P 500 Growth:	59.43%
S&P 500 Value:	50.37%
S&P Mid Cap:	83.46%
S&P 600:	95.33%
S&P 600 Growth:	86.78%
S&P 600 Value:	103.29%

### Separate Account Style Group Median Returns for One Year Ended March 31, 2021

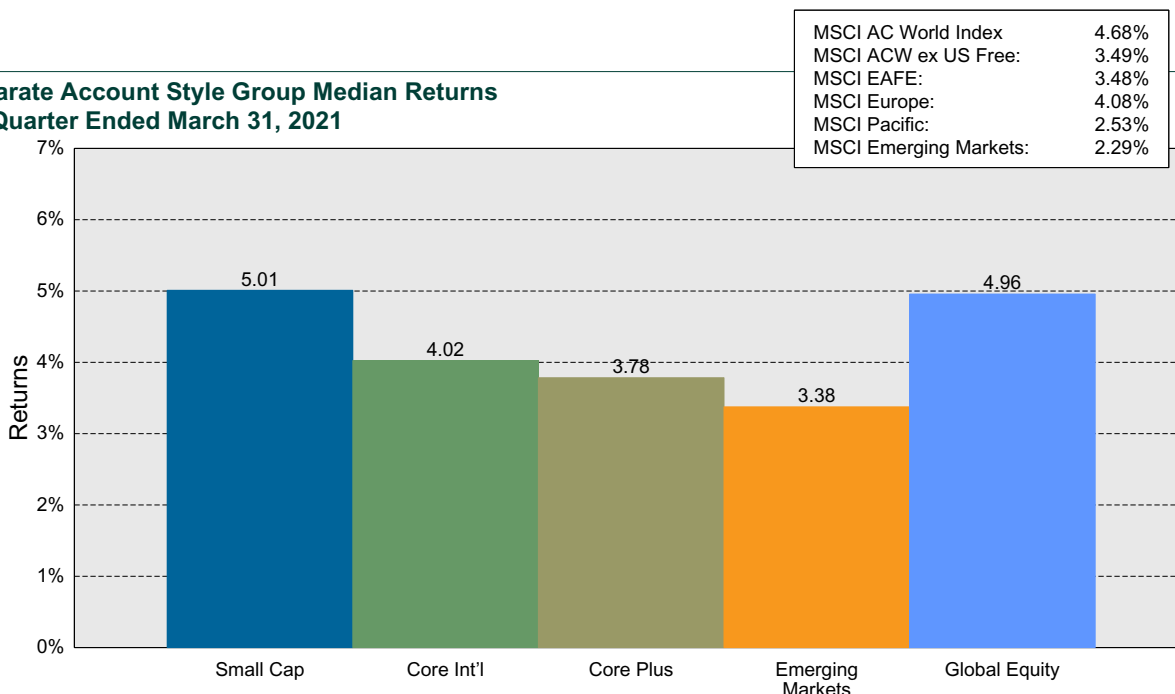


## International Equity Active Management Overview

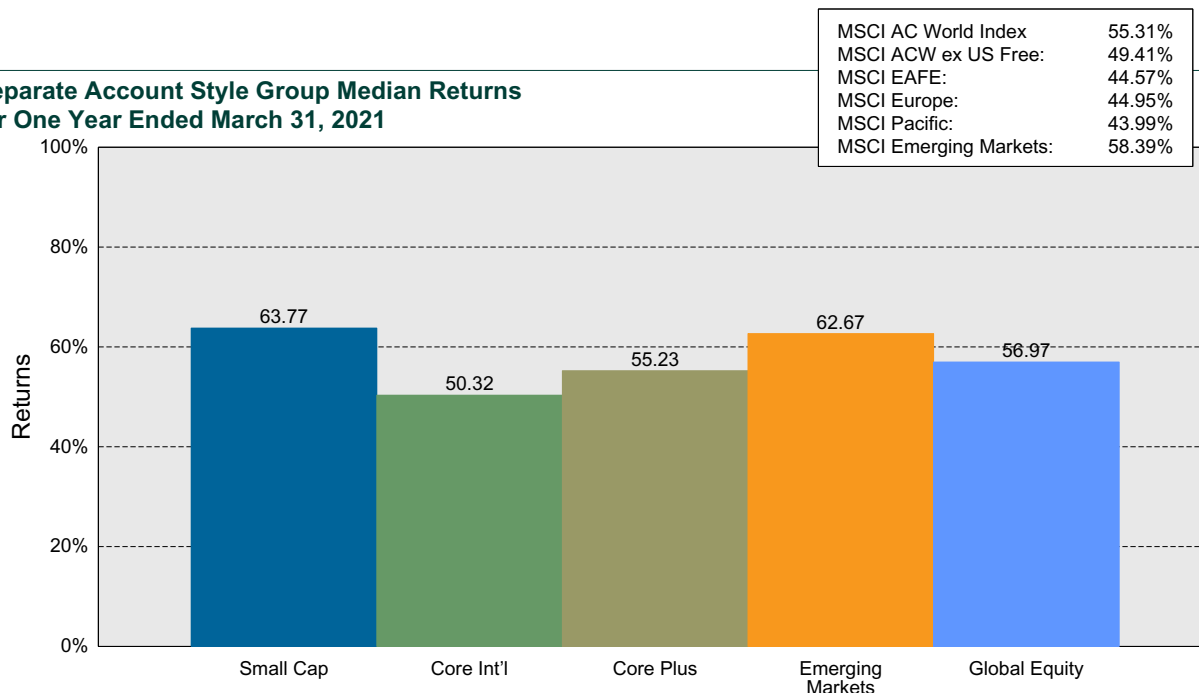
Global ex-U.S. indices posted positive results but generally lagged the U.S., due largely to U.S. dollar strength. The MSCI ACWI ex-USA Index gained 3.5% but was up 6.5% in local currency terms. The greenback gained 6.6% vs. the yen and nearly 4% vs. the euro over the quarter on bright prospects for economic growth in the U.S. and rising interest rates. The U.K. (+6.2%) delivered relatively strong results while Europe (+3.5%) and Japan (+1.6%) lagged. As in the U.S., small cap stocks outperformed large; value outperformed growth; and Financials did especially well.

Emerging markets lagged developed markets in the first quarter; the MSCI Emerging Markets Index gained 2.3% and 4.0% in local terms. China (-0.4%) and Brazil (-10.0%) were laggards as President Xi intensified regulation of China's tech sector, pressuring share prices, and Brazil struggled to contain COVID-19. Taiwan (+10.9%) was a top performer; the country is up more than 90% over the last 12 months, boosted by its heavy weighting in and strong performance from Technology stocks. In contrast, South Korea posted a muted 1.6% gain.

### Separate Account Style Group Median Returns for Quarter Ended March 31, 2021



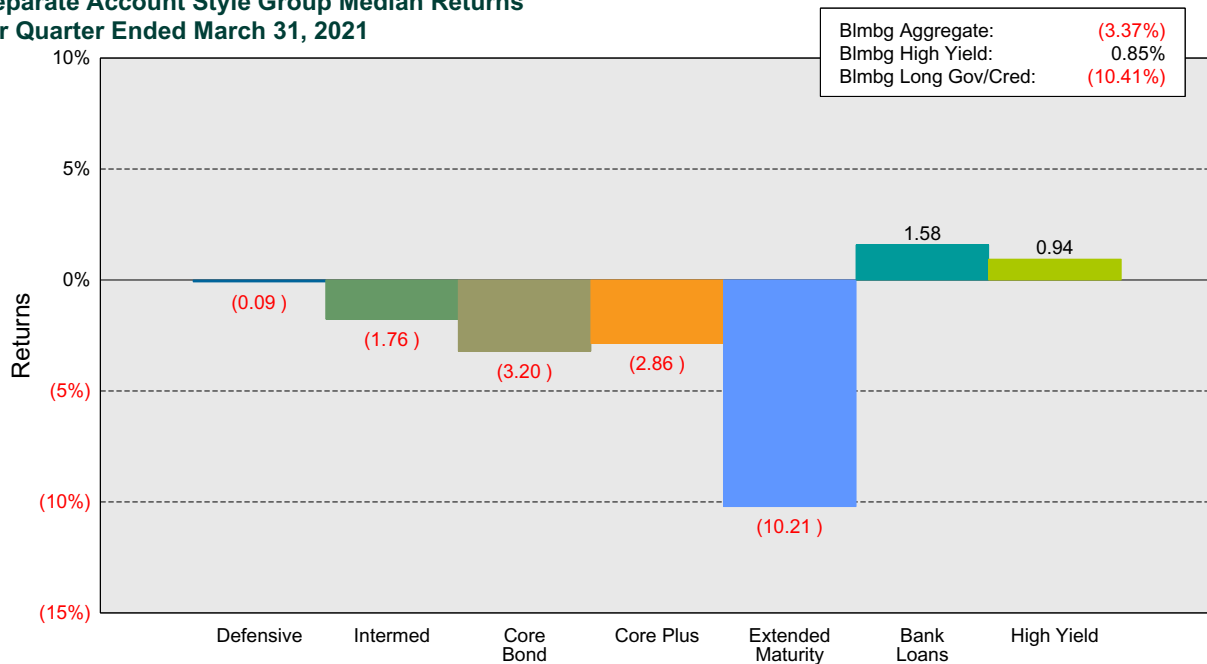
### Separate Account Style Group Median Returns for One Year Ended March 31, 2021



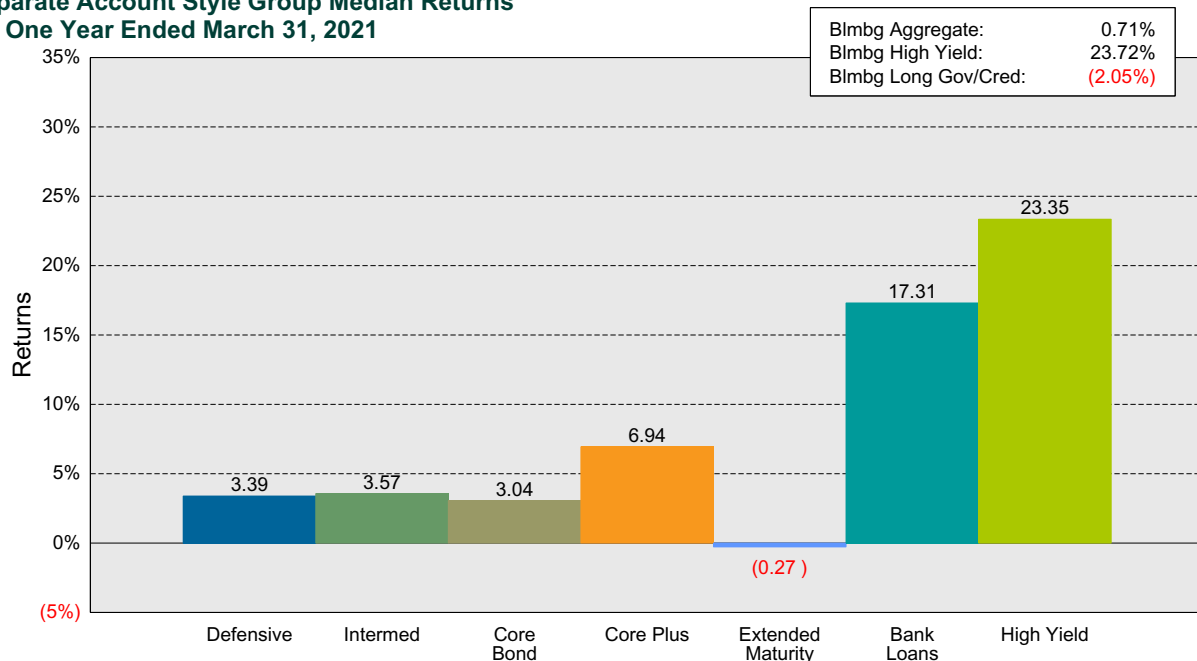
## Domestic Fixed Income Active Management Overview

Concerns over future inflation drove the 10-year U.S. Treasury yield to an intraday high of 1.77% in March, a 15-month high, before closing the quarter at 1.74%, up from 0.93% at year-end. The Bloomberg Barclays US Treasury Index fell 4.3%, and the long-term US Treasury Index (-13.5%) suffered its harshest decline since 1980. TIPS (-1.5%), outperformed nominal Treasuries as 10-year breakeven spreads widened from 1.99% at year-end to 2.37% as of March 31. The Bloomberg Barclays US Aggregate Bond Index fell 3.4%, with spread sectors outperforming Treasuries and lower quality faring the best. High yield corporates posted a 0.8% gain, as measured by Bloomberg Barclays, amid a record-making spate of issuance. Bank loans, which have floating rate coupons and a relatively short duration, gained 1.8% (S&P LSTA).

### Separate Account Style Group Median Returns for Quarter Ended March 31, 2021



### Separate Account Style Group Median Returns for One Year Ended March 31, 2021



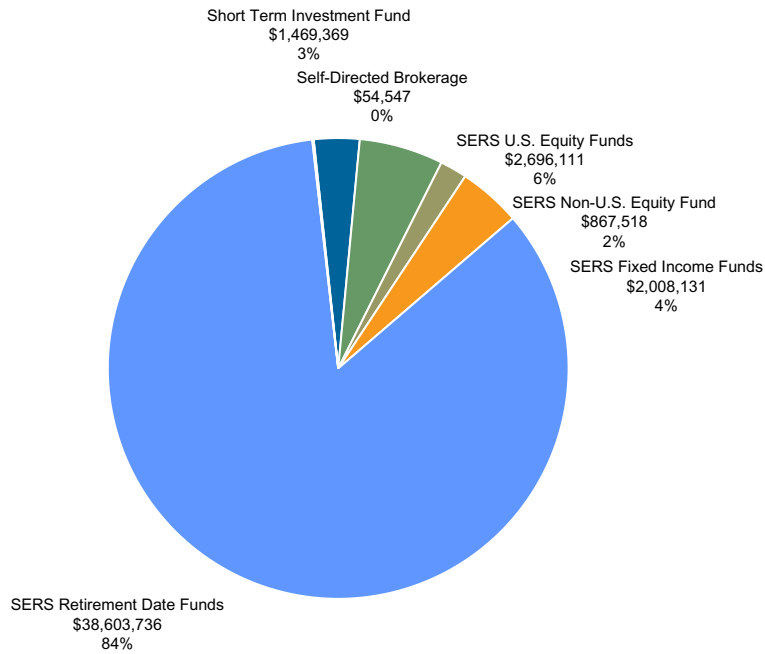




## Changes in Investment Fund Balances Period Ended March 31, 2021

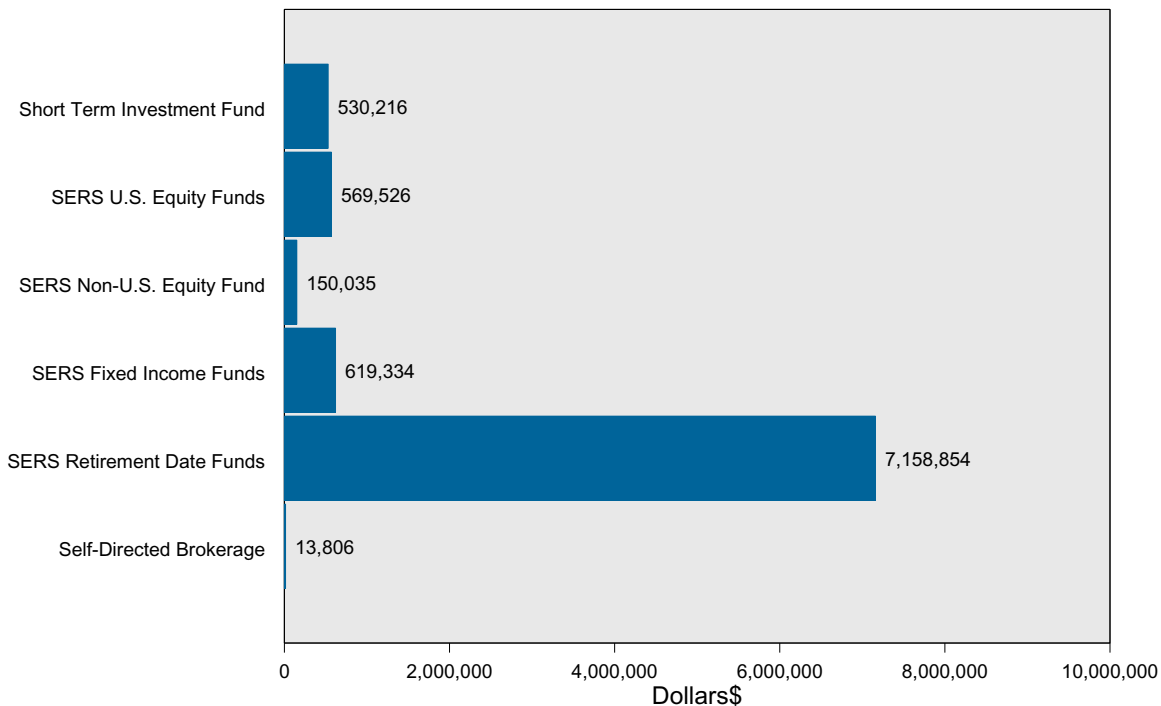
### Allocation Across Investment Options

The chart below illustrates the allocation of the aggregate fund assets across the various investment options for the quarter ended March 31, 2021.



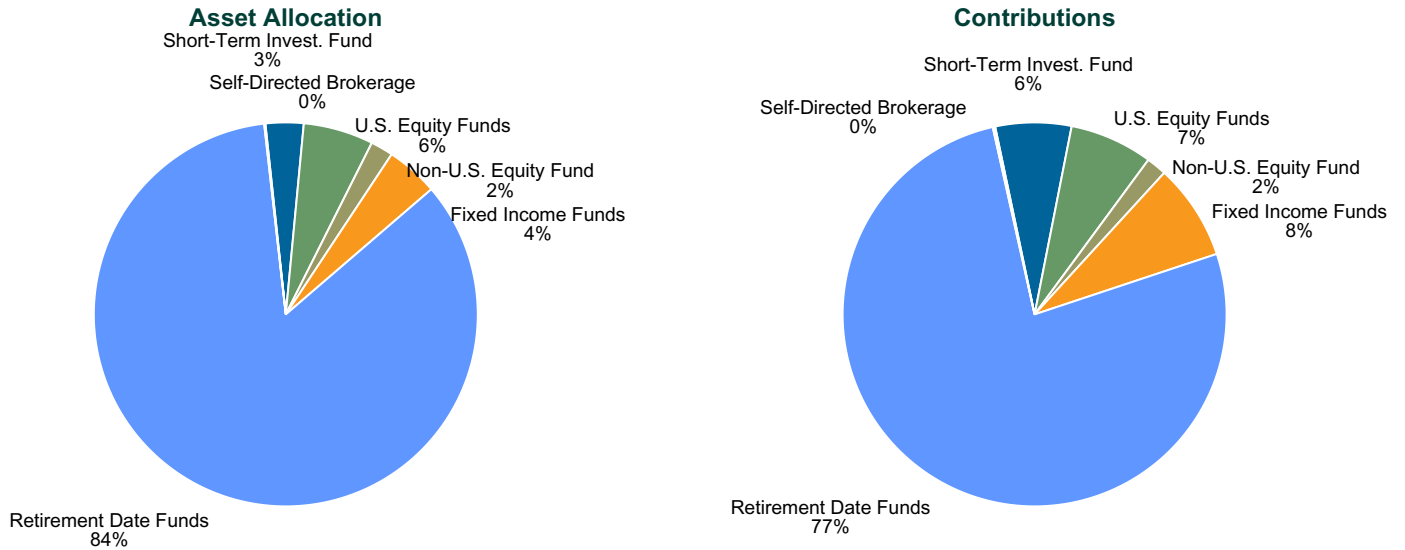
### Changes in Fund Values

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

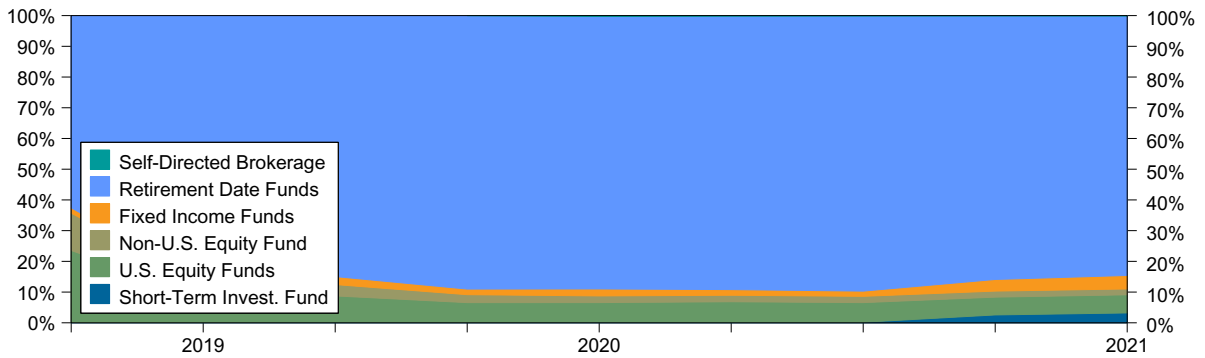


## Asset Allocation

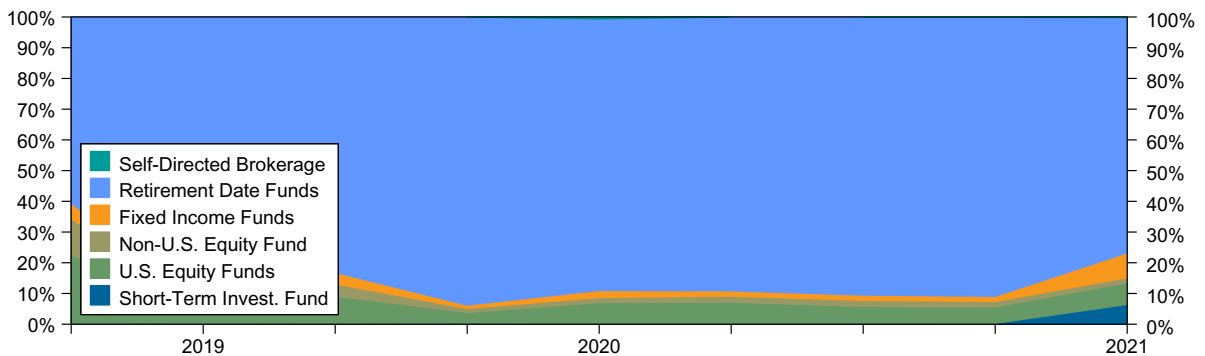
The charts below illustrate the historical asset allocation of the fund as well as the historical allocations of contributions to the fund. The pie charts on the top show the most recent allocations of both assets and contributions which include exchanges and transfers within the plan. The middle chart 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 March 31, 2021, with the distribution as of December 31, 2020. 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

	March 31, 2021			December 31, 2020		
	Market Value	% of Total	Net New Inv.	Inv. Return	Market Value	% of Total
<b>SERS Retirement Date Funds</b>	<b>\$38,603,736</b>	<b>87.28%</b>	<b>\$5,792,266</b>	<b>\$1,366,588</b>	<b>\$31,444,881</b>	<b>88.04%</b>
SERS Post Retirement Fund	684,567	1.55%	119,662	1,742	563,163	1.58%
SERS 2025 Retirement Fund	1,804,071	4.08%	327,570	17,838	1,458,663	4.08%
SERS 2030 Retirement Fund	4,043,672	9.14%	567,244	76,523	3,399,905	9.52%
SERS 2035 Retirement Fund	4,012,900	9.07%	645,933	107,108	3,259,859	9.13%
SERS 2040 Retirement Fund	3,979,091	9.00%	660,372	135,120	3,183,599	8.91%
SERS 2045 Retirement Fund	5,064,220	11.45%	508,431	210,352	4,345,437	12.17%
SERS 2050 Retirement Fund	5,476,107	12.38%	799,819	236,424	4,439,865	12.43%
SERS 2055 Retirement Fund	5,299,495	11.98%	889,649	225,678	4,184,167	11.71%
SERS 2060 Retirement Fund	5,255,900	11.88%	776,613	228,422	4,250,866	11.90%
SERS 2065 Retirement Fund	2,983,712	6.75%	496,974	127,381	2,359,357	6.61%
<b>SERS U.S. Equity</b>	<b>\$2,696,111</b>	<b>6.10%</b>	<b>\$426,776</b>	<b>\$142,750</b>	<b>\$2,126,584</b>	<b>5.95%</b>
SERS U.S. Large Company Idx Fund	1,669,371	3.77%	210,048	88,136	1,371,187	3.84%
SERS U.S. All Company Idx Fund	630,448	1.43%	142,933	30,957	456,557	1.28%
SERS U.S. SMID Company Idx Fund	396,292	0.90%	73,795	23,657	298,840	0.84%
<b>SERS Non-U.S. Equity</b>						
SERS Global Non-U.S. Index Fund	867,518	1.96%	124,927	25,108	717,483	2.01%
<b>SERS Fixed Income</b>	<b>\$2,008,131</b>	<b>4.54%</b>	<b>\$632,267</b>	<b>\$(12,933)</b>	<b>\$1,388,797</b>	<b>3.89%</b>
SERS Short Term Investment Fund	1,469,369	3.32%	529,887	329	939,153	2.63%
SERS U.S. Short Term Bond Idx Fund	56,813	0.13%	4,305	(68)	52,576	0.15%
SERS U.S. TIPS Index Fund	104,197	0.24%	26,095	(1,386)	79,488	0.22%
SERS U.S. Bond Index Fund	377,752	0.85%	71,980	(11,807)	317,580	0.89%
<b>Self-Directed Brokerage</b>						
SERS Self-Directed Brokerage	54,547	0.12%	13,927	(121)	40,741	0.11%
<b>Total Fund</b>	<b>\$44,230,042</b>	<b>100.0%</b>	<b>\$6,990,163</b>	<b>\$1,521,393</b>	<b>\$35,718,486</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 March 31, 2021. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2021

	Last Quarter	1 Year	Last 3 Years	Last 5 Years
<b>Net Performance</b>				
<b>Target Date Funds</b>				
SERS Post Retirement Fund	0.36%	21.79%	8.21%	7.45%
BlackRock Post Retirement Index	0.37%	21.68%	8.17%	7.40%
Callan Tgt Date 2000-2010	0.59%	20.50%	7.57%	7.32%
SERS 2025 Retirement Fund	1.21%	28.04%	8.99%	8.95%
BlackRock 2025 Index	1.24%	27.95%	8.94%	8.86%
Callan Target Date 2025	1.91%	30.95%	9.16%	9.34%
SERS 2030 Retirement Fund	2.18%	34.68%	9.92%	10.01%
BlackRock 2030 Index	2.20%	34.60%	9.86%	9.91%
Callan Target Date 2030	2.74%	36.29%	9.97%	10.41%
SERS 2035 Retirement Fund	3.14%	41.32%	10.81%	11.05%
BlackRock 2035 Index	3.14%	41.24%	10.74%	10.91%
Callan Target Date 2035	3.64%	42.51%	10.71%	11.25%
SERS 2040 Retirement Fund	3.99%	47.64%	11.59%	11.95%
BlackRock 2040 Index	3.97%	47.49%	11.50%	11.79%
Callan Target Date 2040	4.48%	47.34%	11.19%	11.94%
SERS 2045 Retirement Fund	4.68%	52.70%	12.22%	12.60%
BlackRock 2045 Index	4.65%	52.53%	12.10%	12.41%
Callan Target Date 2045	4.93%	51.54%	11.54%	12.47%
SERS 2050 Retirement Fund	5.04%	55.25%	12.54%	12.88%
BlackRock 2050 Index	5.00%	55.08%	12.43%	12.70%
Callan Target Date 2050	5.13%	52.30%	11.80%	12.57%
SERS 2055 Retirement Fund	5.10%	55.61%	12.61%	12.91%
BlackRock 2055 Index	5.07%	55.54%	12.51%	12.75%
Callan Target Date 2055	5.16%	53.73%	11.87%	12.73%
SERS 2060 Retirement Fund	5.09%	55.58%	12.60%	12.89%
BlackRock 2060 Index	5.07%	55.53%	12.51%	12.75%
Callan Target Date 2060	5.25%	53.76%	12.04%	12.89%
SERS 2065 Retirement Fund	5.06%	55.34%	-	-
BlackRock 2065 Index	5.07%	55.53%	-	-
Callan Target Date 2065	5.19%	54.43%	12.07%	-

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended March 31, 2021. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 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	5.94%	6.02%	5.84%	-
BlackRock Post Retirement Index	5.89%	5.99%	5.81%	5.90%
Callan Tgt Date 2000-2010	5.81%	6.00%	5.02%	5.15%
SERS 2025 Retirement Fund	6.94%	7.11%	-	-
BlackRock 2025 Index	6.86%	7.05%	6.09%	6.11%
Callan Target Date 2025	7.21%	7.59%	6.27%	-
SERS 2030 Retirement Fund	7.66%	7.75%	6.49%	-
BlackRock 2030 Index	7.55%	7.67%	6.42%	6.37%
Callan Target Date 2030	7.95%	8.30%	6.49%	6.52%
SERS 2035 Retirement Fund	8.34%	8.35%	-	-
BlackRock 2035 Index	8.21%	8.24%	6.71%	6.58%
Callan Target Date 2035	8.53%	8.88%	6.94%	-
SERS 2040 Retirement Fund	8.93%	8.87%	7.06%	-
BlackRock 2040 Index	8.78%	8.74%	6.95%	6.75%
Callan Target Date 2040	9.05%	9.24%	7.15%	6.92%
SERS 2045 Retirement Fund	9.36%	9.27%	-	-
BlackRock 2045 Index	9.18%	9.13%	7.12%	6.91%
Callan Target Date 2045	9.29%	9.43%	7.60%	-
SERS 2050 Retirement Fund	9.55%	9.48%	-	-
BlackRock 2050 Index	9.39%	9.35%	7.35%	7.58%
Callan Target Date 2050	9.46%	9.67%	7.26%	-
SERS 2055 Retirement Fund	9.57%	9.64%	-	-
BlackRock 2055 Index	9.42%	9.48%	-	-
Callan Target Date 2055	9.59%	9.74%	-	-

\*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 March 31, 2021. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2021

	Last Quarter	1 Year	Last 3 Years	Last 5 Years
<b>Net Performance</b>				
<b>Domestic Equity</b>				
SERS U.S. Large Company Index Fund	6.18%	56.39%	16.80%	16.31%
S&P 500 Index	6.17%	56.35%	16.78%	16.29%
Callan Lg Cap Broad MF	6.52%	58.21%	16.29%	15.88%
SERS U.S. All Company Index Fund	6.32%	62.23%	17.04%	16.58%
Russell 3000 Index	6.35%	62.53%	17.12%	16.64%
Callan Multi Cap Brd MF	6.33%	61.62%	14.84%	14.78%
SERS U.S. SMID Company Idx Fund	7.97%	98.05%	18.28%	18.07%
Dow Jones US Completion	7.73%	97.82%	18.06%	17.85%
Callan SMID Broad MFs	7.76%	82.79%	15.63%	16.35%
<b>International Equity</b>				
SERS Global Non-U.S. Index Fund	3.60%	51.00%	6.77%	10.12%
MSCI ACWI ex US	3.49%	49.41%	6.51%	9.76%
Callan Non US Equity MFs	3.62%	53.39%	6.22%	9.24%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	0.03%	0.30%	1.56%	1.33%
3-month Treasury Bill	0.02%	0.12%	1.49%	1.19%
Callan Cash Database(1)	0.05%	0.73%	1.75%	1.46%
SERS U.S. Short Term Bond Idx Fund	(0.06%)	1.54%	3.04%	-
Blmbg Gov/Cred 1-3 Yr	(0.04%)	1.57%	3.04%	2.00%
Callan Short US Govt MFs	(0.36%)	0.69%	2.77%	1.65%
SERS U.S. TIPS Index Fund	(1.47%)	7.52%	5.67%	-
Blmbg US TIPS	(1.47%)	7.54%	5.68%	3.86%
Callan TIPS MFs	(1.29%)	9.23%	5.27%	3.79%
SERS U.S. Bond Index Fund	(3.39%)	0.63%	4.66%	3.09%
Blmbg Aggregate	(3.37%)	0.71%	4.65%	3.10%
Callan Core Bond MFs	(3.07%)	3.90%	5.22%	3.69%

(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 March 31, 2021. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 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	13.61%	13.93%	10.06%	8.51%
S&P 500 Index	13.59%	13.91%	10.02%	8.47%
Callan Lg Cap Broad MF	12.68%	13.10%	9.93%	8.35%
SERS U.S. All Company Index Fund	13.41%	13.77%	-	-
Russell 3000 Index	13.44%	13.79%	10.05%	8.85%
Callan Multi Cap Brd MF	11.44%	12.04%	8.97%	8.62%
SERS U.S. SMID Company Idx Fund	12.67%	13.23%	10.57%	11.12%
Dow Jones US Completion	12.47%	13.01%	10.36%	10.93%
Callan SMID Broad MFs	11.47%	11.77%	9.84%	10.39%
<b>International Equity</b>				
SERS Global Non-U.S. Index Fund	5.52%	5.19%	-	-
MSCI ACWI ex US	5.26%	4.93%	4.48%	6.16%
Callan Non US Equity MFs	5.36%	5.94%	4.86%	6.15%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	1.01%	0.77%	1.34%	-
3-month Treasury Bill	0.87%	0.63%	1.16%	1.43%
Callan Cash Database(1)	1.16%	0.91%	1.55%	1.78%
Blmbg Gov/Cred 1-3 Yr	1.74%	1.57%	2.53%	2.80%
Callan Short US Govt MFs	1.55%	1.39%	2.46%	2.77%
Blmbg US TIPS	3.42%	3.44%	4.37%	5.08%
Callan TIPS MFs	3.06%	2.98%	4.14%	4.77%
SERS U.S. Bond Index Fund	3.30%	3.40%	4.25%	4.46%
Blmbg Aggregate	3.31%	3.44%	4.29%	4.50%
Callan Core Bond MFs	3.56%	3.76%	4.60%	4.68%

(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- 3/2021	2020	2019	2018	2017
<b>Net Performance</b>					
<b>Target Date Funds</b>					
SERS Post Retirement Fund	0.36%	11.97%	15.65%	(3.47%)	10.18%
BlackRock Post Retirement Index	0.37%	11.80%	15.63%	(3.48%)	10.10%
Callan Tgt Date 2000-2010	0.59%	10.59%	14.39%	(3.15%)	10.09%
SERS 2025 Retirement Fund	1.21%	12.19%	18.60%	(4.86%)	13.91%
BlackRock 2025 Index	1.24%	12.01%	18.56%	(4.90%)	13.75%
Callan Target Date 2025	1.91%	12.58%	18.51%	(5.19%)	14.94%
SERS 2030 Retirement Fund	2.18%	12.88%	20.80%	(5.71%)	15.83%
BlackRock 2030 Index	2.20%	12.72%	20.70%	(5.76%)	15.64%
Callan Target Date 2030	2.74%	13.23%	20.43%	(6.12%)	16.77%
SERS 2035 Retirement Fund	3.14%	13.58%	22.84%	(6.50%)	17.72%
BlackRock 2035 Index	3.14%	13.44%	22.72%	(6.58%)	17.48%
Callan Target Date 2035	3.64%	14.28%	22.17%	(7.03%)	18.51%
SERS 2040 Retirement Fund	3.99%	14.14%	24.71%	(7.22%)	19.38%
BlackRock 2040 Index	3.97%	13.98%	24.62%	(7.33%)	19.09%
Callan Target Date 2040	4.48%	14.91%	23.62%	(7.89%)	19.84%
SERS 2045 Retirement Fund	4.68%	14.83%	26.05%	(7.85%)	20.47%
BlackRock 2045 Index	4.65%	14.65%	25.90%	(7.99%)	20.15%
Callan Target Date 2045	4.93%	15.52%	24.60%	(8.21%)	20.63%
SERS 2050 Retirement Fund	5.04%	15.20%	26.60%	(8.11%)	20.85%
BlackRock 2050 Index	5.00%	15.07%	26.48%	(8.26%)	20.55%
Callan Target Date 2050	5.13%	15.71%	24.89%	(8.44%)	20.72%
SERS 2055 Retirement Fund	5.10%	15.32%	26.67%	(8.13%)	20.82%
BlackRock 2055 Index	5.07%	15.18%	26.58%	(8.28%)	20.55%
Callan Target Date 2055	5.16%	15.83%	24.97%	(8.44%)	21.10%
SERS 2060 Retirement Fund	5.09%	15.31%	26.66%	(8.14%)	20.77%
BlackRock 2060 Index	5.07%	15.19%	26.58%	(8.28%)	20.55%
Callan Target Date 2060	5.25%	15.90%	25.08%	(8.35%)	21.15%
SERS 2065 Retirement Fund	5.06%	15.15%	-	-	-
BlackRock 2065 Index	5.07%	15.19%	-	-	-
Callan Target Date 2065	5.19%	16.41%	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- 3/2021	2020	2019	2018	2017
<b>Net Performance</b>					
<b>Domestic Equity</b>					
SERS U.S. Large Company Index Fund	6.18%	18.43%	31.51%	(4.39%)	21.84%
S&P 500 Index	6.17%	18.40%	31.49%	(4.38%)	21.83%
Callan Lg Cap Broad MF	6.52%	18.47%	30.14%	(4.54%)	23.56%
SERS U.S. All Company Index Fund	6.32%	21.20%	30.52%	(5.29%)	21.09%
Russell 3000 Index	6.35%	20.89%	31.02%	(5.24%)	21.13%
Callan Multi Cap Brd MF	6.33%	17.19%	29.12%	(6.82%)	20.75%
SERS U.S. SMID Company Idx Fund	7.97%	32.03%	28.20%	(9.32%)	18.21%
Dow Jones US Completion	7.73%	32.17%	27.94%	(9.57%)	18.12%
Callan SMID Broad MFs	7.76%	24.00%	29.40%	(8.69%)	17.14%
<b>International Equity</b>					
SERS Global Non-U.S. Index Fund	3.60%	11.15%	21.77%	(13.86%)	27.63%
MSCI ACWI ex US	3.49%	10.65%	21.51%	(14.20%)	27.19%
Callan Non US Equity MFs	3.62%	11.12%	22.83%	(15.04%)	26.90%
<b>Domestic Fixed Income</b>					
SERS Short Term Investment Fund	0.03%	0.67%	2.31%	2.09%	1.08%
3-month Treasury Bill	0.02%	0.67%	2.28%	1.87%	0.86%
Callan Cash Database(1)	0.05%	1.09%	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	(0.04%)	3.33%	4.03%	1.60%	0.84%
Callan Short US Govt MFs	(0.36%)	3.57%	3.52%	1.15%	0.59%
SERS U.S. TIPS Index Fund	(1.47%)	11.00%	8.40%	-	-
Blmbg US TIPS	(1.47%)	10.99%	8.43%	(1.26%)	3.01%
Callan TIPS MFs	(1.29%)	10.29%	8.26%	(1.53%)	3.12%
SERS U.S. Bond Index Fund	(3.39%)	7.56%	8.69%	0.02%	3.53%
Blmbg Aggregate	(3.37%)	7.51%	8.72%	0.01%	3.54%
Callan Core Bond MFs	(3.07%)	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 March 31, 2021. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2021

	Last Quarter	1 Year	Last 3 Years	Last 5 Years
<b>Gross Performance</b>				
<b>Target Date Funds</b>				
SERS Post Retirement Fund	0.37%	21.87%	8.28%	7.52%
BlackRock Post Retirement Index	0.37%	21.68%	8.17%	7.40%
Callan Tgt Date 2000-2010	0.59%	20.50%	7.57%	7.32%
SERS 2025 Retirement Fund	1.23%	28.13%	9.07%	9.02%
BlackRock 2025 Index	1.24%	27.95%	8.94%	8.86%
Callan Target Date 2025	1.91%	30.95%	9.16%	9.34%
SERS 2030 Retirement Fund	2.20%	34.77%	9.99%	10.09%
BlackRock 2030 Index	2.20%	34.60%	9.86%	9.91%
Callan Target Date 2030	2.74%	36.29%	9.97%	10.41%
SERS 2035 Retirement Fund	3.15%	41.41%	10.89%	11.12%
BlackRock 2035 Index	3.14%	41.24%	10.74%	10.91%
Callan Target Date 2035	3.64%	42.51%	10.71%	11.25%
SERS 2040 Retirement Fund	4.00%	47.74%	11.66%	12.02%
BlackRock 2040 Index	3.97%	47.49%	11.50%	11.79%
Callan Target Date 2040	4.48%	47.34%	11.19%	11.94%
SERS 2045 Retirement Fund	4.69%	52.80%	12.30%	12.67%
BlackRock 2045 Index	4.65%	52.53%	12.10%	12.41%
Callan Target Date 2045	4.93%	51.54%	11.54%	12.47%
SERS 2050 Retirement Fund	5.06%	55.35%	12.61%	12.95%
BlackRock 2050 Index	5.00%	55.08%	12.43%	12.70%
Callan Target Date 2050	5.13%	52.30%	11.80%	12.57%
SERS 2055 Retirement Fund	5.12%	55.71%	12.68%	12.98%
BlackRock 2055 Index	5.07%	55.54%	12.51%	12.75%
Callan Target Date 2055	5.16%	53.73%	11.87%	12.73%
SERS 2060 Retirement Fund	5.10%	55.68%	12.67%	12.97%
BlackRock 2060 Index	5.07%	55.53%	12.51%	12.75%
Callan Target Date 2060	5.25%	53.76%	12.04%	12.89%
SERS 2065 Retirement Fund	5.07%	55.43%	-	-
BlackRock 2065 Index	5.07%	55.53%	-	-
Callan Target Date 2065	5.19%	54.43%	12.07%	-

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended March 31, 2021. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 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	6.01%	6.09%	5.91%	-
BlackRock Post Retirement Index	5.89%	5.99%	5.81%	5.90%
Callan Tgt Date 2000-2010	5.81%	6.00%	5.02%	5.15%
SERS 2025 Retirement Fund	7.01%	7.18%	-	-
BlackRock 2025 Index	6.86%	7.05%	6.09%	6.11%
Callan Target Date 2025	7.21%	7.59%	6.27%	-
SERS 2030 Retirement Fund	7.73%	7.82%	6.56%	-
BlackRock 2030 Index	7.55%	7.67%	6.42%	6.37%
Callan Target Date 2030	7.95%	8.30%	6.49%	6.52%
SERS 2035 Retirement Fund	8.41%	8.43%	-	-
BlackRock 2035 Index	8.21%	8.24%	6.71%	6.58%
Callan Target Date 2035	8.53%	8.88%	6.94%	-
SERS 2040 Retirement Fund	9.00%	8.94%	7.13%	-
BlackRock 2040 Index	8.78%	8.74%	6.95%	6.75%
Callan Target Date 2040	9.05%	9.24%	7.15%	6.92%
SERS 2045 Retirement Fund	9.43%	9.34%	-	-
BlackRock 2045 Index	9.18%	9.13%	7.12%	6.91%
Callan Target Date 2045	9.29%	9.43%	7.60%	-
SERS 2050 Retirement Fund	9.62%	9.56%	-	-
BlackRock 2050 Index	9.39%	9.35%	7.35%	7.58%
Callan Target Date 2050	9.46%	9.67%	7.26%	-
SERS 2055 Retirement Fund	9.65%	9.71%	-	-
BlackRock 2055 Index	9.42%	9.48%	-	-
Callan Target Date 2055	9.59%	9.74%	-	-

\*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 March 31, 2021. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2021

	Last Quarter	1 Year	Last 3 Years	Last 5 Years
<b>Gross Performance</b>				
<b>Domestic Equity</b>				
SERS U.S. Large Company Index Fund	6.18%	56.40%	16.80%	16.32%
S&P 500 Index	6.17%	56.35%	16.78%	16.29%
Callan Lg Cap Broad MF	6.52%	58.21%	16.29%	15.88%
SERS U.S. All Company Index Fund	6.32%	62.24%	17.05%	16.58%
Russell 3000 Index	6.35%	62.53%	17.12%	16.64%
Callan Multi Cap Brd MF	6.33%	61.62%	14.84%	14.78%
SERS U.S. SMID Company Idx Fund	7.97%	98.06%	18.28%	18.07%
Dow Jones US Completion	7.73%	97.82%	18.06%	17.85%
Callan SMID Broad MFs	7.76%	82.79%	15.63%	16.35%
<b>International Equity</b>				
SERS Global Non-U.S. Index Fund	3.61%	51.02%	6.78%	10.14%
MSCI ACWI ex US	3.49%	49.41%	6.51%	9.76%
Callan Non US Equity MFs	3.62%	53.39%	6.22%	9.24%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	0.03%	0.30%	1.56%	1.33%
3-month Treasury Bill	0.02%	0.12%	1.49%	1.19%
Callan Cash Database(1)	0.05%	0.73%	1.75%	1.46%
SERS U.S. Short Term Bond Idx Fund	(0.05%)	1.55%	3.04%	-
Blmbg Gov/Cred 1-3 Yr	(0.04%)	1.57%	3.04%	2.00%
Callan Short US Govt MFs	(0.36%)	0.69%	2.77%	1.65%
SERS U.S. TIPS Index Fund	(1.47%)	7.53%	5.67%	-
Blmbg US TIPS	(1.47%)	7.54%	5.68%	3.86%
Callan TIPS MFs	(1.29%)	9.23%	5.27%	3.79%
SERS U.S. Bond Index Fund	(3.39%)	0.64%	4.67%	3.09%
Blmbg Aggregate	(3.37%)	0.71%	4.65%	3.10%
Callan Core Bond MFs	(3.07%)	3.90%	5.22%	3.69%

(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 March 31, 2021. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 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	13.62%	13.94%	10.07%	8.52%
S&P 500 Index	13.59%	13.91%	10.02%	8.47%
Callan Lg Cap Broad MF	12.68%	13.10%	9.93%	8.35%
SERS U.S. All Company Index Fund	13.42%	13.78%	-	-
Russell 3000 Index	13.44%	13.79%	10.05%	8.85%
Callan Multi Cap Brd MF	11.44%	12.04%	8.97%	8.62%
SERS U.S. SMID Company Idx Fund	12.68%	13.24%	10.58%	11.12%
Dow Jones US Completion	12.47%	13.01%	10.35%	10.93%
Callan SMID Broad MFs	11.47%	11.77%	9.84%	10.39%
<b>International Equity</b>				
SERS Global Non-U.S. Index Fund	5.54%	5.20%	-	-
MSCI ACWI ex US	5.26%	4.93%	4.48%	6.16%
Callan Non US Equity MFs	5.36%	5.94%	4.86%	6.15%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	1.01%	0.77%	1.34%	-
3-month Treasury Bill	0.87%	0.63%	1.16%	1.43%
Callan Cash Database(1)	1.16%	0.91%	1.55%	1.78%
Blmbg Gov/Cred 1-3 Yr	1.74%	1.57%	2.53%	2.80%
Callan Short US Govt MFs	1.55%	1.39%	2.46%	2.77%
Blmbg US TIPS	3.42%	3.44%	4.37%	5.08%
Callan TIPS MFs	3.06%	2.98%	4.14%	4.77%
SERS U.S. Bond Index Fund	3.30%	3.41%	4.26%	4.46%
Blmbg Aggregate	3.31%	3.44%	4.29%	4.50%
Callan Core Bond MFs	3.56%	3.76%	4.60%	4.68%

(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- 3/2021	2020	2019	2018	2017
<b>Gross Performance</b>					
<b>Target Date Funds</b>					
SERS Post Retirement Fund	0.37%	12.04%	15.72%	(3.41%)	10.25%
BlackRock Post Retirement Index	0.37%	11.80%	15.63%	(3.48%)	10.10%
Callan Tgt Date 2000-2010	0.59%	10.59%	14.39%	(3.15%)	10.09%
SERS 2025 Retirement Fund	1.23%	12.26%	18.67%	(4.80%)	13.99%
BlackRock 2025 Index	1.24%	12.01%	18.56%	(4.90%)	13.75%
Callan Target Date 2025	1.91%	12.58%	18.51%	(5.19%)	14.94%
SERS 2030 Retirement Fund	2.20%	12.96%	20.86%	(5.63%)	15.91%
BlackRock 2030 Index	2.20%	12.72%	20.70%	(5.76%)	15.64%
Callan Target Date 2030	2.74%	13.23%	20.43%	(6.12%)	16.77%
SERS 2035 Retirement Fund	3.15%	13.65%	22.93%	(6.43%)	17.77%
BlackRock 2035 Index	3.14%	13.44%	22.72%	(6.58%)	17.48%
Callan Target Date 2035	3.64%	14.28%	22.17%	(7.03%)	18.51%
SERS 2040 Retirement Fund	4.00%	14.22%	24.80%	(7.17%)	19.45%
BlackRock 2040 Index	3.97%	13.98%	24.62%	(7.33%)	19.09%
Callan Target Date 2040	4.48%	14.91%	23.62%	(7.89%)	19.84%
SERS 2045 Retirement Fund	4.69%	14.90%	26.12%	(7.78%)	20.54%
BlackRock 2045 Index	4.65%	14.65%	25.90%	(7.99%)	20.15%
Callan Target Date 2045	4.93%	15.52%	24.60%	(8.21%)	20.63%
SERS 2050 Retirement Fund	5.06%	15.27%	26.70%	(8.05%)	20.94%
BlackRock 2050 Index	5.00%	15.07%	26.48%	(8.26%)	20.55%
Callan Target Date 2050	5.13%	15.71%	24.89%	(8.44%)	20.72%
SERS 2055 Retirement Fund	5.12%	15.40%	26.75%	(8.07%)	20.90%
BlackRock 2055 Index	5.07%	15.18%	26.58%	(8.28%)	20.55%
Callan Target Date 2055	5.16%	15.83%	24.97%	(8.44%)	21.10%
SERS 2060 Retirement Fund	5.10%	15.38%	26.74%	(8.08%)	20.85%
BlackRock 2060 Index	5.07%	15.19%	26.58%	(8.28%)	20.55%
Callan Target Date 2060	5.25%	15.90%	25.08%	(8.35%)	21.15%
SERS 2065 Retirement Fund	5.07%	15.22%	-	-	-
BlackRock 2065 Index	5.07%	15.19%	-	-	-
Callan Target Date 2065	5.19%	16.41%	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- 3/2021	2020	2019	2018	2017
<b>Gross Performance</b>					
<b>Domestic Equity</b>					
SERS U.S. Large Company Index Fund	6.18%	18.44%	31.51%	(4.38%)	21.85%
S&P 500 Index	6.17%	18.40%	31.49%	(4.38%)	21.83%
Callan Lg Cap Broad MF	6.52%	18.47%	30.14%	(4.54%)	23.56%
SERS U.S. All Company Index Fund	6.32%	21.20%	30.53%	(5.29%)	21.09%
Russell 3000 Index	6.35%	20.89%	31.02%	(5.24%)	21.13%
Callan Multi Cap Brd MF	6.33%	17.19%	29.12%	(6.82%)	20.75%
SERS U.S. SMID Company Idx Fund	7.97%	32.04%	28.21%	(9.32%)	18.21%
Dow Jones US Completion	7.73%	32.17%	27.94%	(9.57%)	18.12%
Callan SMID Broad MFs	7.76%	24.00%	29.40%	(8.69%)	17.14%
<b>International Equity</b>					
SERS Global Non-U.S. Index Fund	3.61%	11.17%	21.79%	(13.85%)	27.65%
MSCI ACWI ex US	3.49%	10.65%	21.51%	(14.20%)	27.19%
Callan Non US Equity MFs	3.62%	11.12%	22.83%	(15.04%)	26.90%
<b>Domestic Fixed Income</b>					
SERS Short Term Investment Fund	0.03%	0.67%	2.31%	2.09%	1.08%
3-month Treasury Bill	0.02%	0.67%	2.28%	1.87%	0.86%
Callan Cash Database(1)	0.05%	1.09%	2.67%	2.00%	1.18%
SERS U.S. Short Term Bond Idx Fund	(0.05%)	3.37%	4.02%	1.58%	-
Blmbg Gov/Cred 1-3 Yr	(0.04%)	3.33%	4.03%	1.60%	0.84%
Callan Short US Govt MFs	(0.36%)	3.57%	3.52%	1.15%	0.59%
SERS U.S. TIPS Index Fund	(1.47%)	11.00%	8.40%	-	-
Blmbg US TIPS	(1.47%)	10.99%	8.43%	(1.26%)	3.01%
Callan TIPS MFs	(1.29%)	10.29%	8.26%	(1.53%)	3.12%
SERS U.S. Bond Index Fund	(3.39%)	7.56%	8.69%	0.03%	3.53%
Blmbg Aggregate	(3.37%)	7.51%	8.72%	0.01%	3.54%
Callan Core Bond MFs	(3.07%)	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**  
**March 31, 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	0.4 57	21.8 32	8.2 17	7.5 17	5.9 15	6.0 16			0.08 80
BlackRock Post Retirement Index	0.4 57	21.7 35	8.2 17	7.4 18	5.9 15	6.0 17			
<b>SERS 2025 Retirement Fund</b> Callan Target Date 2025	1.2 87	28.0 70	9.0 55	8.9 68	6.9 64	7.1 71			0.08 79
BlackRock 2025 Index	1.2 86	27.9 71	8.9 57	8.9 69	6.9 65	7.0 72			
<b>SERS 2030 Retirement Fund</b> Callan Target Date 2030	2.2 80	34.7 67	9.9 51	10.0 67	7.7 61	7.7 70			0.08 78
BlackRock 2030 Index	2.2 79	34.6 68	9.9 56	9.9 69	7.5 63	7.7 72			
<b>SERS 2035 Retirement Fund</b> Callan Target Date 2035	3.1 74	41.3 63	10.8 42	11.0 60	8.3 58	8.4 66			0.08 79
BlackRock 2035 Index	3.1 74	41.2 64	10.7 48	10.9 72	8.2 71	8.2 71			
<b>SERS 2040 Retirement Fund</b> Callan Target Date 2040	4.0 70	47.6 45	11.6 34	12.0 50	8.9 54	8.9 67			0.08 78
BlackRock 2040 Index	4.0 71	47.5 49	11.5 38	11.8 59	8.8 68	8.7 69			
<b>SERS 2045 Retirement Fund</b> Callan Target Date 2045	4.7 59	52.7 32	12.2 30	12.6 40	9.4 46	9.3 59			0.08 79
BlackRock 2045 Index	4.6 63	52.5 37	12.1 33	12.4 53	9.2 60	9.1 62			
<b>SERS 2050 Retirement Fund</b> Callan Target Date 2050	5.0 55	55.3 23	12.5 30	12.9 39	9.5 43	9.5 54			0.08 78
BlackRock 2050 Index	5.0 58	55.1 25	12.4 33	12.7 47	9.4 57	9.3 65			
<b>SERS 2055 Retirement Fund</b> Callan Target Date 2055	5.1 57	55.6 25	12.6 27	12.9 37	9.6 51	9.6 52			0.08 82
BlackRock 2055 Index	5.1 59	55.5 26	12.5 30	12.7 50	9.4 59	9.5 62			
<b>SERS 2060 Retirement Fund</b> Callan Target Date 2060	5.1 63	55.6 28	12.6 31	12.9 50					0.08 80
BlackRock 2060 Index	5.1 67	55.5 29	12.5 34	12.8 60					

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**  
**March 31, 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	5.1 58	55.3 46							0.08 76
BlackRock 2065 Index	5.1 57	55.5 40							
<b>Domestic Equity</b>									
<b>SERS U.S. Large Company Stock Index Fund</b> Callan Lg Cap Broad MF	6.2 52	56.4 64	16.8 49	16.3 47	13.6 45	13.9 44			0.02 99
S&P 500 Index	6.2 52	56.4 64	16.8 49	16.3 47	13.6 45	13.9 44			
<b>SERS U.S. All Company Index Fund</b> Callan Multi Cap Brd MF	6.3 50	62.2 47	17.0 37	16.6 36	13.4 30	13.8 25			0.03 99
Russell 3000 Index	6.3 50	62.5 46	17.1 36	16.6 36	13.4 29	13.8 25			
<b>U.S. Small/Mid Company Stock Index Fund</b> Callan SMID Broad MFs	8.0 50	98.0 19	18.3 34	18.1 37	12.7 40	13.2 35			0.03 100
Dow Jones US Completion	7.7 50	97.8 19	18.1 35	17.9 38	12.5 41	13.0 39			
<b>International Equity</b>									
<b>SERS Global Non-U.S. Index Fund</b> Callan Non US Equity MFs	3.6 51	51.0 54	6.8 42	10.1 37	5.5 46	5.2 69			0.06 99
MSCI ACWI ex US	3.5 53	49.4 64	6.5 45	9.8 42	5.3 51	4.9 70			
<b>Domestic Fixed Income</b>									
<b>SERS Short Term Investment Fund</b> Callan Cash Database	0.0 94	0.3 84	1.6 81	1.3 78	1.0 81	0.8 81			0.00 100
3-month Treasury Bill	0.0 87	0.1 97	1.5 83	1.2 92	0.9 93	0.6 95			
<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 21	1.5 23	3.0 26						0.03 99
Blmbg Gov/Cred 1-3 Yr	-0.0 21	1.6 20	3.0 26	2.0 13	1.7 21	1.6 30			
<b>SERS U.S. TIPS Index Fund</b> Callan TIPS MFs	-1.5 60	7.5 76	5.7 37						0.03 99
Blmbg US TIPS	-1.5 60	7.5 76	5.7 36	3.9 48	3.4 28	3.4 23			

Returns:  
■ above median  
■ third quartile  
■ fourth quartile

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

Risk Quadrant:  
  
Return  
Risk

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

**Pennsylvania SERS 401(a)**  
**Investment Manager Performance Monitoring Summary Report**  
**March 31, 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>	-3.4 82	0.6 98	4.7 89	3.1 100	3.3 79	3.4 85			0.03 98
Callan Core Bond MFs									
Blmbg Aggregate	-3.4 81	0.7 98	4.7 90	3.1 99	3.3 75	3.4 84			

Returns:  
 above median  
 third quartile  
 fourth quartile

Return Consistency:  
 above median  
 third quartile  
 fourth quartile

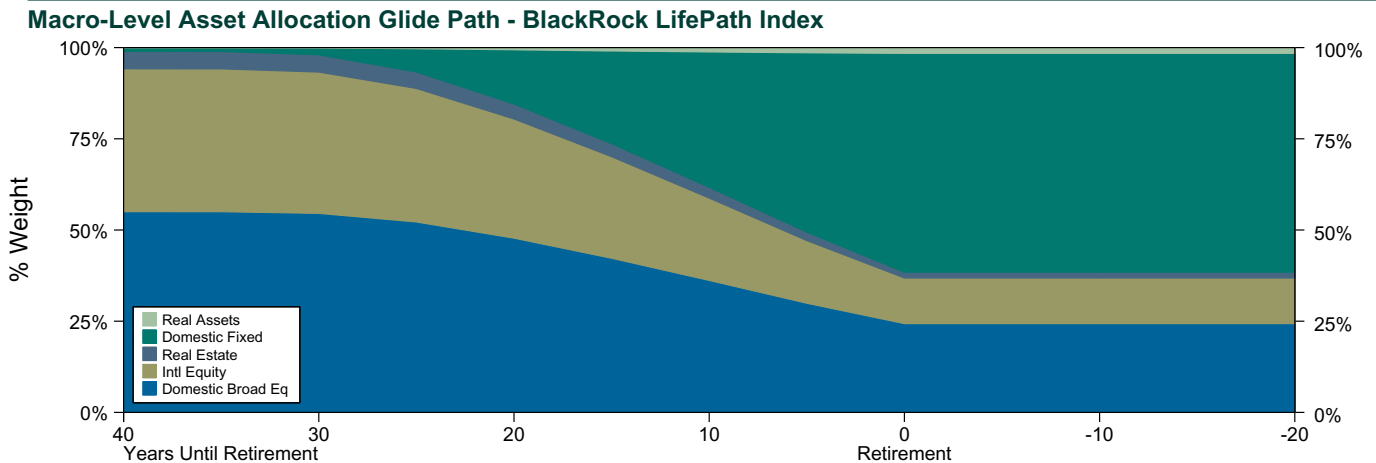
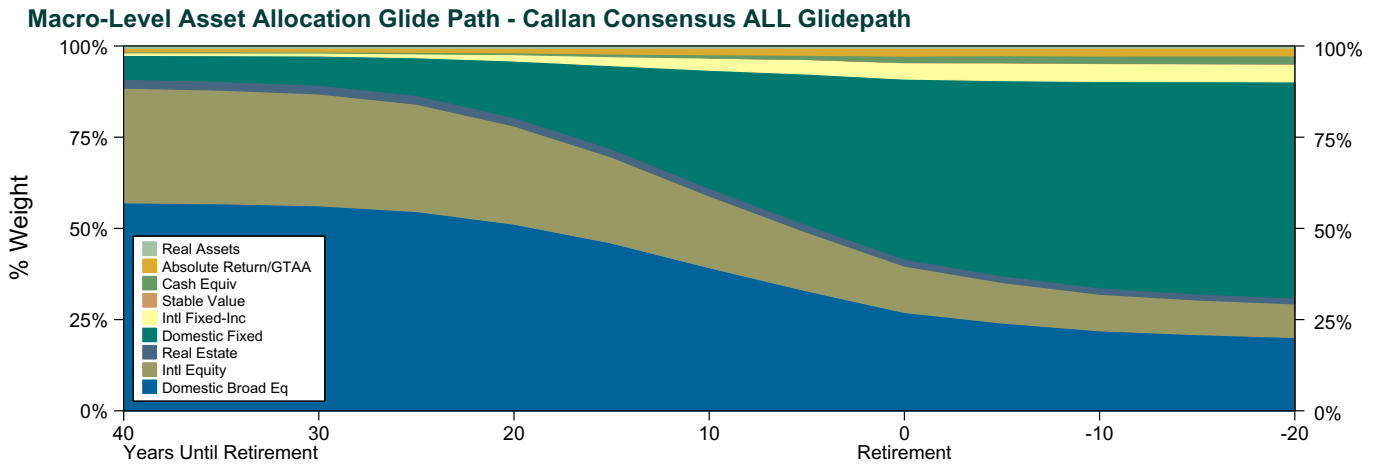
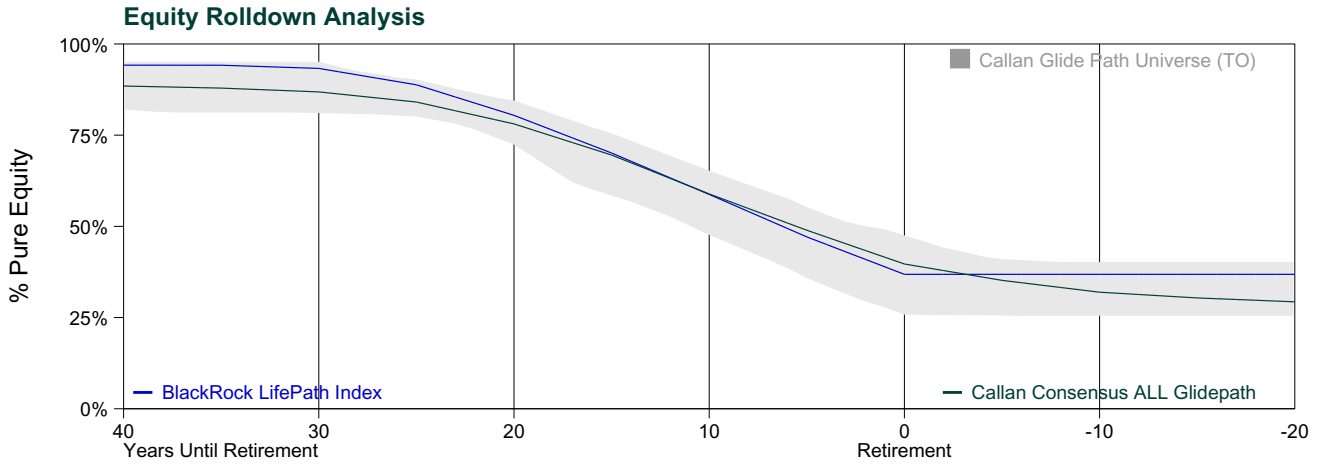
Risk Quadrant:  
 above median  
 third quartile  
 fourth quartile

Expense Ratio:  
 below median  
 second quartile  
 first quartile



# Callan Consensus ALL Glidepath Target Date Glide Path Analysis as of March 31, 2021

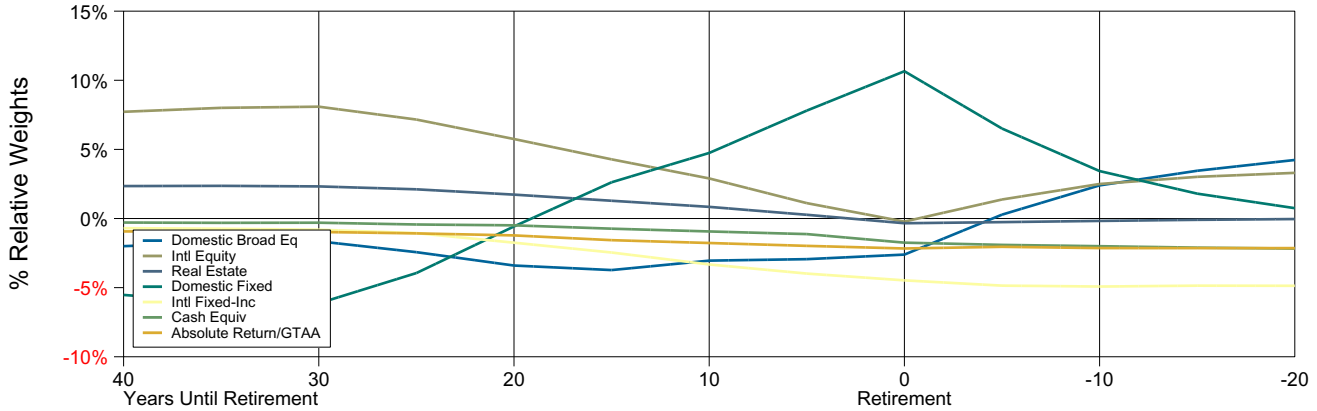
The following charts illustrate the asset allocation "glide path" underlying the relevant suite of target date funds. This analysis covers forty years of investor wealth accumulation up to retirement, as well as twenty years of wealth decumulation following retirement. The top chart shows the "pure"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



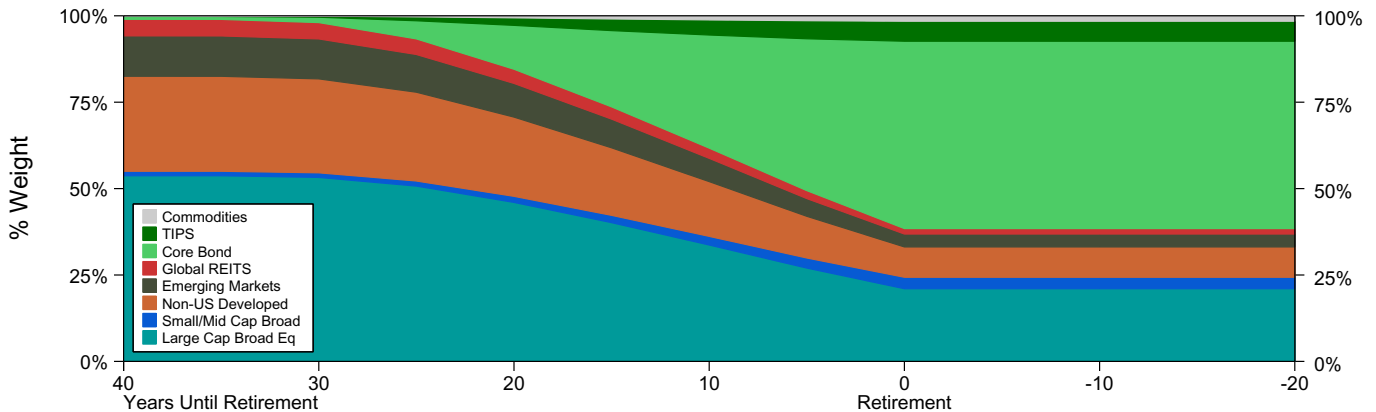
# BlackRock LifePath Index Target Date Glide Path Analysis as of March 31, 2021

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.

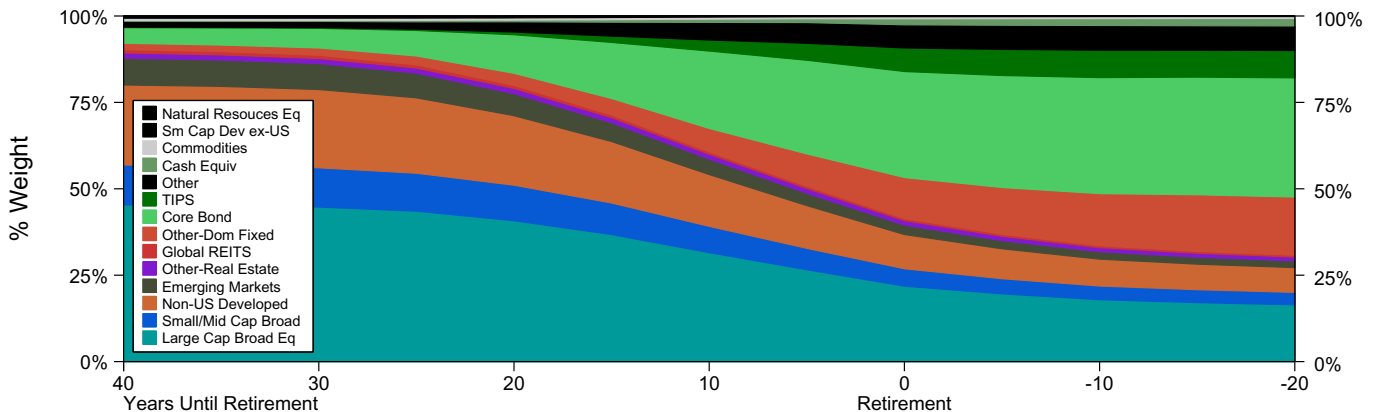
**Relative Macro Asset Allocation - BlackRock LifePath Index vs. Callan Consensus ALL Glidep**



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



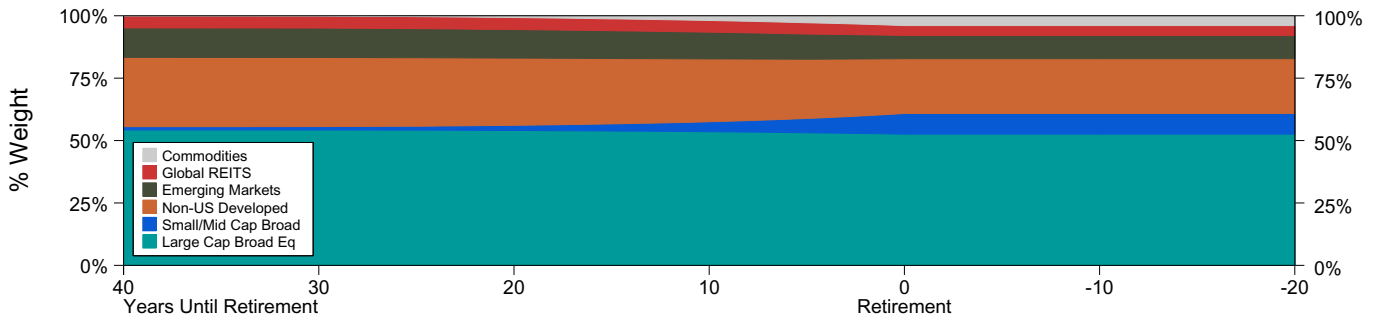
**Micro-Level Asset Allocation Glide Path - Callan Consensus ALL Glidepath**



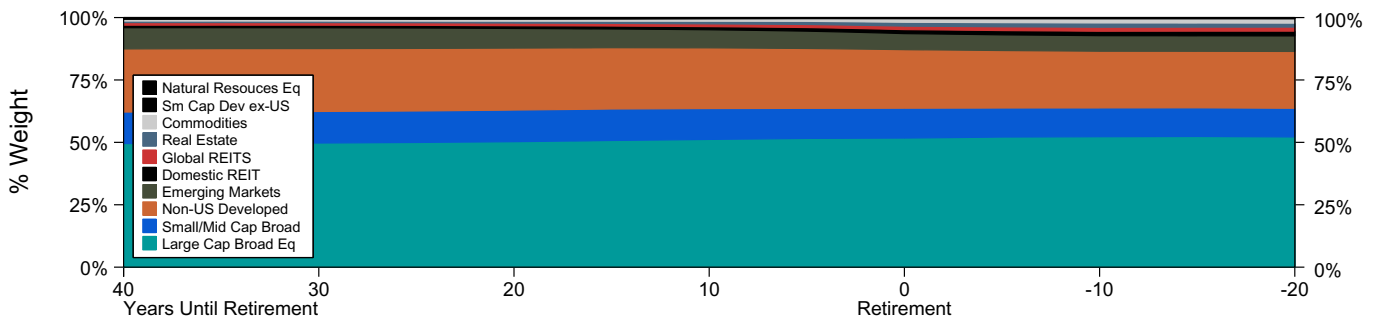
# BlackRock LifePath Index Target Date Glide Path Analysis as of March 31, 2021

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.

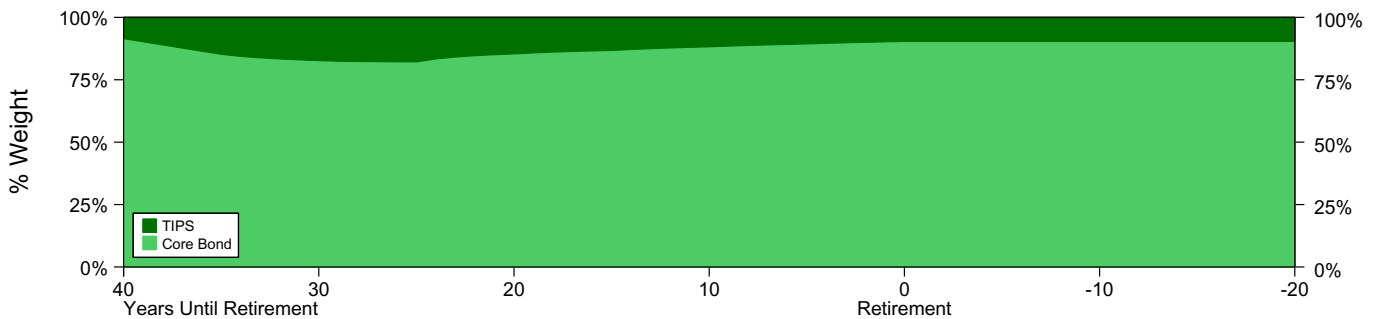
## Micro-Level Equity Allocation Glide Path - BlackRock LifePath Index



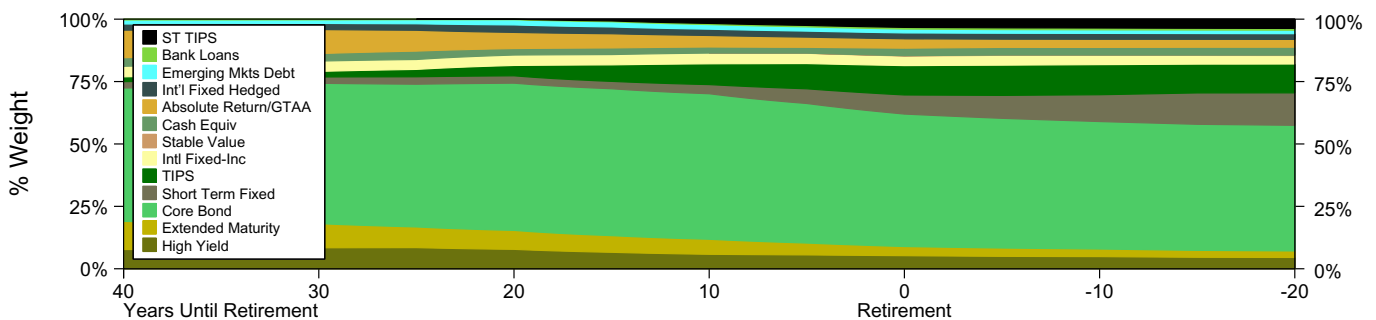
## Micro-Level Equity Asset Allocation Glide Path - Callan Consensus ALL Glidepath



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



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



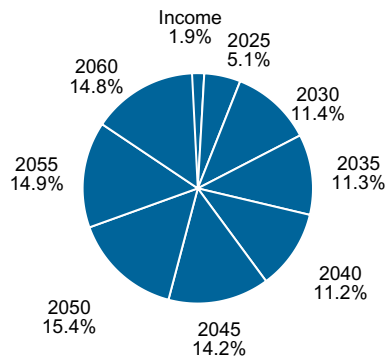
# Pennsylvania SERS 401(a) - BlackRock LifePath Index Target Date Fund Family Analysis as of March 31, 2021

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).

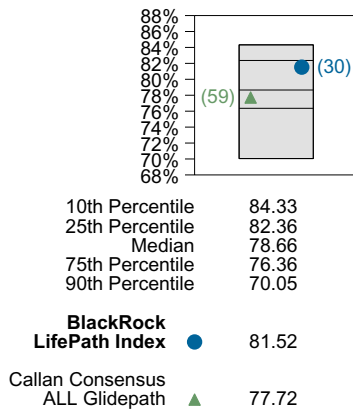
**Glidepath Peer Group: ALL**

**Fee/Return Type: Gross**

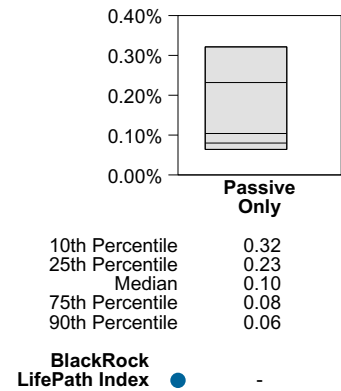
## Fund Family Allocation



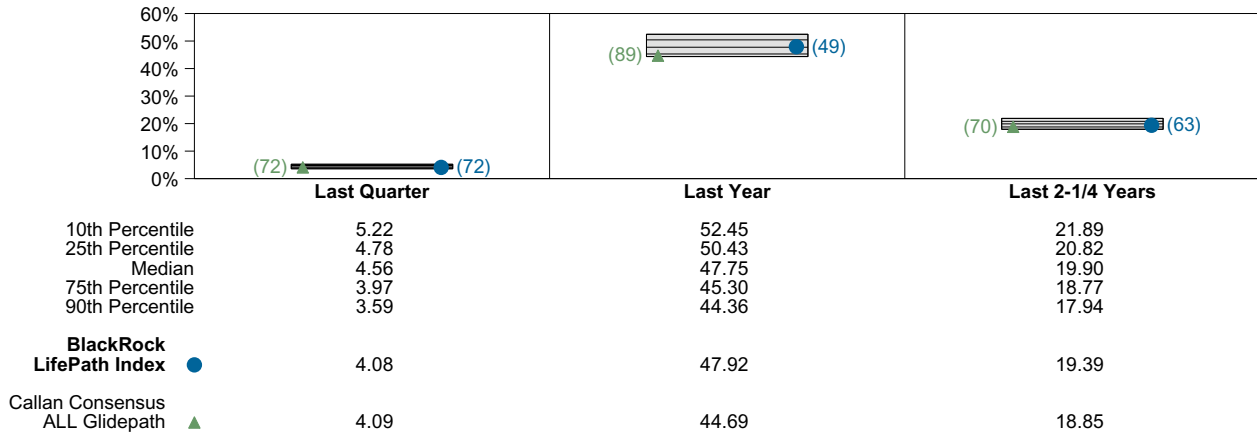
## Equity Exposure



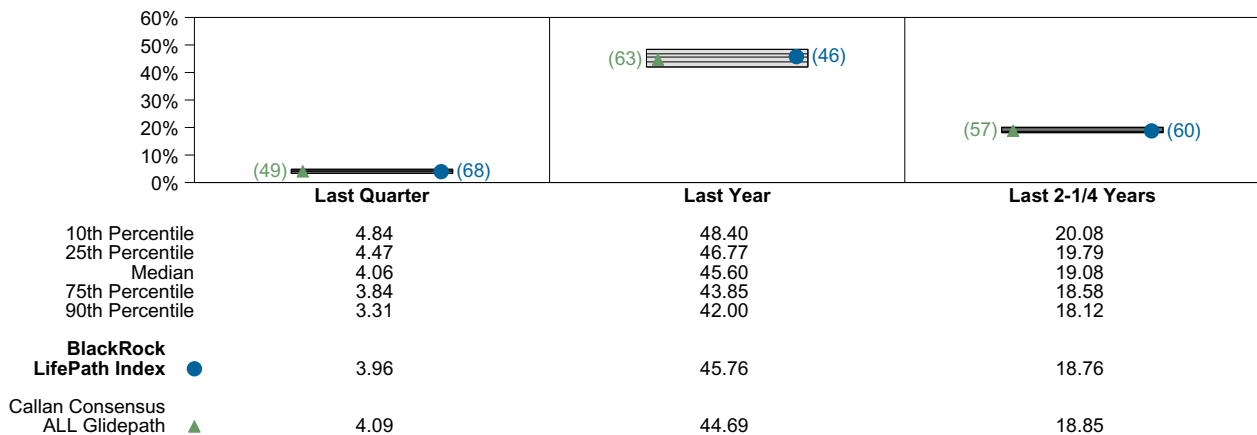
## Expense Ratio



## Target Date Family Performance vs Peer Families



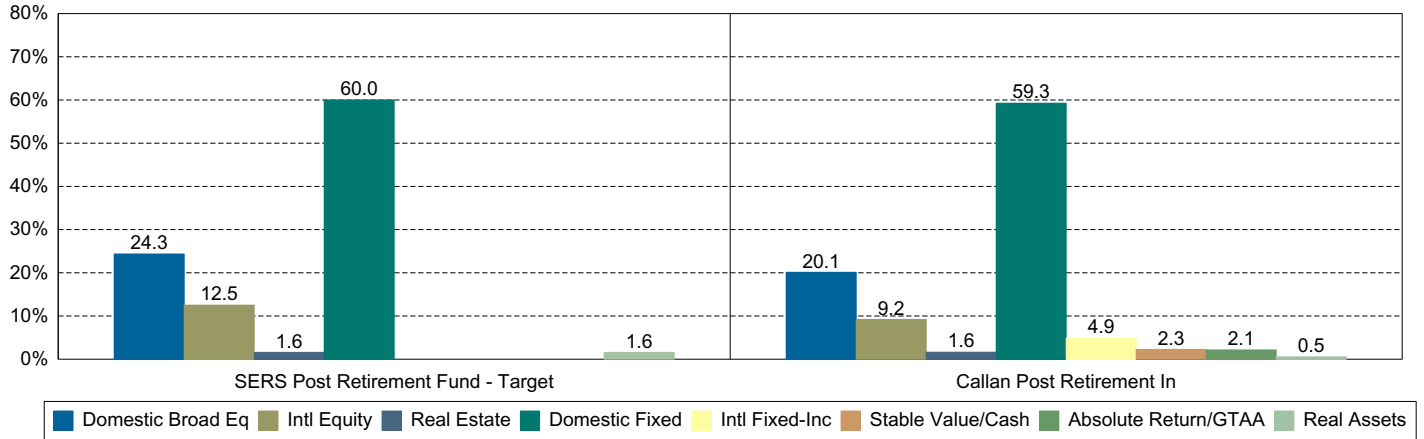
## Target Date Family Glide Path Returns vs Peer Families



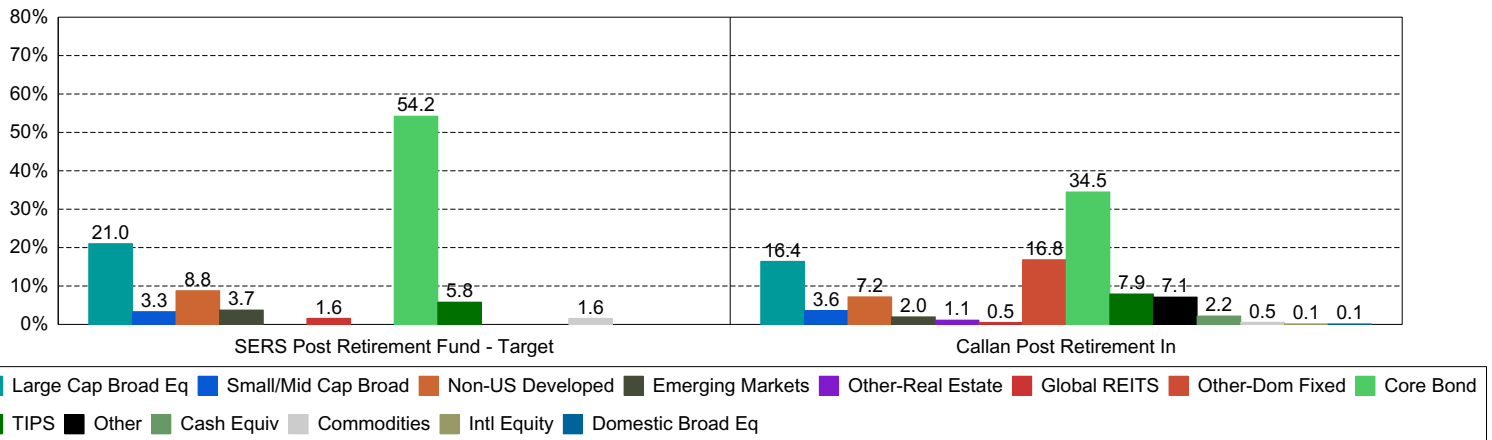
# SERS Post Retirement Fund Target Date Fund Asset Allocation as of March 31, 2021

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.

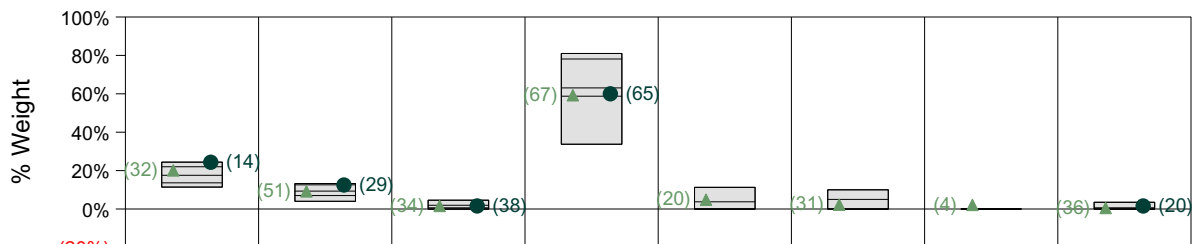
## Macro-Level Asset Allocation



## 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	24.41	13.25	4.58	81.00	11.28	10.00	0.00	3.50
25th Percentile	22.00	12.59	1.95	78.12	3.75	5.00	0.00	0.62
Median	17.55	9.32	0.62	63.07	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 March 31, 2021

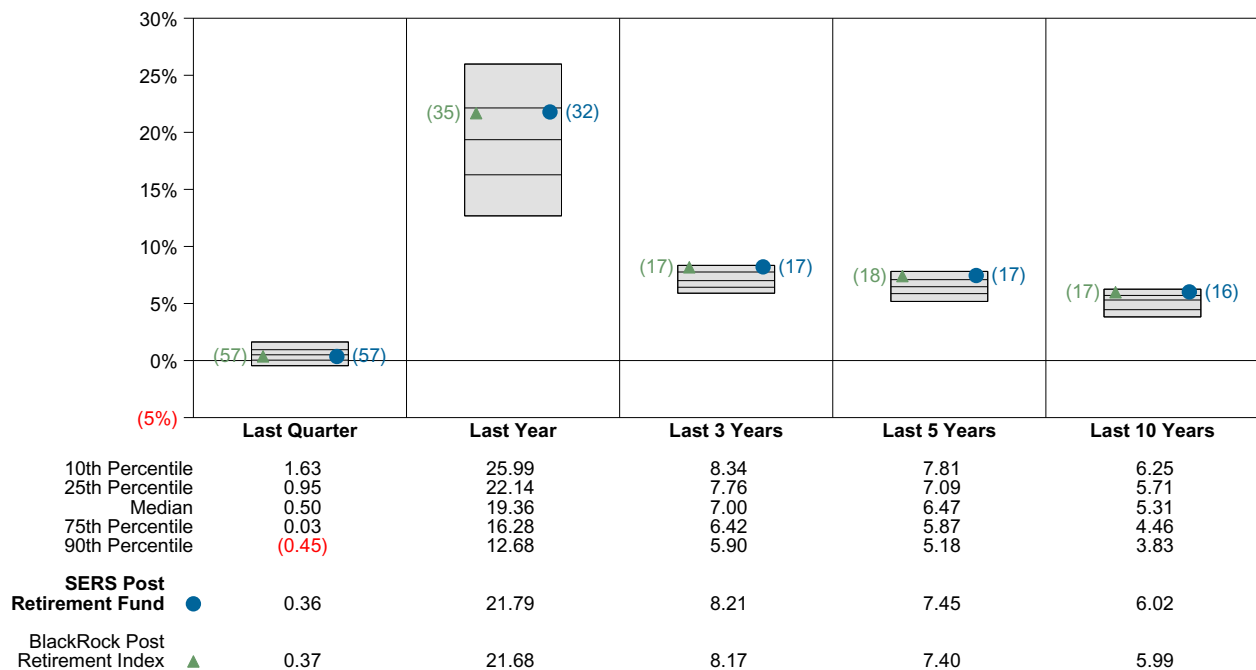
## Investment Philosophy

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.

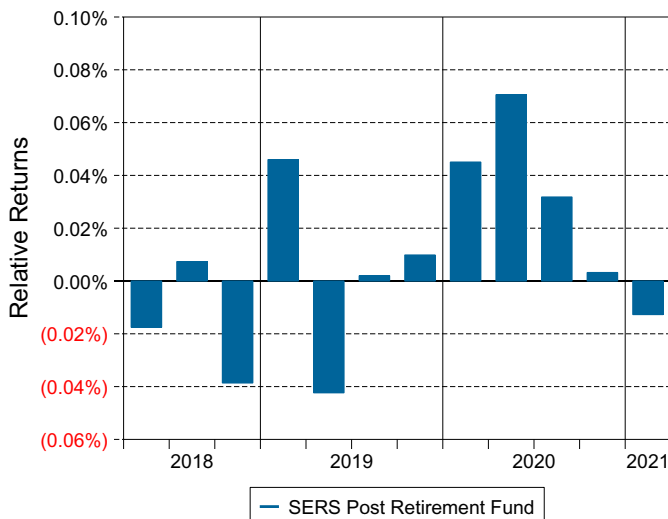
## Quarterly Summary and Highlights

- SERS Post Retirement Fund's portfolio posted a 0.36% return for the quarter placing it in the 57 percentile of the Callan Target Date Retirement Income group for the quarter and in the 32 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 0.10%.

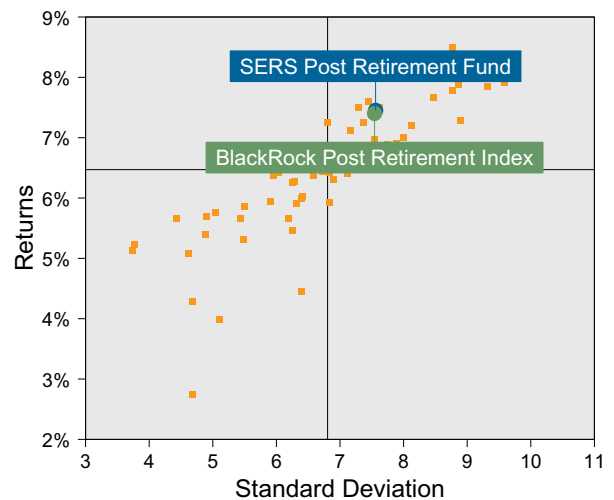
## Performance vs Callan Target Date Retirement Income (Net)



## Relative Returns vs BlackRock Post Retirement Index



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

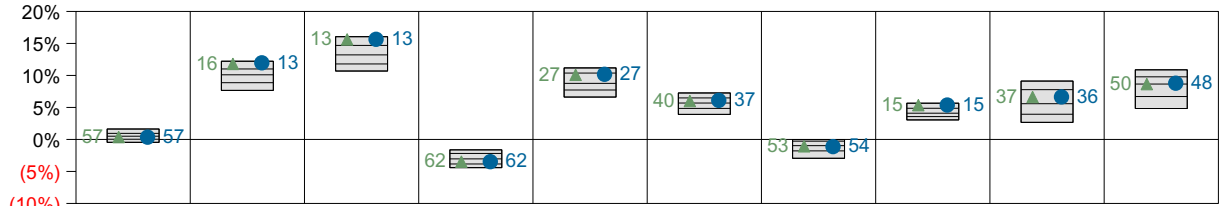


# SERS Post Retirement Fund Return Analysis Summary

## Return Analysis

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

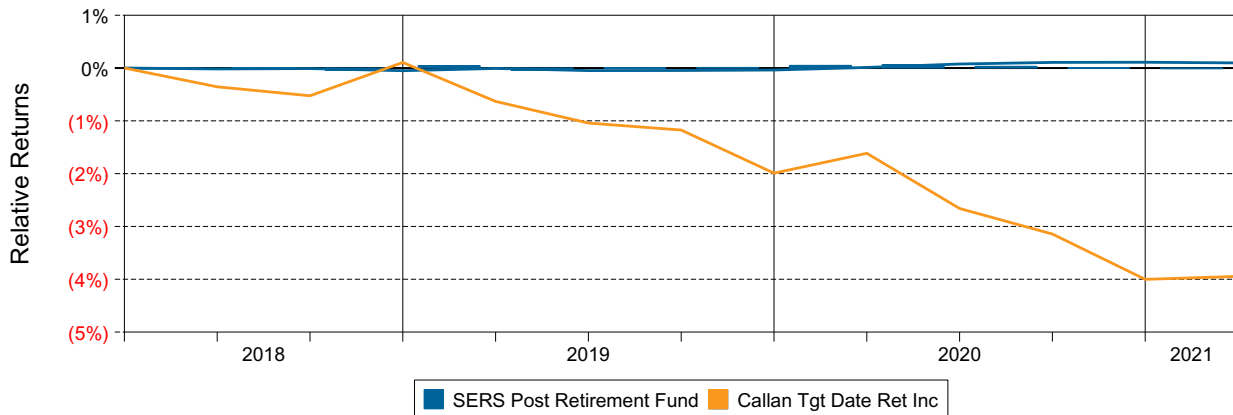
### Performance vs Callan Target Date Retirement Income (Net)



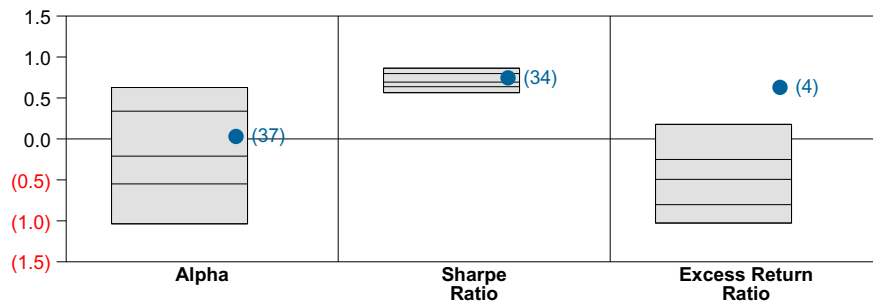
	12/20- 3/21	2020	2019	2018	2017	2016	2015	2014	2013	2012
10th Percentile	1.63	12.22	16.05	(1.63)	11.17	7.26	(0.02)	5.66	9.12	10.88
25th Percentile	0.95	11.01	14.69	(2.19)	10.37	6.49	(0.27)	4.87	7.78	9.78
Median	0.50	10.10	13.21	(3.04)	8.76	5.69	(0.97)	4.10	5.58	8.66
75th Percentile	0.03	8.87	11.80	(3.83)	7.72	4.85	(1.79)	3.57	3.94	6.70
90th Percentile	(0.45)	7.66	10.69	(4.41)	6.62	3.91	(2.95)	3.05	2.67	4.83

	12/20- 3/21	2020	2019	2018	2017	2016	2015	2014	2013	2012
<b>SERS Post Retirement Fund</b> ●	0.36	11.97	15.65	(3.47)	10.18	6.10	(1.12)	5.38	6.64	8.79
BlackRock Post Retirement Index ▲	0.37	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 March 31, 2021

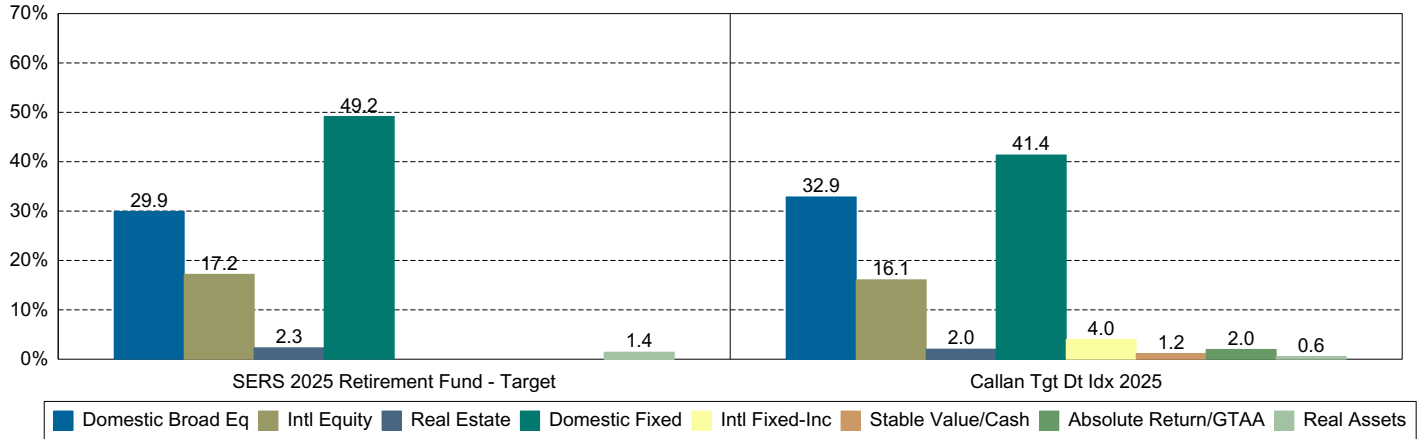


	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.63	0.86	0.18
25th Percentile	0.34	0.80	(0.25)
Median	(0.21)	0.69	(0.49)
75th Percentile	(0.55)	0.64	(0.80)
90th Percentile	(1.04)	0.56	(1.03)
<b>SERS Post Retirement Fund</b> ●	0.03	0.75	0.63

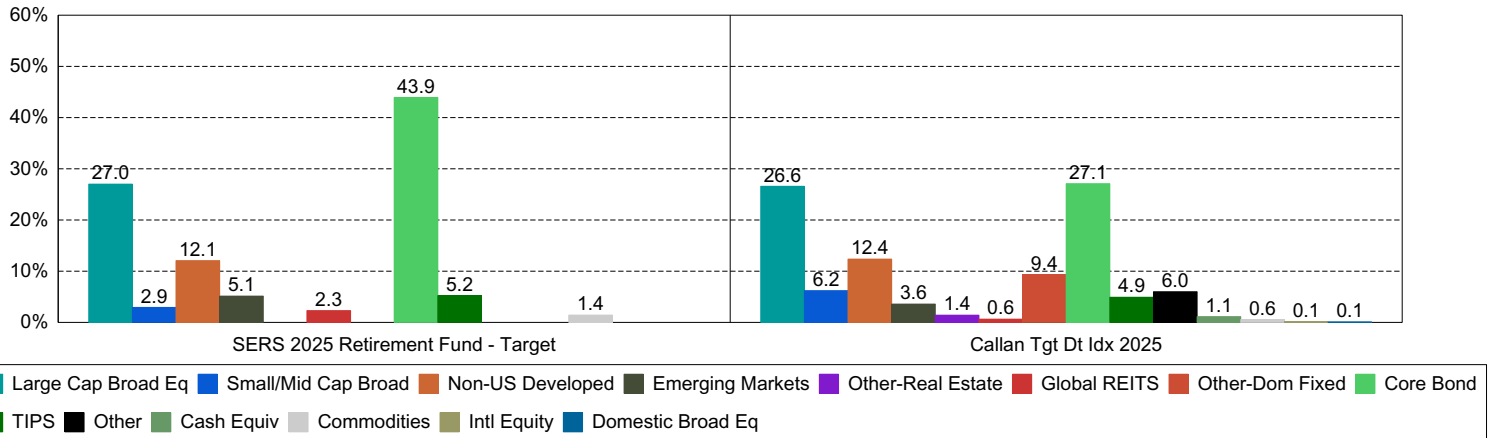
# SERS 2025 Retirement Fund Target Date Fund Asset Allocation as of March 31, 2021

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.

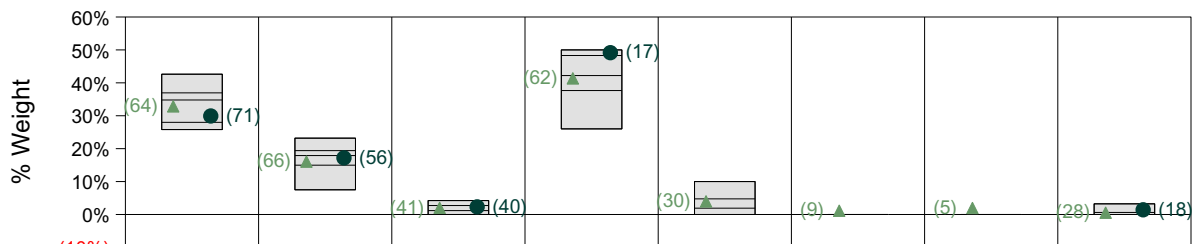
## Macro-Level Asset Allocation



## 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	42.62	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	42.21	1.92	0.00	0.00	0.00
75th Percentile	28.00	14.98	0.00	37.66	0.00	0.00	0.00	0.00
90th Percentile	25.80	7.50	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 March 31, 2021

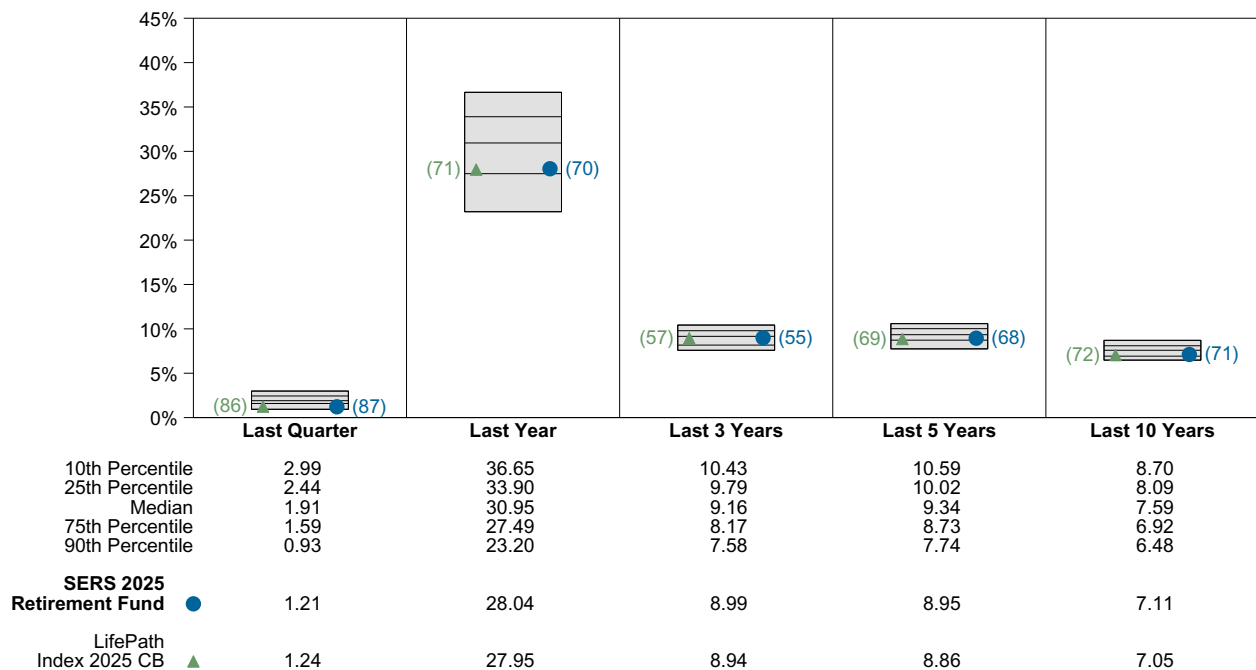
## Investment Philosophy

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.

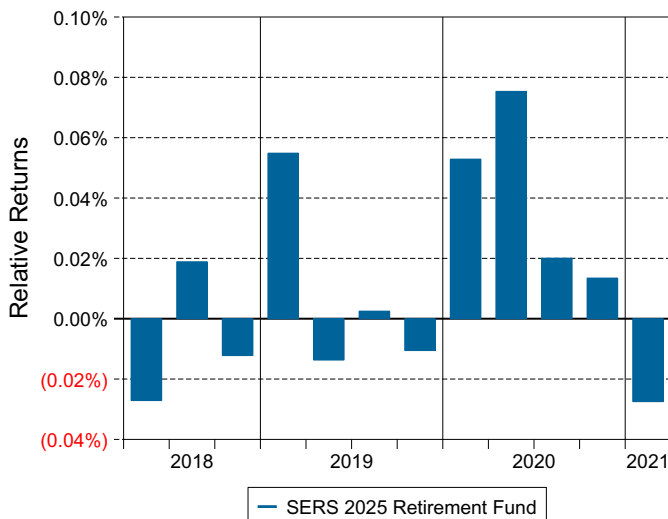
## Quarterly Summary and Highlights

- SERS 2025 Retirement Fund's portfolio posted a 1.21% return for the quarter placing it in the 87 percentile of the Callan Target Date 2025 group for the quarter and in the 70 percentile for the last year.
- SERS 2025 Retirement Fund's portfolio underperformed the LifePath Index 2025 CB by 0.03% for the quarter and outperformed the LifePath Index 2025 CB for the year by 0.09%.

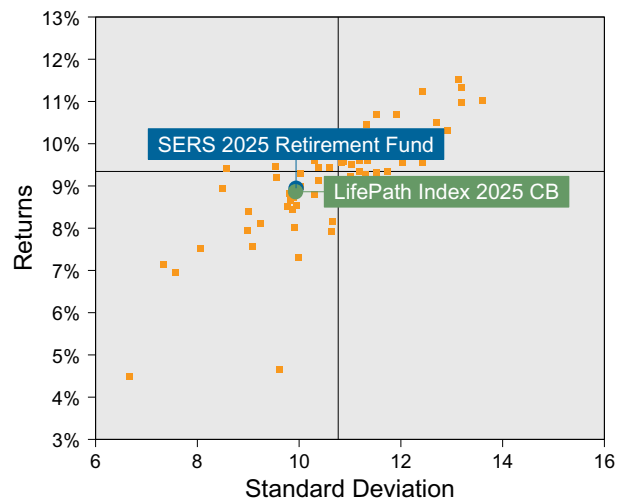
## Performance vs Callan Target Date 2025 (Net)



## Relative Return vs LifePath Index 2025 CB



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

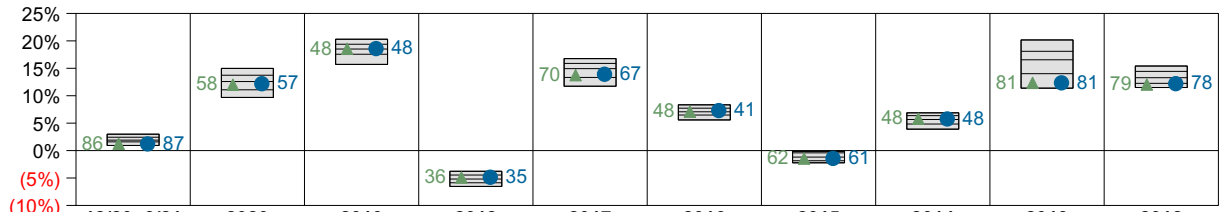


# SERS 2025 Retirement Fund Return Analysis Summary

## Return Analysis

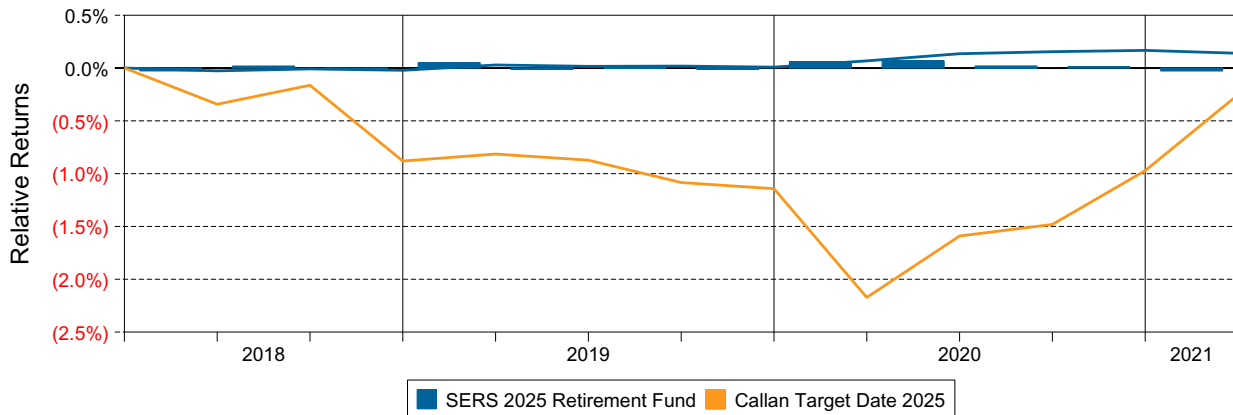
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

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

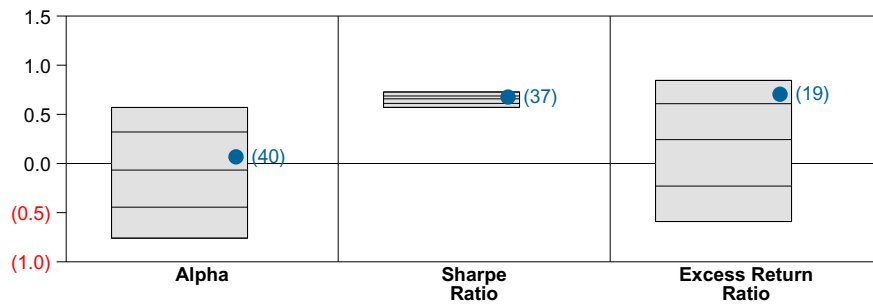


	12/20- 3/21	2020	2019	2018	2017	2016	2015	2014	2013	2012
10th Percentile	2.99	14.98	20.30	(3.77)	16.77	8.34	(0.13)	6.88	20.17	15.41
25th Percentile	2.44	13.74	19.39	(4.46)	15.89	7.73	(0.41)	6.37	18.10	14.44
Median	1.91	12.58	18.51	(5.19)	14.94	7.07	(1.19)	5.67	16.55	13.28
75th Percentile	1.59	11.08	17.56	(5.87)	13.33	6.48	(1.85)	4.84	14.02	12.26
90th Percentile	0.93	9.69	15.71	(6.53)	11.73	5.59	(2.23)	3.90	11.38	11.50
<b>SERS 2025 Retirement Fund</b>	● 1.21	12.19	18.60	(4.86)	13.91	7.30	(1.43)	5.77	12.34	12.20
LifePath Index 2025 CB	▲ 1.24	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 March 31, 2021



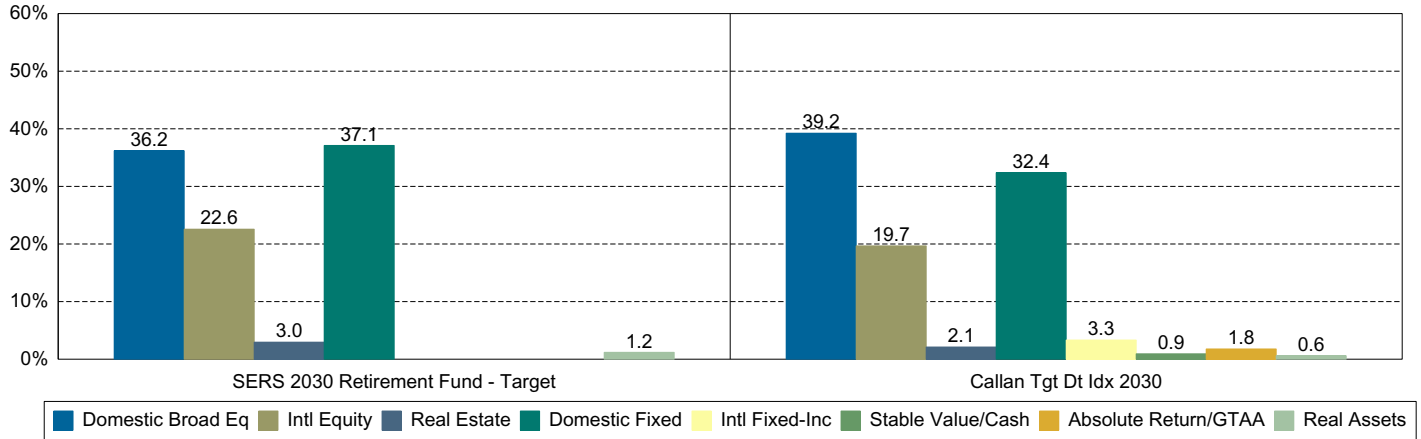
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.57	0.73	0.85
25th Percentile	0.32	0.69	0.61
Median	(0.07)	0.66	0.24
75th Percentile	(0.44)	0.61	(0.23)
90th Percentile	(0.76)	0.57	(0.59)
<b>SERS 2025 Retirement Fund</b>	● 0.07	0.68	0.70

# SERS 2030 Retirement Fund

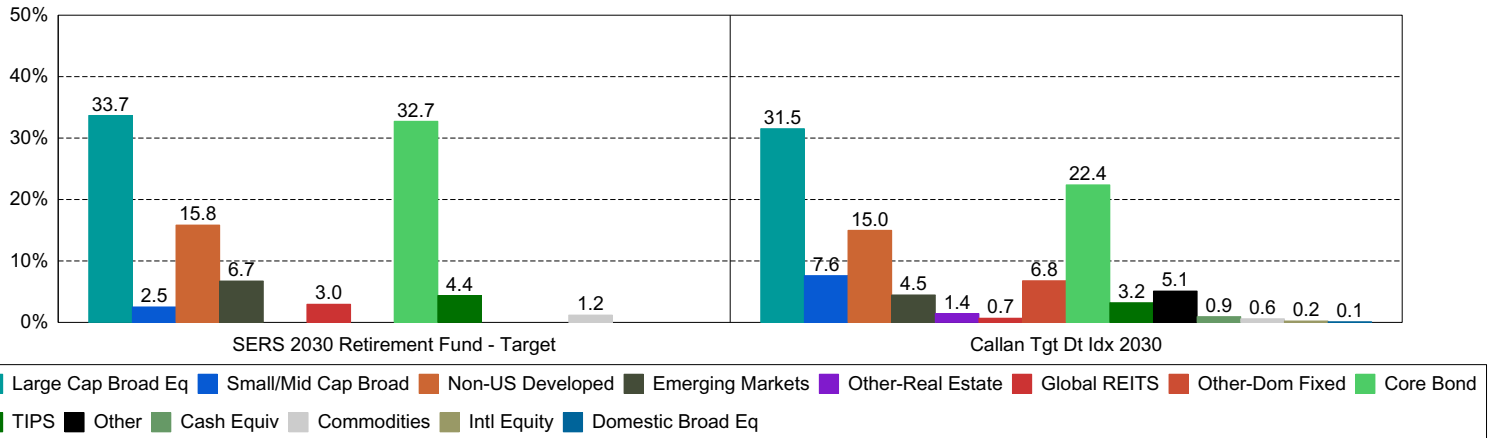
## Target Date Fund Asset Allocation as of March 31, 2021

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.

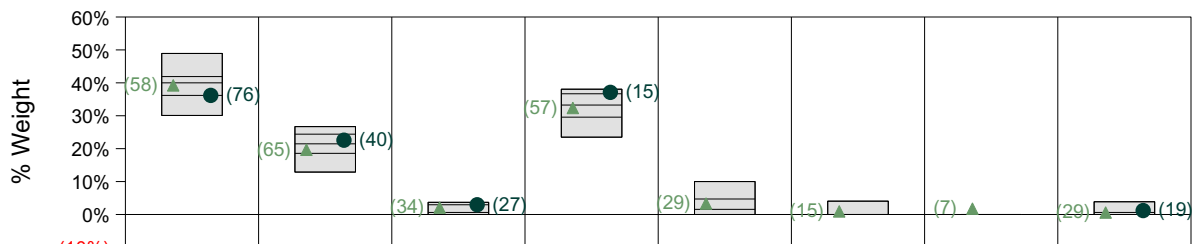
### Macro-Level Asset Allocation



### 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	48.93	26.70	3.70	38.06	10.00	4.05	0.00	3.87
25th Percentile	41.90	24.40	2.95	36.67	4.71	0.00	0.00	0.62
Median	40.00	21.47	0.62	33.25	1.56	0.00	0.00	0.00
75th Percentile	36.18	18.57	0.00	29.57	0.00	0.00	0.00	0.00
90th Percentile	30.09	12.88	0.00	23.49	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 March 31, 2021

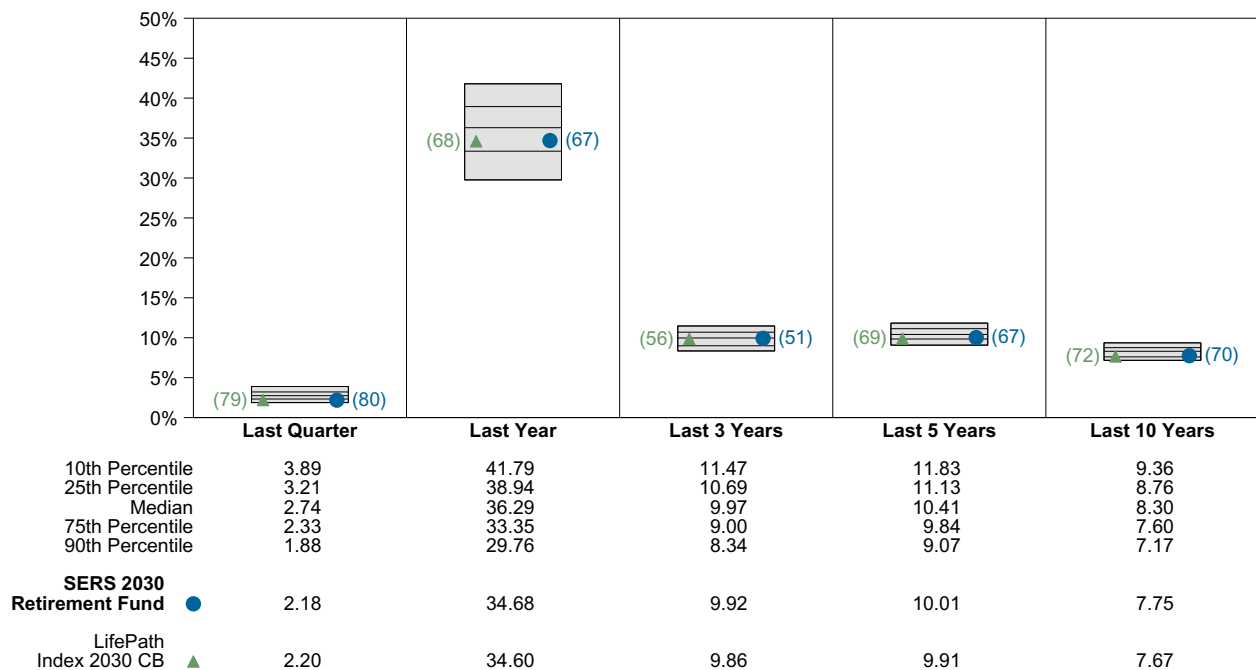
## Investment Philosophy

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.

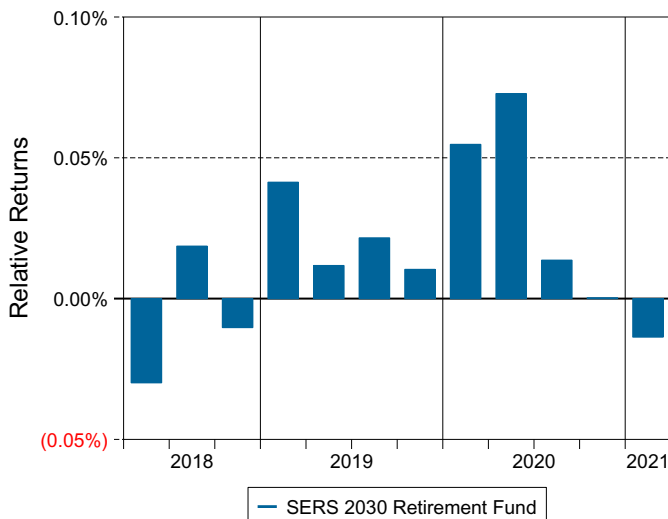
## Quarterly Summary and Highlights

- SERS 2030 Retirement Fund's portfolio posted a 2.18% return for the quarter placing it in the 80 percentile of the Callan Target Date 2030 group for the quarter and in the 67 percentile for the last year.
- SERS 2030 Retirement Fund's portfolio underperformed the LifePath Index 2030 CB by 0.01% for the quarter and outperformed the LifePath Index 2030 CB for the year by 0.09%.

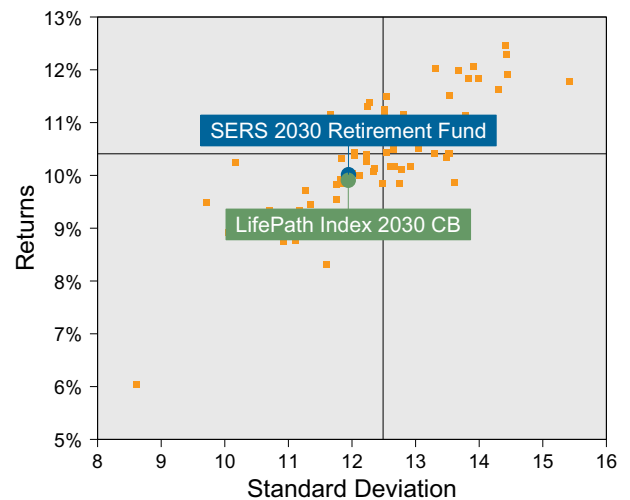
## Performance vs Callan Target Date 2030 (Net)



## Relative Return vs LifePath Index 2030 CB



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

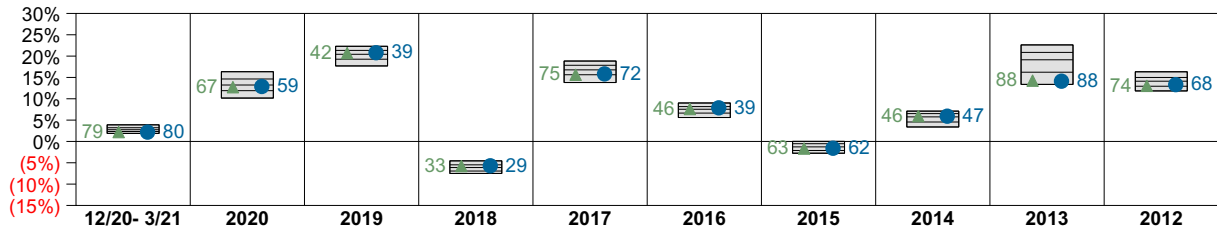


# SERS 2030 Retirement Fund Return Analysis Summary

## Return Analysis

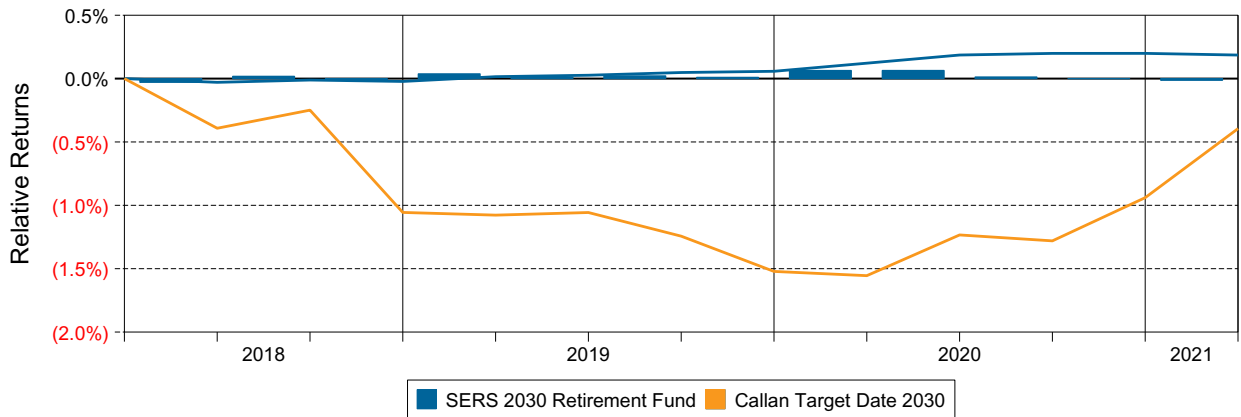
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

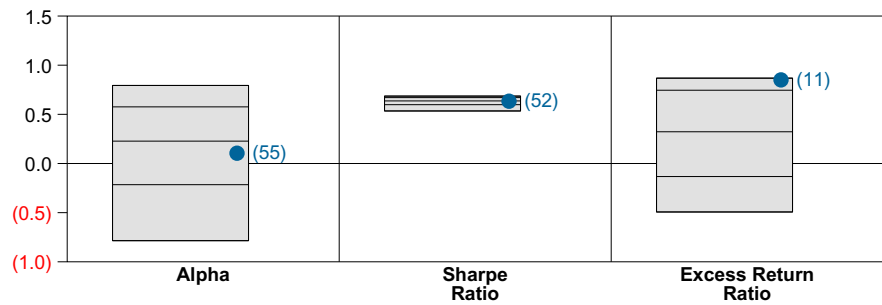


10th Percentile	3.89	16.35	22.30	(4.55)	18.85	9.01	0.01	7.11	22.62	16.33	
25th Percentile	3.21	14.64	21.34	(5.48)	17.85	8.17	(0.53)	6.53	20.87	14.99	
Median	2.74	13.23	20.43	(6.12)	16.77	7.54	(1.27)	5.76	19.13	14.12	
75th Percentile	2.33	11.90	19.28	(6.94)	15.63	6.64	(2.12)	4.56	16.22	12.94	
90th Percentile	1.88	10.16	17.70	(7.50)	13.81	5.61	(2.77)	3.39	13.37	11.84	
<b>SERS 2030 Retirement Fund</b>	●	2.18	12.88	20.80	(5.71)	15.83	7.88	(1.60)	5.92	14.12	13.31
LifePath Index 2030 CB	▲	2.20	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 March 31, 2021



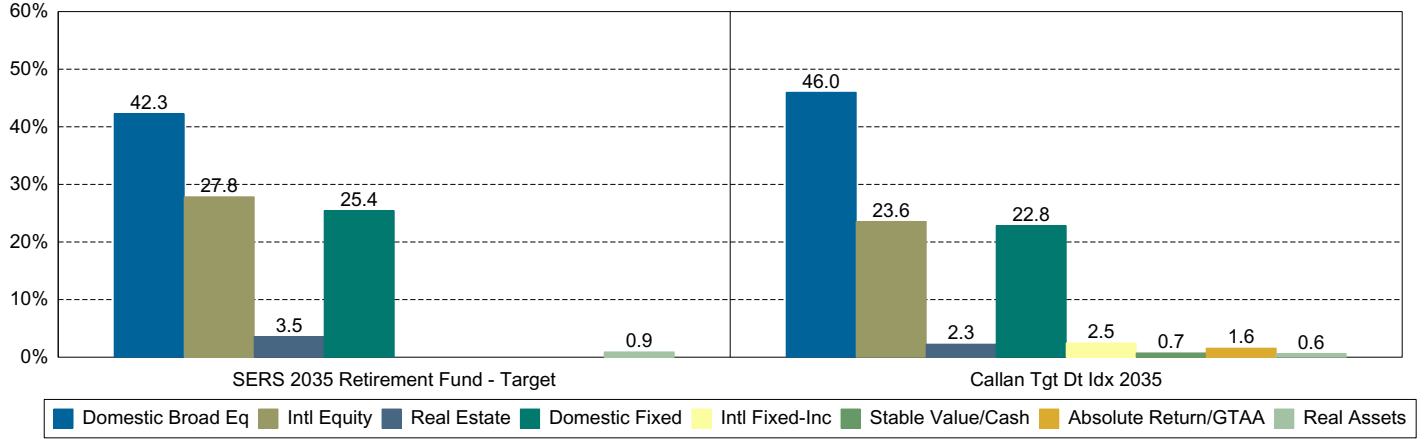
10th Percentile	0.79	0.69	0.87	
25th Percentile	0.58	0.67	0.75	
Median	0.23	0.64	0.32	
75th Percentile	(0.22)	0.60	(0.13)	
90th Percentile	(0.79)	0.53	(0.49)	
<b>SERS 2030 Retirement Fund</b>	●	0.10	0.63	0.85



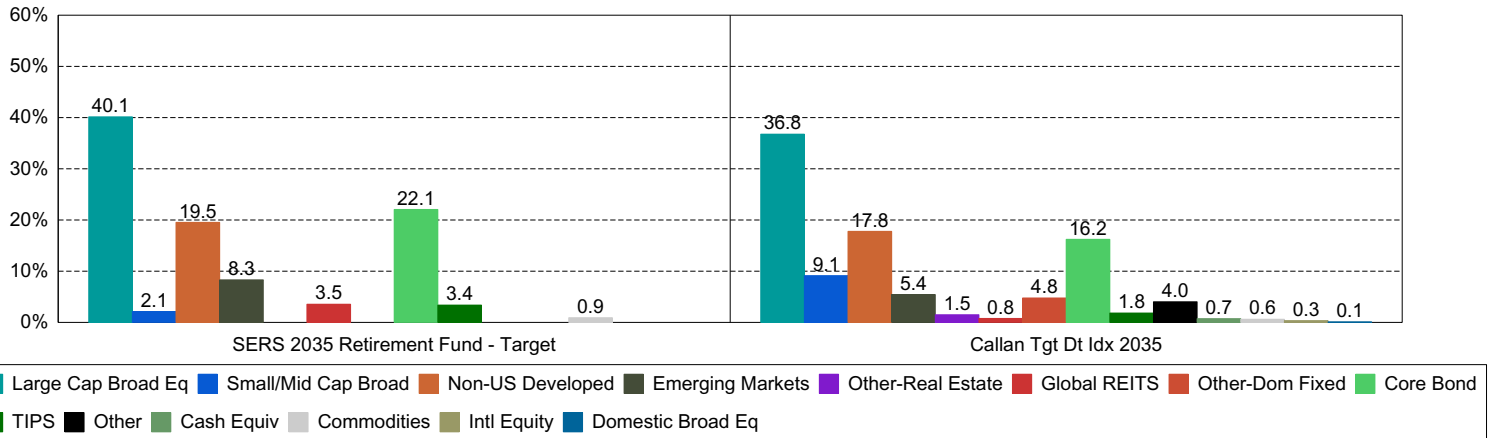
# SERS 2035 Retirement Fund Target Date Fund Asset Allocation as of March 31, 2021

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.

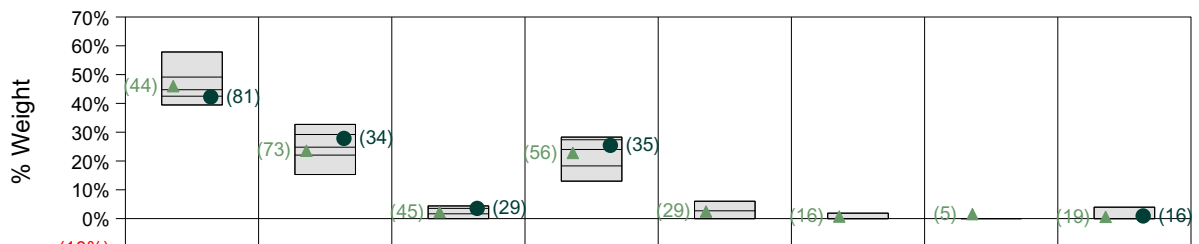
## Macro-Level Asset Allocation



## 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	6.03	1.89	0.00	3.96
25th Percentile	49.14	29.20	3.55	27.38	2.70	0.00	0.00	0.00
Median	44.75	24.80	1.67	24.00	0.00	0.00	0.00	0.00
75th Percentile	42.50	22.05	0.00	18.30	0.00	0.00	0.00	0.00
90th Percentile	39.45	15.31	0.00	13.00	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	0.61

# SERS 2035 Retirement Fund Period Ended March 31, 2021

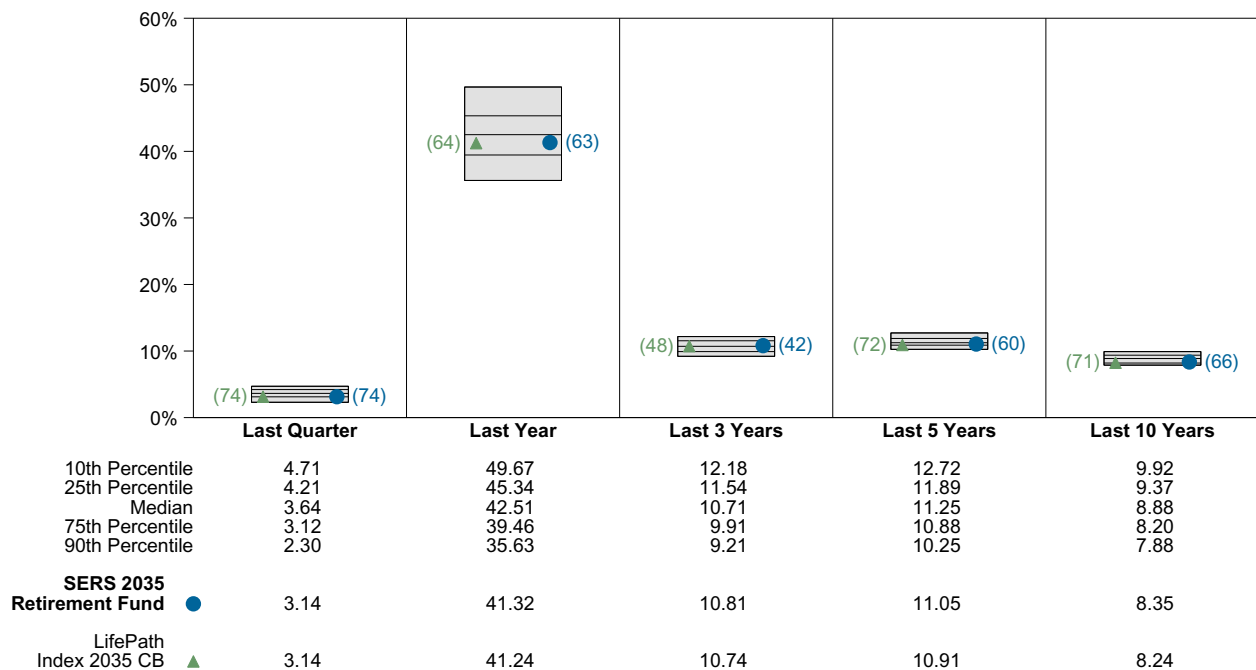
## Investment Philosophy

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.

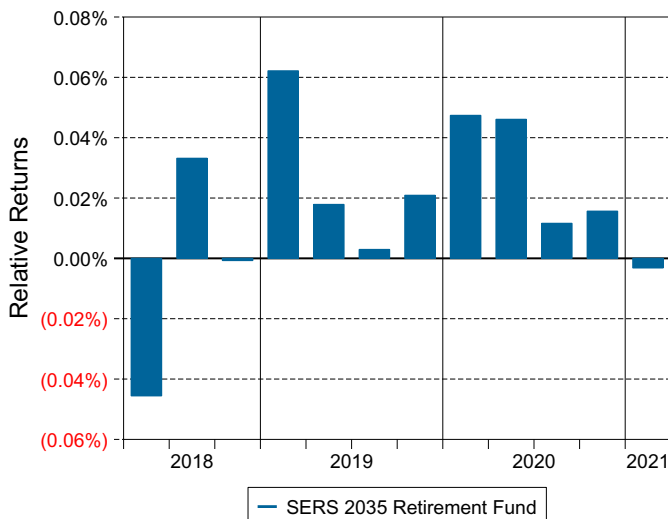
## Quarterly Summary and Highlights

- SERS 2035 Retirement Fund's portfolio posted a 3.14% return for the quarter placing it in the 74 percentile of the Callan Target Date 2035 group for the quarter and in the 63 percentile for the last year.
- SERS 2035 Retirement Fund's portfolio underperformed the LifePath Index 2035 CB by 0.00% for the quarter and outperformed the LifePath Index 2035 CB for the year by 0.09%.

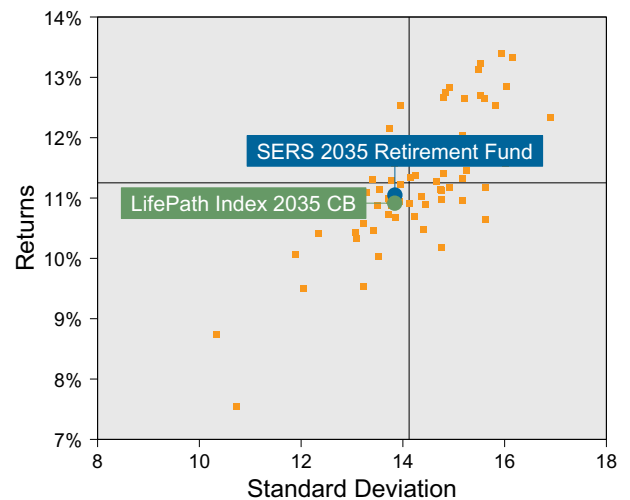
## Performance vs Callan Target Date 2035 (Net)



## Relative Return vs LifePath Index 2035 CB



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

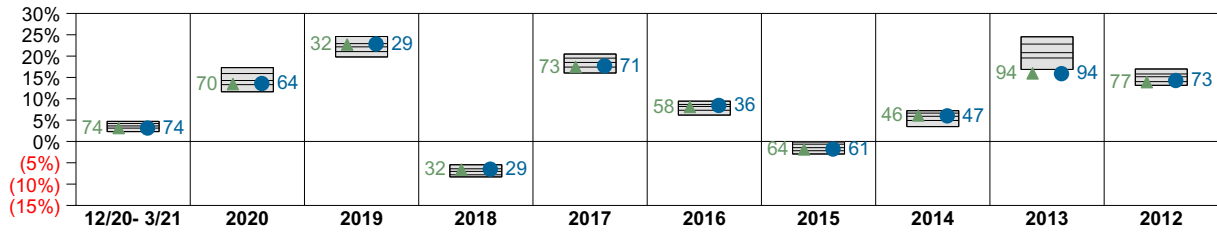


# SERS 2035 Retirement Fund Return Analysis Summary

## Return Analysis

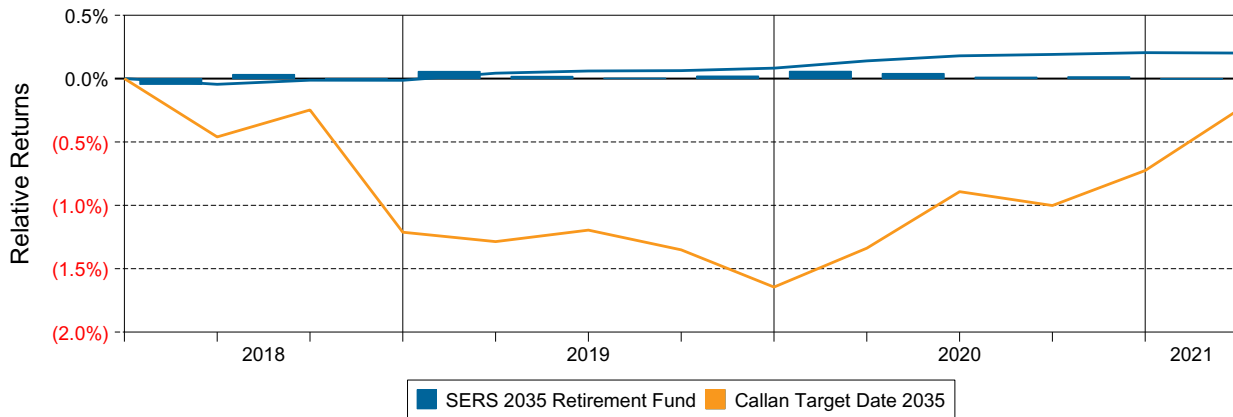
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

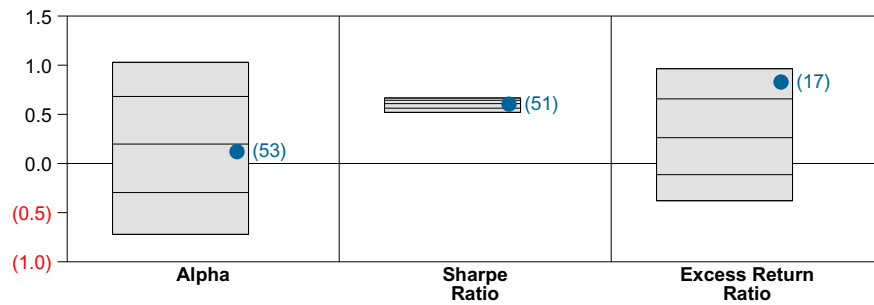


10th Percentile	4.71	17.30	24.59	(5.46)	20.49	9.45	(0.10)	7.21	24.53	16.98
25th Percentile	4.21	15.91	22.92	(6.41)	19.53	8.67	(0.64)	6.63	22.82	15.81
Median	3.64	14.28	22.17	(7.03)	18.51	8.20	(1.46)	5.89	20.81	15.16
75th Percentile	3.12	13.31	21.05	(7.82)	17.42	7.30	(2.17)	4.91	19.56	14.02
90th Percentile	2.30	11.64	19.80	(8.31)	16.04	6.17	(2.95)	3.47	16.87	13.15
<b>SERS 2035 Retirement Fund</b>	● 3.14	13.58	22.84	(6.50)	17.72	8.44	(1.78)	5.99	15.88	14.28
LifePath Index 2035 CB	▲ 3.14	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 March 31, 2021

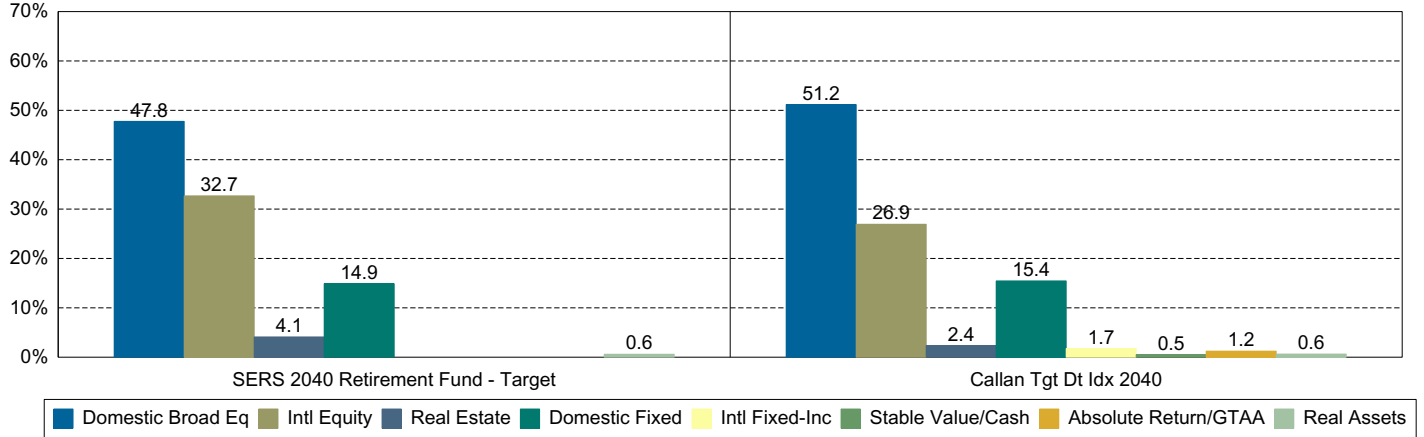


10th Percentile	1.03	0.67	0.96
25th Percentile	0.68	0.64	0.66
Median	0.20	0.61	0.26
75th Percentile	(0.30)	0.56	(0.11)
90th Percentile	(0.72)	0.52	(0.38)
<b>SERS 2035 Retirement Fund</b>	● 0.12	0.60	0.83

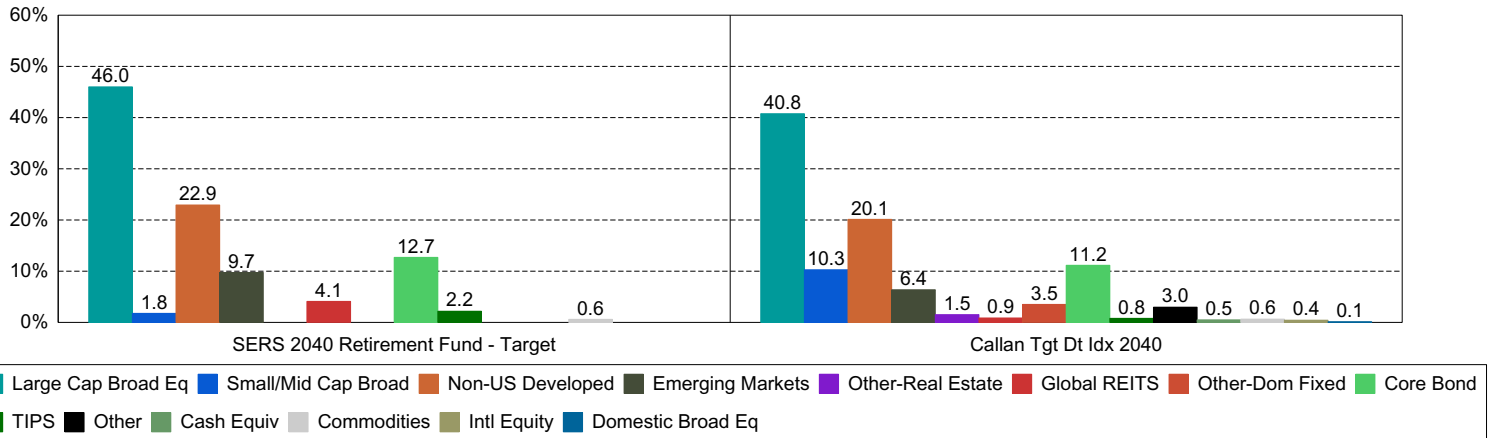
# SERS 2040 Retirement Fund Target Date Fund Asset Allocation as of March 31, 2021

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.

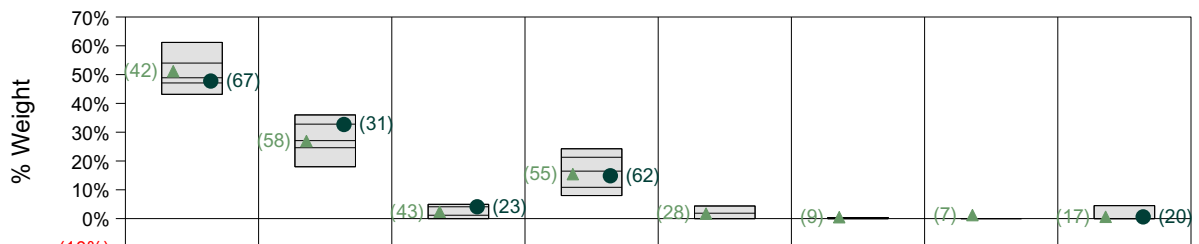
## Macro-Level Asset Allocation



## 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	61.17	36.00	4.95	24.25	4.38	0.37	0.00	4.50
25th Percentile	54.00	32.80	4.10	21.30	1.87	0.00	0.00	0.00
Median	48.90	27.07	1.17	16.48	0.00	0.00	0.00	0.00
75th Percentile	47.10	24.61	0.00	10.86	0.00	0.00	0.00	0.00
90th Percentile	43.15	18.00	0.00	8.00	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	0.63

# SERS 2040 Retirement Fund Period Ended March 31, 2021

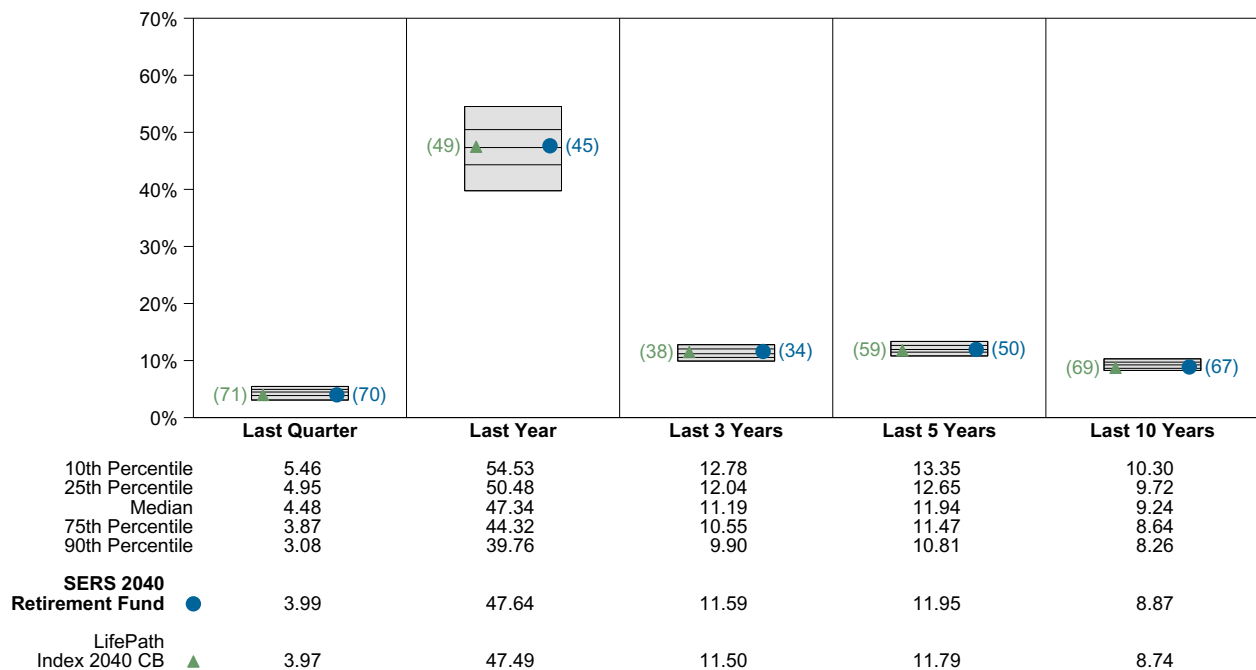
## Investment Philosophy

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.

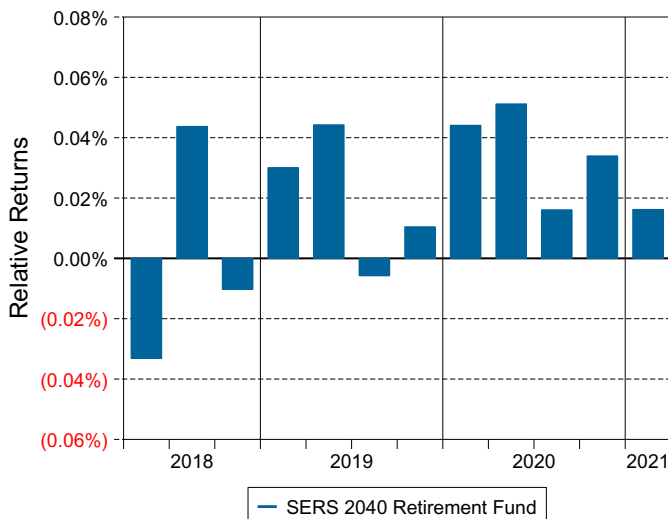
## Quarterly Summary and Highlights

- SERS 2040 Retirement Fund's portfolio posted a 3.99% return for the quarter placing it in the 70 percentile of the Callan Target Date 2040 group for the quarter and in the 45 percentile for the last year.
- SERS 2040 Retirement Fund's portfolio outperformed the LifePath Index 2040 CB by 0.02% for the quarter and outperformed the LifePath Index 2040 CB for the year by 0.15%.

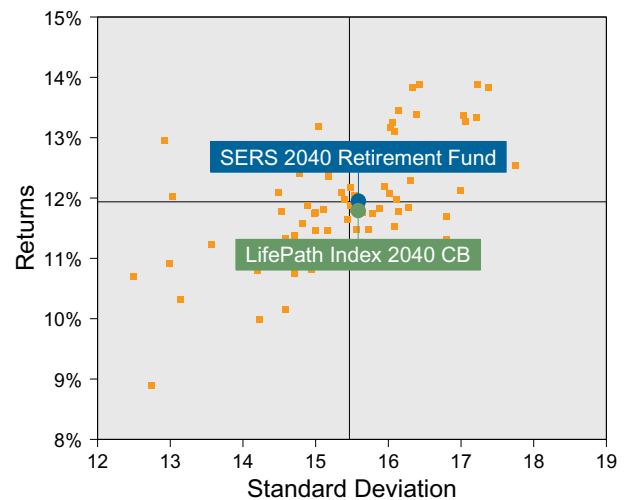
## Performance vs Callan Target Date 2040 (Net)



## Relative Return vs LifePath Index 2040 CB



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

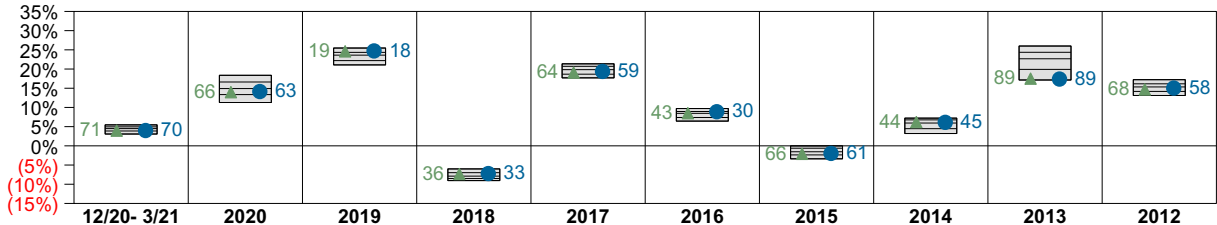


# SERS 2040 Retirement Fund Return Analysis Summary

## Return Analysis

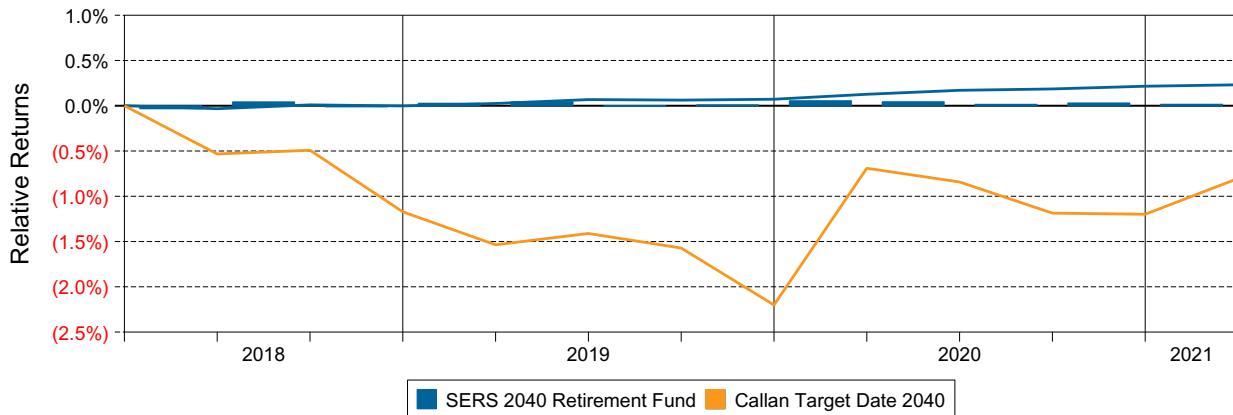
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

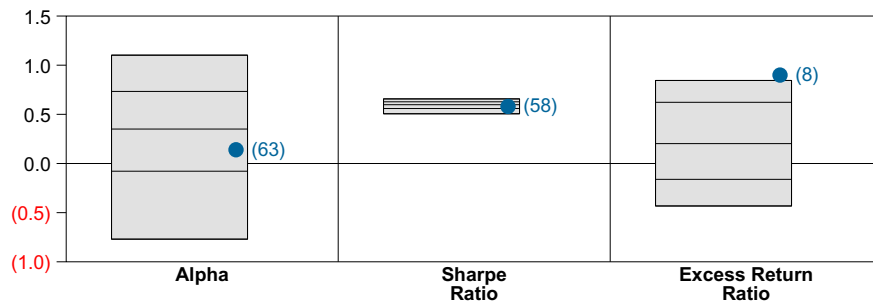


	12/20- 3/21	2020	2019	2018	2017	2016	2015	2014	2013	2012
<b>SERS 2040 Retirement Fund</b>	● 3.99	14.14	24.71	(7.22)	19.38	8.88	(1.98)	6.12	17.39	15.04
LifePath Index 2040 CB	▲ 3.97	13.98	24.62	(7.33)	19.09	8.51	(2.08)	6.21	17.52	14.70

### 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 March 31, 2021



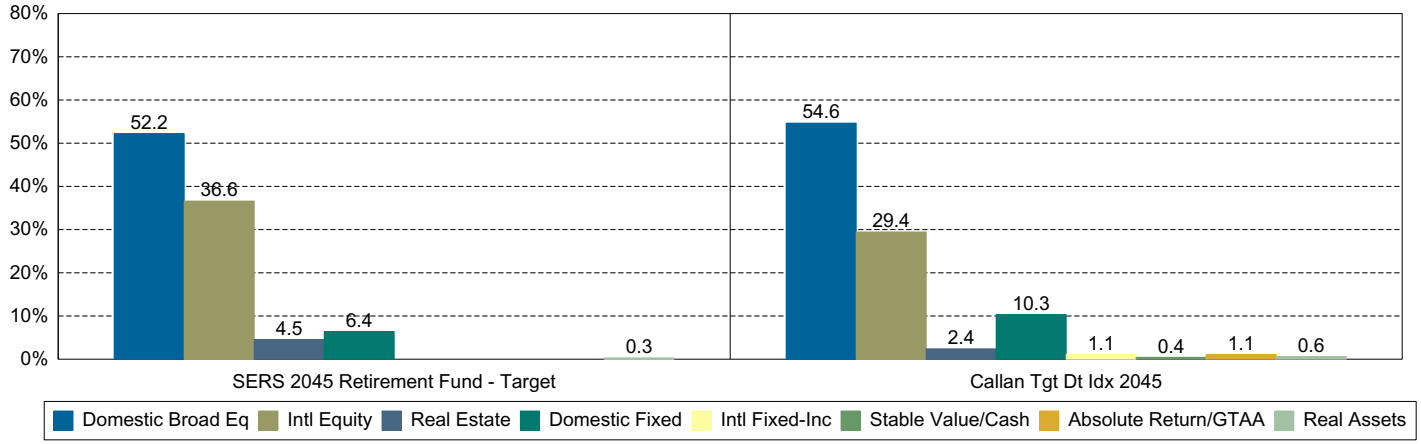
<b>SERS 2040 Retirement Fund</b>	● 0.14	0.58	0.90
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# SERS 2045 Retirement Fund

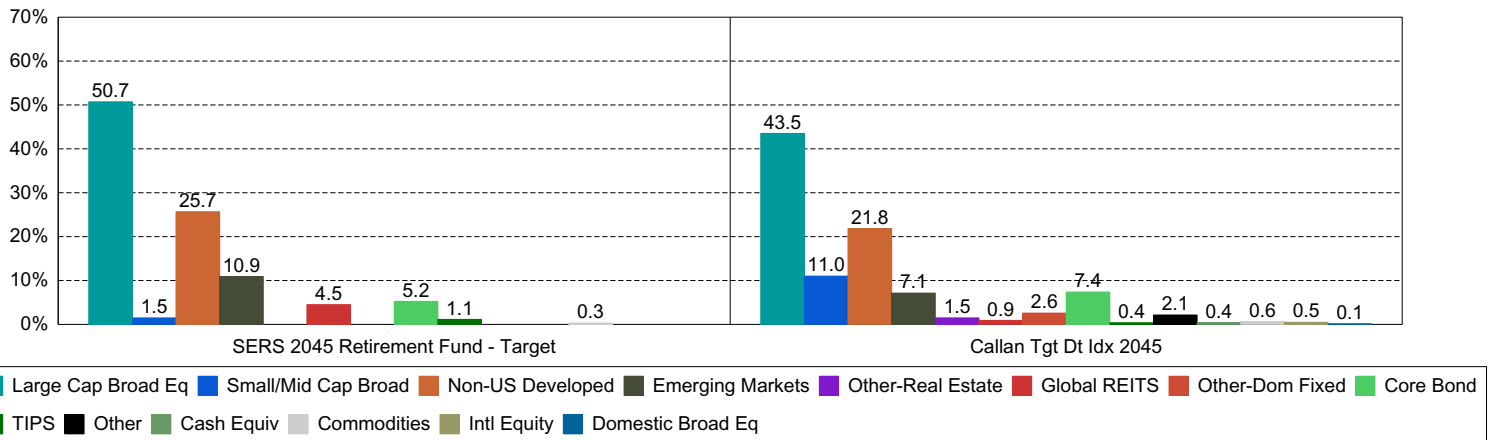
## Target Date Fund Asset Allocation as of March 31, 2021

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.

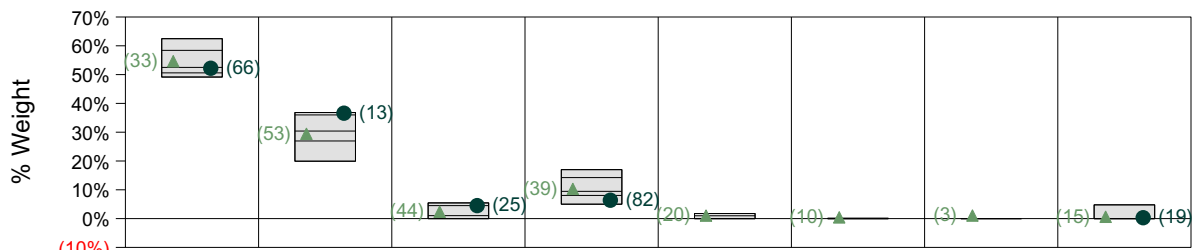
### Macro-Level Asset Allocation



### 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	62.47	36.83	5.45	17.00	1.76	0.12	0.00	4.77
25th Percentile	58.42	36.00	4.51	14.24	0.98	0.00	0.00	0.00
Median	52.50	30.40	1.03	9.46	0.00	0.00	0.00	0.00
75th Percentile	50.60	26.95	0.00	8.05	0.00	0.00	0.00	0.00
90th Percentile	49.15	19.93	0.00	5.00	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	0.64

# SERS 2045 Retirement Fund Period Ended March 31, 2021

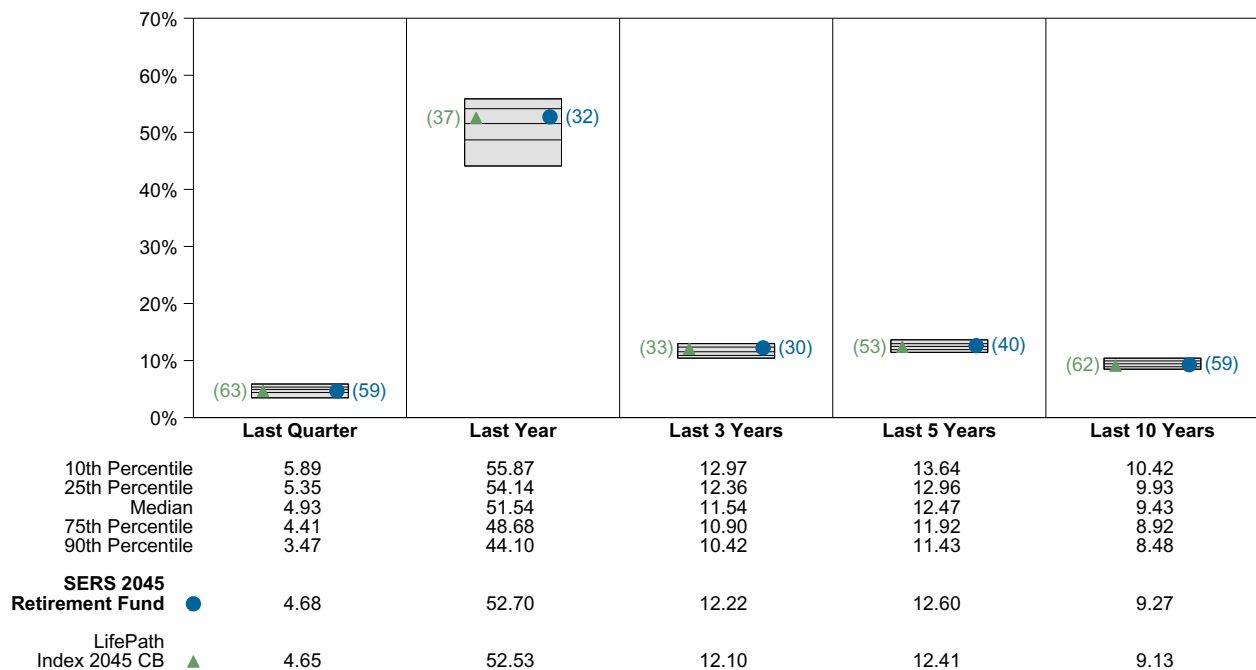
## Investment Philosophy

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.

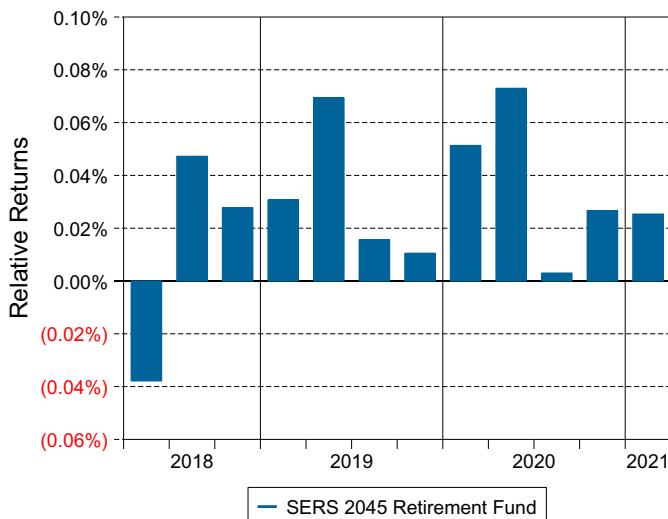
## Quarterly Summary and Highlights

- SERS 2045 Retirement Fund's portfolio posted a 4.68% return for the quarter placing it in the 59 percentile of the Callan Target Date 2045 group for the quarter and in the 32 percentile for the last year.
- SERS 2045 Retirement Fund's portfolio outperformed the LifePath Index 2045 CB by 0.03% for the quarter and outperformed the LifePath Index 2045 CB for the year by 0.17%.

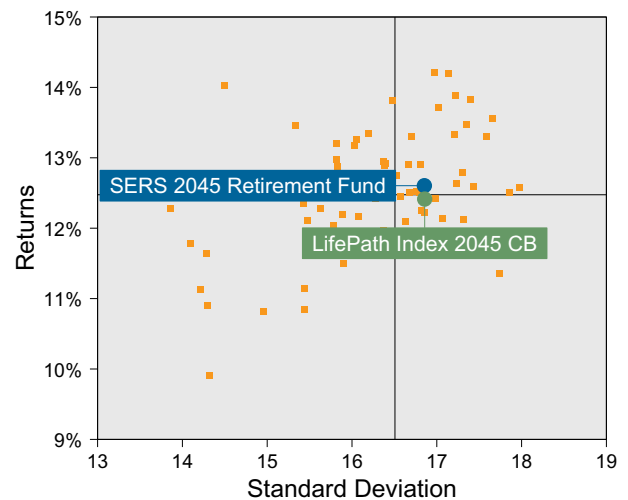
## Performance vs Callan Target Date 2045 (Net)



## Relative Return vs LifePath Index 2045 CB



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



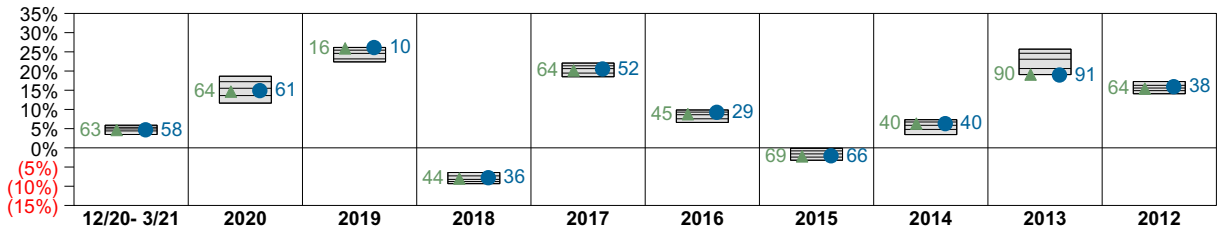


# SERS 2045 Retirement Fund Return Analysis Summary

## Return Analysis

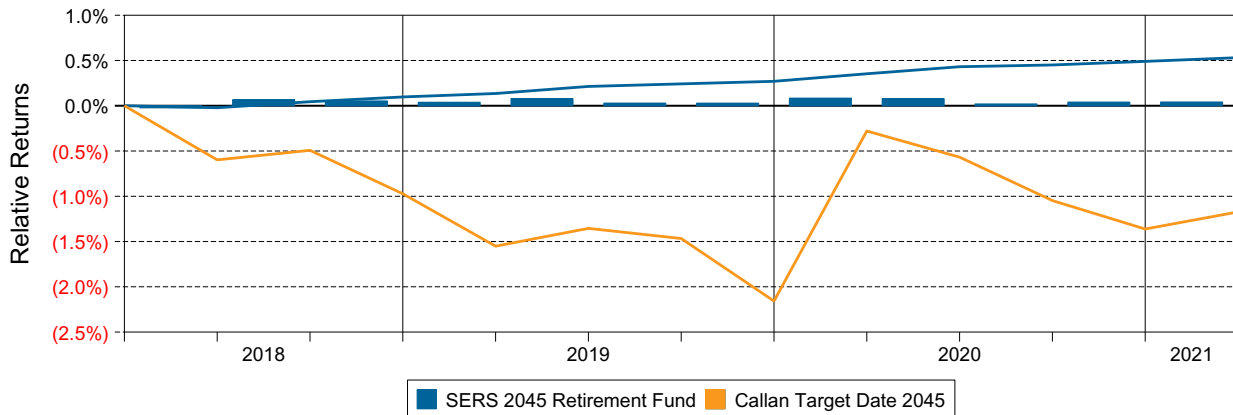
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

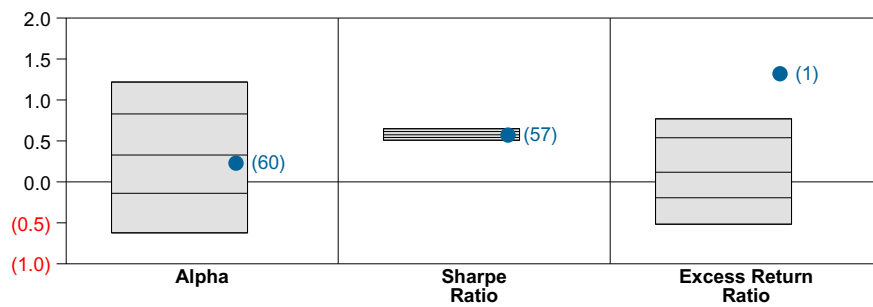


10th Percentile	5.89	18.65	26.14	(6.43)	22.08	9.86	(0.12)	7.33	25.70	17.26
25th Percentile	5.35	17.23	25.44	(7.30)	21.36	9.31	(0.79)	6.73	24.63	16.28
Median	4.93	15.52	24.60	(8.21)	20.63	8.63	(1.57)	5.87	23.08	15.58
75th Percentile	4.41	13.61	23.16	(8.78)	19.47	7.56	(2.41)	4.80	20.66	14.90
90th Percentile	3.47	11.64	22.38	(9.33)	18.51	6.62	(3.23)	3.45	19.08	14.09
<b>SERS 2045 Retirement Fund</b> ●	4.69	14.90	26.12	(7.78)	20.54	9.25	(2.07)	6.30	18.97	15.92
LifePath Index 2045 CB ▲	4.65	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 March 31, 2021



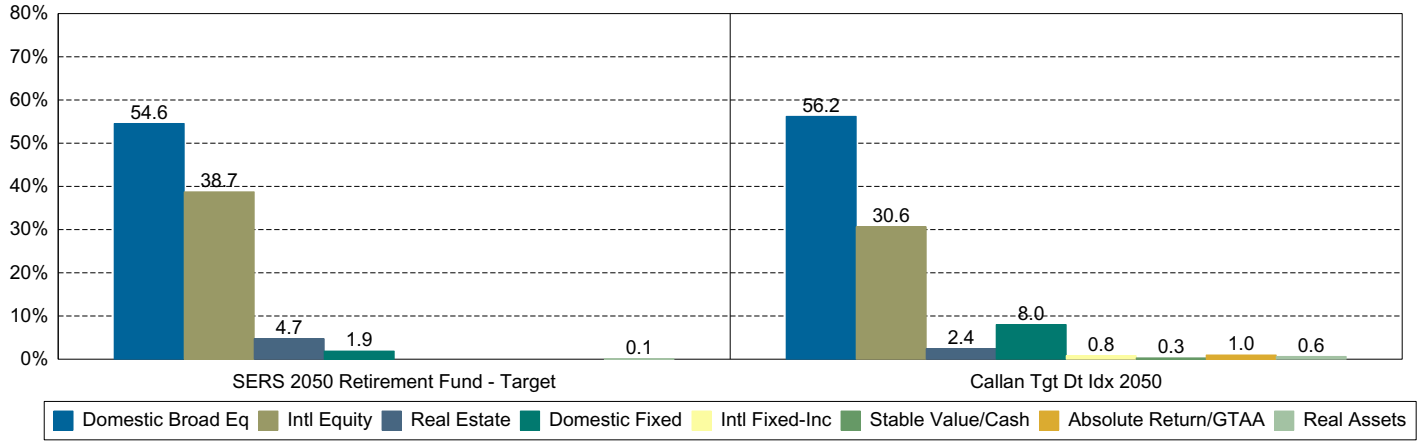
10th Percentile	1.22	0.65	0.77
25th Percentile	0.83	0.61	0.54
Median	0.33	0.57	0.12
75th Percentile	(0.14)	0.54	(0.19)
90th Percentile	(0.62)	0.51	(0.52)
<b>SERS 2045 Retirement Fund</b> ●	0.23	0.57	1.32

# SERS 2050 Retirement Fund

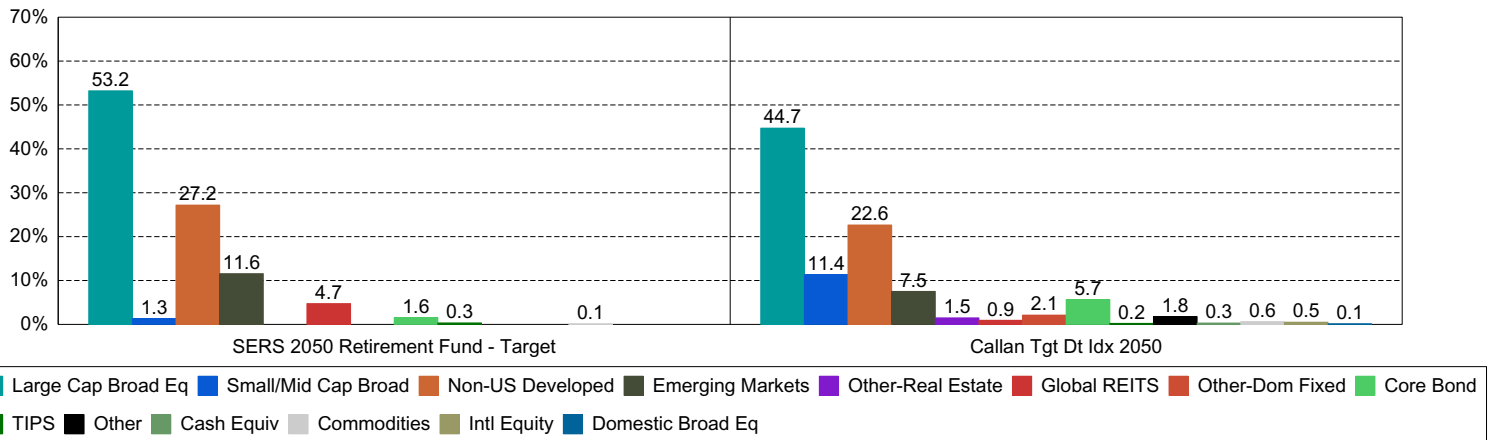
## Target Date Fund Asset Allocation as of March 31, 2021

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.

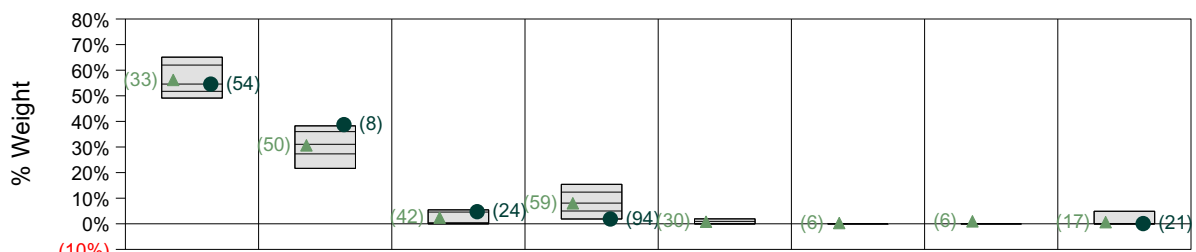
### Macro-Level Asset Allocation



### 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	65.09	38.26	5.45	15.42	1.92	0.00	0.00	4.90
25th Percentile	62.00	36.00	4.58	12.37	0.95	0.00	0.00	0.00
Median	54.58	31.06	0.42	8.08	0.00	0.00	0.00	0.00
75th Percentile	51.75	27.31	0.00	5.00	0.00	0.00	0.00	0.00
90th Percentile	49.11	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 March 31, 2021

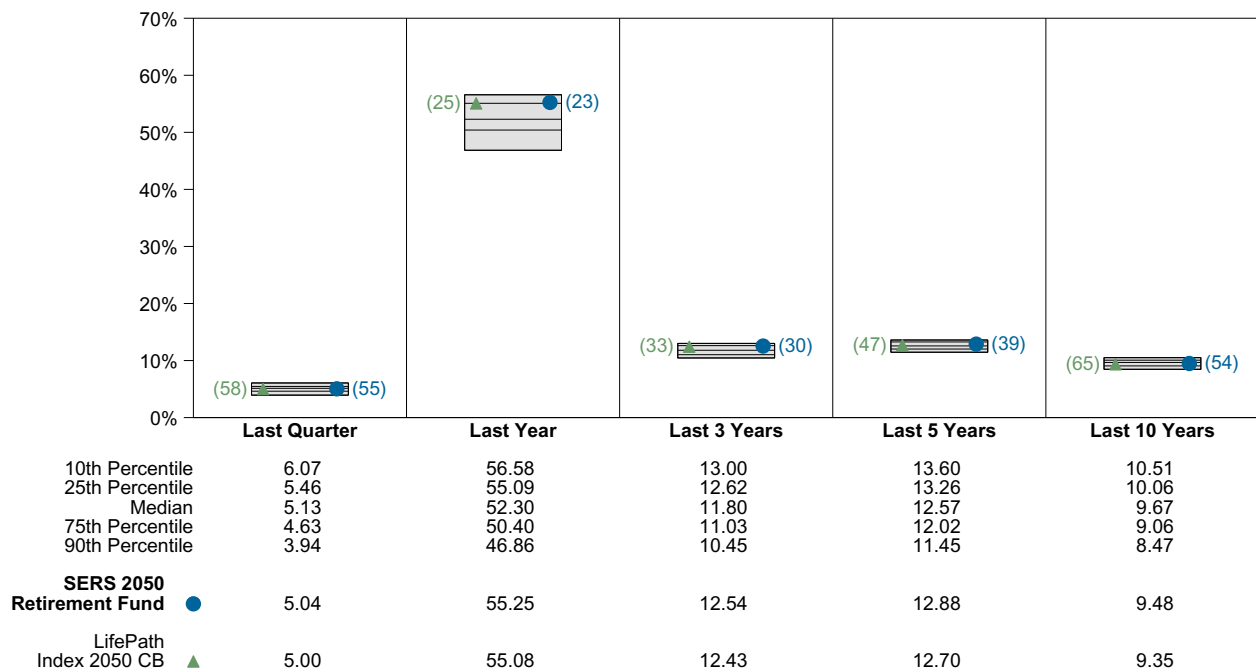
## Investment Philosophy

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.

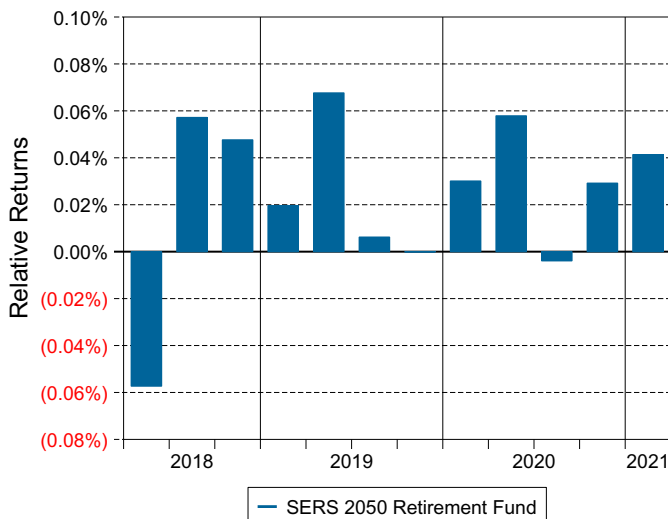
## Quarterly Summary and Highlights

- SERS 2050 Retirement Fund's portfolio posted a 5.04% return for the quarter placing it in the 55 percentile of the Callan Target Date 2050 group for the quarter and in the 23 percentile for the last year.
- SERS 2050 Retirement Fund's portfolio outperformed the LifePath Index 2050 CB by 0.04% for the quarter and outperformed the LifePath Index 2050 CB for the year by 0.17%.

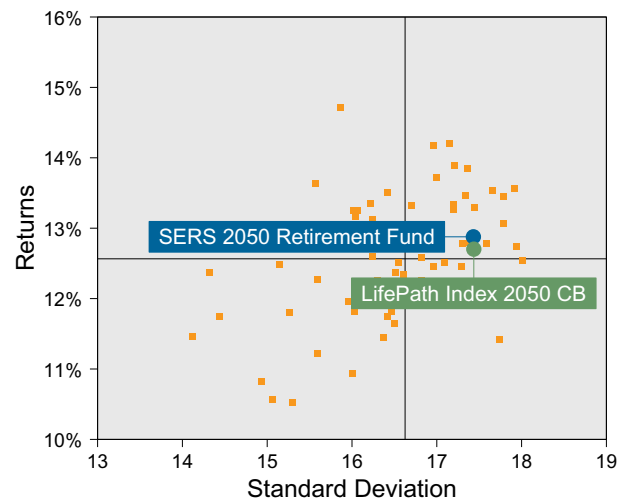
## Performance vs Callan Target Date 2050 (Net)



## Relative Return vs LifePath Index 2050 CB



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

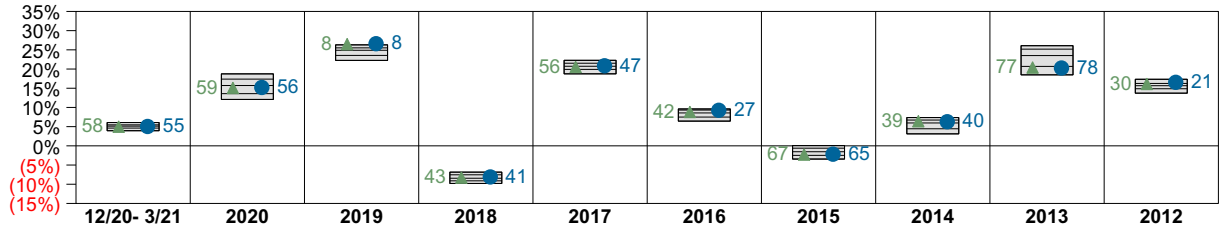


# SERS 2050 Retirement Fund Return Analysis Summary

## Return Analysis

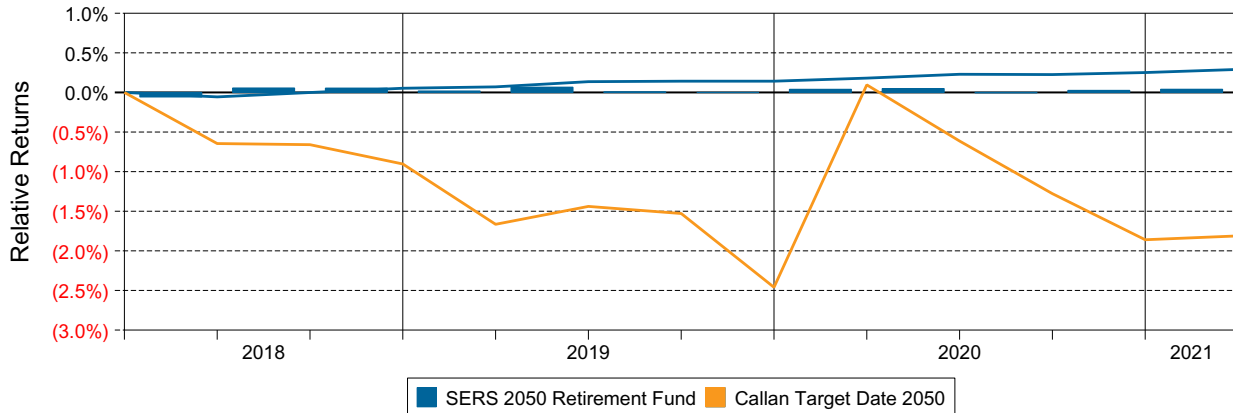
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

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

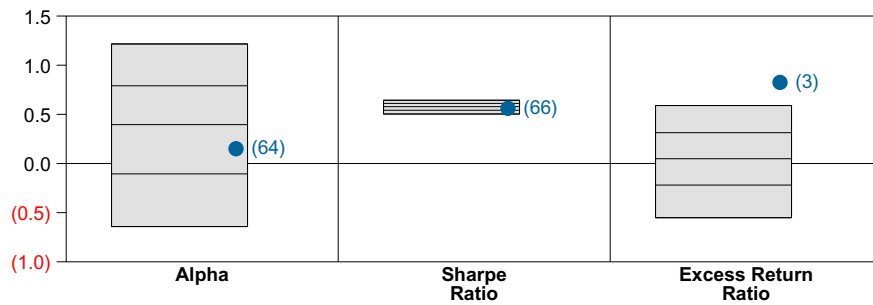


	12/20- 3/21	2020	2019	2018	2017	2016	2015	2014	2013	2012
10th Percentile	6.07	18.74	26.30	(6.84)	22.27	9.60	0.05	7.37	26.07	17.34
25th Percentile	5.46	17.38	25.51	(7.54)	21.51	9.32	(0.61)	6.72	25.18	16.25
Median	5.13	15.71	24.89	(8.44)	20.72	8.57	(1.54)	5.96	23.51	15.66
75th Percentile	4.63	13.59	23.55	(9.11)	19.91	7.49	(2.48)	4.45	20.69	14.87
90th Percentile	3.94	12.08	22.25	(9.80)	18.75	6.44	(3.45)	3.12	18.49	13.71
<b>SERS 2050 Retirement Fund</b>	● 5.04	15.20	26.60	(8.11)	20.85	9.26	(2.17)	6.28	20.26	16.54
LifePath Index 2050 CB	▲ 5.00	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 March 31, 2021



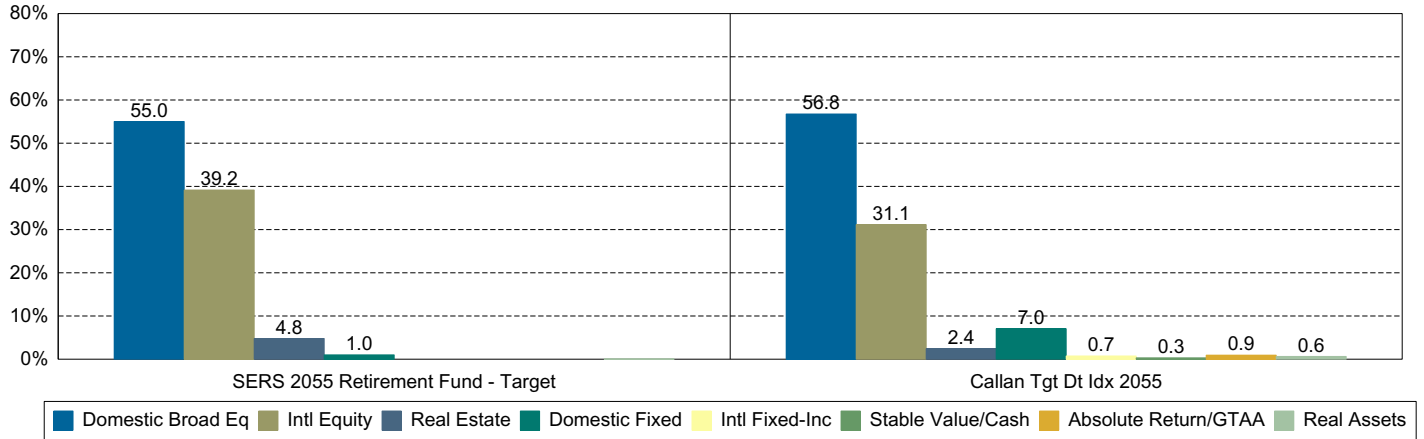
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	1.22	0.64	0.59
25th Percentile	0.79	0.61	0.31
Median	0.40	0.58	0.05
75th Percentile	(0.11)	0.54	(0.22)
90th Percentile	(0.64)	0.50	(0.55)
<b>SERS 2050 Retirement Fund</b>	● 0.15	0.56	0.83

# SERS 2055 Retirement Fund

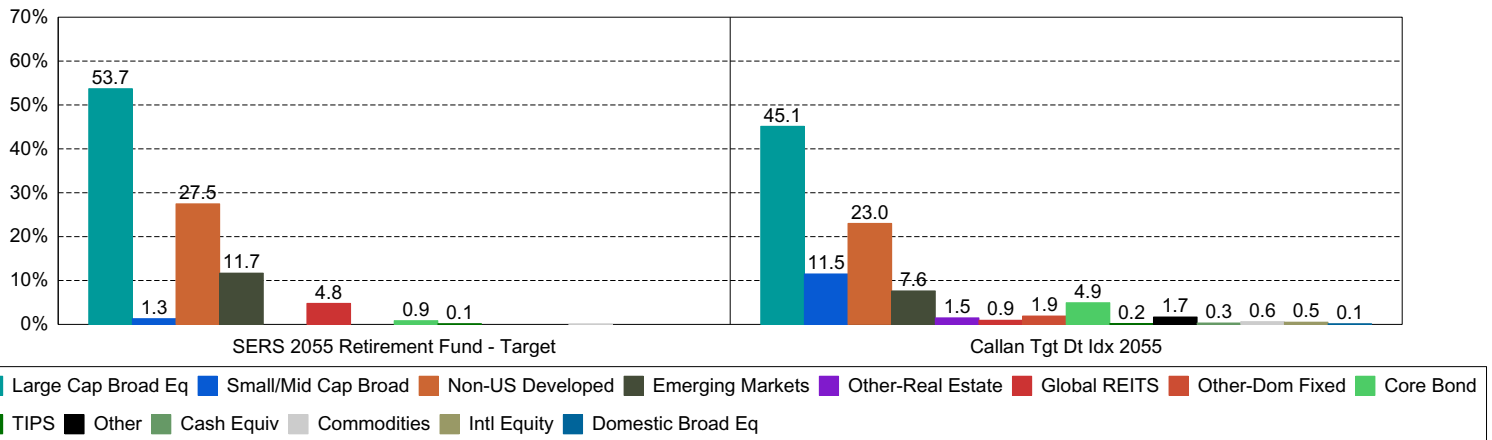
## Target Date Fund Asset Allocation as of March 31, 2021

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.

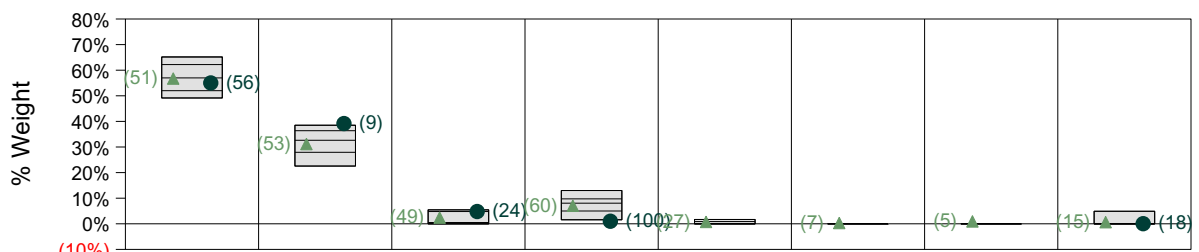
### Macro-Level Asset Allocation



### 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	62.19	36.36	4.79	9.74	0.88	0.00	0.00	0.00
Median	56.99	32.63	0.50	8.05	0.00	0.00	0.00	0.00
75th Percentile	52.00	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 March 31, 2021

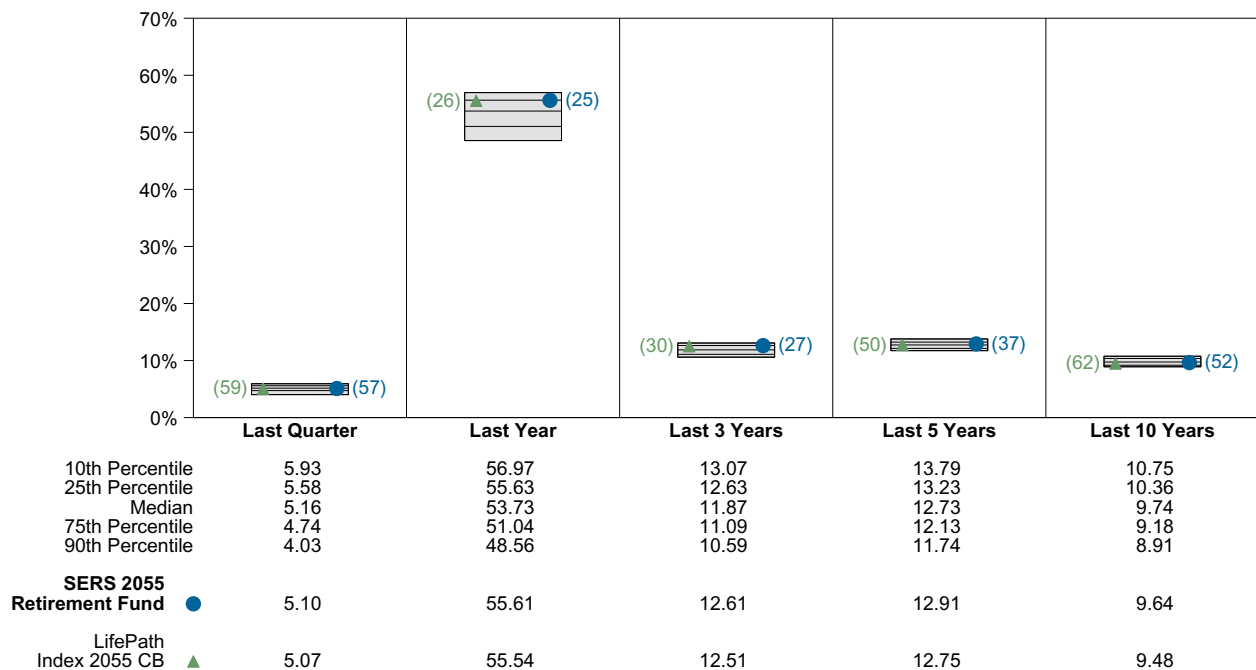
## Investment Philosophy

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.

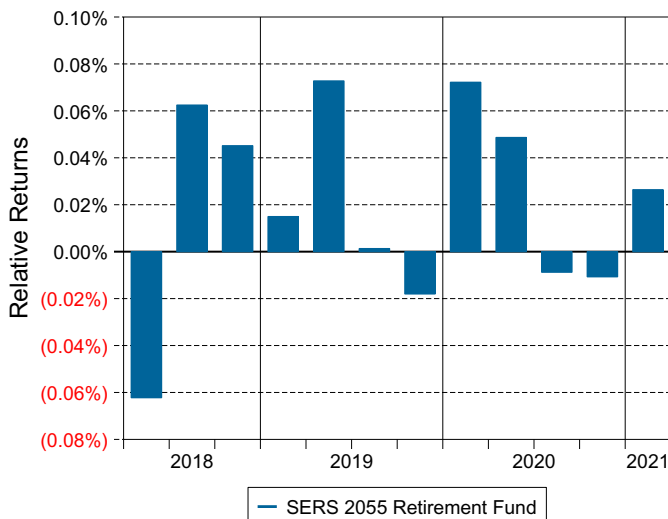
## Quarterly Summary and Highlights

- SERS 2055 Retirement Fund's portfolio posted a 5.10% return for the quarter placing it in the 57 percentile of the Callan Target Date 2055 group for the quarter and in the 25 percentile for the last year.
- SERS 2055 Retirement Fund's portfolio outperformed the LifePath Index 2055 CB by 0.03% for the quarter and outperformed the LifePath Index 2055 CB for the year by 0.08%.

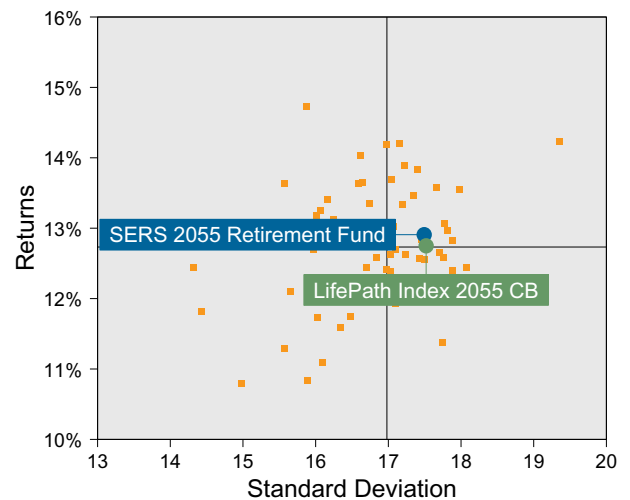
## Performance vs Callan Target Date 2055 (Net)



## Relative Return vs LifePath Index 2055 CB



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

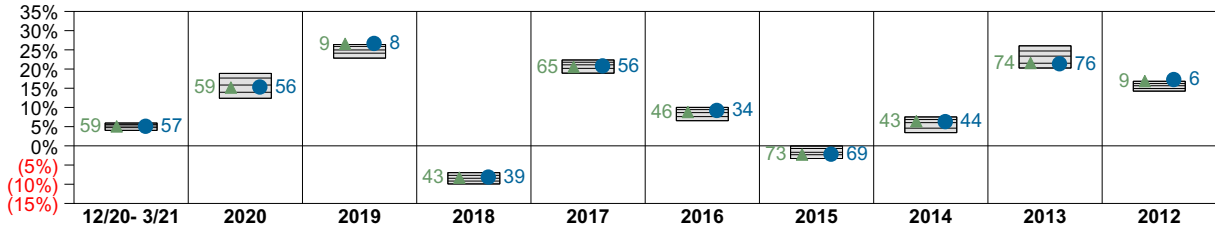


# SERS 2055 Retirement Fund Return Analysis Summary

## Return Analysis

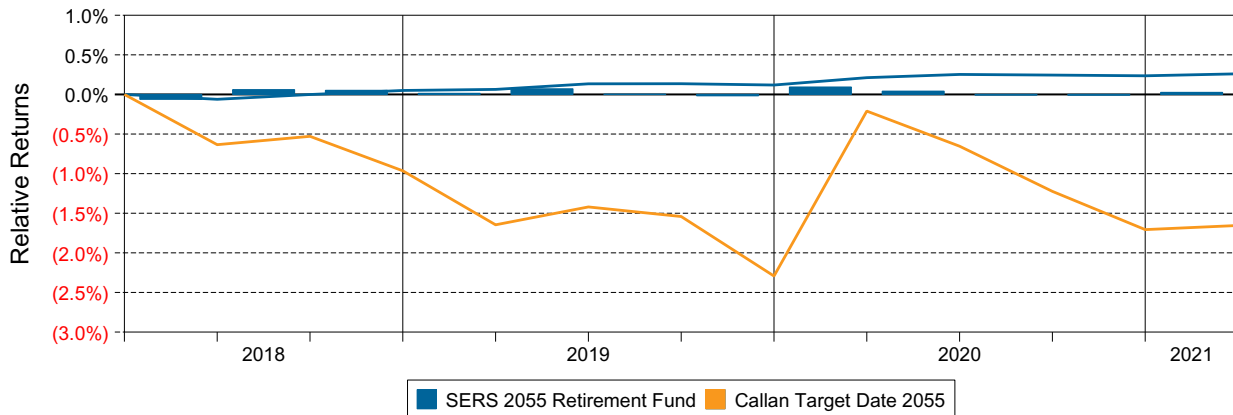
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

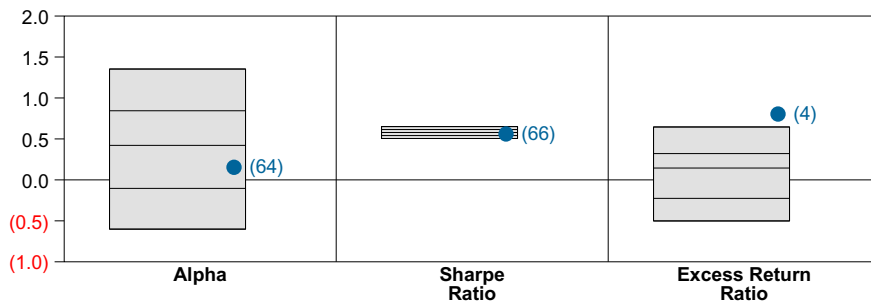


	12/20-3/21	2020	2019	2018	2017	2016	2015	2014	2013	2012
10th Percentile	5.93	18.86	26.39	(6.98)	22.36	10.01	(0.05)	7.53	26.05	16.82
25th Percentile	5.58	17.65	25.90	(7.69)	21.77	9.44	(0.69)	6.85	24.70	16.22
Median	5.16	15.83	24.97	(8.44)	21.10	8.65	(1.68)	6.04	23.36	15.65
75th Percentile	4.74	13.95	24.13	(9.18)	20.17	7.61	(2.31)	4.60	21.51	14.93
90th Percentile	4.03	12.38	22.84	(9.93)	18.92	6.55	(3.30)	3.44	20.26	14.25
<b>SERS 2055 Retirement Fund</b>	5.10	15.32	26.67	(8.13)	20.82	9.22	(2.17)	6.31	21.37	17.27
LifePath Index 2055 CB	5.07	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 March 31, 2021



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	1.35	0.65	0.65
25th Percentile	0.84	0.61	0.32
Median	0.42	0.58	0.14
75th Percentile	(0.10)	0.54	(0.23)
90th Percentile	(0.60)	0.51	(0.50)
<b>SERS 2055 Retirement Fund</b>	0.15	0.56	0.80

# SERS 2060 Retirement Fund Period Ended March 31, 2021

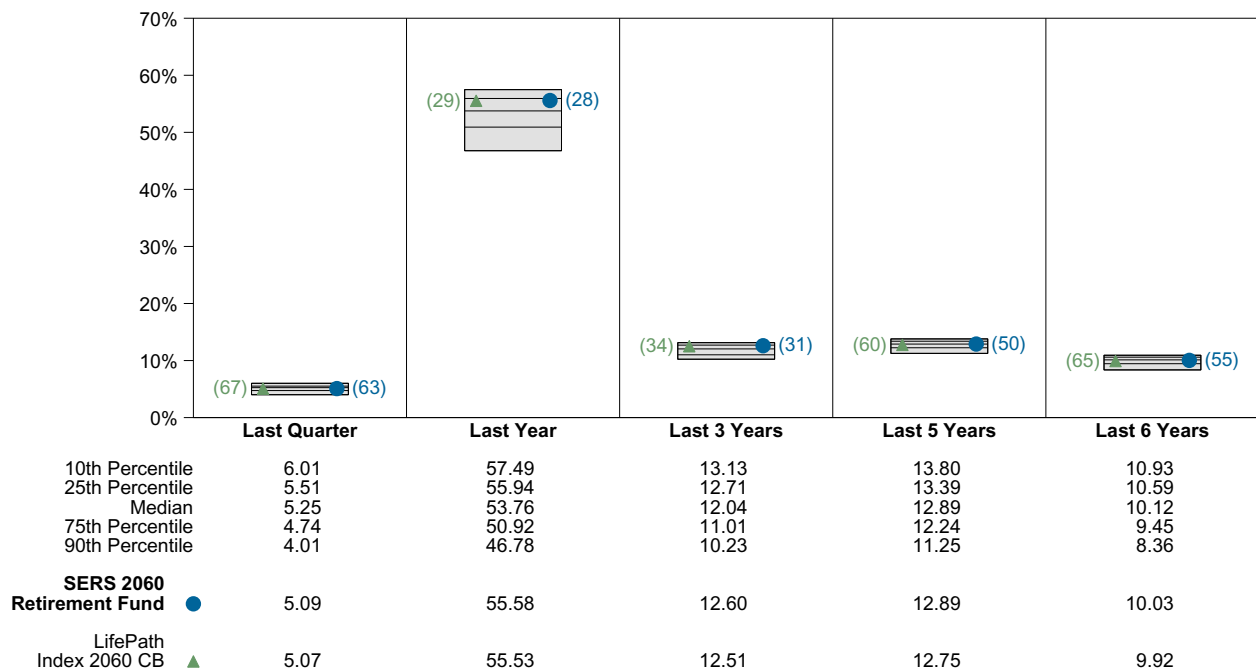
## Investment Philosophy

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.

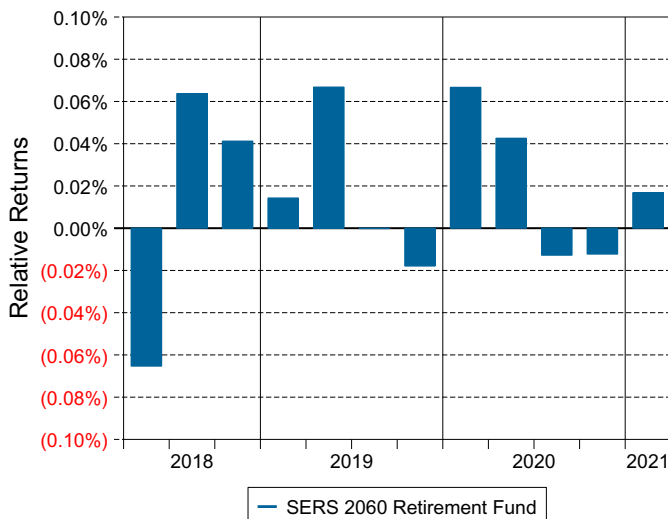
## Quarterly Summary and Highlights

- SERS 2060 Retirement Fund's portfolio posted a 5.09% return for the quarter placing it in the 63 percentile of the Callan Target Date 2060 group for the quarter and in the 28 percentile for the last year.
- SERS 2060 Retirement Fund's portfolio outperformed the LifePath Index 2060 CB by 0.02% for the quarter and outperformed the LifePath Index 2060 CB for the year by 0.05%.

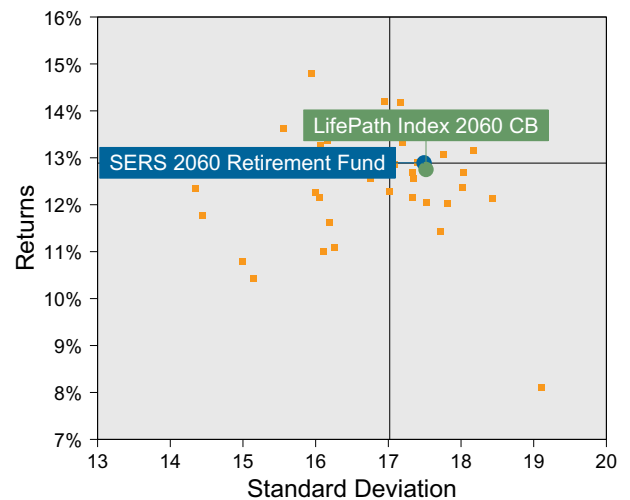
## Performance vs Callan Target Date 2060 (Net)



## Relative Return vs LifePath Index 2060 CB



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



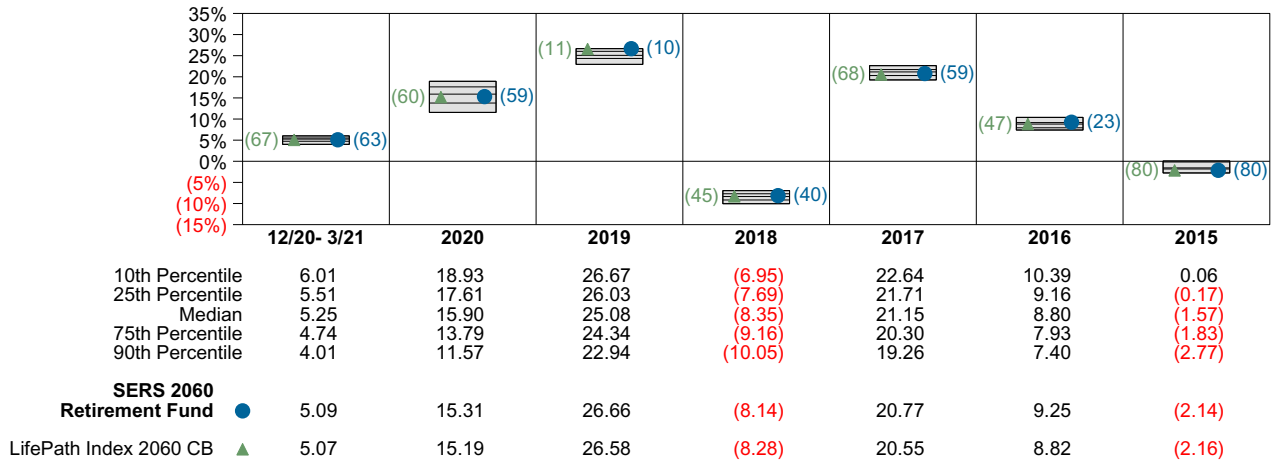


# SERS 2060 Retirement Fund Return Analysis Summary

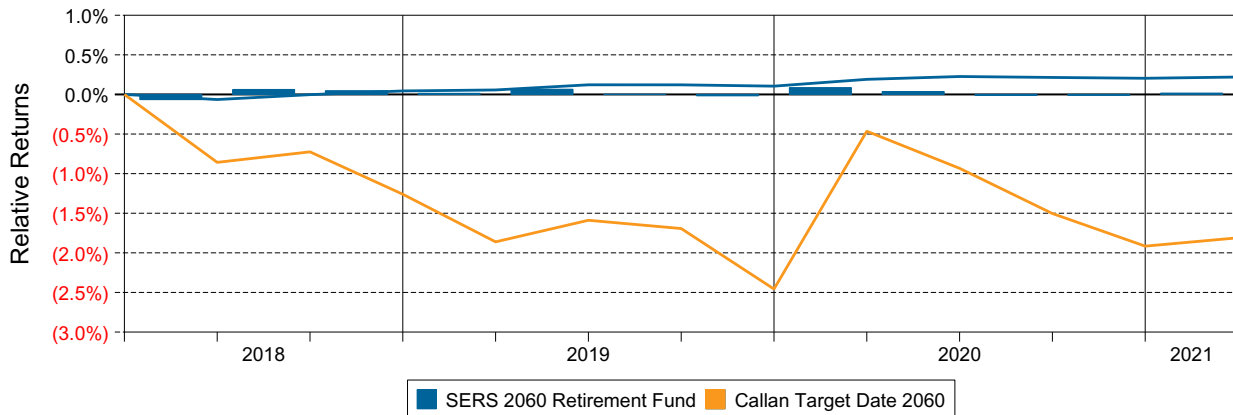
## Return Analysis

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

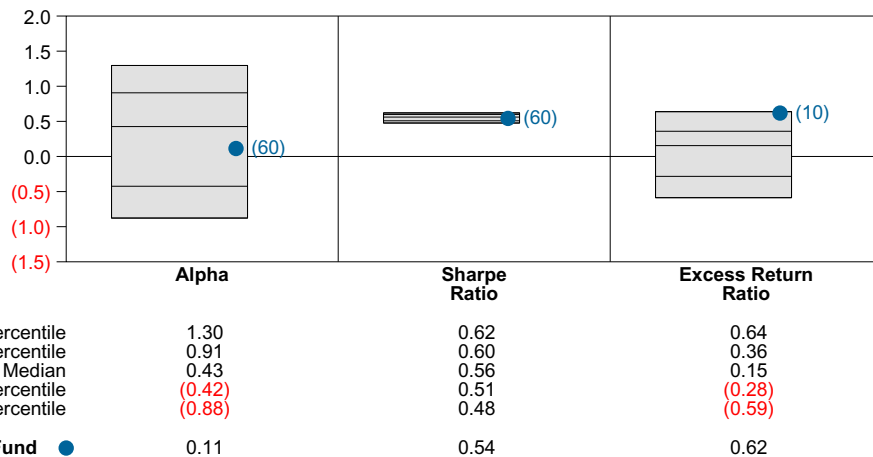
### Performance vs Callan Target Date 2060 (Net)



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



### Risk Adjusted Return Measures vs LifePath Index 2060 CB Rankings Against Callan Target Date 2060 (Net) Six Years Ended March 31, 2021



# SERS 2065 Retirement Fund Period Ended March 31, 2021

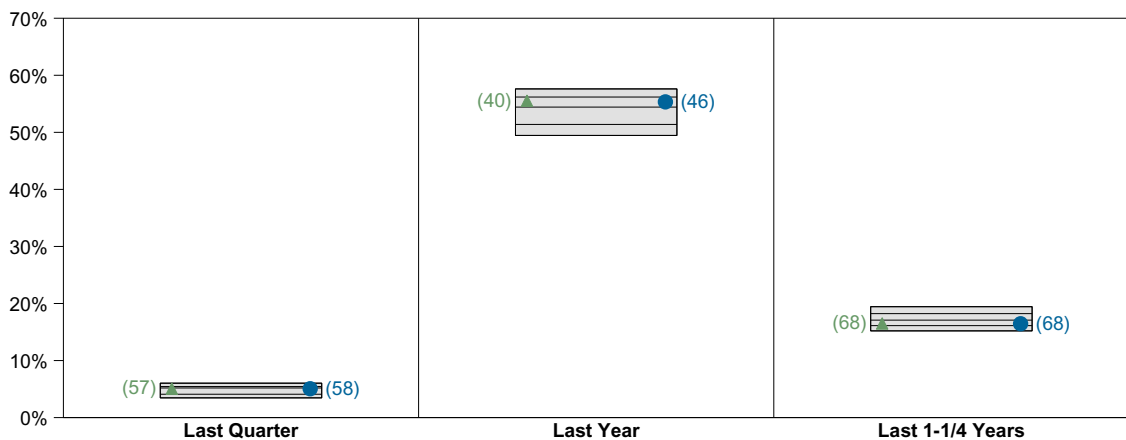
## Investment Philosophy

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

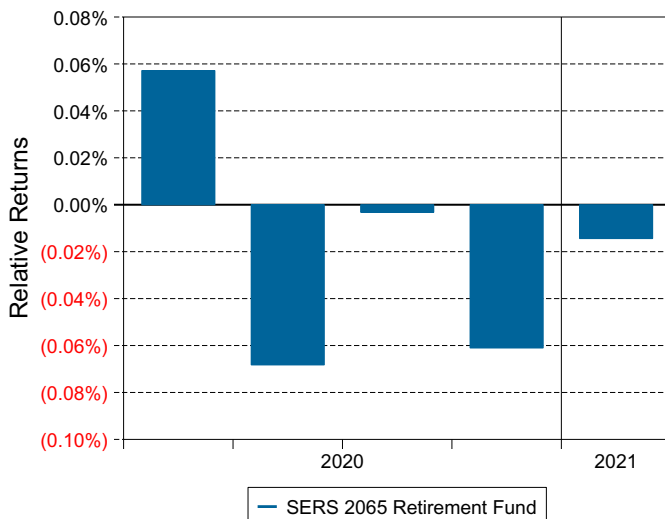
- SERS 2065 Retirement Fund's portfolio posted a 5.06% return for the quarter placing it in the 58 percentile of the Callan Target Date 2065 group for the quarter and in the 46 percentile for the last year.
- SERS 2065 Retirement Fund's portfolio underperformed the LifePath Index 2065 CB by 0.01% for the quarter and underperformed the LifePath Index 2065 CB for the year by 0.20%.

## Performance vs Callan Target Date 2065 (Net)

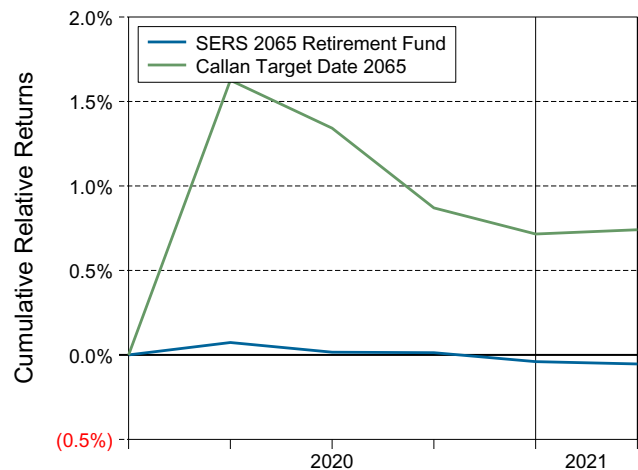


	Last Quarter	Last Year	Last 1-1/4 Years
10th Percentile	6.04	57.61	19.44
25th Percentile	5.44	56.19	18.22
Median	5.19	54.43	17.08
75th Percentile	4.10	51.39	16.12
90th Percentile	3.46	49.46	15.20
<b>SERS 2065 Retirement Fund</b>	<b>5.06</b>	<b>55.34</b>	<b>16.45</b>
LifePath Index 2065 CB	5.07	55.53	16.50

## Relative Return vs LifePath Index 2065 CB



## Cumulative Returns vs LifePath Index 2065 CB





# SERS U.S. Large Company Index Period Ended March 31, 2021

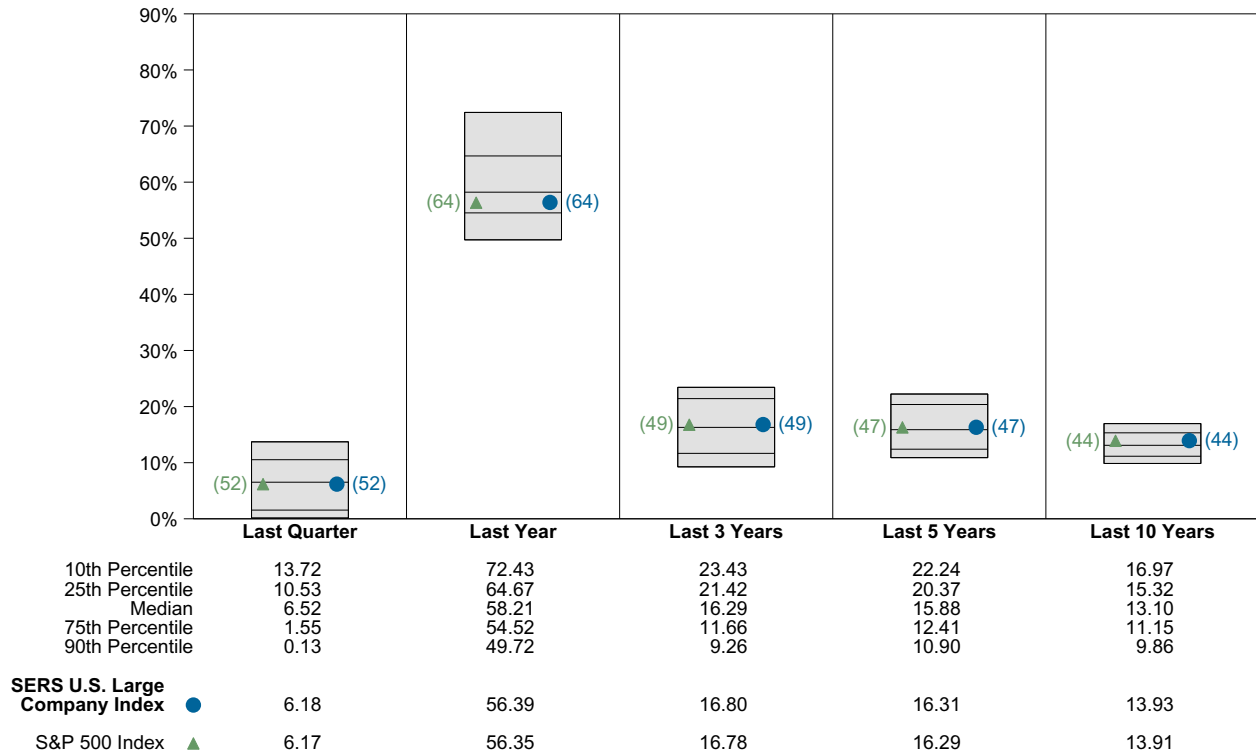
## Investment Philosophy

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.

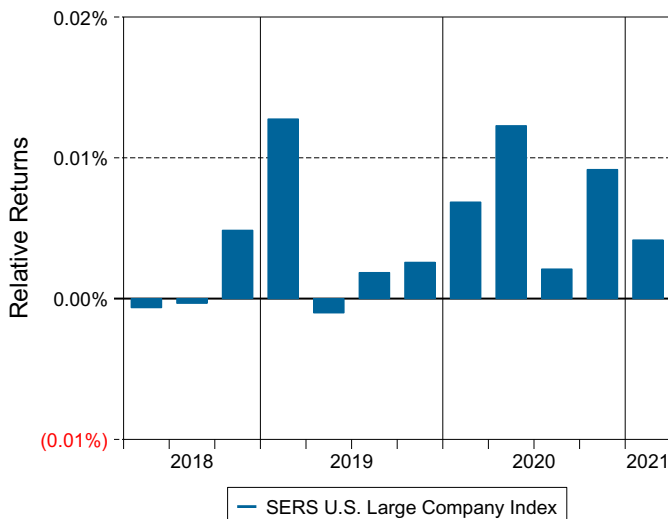
## Quarterly Summary and Highlights

- SERS U.S. Large Company Index's portfolio posted a 6.18% return for the quarter placing it in the 52 percentile of the Callan Large Cap Broad Equity Mut Funds group for the quarter and in the 64 percentile for the last year.
- SERS U.S. Large Company Index's portfolio outperformed the S&P 500 Index by 0.00% for the quarter and outperformed the S&P 500 Index for the year by 0.04%.

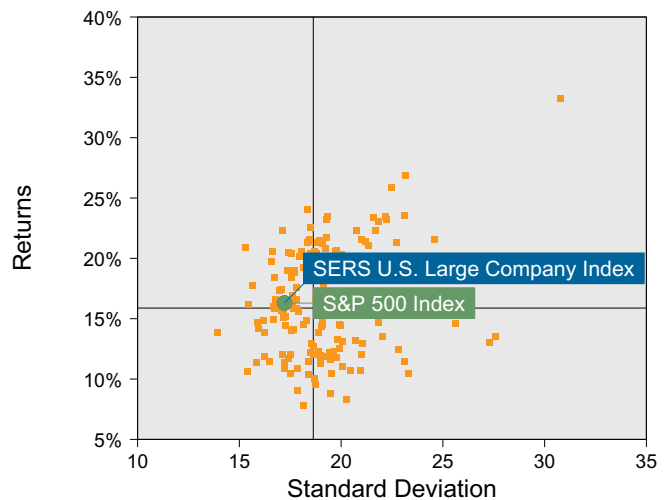
## Performance vs Callan Large Cap Broad Equity Mut Funds (Institutional Net)



## Relative Return vs S&P 500 Index



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

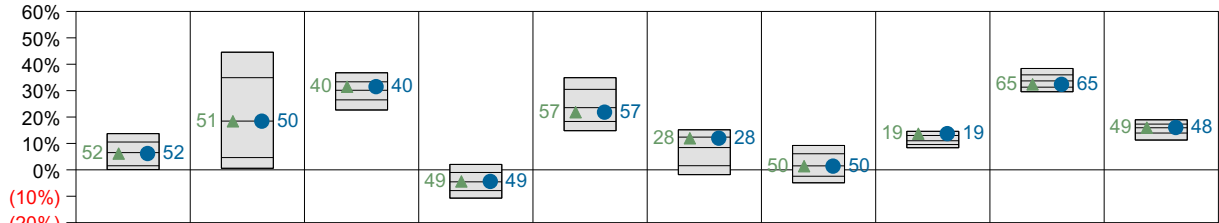


# SERS U.S. Large Company Index Return Analysis Summary

## Return Analysis

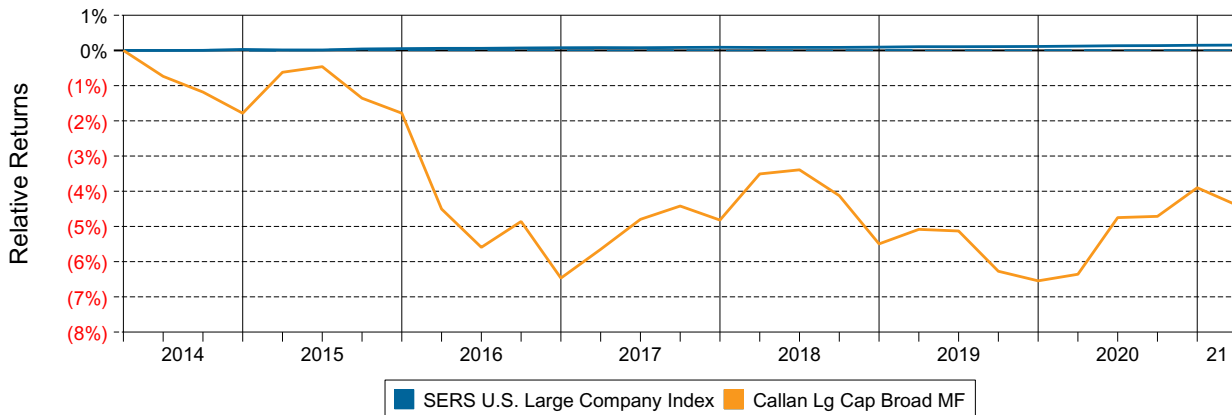
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

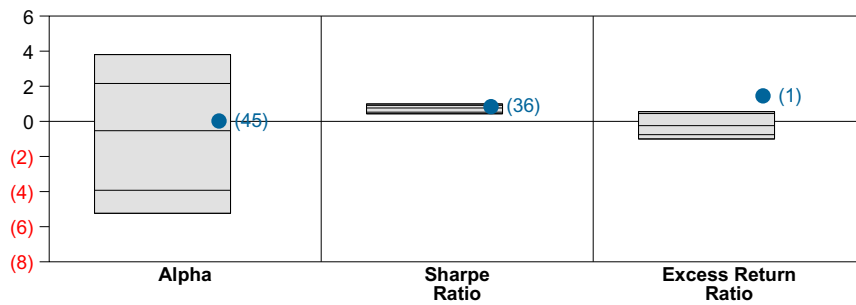


	12/20- 3/21	2020	2019	2018	2017	2016	2015	2014	2013	2012
10th Percentile	13.72	44.56	36.76	2.05	34.91	15.17	9.23	14.58	38.40	18.96
25th Percentile	10.53	34.90	33.34	(1.00)	30.48	12.39	6.09	13.01	35.98	17.33
Median	6.52	18.47	30.14	(4.54)	23.56	8.43	1.50	11.02	33.69	15.94
75th Percentile	1.55	4.64	26.51	(7.86)	18.33	1.56	(2.42)	9.59	31.31	13.94
90th Percentile	0.13	0.58	22.66	(10.72)	14.82	(1.82)	(4.91)	8.38	29.58	11.29
<b>SERS U.S. Large Company Index</b>	● 6.18	18.44	31.51	(4.38)	21.85	11.99	1.41	13.72	32.39	16.04
S&P 500 Index	▲ 6.17	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 March 31, 2021



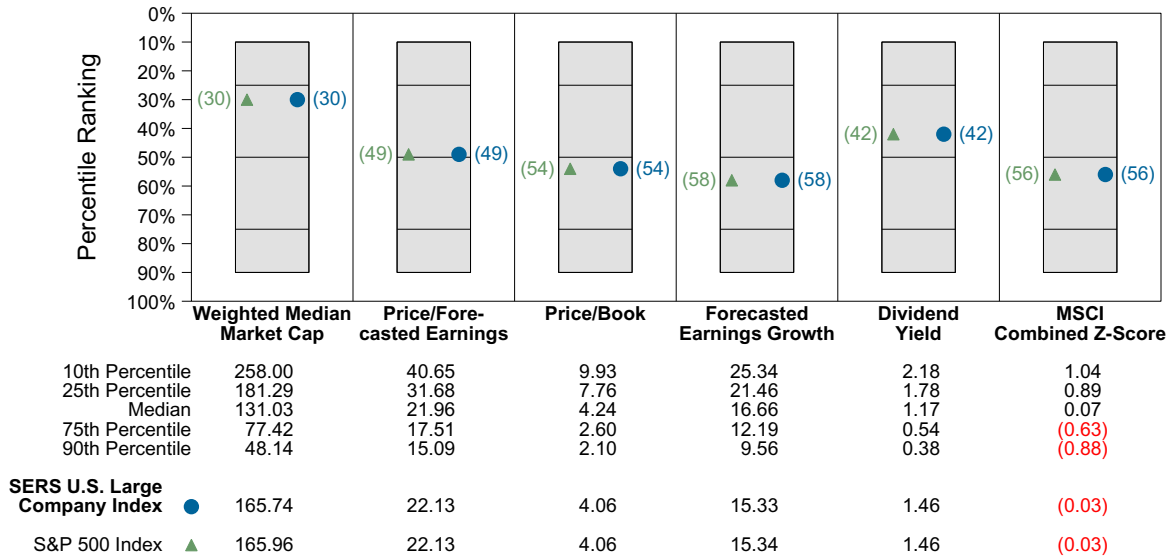
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	3.81	0.99	0.55
25th Percentile	2.16	0.91	0.45
Median	(0.53)	0.76	(0.24)
75th Percentile	(3.93)	0.52	(0.76)
90th Percentile	(5.24)	0.43	(1.00)
<b>SERS U.S. Large Company Index</b>	● 0.02	0.84	1.45

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

## Portfolio Characteristics

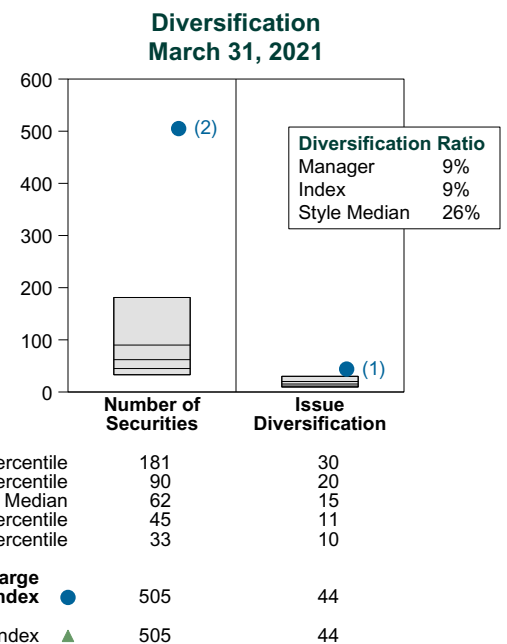
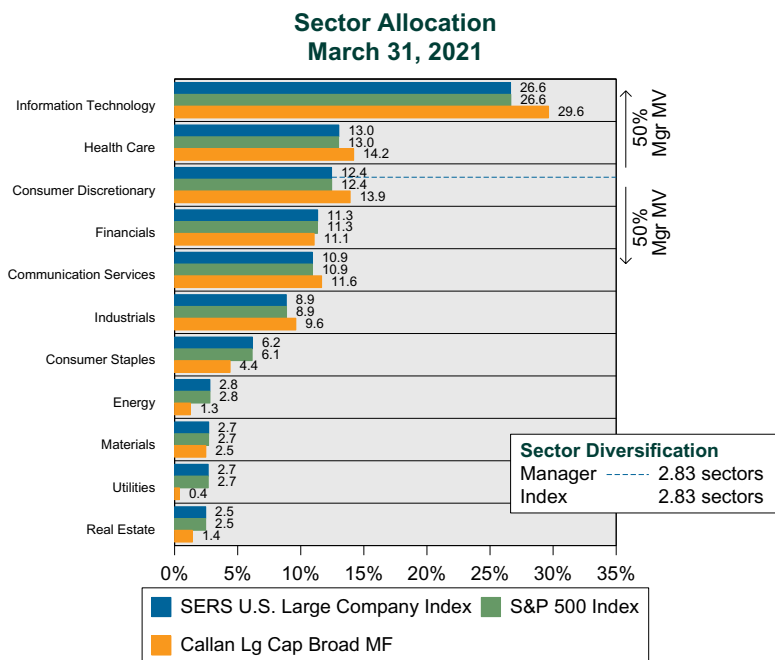
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Broad Equity Mut Funds as of March 31, 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 March 31, 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	\$95,661	5.7%	(7.81)%	2050.67	26.76	0.67%	14.08%
Microsoft Corp	Information Technology	\$88,247	5.3%	6.25%	1778.23	29.81	0.95%	16.95%
Amazon.Com	Consumer Discretionary	\$65,723	3.9%	(5.00)%	1558.07	59.13	0.00%	43.00%
Facebook Inc Cl A	Communication Services	\$35,158	2.1%	7.82%	708.48	24.79	0.00%	21.50%
Alphabet Inc Cl A	Communication Services	\$30,781	1.8%	17.68%	620.28	28.47	0.00%	16.95%
Alphabet Inc Cl C	Communication Services	\$29,590	1.8%	18.08%	677.59	28.46	0.00%	16.95%
Tesla Mtrs Inc	Consumer Discretionary	\$25,452	1.5%	(5.35)%	641.11	149.59	0.00%	32.10%
Berkshire Hathaway Inc Del Cl B New	Financials	\$24,172	1.4%	10.18%	341.07	22.87	0.00%	27.82%
JPMorgan Chase & Co	Financials	\$23,052	1.4%	20.66%	464.53	13.96	2.36%	1.28%
Johnson & Johnson	Health Care	\$21,439	1.3%	5.08%	432.69	16.94	2.46%	6.00%

### 10 Best Performers

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
L Brands Inc	Consumer Discretionary	\$723	0.0%	66.34%	17.25	14.10	0.00%	13.47%
Marathon Oil Corp	Energy	\$422	0.0%	60.63%	8.43	72.65	1.12%	(3.00)%
Applied Mtls Inc	Information Technology	\$6,082	0.4%	55.09%	122.60	21.62	0.72%	19.80%
Occidental Petroleum	Energy	\$1,108	0.1%	53.84%	24.85	(22.75)	0.15%	(5.15)%
Diamondback Energy Inc	Energy	\$586	0.0%	52.66%	12.50	9.88	2.18%	49.63%
Nucor Corp	Materials	\$1,203	0.1%	51.67%	23.98	11.56	2.02%	7.65%
American Airlines Group Inc	Industrials	\$734	0.0%	51.55%	15.33	(4.09)	0.00%	(45.70)%
Gap	Consumer Discretionary	\$305	0.0%	47.50%	11.16	20.97	0.00%	4.90%
Eog Resources	Energy	\$2,105	0.1%	46.31%	42.33	14.35	2.27%	61.61%
INVESCO Ltd Shs	Financials	\$476	0.0%	45.69%	11.58	9.74	2.46%	(1.50)%

### 10 Worst Performers

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Viatrix Inc	Health Care	\$843	0.1%	(25.45)%	16.86	3.95	0.00%	(3.65)%
Paycom Software Inc	Information Technology	\$908	0.1%	(18.17)%	22.27	82.33	0.00%	19.10%
Take-Two Interactive Sof	Communication Services	\$1,008	0.1%	(14.96)%	20.35	28.59	0.00%	14.20%
Verisk Analytics Inc Cl A	Industrials	\$1,438	0.1%	(14.74)%	28.69	32.14	0.66%	10.14%
Copart Inc	Industrials	\$1,121	0.1%	(14.65)%	25.67	31.48	0.00%	28.22%
Advanced Micro Devices Inc	Information Technology	\$4,719	0.3%	(14.40)%	95.35	37.20	0.00%	27.34%
Brown Forman Corp B	Consumer Staples	\$636	0.0%	(12.95)%	21.35	36.98	1.04%	7.53%
Marketaxess Hldgs Inc	Financials	\$946	0.1%	(12.63)%	18.92	57.80	0.53%	10.47%
Xilinx	Information Technology	\$1,509	0.1%	(12.60)%	30.45	37.43	1.23%	12.81%
Qualcomm Inc	Information Technology	\$7,473	0.4%	(12.53)%	150.62	17.22	1.96%	26.40%

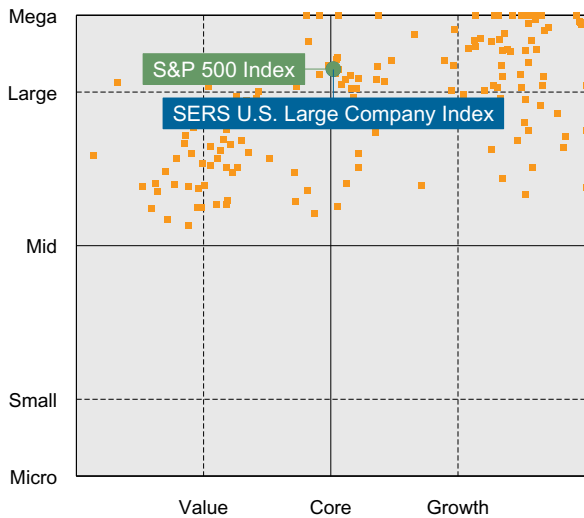
# Historical Holdings Based Style Analysis

## SERS U.S. Large Company Index

### For Three Years Ended March 31, 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.

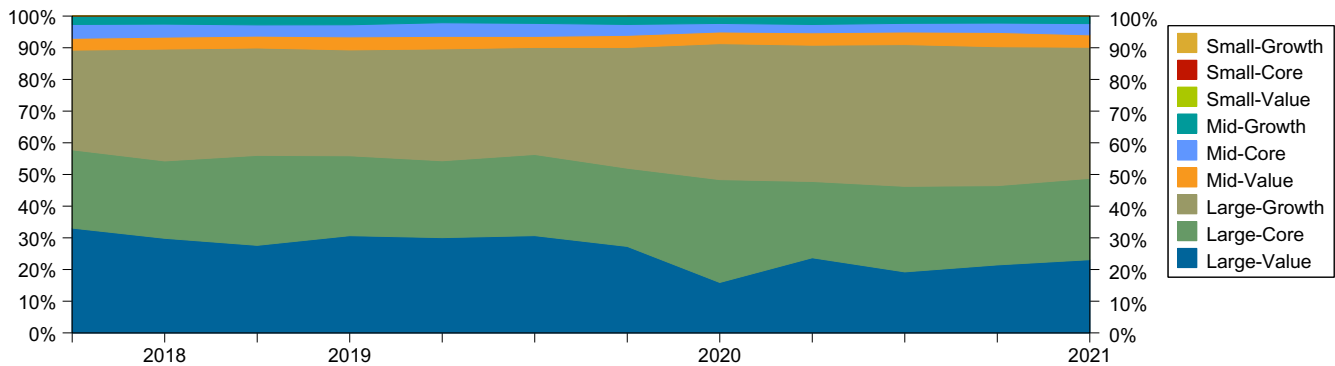
**Average Style Map vs Callan Lg Cap Broad MF Holdings for Three Years Ended March 31, 2021**



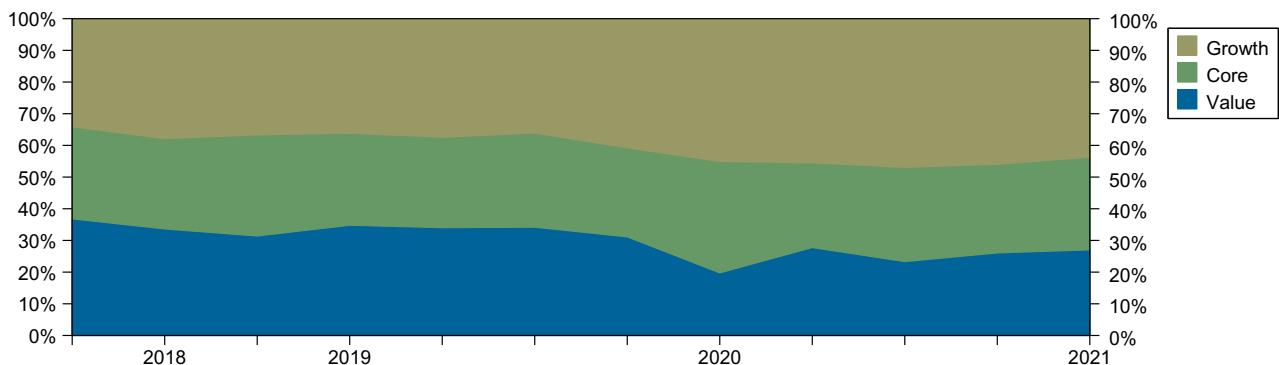
**Average Style Exposure Matrix Holdings for Three Years Ended March 31, 2021**

Large	26.1% (96)	26.0% (97)	38.1% (86)	90.1% (279)
	26.1% (96)	26.0% (98)	38.1% (86)	90.2% (280)
Mid	3.9% (95)	3.5% (76)	2.4% (48)	9.8% (219)
	3.9% (95)	3.5% (75)	2.4% (48)	9.8% (218)
Small	0.0% (4)	0.0% (1)	0.0% (1)	0.1% (6)
	0.0% (4)	0.0% (1)	0.0% (1)	0.1% (6)
Micro	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Total	30.0% (195)	29.5% (174)	40.5% (135)	100.0% (504)
	30.0% (195)	29.5% (174)	40.6% (135)	100.0% (504)
	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 March 31, 2021

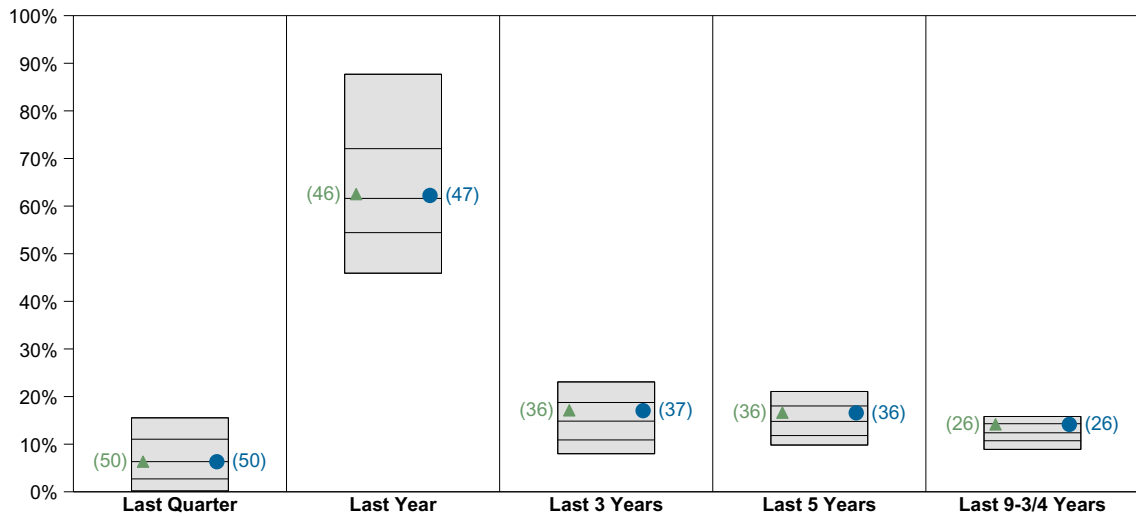
### Investment Philosophy

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 6.32% return for the quarter placing it in the 50 percentile of the Callan Multi Cap Broad Mutual Funds group for the quarter and in the 47 percentile for the last year.
- SERS U.S. All Company Index Fund's portfolio underperformed the Russell 3000 Index by 0.03% for the quarter and underperformed the Russell 3000 Index for the year by 0.29%.

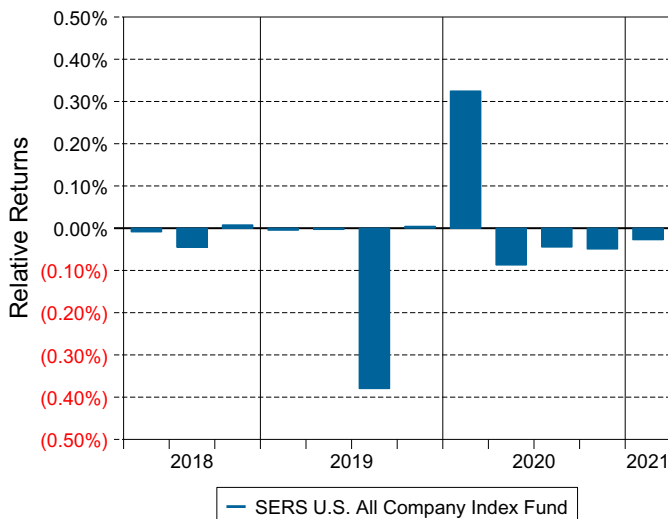
### Performance vs Callan Multi Cap Broad Mutual Funds (Institutional Net)



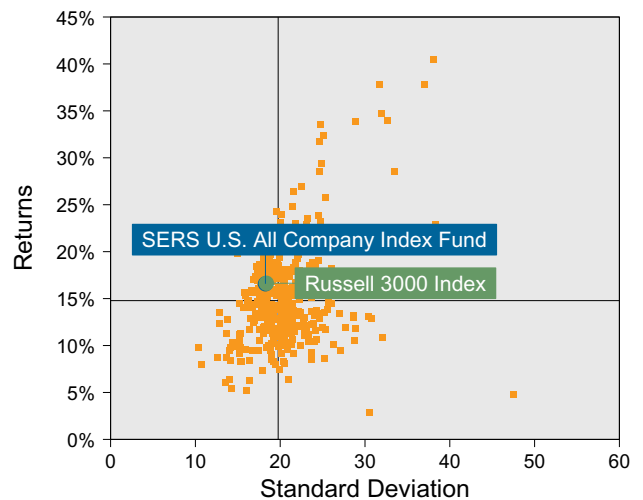
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9-3/4 Years
10th Percentile	15.54	87.69	23.08	21.07	15.82
25th Percentile	11.04	72.07	18.76	18.03	14.30
Median	6.33	61.62	14.84	14.78	12.39
75th Percentile	2.71	54.43	10.89	11.81	10.72
90th Percentile	0.17	45.91	8.00	9.82	8.91

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9-3/4 Years
<b>SERS U.S. All Company Index Fund</b> ●	6.32	62.23	17.04	16.58	14.15
Russell 3000 Index ▲	6.35	62.53	17.12	16.64	14.17

### Relative Return vs Russell 3000 Index



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

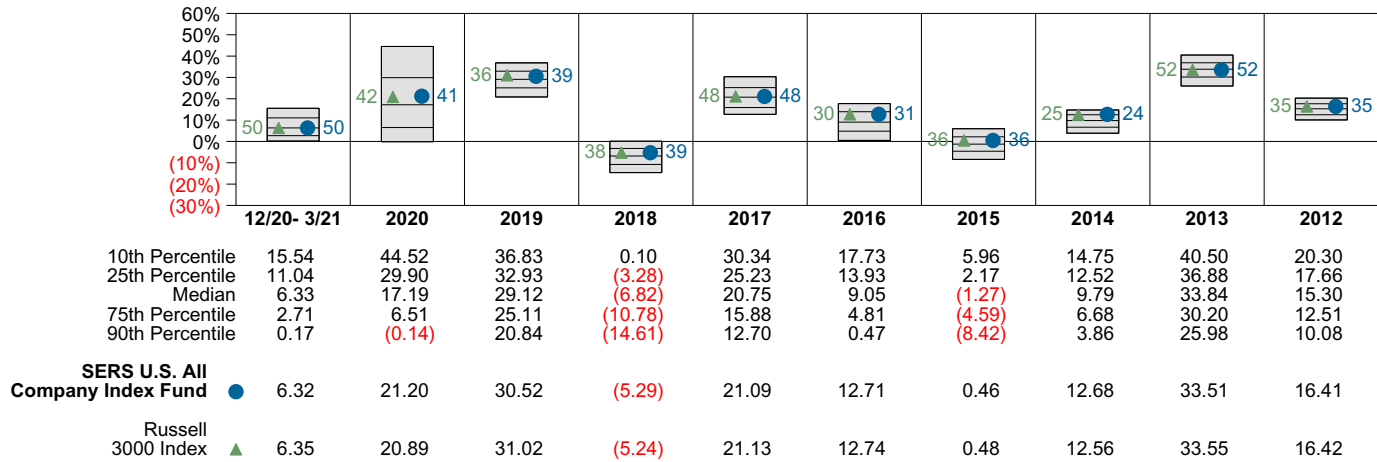


# SERS U.S. All Company Index Fund Return Analysis Summary

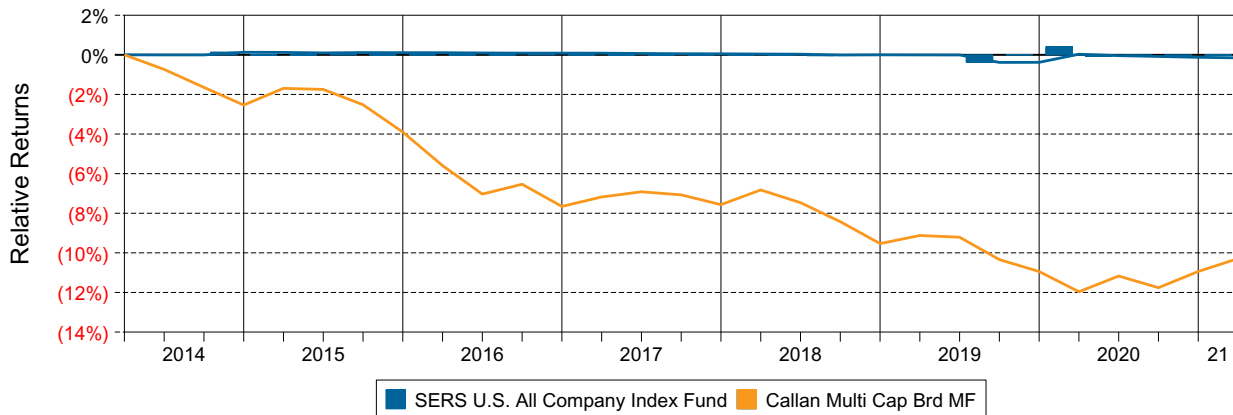
## Return Analysis

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.

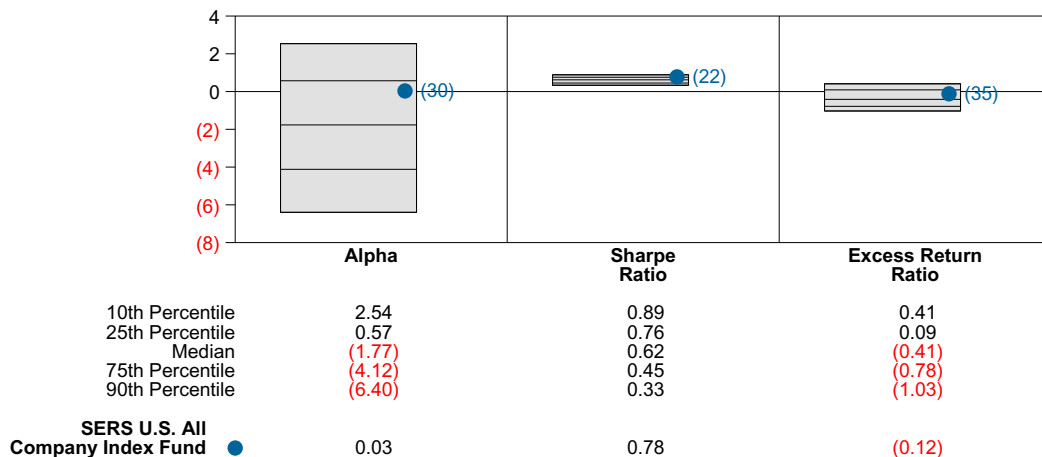
### Performance vs Callan Multi Cap Broad Mutual Funds (Institutional Net)



### 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 March 31, 2021

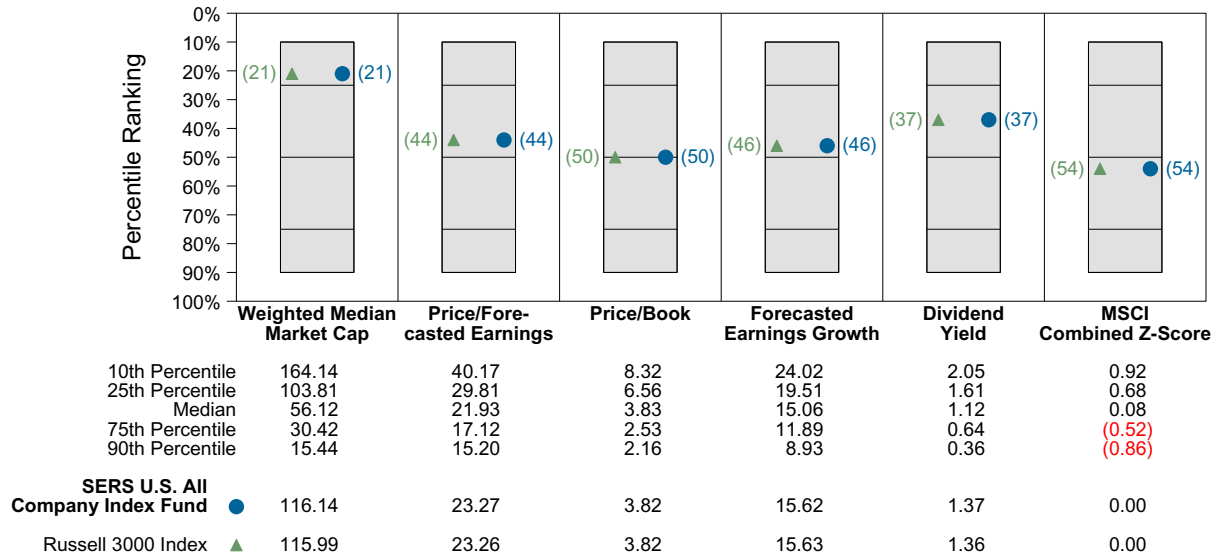


# SERS U.S. All Company Index Fund Equity Characteristics Analysis Summary

## Portfolio Characteristics

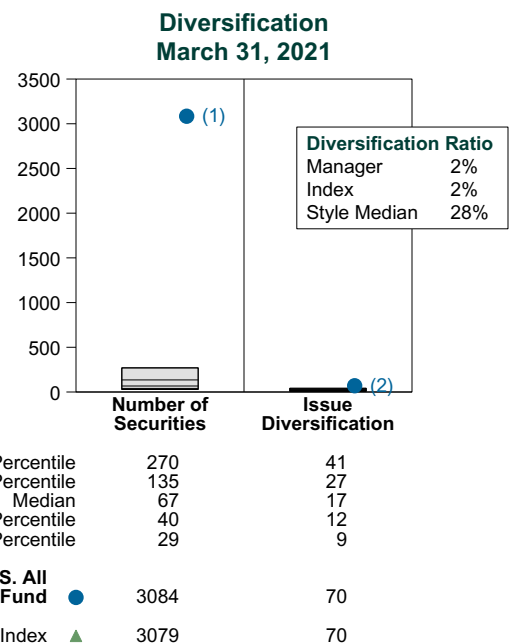
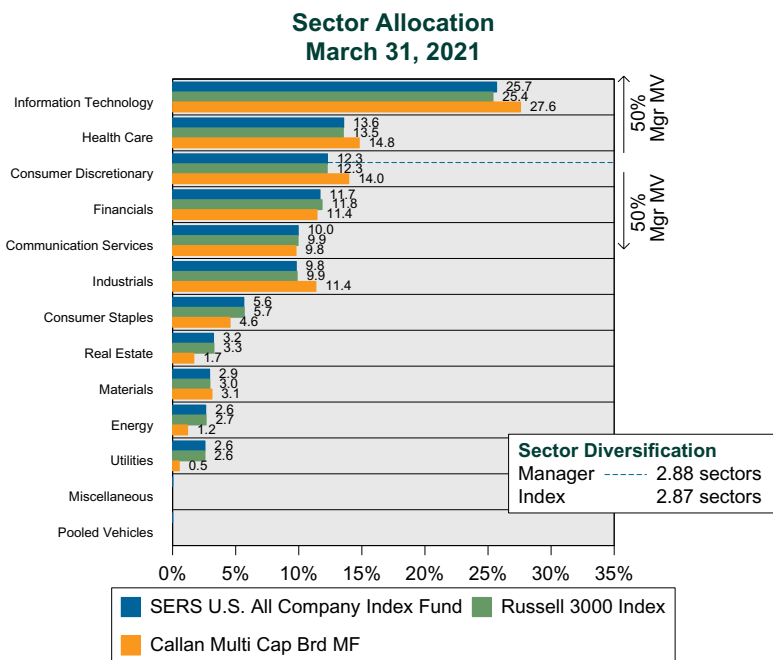
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Multi Cap Broad Mutual Funds as of March 31, 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 March 31, 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	\$30,229	4.8%	(7.81)%	2050.67	26.76	0.67%	14.08%
Microsoft Corp	Information Technology	\$27,582	4.4%	6.25%	1778.23	29.81	0.95%	16.95%
Amazon.Com	Consumer Discretionary	\$20,497	3.3%	(5.00)%	1558.07	59.13	0.00%	43.00%
Facebook Inc Cl A	Communication Services	\$11,051	1.8%	7.82%	708.48	24.79	0.00%	21.50%
Alphabet Inc Cl A	Communication Services	\$9,677	1.5%	17.68%	620.28	28.47	0.00%	16.95%
Alphabet Inc Cl C	Communication Services	\$9,401	1.5%	18.08%	677.59	28.46	0.00%	16.95%
Tesla Mtrs Inc	Consumer Discretionary	\$7,992	1.3%	(5.35)%	641.11	149.59	0.00%	32.10%
Berkshire Hathaway Inc Del Cl B New	Financials	\$7,506	1.2%	10.18%	341.07	22.87	0.00%	27.82%
JPMorgan Chase & Co	Financials	\$7,202	1.1%	20.66%	464.53	13.96	2.36%	1.28%
Johnson & Johnson	Health Care	\$6,771	1.1%	5.08%	432.69	16.94	2.46%	6.00%

### 10 Best Performers

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Gamestop Corp New Cl A	Consumer Discretionary	\$168	0.0%	907.54%	13.28	15818.33	0.00%	(15.71)%
Cassava Sciences Inc	Health Care	\$23	0.0%	558.83%	1.79	591.45	0.00%	58.11%
Amc Entmt Hldgs Inc Cl A Com	Communication Services	\$60	0.0%	381.61%	4.60	(4.13)	0.00%	6.01%
Express Inc	Consumer Discretionary	\$4	0.0%	341.76%	0.26	(4.74)	0.00%	(29.49)%
Pandion Therapeutics	Health Care	\$10	0.0%	304.41%	1.77	(37.02)	0.00%	-
Immunome Inc Com	Health Care	\$2	0.0%	250.01%	0.36	(28.79)	0.00%	-
Rubius Therapeutics Inc	Health Care	\$15	0.0%	249.14%	2.33	(12.59)	0.00%	-
Exone Co	Industrials	\$7	0.0%	230.49%	0.69	(45.92)	0.00%	-
Upstart Hldgs Inc	Information Technology	\$22	0.0%	216.21%	9.49	271.28	0.00%	-
Amyris Inc	Materials	\$31	0.0%	210.04%	5.04	(127.33)	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
Odonate Therapeutics Inc	Health Care	\$1	0.0%	(82.19)%	0.13	(1.11)	0.00%	-
Graybug Vision	Health Care	\$1	0.0%	(80.87)%	0.12	(1.90)	0.00%	-
Frequency Therapeutics	Health Care	\$4	0.0%	(73.06)%	0.32	(15.25)	0.00%	-
Immunovant Inc	Health Care	\$9	0.0%	(65.27)%	1.57	(10.91)	0.00%	-
Avid Bioservices Inc	Health Care	\$16	0.0%	(62.73)%	1.11	105.38	0.00%	15.00%
Imara Inc	Health Care	\$1	0.0%	(61.72)%	0.15	(2.41)	0.00%	-
Athenex Inc	Health Care	\$5	0.0%	(61.12)%	0.40	(3.05)	0.00%	-
Concert Pharmaceuticals Inc	Health Care	\$2	0.0%	(60.52)%	0.16	(1.75)	0.00%	-
Amicus Therapeutics Inc	Health Care	\$39	0.0%	(57.21)%	2.61	(13.26)	0.00%	-
Oncorus Inc Com	Health Care	\$1	0.0%	(56.94)%	0.36	(5.72)	0.00%	-

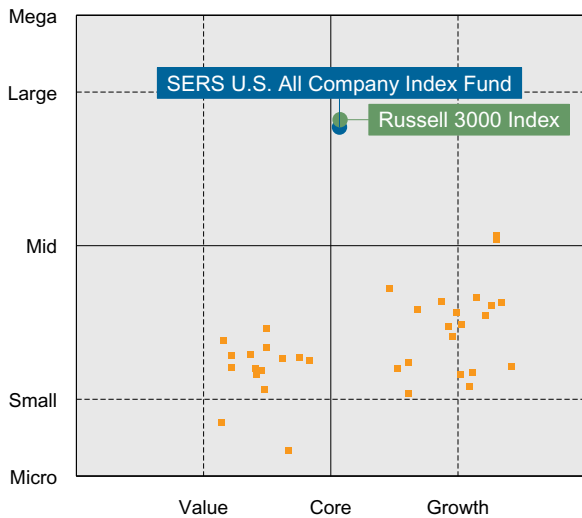
# Historical Holdings Based Style Analysis

## SERS U.S. All Company Index Fund

### For Two and 1/2 Years Ended March 31, 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.

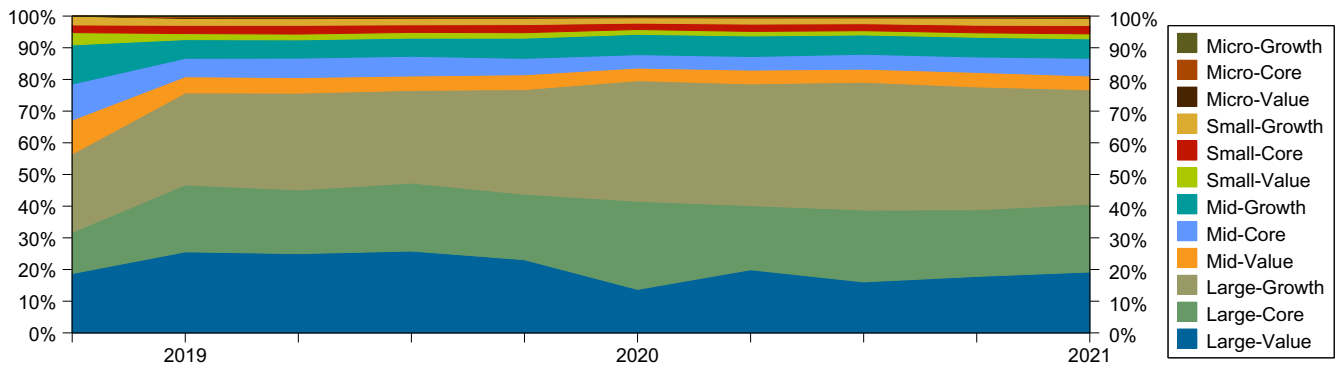
**Average Style Map vs Callan SMID Broad MFs Holdings for Two and 1/2 Years Ended March 31, 2021**



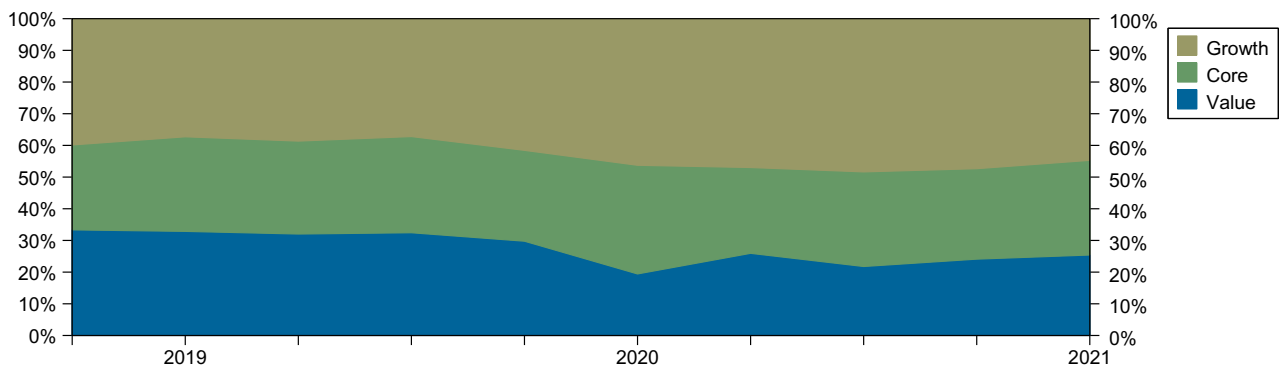
**Average Style Exposure Matrix Holdings for Two and 1/2 Years Ended March 31, 2021**

	20.5% (91)	21.0% (94)	33.8% (98)	<b>75.3% (283)</b>
Large	21.0% (96)	22.0% (99)	34.3% (103)	<b>77.3% (298)</b>
Mid	5.1% (161)	5.8% (196)	6.8% (228)	<b>17.7% (585)</b>
	4.5% (164)	5.2% (201)	6.1% (233)	<b>15.9% (598)</b>
Small	1.8% (293)	2.4% (458)	2.1% (360)	<b>6.4% (1111)</b>
	1.6% (313)	2.4% (494)	2.0% (389)	<b>6.1% (1196)</b>
Micro	0.2% (302)	0.2% (346)	0.1% (157)	<b>0.6% (805)</b>
	0.3% (331)	0.3% (388)	0.2% (178)	<b>0.7% (897)</b>
<b>Total</b>	<b>27.7% (847)</b>	<b>29.5% (1094)</b>	<b>42.8% (843)</b>	<b>100.0% (2784)</b>
	<b>27.4% (904)</b>	<b>29.9% (1182)</b>	<b>42.7% (903)</b>	<b>100.0% (2989)</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 March 31, 2021

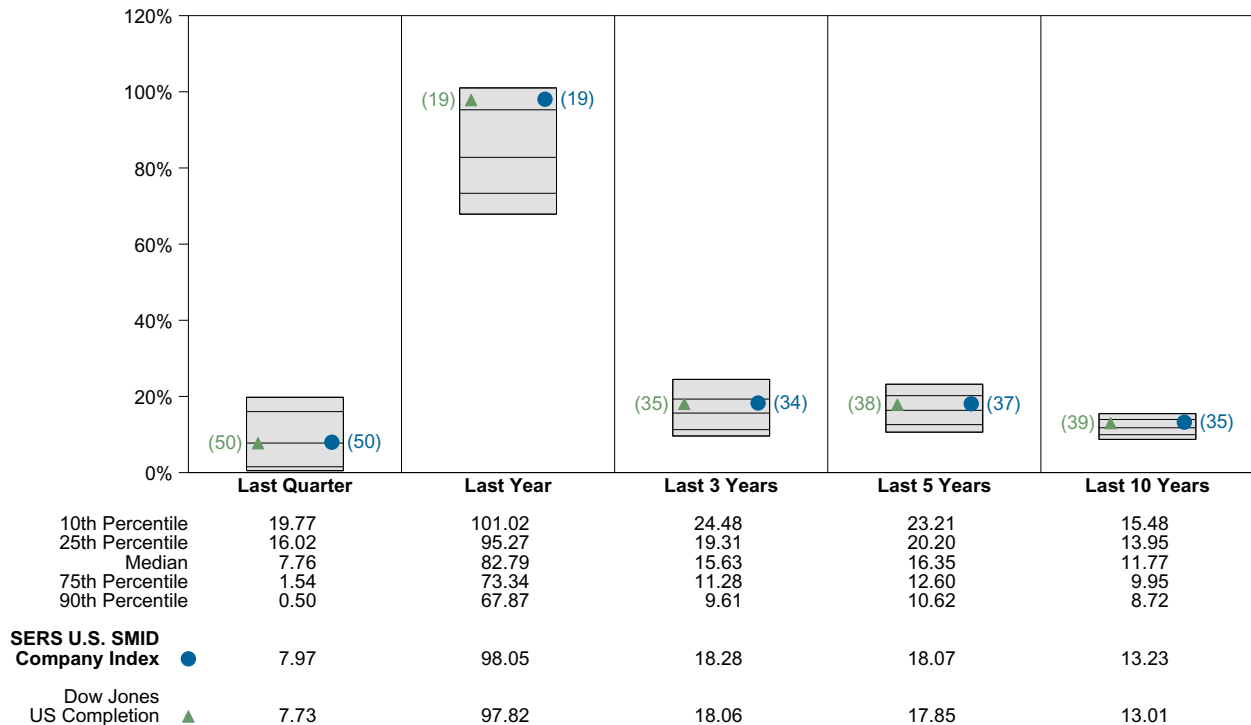
## Investment Philosophy

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.

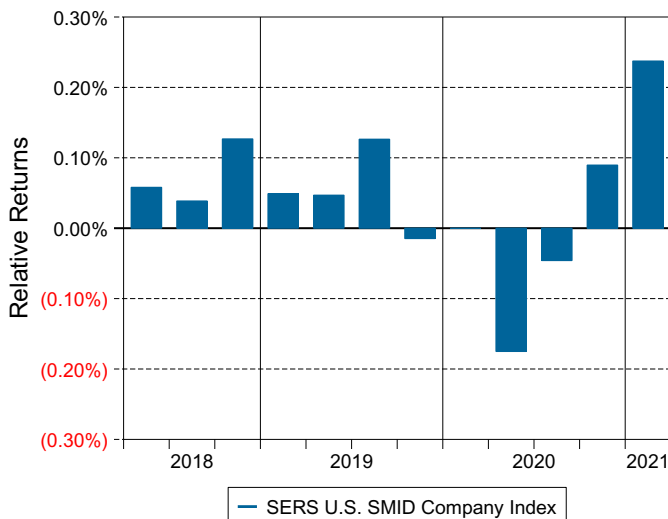
## Quarterly Summary and Highlights

- SERS U.S. SMID Company Index's portfolio posted a 7.97% return for the quarter placing it in the 50 percentile of the Callan Small/MidCap Broad Mutual Funds group for the quarter and in the 19 percentile for the last year.
- SERS U.S. SMID Company Index's portfolio outperformed the Dow Jones US Completion by 0.24% for the quarter and outperformed the Dow Jones US Completion for the year by 0.23%.

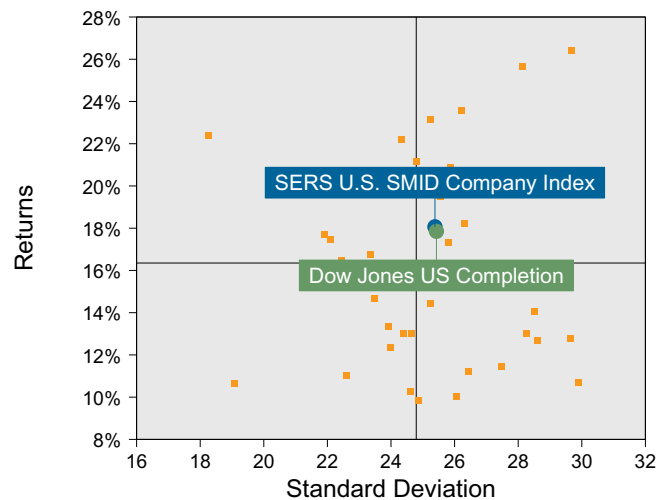
## Performance vs Callan Small/MidCap Broad Mutual Funds (Institutional Net)



## Relative Return vs Dow Jones US Completion



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

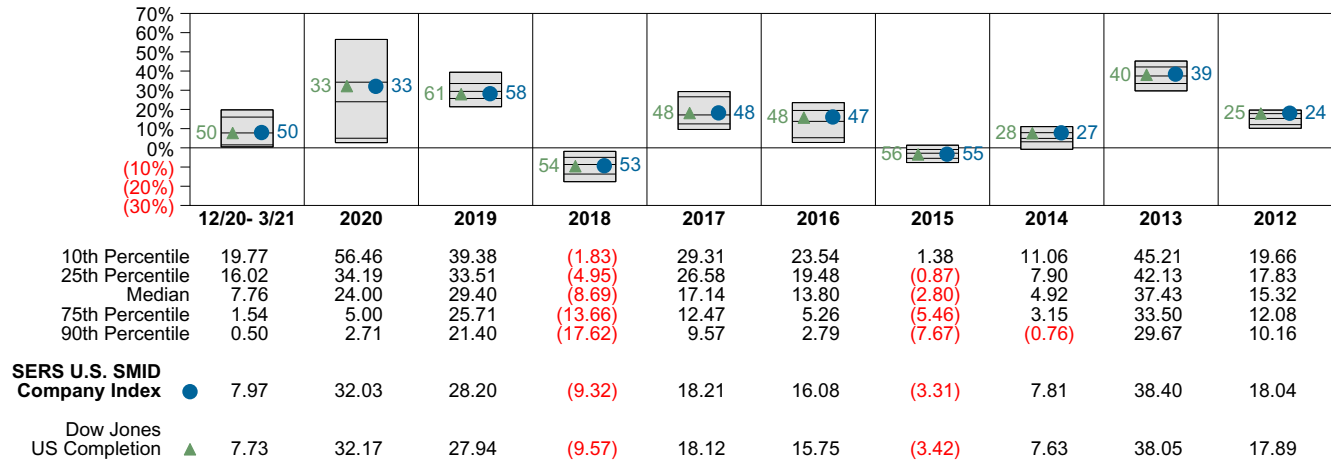


# SERS U.S. SMID Company Index Return Analysis Summary

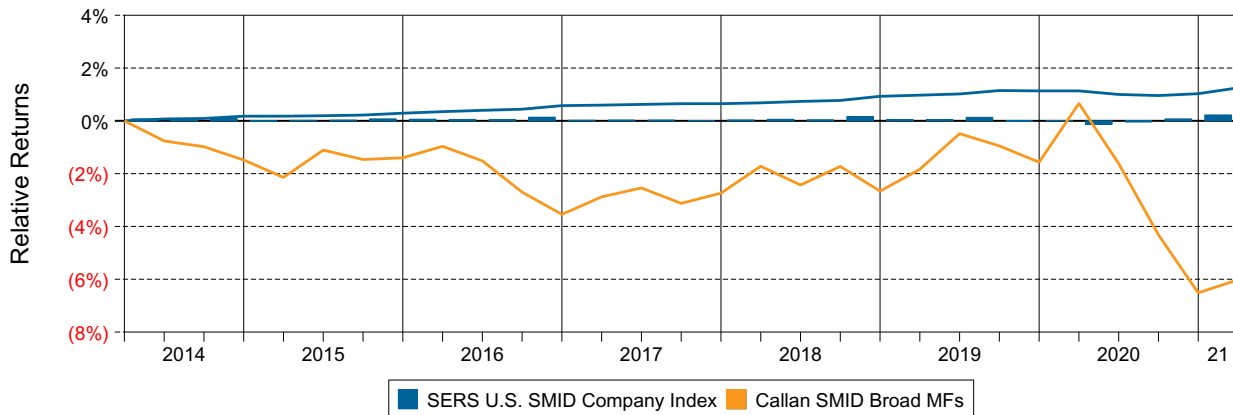
## Return Analysis

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.

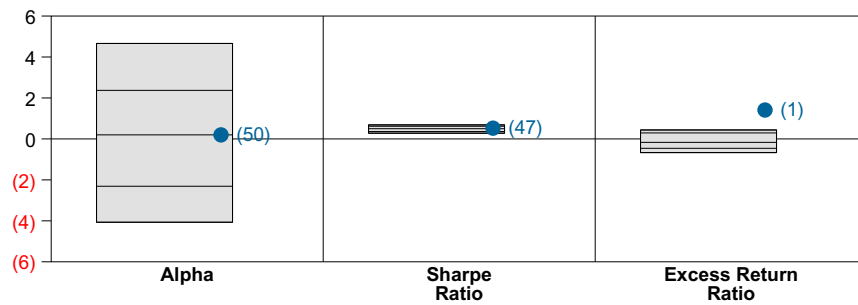
### Performance vs Callan Small/MidCap Broad Mutual Funds (Institutional Net)



### 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 March 31, 2021



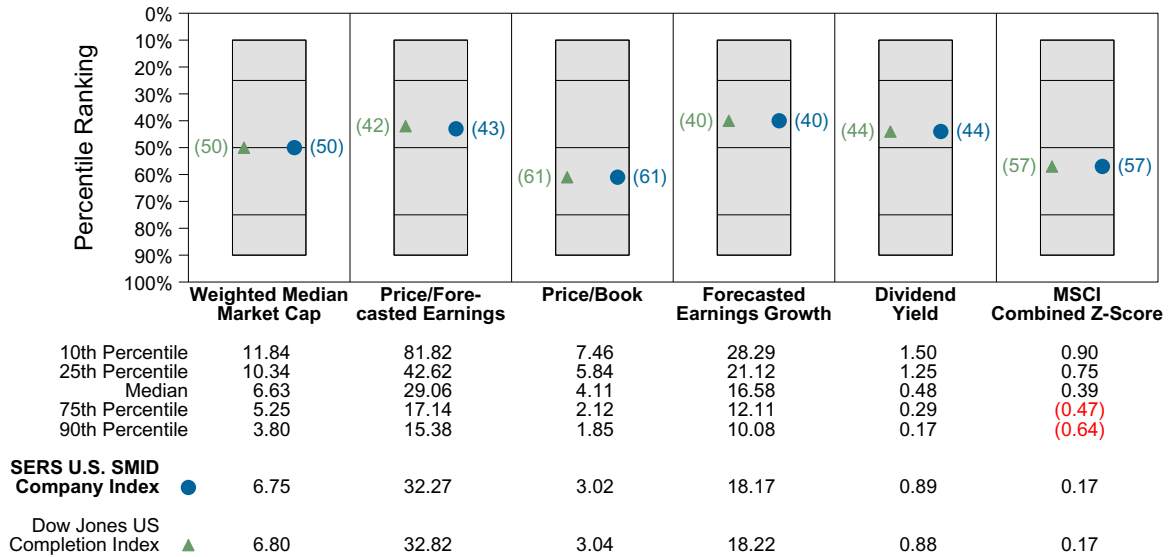
10th Percentile	4.66	0.69	0.44
25th Percentile	2.37	0.62	0.29
Median	0.20	0.50	(0.17)
75th Percentile	(2.31)	0.36	(0.46)
90th Percentile	(4.07)	0.28	(0.67)
<b>SERS U.S. SMID Company Index</b>	● 0.20	0.52	1.41

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

## Portfolio Characteristics

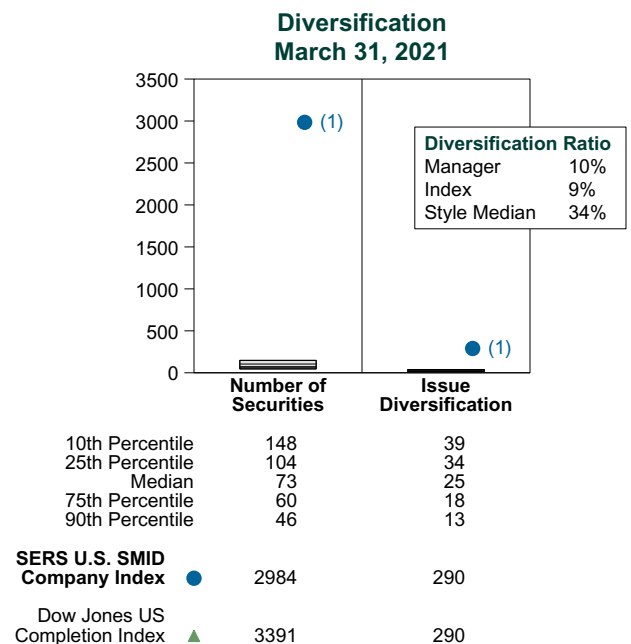
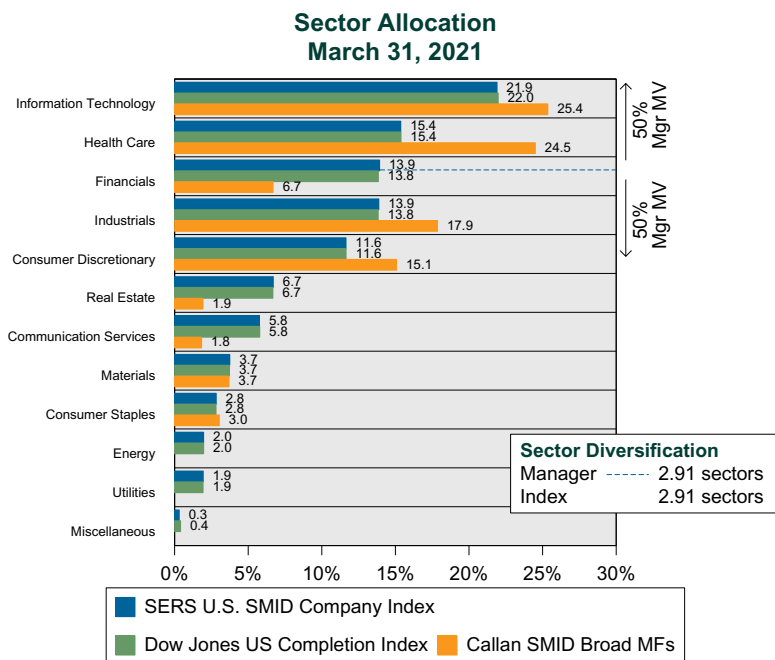
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Small/MidCap Broad Mutual Funds as of March 31, 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 March 31, 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	\$4,703	1.2%	4.32%	88.51	163.11	0.00%	52.84%
Uber Technologies Inc	Industrials	\$4,221	1.1%	6.89%	101.44	(41.36)	0.00%	65.50%
Zoom Video Communications Inc Cl A	Information Technology	\$3,493	0.9%	(4.75)%	75.26	84.89	0.00%	17.05%
Twilio Inc Cl A	Information Technology	\$2,879	0.7%	0.67%	54.53	(15489.09)	0.00%	-
Blackstone Group Inc Com Cl A	Financials	\$2,711	0.7%	16.56%	50.97	22.28	3.03%	15.10%
Snap Inc Cl A	Communication Services	\$2,578	0.7%	4.43%	65.52	201.12	0.00%	94.30%
Workday Inc Cl A	Information Technology	\$2,413	0.6%	3.68%	45.71	85.08	0.00%	13.70%
Moderna Inc	Health Care	\$2,125	0.5%	25.35%	52.40	6.51	0.00%	-
Pinterest Inc Cl A	Communication Services	\$2,083	0.5%	12.34%	39.42	77.93	0.00%	-
Docusign Inc	Information Technology	\$2,007	0.5%	(8.93)%	39.09	144.09	0.00%	-

### 10 Best Performers

Stock	Sector	Ending Market Value	Percent of Portfolio	Qtrly Return	Market Capital	Price/Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Gamestop Corp New Cl A	Consumer Discretionary	\$552	0.1%	907.54%	13.28	15818.33	0.00%	(15.71)%
Aemetis Inc	Energy	\$17	0.0%	885.44%	0.66	(19.54)	0.00%	-
Second Sight Med Prods Inc Issuer_co	Health Care	\$0	0.0%	590.75%	0.00	-	0.00%	-
Cassava Sciences Inc	Health Care	\$83	0.0%	558.83%	1.79	591.45	0.00%	58.11%
Koss Corp	Consumer Discretionary	\$4	0.0%	553.78%	0.17	(5622.50)	1.07%	-
Comstock Mng Inc	Materials	\$15	0.0%	420.19%	0.19	(35.23)	0.00%	-
Asensus Surgical Inc	Health Care	\$20	0.0%	420.00%	0.76	(13.54)	0.00%	(1.34)%
Amc Entmt Hldgs Inc Cl A Com	Communication Services	\$177	0.0%	381.61%	4.60	(4.13)	0.00%	6.01%
Marathon Digital Holdings In	Information Technology	\$203	0.1%	359.96%	4.74	22.87	0.00%	-
Express Inc	Consumer Discretionary	\$18	0.0%	341.76%	0.26	(4.74)	0.00%	(29.49)%

### 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
Odonate Therapeutics Inc	Health Care	\$4	0.0%	(82.19)%	0.13	(1.11)	0.00%	-
Graybug Vision	Health Care	\$2	0.0%	(80.87)%	0.12	(1.90)	0.00%	-
Frequency Therapeutics	Health Care	\$17	0.0%	(73.06)%	0.32	(15.25)	0.00%	-
Lumos Pharma Inc	Health Care	\$3	0.0%	(67.24)%	0.10	(3.03)	0.00%	-
Washington Prime Group New	Real Estate	\$3	0.0%	(65.76)%	0.05	(0.25)	0.00%	(6.57)%
Immunovant Inc	Health Care	\$48	0.0%	(65.27)%	1.57	(10.91)	0.00%	-
Idera Pharmaceuticals Inc Com Par	Health Care	\$2	0.0%	(64.47)%	0.05	(2.17)	0.00%	-
Romeo Power Inc	Miscellaneous	\$31	0.0%	(62.96)%	1.06	(19.42)	0.00%	-
Avid Bioservices Inc	Health Care	\$49	0.0%	(62.73)%	1.11	105.38	0.00%	15.00%
XI Fleet Corp Com Cl A	Miscellaneous	\$36	0.0%	(62.16)%	1.25	(48.54)	0.00%	-

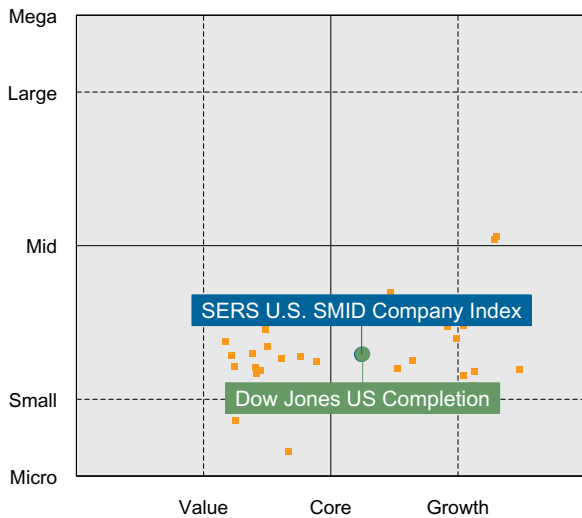
# Historical Holdings Based Style Analysis

## SERS U.S. SMID Company Index

### For Three Years Ended March 31, 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.

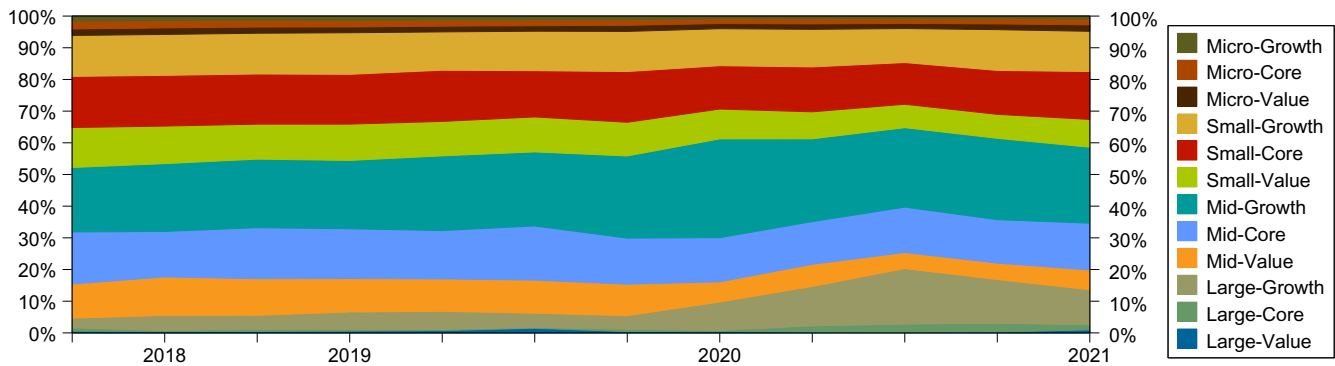
**Average Style Map vs Callan SMID Broad MFs Holdings for Three Years Ended March 31, 2021**



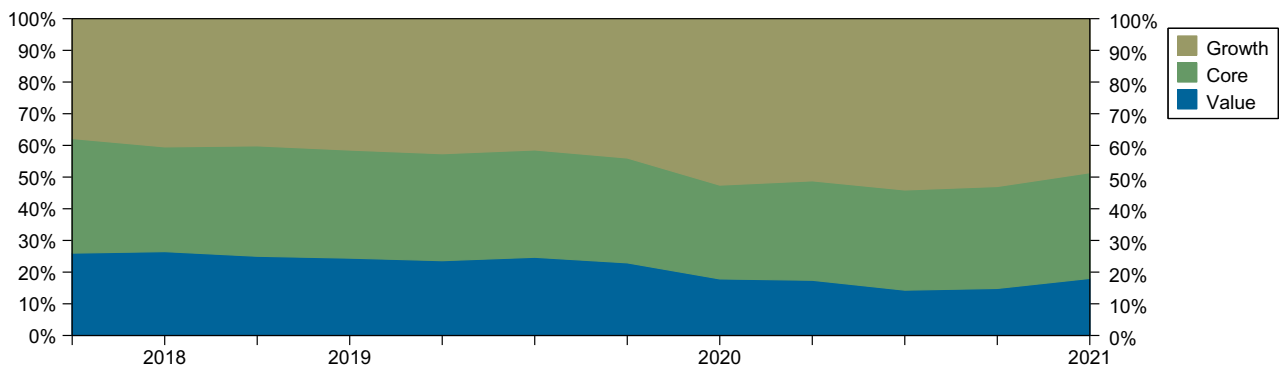
**Average Style Exposure Matrix Holdings for Three Years Ended March 31, 2021**

	0.6% (2)	1.1% (4)	8.0% (14)	9.7% (20)
Large	0.6% (2)	1.1% (4)	8.0% (14)	9.6% (20)
Mid	8.8% (75)	15.0% (131)	24.2% (179)	47.9% (385)
Small	10.1% (308)	15.0% (503)	12.4% (390)	37.6% (1201)
Micro	1.8% (484)	2.0% (543)	1.1% (221)	4.9% (1248)
<b>Total</b>	<b>21.3% (869)</b>	<b>33.1% (1181)</b>	<b>45.6% (804)</b>	<b>100.0% (2854)</b>
	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 March 31, 2021

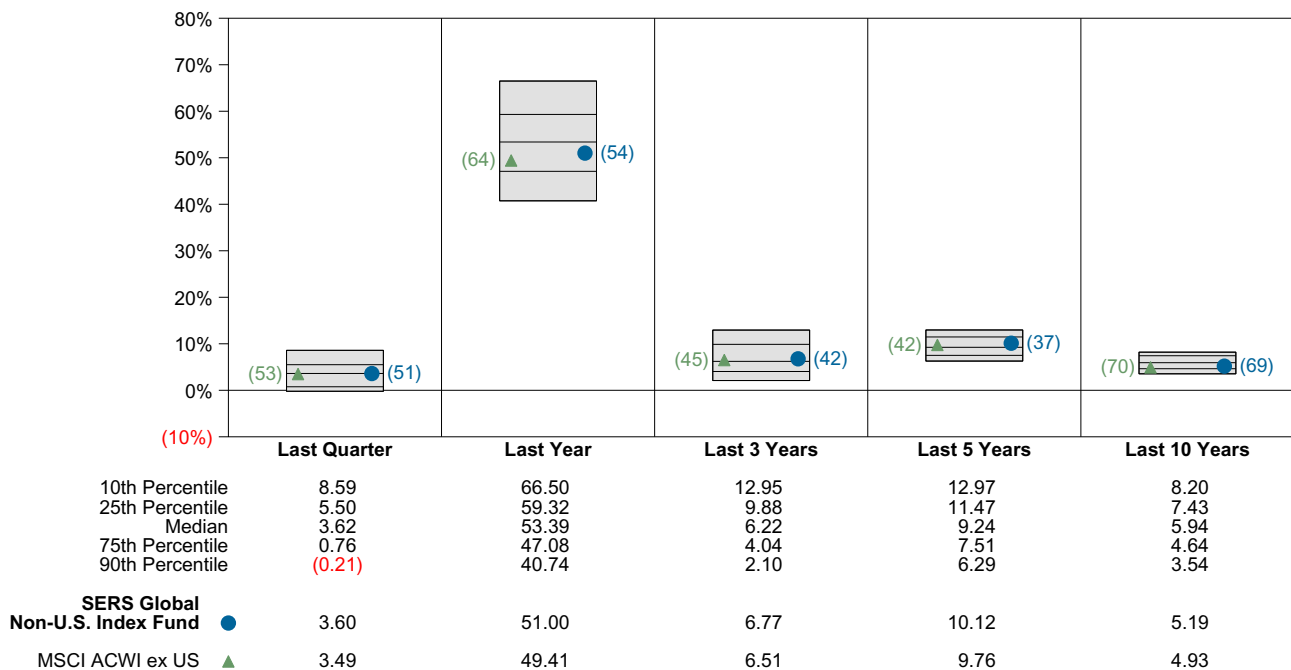
### Investment Philosophy

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

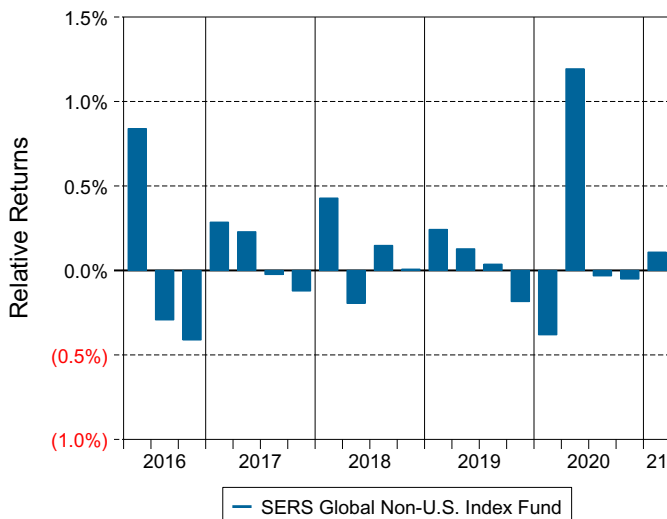
### Quarterly Summary and Highlights

- SERS Global Non-U.S. Index Fund's portfolio posted a 3.60% return for the quarter placing it in the 51 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 54 percentile for the last year.
- SERS Global Non-U.S. Index Fund's portfolio outperformed the MSCI ACWI ex US by 0.11% for the quarter and outperformed the MSCI ACWI ex US for the year by 1.58%.

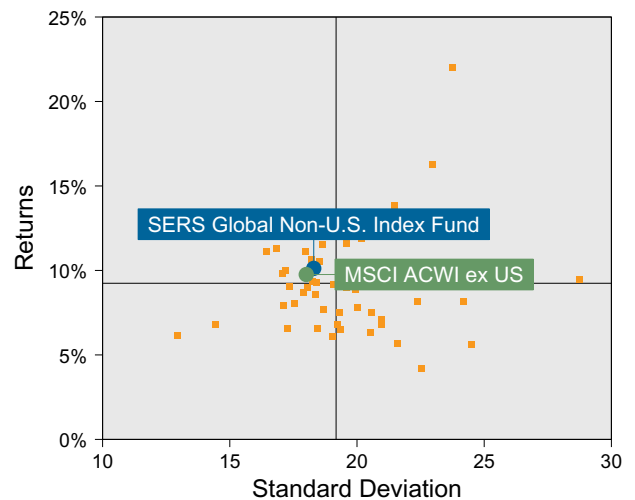
### Performance vs Callan Non US Equity Mutual Funds (Institutional Net)



### Relative Return vs MSCI ACWI ex US



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

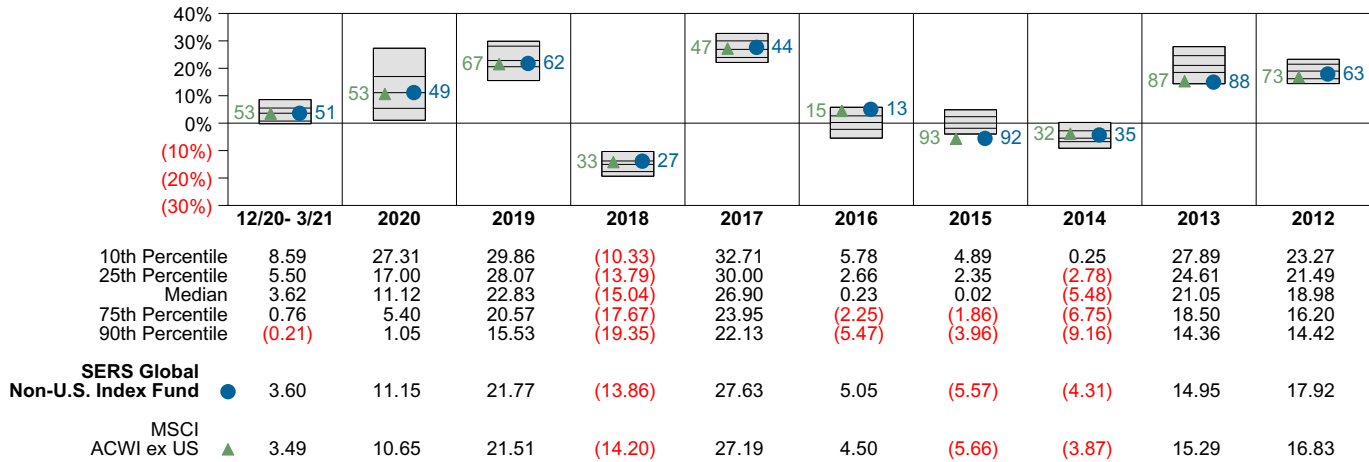


# SERS Global Non-U.S. Index Fund Return Analysis Summary

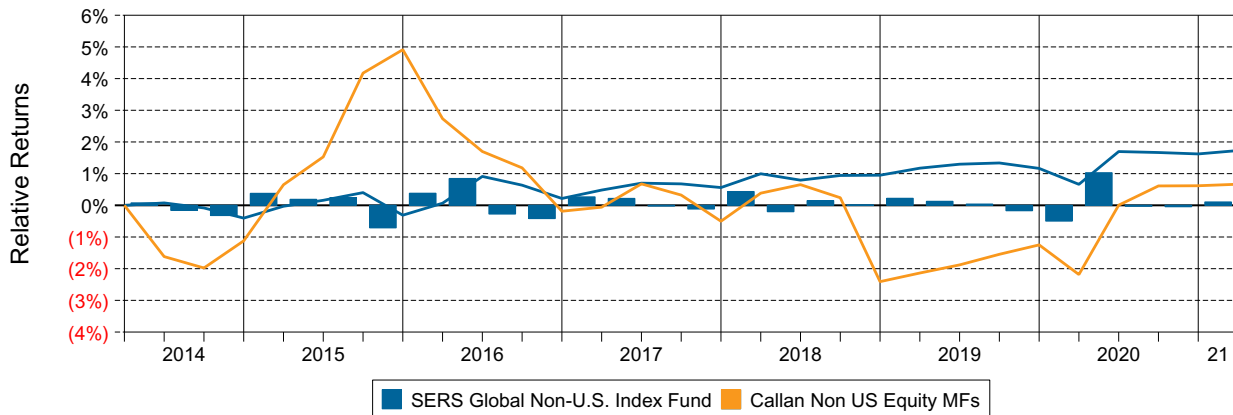
## Return Analysis

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.

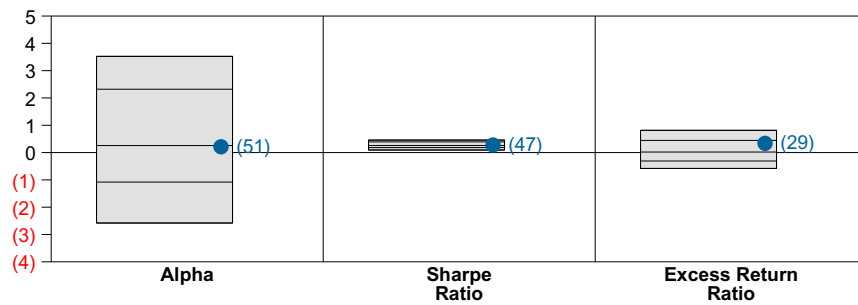
### Performance vs Callan Non US Equity Mutual Funds (Institutional Net)



### 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 March 31, 2021

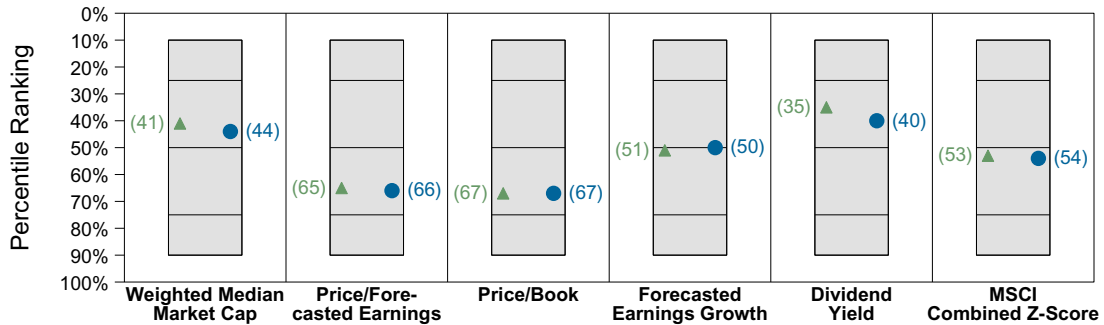


# SERS Global Non-U.S. Index Fund Equity Characteristics Analysis Summary

## 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 March 31, 2021

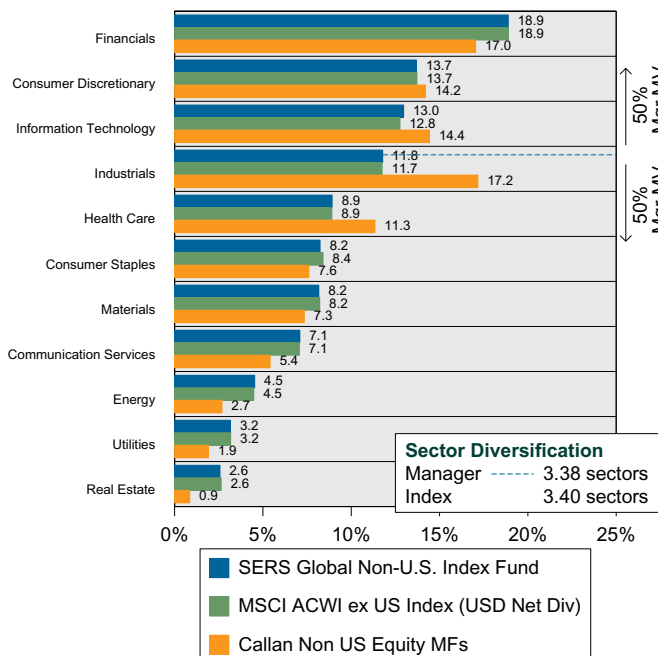


10th Percentile	68.39	27.88	4.42	18.62	2.73	0.88
25th Percentile	52.41	23.51	3.59	15.77	2.48	0.62
Median	36.60	18.02	2.23	13.16	1.93	0.11
75th Percentile	31.59	14.95	1.55	10.11	1.35	(0.28)
90th Percentile	17.13	12.71	1.28	8.10	1.09	(0.52)
<b>SERS Global Non-U.S. Index Fund</b>	● 40.73	16.28	1.84	13.16	2.22	0.00
MSCI ACWI ex US Index (USD Net Div)	▲ 41.64	16.43	1.85	13.10	2.27	0.01

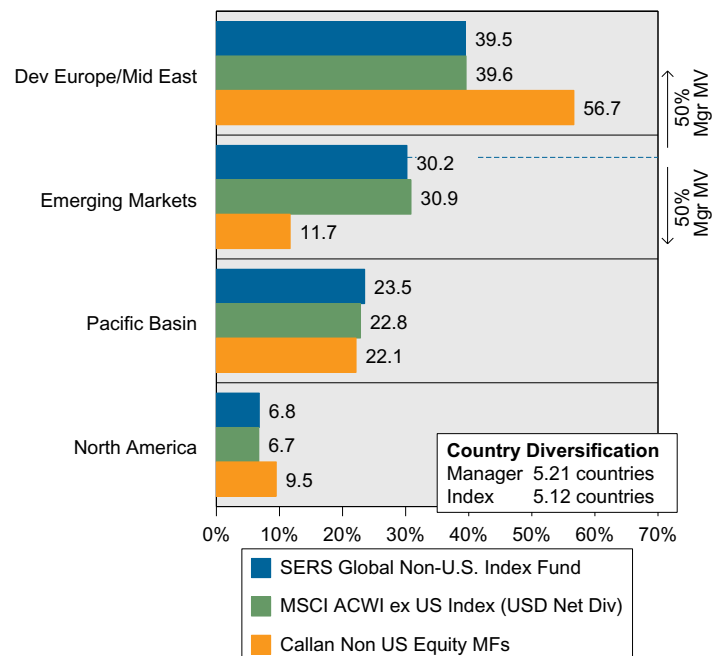
## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. 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 March 31, 2021



### Regional Allocation March 31, 2021



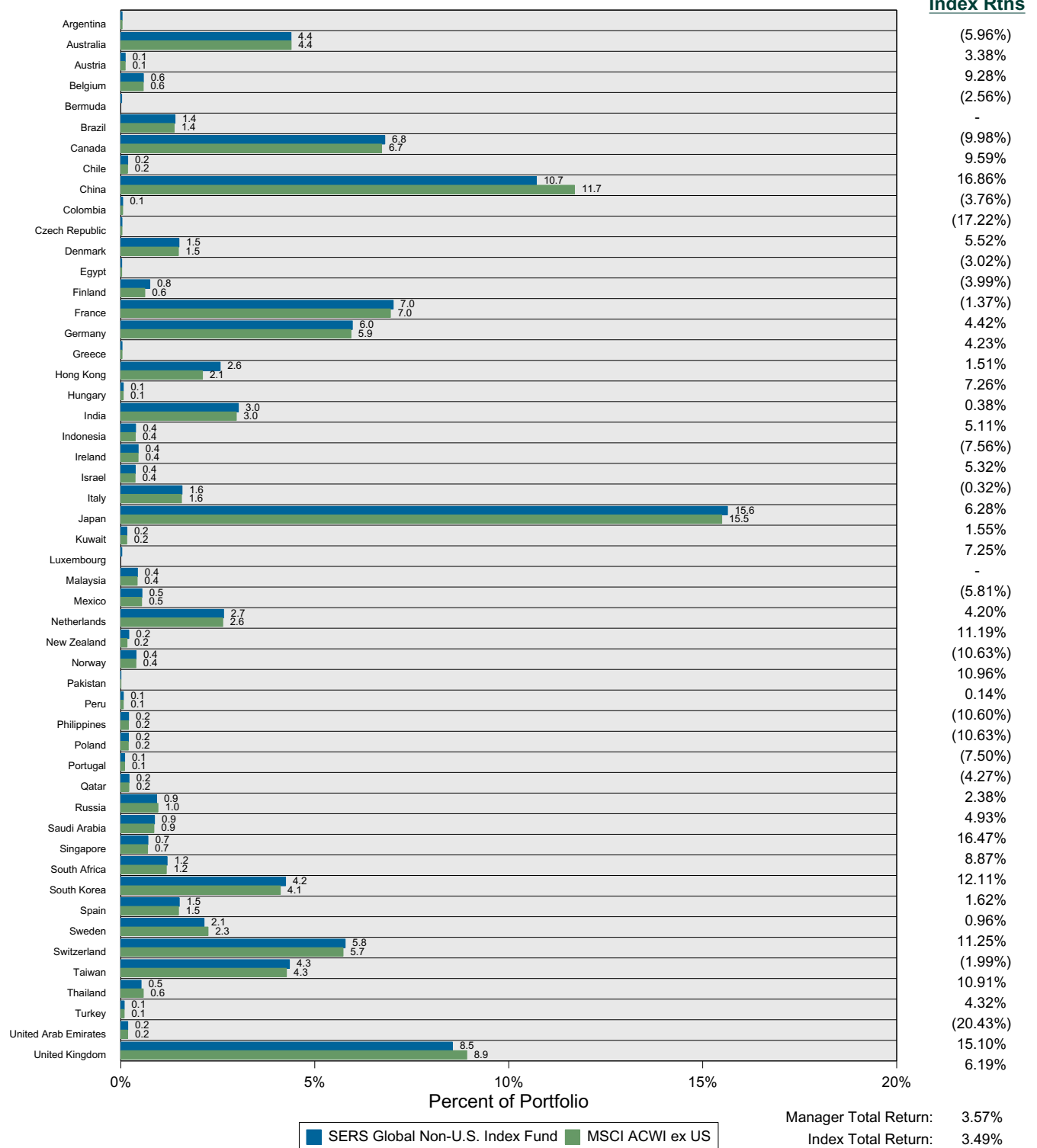
# Country Allocation

## 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 March 31, 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 March 31, 2021



## SERS Global Non-U.S. Index Fund Top 10 Portfolio Holdings Characteristics as of March 31, 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	\$17,135	2.0%	9.52%	533.46	25.21	1.70%	23.44%
Tencent Holdings Limited Shs Par Hkd	Communication Services	\$15,258	1.8%	7.09%	752.81	30.06	0.26%	26.60%
Alibaba Group Hldg Ltd Sponsored Ads	Consumer Discretionary	\$14,520	1.7%	(3.54)%	613.45	18.97	0.00%	24.26%
Samsung Electronics Co Ltd Ord	Information Technology	\$11,616	1.3%	(1.16)%	429.37	14.07	3.68%	26.38%
Nestle S A Shs Nom New	Consumer Staples	\$10,812	1.2%	(5.10)%	322.46	23.56	2.61%	4.40%
Asml Holding N V Asml Rev Stk Spl	Information Technology	\$8,671	1.0%	24.92%	254.90	47.12	0.53%	17.30%
Roche Hldgs Ag Basel Div Rts Ctf	Health Care	\$7,644	0.9%	(4.40)%	228.02	15.33	2.98%	6.60%
Novartis	Health Care	\$6,387	0.7%	(5.83)%	211.73	13.20	3.71%	7.47%
Lvmh Moet Hennessy Lou Vuitt Ord	Consumer Discretionary	\$6,213	0.7%	6.81%	337.02	36.04	1.06%	13.85%
Toyota Motor Corp	Consumer Discretionary	\$5,544	0.6%	1.17%	254.43	10.85	2.55%	8.49%

### 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
Nan Ya Printed Circuit Board	Information Technology	\$92	0.0%	91.53%	8.02	31.82	0.20%	196.10%
Korea Kumho Petrochem.	Materials	\$142	0.0%	80.59%	7.13	10.08	1.58%	24.90%
Banco Espirito Santo E Comer Ord	Financials	\$0	0.0%	80.11%	0.01	-	0.00%	-
China Overseas Property Hold Common	Real Estate	\$40	0.0%	77.94%	3.07	25.24	0.88%	24.52%
China Medical System Hldgs L Shs	Health Care	\$89	0.0%	75.85%	4.89	10.58	3.10%	8.21%
Volkswagen Stamm	Consumer Discretionary	\$392	0.0%	72.61%	106.82	8.94	1.56%	-
Cansino Biologics H	Health Care	\$92	0.0%	64.93%	5.02	10.63	0.00%	44.80%
Tata Motors Limited Shs	Consumer Discretionary	\$238	0.0%	64.05%	13.71	16.20	0.00%	(14.93)%
Sasol	Materials	\$272	0.0%	57.24%	9.00	7.97	0.00%	(18.40)%
Grasim Industries Ltd Shs Dematerial	Materials	\$197	0.0%	56.24%	13.03	54.36	0.28%	4.95%

### 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
Delta Electron Thai Pub Co L Shs	Information Technology	\$97	0.0%	(42.18)%	11.58	46.40	1.14%	(10.84)%
Turkiye Garanti Bankasi A S Ord	Financials	\$65	0.0%	(42.06)%	3.40	3.01	2.22%	30.53%
Sk Biopharmaceuticals	Health Care	\$83	0.0%	(41.50)%	7.13	(1516.83)	0.00%	-
Shenzhen Luxshare Precn. Ind.'a'	Information Technology	\$15	0.0%	(40.31)%	36.24	21.86	0.27%	36.82%
Chengdu Kanghong Pharm. A	Health Care	\$3	0.0%	(39.83)%	4.10	25.06	0.96%	19.55%
Mbiznetworks Globa Krw500	Health Care	\$75	0.0%	(39.66)%	4.75	285.03	0.00%	-
Sk Chemicals Co Ltd/New	Materials	\$56	0.0%	(38.44)%	2.56	7.90	0.80%	-
Supermax	Health Care	\$45	0.0%	(38.10)%	2.50	3.72	0.00%	(1.18)%
Allegro.Eu Sa	Consumer Discretionary	\$165	0.0%	(38.05)%	14.41	47.73	0.00%	37.00%
Akbank Akt	Financials	\$59	0.0%	(37.67)%	2.95	2.85	2.57%	23.50%



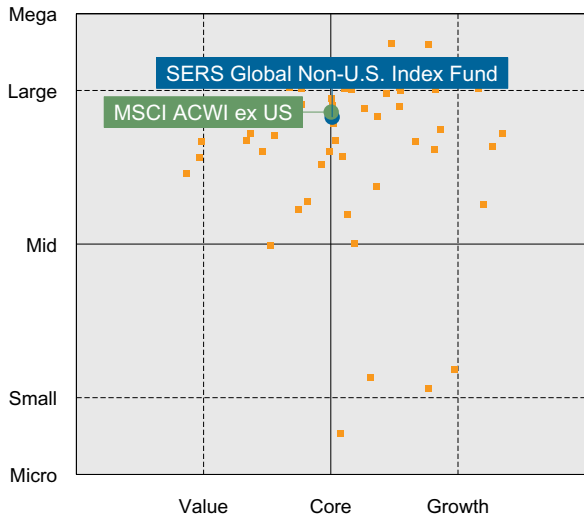
# Historical Holdings Based Style Analysis

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

### For Three Years Ended March 31, 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.

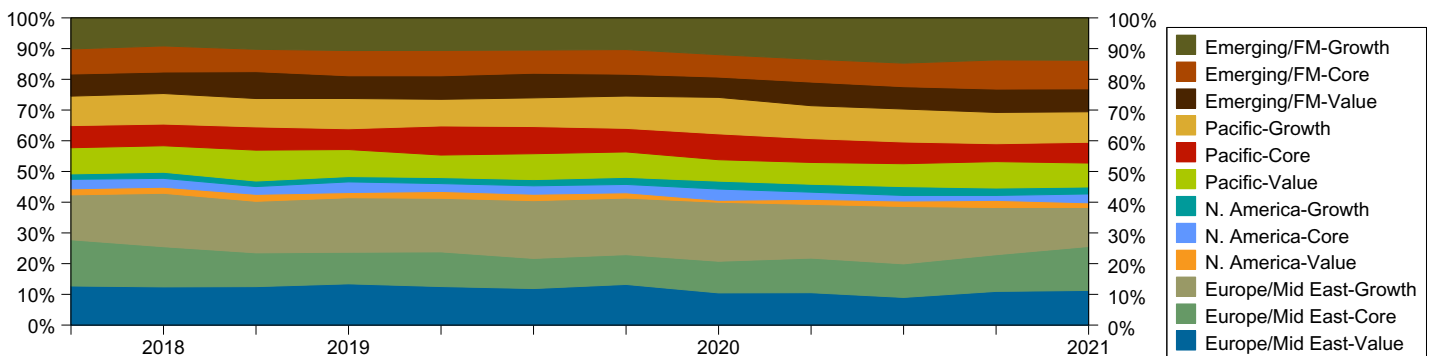
**Average Style Map vs Callan Non US Equity MFs Holdings for Three Years Ended March 31, 2021**



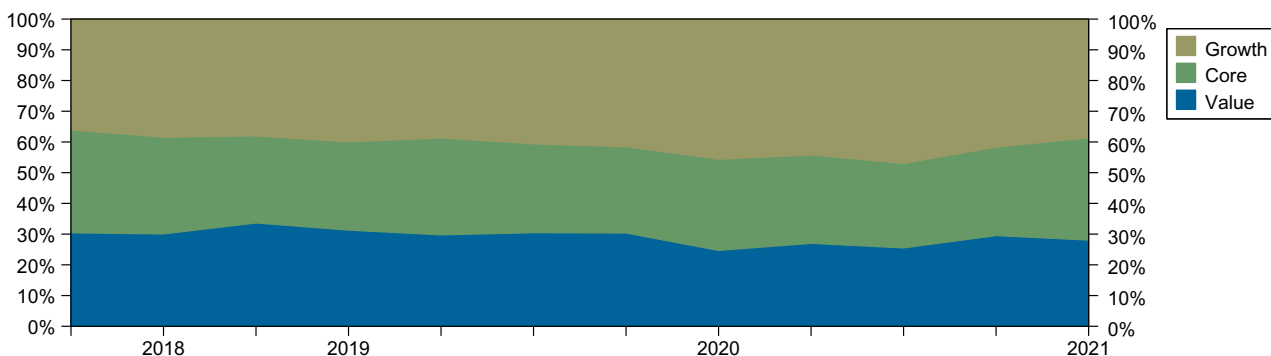
**Average Style Exposure Matrix Holdings for Three Years Ended March 31, 2021**

Europe/ Mid East	11.8% (126)	11.6% (121)	17.0% (168)	40.4% (415)
	12.1% (138)	11.4% (125)	17.1% (181)	40.6% (444)
N. America	1.8% (27)	2.7% (28)	2.2% (31)	6.7% (86)
	1.8% (28)	2.7% (29)	2.2% (33)	6.7% (90)
Pacific	8.2% (150)	7.5% (142)	10.0% (167)	25.7% (459)
	7.9% (152)	7.2% (142)	9.6% (166)	24.6% (460)
Emerging/ FM	7.5% (396)	8.1% (328)	11.6% (322)	27.2% (1046)
	7.9% (458)	8.3% (396)	11.9% (386)	28.1% (1240)
<b>Total</b>	<b>29.2% (699)</b>	<b>29.9% (619)</b>	<b>40.9% (688)</b>	<b>100.0% (2006)</b>
	<b>29.7% (776)</b>	<b>29.6% (692)</b>	<b>40.8% (766)</b>	<b>100.0% (2234)</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 March 31, 2021

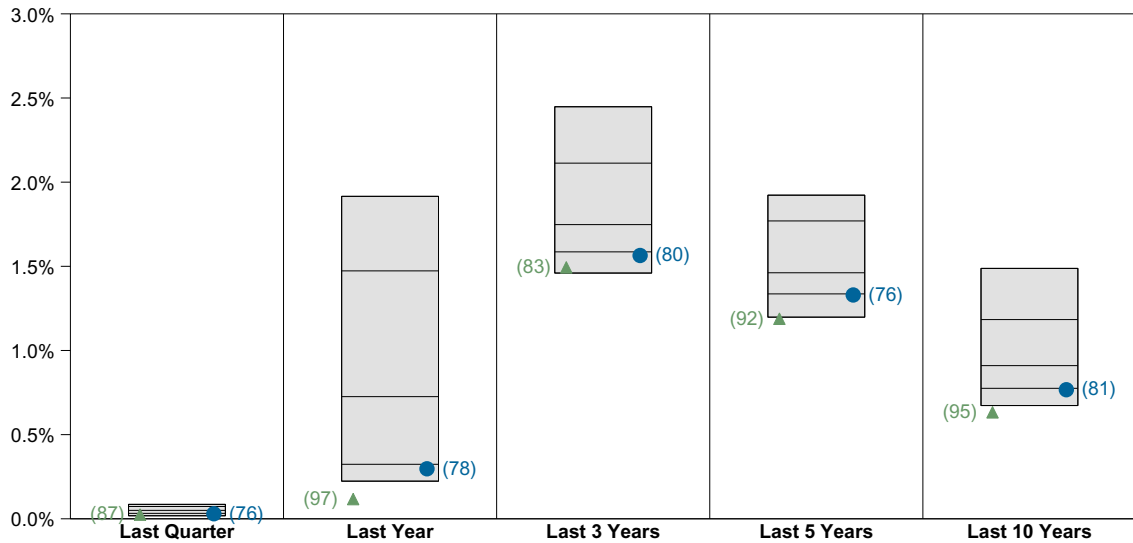
### Investment Philosophy

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

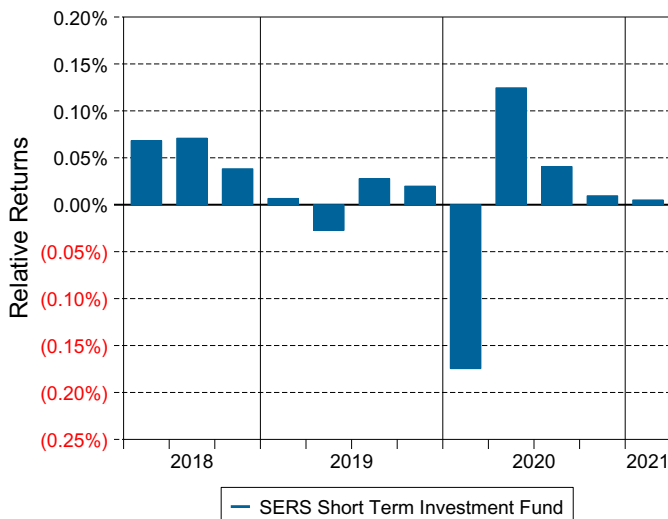
- SERS Short Term Investment Fund's portfolio posted a 0.03% return for the quarter placing it in the 76 percentile of the Callan Cash Database group for the quarter and in the 78 percentile for the last year.
- SERS Short Term Investment Fund's portfolio outperformed the 3-month Treasury Bill by 0.01% for the quarter and outperformed the 3-month Treasury Bill for the year by 0.18%.

### Performance vs Callan Cash Database (Gross)

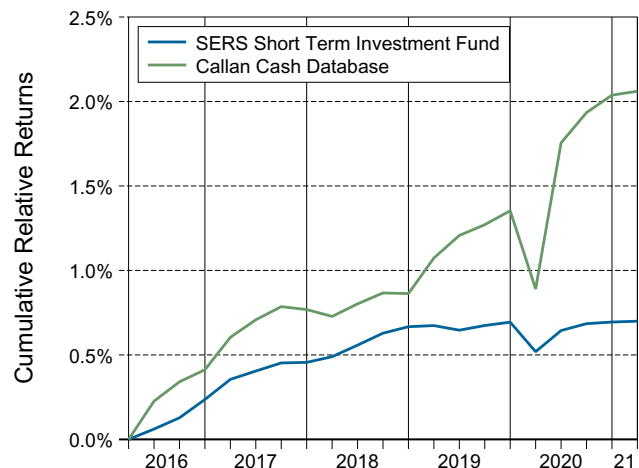


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	0.09	1.92	2.45	1.92	1.49
25th Percentile	0.07	1.47	2.11	1.77	1.18
Median	0.05	0.73	1.75	1.46	0.91
75th Percentile	0.03	0.32	1.59	1.34	0.78
90th Percentile	0.02	0.22	1.46	1.20	0.67
<b>SERS Short Term Investment Fund</b>	● 0.03 (76)	● 0.30 (78)	● 1.56 (80)	● 1.33 (76)	● 0.77 (81)
3-month Treasury Bill	▲ 0.02 (87)	▲ 0.12 (97)	▲ 1.49 (83)	▲ 1.19 (92)	▲ 0.63 (95)

### Relative Return vs 3-month Treasury Bill



### Cumulative Returns vs 3-month Treasury Bill

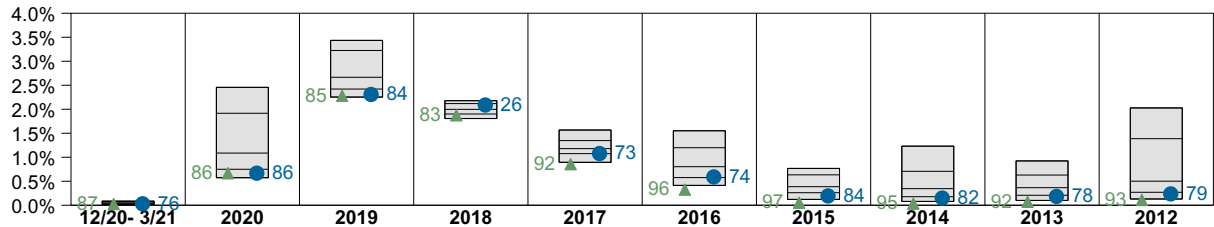


# SERS Short Term Investment Fund Return Analysis Summary

## Return Analysis

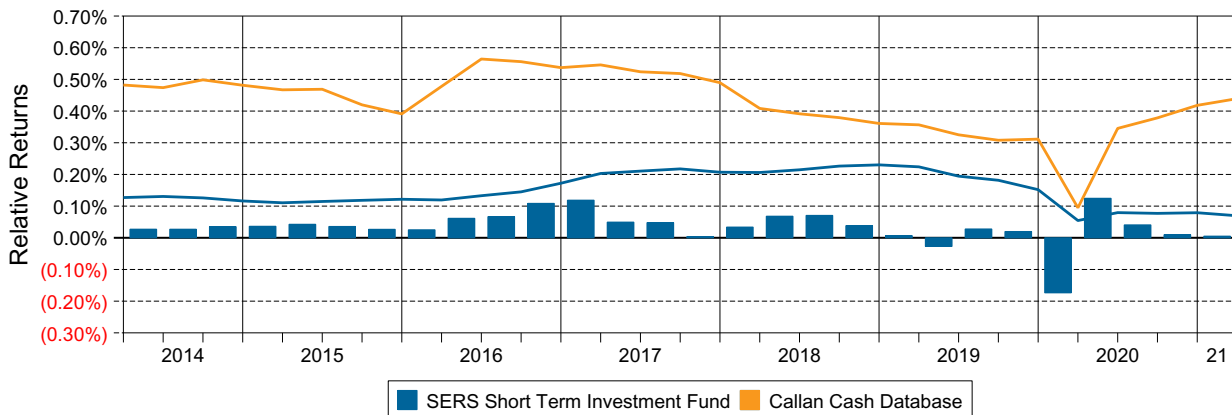
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and 12 quarter rolling manager returns versus the appropriate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

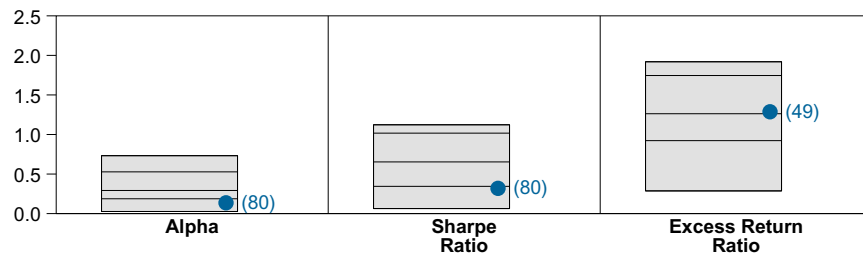


Period	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile	SERS Short Term Investment Fund	3-month Treasury Bill
12/20-3/21	0.09	0.07	0.05	0.03	0.02	0.03	0.02
2020	2.46	1.92	1.09	0.75	0.57	0.67	0.67
2019	3.43	3.22	2.67	2.42	2.25	2.31	2.28
2018	2.18	2.12	2.00	1.90	1.81	2.09	1.87
2017	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 March 31, 2021



Measure	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile	SERS Short Term Investment Fund
Alpha	0.73	0.53	0.29	0.19	0.03	0.14
Sharpe Ratio	1.12	1.02	0.65	0.34	0.06	0.32
Excess Return Ratio	1.92	1.75	1.26	0.92	0.29	1.29

# SERS U.S. Short Term Bond Idx Fund

## Period Ended March 31, 2021

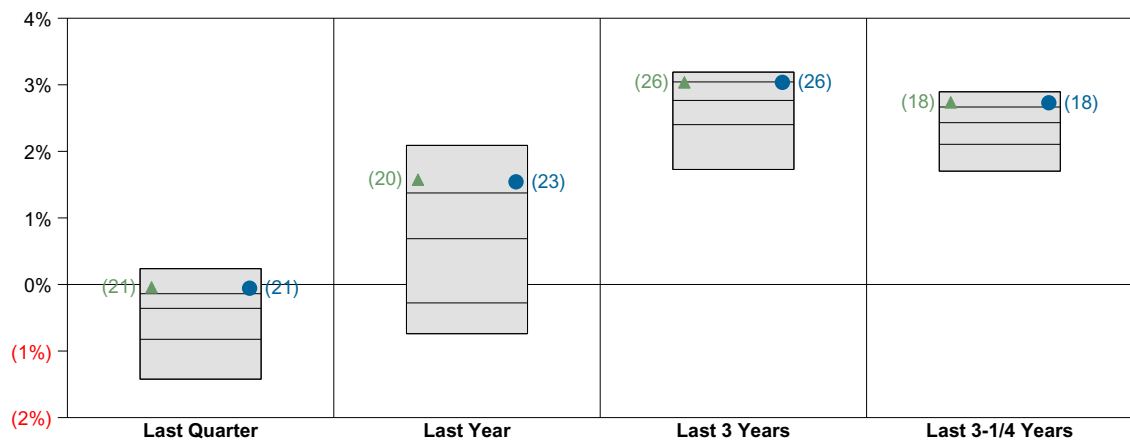
### Investment Philosophy

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

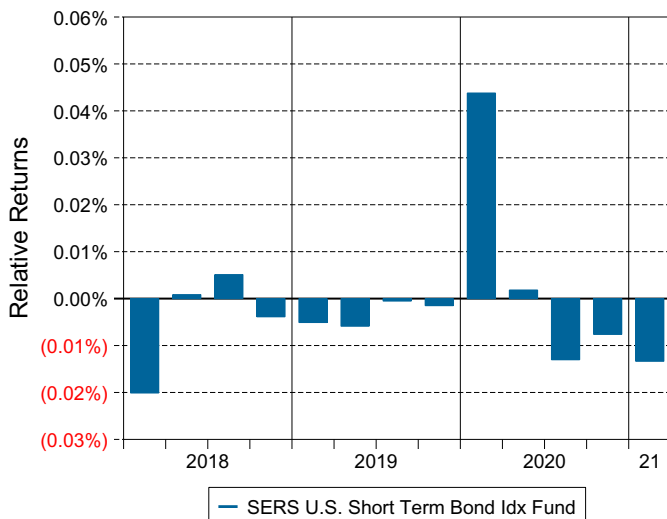
- SERS U.S. Short Term Bond Idx Fund's portfolio posted a (0.06)% return for the quarter placing it in the 21 percentile of the Callan Short US Gov Bond Mut Funds group for the quarter and in the 23 percentile for the last year.
- SERS U.S. Short Term Bond Idx Fund's portfolio underperformed the Blmbg Gov/Cred 1-3 Yr by 0.01% for the quarter and underperformed the Blmbg Gov/Cred 1-3 Yr for the year by 0.03%.

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

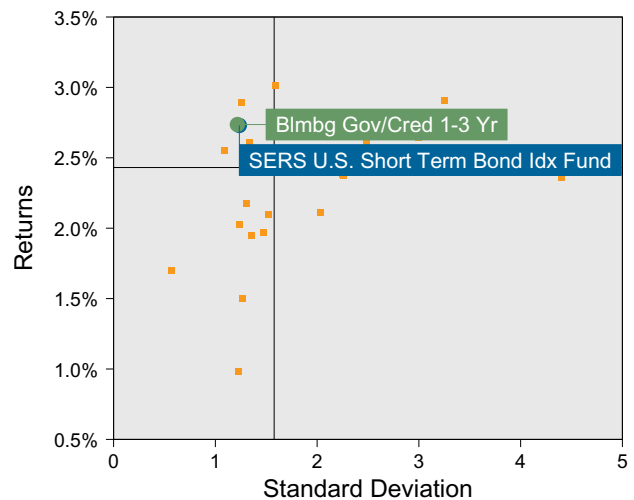


	Last Quarter	Last Year	Last 3 Years	Last 3-1/4 Years
10th Percentile	0.24	2.09	3.19	2.90
25th Percentile	(0.14)	1.38	3.04	2.67
Median	(0.36)	0.69	2.77	2.43
75th Percentile	(0.82)	(0.28)	2.40	2.11
90th Percentile	(1.42)	(0.74)	1.73	1.70
<b>SERS U.S. Short Term Bond Idx Fund</b>	<b>(0.06)</b>	<b>1.54</b>	<b>3.04</b>	<b>2.73</b>
<b>Blmbg Gov/Cred 1-3 Yr</b>	<b>(0.04)</b>	<b>1.57</b>	<b>3.04</b>	<b>2.74</b>

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



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



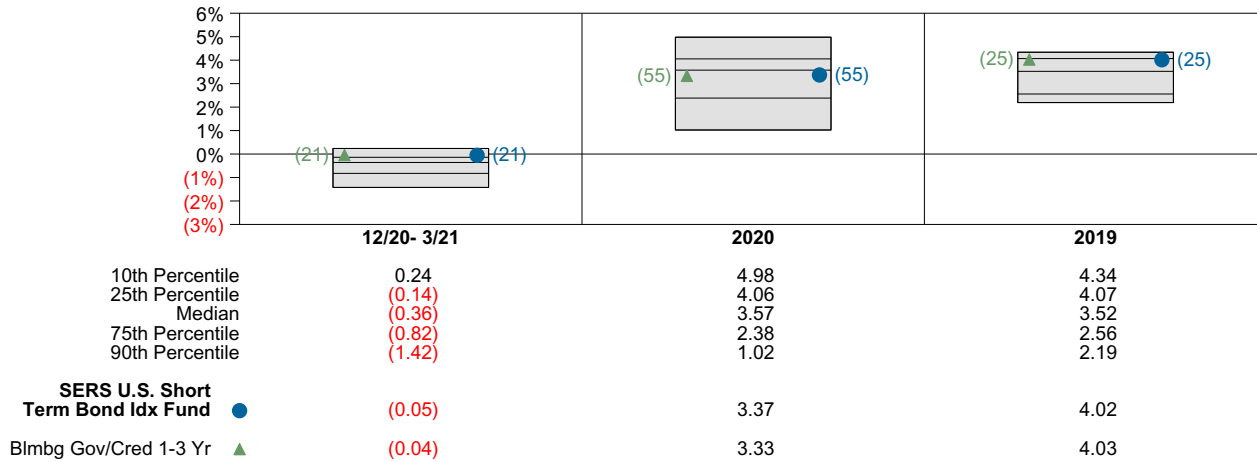
# SERS U.S. Short Term Bond Idx Fund

## Return Analysis Summary

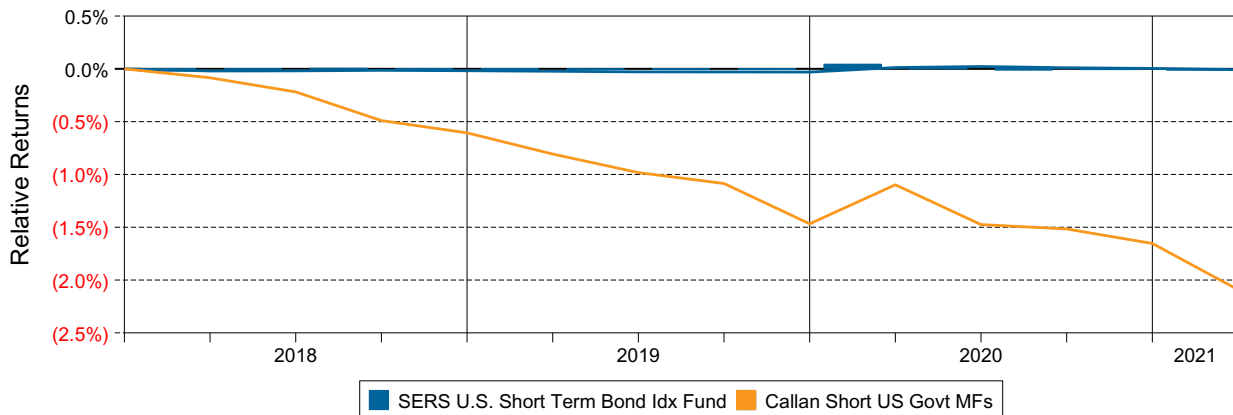
### Return Analysis

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)



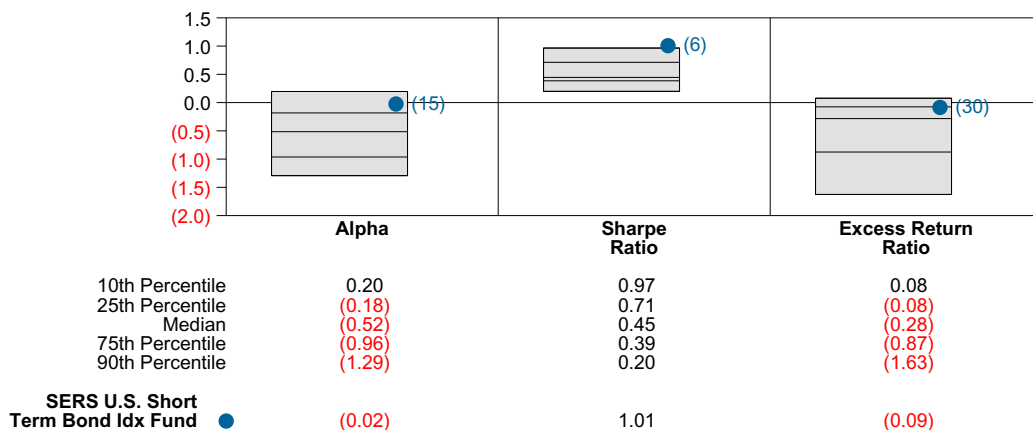
### Cumulative and Quarterly Relative Return vs Blmbg Gov/Cred 1-3 Yr



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

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

#### Three and One-Quarter Years Ended March 31, 2021



# SERS U.S. Short Term Bond Idx Fund

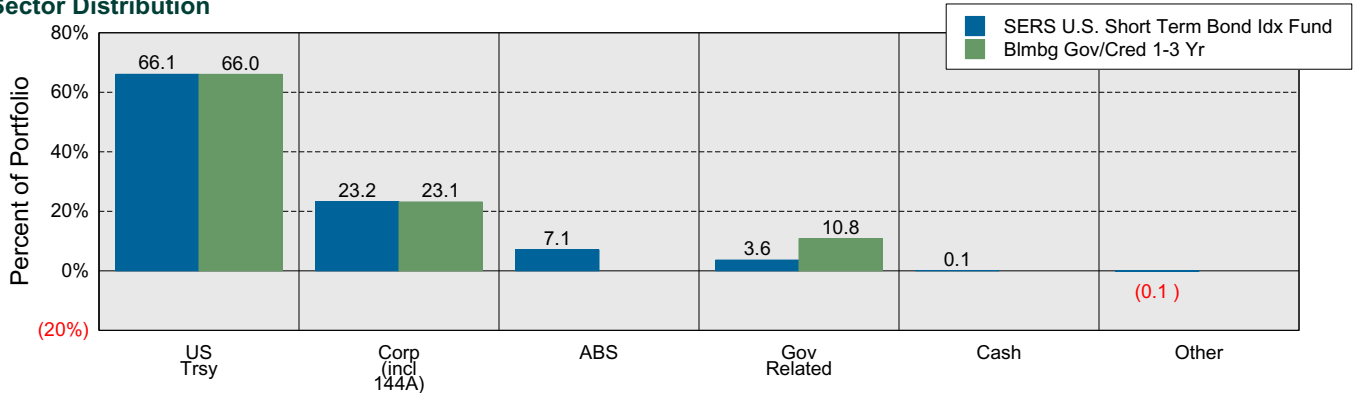
## Portfolio Characteristics Summary

### As of March 31, 2021

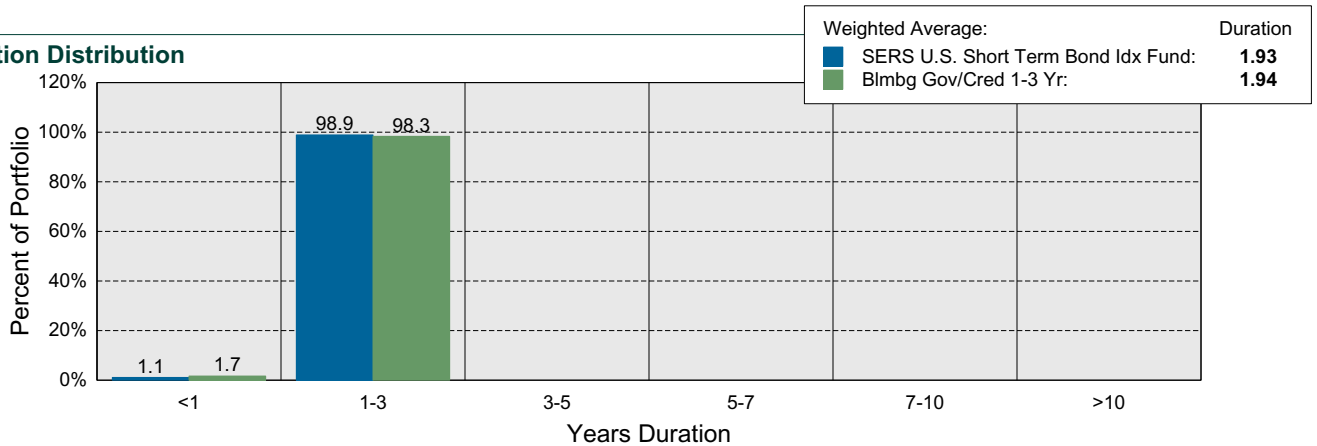
#### Portfolio Structure Comparison

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.

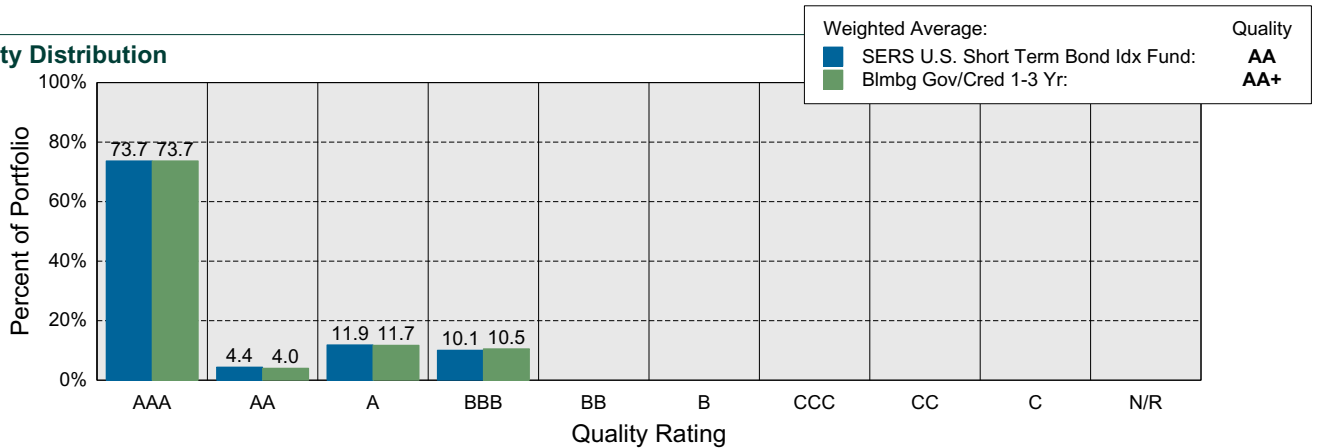
#### Sector Distribution



#### Duration Distribution



#### Quality Distribution



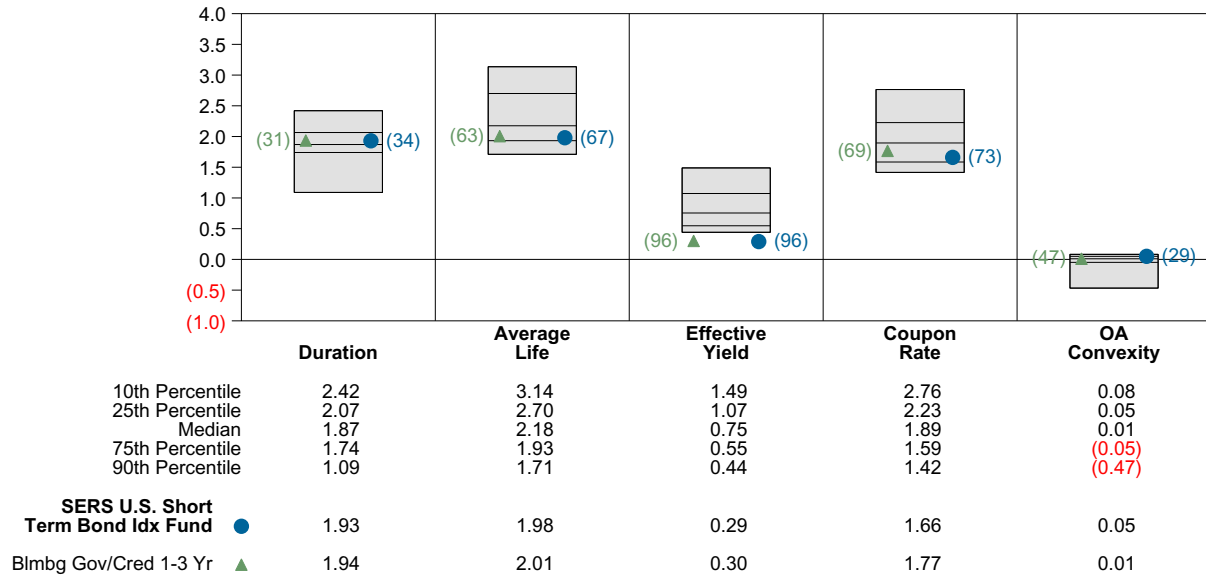
# SERS U.S. Short Term Bond Idx Fund

## Bond Characteristics Analysis Summary

### Portfolio Characteristics

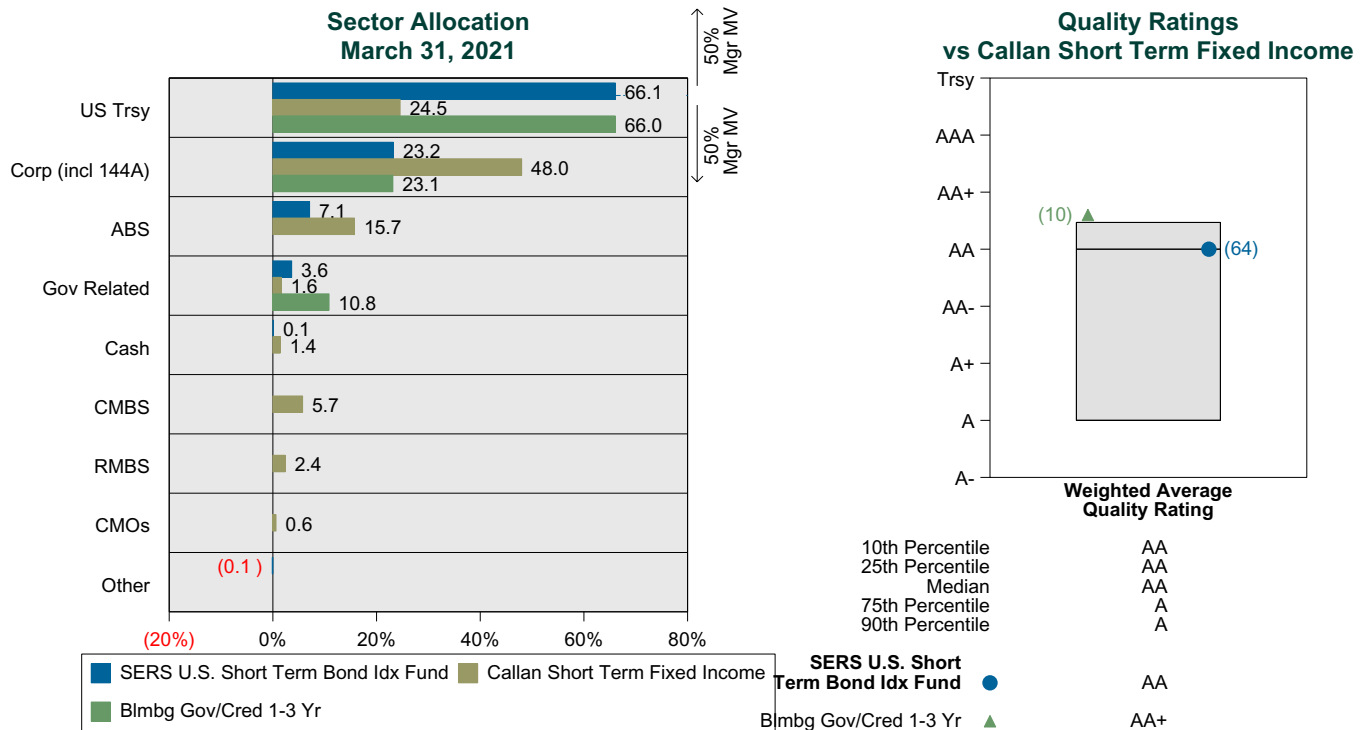
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

### Fixed Income Portfolio Characteristics Rankings Against Callan Short Term Fixed Income as of March 31, 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 March 31, 2021

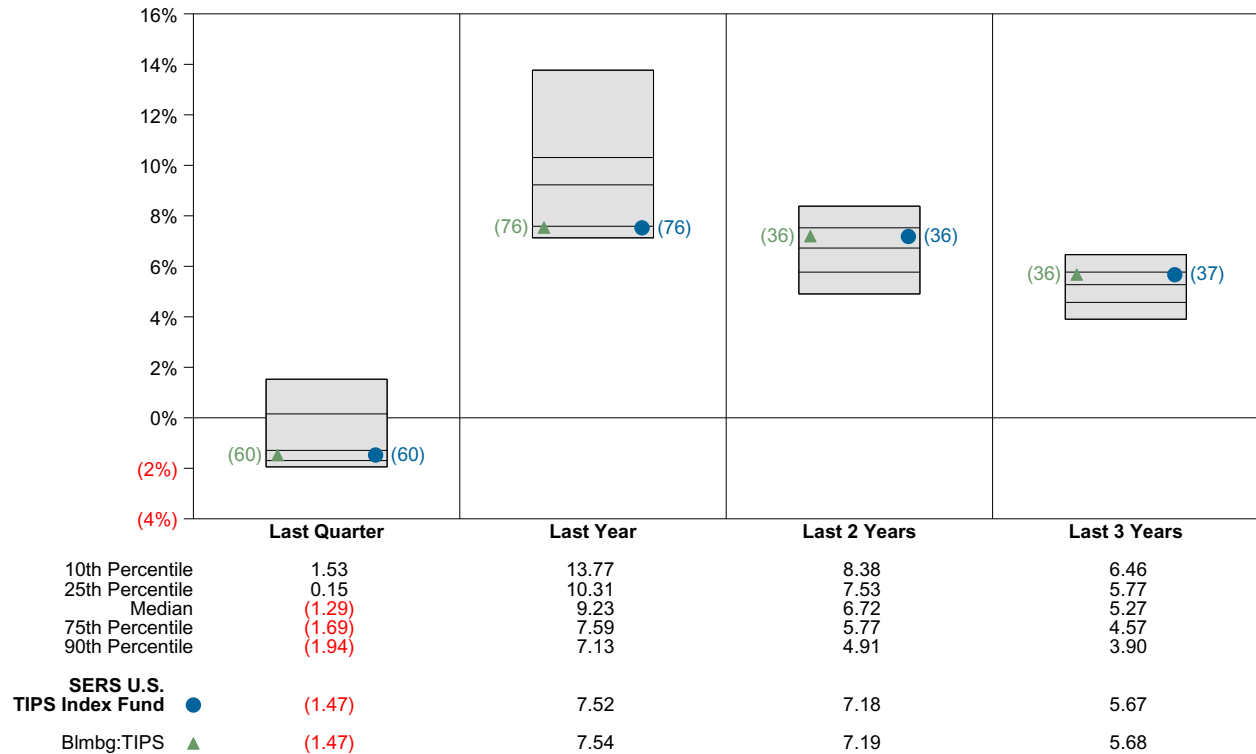
### Investment Philosophy

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.

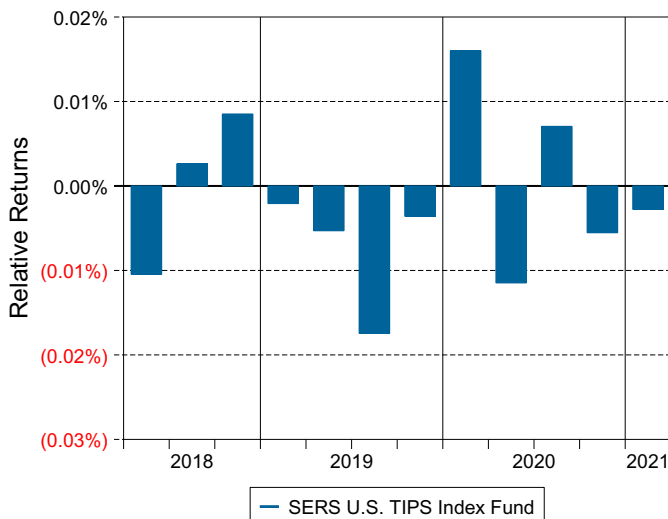
### Quarterly Summary and Highlights

- SERS U.S. TIPS Index Fund's portfolio posted a (1.47)% return for the quarter placing it in the 60 percentile of the Callan Treas Infl Prot Securities MFs group for the quarter and in the 76 percentile for the last year.
- SERS U.S. TIPS Index Fund's portfolio underperformed the Blmbg:TIPS by 0.00% for the quarter and underperformed the Blmbg:TIPS for the year by 0.01%.

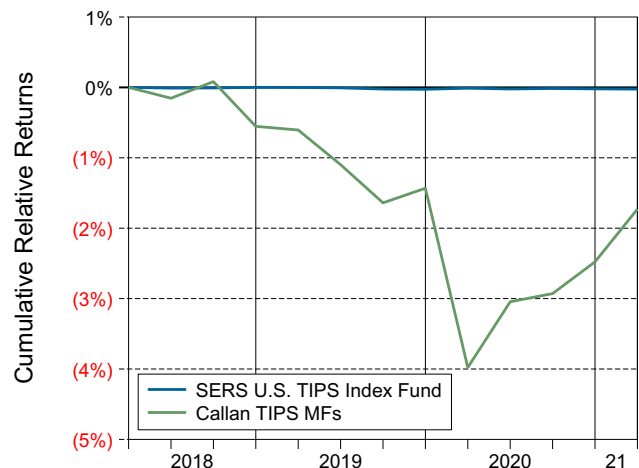
### Performance vs Callan Treas Infl Prot Securities MFs (Institutional Net)



### Relative Return vs Blmbg:TIPS



### Cumulative Returns vs Blmbg:TIPS



# SERS U.S. TIPS Index Fund

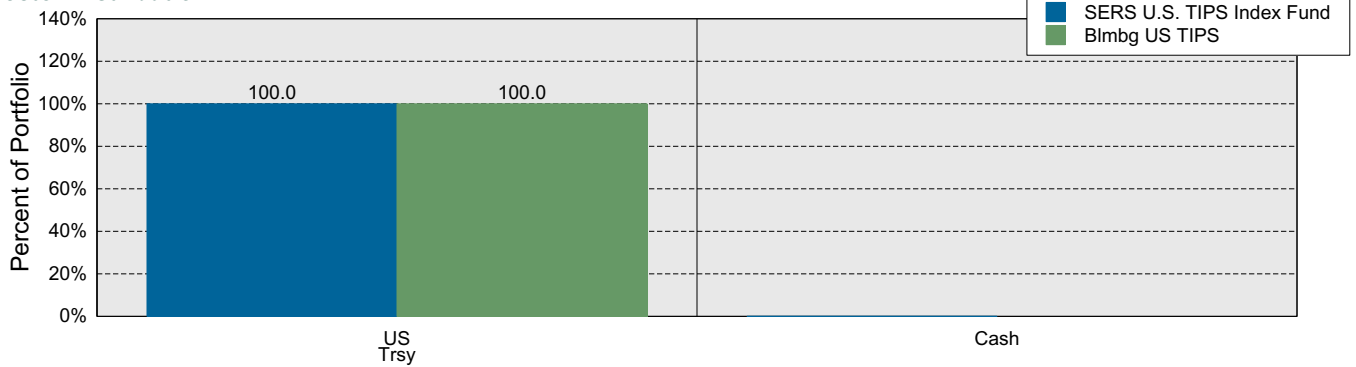
## Portfolio Characteristics Summary

### As of March 31, 2021

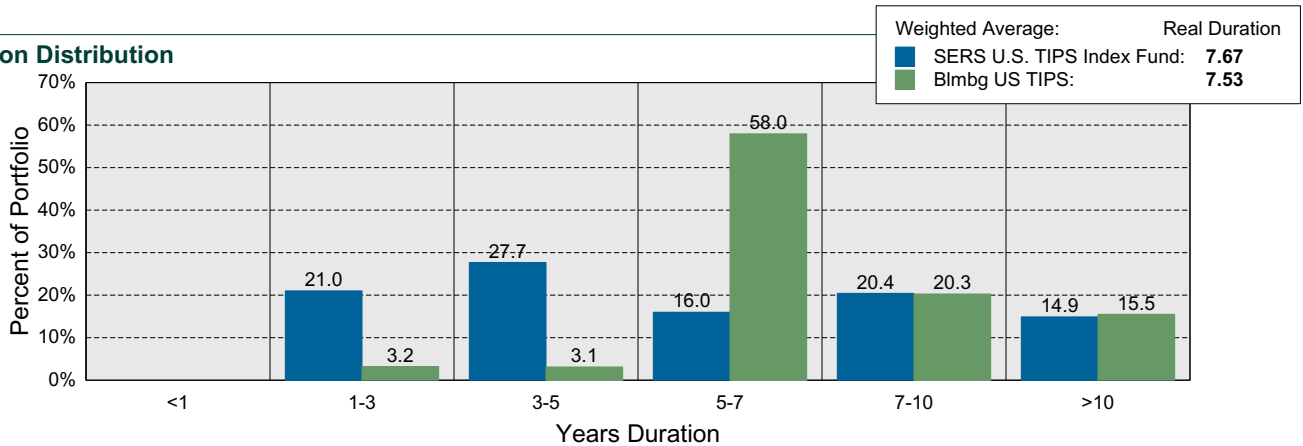
#### Portfolio Structure Comparison

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.

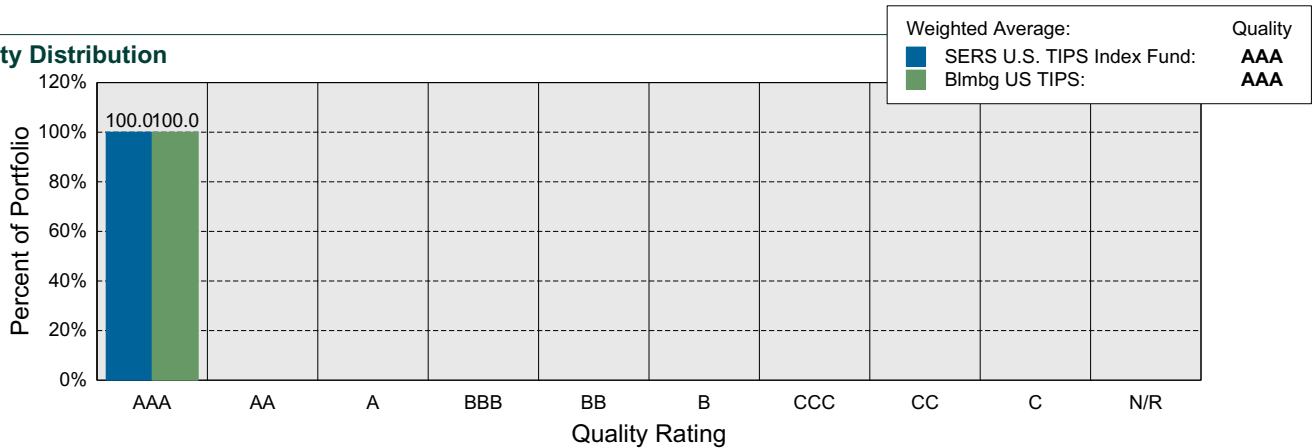
#### Sector Distribution



#### Duration Distribution



#### Quality Distribution

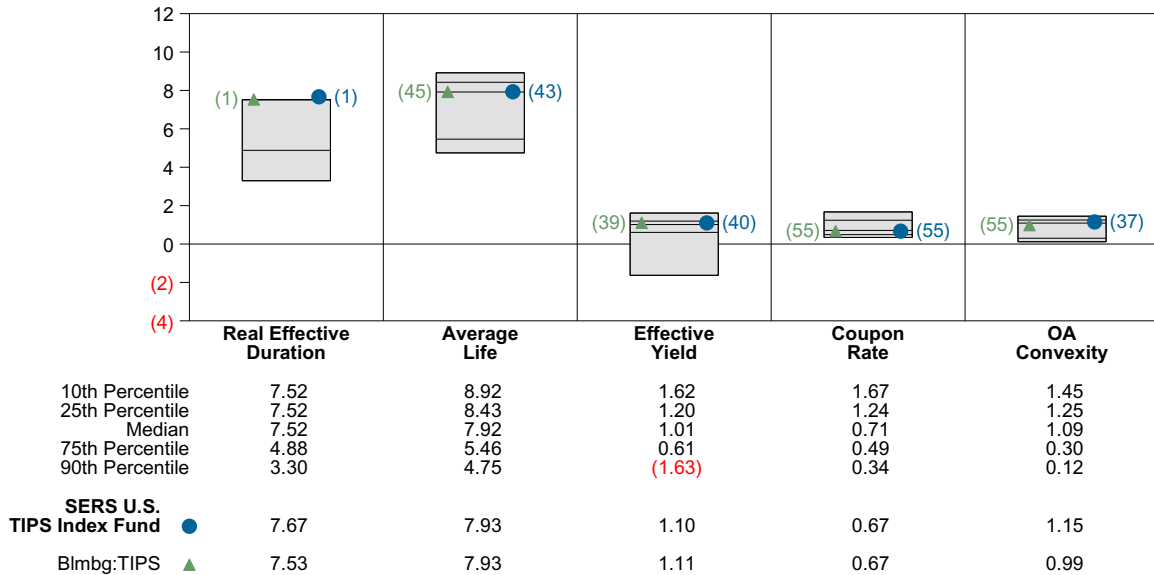


# SERS U.S. TIPS Index Fund Bond Characteristics Analysis Summary

## Portfolio Characteristics

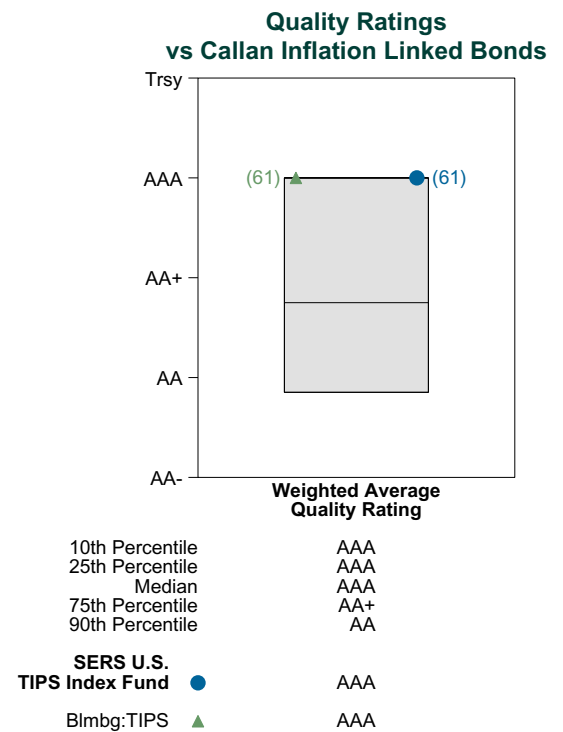
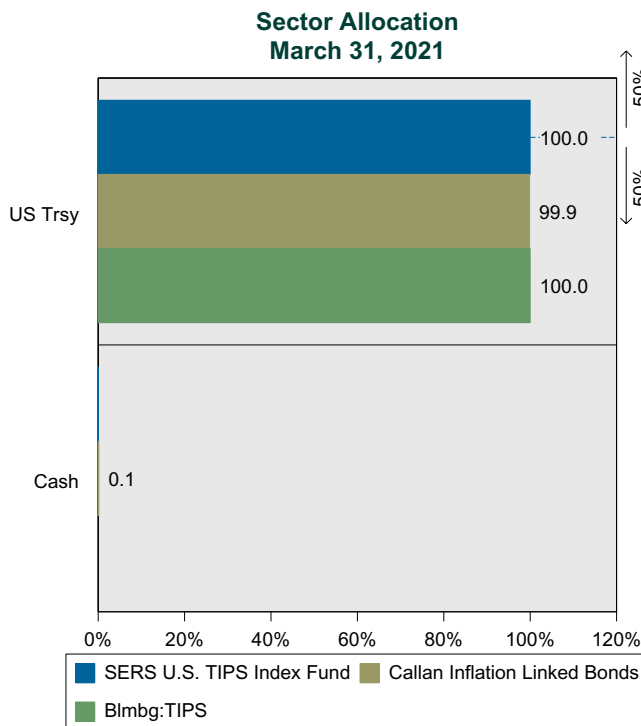
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of March 31, 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 March 31, 2021

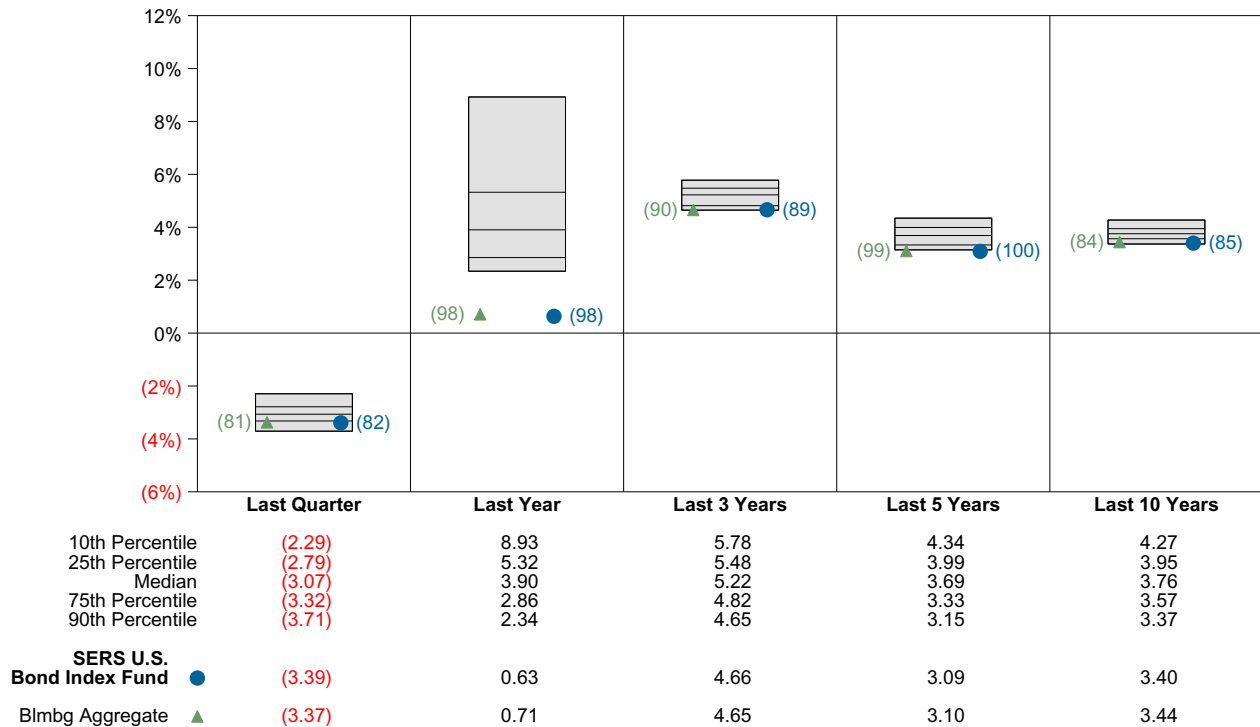
## Investment Philosophy

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.

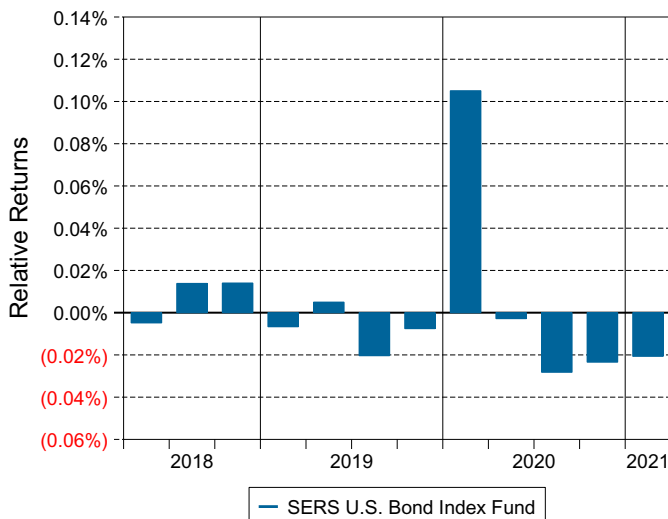
## Quarterly Summary and Highlights

- SERS U.S. Bond Index Fund's portfolio posted a (3.39)% return for the quarter placing it in the 82 percentile of the Callan Core Bond Mutual Funds group for the quarter and in the 98 percentile for the last year.
- SERS U.S. Bond Index Fund's portfolio underperformed the Blmbg Aggregate by 0.02% for the quarter and underperformed the Blmbg Aggregate for the year by 0.08%.

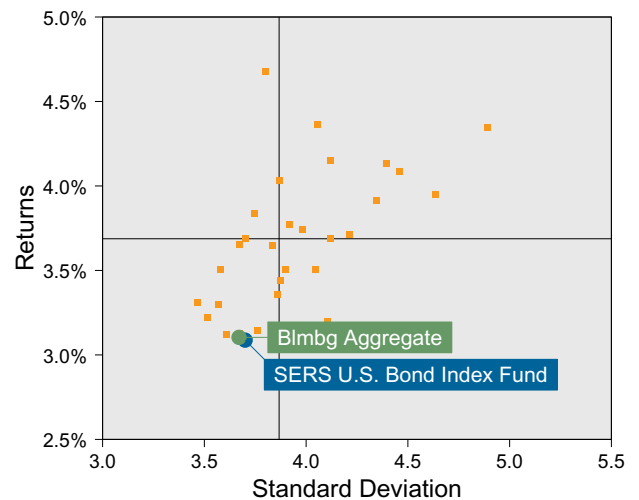
## Performance vs Callan Core Bond Mutual Funds (Institutional Net)



## Relative Return vs Blmbg Aggregate



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

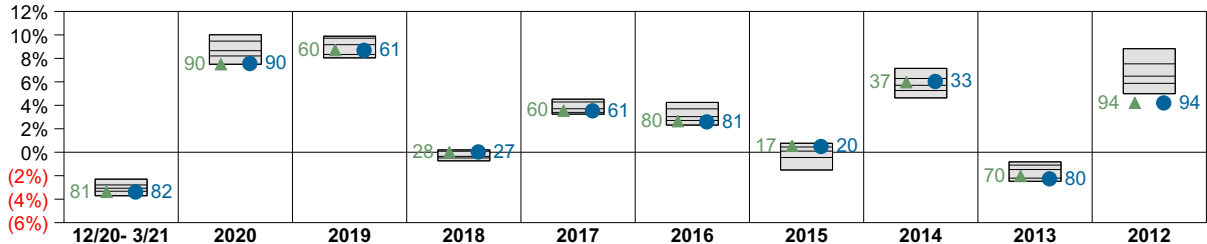


# SERS U.S. Bond Index Fund Return Analysis Summary

## Return Analysis

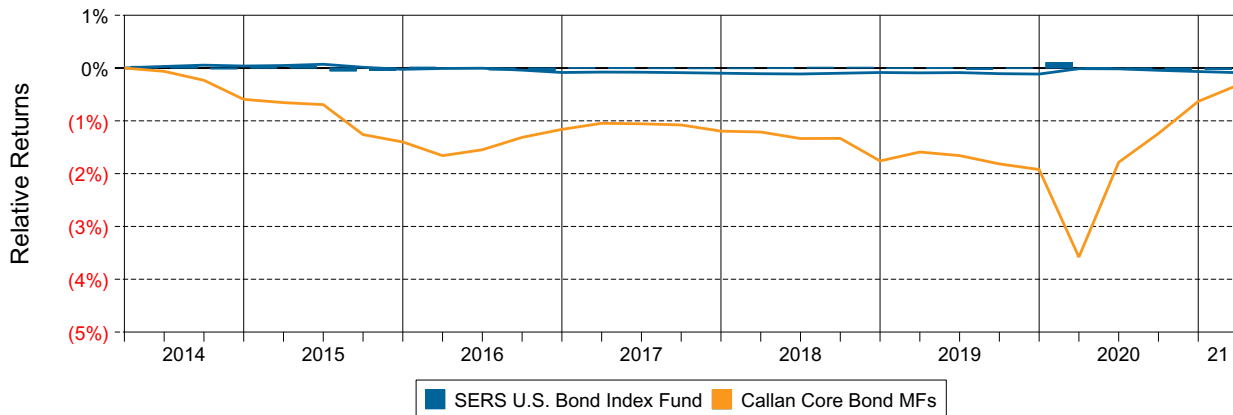
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

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

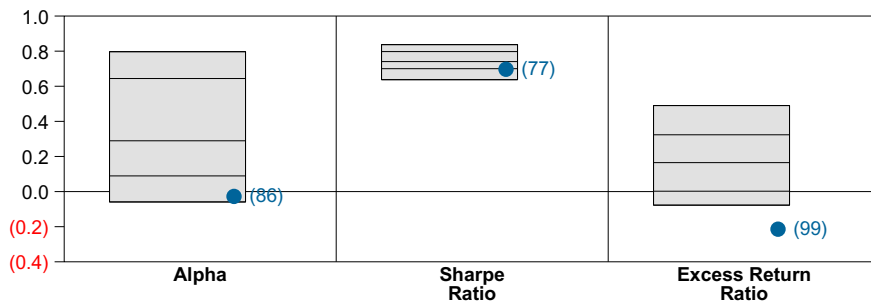


	12/20- 3/21	2020	2019	2018	2017	2016	2015	2014	2013	2012
10th Percentile	(2.29)	10.01	9.89	0.20	4.52	4.25	0.77	7.15	(0.82)	8.83
25th Percentile	(2.79)	9.47	9.72	0.09	4.28	3.70	0.45	6.29	(1.10)	7.53
Median	(3.07)	8.65	9.17	(0.35)	3.71	3.03	0.10	5.71	(1.47)	6.49
75th Percentile	(3.32)	8.21	8.33	(0.49)	3.40	2.71	(0.45)	5.26	(2.21)	5.87
90th Percentile	(3.71)	7.50	8.04	(0.73)	3.25	2.31	(1.52)	4.63	(2.48)	4.99
<b>SERS U.S. Bond Index Fund</b>	● (3.39)	7.56	8.69	0.02	3.53	2.59	0.49	6.03	(2.26)	4.20
<b>Blmbg Aggregate</b>	▲ (3.37)	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 March 31, 2021



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.80	0.84	0.49
25th Percentile	0.64	0.80	0.32
Median	0.29	0.74	0.16
75th Percentile	0.09	0.70	0.00
90th Percentile	(0.06)	0.64	(0.08)
<b>SERS U.S. Bond Index Fund</b>	● (0.03)	0.70	(0.21)

# SERS U.S. Bond Index Fund

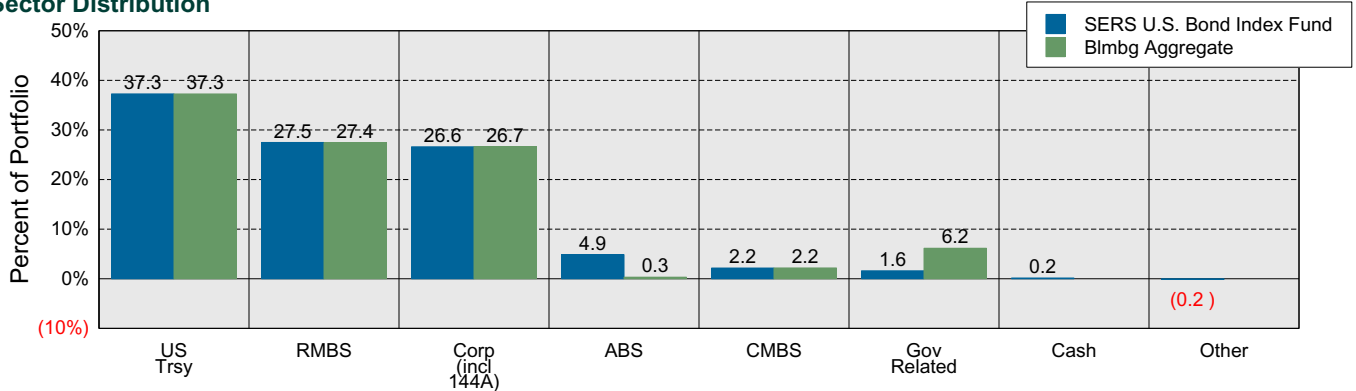
## Portfolio Characteristics Summary

### As of March 31, 2021

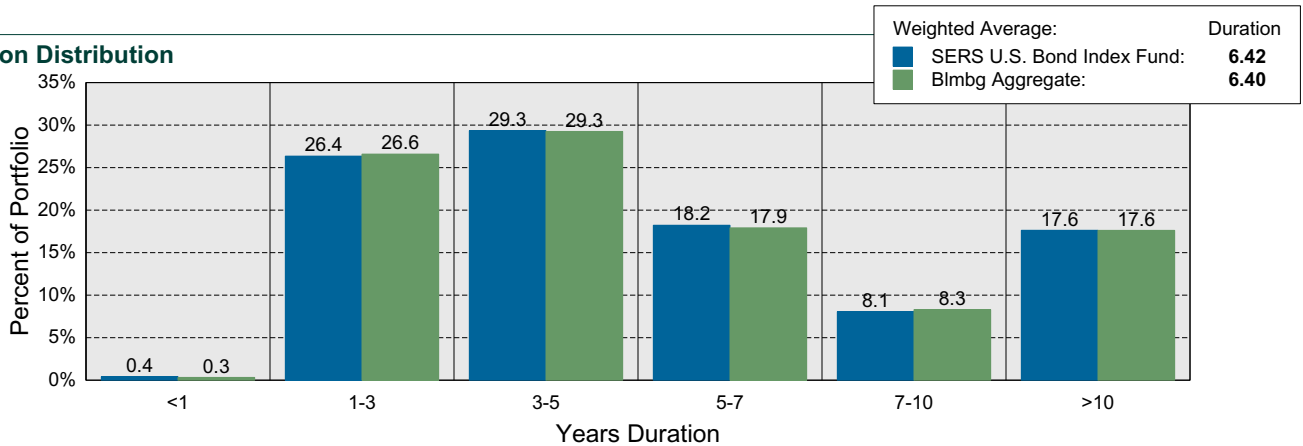
#### Portfolio Structure Comparison

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.

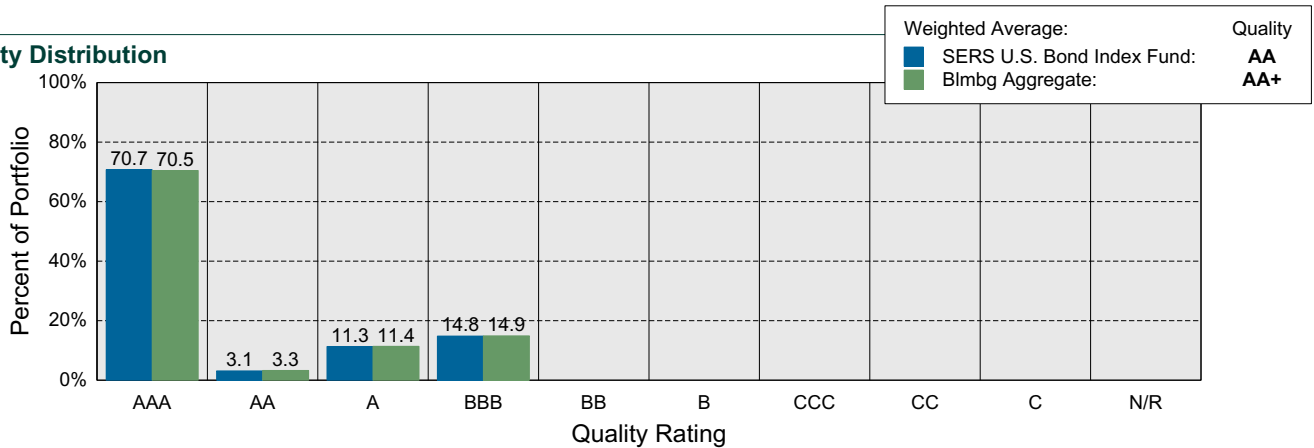
#### Sector Distribution



#### Duration Distribution



#### Quality Distribution



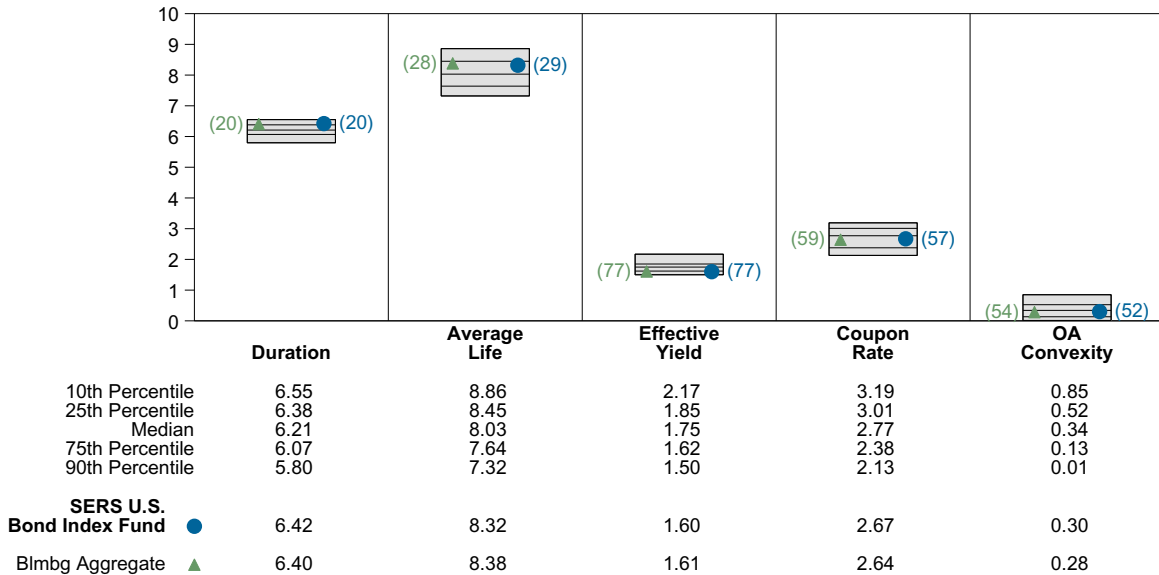
# SERS U.S. Bond Index Fund

## Bond Characteristics Analysis Summary

### Portfolio Characteristics

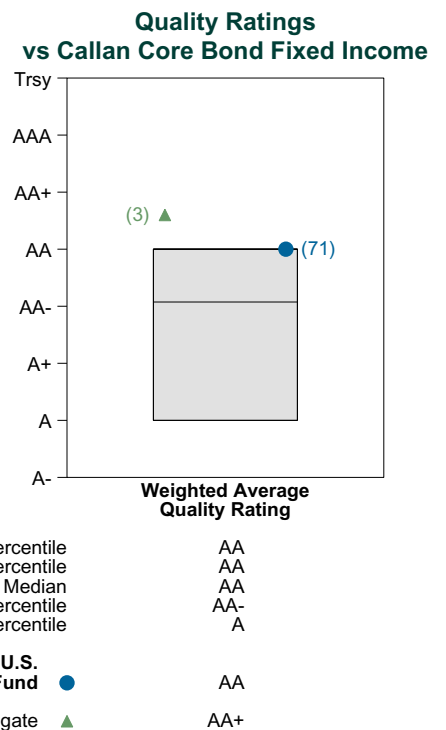
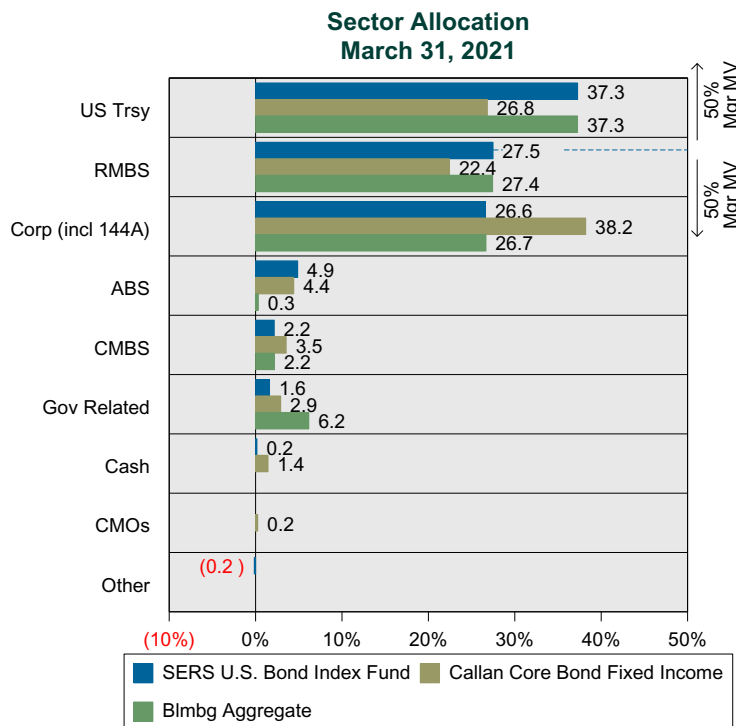
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

### Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of March 31, 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.







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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 Barclays Aggregate Bond Index** 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.



## Research and Education

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/callan/research-library](http://www.callan.com/callan/research-library) to see all of our publications, and [www.callan.com/callan/blog](http://www.callan.com/callan/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

**[Callan's 2021-2030 Capital Markets Assumptions](#)** | Callan develops capital markets assumptions to help clients with their long-term strategic planning. For the period 2021-2030, we made almost revolutionary changes to our projections. We also added several new asset classes, including private credit.

**[2021 Defined Contribution Survey](#)** | The world is changing dramatically, and our annual *DC Survey* is evolving to fit the shifting landscape. Callan's 14th Annual *DC Survey* now covers the SECURE and CARES Acts, the impacts of the COVID-19 pandemic, along with the key tenets of DC plan management, financial wellness, and HSAs.

**[GameStopped—or Just Getting Started?](#)** | In this quarter's *Hedge Fund Monitor*, Jim McKee explains what the GameStop saga means for institutional investors, and outlines what questions they should be asking their hedge fund managers.

**[Coping with COVID-19: How Work Is Evolving for Investment Managers, 3rd Edition](#)** | Following up on our September publication, Callan surveyed investment managers regarding how their firms were responding to the COVID-19 pandemic, focusing on office closures and re-openings, work-from-home approaches, business travel, and meetings. This edition also includes data on how firms are handling attendance to live events and changes to employee benefits packages specific to the COVID-19 pandemic.

### Blog Highlights

**[Captive Insurance Stepped in to Ease Pandemic's Blow. Now What?](#)** | By accessing permissible capital invested in the captive investment portfolio, some captive insurers were able to support their parent organizations during COVID-19 by providing relief from business interruption losses. As dependence on captive

insurance increases, the demand for higher investment returns from the captive investment portfolio will also increase.

**[How the Pandemic Affected Private Credit, and What's Next](#)** | As interest rates on investment grade bonds have fallen to near-zero, private credit has attracted more interest from institutional investors.

**[Why the Yield Curve Is Really Curving](#)** | As prospects for growth have brightened on the back of increasing vaccinations, a gradual re-opening across the country, and continued fiscal stimulus, yields on longer maturity bonds have risen while short-term rates have been anchored by the Fed.

### Quarterly Periodicals

**[Private Equity Trends, 4Q20](#)** | A high-level summary of private equity activity in the quarter through all the investment stages

**[Active vs. Passive Charts, 4Q20](#)** | A comparison of active managers alongside relevant benchmarks over the long term

**[Market Pulse Flipbook, 4Q20](#)** | 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, 4Q20](#)** | 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, 4Q20](#)** | Commentary on developments for hedge funds and multi-asset class (MAC) strategies

**[Real Assets Reporter, 4Q20](#)** | A summary of market activity for real assets and private real estate during the quarter

## Events

Miss out on a Callan conference or workshop? Event summaries and speakers' presentations are available on our website: [callan.com/callan/research-library](http://callan.com/callan/research-library)

Please mark your calendar and look forward to upcoming invitations:

### 2021 National Conference

July 19-21, 2021, in Salt Lake City

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—Virtual

August 17-19, 2021

This program familiarizes institutional investor trustees and staff and asset management advisers with basic investment theory, terminology, and practices. It is held over three days with virtual modules of 2.5-3 hours. This course is designed for individuals with less than two years of experience with asset-management oversight and/or support responsibilities. Tuition is \$950 per person and includes instruction and digital materials.

Additional information including registration can be found at: [callan.com/callan/events/ccintro\\_august/](http://callan.com/callan/events/ccintro_august/)

### Introduction to Investments—In Person

October 6-7, 2021, in Chicago

This program familiarizes institutional investor trustees and staff and asset management advisers with basic investment theory, terminology, and practices. It lasts one-and-a-half days and is designed for individuals with less than two years of experience with asset-management oversight and/or support responsibilities. 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 dates and registration can be found at: [callan.com/callan/events/oct-intro-college-2/](http://callan.com/callan/events/oct-intro-college-2/)



"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









