

March 31, 2022

**Pennsylvania SERS 401(a)**



**Investment Measurement Service  
Quarterly Review**

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## Geopolitical Upheaval; Unsettled Markets

### ECONOMY

**2** Capital markets reacted strongly to the upheaval and uncertainty unleashed by Russia's invasion of Ukraine. Both stocks and bonds dropped in 1Q22, and GDP fell 1.4%, but underlying strength in the U.S. economy should spare the country from a recession.

## Quarterly Losses Amid Global Turmoil

### INSTITUTIONAL INVESTORS

**4** All institutional investor types saw declines in 1Q22, but most did better than a 60% stocks/40% bonds benchmark. Over 20 years, returns for institutional investors have roughly matched the benchmark returns, and exceeded fixed income and global ex-U.S. equities.

## War, COVID Weigh on Markets Worldwide

### EQUITY

**6** The S&P 500 fell 4.6% in 1Q22, but was down more than 12% early in March before rallying into quarter-end. Global equity indices fell as well, as a resurgence of COVID-19 cases in Europe and Asia, specifically in China, weighed on the global recovery.

## Broad Market Quarterly Returns

**U.S. Equity**  
Russell 3000



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



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



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



Sources: Bloomberg, FTSE Russell, MSCI

## Global Indices Fall, Driven by Rate Hikes

### FIXED INCOME

**8** The Bloomberg Aggregate fell 5.9%, its worst quarterly return since 1980. The Fed raised rates by 25 bps, with many more hikes expected. Global indices fell as well, driven by broad interest rate increases. Russia was removed from indices at a price of \$0.

## Asset Class Shows Continued Gains

### REAL ESTATE/REAL ASSETS

**10** The NCREIF Property Index rose 5.3% during 1Q22. The NCREIF Open-End Diversified Core Equity (ODCE) Index rose 7.1%. While U.S. REITs, as measured by the FTSE Nareit Equity REITs Index, fell 3.9%, they outperformed U.S. equities. Commodities were a rare bright spot.

## Where Do Investors Go From Here?

### PRIVATE EQUITY

**11** Except for fundraising dollar volume, all other private equity activity measures moderated in 1Q22. It was still a good quarter from a transaction volume perspective, as positive sentiment toward private equity and its ability to capitalize on volatile periods persisted.

## Appealing in Climate of Low Yields

### PRIVATE CREDIT

**12** Private credit continues to be attractive in this low-yield environment, and the floating-rate structure of many types of private credit serves as a buffer as interest rates rise. On average, it has generated net IRRs of 8% to 10% for trailing periods ended Sep. 30, 2021.

## Market Volatility Tests Managers' Strategies

### HEDGE FUNDS/MACs

**13** Hedge funds ended the volatile quarter with mixed results, as equity hedge managers had a difficult time. Event-driven strategies fell, due to a higher weight to equities vs. credit. Macro strategies soared, as commodities spiked. Relative value managers gained, profiting off rate volatility.

## DC Index Bounces Back in 4Q After Loss

### DEFINED CONTRIBUTION

**15** The Callan DC Index™ rose 5.1% in 4Q21, after falling in 3Q, while the Age 45 Target Date Fund gained 5.5%. TDFs again saw the largest net inflows. Real return/TIPS had larger-than-typical net inflows (+13.6%), indicating participants may be looking to hedge inflation.

# Geopolitical Upheaval and Unsettled Markets

ECONOMY | Jay Kloepfer

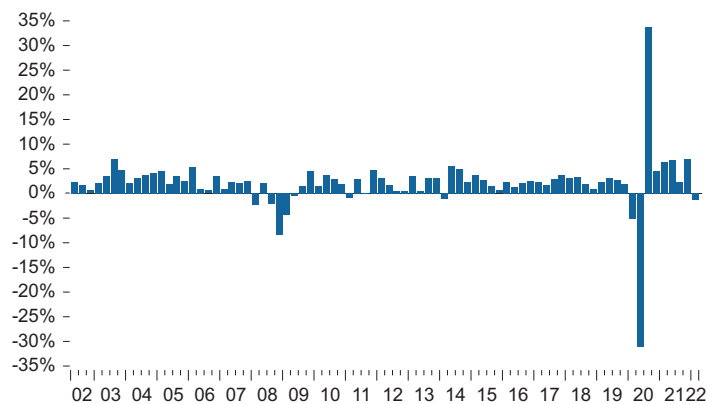
Capital markets abhor uncertainty, and there is no greater human-generated uncertainty than war. The Russian invasion of Ukraine upended expectations for an orderly slowdown in economic growth from the surge in 2021, and for the spike in inflation to subside as pandemic-induced supply chain bottlenecks cleared. Amid this geopolitical upheaval and humanitarian catastrophe, the equity and fixed income markets were both down in 1Q22. How often does that happen? More than we expected. Looking at data back to 1926, there have been 37 quarters in which returns on stocks and bonds were both negative, almost 10% of all quarters over that period. Before now, the most recent quarter was 1Q18, and before that, the 2nd and 3rd quarters of 2008, as the Global Financial Crisis (GFC) began unfolding. In case you were wondering, the S&P 500 plunged 19.6% in 1Q20, while the Bloomberg Aggregate rose 3.1%. The frequency of down quarters for both stocks and bonds has been much lower since 1990 than in the first 60 years of the data set. Looking at annual returns, there have been only two calendar years when stocks and bonds were both down, 1931 and 1969 (with a near-miss in 2018). The point: Over more recent history, stocks and bonds down together is relatively unusual.

The war also hit business and consumer confidence, and the 1Q GDP report surprised all with a 1.4% drop, following a 6.9% surge in 4Q21. The 8.3% swing in growth came from a huge drop in inventory investment and net exports. Imports surged 17.7% while exports declined 5.9%, a sharp reversal from 22.4% growth in 4Q21. The drop in GDP is a surprise because the economy is otherwise healthy, with a strong job market. Final sales to the private sector grew 3.7% in 1Q, up from 2.6% in 4Q21, suggesting strength in aggregate demand. The concern going forward is that the confidence to spend and invest will be tested by rising interest rates, skyrocketing inflation, war uncertainty, and the prospect of a recession.

The Fed raised rates at its March meeting, bringing the Fed Funds rate up to 0.25%-0.50%. Chairman Jerome Powell made a point of debunking a 75 basis point hike at the next

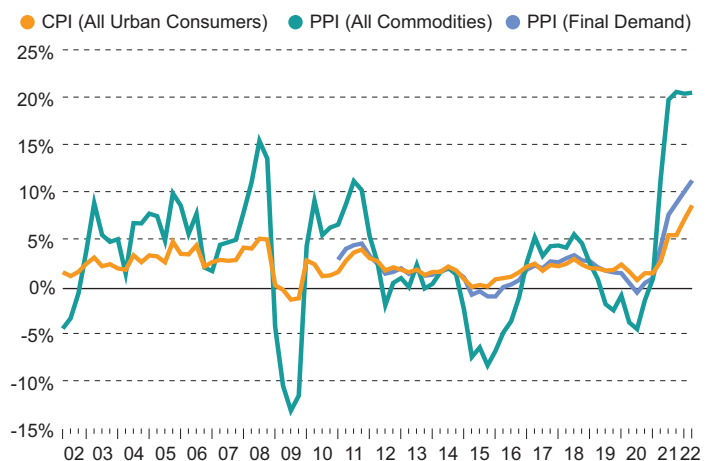
Quarterly Real GDP Growth

(20 Years)



Source: Bureau of Economic Analysis

Inflation Year-Over-Year



Source: Bureau of Labor Statistics

FOMC meeting. The median projection by FOMC members for the Fed Funds rate is 1.90% at the end of 2022, rising to 2.80% in 2023. However, the range of projections (1.4% to 3.2% by year-end) from Committee members reflects a high degree of uncertainty. As of quarter-end, the market was anticipating nine hikes in 2022, three more than expected by the Fed.

The war in Ukraine and the sanctions imposed on Russia are now piling on to supply bottlenecks, with particular concerns about food and energy supplies, and putting into question the assumption that inflation would ease later in 2022 and into 2023.

CPI-U for the U.S. hit 8.5% for the 12 months ending in March, the highest rate since the period ending December 1981. Driving the increase were prices for gasoline, shelter, and food. The energy index rose 32%, with gasoline prices up 48% year over year. The food price index rose 8.8%, and like the broad CPI, it was the biggest surge since 1981. Russia and Ukraine are vital suppliers to regional and global food supplies. In addition to price inflation, the war has raised serious concerns about the 2022 spring planting and harvest later in the year, and the potential for disaster in food-insecure parts of the globe.

The impact of the war is most direct and dramatic in eastern Europe and central Asia (EECA). The economic ties with Russia and Ukraine are extensive for many countries in the EECA bloc. Russia is the largest market for some countries, and the largest source of goods and energy for others. Tourism and foreign direct investment from Russia is substantial, and salary remittances from foreign workers in Russia are a vital source of income for many EECA countries. Poland attracted a substantial number of Ukrainian workers. Even without close ties, countries within the EECA, western Europe, Africa, and the Americas are vulnerable to disruptions in the flow of goods, services, and energy stemming from the conflict.

If recession is often identified by consecutive quarterly declines in GDP, why wouldn't the 1Q22 decline signal a potential downturn? First, aggregate demand remains robust. Second, household balance sheets are healthy. A labor market characterized by high employer demand, low unemployment (3.6% and falling), and rising compensation suggests continuing growth in consumer spending. Business investment will respond to this strong consumer demand. High frequency data show resilient growth in spending on travel and entertainment, and a recovery from the sharp drop in activity during the Omicron wave.

### Recent Quarterly Economic Indicators

	1Q22	4Q21	3Q21	2Q21	1Q21	4Q20	3Q20	2Q20
Employment Cost–Total Compensation Growth	4.5%	4.0%	3.7%	2.9%	2.6%	2.5%	2.4%	2.7%
Nonfarm Business–Productivity Growth	-7.5%	6.3%	-3.9%	3.2%	2.2%	-2.8%	6.2%	10.3%
GDP Growth	-1.4%	6.9%	2.3%	6.7%	6.3%	4.5%	33.8%	-31.2%
Manufacturing Capacity Utilization	78.0%	77.0%	76.1%	75.4%	74.5%	74.0%	71.9%	64.3%
Consumer Sentiment Index (1966=100)	63.1	69.9	74.8	85.6	80.2	79.8	75.6	74.0

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

### The Long-Term View

Index	1Q22	Periods Ended 12/31/21			
		1 Yr	5 Yrs	10 Yrs	25 Yrs
<b>U.S. Equity</b>					
Russell 3000	-5.3	11.9	15.4	14.3	9.5
S&P 500	-4.6	15.6	16.0	14.6	9.4
Russell 2000	-7.5	-5.8	9.7	11.0	8.9
<b>Global ex-U.S. Equity</b>					
MSCI EAFE	-5.9	1.2	6.7	6.3	5.0
MSCI ACWI ex USA	-5.4	-1.5	6.8	5.6	--
MSCI Emerging Markets	-7.0	-11.4	6.0	3.4	--
MSCI ACWI ex USA Small Cap	-6.5	0.0	7.9	7.3	6.7
<b>Fixed Income</b>					
Bloomberg Agg	-5.9	-4.2	2.1	2.2	4.7
90-Day T-Bill	0.0	0.1	1.1	0.6	2.0
Bloomberg Long G/C	-11.0	-3.1	4.6	4.7	6.9
Bloomberg GI Agg ex US	-6.1	-7.9	1.3	0.1	3.4
<b>Real Estate</b>					
NCREIF Property	5.3	21.9	8.5	9.6	9.5
FTSE Nareit Equity	-3.9	26.5	9.6	9.8	9.7
<b>Alternatives</b>					
CS Hedge Fund	2.1	7.5	5.5	4.7	6.6
Cambridge PE*	5.0	48.8	21.3	17.1	15.6
Bloomberg Commodity	25.5	49.3	9.0	-0.7	1.9
Gold Spot Price	6.9	13.9	9.3	1.6	7.1
<b>Inflation – CPI-U</b>	3.1	8.5	3.4	2.3	2.4

\*Data for most recent period lags. Data as of 9/30/21.

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

While expectations for economic growth in the U.S. are clearly lower since the Russian invasion, with GDP projections for 2022 down from 4% to 3% or lower, they are still positive. The impact of the war may be more consequential for Europe, with its greater dependence on energy imports. Risk of recession is higher, but not yet the expected case for 2022.

*Kristin Bradbury contributed to this commentary.*

# Tough Quarter Amid Global Upheaval, Stock and Bond Drops

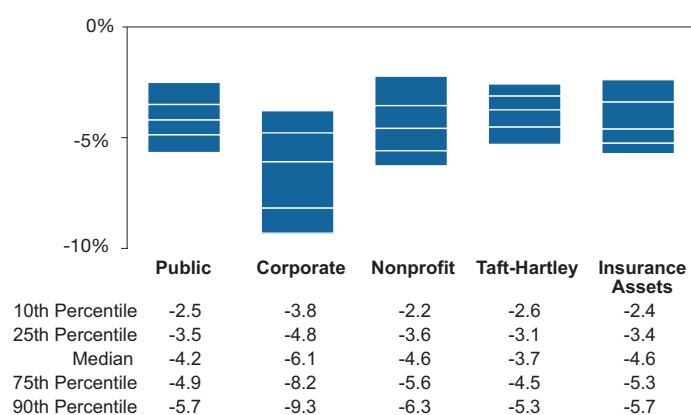
## INSTITUTIONAL INVESTORS

- All institutional investor types saw lower returns in 1Q22, but most topped equities, fixed income, and a 60% stocks/40% bonds benchmark.
- Taft-Hartley plans fared best, followed by public defined benefit (DB) plans. Corporate DB plans brought up the rear, although the plunge in liabilities may have helped plan funded status.
- All investor types continue to show gains roughly in line with the 60%/40% benchmark over 20 years, although the gap widened a bit this quarter. And all types have topped global ex-U.S. equities and bonds over that same period, although they still lag U.S. equities.
- Strategic conversations remain focused on “Where do we go from here?” Many investors just enjoyed outstanding returns in 2021, but the elation is tempered by sobering capital markets assumptions.
- Inflation and what to do with fixed income continue to be the two primary topics of discussion.
  - How to structure the overall portfolio to fight inflation
  - What to do to protect bond portfolios with rates rising faster than expected
- After the Global Financial Crisis, many public plans eliminated cost-of-living adjustments (COLAs) to help ensure

solvency. Improving funded status coupled with generational highs in inflation are bringing COLAs to the forefront again. Retirees want COLAs while active participants in plans with cost sharing want lower contributions to maintain intergenerational equity.

- There is increasing concern about a market drawdown, given high valuations relative to historical averages, rising rates and inflation, and the war in Ukraine.
- More of our clients are back in the office, but uncertainty about return dates for others remains high.

### Quarterly Returns, Callan Database Groups



Source: Callan

### Callan Database Median and Index Returns\* for Periods Ended 3/31/22

Database Group	Quarter	1 Year	3 Years	5 Years	10 Years	20 Years
Public Database	-4.2	5.5	10.6	9.2	8.5	7.2
Corporate Database	-6.1	2.4	8.8	8.0	7.8	6.9
Nonprofit Database	-4.6	4.6	10.3	8.9	8.2	7.2
Taft-Hartley Database	-3.7	6.5	10.6	9.2	8.7	7.0
Insurance Assets Database	-4.6	-0.2	5.3	4.9	4.7	5.3
All Institutional Investors	-4.5	4.8	10.1	8.8	8.2	7.1
Large (>\$1 billion)	-3.9	6.4	10.7	9.4	8.6	7.5
Medium (\$100mm - \$1bn)	-4.7	4.6	10.1	8.9	8.2	7.0
Small (<\$100 million)	-4.7	4.3	9.8	8.5	7.9	6.8
60% S&P 500/40% Bloomberg Agg	-5.1	7.5	12.1	10.6	9.8	7.4

\*Returns less than one year are not annualized.

Source: Callan. Callan's database includes the following groups: public defined benefit (DB) plans, corporate DB plans, nonprofits, insurance assets, and Taft-Hartley plans. Approximately 10% to 15% of the database constituents are Callan's clients. All database group returns presented gross of fees. Past performance is no guarantee of future results. Reference to or inclusion in this report of any product, service, or entity should not be construed as a recommendation, approval, affiliation, or endorsement of such product, service, or entity by Callan.

- In terms of investment structures, few changes are planned in active vs. passive implementations.

**Corporate DB Plans**

- Lowered return expectations stress estimated return on asset assumptions for corporate plans.
- For corporate plans with de-risking glidepaths, strong returns led to improved funding and larger fixed income allocations, causing a reduction in expected returns.
- Funding relief from ARPA has some corporate plan sponsors reconsidering LDI in order to increase or at least maintain their allocations to growth assets and expected returns.

**Public DB Plans**

- 2020-21 gains drove improvements in the funded status of public plans.
- Large public plans are examining whether to have fewer active managers and increasing the allocation to passive in an effort to increase net-of-fee returns.
- Low projected returns mean downward pressure on actuarial discount rates. For many plans it may be an ideal time

to lower discount rates without having funded status fall to untenable levels.

- However, increased funded status may spur retirees to seek improved COLAs given current inflation.
- Weaker expected returns from liquid markets may spur demand for larger allocations to alternatives as well as discussions of total fund leverage.
- Interest in private credit by public DB plans remains high.

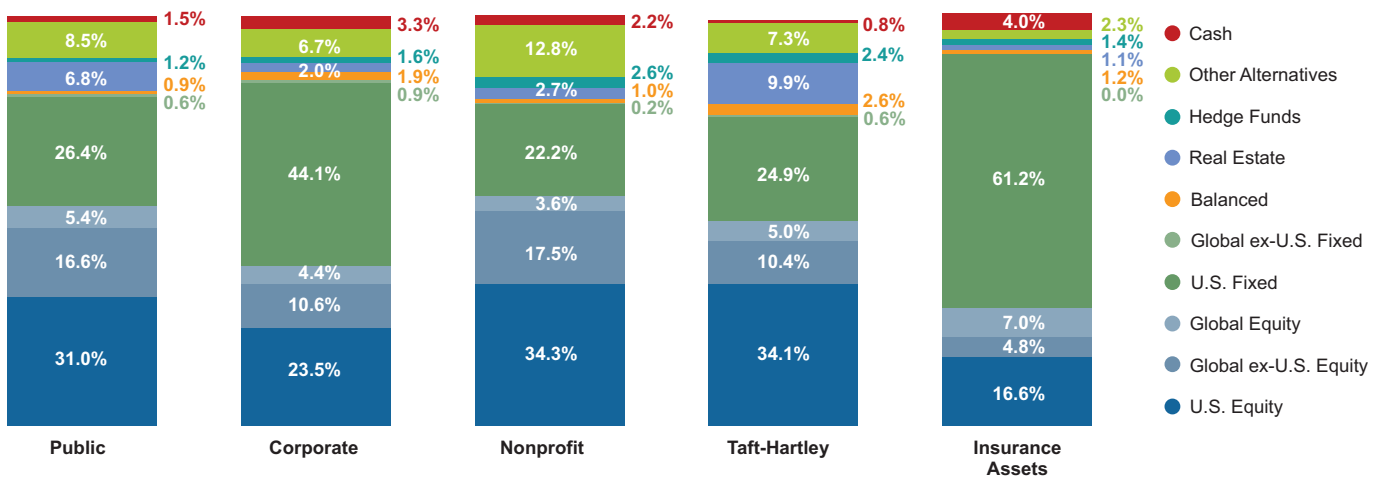
**Defined Contribution (DC) Plans**

- Fees continue as a top-of-mind issue, with most sponsors benchmarking their fees, according to our DC Survey.
- Target date funds are adding allocations to growth assets across the spectrum of retirement cohorts to increase income-replacement ratios.

**Nonprofits**

- They continue to expand the depth and breadth of their private markets investments in light of both high valuations in public market growth assets and the potential for high inflation to erode the real values of their assets and distributions.

**Average Asset Allocation, Callan Database Groups**



Note: charts may not sum to 100% due to rounding. Other alternatives include but is not limited to: diversified multi-asset, private credit, private equity, and real assets. Source: Callan



# Equity

## U.S. Equities

- The S&P 500 Index fell 4.6% in 1Q22, but was down more than 12% early in March before rallying into quarter-end.
- Value stocks sharply outpaced growth across capitalizations, with the spread exceeding 10% in both mid and small caps and just over 8% in large caps.
- Energy (+39%) was the best-performing sector given a 33% spike in WTI crude oil prices. Commodity-linked Materials and Utilities sectors also performed well on a relative basis.
- Communication Services (-12%), Consumer Discretionary (-9%), and Information Technology (-8%) were the worst-performing sectors.
- Uncertainty over rates, inflation, and geopolitical tensions all contributed to a volatile and risk-averse environment.
- Interestingly, the Russell Dynamic Index (-4.3%) outperformed the Russell Defensive Index (-5.9%) during the 1Q downturn.

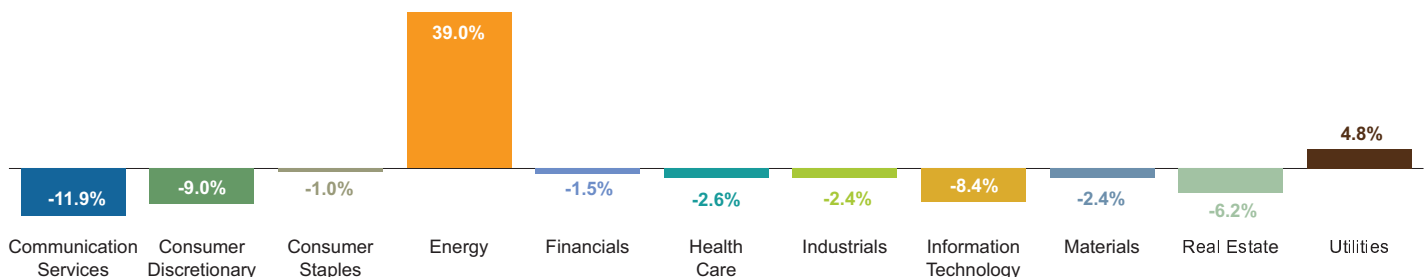
## Historical small cap discount relative to large cap

- The Russell 2000 Index continues to underperform the Russell 1000 Index; the small cap index now trails large cap by almost 1,660 basis points cumulatively on a three-year basis and over 2,360 bps on a five-year basis.

## Index concentration

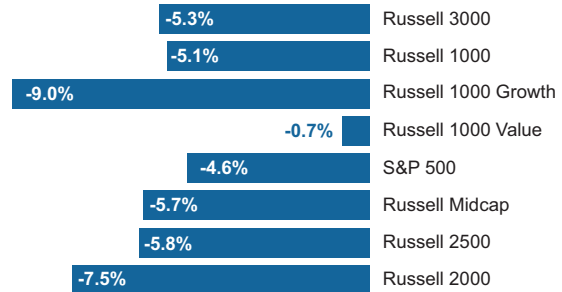
- Index concentration continues despite negative 1Q core index returns and falling earnings contributions.
- Among mega cap tech stocks, Apple and Microsoft now seen as providing downside protection

## Quarterly Performance of Industry Sectors

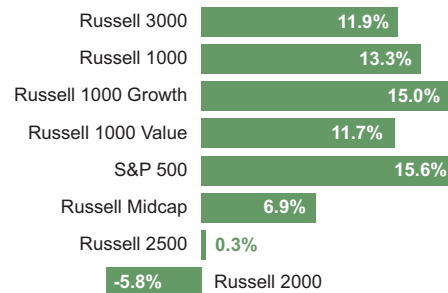


Source: S&P Dow Jones Indices

## U.S. Equity: Quarterly Returns



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



Sources: FTSE Russell and S&P Dow Jones Indices

- Index concentration continues to cause active managers significant headwinds in the large cap growth space—the Russell 1000 Growth Index has nearly 50% of its capitalization in just the top 10 names (Apple and Microsoft are greater than 10% weights).

## Global Equity

### War in Ukraine stoked market volatility

- In the aftermath of invading Ukraine, Russia faced condemnation and sanctions that crippled its stocks, bonds, and currency and shocked the global markets.
- The fog of war exacerbated inflationary concerns and led to a surge in energy prices, as Russia is the second-largest natural gas provider and third-largest oil producer in the world.
- Energy exporters notably outperformed importers given the soaring prices.

### Fears of COVID-19

- A resurgence of COVID-19 cases in Europe and Asia, specifically in China, weighed on the global recovery.
- China's zero-COVID policy has injected doubt into its 2022 projected GDP growth of 5.5%, which is already its lowest annual target in more than 25 years.

### Growth vs. value

- Value sectors such as Energy, Materials, and Financials were in favor relative to growth sectors like Consumer Discretionary and Information Technology, due to recession fears and a tightening monetary cycle.
- However, Energy was the worst performer within emerging markets due to the removal of Russia from indices.

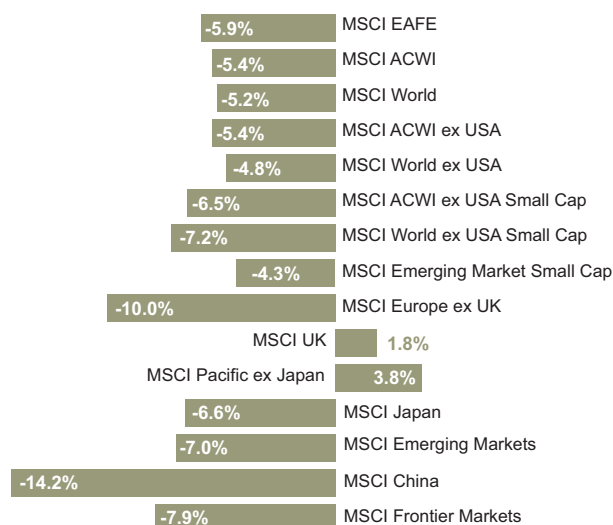
### U.S. dollar vs. other currencies

- With the uncertainty of war, the U.S. dollar strengthened against other major currencies, including the yen, as the Bank of Japan maintained an easing policy.

### Value is attractive relative to history

- There are attractive valuations in multiple regions.
- Growth relative to value is more vulnerable as interest rates normalize.
- Global recovery from COVID and deficit in Energy should support value.
- Value sectors are underexposed in international indices relative to history.
- Value outperforms in “heating up” inflationary environments.

## 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

### Bonds hit hard as rates rose sharply

- Bloomberg Aggregate worst quarterly return since 1980
- Curve flattened; as of 3/31 5-year U.S. Treasury yield was 10 bps higher than 10-year UST yield (2.42% vs. 2.32%).
- TIPS topped nominal Treasuries, and 10-year breakeven spread widened to 2.84% from 2.56% at year-end.
- Fed raised rates by 25 bps, with many more hikes expected this year.

### Credit sectors underperformed

- Investment-grade corporates underperformed duration-matched U.S. Treasuries by 145 bps, RMBS by 71 bps.
- High yield “benefited” from less interest rate sensitivity and relatively higher exposure to the energy sector; excess return vs. U.S. Treasuries was 92 bps.
- Defaults remain low (less than 1%) and yield breached 6%.

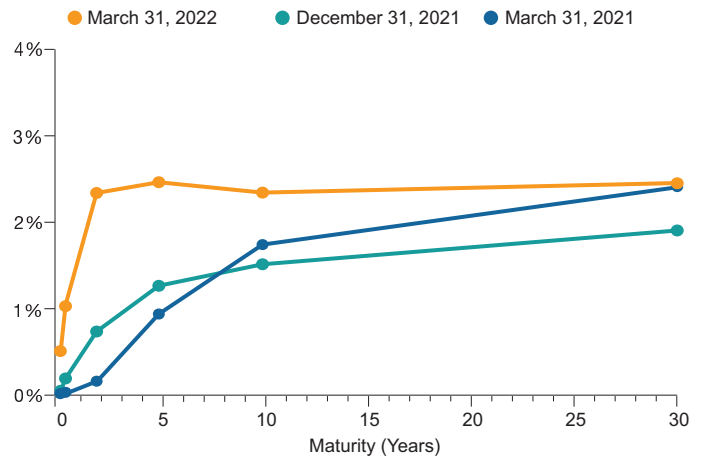
### Leveraged loans performed relatively well

- Helped by floating rate coupons/low duration

### Securitized sectors also performed well

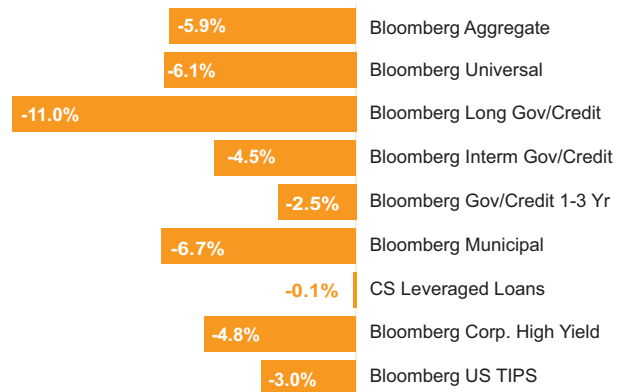
- Consumer ABS was the best within the sector due to its shorter duration profile and solid consumer spending.
- Conduit CMBS traded in line as the economy re-opens.
- Agency MBS saw duration extend by 0.4 year due to higher rates.
- The U.S. yield curve “bear-flattened” as the Fed pivoted to focus on higher-than-expected inflation.
- The U.S. yield curve (2Y/10Y) inverted on the last (intra) day of the quarter, which has not been seen since Aug. 2019.
- Despite rates moving higher this year, could the recent back-up indicate a new regime of higher rates, or is the market simply trading to the higher end of this secular range that has persisted for nearly 40 years?

## U.S. Treasury Yield Curves



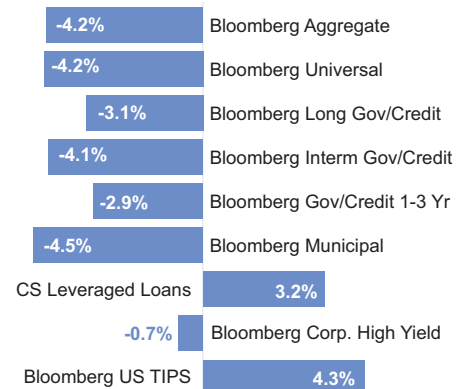
Source: Bloomberg

## U.S. Fixed Income: Quarterly Returns



Sources: Bloomberg and Credit Suisse

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



Sources: Bloomberg and Credit Suisse

**Municipal Bonds**

**Municipal bond returns hurt by rising rates**

- Bloomberg Municipal Bond Index suffered its worst quarterly return since 3Q81.
- Lower quality underperformed: BBB -7.1%; AAA -6.1%
- As with U.S. Treasuries, the muni yield curve flattened with 2-year yields rising more than 10-year and 30-year yields

**Valuations relatively attractive**

- 10-year AAA Muni/10-year U.S. Treasury ratio = 94%
- Up from 68% at year-end; 10-year median = 90%
- Municipal Bond Index after-tax yield = 4.4% (tax rate of 37%)

**Supply/demand**

- Heavy outflows in 1Q22 following record inflows in 2021
- \$22 billion in outflows in 1Q (one-fifth of 2021 inflows)
- Supply down modestly vs. 1Q21

**Credit quality remains stable to improving**

- Tax revenues continued to rise and reserve levels are high
- Upgrades outpaced downgrades

**Global Fixed Income**

**Negative returns driven by broad interest rate increases**

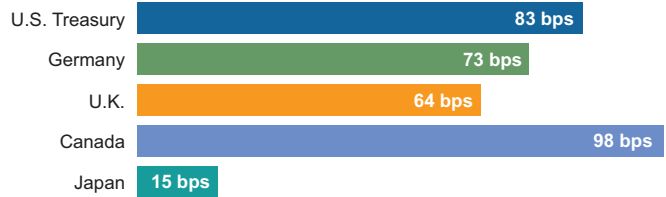
- U.S. dollar appreciated against the Japanese yen, euro, and British pound.

**Emerging market debt was not spared**

- JPM Global Diversified hurt by rising rates in the U.S.
- GBI-EM hurt by rising local rates, but currency appreciation helped in Latin America and Africa.
- Russia removed from indices at a price of \$0 (-100% return).

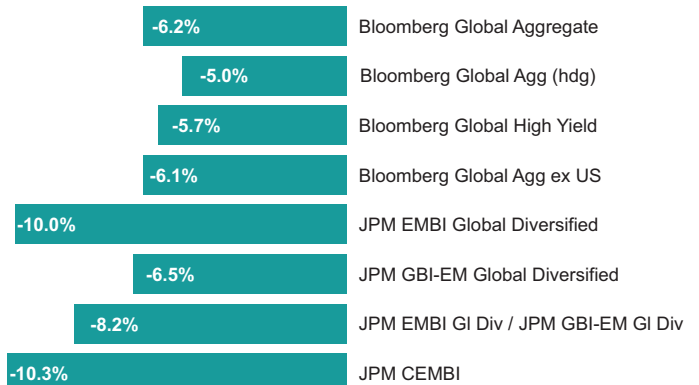
**Change in 10-Year Global Government Bond Yields**

4Q21 to 1Q22



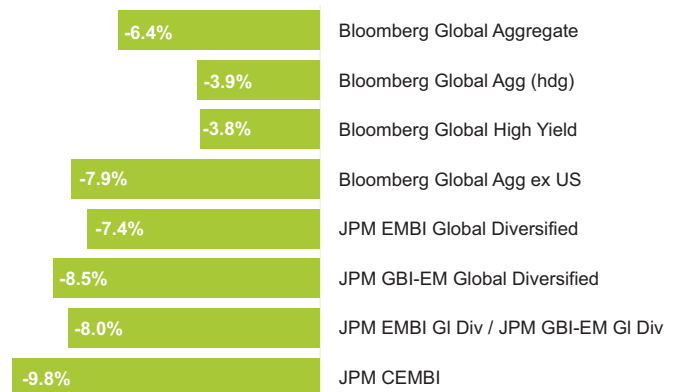
Source: Bloomberg

**Global Fixed Income: Quarterly Returns**



Sources: Bloomberg and JPMorgan Chase

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



Sources: Bloomberg and JPMorgan Chase

# Continued Strong Performance Across the Asset Class

REAL ESTATE/REAL ASSETS | Munir Iman

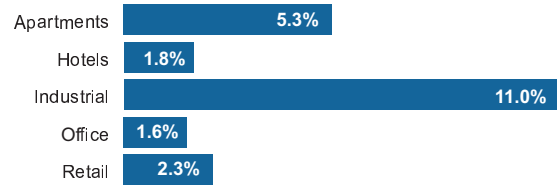
## Private Real Estate

- The NCREIF Property Index, a measure of U.S. institutional real estate assets, rose 5.3% during 1Q22. The income return was 1.0% and the appreciation return was 4.3%.
- Industrial led property sector performance with a gain of 11.0%. Office finished last with an increase of 1.6%.
- Regionally, the West led with a 6.5% increase, while the Midwest was the worst performer but still gained 3.5%.
- The NCREIF Open-End Diversified Core Equity (ODCE) Index, representing equity ownership positions in U.S. core real estate, rose 7.1% during the quarter.
- Valuations are reflective of strong fundamentals in Industrial and Apartment and continued uncertainty despite a modest recovery in Office and Retail.
- Office and Retail vacancy rates increased slightly during the quarter.
- Net operating income growth turned negative for Office as the Omicron variant delayed many return-to-office plans.
- Net operating income growth continued its gradual increase in Industrial while decreasing slightly in Apartment and Retail.

## Public Real Estate

- The FTSE EPRA Nareit Developed REIT Index, a measure of global real estate securities, fell 4.0% during 1Q22.

## Sector Quarterly Returns by Property Type



Source: NCREIF

- U.S. REITs, as measured by the FTSE EPRA Nareit Equity REITs Index, dropped 3.9%.
- The FTSE EPRA Nareit Asia Index (USD), representing the Asia/Pacific region, fell 1.0%.
- European REITs, as measured by the FTSE EPRA Nareit Europe Index (USD), fell 7.2%.

## Real Assets

- Commodities were a rare bright spot given their inflation-protection properties as well as war-induced supply concerns. The Bloomberg Commodity TR Index soared 25.5% and the energy-heavy S&P GSCI climbed 33.1%.
- Gold (S&P Gold Spot Price Index: +6.9%) and listed infrastructure (DJB Global Infrastructure: +3.2%) outperformed global stocks and bonds.
- TIPS (Bloomberg TIPS: -3.0%) fell but outpaced nominal U.S. Treasuries.

## Callan Database Median and Index Returns\* for Periods Ended 3/31/22

Private Real Assets	Quarter	Year to Date	1 Year	3 Years	5 Years	10 Years	15 Years
<b>Real Estate ODCE Style</b>	<b>5.6</b>	<b>5.6</b>	<b>26.2</b>	<b>10.7</b>	<b>9.3</b>	<b>9.8</b>	<b>5.9</b>
NFI-ODCE (value wt net)	7.1	7.1	27.3	10.3	8.9	9.9	6.0
NCREIF Property	5.3	5.3	21.9	9.6	8.5	9.6	7.3
NCREIF Farmland	2.6	2.6	9.7	5.9	6.2	9.6	10.6
NCREIF Timberland	3.2	3.2	11.8	4.7	4.1	5.6	5.2
<b>Public Real Estate</b>							
<b>Global Real Estate Style</b>	<b>-4.1</b>	<b>-4.1</b>	<b>16.8</b>	<b>9.3</b>	<b>9.8</b>	<b>9.2</b>	<b>4.8</b>
FTSE EPRA Nareit Developed	-4.0	-4.0	14.5	5.4	6.5	6.9	2.9
<b>Global ex-U.S. Real Estate Style</b>	<b>-3.7</b>	<b>-3.7</b>	<b>4.4</b>	<b>5.0</b>	<b>8.9</b>	<b>8.4</b>	<b>2.6</b>
FTSE EPRA Nareit Dev ex US	-3.3	-3.3	2.5	1.1	4.7	5.4	1.2
<b>U.S. REIT Style</b>	<b>-4.9</b>	<b>-4.9</b>	<b>26.0</b>	<b>13.3</b>	<b>11.3</b>	<b>10.7</b>	<b>7.3</b>
FTSE EPRA Nareit Equity REITs	-3.9	-3.9	26.5	11.1	9.6	9.8	6.4

\*Returns less than one year are not annualized.

Sources: Callan, FTSE Russell, NCREIF

# Where Do We Go From Here?

## PRIVATE EQUITY | Gary Robertson

Private equity had a slower but still active 1Q22. The unsettling shift in the geopolitical and economic environment is creating murkiness regarding the future direction of private equity activity volumes. Fundraising remained strong, with venture capital dominating new commitments and buyouts paling by comparison—an unusual circumstance not seen since the late 1990s. Company-level private transactions fell on average about 23% by dollar volume and 24% by new deal count. Exits declined more than new investments. IPOs faced continuing challenges.

**Fundraising** ► Based on preliminary data, 1Q22 private equity partnerships holding final closes totaled \$216 billion, up 16% from 4Q21. New partnerships formed dropped 34% to 497, with larger funds remaining dominant. European commitments fell to a markedly low 16% of the total in 1Q. New buyout fund commitments were surprisingly low given its 44% share of commitments for the full year 2021. (Unless otherwise noted, all data come from PitchBook.)

**Buyouts** ► Funds closed 2,667 investments with \$200 billion in disclosed deal value, a 31% decline in count and a 16% drop in dollar value from 4Q. The largest investment was the \$17.0 billion sponsor-to-sponsor sale of electronic medical records company Athenahealth by Veritas and Elliott to Bain and Hellman & Friedman.

### Private Equity Performance (%) (Pooled Horizon IRRs through 9/30/21\*)

Strategy	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years
All Venture	7.2	76.0	36.3	27.5	20.6	15.6	11.5	23.8
Growth Equity	4.4	52.3	29.0	24.3	18.1	15.6	14.7	16.4
All Buyouts	4.4	42.8	21.8	20.2	16.1	12.6	14.2	13.7
Mezzanine	3.0	22.2	11.8	12.4	12.2	11.0	10.5	10.4
Credit Opportunities	2.1	21.7	7.0	8.8	9.9	9.0	9.9	9.9
Control Distressed	7.2	42.6	16.6	14.3	13.5	10.8	11.7	11.9
<b>All Private Equity</b>	<b>5.1</b>	<b>49.8</b>	<b>24.8</b>	<b>21.4</b>	<b>16.7</b>	<b>13.3</b>	<b>13.2</b>	<b>14.8</b>
S&P 500	0.6	30.0	16.0	16.9	16.6	10.4	9.5	9.7
Russell 3000	-0.1	31.9	16.0	16.9	16.6	10.4	9.8	9.7

Note: Private equity returns are net of fees. Sources: Refinitiv/Cambridge and S&P Dow Jones Indices  
\*Most recent data available at time of publication

**VC Investments** ► New investments in venture capital companies totaled 11,495 rounds of financing, down 6%, with \$154 billion of announced value, down 20%. The largest investment was the \$3.0 billion mega 2nd round in Altos Labs, which focuses on cellular rejuvenation, by Foresite.

**Exits** ► There were 540 private M&A exits of private equity-backed companies, a drop of 41%. Disclosed values declined 33% to \$140 billion. There were 41 private equity-backed IPOs, down 66%, which raised an aggregate \$7 billion, down 76%.

Venture-backed M&A exits totaled 693 with disclosed value of \$46 billion. The number of sales fell 18% from 4Q, and announced value fell 22%. There were 69 VC-backed IPOs, down 60%, and the combined float totaled \$7 billion, an 83% decrease.

### Funds Closed 1/1/22 to 3/31/22

Strategy	No. of Funds	Amt (\$mm)	Share
Venture Capital	319	92,441	43%
Growth Equity	35	44,023	20%
Buyouts	99	58,897	27%
Mezzanine Debt	2	8,980	4%
Distressed	5	5,339	2%
Energy	2	810	0%
Secondary and Other	31	4,398	2%
Fund-of-Funds	4	1,234	1%
<b>Totals</b>	<b>497</b>	<b>216,122</b>	<b>100%</b>

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

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

# Appealing to Investors in Low-Yield Climate

PRIVATE CREDIT | Catherine Beard

## Benefiting from low-yield environment

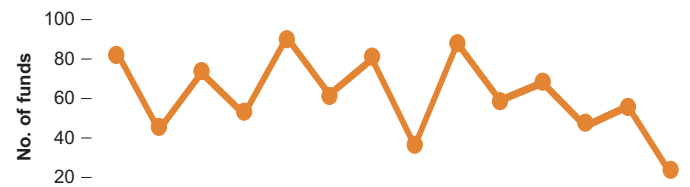
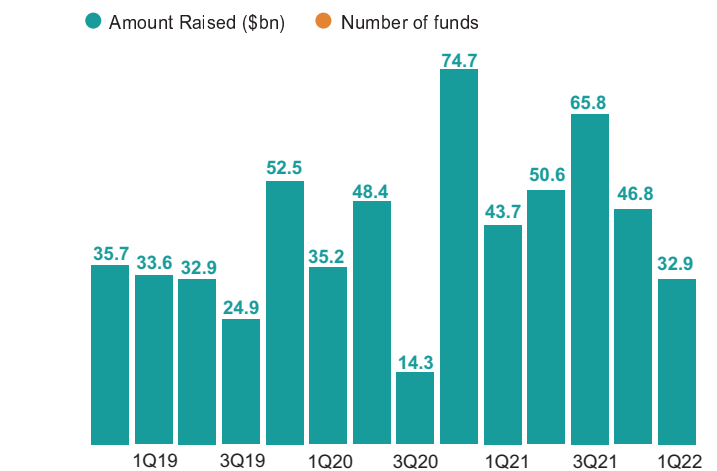
- Yield and income-generating characteristics remain attractive in a low-rate environment.
- Alpha generation can be magnified through strategies that extract a complexity premium.
- Many direct lending assets are floating rate, which can add protection against rising rates.
- Portfolios were resilient during the COVID dislocation due to liquidity injected into the economy; valuations are back to 2019 levels but the space remains crowded.
- Private credit performance varies across sub-asset class and underlying return drivers. On average, the asset class has generated net IRRs of 8% to 10% for trailing periods ended Sep. 30, 2021. Higher-risk strategies performed better than lower-risk strategies.

## Fundraising in 2022 seasonally slow

- Private credit fundraising tapered off in 3Q20 due to COVID-related disruption but significantly rebounded in 4Q20 and 1H21; 1Q22 has been seasonally slow with fewer funds in the market but with larger fundraise targets.
- Fundraising in the first part of 2022 focused on diversifying strategies such as specialty finance, specialized industry lending, and non-sponsor/opportunistic lending.
- Traditional sponsor-backed strategies are coming to market with evergreen structures for which there is growing demand.
- There is continued strong PC fundraising activity from large credit shops as well as new offerings from traditional fixed income managers.

- Industry consolidation is in full swing with large traditional firms acquiring alternative credit managers, such as T. Rowe Price acquiring Oak Hill Advisors and Alliance Bernstein's acquisition of CarVal.

## Private Credit Fundraising (\$bn)



Source: Preqin

## Private Credit Performance (%) (Pooled Horizon IRRs through 9/30/21\*)

Strategy	Quarter	1 Year	3 Years	5 Years	8 Years	10 Years	15 Years	20 Years
Senior Debt	1.1	11.3	6.9	7.9	7.4	7.4	7.5	7.5
Mezzanine	3.0	22.2	11.8	12.4	11.5	12.2	11.1	10.4
Credit Opportunities	2.1	21.7	7.0	8.8	7.5	9.9	9.0	9.9
Total Private Credit	2.1	19.6	8.1	9.4	8.4	10	9.3	9.8

Sources: Refinitiv/Cambridge

\*Most recent data available at time of publication



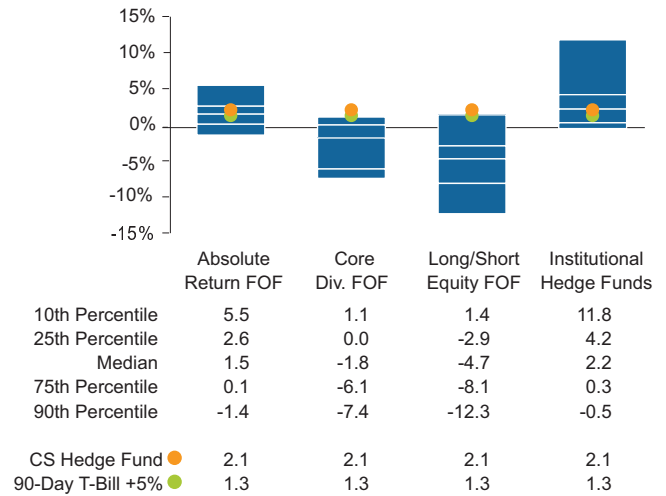
# Market Volatility Tests Managers

HEDGE FUNDS/MACs | Joe McGuane

Global market volatility spiked during 1Q22 following Russia's invasion of Ukraine. The S&P 500 fell 4.6%, but was off more than 12% at its lowest point in the quarter. Despite the conflict in Europe, the Federal Reserve moved ahead with a 25 basis point increase in policy rates, its first since 2018. The U.S. Treasury 10-year yield rose by 70 bps to 2.33%. Hawkish monetary policy drove bond yields higher and prices lower.

Hedge funds ended the volatile quarter with mixed results. Equity managers with a focus on energy and industrials had a solid quarter but were not able to offset those with net long exposure to tech, media, and telecom (TMT), which was a drag on performance. Event-driven strategies also fell due to a higher weight to equities vs. credit to start off the year. Macro strategies soared, as commodities spiked. Relative value managers ended slightly higher, as they were able to profit off an increase in rate volatility.

## Hedge Fund Style Group Returns



Sources: Callan, Credit Suisse, Federal Reserve

## Callan Peer Group Median and Index Returns\* for Periods Ended 3/31/22

Hedge Fund Universe	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years
Callan Institutional Hedge Fund Peer Group	2.2	8.0	6.3	5.6	6.4	6.7
Callan Fund-of-Funds Peer Group	-1.3	1.2	6.0	5.1	5.1	4.1
Callan Absolute Return FOF Style	1.5	6.5	6.0	4.4	4.9	3.5
Callan Core Diversified FOF Style	-1.8	1.3	6.1	4.7	4.8	3.8
Callan Long/Short Equity FOF Style	-4.7	-2.8	6.6	6.0	5.5	4.9
BB GS Cross Asset Risk Premia 6% Vol Idx	0.6	0.0	-0.4	1.7	3.6	5.1
Credit Suisse Hedge Fund	2.1	7.5	7.3	5.5	4.7	4.2
CS Convertible Arbitrage	-2.5	1.0	6.0	4.4	3.9	3.9
CS Distressed	-0.2	5.6	5.0	4.1	4.7	3.9
CS Emerging Markets	-7.2	-4.9	4.7	4.6	4.6	4.1
CS Equity Market Neutral	-0.1	5.1	2.2	2.0	1.6	-1.3
CS Event-Driven Multi	-3.0	3.5	7.4	5.1	4.3	4.0
CS Fixed Income Arb	-1.0	2.0	3.9	3.8	4.2	3.6
CS Global Macro	16.2	23.9	13.4	8.8	5.8	6.6
CS Long/Short Equity	-3.3	2.3	6.3	5.8	5.6	4.6
CS Managed Futures	12.3	18.9	9.4	5.6	3.1	3.9
CS Multi-Strategy	3.1	8.0	6.6	5.1	6.0	5.1
CS Risk Arbitrage	-0.6	2.7	7.7	5.9	4.1	4.1
HFRI Fund Wtd Composite	0.1	5.3	8.2	7.0	6.9	6.8
90-Day T-Bill + 5%	1.3	5.1	5.8	6.1	5.6	5.8

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



Representing a raw collection of hedge funds reporting performance without implementation costs, the HFRI Fund-Weighted Composite Index lost 1.8% for 1Q. The median manager in the Callan Hedge Fund-of-Funds (FOF) Database Group detracted 1.3%, net of all fees. Serving as a proxy for large, broadly diversified hedge funds with low-beta exposure to equity markets, the median Callan Institutional Hedge Fund Peer Group manager rose 2.2%.

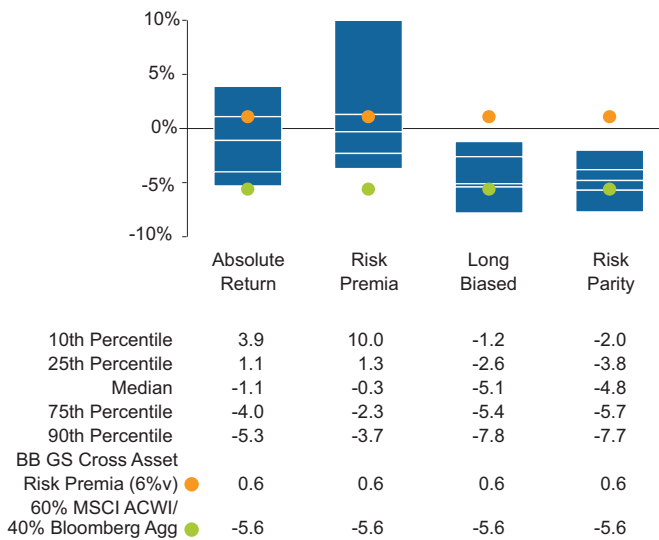
Within the HFRI indices, the best-performing strategy last quarter was Macro (+6.7%), aided by its exposure to commodities. Equity hedge strategies (-4.3%) had a difficult quarter, as those that were overweight to growth performed worse than those with a value bias.

Across the Callan Hedge FOF Database, the median Absolute Return FOF gained 1.5%, as a focus on lower beta strategies

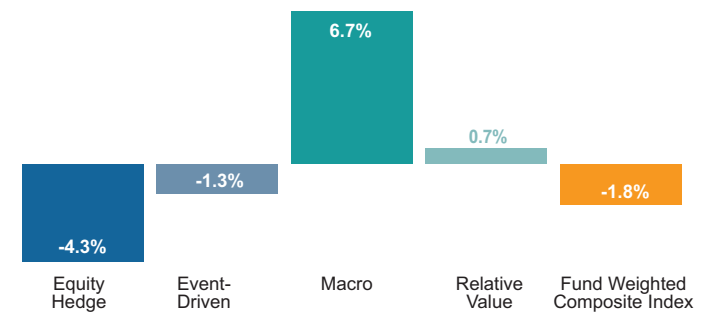
performed well. Meanwhile, the Callan Long-Short Equity FOF fell 4.7% as a growth bias was a drag on performance. The median Callan Core Diversified FOF declined 1.8%, as equity positioning and interest rate volatility offset macro outperformance.

Measuring the quarter's performance of alternative risk premia, the Bloomberg GSAM Risk Premia Index increased 0.6% based upon a 6% volatility target. Within Callan's database of liquid alternative solutions, the median managers of the Callan Multi-Asset Class (MAC) Style Groups generated negative returns for the quarter, gross of fees. The median Callan Long Biased MAC manager fell 5.1%, as exposure to equity and fixed income was a drag on performance. The Callan Risk Parity MAC index, which typically targets an equally risk-weighted allocation to the major asset classes with leverage, was down 4.8%. The Callan Risk Premia MAC held up the best, down 0.3%.

### MAC Style Group Returns



### HFRI Hedge Fund Strategy Returns



Source: HFRI

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

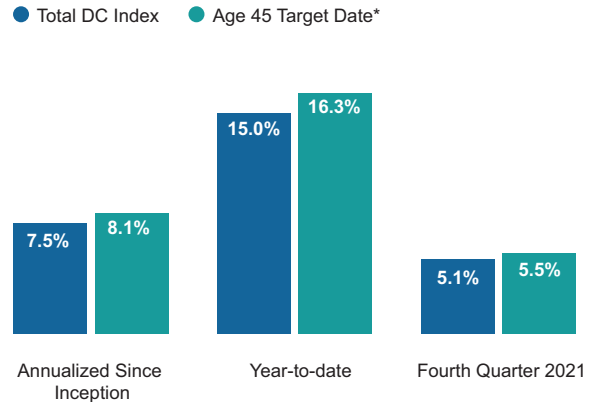
# DC Index Bounces Back in 4Q

## DEFINED CONTRIBUTION | Patrick Wisdom

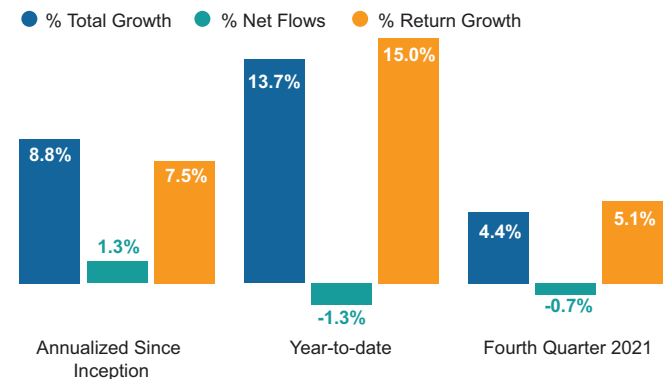
- The Callan DC Index™ gained 5.1% in 4Q21, rebounding from its 3Q21 decline (-0.4%).
- The Age 45 Target Date Fund (analogous to the 2040 vintage) had a slightly higher quarterly return (5.5%), attributable to its larger allocation to equity, which outperformed fixed income during the quarter.
- Balances within the DC Index rose by 4.4% after a 0.7% decline the previous quarter. Investment returns (5.1%) were the sole driver of the growth, offset by net flows (-0.7%).
- Target date funds received 77.9% of net inflows, the largest share for the fourth straight quarter.
- For the second straight quarter, real return/TIPS had larger-than-typical net inflows (+13.6%), indicating that participants may be looking to hedge inflation.
- In 4Q21, investors transferred assets out of less-risky asset classes, as stable value (-15.6%), U.S. fixed income (-8.2%), and money market (-3.4%) experienced net outflows.
- U.S. large cap (-40.4%) and U.S. small/mid cap (-10.4%) saw material net outflows. In contrast, global ex-U.S. equity (+5.1%) saw net inflows, while emerging market equity (+0.1%) experienced relatively little change.
- Turnover (net transfer activity levels within DC plans) in the DC Index remained at 0.19%, consistent with the 3Q level.
- The Index’s overall allocation to equity (72.8%) increased from the previous quarter’s level (72.2%), and is within reach of the high mark of 4Q07 (72.9%).
- U.S. large cap (27.7%) had the largest percentage increase in allocation from 3Q. The increase came despite net outflows, signaling that the relative outperformance of U.S. equity drove the higher overall allocations.
- U.S. fixed income (5.5%) experienced the largest percentage decrease in allocation.
- The prevalence of a balanced fund (44.1%) decreased to its lowest level since the inception of the Index in 2006.

*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 (4Q21)

(Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Target Date Funds	77.9%
Real Return/TIPS	13.6%
Stable Value	-15.6%
U.S. Large Cap	-40.4%
<b>Total Turnover**</b>	<b>0.19%</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.



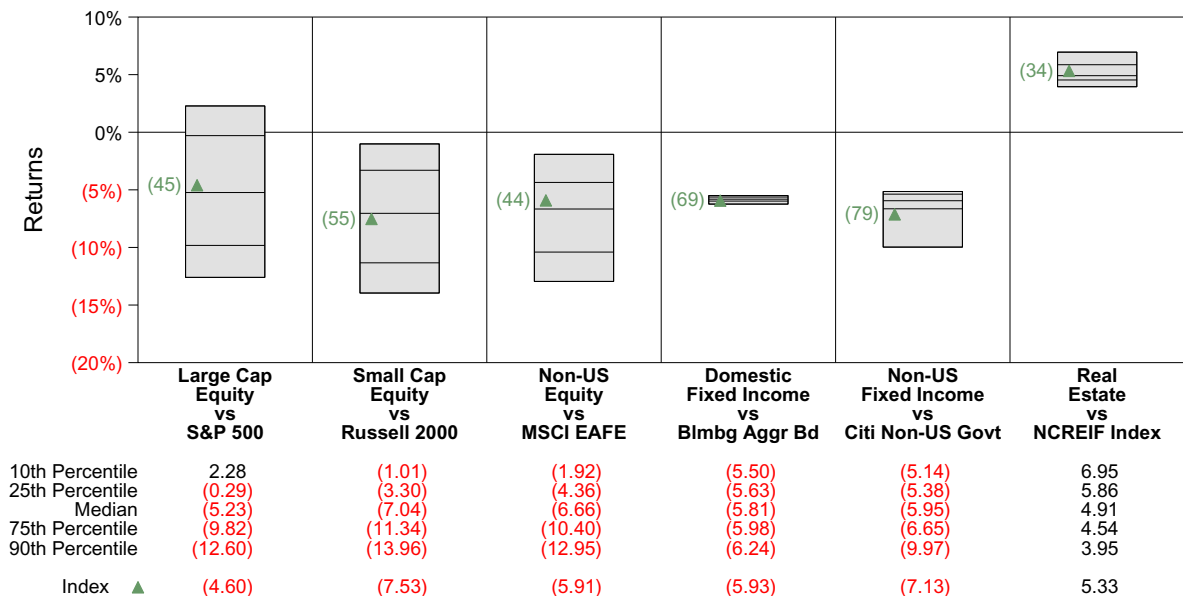
## Market Overview

### Active Management vs Index Returns

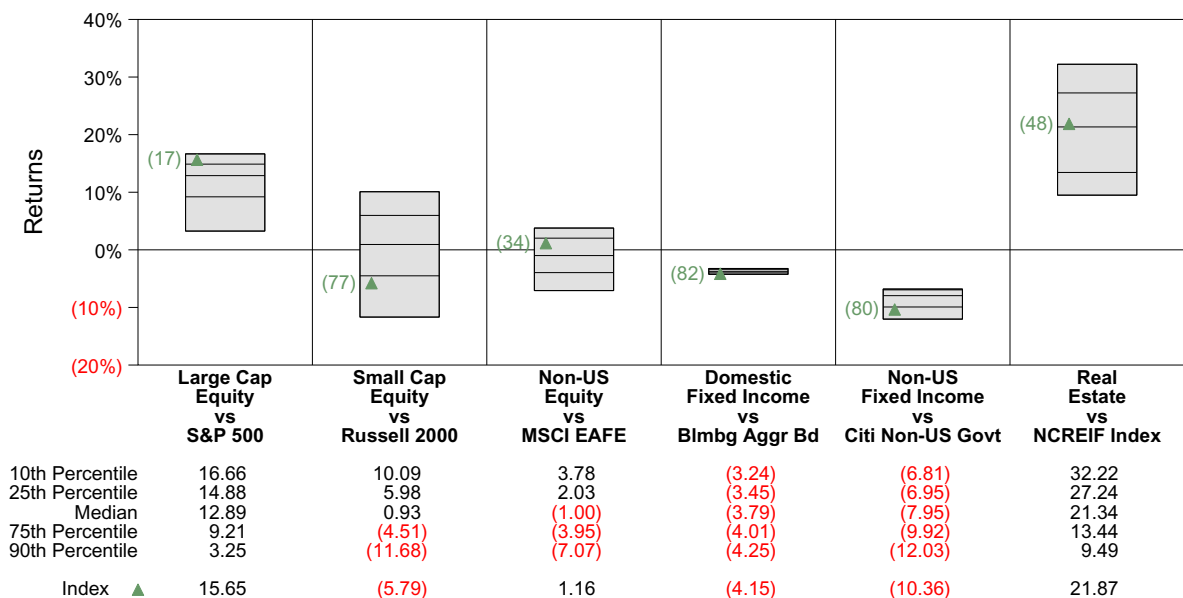
#### Market Overview

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, 2022



#### Range of Separate Account Manager Returns by Asset Class One Year Ended March 31, 2022

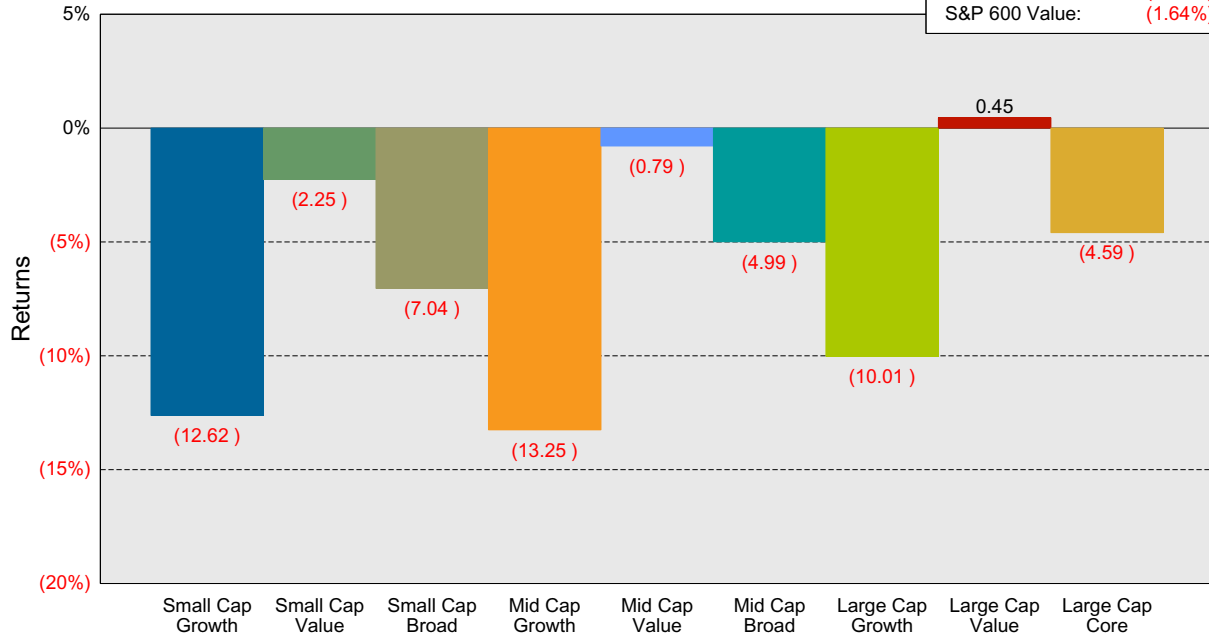


## Domestic Equity Active Management Overview

The S&P 500 Index fell 4.6% for the quarter, but it was down more than 12% early in March before staging a rally into quarter-end. Value stocks sharply outpaced growth across capitalizations, with the spread exceeding 10% in both mid and small caps and just over 8% in large caps. Not surprisingly, Energy (+39%) was the best-performing sector given a 33% spike in WTI crude oil prices. The defensive Utilities sector (+5%) also posted a positive result. Communication Services (-12%), Consumer Discretionary (-9%), and Information Technology (-8%) were the worst-performing sectors. Small cap stocks (R2000: -7.5%) underperformed large (R1000: -5.1%).

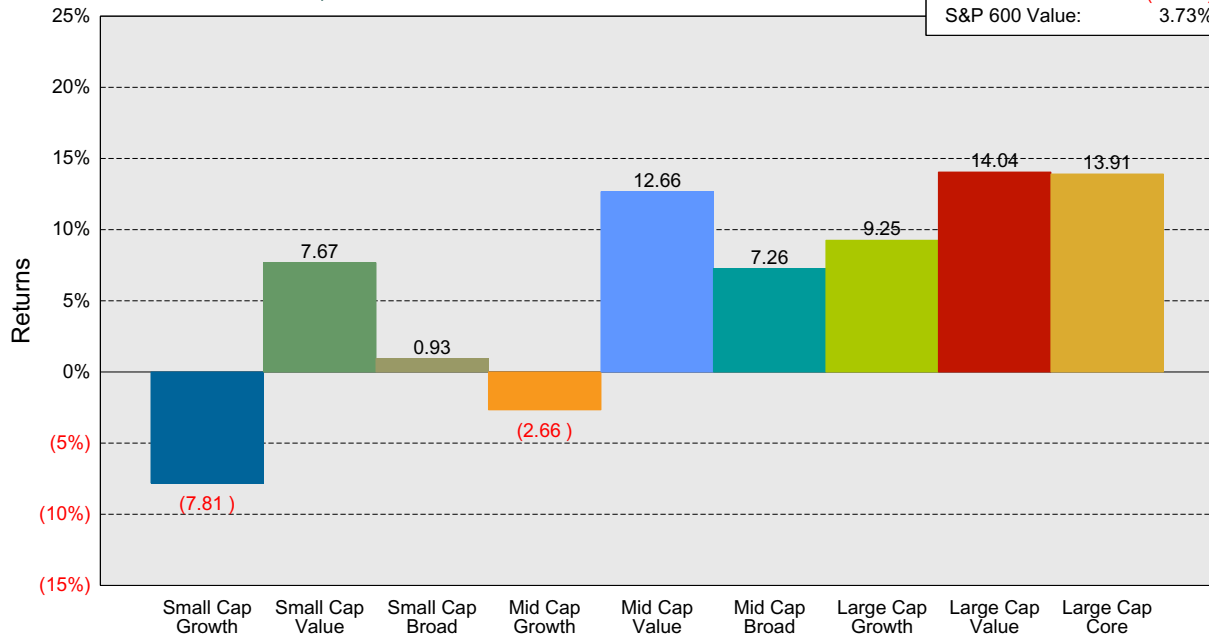
S&P 500:	(4.60%)
S&P 500 Growth:	(8.59%)
S&P 500 Value:	(0.16%)
S&P Mid Cap:	(4.88%)
S&P 600:	(5.62%)
S&P 600 Growth:	(9.51%)
S&P 600 Value:	(1.64%)

### Separate Account Style Group Median Returns for Quarter Ended March 31, 2022



S&P 500:	15.65%
S&P 500 Growth:	18.16%
S&P 500 Value:	12.58%
S&P Mid Cap:	4.59%
S&P 600:	1.23%
S&P 600 Growth:	(1.17%)
S&P 600 Value:	3.73%

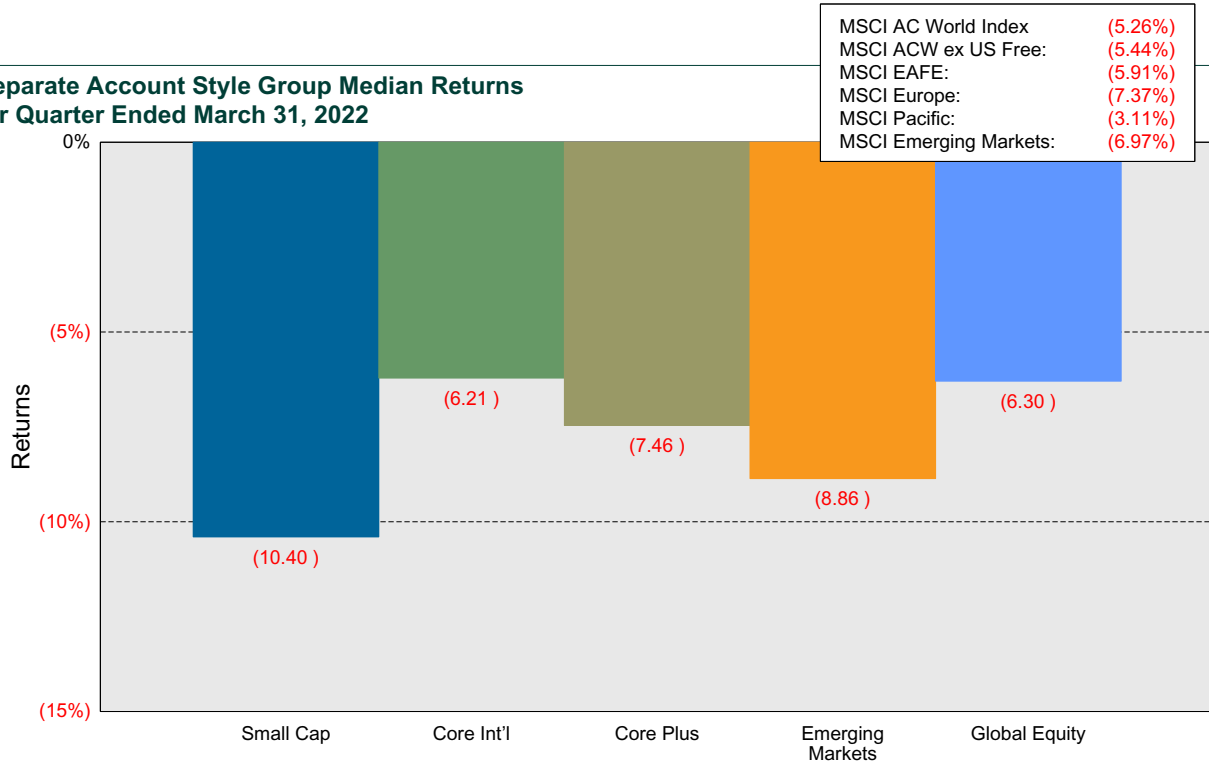
### Separate Account Style Group Median Returns for One Year Ended March 31, 2022



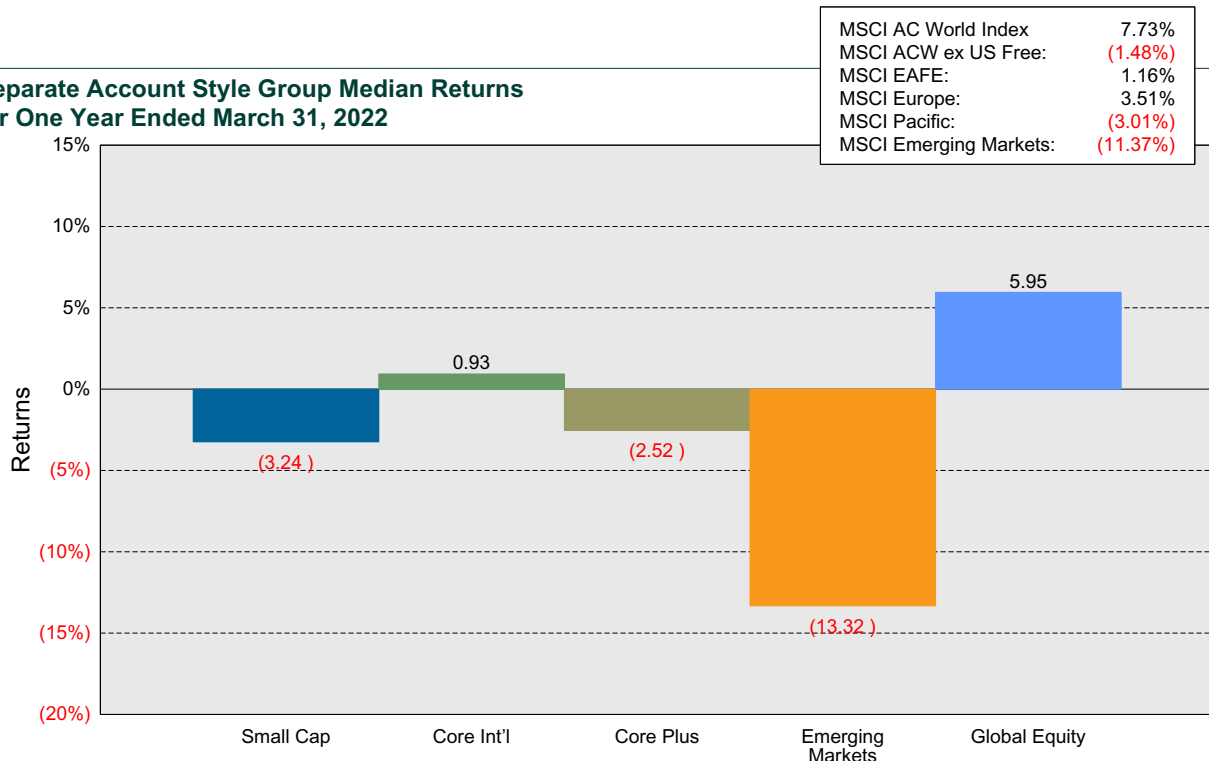
## International Equity Active Management Overview

Emerging markets (MSCI EM: -1.3% in 4Q21; -2.5% in 2021) did not participate in the stock rally the rest of the world enjoyed during the fourth quarter and 2021. China's weight in the Index (35%) and poor performance (-6%; -22%) was a key driver. China stocks were hurt by slowing growth and heightened regulation. Brazil (-6%; -17%) was also a notable underperformer. India (-0.2%; +26%) and Russia (-9%; +19%) fell in the fourth quarter, but were up for the year. Turkey (-11%; -28%) was the worst performer and the 44% decline in the Turkish lira was also notable. The country is battling high inflation (36% in December) with unconventional monetary policy (lowering rates).

**Separate Account Style Group Median Returns  
for Quarter Ended March 31, 2022**



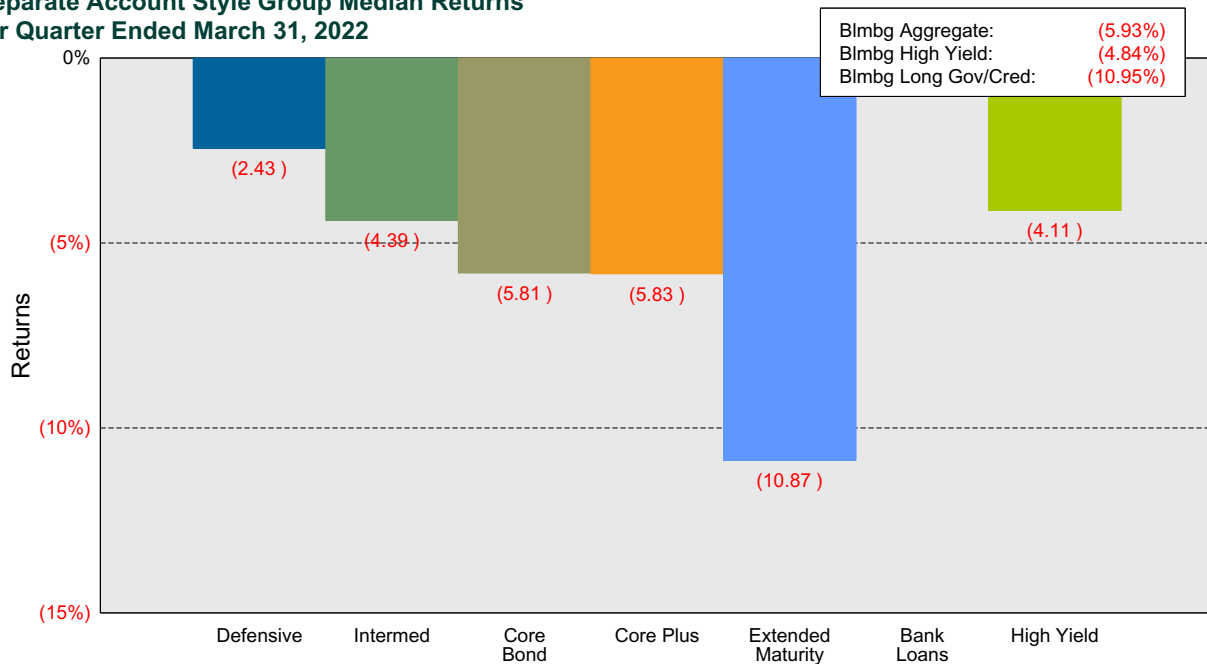
**Separate Account Style Group Median Returns  
for One Year Ended March 31, 2022**



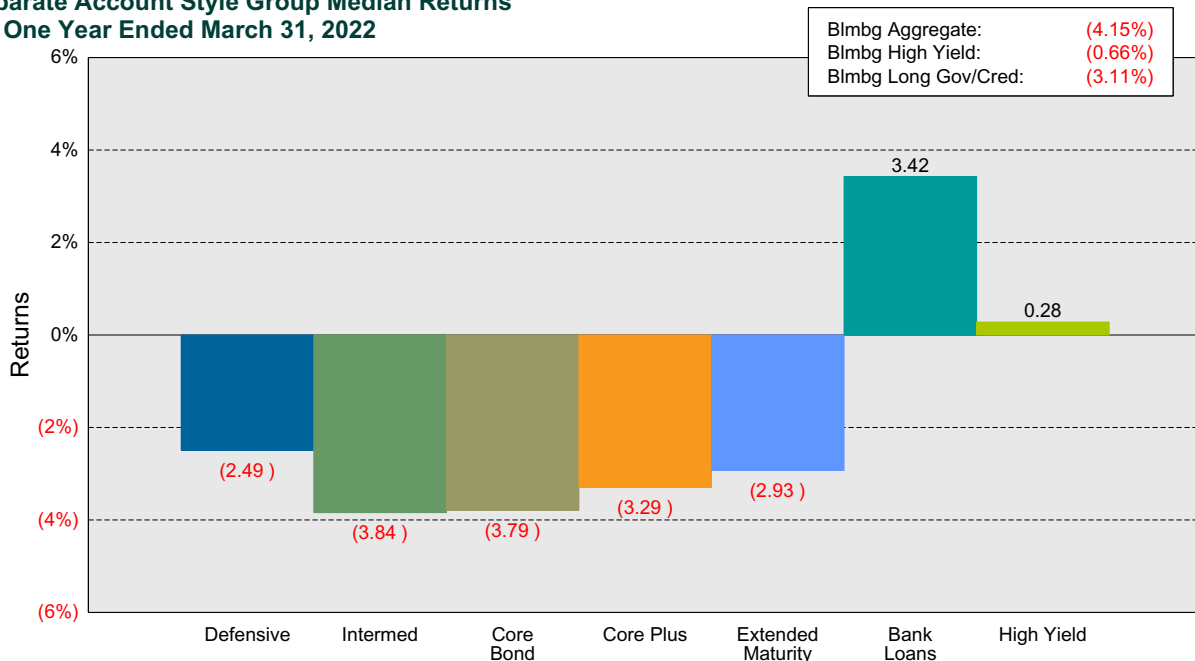
## Domestic Fixed Income Active Management Overview

The Bloomberg US Aggregate Bond Index sank 5.9% over the quarter, the third-worst quarter since the index's inception in 1976 (the other two being in 1980). Rates rose sharply on worries over inflation and expectations for Fed rate hikes. The 10-year U.S. Treasury closed the quarter at 2.32%, up from 1.52% at year-end. Notably, the yield curve flattened meaningfully and as of quarter-end the relationship between the 5-year yield (2.42%) and the 10-year yield (2.32%) was inverted. Against this backdrop, TIPS (Bloomberg TIPS: -3.0%) did relatively well as inflation expectations rose. High yield corporates (Bloomberg High Yield: -4.8%) outperformed investment grade corporates given less sensitivity to interest rates, and bank loans (S&P LSTA Leveraged Loan: -0.1%) were helped by their floating rate coupons and low duration. ^L

### Separate Account Style Group Median Returns for Quarter Ended March 31, 2022



### Separate Account Style Group Median Returns for One Year Ended March 31, 2022



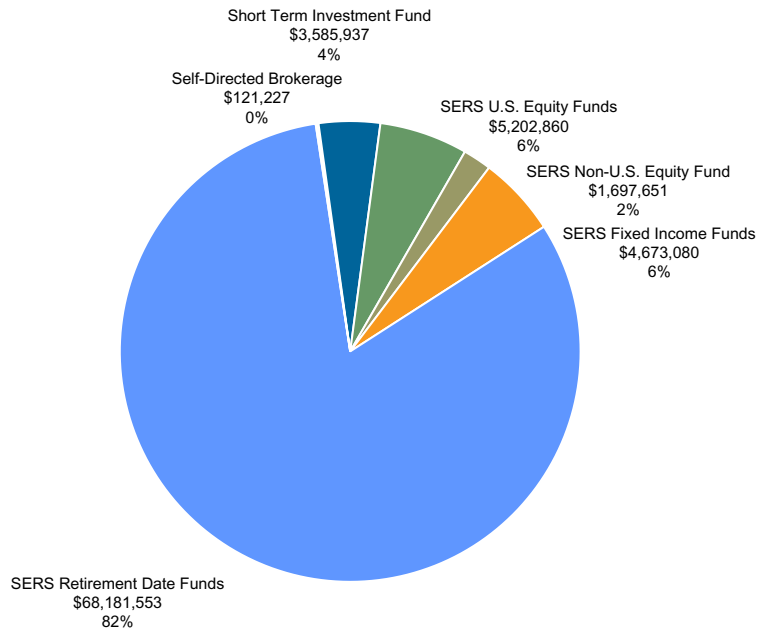




## Changes in Investment Fund Balances Period Ended March 31, 2022

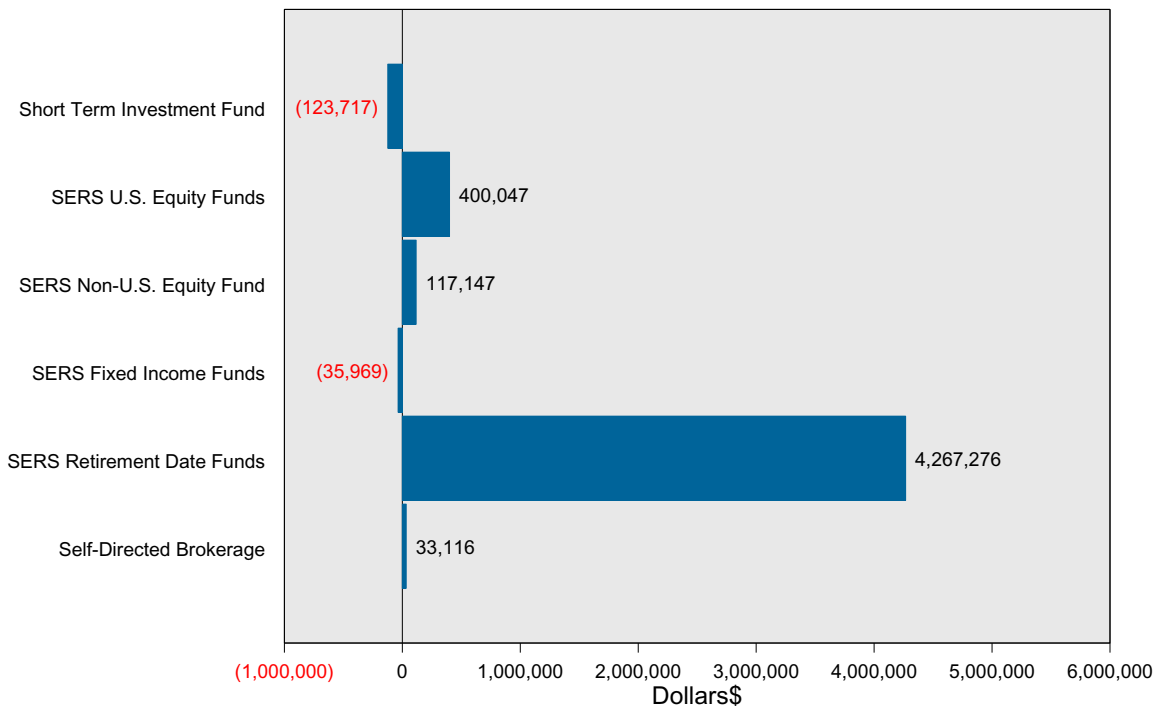
### Allocation Across Investment Options

The chart below illustrates the allocation of the aggregate fund assets across the various investment options for the quarter ended March 31, 2022.



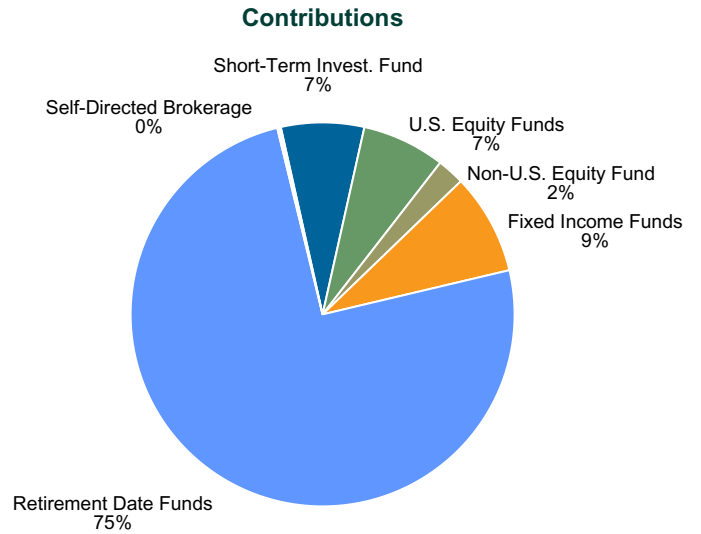
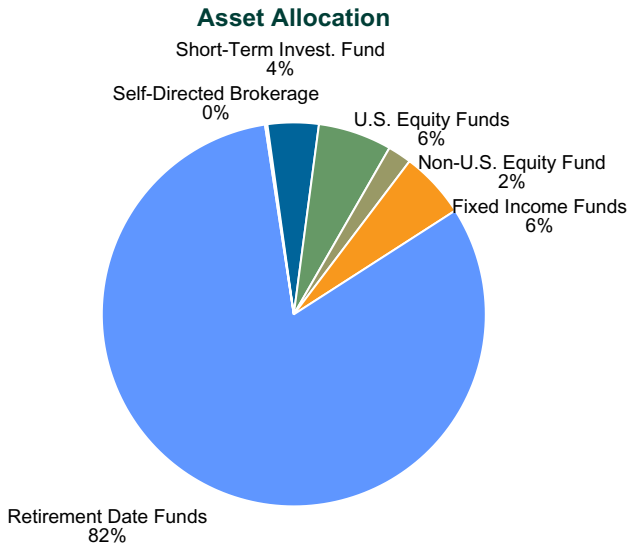
### Changes in Fund Values

The chart below shows the net change in fund values across the various investment options for the quarter ended March 31, 2022. 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.

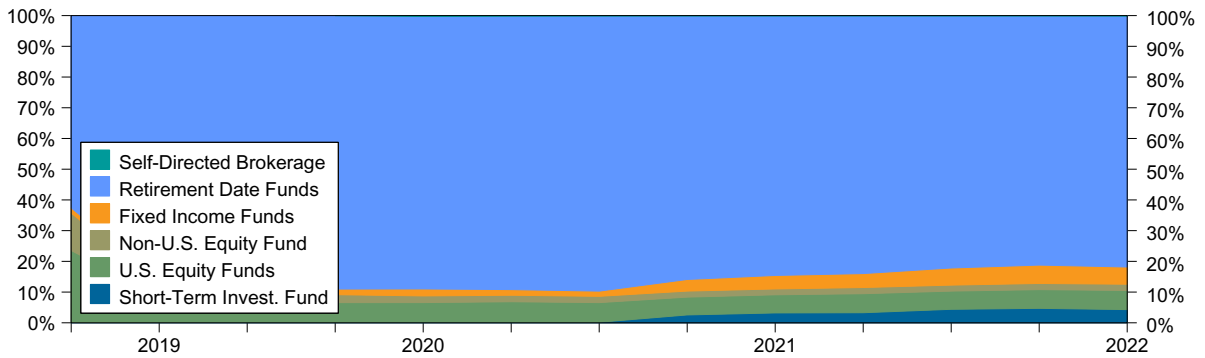


## Asset Allocation

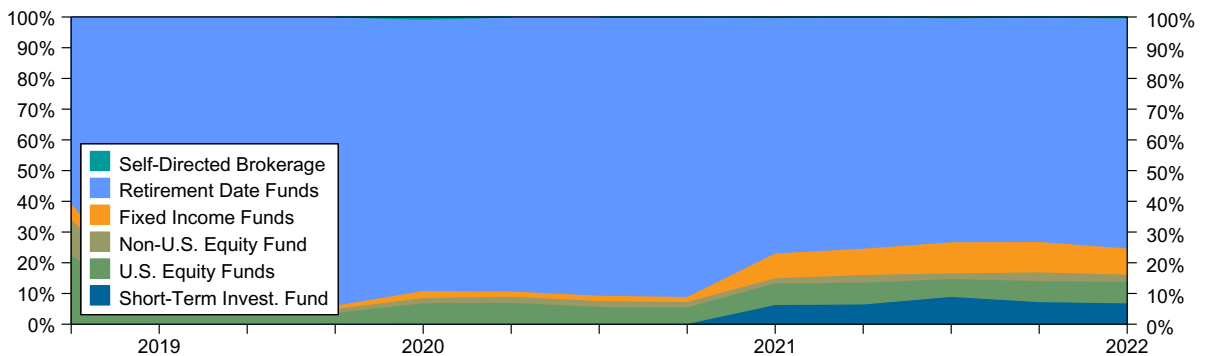
The charts below illustrate the historical asset allocation of the fund as well as the historical allocations of contributions to the fund. The pie charts on the top show the most recent allocations of both assets and contributions which include exchanges and transfers within the plan. The middle chart 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, 2022, with the distribution as of December 31, 2021. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

### Asset Distribution Across Investment Managers

	March 31, 2022			Inv. Return	December 31, 2021	
	Market Value	% of Total	Net New Inv.		Market Value	% of Total
<b>SERS Retirement Date Funds</b>	<b>\$68,181,553</b>	<b>85.36%</b>	<b>\$7,730,708</b>	<b>\$(3,463,432)</b>	<b>\$63,914,277</b>	<b>85.11%</b>
SERS Post Retirement Fund	1,150,871	1.44%	147,569	(55,761)	1,059,063	1.41%
SERS 2025 Retirement Fund	3,281,783	4.11%	365,419	(160,752)	3,077,116	4.10%
SERS 2030 Retirement Fund	6,243,938	7.82%	685,465	(307,899)	5,866,372	7.81%
SERS 2035 Retirement Fund	8,203,148	10.27%	847,089	(401,957)	7,758,015	10.33%
SERS 2040 Retirement Fund	7,743,399	9.69%	1,066,799	(369,923)	7,046,524	9.38%
SERS 2045 Retirement Fund	8,207,764	10.28%	834,665	(426,168)	7,799,267	10.39%
SERS 2050 Retirement Fund	9,398,793	11.77%	1,099,429	(489,375)	8,788,739	11.70%
SERS 2055 Retirement Fund	9,308,564	11.65%	979,682	(490,881)	8,819,763	11.74%
SERS 2060 Retirement Fund	8,895,549	11.14%	907,376	(470,388)	8,458,562	11.26%
SERS 2065 Retirement Fund	5,747,744	7.20%	797,217	(290,328)	5,240,856	6.98%
<b>SERS U.S. Equity</b>	<b>\$5,202,860</b>	<b>6.51%</b>	<b>\$656,336</b>	<b>\$(256,289)</b>	<b>\$4,802,813</b>	<b>6.40%</b>
SERS U.S. Large Company Idx Fund	3,233,450	4.05%	400,171	(135,159)	2,968,439	3.95%
SERS U.S. All Company Idx Fund	1,285,386	1.61%	180,385	(60,273)	1,165,275	1.55%
SERS U.S. SMID Company Idx Fund	684,024	0.86%	75,780	(60,856)	669,099	0.89%
<b>SERS Non-U.S. Equity</b>						
SERS Global Non-U.S. Index Fund	1,697,651	2.13%	214,074	(96,927)	1,580,504	2.10%
<b>SERS Fixed Income</b>	<b>\$4,673,080</b>	<b>5.85%</b>	<b>\$19,160</b>	<b>\$(55,129)</b>	<b>\$4,709,049</b>	<b>6.27%</b>
SERS Short Term Investment Fund	3,585,937	4.49%	(124,500)	783	3,709,654	4.94%
SERS U.S. Short Term Bond Idx Fund	27,086	0.03%	1,077	(656)	26,665	0.04%
SERS U.S. TIPS Index Fund	242,539	0.30%	39,163	(6,744)	210,120	0.28%
SERS U.S. Bond Index Fund	817,518	1.02%	103,420	(48,513)	762,610	1.02%
<b>Self-Directed Brokerage</b>						
SERS Self-Directed Brokerage	121,227	0.15%	37,372	(4,256)	88,112	0.12%
<b>Total Fund</b>	<b>\$79,876,372</b>	<b>100.0%</b>	<b>\$8,657,650</b>	<b>\$(3,876,033)</b>	<b>\$75,094,755</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, 2022. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2022

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
<b>Net Performance</b>				
<b>Target Date Funds</b>				
SERS Post Retirement Fund	(5.12%)	1.12%	7.18%	6.34%
BlackRock Post Retirement Index	(5.08%)	1.21%	7.17%	6.32%
Callan Tgt Date 2000-2010	(4.76%)	1.38%	7.22%	6.53%
SERS 2025 Retirement Fund	(5.13%)	2.16%	8.27%	7.51%
BlackRock 2025 Index	(5.05%)	2.29%	8.27%	7.47%
Callan Target Date 2025	(5.30%)	1.99%	8.82%	7.82%
SERS 2030 Retirement Fund	(5.17%)	3.41%	9.58%	8.56%
BlackRock 2030 Index	(5.04%)	3.61%	9.59%	8.53%
Callan Target Date 2030	(5.71%)	2.67%	9.76%	8.66%
SERS 2035 Retirement Fund	(5.24%)	4.56%	10.82%	9.57%
BlackRock 2035 Index	(5.06%)	4.81%	10.85%	9.53%
Callan Target Date 2035	(5.86%)	3.43%	10.79%	9.47%
SERS 2040 Retirement Fund	(5.35%)	5.56%	11.91%	10.44%
BlackRock 2040 Index	(5.10%)	5.85%	11.94%	10.40%
Callan Target Date 2040	(5.96%)	4.16%	11.70%	10.06%
SERS 2045 Retirement Fund	(5.44%)	6.34%	12.82%	11.12%
BlackRock 2045 Index	(5.16%)	6.67%	12.83%	11.06%
Callan Target Date 2045	(6.11%)	4.81%	12.46%	10.53%
SERS 2050 Retirement Fund	(5.52%)	6.73%	13.27%	11.44%
BlackRock 2050 Index	(5.23%)	7.05%	13.30%	11.39%
Callan Target Date 2050	(6.13%)	4.96%	12.53%	10.58%
SERS 2055 Retirement Fund	(5.54%)	6.80%	13.36%	11.49%
BlackRock 2055 Index	(5.26%)	7.13%	13.40%	11.45%
Callan Target Date 2055	(6.17%)	4.93%	12.65%	10.85%
SERS 2060 Retirement Fund	(5.55%)	6.79%	13.35%	11.47%
BlackRock 2060 Index	(5.26%)	7.13%	13.40%	11.45%
Callan Target Date 2060	(6.16%)	4.91%	12.77%	10.86%
SERS 2065 Retirement Fund	(5.56%)	6.77%	-	-
BlackRock 2065 Index	(5.27%)	7.11%	-	-
Callan Target Date 2065	(6.28%)	3.71%	12.62%	-

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended March 31, 2022. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2022

	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	5.36%	5.55%	5.27%	-
BlackRock Post Retirement Index	5.34%	5.51%	5.26%	5.74%
Callan Tgt Date 2000-2010	5.58%	6.28%	5.11%	5.43%
SERS 2025 Retirement Fund	6.41%	6.93%	5.48%	-
BlackRock 2025 Index	6.37%	6.88%	5.44%	6.18%
Callan Target Date 2025	6.55%	7.50%	5.81%	-
SERS 2030 Retirement Fund	7.26%	7.75%	5.86%	-
BlackRock 2030 Index	7.21%	7.68%	5.81%	6.53%
Callan Target Date 2030	7.38%	8.28%	6.02%	6.39%
SERS 2035 Retirement Fund	8.08%	8.52%	6.22%	-
BlackRock 2035 Index	8.01%	8.43%	6.16%	6.84%
Callan Target Date 2035	8.10%	9.02%	6.48%	-
SERS 2040 Retirement Fund	8.78%	9.19%	6.52%	-
BlackRock 2040 Index	8.70%	9.09%	6.43%	7.09%
Callan Target Date 2040	8.61%	9.47%	6.83%	6.67%
SERS 2045 Retirement Fund	9.30%	9.71%	6.72%	-
BlackRock 2045 Index	9.20%	9.61%	6.64%	7.26%
Callan Target Date 2045	8.99%	9.81%	6.84%	-
SERS 2050 Retirement Fund	9.54%	10.02%	-	-
BlackRock 2050 Index	9.44%	9.91%	6.91%	7.62%
Callan Target Date 2050	9.07%	9.90%	6.85%	-
SERS 2055 Retirement Fund	9.57%	10.16%	-	-
BlackRock 2055 Index	9.49%	10.06%	-	-
Callan Target Date 2055	9.14%	10.06%	-	-

\*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, 2022. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2022

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
<b>Net Performance</b>				
<b>Domestic Equity</b>				
SERS U.S. Large Company Index Fund	(4.60%)	15.64%	18.94%	16.00%
S&P 500 Index	(4.60%)	15.65%	18.92%	15.99%
Callan Lg Cap Broad MF	(5.70%)	11.88%	17.33%	15.16%
SERS U.S. All Company Index Fund	(5.29%)	11.90%	18.17%	15.34%
Russell 3000 Index	(5.28%)	11.92%	18.24%	15.40%
Callan Multi Cap Brd MF	(6.12%)	8.68%	15.45%	12.97%
SERS U.S. SMID Company Idx Fund	(9.19%)	(5.05%)	14.36%	12.20%
Dow Jones US Completion	(9.36%)	(5.47%)	14.08%	11.96%
Callan SMID Broad MFs	(8.97%)	1.14%	13.64%	11.43%
<b>International Equity</b>				
SERS Global Non-U.S. Index Fund	(5.69%)	(1.72%)	7.62%	6.98%
MSCI ACWI ex US	(5.44%)	(1.48%)	7.51%	6.76%
Callan Non US Equity MFs	(7.74%)	(2.55%)	7.26%	6.47%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	0.02%	0.06%	0.81%	1.20%
3-month Treasury Bill	0.04%	0.06%	0.81%	1.13%
Callan Cash Database(1)	(0.07%)	(0.03%)	0.95%	1.31%
SERS U.S. Short Term Bond Idx Fund	(2.49%)	(2.94%)	1.01%	-
Blmbg Gov/Cred 1-3 Yr	(2.49%)	(2.91%)	1.02%	1.26%
Callan Short US Govt MFs	(2.87%)	(3.55%)	0.65%	0.91%
SERS U.S. TIPS Index Fund	(2.97%)	4.26%	6.20%	-
Blmbg US TIPS	(3.02%)	4.29%	6.22%	4.43%
Callan TIPS MFs	(2.61%)	3.84%	5.80%	4.11%
SERS U.S. Bond Index Fund	(5.84%)	(4.14%)	1.70%	2.14%
Blmbg Aggregate	(5.93%)	(4.15%)	1.69%	2.14%
Callan Core Bond MFs	(5.83%)	(4.00%)	2.22%	2.47%

(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, 2022. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2022

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
<b>Net Performance</b>				
<b>Domestic Equity</b>				
SERS U.S. Large Company Index Fund	14.03%	14.65%	10.31%	9.29%
S&P 500 Index	14.01%	14.64%	10.26%	9.25%
Callan Lg Cap Broad MF	12.69%	13.62%	9.96%	9.06%
SERS U.S. All Company Index Fund	13.33%	14.26%	-	-
Russell 3000 Index	13.38%	14.28%	10.10%	9.37%
Callan Multi Cap Brd MF	10.89%	12.39%	8.78%	8.76%
SERS U.S. SMID Company Idx Fund	10.27%	12.38%	9.52%	10.28%
Dow Jones US Completion	10.03%	12.15%	9.27%	10.10%
Callan SMID Broad MFs	9.86%	11.61%	9.53%	9.57%
<b>International Equity</b>				
SERS Global Non-U.S. Index Fund	5.42%	5.74%	-	-
MSCI ACWI ex US	5.19%	5.55%	3.13%	6.41%
Callan Non US Equity MFs	4.84%	6.14%	3.49%	6.24%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	0.99%	0.75%	1.02%	-
3-month Treasury Bill	0.87%	0.63%	0.83%	1.27%
Callan Cash Database(1)	1.13%	0.88%	1.21%	1.59%
Blmbg Gov/Cred 1-3 Yr	1.15%	1.09%	1.98%	2.37%
Callan Short US Govt MFs	0.79%	0.76%	1.88%	2.26%
Blmbg US TIPS	3.58%	2.69%	4.30%	5.07%
Callan TIPS MFs	3.38%	2.46%	3.94%	4.74%
SERS U.S. Bond Index Fund	1.85%	2.21%	3.52%	3.97%
Blmbg Aggregate	1.87%	2.24%	3.56%	4.00%
Callan Core Bond MFs	2.25%	2.55%	3.88%	4.24%

(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.

	12/2021- 3/2022	2021	2020	2019	2018
<b>Net Performance</b>					
<b>Target Date Funds</b>					
SERS Post Retirement Fund	(5.12%)	6.95%	11.97%	15.65%	(3.47%)
BlackRock Post Retirement Index	(5.08%)	7.02%	11.80%	15.63%	(3.48%)
Callan Tgt Date 2000-2010	(4.76%)	8.05%	10.59%	14.39%	(3.15%)
SERS 2025 Retirement Fund	(5.13%)	8.99%	12.19%	18.60%	(4.86%)
BlackRock 2025 Index	(5.05%)	9.07%	12.01%	18.56%	(4.90%)
Callan Target Date 2025	(5.30%)	10.05%	12.58%	18.51%	(5.19%)
SERS 2030 Retirement Fund	(5.17%)	11.43%	12.88%	20.80%	(5.71%)
BlackRock 2030 Index	(5.04%)	11.50%	12.72%	20.70%	(5.76%)
Callan Target Date 2030	(5.71%)	11.63%	13.23%	20.43%	(6.12%)
SERS 2035 Retirement Fund	(5.24%)	13.80%	13.58%	22.84%	(6.50%)
BlackRock 2035 Index	(5.06%)	13.85%	13.44%	22.72%	(6.58%)
Callan Target Date 2035	(5.86%)	13.92%	14.28%	22.17%	(7.03%)
SERS 2040 Retirement Fund	(5.35%)	15.96%	14.14%	24.71%	(7.22%)
BlackRock 2040 Index	(5.10%)	15.97%	13.98%	24.62%	(7.33%)
Callan Target Date 2040	(5.96%)	15.79%	14.91%	23.62%	(7.89%)
SERS 2045 Retirement Fund	(5.44%)	17.72%	14.83%	26.05%	(7.85%)
BlackRock 2045 Index	(5.16%)	17.70%	14.65%	25.90%	(7.99%)
Callan Target Date 2045	(6.11%)	16.83%	15.52%	24.60%	(8.21%)
SERS 2050 Retirement Fund	(5.52%)	18.67%	15.20%	26.60%	(8.11%)
BlackRock 2050 Index	(5.23%)	18.62%	15.07%	26.48%	(8.26%)
Callan Target Date 2050	(6.13%)	17.17%	15.71%	24.89%	(8.44%)
SERS 2055 Retirement Fund	(5.54%)	18.83%	15.32%	26.67%	(8.13%)
BlackRock 2055 Index	(5.26%)	18.81%	15.18%	26.58%	(8.28%)
Callan Target Date 2055	(6.17%)	17.27%	15.83%	24.97%	(8.44%)
SERS 2060 Retirement Fund	(5.55%)	18.82%	15.31%	26.66%	(8.14%)
BlackRock 2060 Index	(5.26%)	18.81%	15.19%	26.58%	(8.28%)
Callan Target Date 2060	(6.16%)	17.41%	15.90%	25.08%	(8.35%)
SERS 2065 Retirement Fund	(5.56%)	18.77%	15.15%	-	-
BlackRock 2065 Index	(5.27%)	18.80%	15.19%	-	-
Callan Target Date 2065	(6.28%)	17.01%	16.43%	25.62%	(8.63%)



## Investment Fund Returns

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

	12/2021- 3/2022	2021	2020	2019	2018
<b>Net Performance</b>					
<b>Domestic Equity</b>					
SERS U.S. Large Company Index Fund	(4.60%)	28.70%	18.43%	31.51%	(4.39%)
S&P 500 Index	(4.60%)	28.71%	18.40%	31.49%	(4.38%)
Callan Lg Cap Broad MF	(5.70%)	25.50%	18.47%	30.14%	(4.54%)
SERS U.S. All Company Index Fund	(5.29%)	25.61%	21.20%	30.52%	(5.29%)
Russell 3000 Index	(5.28%)	25.66%	20.89%	31.02%	(5.24%)
Callan Multi Cap Brd MF	(6.12%)	24.17%	17.19%	29.12%	(6.82%)
SERS U.S. SMID Company Idx Fund	(9.19%)	12.89%	32.03%	28.20%	(9.32%)
Dow Jones US Completion	(9.36%)	12.36%	32.17%	27.94%	(9.57%)
Callan SMID Broad MFs	(8.97%)	19.56%	24.00%	29.40%	(8.69%)
<b>International Equity</b>					
SERS Global Non-U.S. Index Fund	(5.69%)	7.97%	11.15%	21.77%	(13.86%)
MSCI ACWI ex US	(5.44%)	7.82%	10.65%	21.51%	(14.20%)
Callan Non US Equity MFs	(7.74%)	9.47%	11.12%	22.83%	(15.04%)
<b>Domestic Fixed Income</b>					
SERS Short Term Investment Fund	0.02%	0.07%	0.67%	2.31%	2.09%
3-month Treasury Bill	0.04%	0.05%	0.67%	2.28%	1.87%
Callan Cash Database(1)	(0.07%)	0.13%	1.05%	2.65%	2.00%
SERS U.S. Short Term Bond Idx Fund	(2.49%)	(0.52%)	3.36%	4.02%	1.58%
Blmbg Gov/Cred 1-3 Yr	(2.49%)	(0.47%)	3.33%	4.03%	1.60%
Callan Short US Govt MFs	(2.87%)	(1.08%)	3.57%	3.52%	1.15%
SERS U.S. TIPS Index Fund	(2.97%)	5.87%	11.00%	8.40%	-
Blmbg US TIPS	(3.02%)	5.96%	10.99%	8.43%	(1.26%)
Callan TIPS MFs	(2.61%)	5.55%	10.29%	8.26%	(1.53%)
SERS U.S. Bond Index Fund	(5.84%)	(1.65%)	7.56%	8.69%	0.02%
Blmbg Aggregate	(5.93%)	(1.54%)	7.51%	8.72%	0.01%
Callan Core Bond MFs	(5.83%)	(1.17%)	8.65%	9.17%	(0.35%)

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

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended March 31, 2022. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2022

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
<b>Gross Performance</b>				
<b>Target Date Funds</b>				
SERS Post Retirement Fund	(5.10%)	1.19%	7.25%	6.41%
BlackRock Post Retirement Index	(5.08%)	1.21%	7.17%	6.32%
Callan Tgt Date 2000-2010	(4.76%)	1.38%	7.22%	6.53%
SERS 2025 Retirement Fund	(5.11%)	2.23%	8.34%	7.58%
BlackRock 2025 Index	(5.05%)	2.29%	8.27%	7.47%
Callan Target Date 2025	(5.30%)	1.99%	8.82%	7.82%
SERS 2030 Retirement Fund	(5.16%)	3.48%	9.65%	8.64%
BlackRock 2030 Index	(5.04%)	3.61%	9.59%	8.53%
Callan Target Date 2030	(5.71%)	2.67%	9.76%	8.66%
SERS 2035 Retirement Fund	(5.22%)	4.63%	10.89%	9.64%
BlackRock 2035 Index	(5.06%)	4.81%	10.85%	9.53%
Callan Target Date 2035	(5.86%)	3.43%	10.79%	9.47%
SERS 2040 Retirement Fund	(5.33%)	5.63%	11.98%	10.52%
BlackRock 2040 Index	(5.10%)	5.85%	11.94%	10.40%
Callan Target Date 2040	(5.96%)	4.16%	11.70%	10.06%
SERS 2045 Retirement Fund	(5.42%)	6.41%	12.89%	11.19%
BlackRock 2045 Index	(5.16%)	6.67%	12.83%	11.06%
Callan Target Date 2045	(6.11%)	4.81%	12.46%	10.53%
SERS 2050 Retirement Fund	(5.51%)	6.80%	13.35%	11.51%
BlackRock 2050 Index	(5.23%)	7.05%	13.30%	11.39%
Callan Target Date 2050	(6.13%)	4.96%	12.53%	10.58%
SERS 2055 Retirement Fund	(5.53%)	6.87%	13.44%	11.56%
BlackRock 2055 Index	(5.26%)	7.13%	13.40%	11.45%
Callan Target Date 2055	(6.17%)	4.93%	12.65%	10.85%
SERS 2060 Retirement Fund	(5.53%)	6.86%	13.42%	11.54%
BlackRock 2060 Index	(5.26%)	7.13%	13.40%	11.45%
Callan Target Date 2060	(6.16%)	4.91%	12.77%	10.86%
SERS 2065 Retirement Fund	(5.55%)	6.84%	-	-
BlackRock 2065 Index	(5.27%)	7.11%	-	-
Callan Target Date 2065	(6.28%)	3.71%	12.62%	-

## Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended March 31, 2022. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2022

	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	5.43%	5.62%	5.35%	-
BlackRock Post Retirement Index	5.34%	5.51%	5.26%	5.74%
Callan Tgt Date 2000-2010	5.58%	6.28%	5.11%	5.43%
SERS 2025 Retirement Fund	6.48%	7.00%	5.55%	-
BlackRock 2025 Index	6.37%	6.88%	5.44%	6.18%
Callan Target Date 2025	6.55%	7.50%	5.81%	-
SERS 2030 Retirement Fund	7.34%	7.82%	5.94%	-
BlackRock 2030 Index	7.21%	7.68%	5.81%	6.53%
Callan Target Date 2030	7.38%	8.28%	6.02%	6.39%
SERS 2035 Retirement Fund	8.15%	8.59%	6.30%	-
BlackRock 2035 Index	8.01%	8.43%	6.16%	6.84%
Callan Target Date 2035	8.10%	9.02%	6.48%	-
SERS 2040 Retirement Fund	8.85%	9.26%	6.59%	-
BlackRock 2040 Index	8.70%	9.09%	6.43%	7.09%
Callan Target Date 2040	8.61%	9.47%	6.83%	6.67%
SERS 2045 Retirement Fund	9.37%	9.79%	6.79%	-
BlackRock 2045 Index	9.20%	9.61%	6.64%	7.26%
Callan Target Date 2045	8.99%	9.81%	6.84%	-
SERS 2050 Retirement Fund	9.61%	10.09%	-	-
BlackRock 2050 Index	9.44%	9.91%	6.91%	7.62%
Callan Target Date 2050	9.07%	9.90%	6.85%	-
SERS 2055 Retirement Fund	9.64%	10.23%	-	-
BlackRock 2055 Index	9.49%	10.06%	-	-
Callan Target Date 2055	9.14%	10.06%	-	-

\*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, 2022. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2022

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
<b>Gross Performance</b>				
<b>Domestic Equity</b>				
SERS U.S. Large Company Index Fund	(4.60%)	15.65%	18.94%	16.01%
S&P 500 Index	(4.60%)	15.65%	18.92%	15.99%
Callan Lg Cap Broad MF	(5.70%)	11.88%	17.33%	15.16%
SERS U.S. All Company Index Fund	(5.29%)	11.90%	18.18%	15.34%
Russell 3000 Index	(5.28%)	11.92%	18.24%	15.40%
Callan Multi Cap Brd MF	(6.12%)	8.68%	15.45%	12.97%
SERS U.S. SMID Company Idx Fund	(9.19%)	(5.04%)	14.36%	12.21%
Dow Jones US Completion	(9.36%)	(5.47%)	14.08%	11.96%
Callan SMID Broad MFs	(8.97%)	1.14%	13.64%	11.43%
<b>International Equity</b>				
SERS Global Non-U.S. Index Fund	(5.69%)	(1.70%)	7.64%	6.99%
MSCI ACWI ex US	(5.44%)	(1.48%)	7.51%	6.76%
Callan Non US Equity MFs	(7.74%)	(2.55%)	7.26%	6.47%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	0.02%	0.06%	0.81%	1.20%
3-month Treasury Bill	0.04%	0.06%	0.81%	1.13%
Callan Cash Database(1)	(0.07%)	(0.03%)	0.95%	1.31%
SERS U.S. Short Term Bond Idx Fund	(2.48%)	(2.93%)	1.01%	-
Blmbg Gov/Cred 1-3 Yr	(2.49%)	(2.91%)	1.02%	1.26%
Callan Short US Govt MFs	(2.87%)	(3.55%)	0.65%	0.91%
SERS U.S. TIPS Index Fund	(2.97%)	4.27%	6.20%	-
Blmbg US TIPS	(3.02%)	4.29%	6.22%	4.43%
Callan TIPS MFs	(2.61%)	3.84%	5.80%	4.11%
SERS U.S. Bond Index Fund	(5.84%)	(4.13%)	1.70%	2.15%
Blmbg Aggregate	(5.93%)	(4.15%)	1.69%	2.14%
Callan Core Bond MFs	(5.83%)	(4.00%)	2.22%	2.47%

(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, 2022. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

### Returns for Periods Ended March 31, 2022

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
<b>Gross Performance</b>				
<b>Domestic Equity</b>				
SERS U.S. Large Company Index Fund	14.03%	14.66%	10.31%	9.30%
S&P 500 Index	14.01%	14.64%	10.26%	9.25%
Callan Lg Cap Broad MF	12.69%	13.62%	9.96%	9.06%
SERS U.S. All Company Index Fund	13.33%	14.26%	-	-
Russell 3000 Index	13.38%	14.28%	10.10%	9.37%
Callan Multi Cap Brd MF	10.89%	12.39%	8.78%	8.76%
SERS U.S. SMID Company Idx Fund	10.28%	12.39%	9.52%	10.29%
Dow Jones US Completion	10.03%	12.15%	9.27%	10.10%
Callan SMID Broad MFs	9.86%	11.61%	9.53%	9.57%
<b>International Equity</b>				
SERS Global Non-U.S. Index Fund	5.43%	5.76%	-	-
MSCI ACWI ex US	5.19%	5.55%	3.13%	6.41%
Callan Non US Equity MFs	4.84%	6.14%	3.49%	6.24%
<b>Domestic Fixed Income</b>				
SERS Short Term Investment Fund	0.99%	0.75%	1.02%	-
3-month Treasury Bill	0.87%	0.63%	0.83%	1.27%
Callan Cash Database(1)	1.13%	0.88%	1.21%	1.59%
Blmbg Gov/Cred 1-3 Yr	1.15%	1.09%	1.98%	2.37%
Callan Short US Govt MFs	0.79%	0.76%	1.88%	2.26%
Blmbg US TIPS	3.58%	2.69%	4.30%	5.07%
Callan TIPS MFs	3.38%	2.46%	3.94%	4.74%
SERS U.S. Bond Index Fund	1.86%	2.21%	3.52%	3.98%
Blmbg Aggregate	1.87%	2.24%	3.56%	4.00%
Callan Core Bond MFs	2.25%	2.55%	3.88%	4.24%

(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.

	12/2021- 3/2022	2021	2020	2019	2018
<b>Gross Performance</b>					
<b>Target Date Funds</b>					
SERS Post Retirement Fund	(5.10%)	7.03%	12.04%	15.72%	(3.41%)
BlackRock Post Retirement Index	(5.08%)	7.02%	11.80%	15.63%	(3.48%)
Callan Tgt Date 2000-2010	(4.76%)	8.05%	10.59%	14.39%	(3.15%)
SERS 2025 Retirement Fund	(5.11%)	9.06%	12.26%	18.67%	(4.80%)
BlackRock 2025 Index	(5.05%)	9.07%	12.01%	18.56%	(4.90%)
Callan Target Date 2025	(5.30%)	10.05%	12.58%	18.51%	(5.19%)
SERS 2030 Retirement Fund	(5.16%)	11.50%	12.96%	20.86%	(5.63%)
BlackRock 2030 Index	(5.04%)	11.50%	12.72%	20.70%	(5.76%)
Callan Target Date 2030	(5.71%)	11.63%	13.23%	20.43%	(6.12%)
SERS 2035 Retirement Fund	(5.22%)	13.88%	13.65%	22.93%	(6.43%)
BlackRock 2035 Index	(5.06%)	13.85%	13.44%	22.72%	(6.58%)
Callan Target Date 2035	(5.86%)	13.92%	14.28%	22.17%	(7.03%)
SERS 2040 Retirement Fund	(5.33%)	16.04%	14.22%	24.80%	(7.17%)
BlackRock 2040 Index	(5.10%)	15.97%	13.98%	24.62%	(7.33%)
Callan Target Date 2040	(5.96%)	15.79%	14.91%	23.62%	(7.89%)
SERS 2045 Retirement Fund	(5.42%)	17.79%	14.90%	26.12%	(7.78%)
BlackRock 2045 Index	(5.16%)	17.70%	14.65%	25.90%	(7.99%)
Callan Target Date 2045	(6.11%)	16.83%	15.52%	24.60%	(8.21%)
SERS 2050 Retirement Fund	(5.51%)	18.75%	15.27%	26.70%	(8.05%)
BlackRock 2050 Index	(5.23%)	18.62%	15.07%	26.48%	(8.26%)
Callan Target Date 2050	(6.13%)	17.17%	15.71%	24.89%	(8.44%)
SERS 2055 Retirement Fund	(5.53%)	18.91%	15.40%	26.75%	(8.07%)
BlackRock 2055 Index	(5.26%)	18.81%	15.18%	26.58%	(8.28%)
Callan Target Date 2055	(6.17%)	17.27%	15.83%	24.97%	(8.44%)
SERS 2060 Retirement Fund	(5.53%)	18.90%	15.38%	26.74%	(8.08%)
BlackRock 2060 Index	(5.26%)	18.81%	15.19%	26.58%	(8.28%)
Callan Target Date 2060	(6.16%)	17.41%	15.90%	25.08%	(8.35%)
SERS 2065 Retirement Fund	(5.55%)	18.85%	15.22%	-	-
BlackRock 2065 Index	(5.27%)	18.80%	15.19%	-	-
Callan Target Date 2065	(6.28%)	17.01%	16.43%	25.62%	(8.63%)

## Investment Fund Returns

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

	12/2021- 3/2022	2021	2020	2019	2018
<b>Gross Performance</b>					
<b>Domestic Equity</b>					
SERS U.S. Large Company Index Fund	(4.60%)	28.71%	18.44%	31.51%	(4.38%)
S&P 500 Index	(4.60%)	28.71%	18.40%	31.49%	(4.38%)
Callan Lg Cap Broad MF	(5.70%)	25.50%	18.47%	30.14%	(4.54%)
SERS U.S. All Company Index Fund	(5.29%)	25.62%	21.20%	30.53%	(5.29%)
Russell 3000 Index	(5.28%)	25.66%	20.89%	31.02%	(5.24%)
Callan Multi Cap Brd MF	(6.12%)	24.17%	17.19%	29.12%	(6.82%)
SERS U.S. SMID Company Idx Fund	(9.19%)	12.90%	32.04%	28.21%	(9.32%)
Dow Jones US Completion	(9.36%)	12.36%	32.17%	27.94%	(9.57%)
Callan SMID Broad MFs	(8.97%)	19.56%	24.00%	29.40%	(8.69%)
<b>International Equity</b>					
SERS Global Non-U.S. Index Fund	(5.69%)	7.98%	11.17%	21.79%	(13.85%)
MSCI ACWI ex US	(5.44%)	7.82%	10.65%	21.51%	(14.20%)
Callan Non US Equity MFs	(7.74%)	9.47%	11.12%	22.83%	(15.04%)
<b>Domestic Fixed Income</b>					
SERS Short Term Investment Fund	0.02%	0.07%	0.67%	2.31%	2.09%
3-month Treasury Bill	0.04%	0.05%	0.67%	2.28%	1.87%
Callan Cash Database(1)	(0.07%)	0.13%	1.05%	2.65%	2.00%
SERS U.S. Short Term Bond Idx Fund	(2.48%)	(0.51%)	3.37%	4.02%	1.58%
Blmbg Gov/Cred 1-3 Yr	(2.49%)	(0.47%)	3.33%	4.03%	1.60%
Callan Short US Govt MFs	(2.87%)	(1.08%)	3.57%	3.52%	1.15%
SERS U.S. TIPS Index Fund	(2.97%)	5.88%	11.00%	8.40%	-
Blmbg US TIPS	(3.02%)	5.96%	10.99%	8.43%	(1.26%)
Callan TIPS MFs	(2.61%)	5.55%	10.29%	8.26%	(1.53%)
SERS U.S. Bond Index Fund	(5.84%)	(1.64%)	7.56%	8.69%	0.03%
Blmbg Aggregate	(5.93%)	(1.54%)	7.51%	8.72%	0.01%
Callan Core Bond MFs	(5.83%)	(1.17%)	8.65%	9.17%	(0.35%)

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

**Pennsylvania SERS 401(a)**  
**Investment Manager Performance Monitoring Summary Report**  
**March 31, 2022**

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	-5.1 62	1.1 36	7.2 17	6.3 14	5.4 12	5.5 19			0.08 83
BlackRock Post Retirement Index	-5.1 61	1.2 35	7.2 17	6.3 15	5.3 13	5.5 20			
<b>SERS 2025 Retirement Fund</b> Callan Target Date 2025	-5.1 39	2.2 44	8.3 63	7.5 60	6.4 60	6.9 74			0.08 78
BlackRock 2025 Index	-5.1 36	2.3 41	8.3 63	7.5 63	6.4 62	6.9 75			
<b>SERS 2030 Retirement Fund</b> Callan Target Date 2030	-5.2 24	3.4 26	9.6 58	8.6 56	7.3 56	7.8 73			0.08 79
BlackRock 2030 Index	-5.0 18	3.6 20	9.6 57	8.5 59	7.2 58	7.7 74			
<b>SERS 2035 Retirement Fund</b> Callan Target Date 2035	-5.2 18	4.6 24	10.8 49	9.6 46	8.1 51	8.5 70			0.08 81
BlackRock 2035 Index	-5.1 14	4.8 19	10.8 48	9.5 47	8.0 52	8.4 72			
<b>SERS 2040 Retirement Fund</b> Callan Target Date 2040	-5.3 21	5.6 17	11.9 40	10.4 30	8.8 38	9.2 66			0.08 76
BlackRock 2040 Index	-5.1 13	5.9 11	11.9 39	10.4 33	8.7 44	9.1 72			
<b>SERS 2045 Retirement Fund</b> Callan Target Date 2045	-5.4 22	6.3 12	12.8 27	11.1 24	9.3 31	9.7 56			0.08 78
BlackRock 2045 Index	-5.2 11	6.7 8	12.8 27	11.1 27	9.2 37	9.6 63			
<b>SERS 2050 Retirement Fund</b> Callan Target Date 2050	-5.5 27	6.7 10	13.3 17	11.4 12	9.5 22	10.0 38			0.08 76
BlackRock 2050 Index	-5.2 15	7.1 7	13.3 16	11.4 14	9.4 24	9.9 49			
<b>SERS 2055 Retirement Fund</b> Callan Target Date 2055	-5.5 20	6.8 10	13.4 16	11.5 13	9.6 20	10.2 44			0.08 81
BlackRock 2055 Index	-5.3 11	7.1 7	13.4 15	11.4 14	9.5 28	10.1 50			
<b>SERS 2060 Retirement Fund</b> Callan Target Date 2060	-5.5 23	6.8 11	13.3 19	11.5 14	9.6 35				0.08 78
BlackRock 2060 Index	-5.3 15	7.1 7	13.4 18	11.4 14	9.5 40				

Returns:  
■ above median  
■ third quartile  
■ fourth quartile

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

Risk Quadrant:  


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



**Pennsylvania SERS 401(a)**  
**Investment Manager Performance Monitoring Summary Report**  
**March 31, 2022**

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 BlackRock 2065 Index	-5.6 15	6.8 7							0.08 45
<b>Domestic Equity</b>									
<b>SERS U.S. Large Company Stock Index Fund</b> Callan Lg Cap Broad MF S&P 500 Index	-4.6 42	15.6 14	18.9 33	16.0 46	14.0 40	14.7 38			0.02 100
<b>SERS U.S. All Company Index Fund</b> Callan Multi Cap Brd MF Russell 3000 Index	-5.3 42	11.9 31	18.2 29	15.3 32	13.3 23	14.3 21			0.03 99
<b>U.S. Small/Mid Company Stock Index Fund</b> Callan SMID Broad MFs Dow Jones US Completion	-9.2 53	-5.0 66	14.4 40	12.2 47	10.3 45	12.4 39			0.03 100
<b>International Equity</b>									
<b>SERS Global Non-U.S. Index Fund</b> Callan Non US Equity MFs MSCI ACWI ex US	-5.7 27	-1.7 44	7.6 46	7.0 44	5.4 41	5.7 64			0.05 99
<b>Domestic Fixed Income</b>									
<b>SERS Short Term Investment Fund</b> Callan Cash Database 3-month Treasury Bill	0.0 39	0.1 42	0.8 81	1.2 78	1.0 76	0.7 76			0.00 100
<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 Blmbg Gov/Cred 1-3 Yr	-2.5 37	-2.9 32	1.0 23						0.02 99
<b>SERS U.S. TIPS Index Fund</b> Callan TIPS MFs Blmbg US TIPS	-3.0 69	4.3 28	6.2 31						0.02 98

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, 2022**

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>	-5.8 52	-4.1 61	1.7 88	2.1 94	1.9 90	2.2 94			0.02 98
Callan Core Bond MFs									
Blmbg Aggregate	-5.9 56	-4.2 62	1.7 88	2.1 94	1.9 88	2.2 94			

Returns:  
 above median  
 third quartile  
 fourth quartile

Return Consistency:  
 above median  
 third quartile  
 fourth quartile

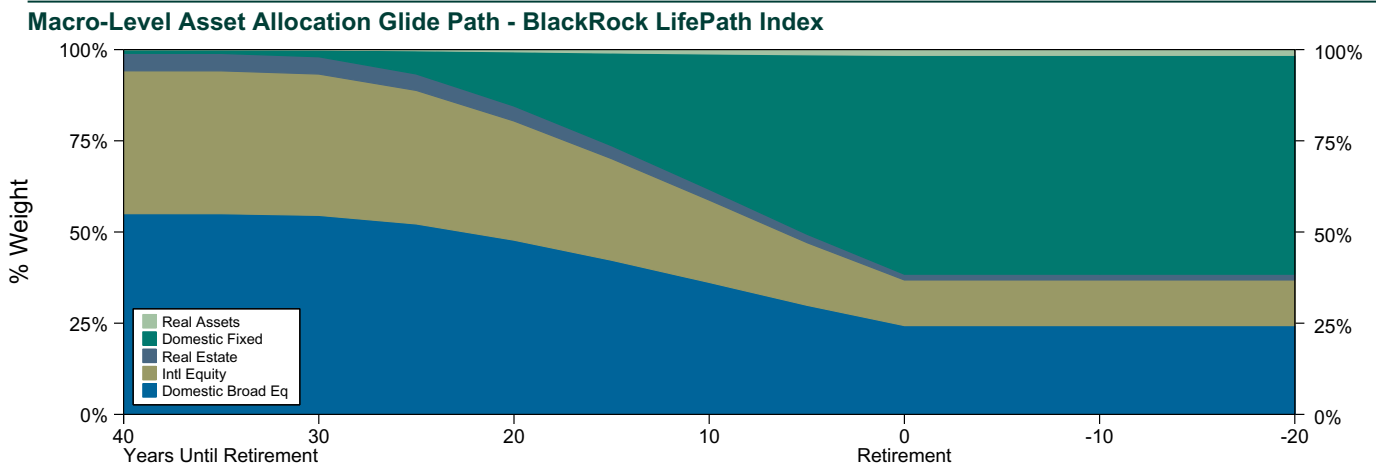
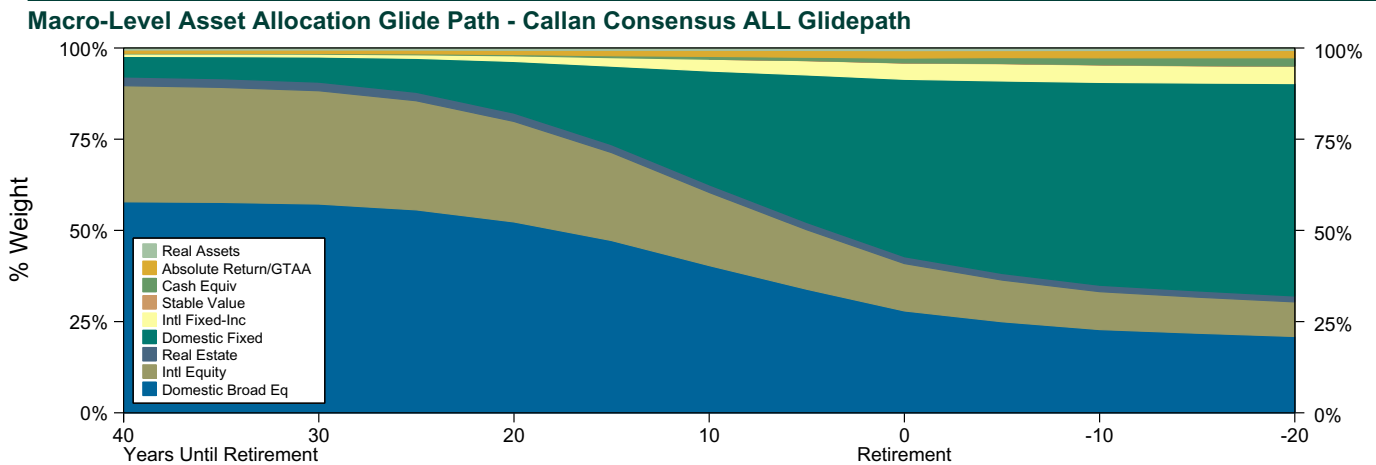
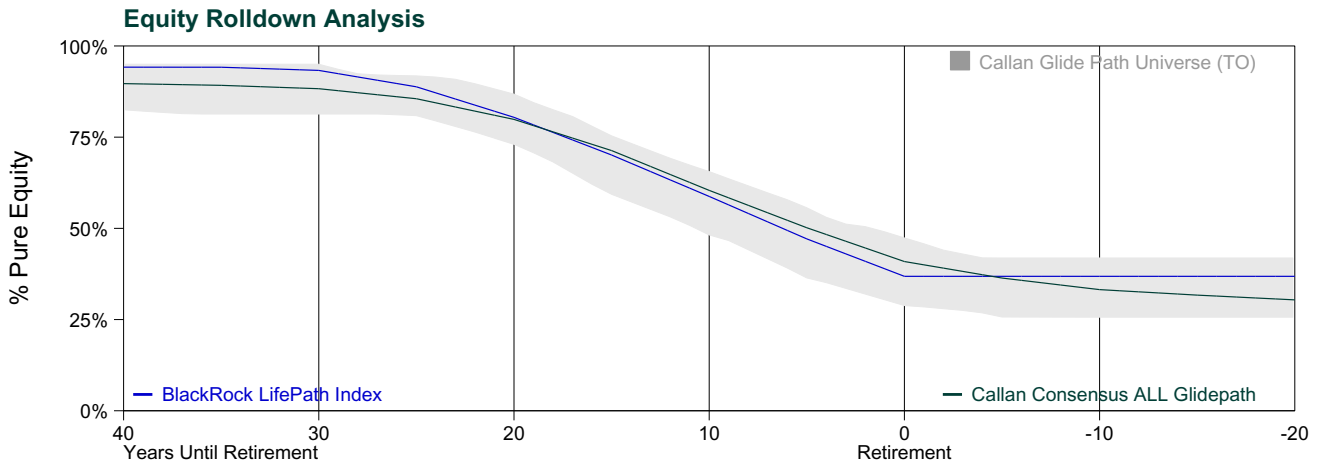
Risk Quadrant:  
 above median, low risk  
 second quartile, low risk  
 second quartile, high risk  
 first quartile, high risk

Expense Ratio:  
 below median  
 second quartile  
 first quartile



# Callan Consensus ALL Glidepath Target Date Glide Path Analysis as of March 31, 2022

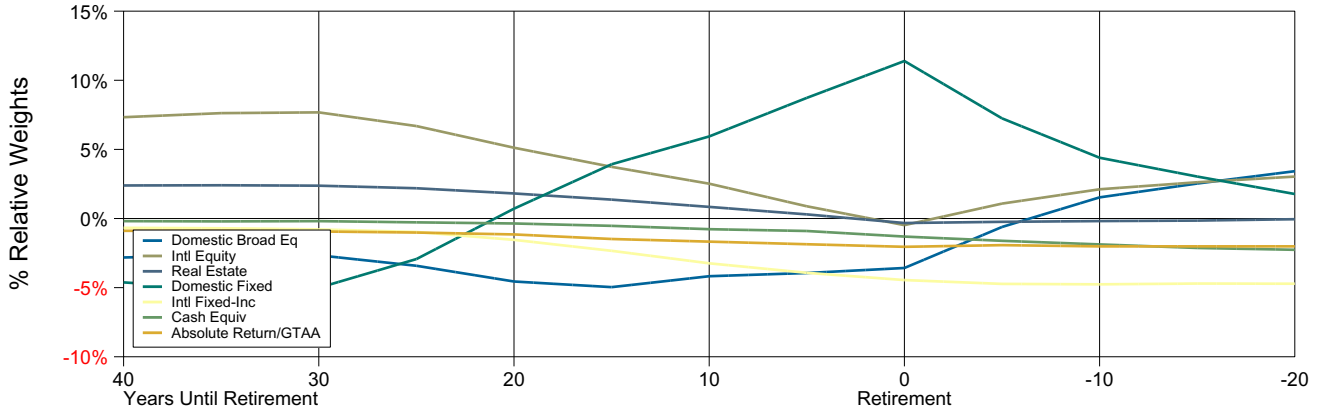
The following charts illustrate the asset allocation "glide path" underlying the relevant suite of target date funds. This analysis covers forty years of investor wealth accumulation up to retirement, as well as twenty years of wealth decumulation following retirement. The top chart shows the "pure"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



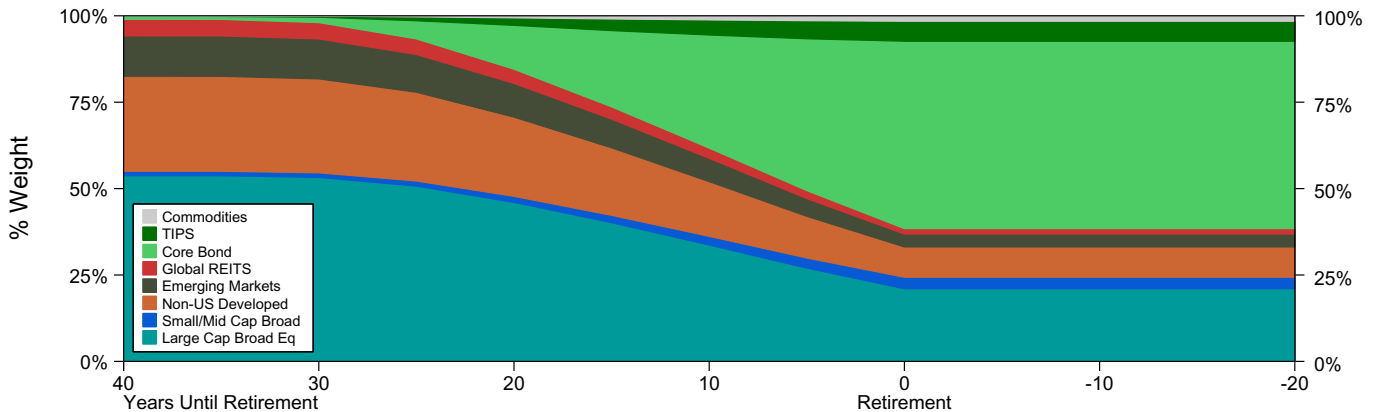
# BlackRock LifePath Index Target Date Glide Path Analysis as of March 31, 2022

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.

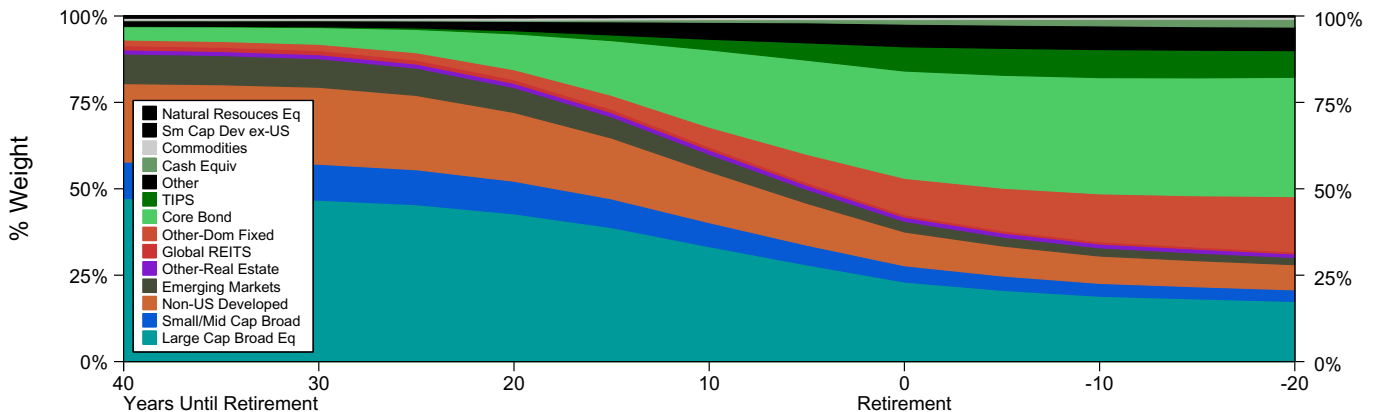
**Relative Macro Asset Allocation - BlackRock LifePath Index vs. Callan Consensus ALL Glidep**



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



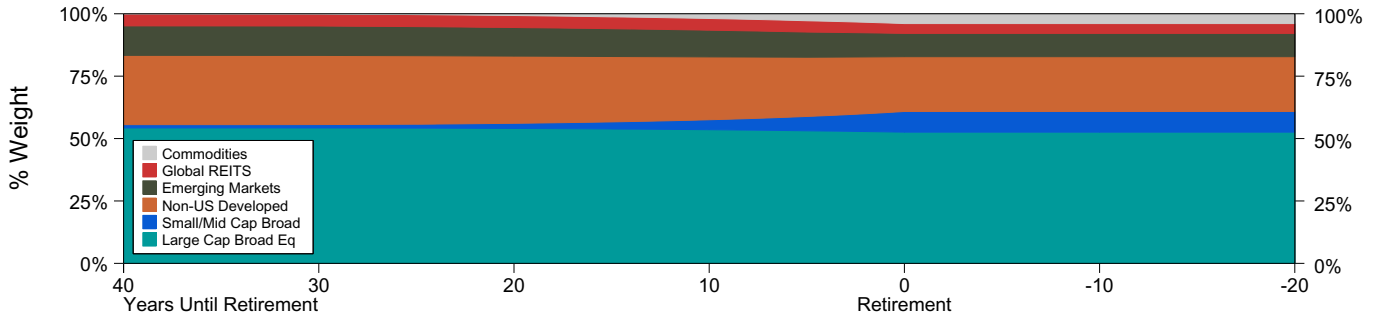
**Micro-Level Asset Allocation Glide Path - Callan Consensus ALL Glidepath**



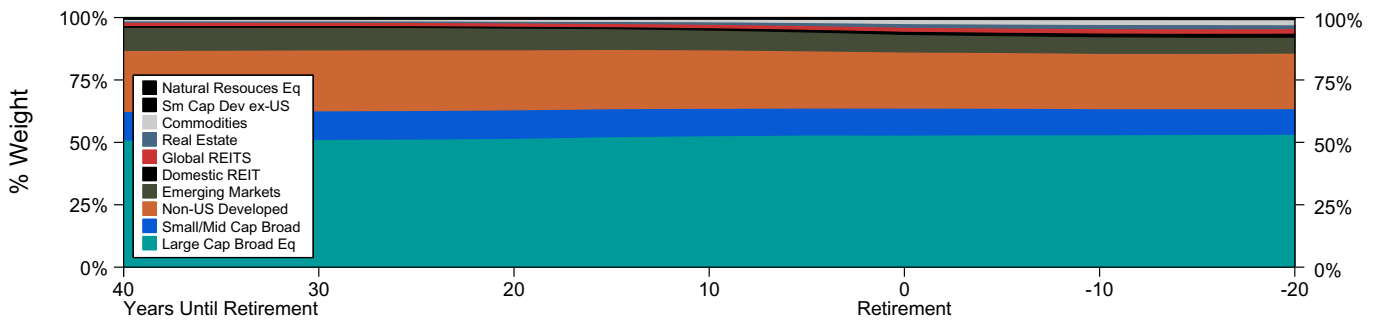
# BlackRock LifePath Index Target Date Glide Path Analysis as of March 31, 2022

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.

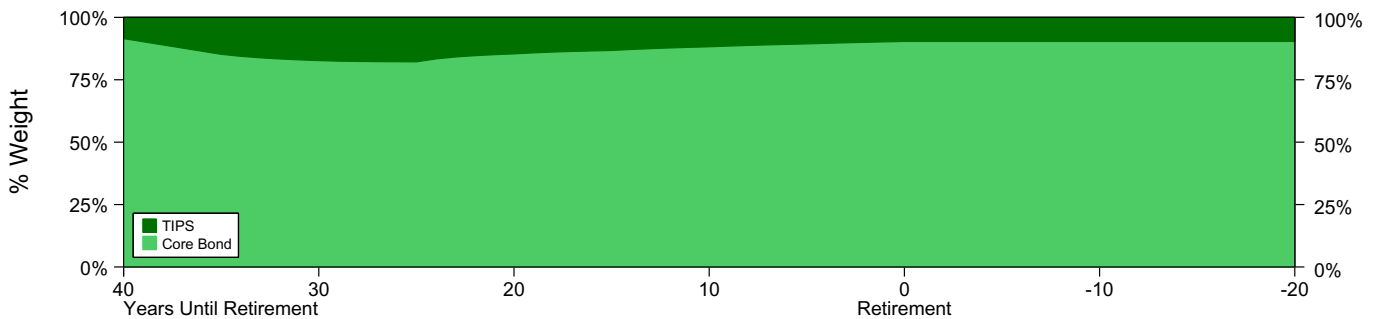
## Micro-Level Equity Allocation Glide Path - BlackRock LifePath Index



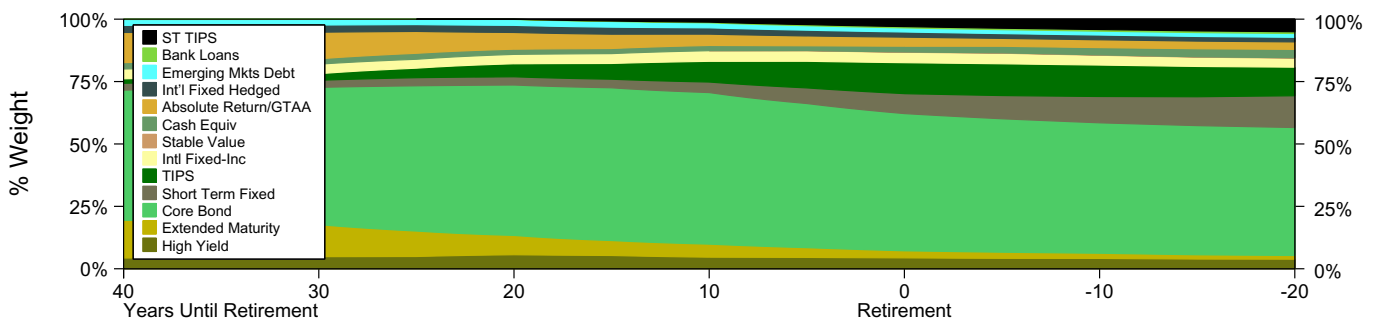
## Micro-Level Equity Asset Allocation Glide Path - Callan Consensus ALL Glidepath



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



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

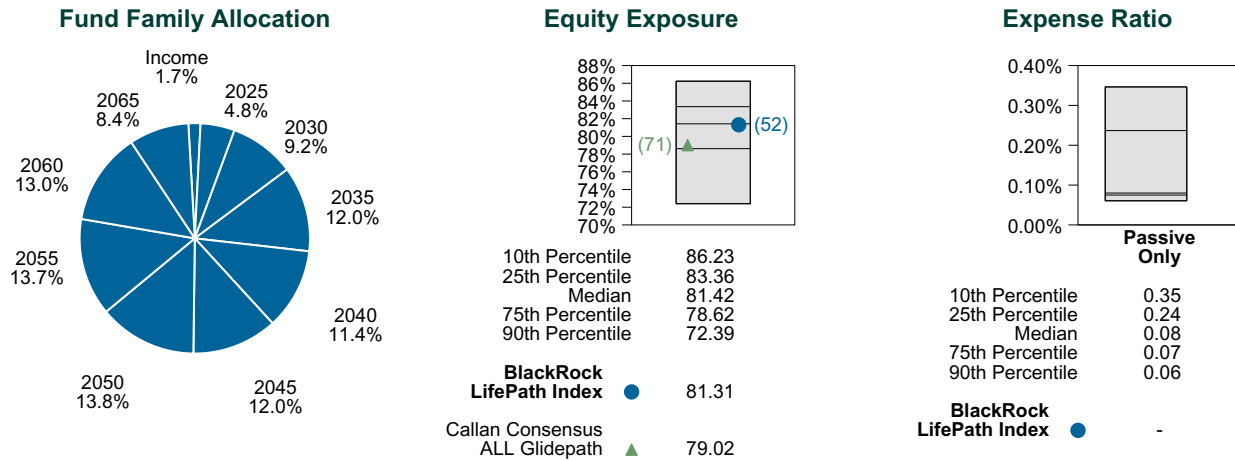


# Pennsylvania SERS 401(a) - BlackRock LifePath Index Target Date Fund Family Analysis as of March 31, 2022

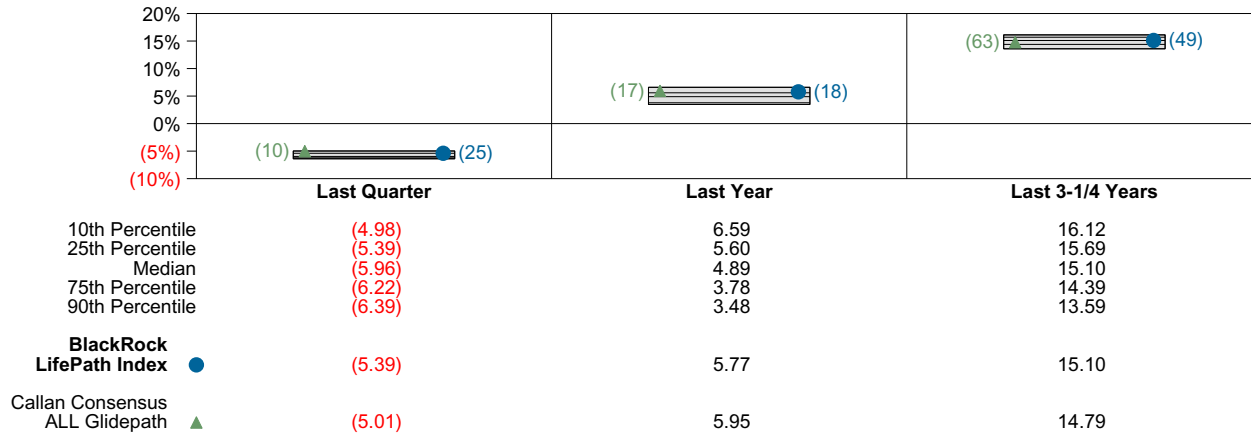
The following is an analysis of the client's suite of target date funds as an aggregated portfolio using actual proportions held by the client's participants. The upper-left pie chart shows the current client weights across target dates. The rest of the charts compare different attributes of the aggregated client target date portfolio to a peer group of target date fund families, as well as target date indices, by mimicking the client target date weights using these alternatives. The first two charts evaluate the aggregate client equity exposure and expense ratio via target date funds. The last two charts analyze aggregate client target date performance on both an actual return basis as well as a "glide path return" basis (simulated returns using each funds' asset allocation "glide path" weights and index returns).

**Glidepath Peer Group: ALL**

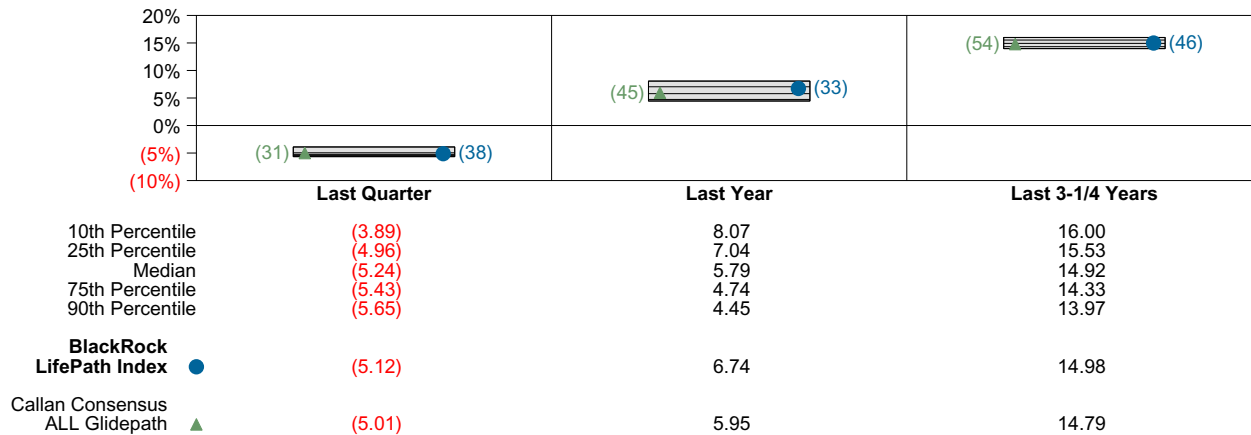
**Fee/Return Type: Gross**



## Target Date Family Performance vs Peer Families



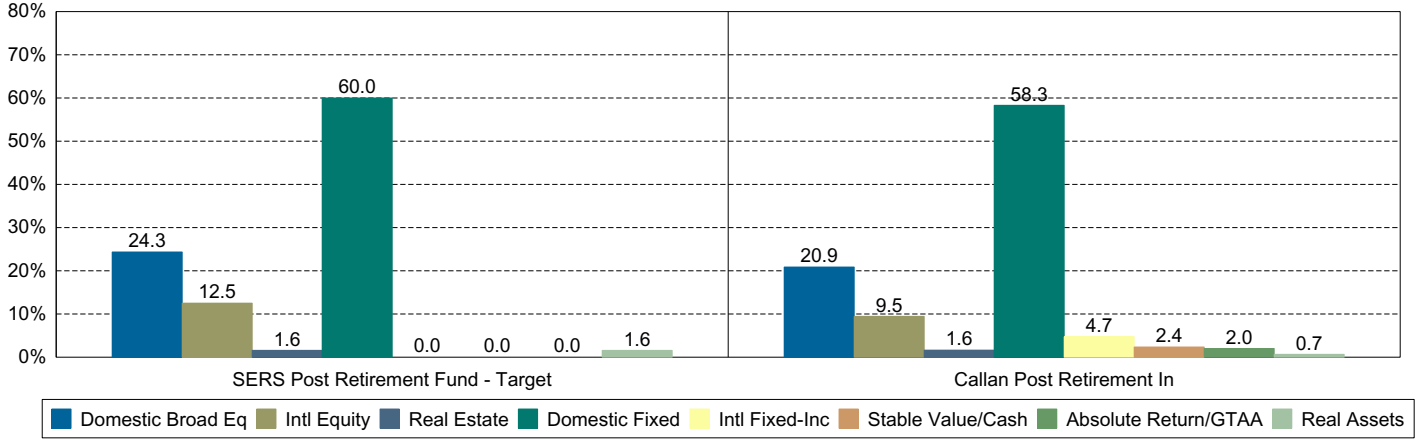
## Target Date Family Glide Path Returns vs Peer Families



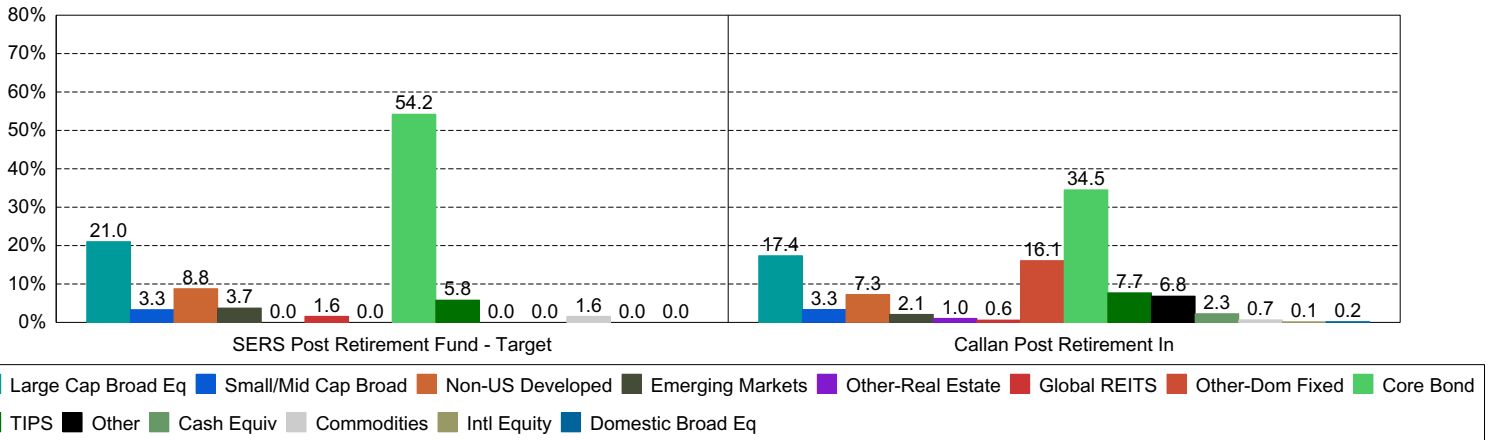
# SERS Post Retirement Fund Target Date Fund Asset Allocation as of March 31, 2022

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.

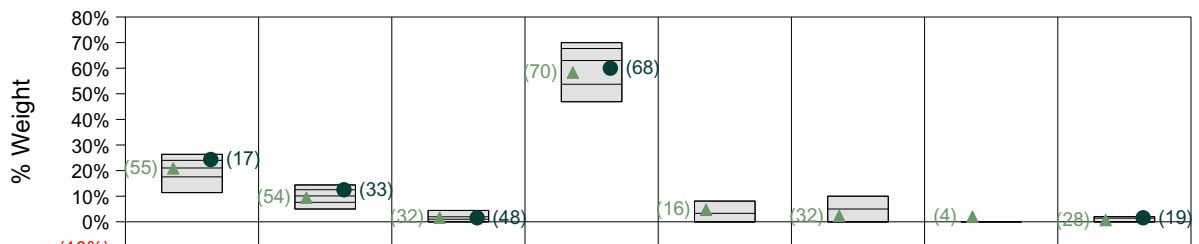
## Macro-Level Asset Allocation



## 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	26.36	14.40	4.44	69.99	8.09	10.00	0.00	2.00
25th Percentile	24.00	12.53	1.96	67.69	3.30	5.00	0.00	1.42
Median	21.02	10.10	1.01	63.00	0.00	0.00	0.00	0.00
75th Percentile	17.55	7.60	0.00	53.73	0.00	0.00	0.00	0.00
90th Percentile	11.40	5.00	0.00	46.91	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	▲	20.86	9.45	1.63	58.30	4.72	2.36	2.01	0.66



# SERS Post Retirement Fund Period Ended March 31, 2022

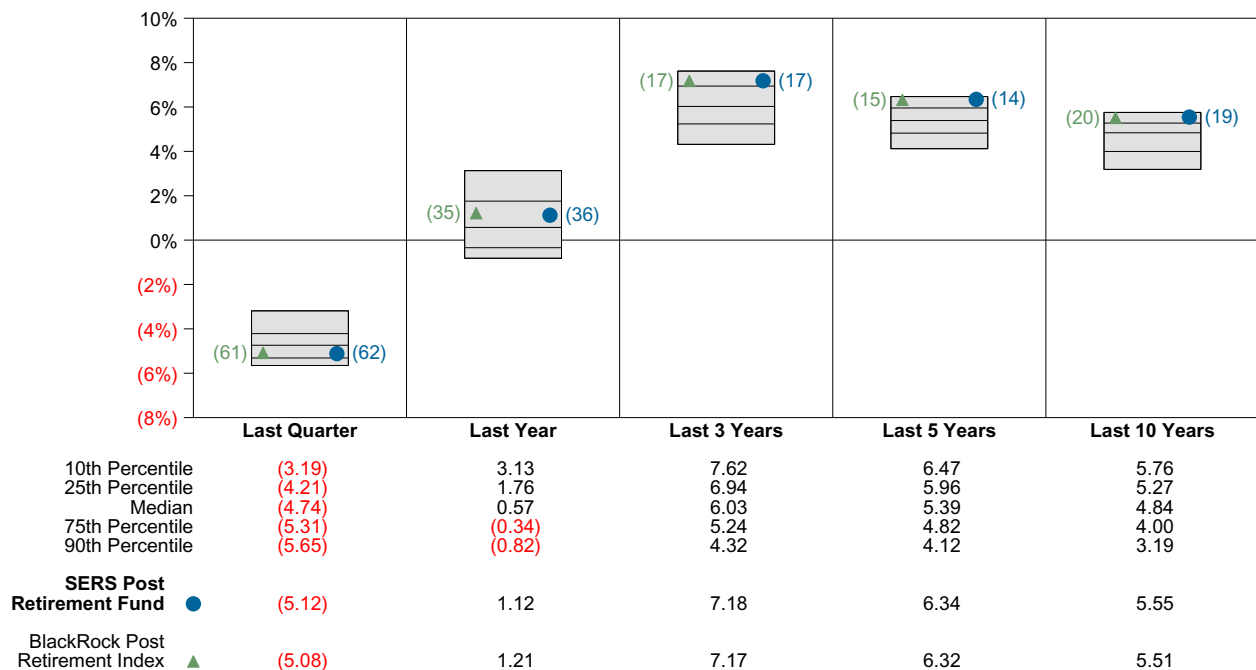
## Investment Philosophy

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.

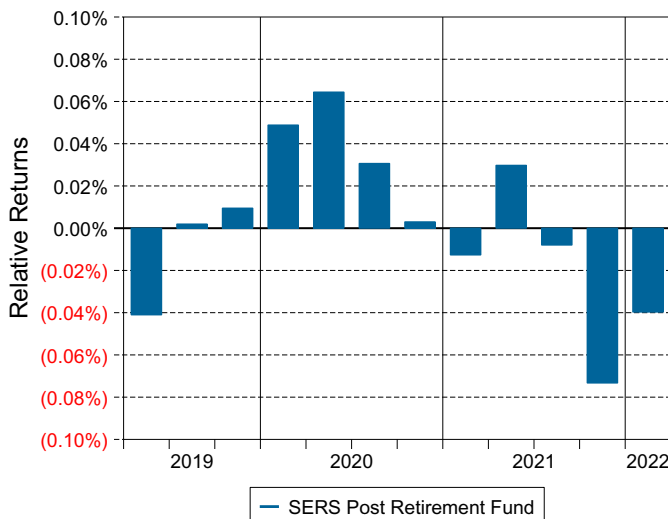
## Quarterly Summary and Highlights

- SERS Post Retirement Fund's portfolio posted a (5.12)% return for the quarter placing it in the 62 percentile of the Callan Target Date Retirement Income group for the quarter and in the 36 percentile for the last year.
- SERS Post Retirement Fund's portfolio underperformed the BlackRock Post Retirement Index by 0.04% for the quarter and underperformed the BlackRock Post Retirement Index for the year by 0.09%.

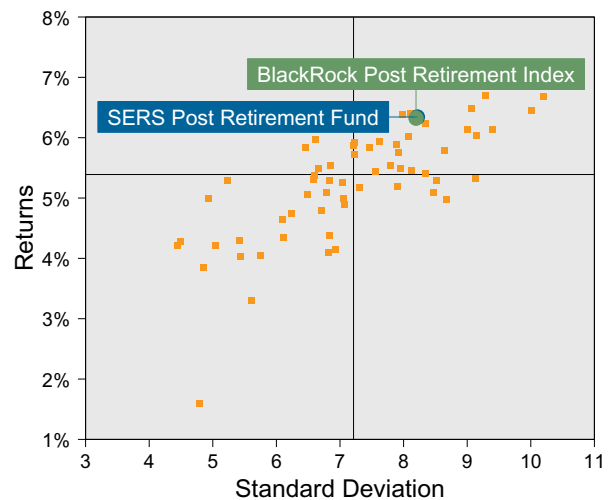
## Performance vs Callan Target Date Retirement Income (Net)



## Relative Returns vs BlackRock Post Retirement Index



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

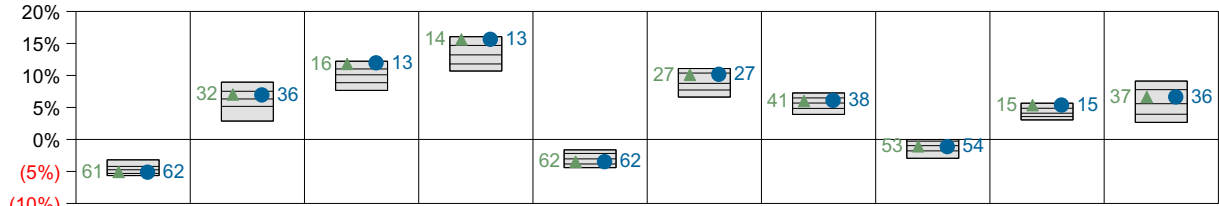


# SERS Post Retirement Fund Return Analysis Summary

## Return Analysis

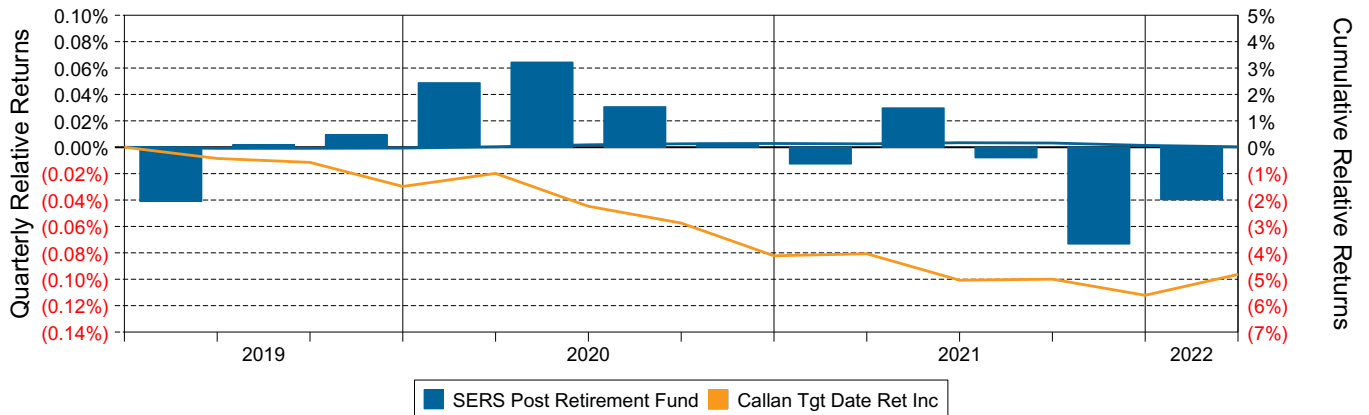
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

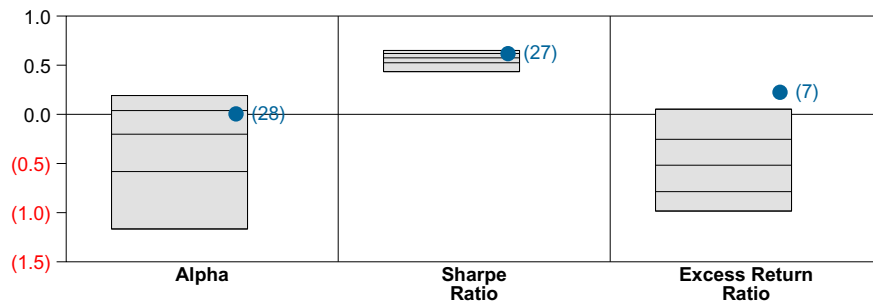


	12/21- 3/22	2021	2020	2019	2018	2017	2016	2015	2014	2013
10th Percentile	(3.19)	8.95	12.22	16.05	(1.63)	11.08	7.26	(0.02)	5.66	9.12
25th Percentile	(4.21)	7.53	11.01	14.69	(2.19)	10.37	6.49	(0.27)	4.87	7.78
Median	(4.74)	6.33	10.10	13.21	(3.04)	8.76	5.69	(0.97)	4.10	5.58
75th Percentile	(5.31)	5.17	8.87	11.80	(3.83)	7.72	4.85	(1.79)	3.57	3.94
90th Percentile	(5.65)	2.87	7.66	10.69	(4.41)	6.62	3.91	(2.95)	3.05	2.67
<b>SERS Post Retirement Fund</b>	<b>(5.12)</b>	6.95	11.97	15.65	(3.47)	10.18	6.10	(1.12)	5.38	6.64
BlackRock Post Retirement Index	(5.08)	7.02	11.80	15.63	(3.48)	10.10	6.01	(1.07)	5.36	6.63

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



### Risk Adjusted Return Measures vs BlackRock Post Retirement Index Rankings Against Callan Target Date Retirement Income (Net) Seven Years Ended March 31, 2022

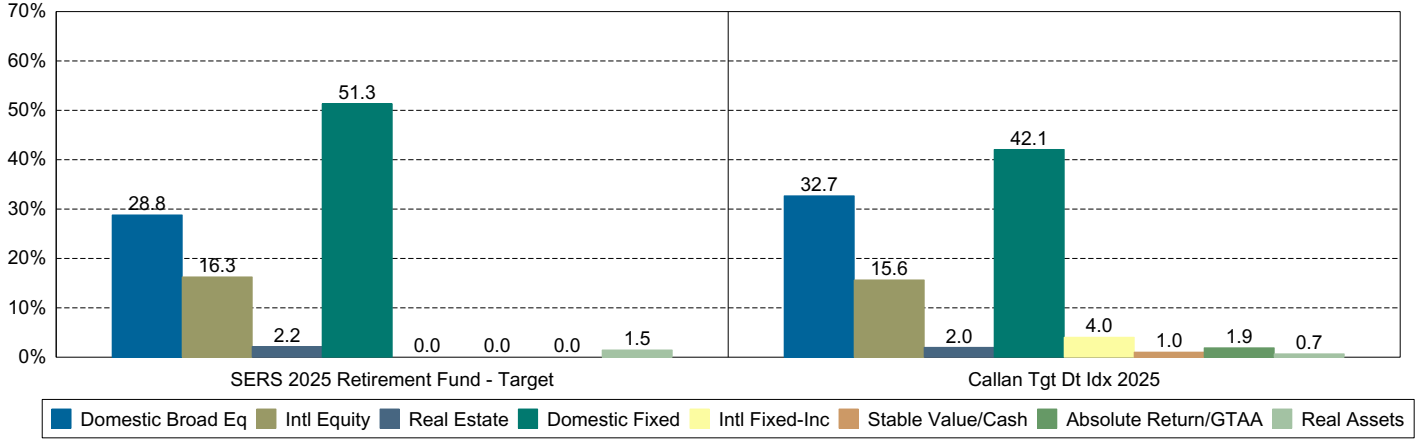


	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.19	0.65	0.05
25th Percentile	0.04	0.62	(0.25)
Median	(0.20)	0.57	(0.52)
75th Percentile	(0.58)	0.52	(0.79)
90th Percentile	(1.17)	0.43	(0.98)
<b>SERS Post Retirement Fund</b>	0.00	0.62	0.22

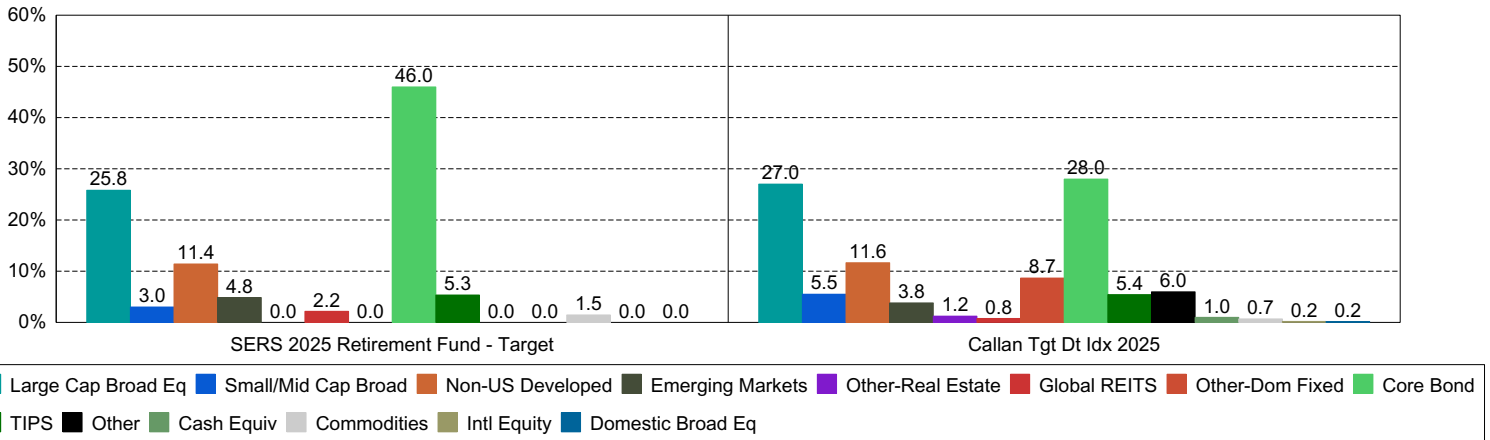
# SERS 2025 Retirement Fund Target Date Fund Asset Allocation as of March 31, 2022

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.

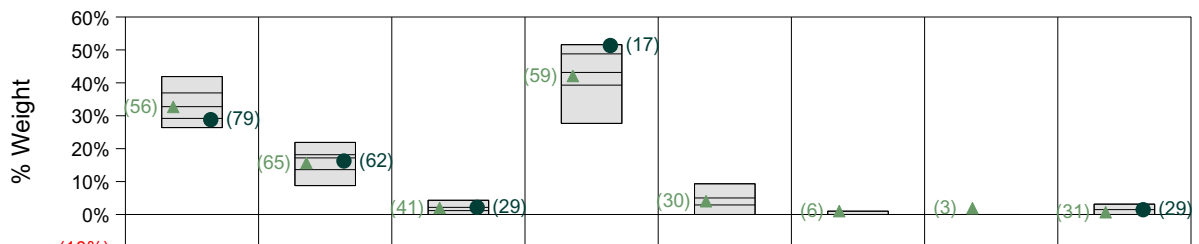
## Macro-Level Asset Allocation



## 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	41.90	21.90	4.32	51.60	9.33	1.00	0.00	3.14
25th Percentile	36.94	18.16	2.16	48.79	5.02	0.00	0.00	1.48
Median	32.76	17.19	1.18	43.16	2.90	0.00	0.00	0.00
75th Percentile	29.19	13.62	0.00	39.30	0.00	0.00	0.00	0.00
90th Percentile	26.40	8.78	0.00	27.67	0.00	0.00	0.00	0.00

<b>SERS 2025 Retirement Fund - Target</b>	●	28.81	16.25	2.16	51.33	-	-	1.45
Callan Tgt Dt Idx 2025	▲	32.68	15.64	1.99	42.07	4.03	1.90	0.68

# SERS 2025 Retirement Fund Period Ended March 31, 2022

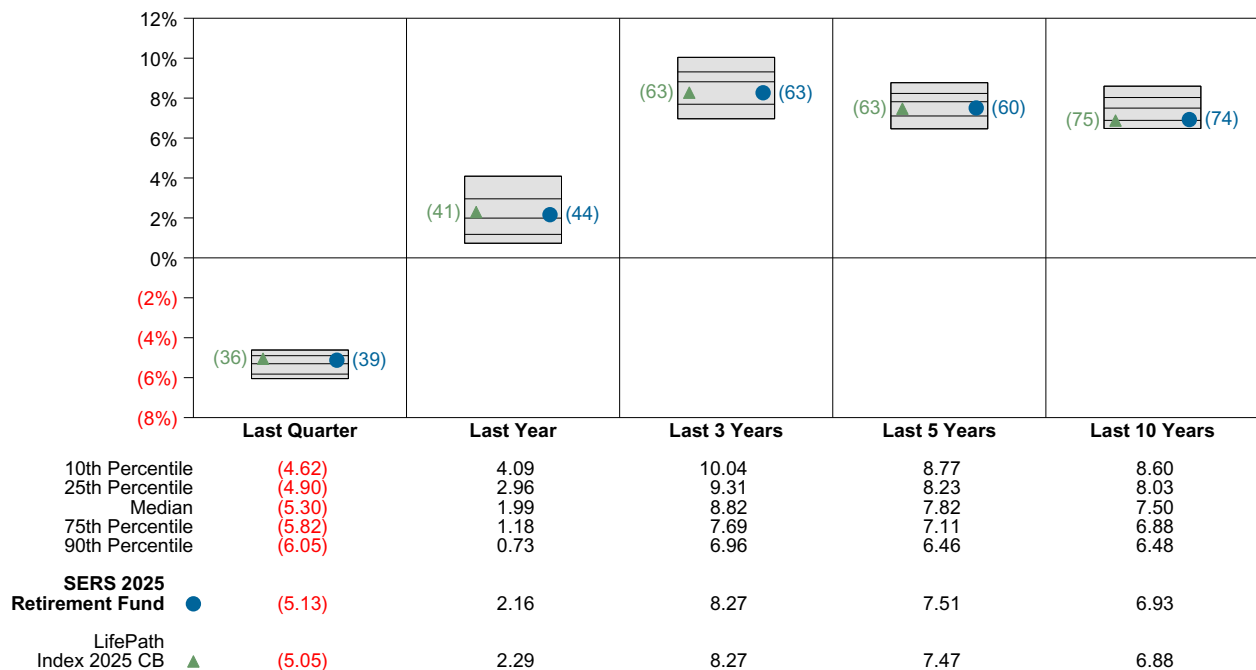
## Investment Philosophy

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.

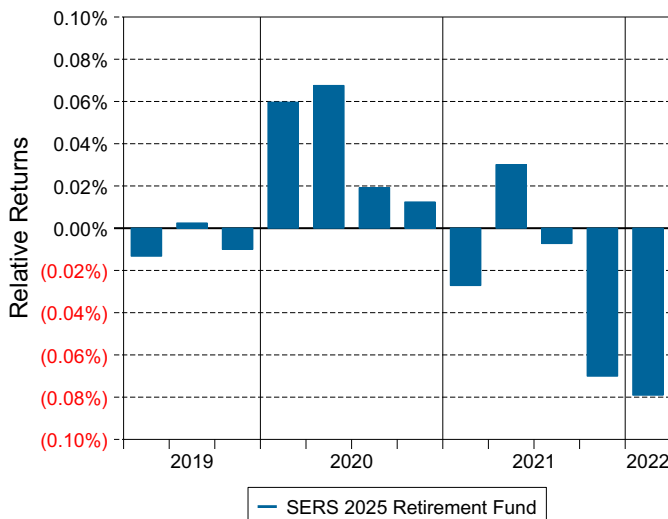
## Quarterly Summary and Highlights

- SERS 2025 Retirement Fund's portfolio posted a (5.13)% return for the quarter placing it in the 39 percentile of the Callan Target Date 2025 group for the quarter and in the 44 percentile for the last year.
- SERS 2025 Retirement Fund's portfolio underperformed the LifePath Index 2025 CB by 0.08% for the quarter and underperformed the LifePath Index 2025 CB for the year by 0.13%.

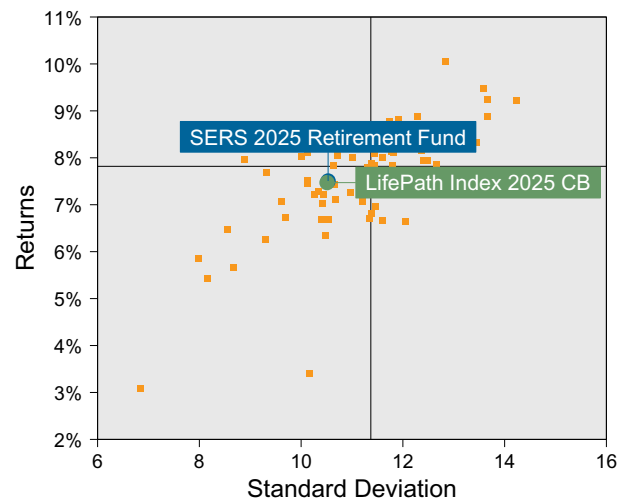
## Performance vs Callan Target Date 2025 (Net)



## Relative Return vs LifePath Index 2025 CB



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

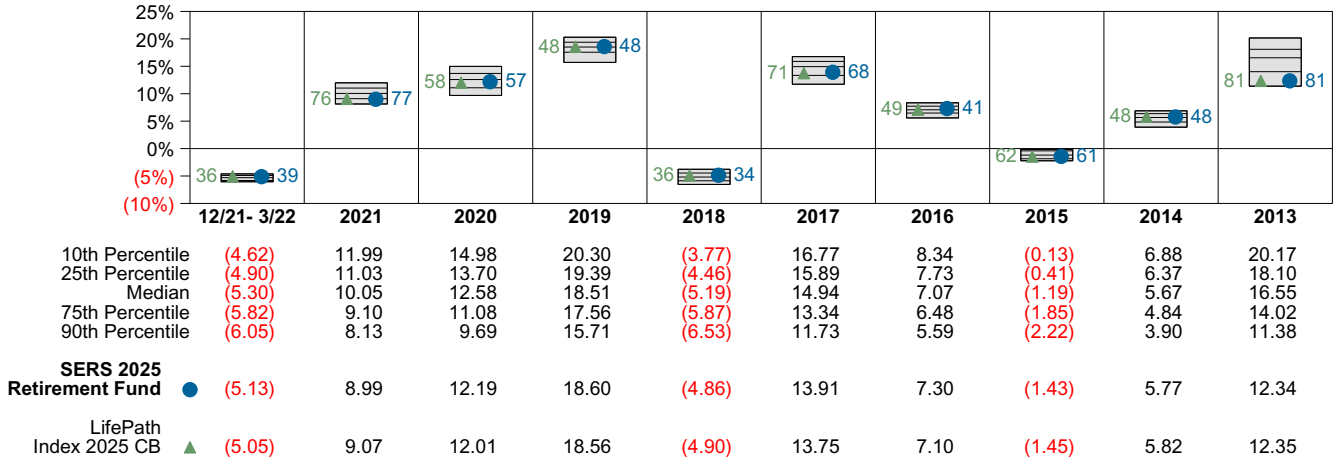


# SERS 2025 Retirement Fund Return Analysis Summary

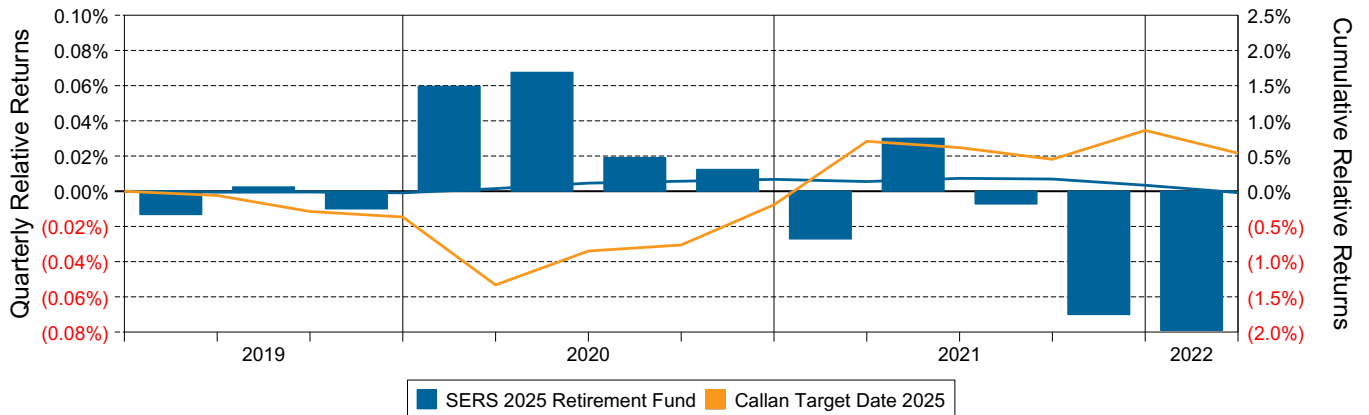
## Return Analysis

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.

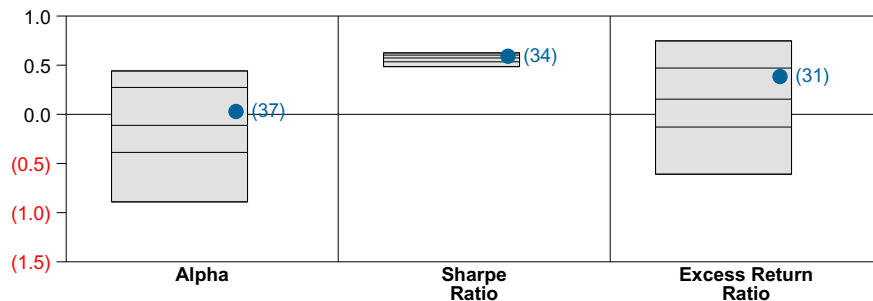
### Performance vs Callan Target Date 2025 (Net)



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



### Risk Adjusted Return Measures vs LifePath Index 2025 CB Rankings Against Callan Target Date 2025 (Net) Seven Years Ended March 31, 2022



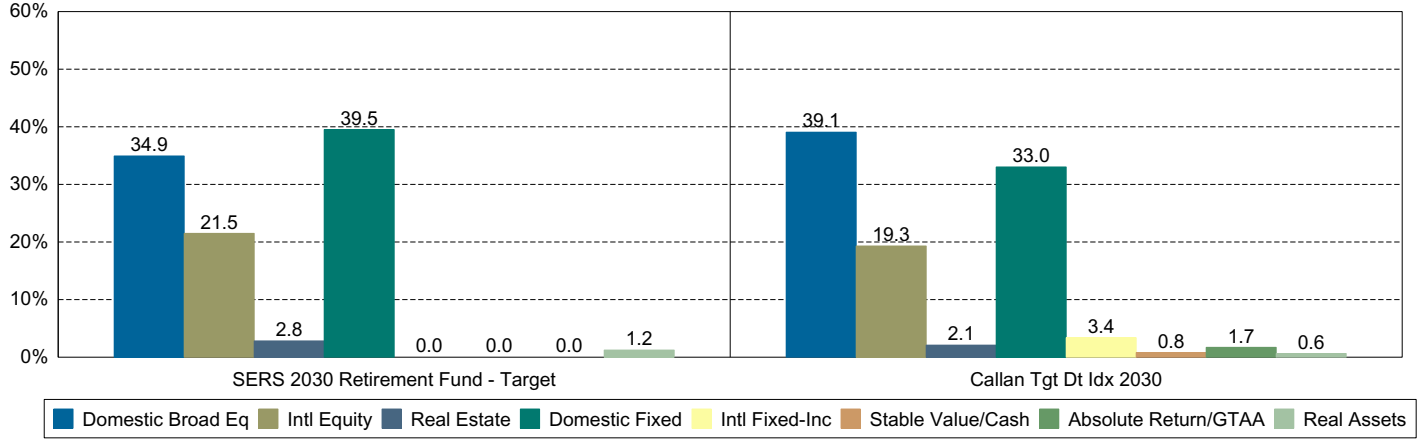
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.44	0.62	0.75
25th Percentile	0.27	0.60	0.47
Median	(0.11)	0.57	0.15
75th Percentile	(0.39)	0.53	(0.13)
90th Percentile	(0.89)	0.49	(0.61)
<b>SERS 2025 Retirement Fund</b>	● 0.03	0.59	0.38

# SERS 2030 Retirement Fund

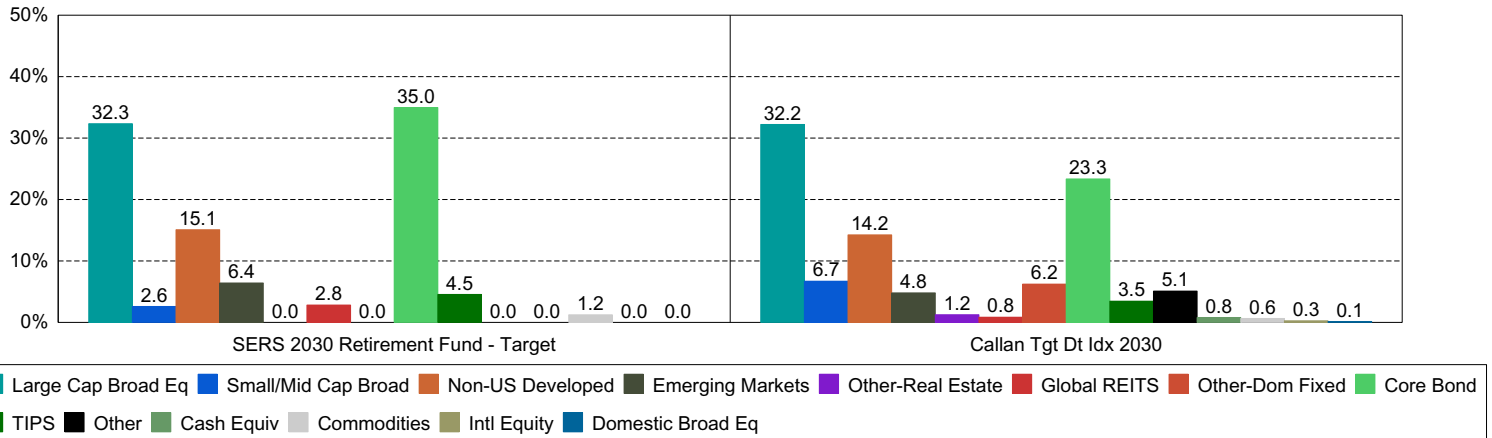
## Target Date Fund Asset Allocation as of March 31, 2022

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.

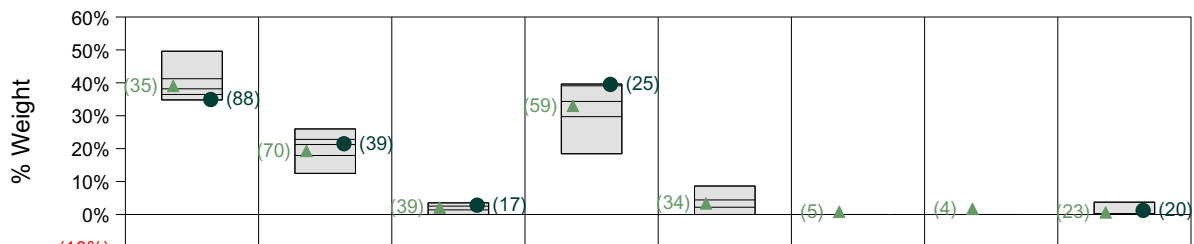
### Macro-Level Asset Allocation



### 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	49.61	26.00	3.54	39.62	8.65	0.00	0.00	3.74
25th Percentile	41.24	22.82	2.54	39.10	4.42	0.00	0.00	0.28
Median	38.18	21.26	1.40	34.35	2.20	0.00	0.00	0.00
75th Percentile	36.46	17.93	0.00	29.72	0.00	0.00	0.00	0.00
90th Percentile	34.80	12.49	0.00	18.45	0.00	0.00	0.00	0.00

<b>SERS 2030 Retirement Fund - Target</b>	●	34.93	21.49	2.82	39.52	-	-	1.24
Callan Tgt Dt Idx 2030	▲	39.06	19.30	2.09	33.02	3.38	0.80	1.71

# SERS 2030 Retirement Fund Period Ended March 31, 2022

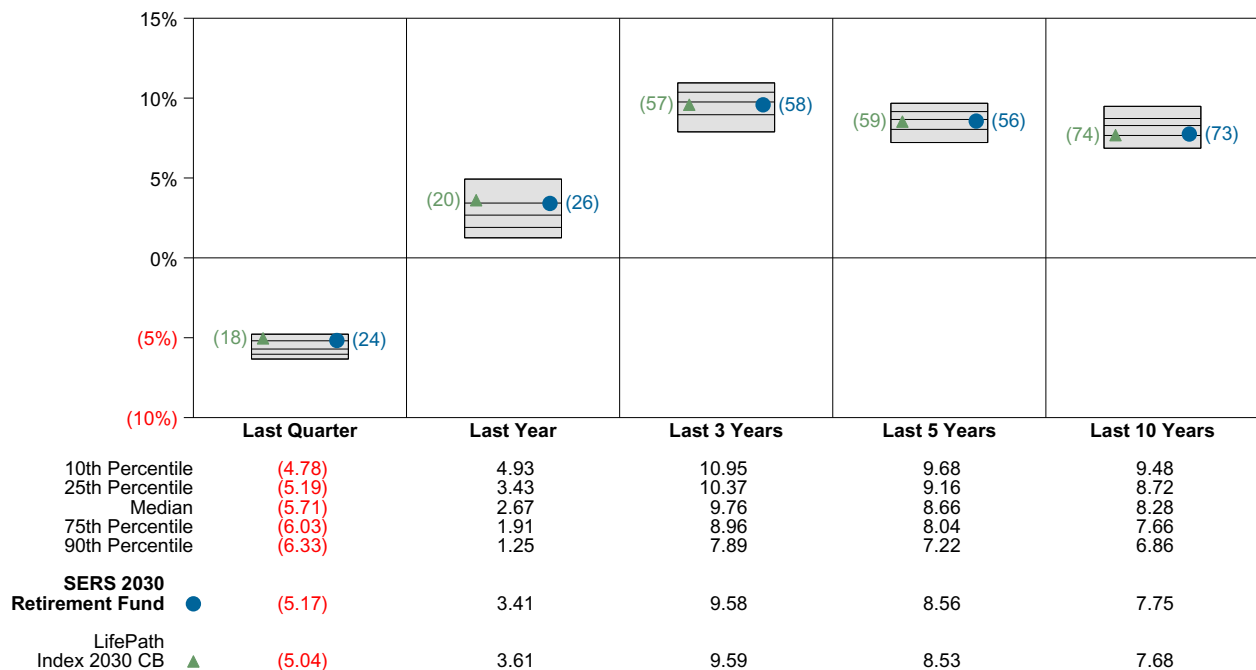
## Investment Philosophy

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.

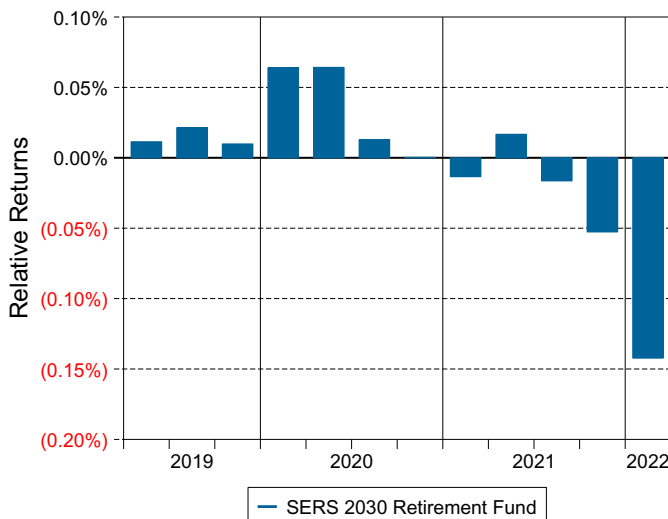
## Quarterly Summary and Highlights

- SERS 2030 Retirement Fund's portfolio posted a (5.17)% return for the quarter placing it in the 24 percentile of the Callan Target Date 2030 group for the quarter and in the 26 percentile for the last year.
- SERS 2030 Retirement Fund's portfolio underperformed the LifePath Index 2030 CB by 0.14% for the quarter and underperformed the LifePath Index 2030 CB for the year by 0.20%.

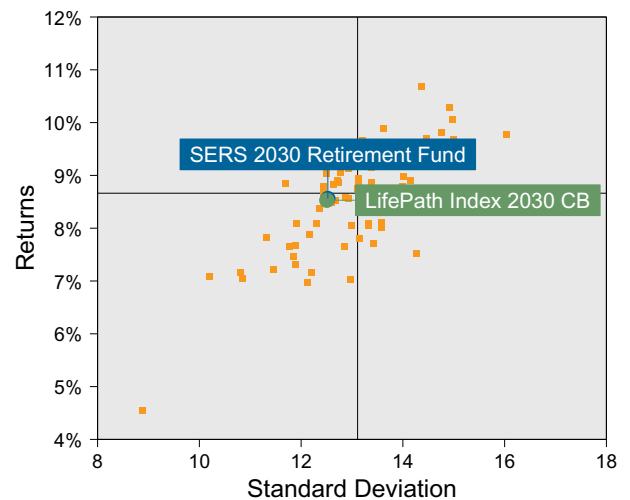
## Performance vs Callan Target Date 2030 (Net)



## Relative Return vs LifePath Index 2030 CB



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

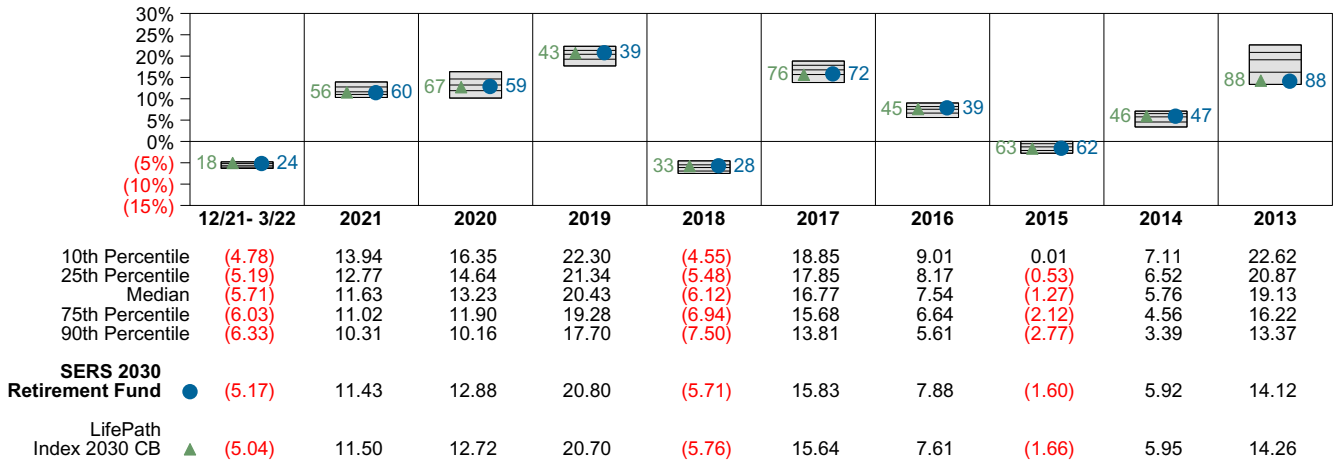


# SERS 2030 Retirement Fund Return Analysis Summary

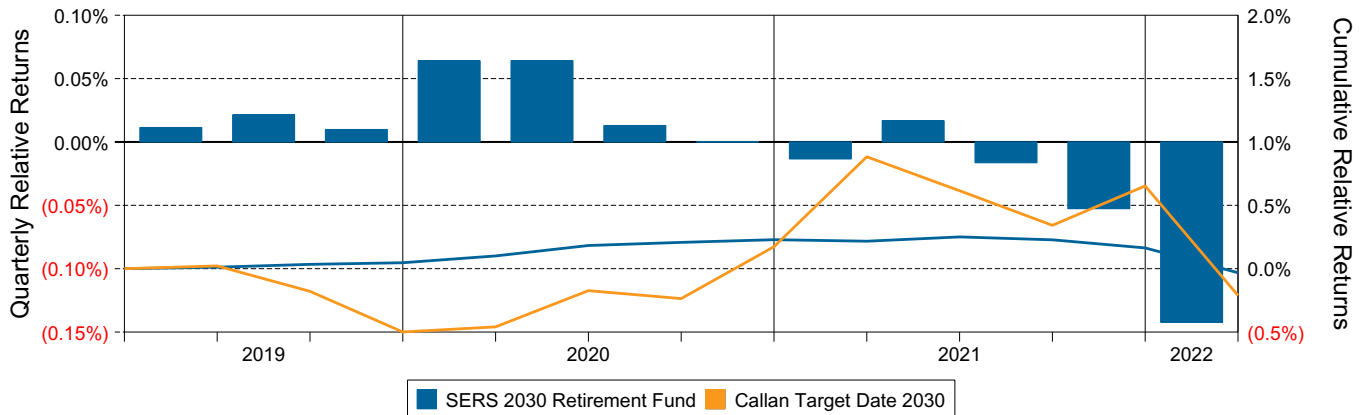
## Return Analysis

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.

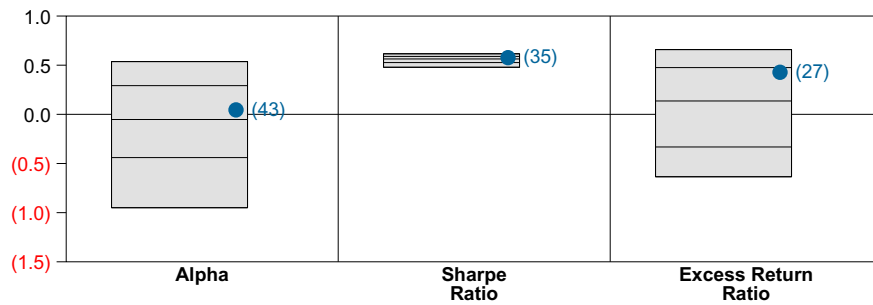
### Performance vs Callan Target Date 2030 (Net)



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



### Risk Adjusted Return Measures vs LifePath Index 2030 CB Rankings Against Callan Target Date 2030 (Net) Seven Years Ended March 31, 2022



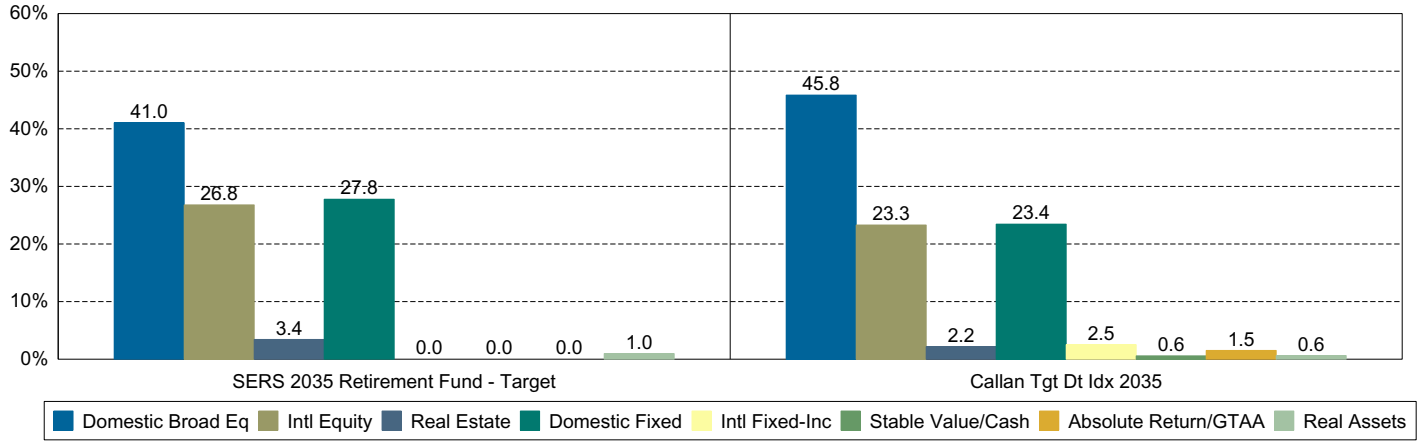
10th Percentile	0.54	0.62	0.66
25th Percentile	0.29	0.59	0.48
Median	(0.05)	0.56	0.14
75th Percentile	(0.44)	0.53	(0.33)
90th Percentile	(0.95)	0.48	(0.63)
<b>SERS 2030 Retirement Fund</b>	<b>0.05</b>	<b>0.58</b>	<b>0.43</b>



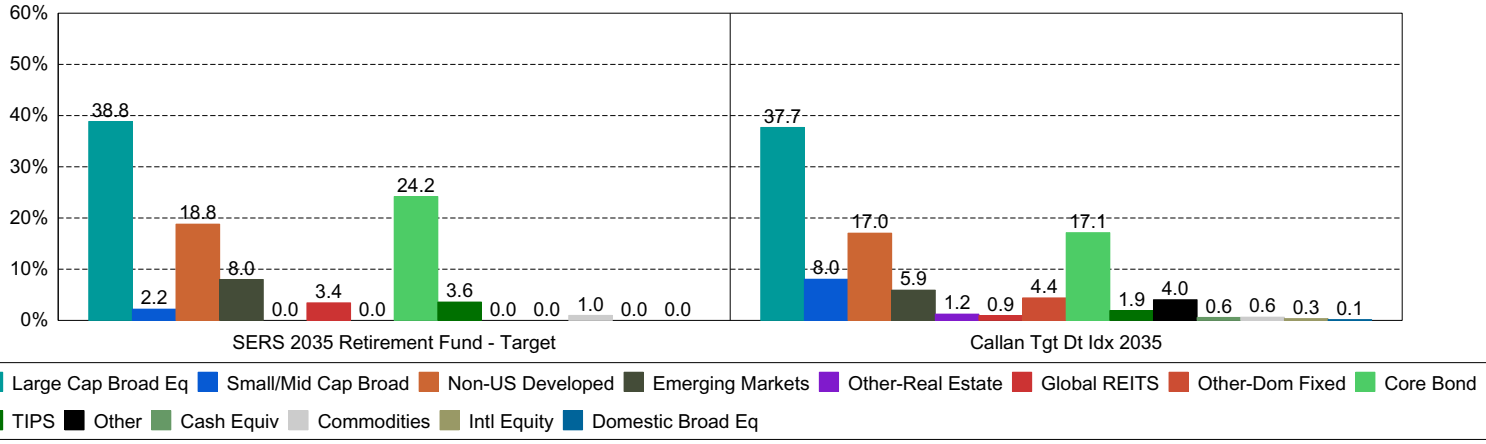
# SERS 2035 Retirement Fund Target Date Fund Asset Allocation as of March 31, 2022

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.

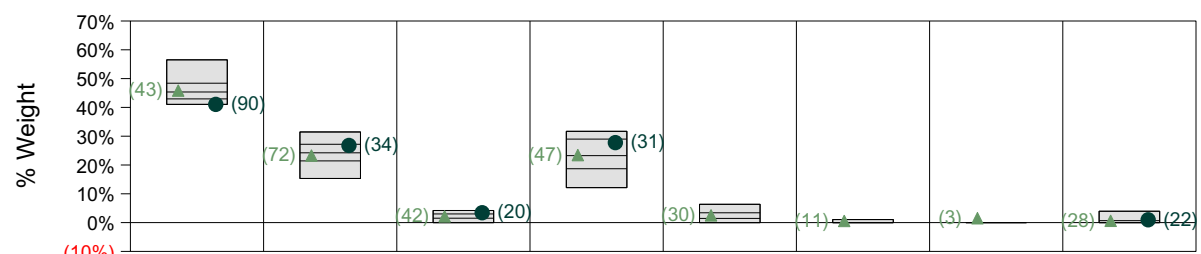
## Macro-Level Asset Allocation



## 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	56.52	31.47	4.20	31.70	6.35	1.06	0.00	3.94
25th Percentile	48.40	27.19	3.01	28.99	3.41	0.00	0.00	0.67
Median	45.35	24.23	1.53	23.25	1.45	0.00	0.00	0.00
75th Percentile	42.95	21.43	0.00	18.70	0.00	0.00	0.00	0.00
90th Percentile	41.04	15.32	0.00	12.14	0.00	0.00	0.00	0.00
<b>SERS 2035 Retirement Fund - Target</b>	● 41.04	26.79	3.43	27.77	-	-	-	0.97
Callan Tgt Dt Idx 2035	▲ 45.85	23.29	2.17	23.44	2.52	0.58	1.52	0.63

# SERS 2035 Retirement Fund Period Ended March 31, 2022

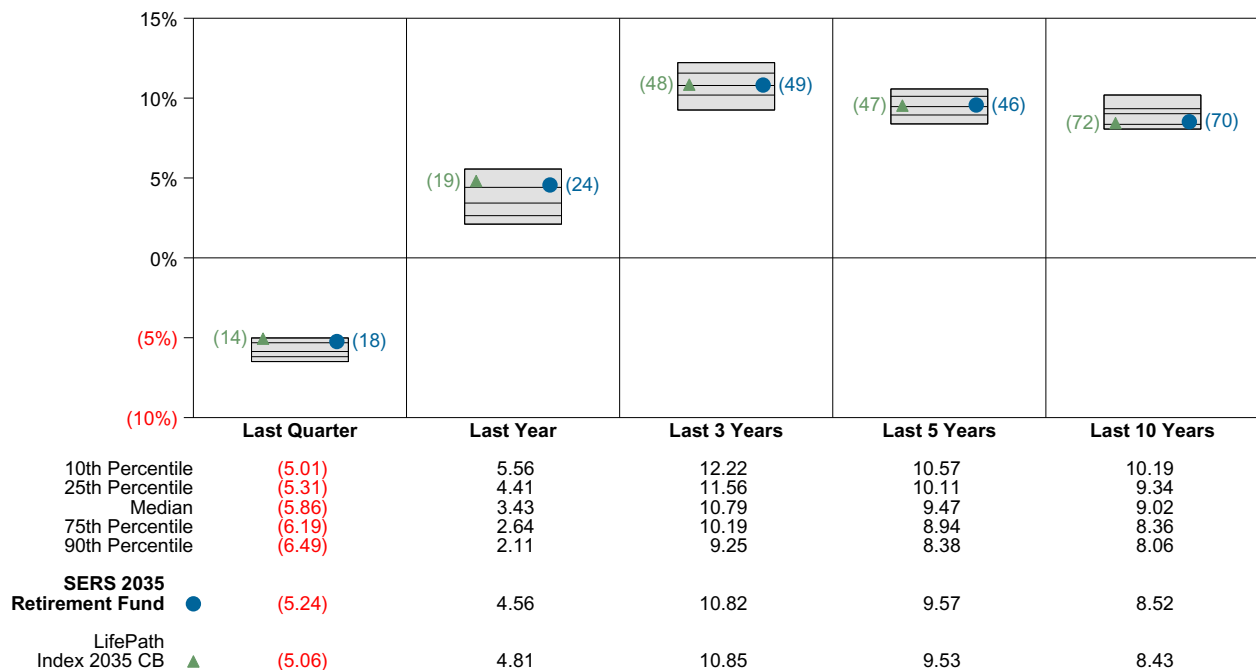
## Investment Philosophy

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.

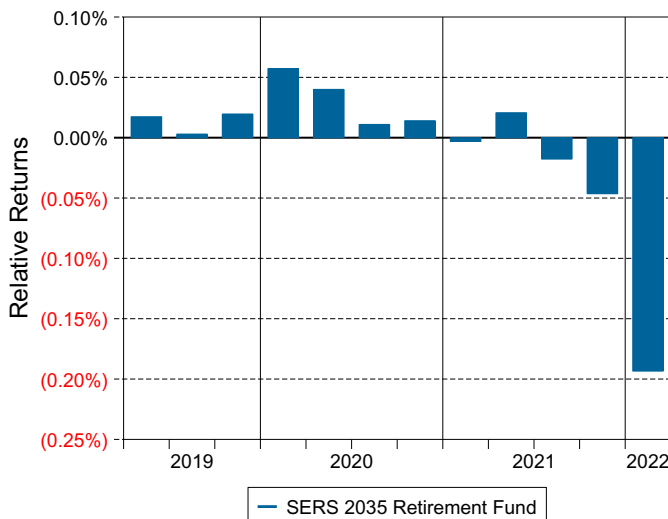
## Quarterly Summary and Highlights

- SERS 2035 Retirement Fund's portfolio posted a (5.24)% return for the quarter placing it in the 18 percentile of the Callan Target Date 2035 group for the quarter and in the 24 percentile for the last year.
- SERS 2035 Retirement Fund's portfolio underperformed the LifePath Index 2035 CB by 0.18% for the quarter and underperformed the LifePath Index 2035 CB for the year by 0.25%.

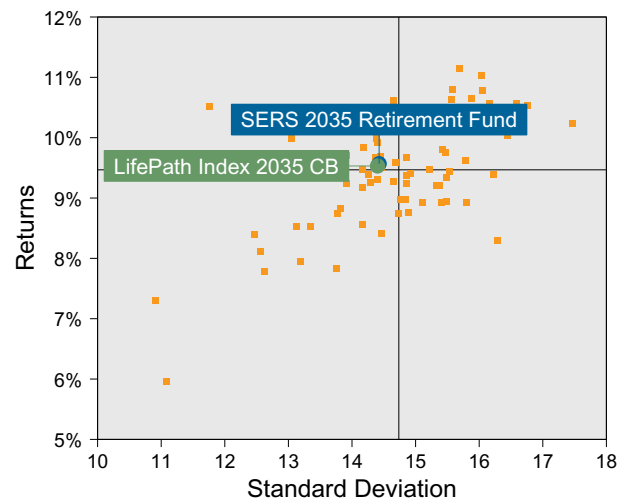
## Performance vs Callan Target Date 2035 (Net)



## Relative Return vs LifePath Index 2035 CB



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

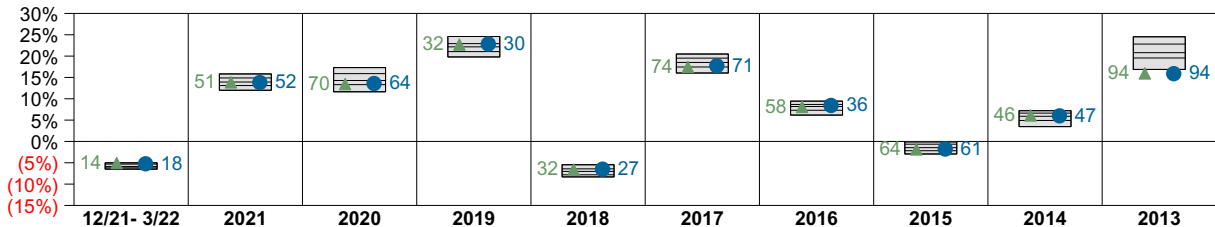


# SERS 2035 Retirement Fund Return Analysis Summary

## Return Analysis

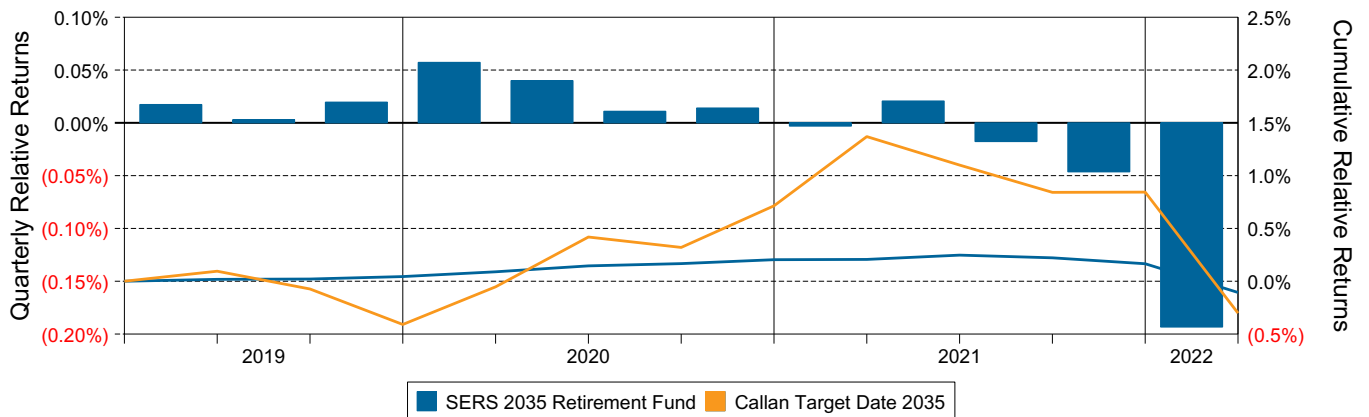
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

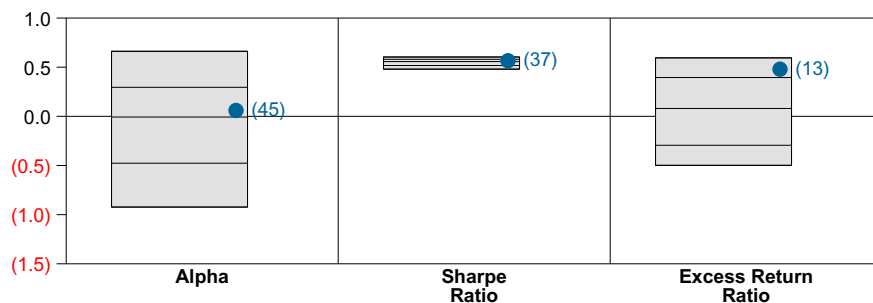


	12/21- 3/22	2021	2020	2019	2018	2017	2016	2015	2014	2013
10th Percentile	(5.01)	15.82	17.31	24.59	(5.46)	20.49	9.45	(0.10)	7.21	24.53
25th Percentile	(5.31)	14.88	15.89	22.92	(6.42)	19.53	8.67	(0.64)	6.63	22.82
Median	(5.86)	13.92	14.28	22.17	(7.03)	18.51	8.19	(1.46)	5.89	20.81
75th Percentile	(6.19)	13.10	13.31	21.05	(7.82)	17.45	7.30	(2.17)	4.91	19.56
90th Percentile	(6.49)	11.99	11.64	19.80	(8.31)	16.04	6.17	(2.95)	3.47	16.87
<b>SERS 2035 Retirement Fund</b>	● (5.24)	13.80	13.58	22.84	(6.50)	17.72	8.44	(1.78)	5.99	15.88
LifePath Index 2035 CB	▲ (5.06)	13.85	13.44	22.72	(6.58)	17.48	8.08	(1.86)	6.11	15.96

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



### Risk Adjusted Return Measures vs LifePath Index 2035 CB Rankings Against Callan Target Date 2035 (Net) Seven Years Ended March 31, 2022

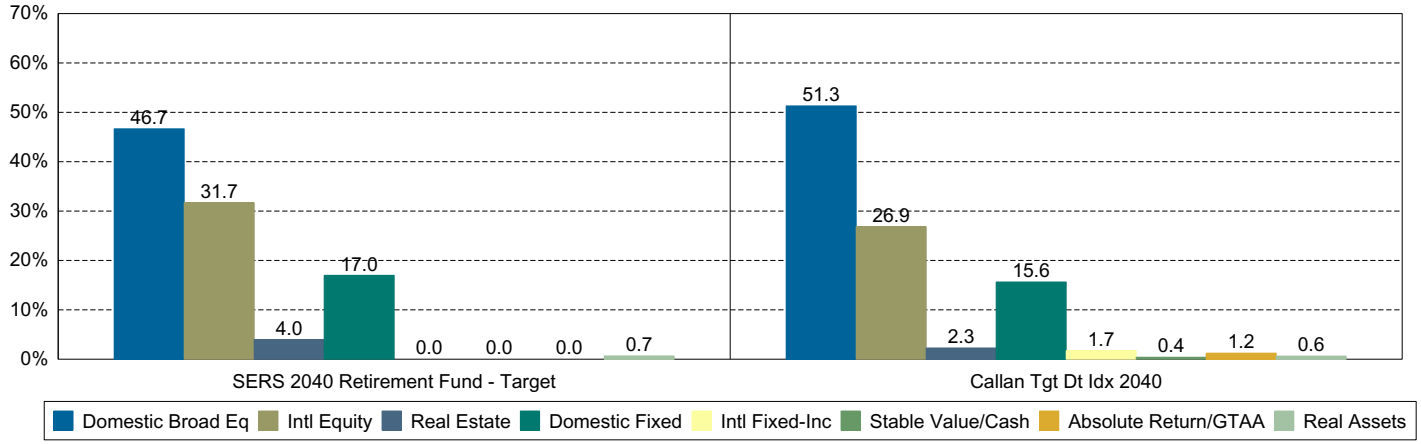


	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.66	0.60	0.60
25th Percentile	0.30	0.58	0.39
Median	(0.01)	0.56	0.08
75th Percentile	(0.48)	0.52	(0.29)
90th Percentile	(0.92)	0.48	(0.50)
<b>SERS 2035 Retirement Fund</b>	● 0.06	0.57	0.48

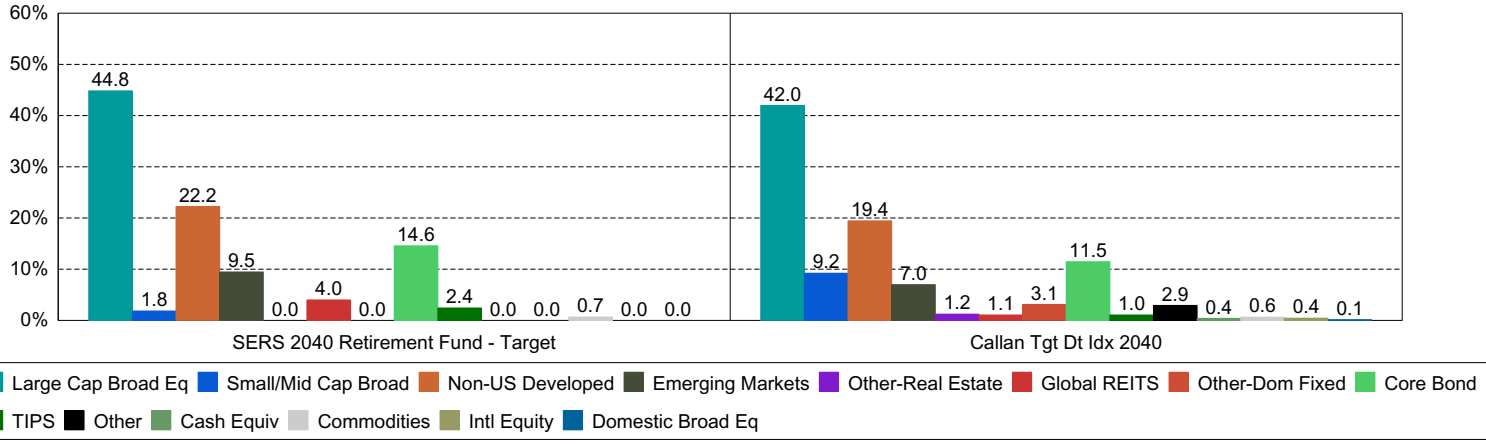
# SERS 2040 Retirement Fund Target Date Fund Asset Allocation as of March 31, 2022

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

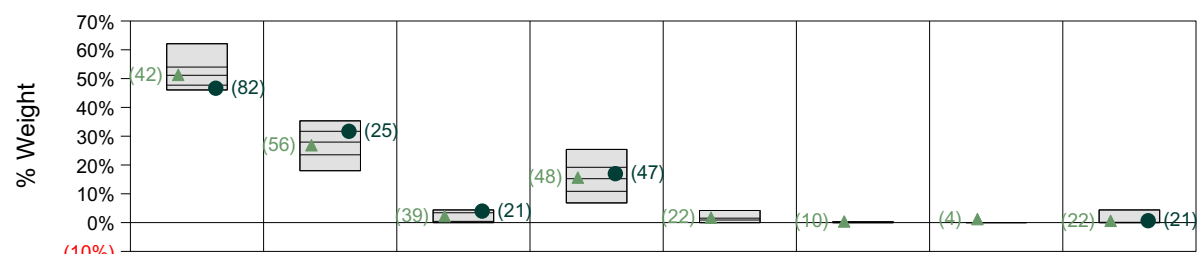
## Macro-Level Asset Allocation



## Micro-Level Asset Allocation



## Macro Asset Allocation Rankings vs. Callan Target Date 2040



	Domestic Broad Eq	Intl Equity	Real Estate	Domestic Fixed	Intl Fixed-Inc	Stable Value/Cash	Absolute Return/GTAA	Real Assets
10th Percentile	62.11	35.33	4.40	25.41	4.20	0.28	0.00	4.40
25th Percentile	54.00	31.71	3.42	19.20	1.54	0.00	0.00	0.11
Median	51.15	27.95	0.43	15.24	0.90	0.00	0.00	0.00
75th Percentile	47.72	23.54	0.00	10.87	0.00	0.00	0.00	0.00
90th Percentile	46.05	18.01	0.00	6.83	0.00	0.00	0.00	0.00
<b>SERS 2040 Retirement Fund - Target</b>	● 46.66	31.71	3.99	16.99	-	-	-	0.66
Callan Tgt Dt Idx 2040	▲ 51.30	26.86	2.27	15.63	1.70	0.39	1.22	0.63

# SERS 2040 Retirement Fund Period Ended March 31, 2022

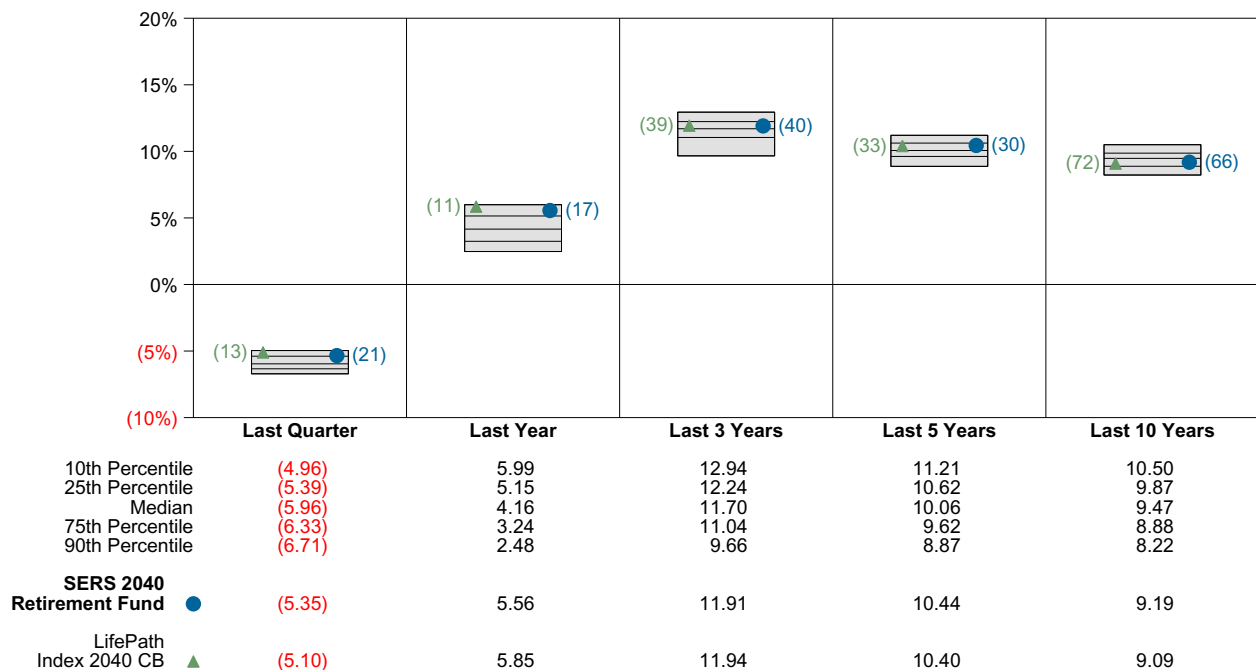
## Investment Philosophy

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.

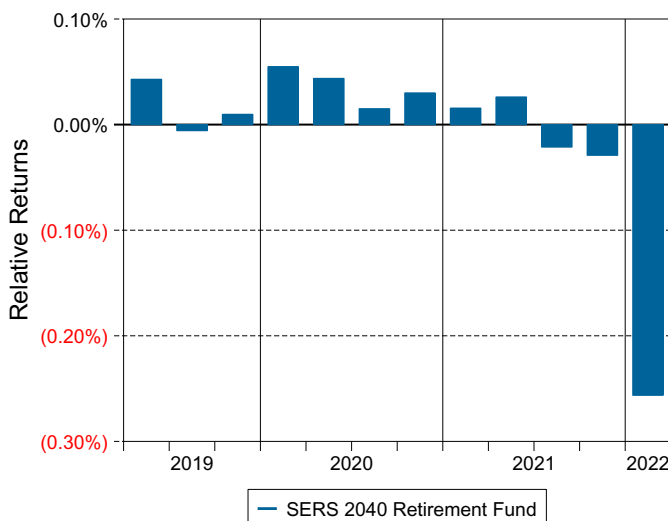
## Quarterly Summary and Highlights

- SERS 2040 Retirement Fund's portfolio posted a (5.35)% return for the quarter placing it in the 21 percentile of the Callan Target Date 2040 group for the quarter and in the 17 percentile for the last year.
- SERS 2040 Retirement Fund's portfolio underperformed the LifePath Index 2040 CB by 0.24% for the quarter and underperformed the LifePath Index 2040 CB for the year by 0.30%.

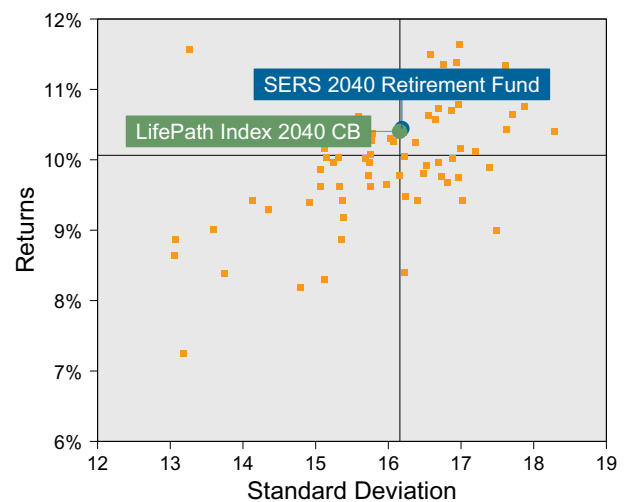
## Performance vs Callan Target Date 2040 (Net)



## Relative Return vs LifePath Index 2040 CB



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

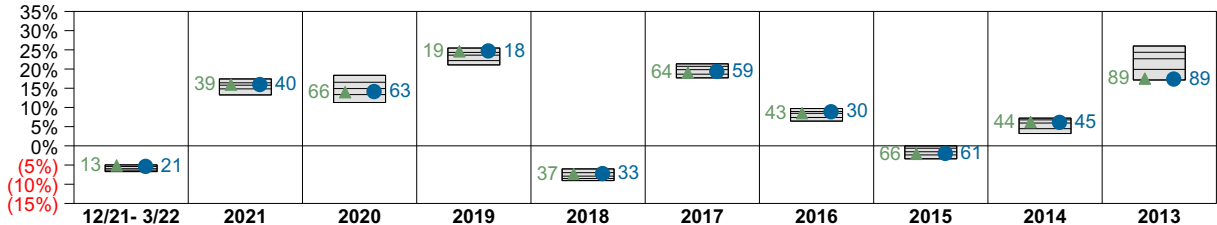


# SERS 2040 Retirement Fund Return Analysis Summary

## 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.

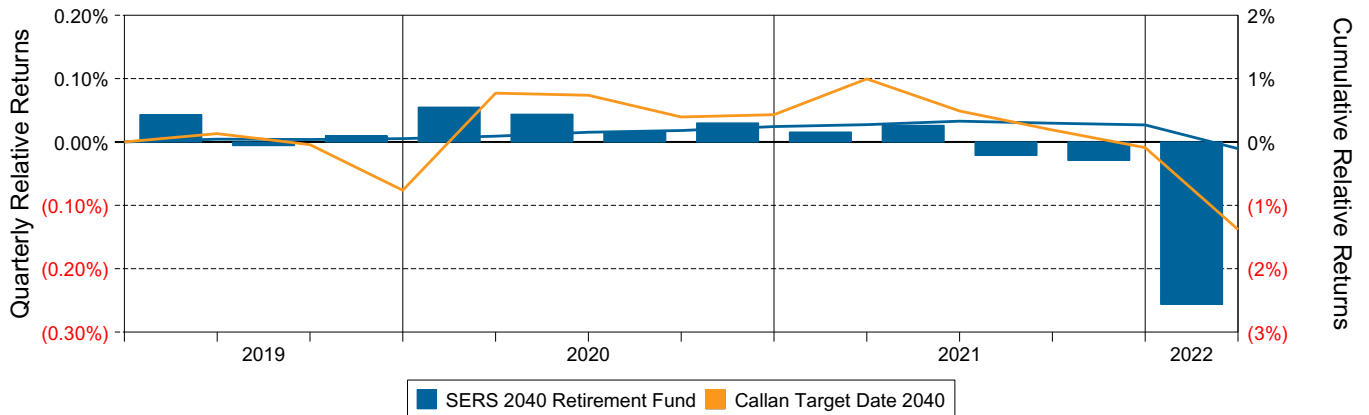
### Performance vs Callan Target Date 2040 (Net)



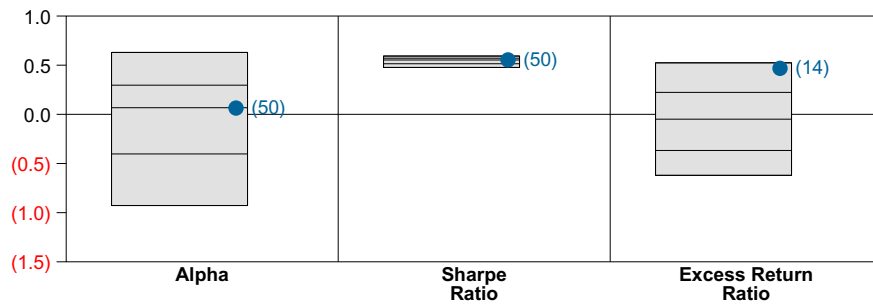
10th Percentile	(4.96)	17.43	18.37	25.47	(6.01)	21.35	9.71	(0.03)	7.22	26.00
25th Percentile	(5.39)	16.42	16.56	24.33	(6.99)	20.71	8.94	(0.62)	6.76	24.36
Median	(5.96)	15.79	14.91	23.62	(7.89)	19.84	8.46	(1.54)	5.94	22.67
75th Percentile	(6.33)	14.83	13.35	22.20	(8.52)	18.66	7.38	(2.36)	4.47	19.91
90th Percentile	(6.71)	13.26	11.29	21.07	(9.05)	17.70	6.44	(3.38)	3.21	17.15

Period	SERS 2040 Retirement Fund	LifePath Index 2040 CB
12/21- 3/22	(5.35)	(5.10)
2021	15.96	15.97
2020	14.14	13.98
2019	24.71	24.62
2018	(7.22)	(7.33)
2017	19.38	19.09
2016	8.88	8.51
2015	(1.98)	(2.08)
2014	6.12	6.21
2013	17.39	17.52

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



### Risk Adjusted Return Measures vs LifePath Index 2040 CB Rankings Against Callan Target Date 2040 (Net) Seven Years Ended March 31, 2022



10th Percentile	0.63	0.59	0.52
25th Percentile	0.30	0.57	0.22
Median	0.07	0.55	(0.05)
75th Percentile	(0.40)	0.51	(0.37)
90th Percentile	(0.93)	0.48	(0.62)

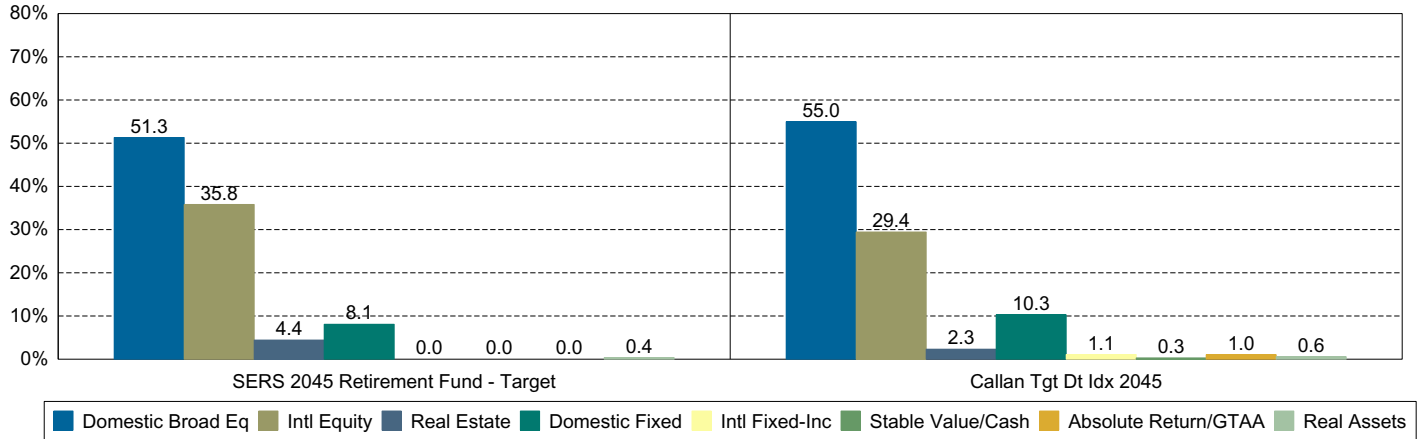
SERS 2040 Retirement Fund	0.06	0.55	0.47
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# SERS 2045 Retirement Fund

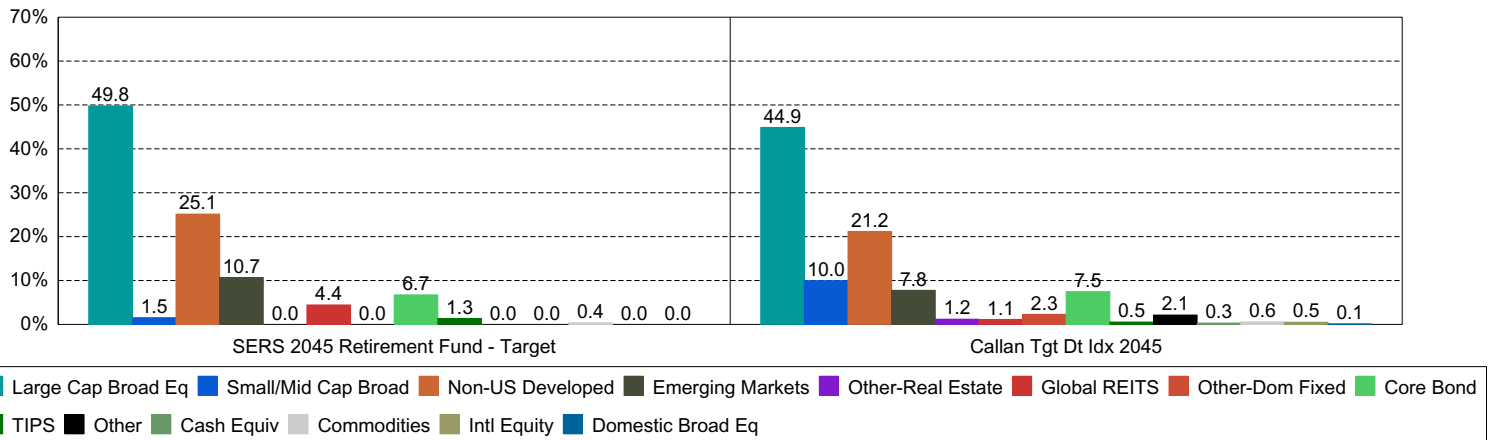
## Target Date Fund Asset Allocation as of March 31, 2022

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

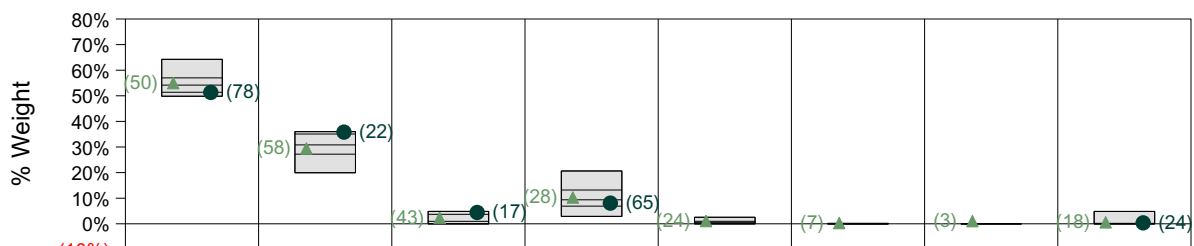
### Macro-Level Asset Allocation



### Micro-Level Asset Allocation



### Macro Asset Allocation Rankings vs. Callan Target Date 2045



	Domestic Broad Eq	Intl Equity	Real Estate	Domestic Fixed	Intl Fixed-Inc	Stable Value/Cash	Absolute Return/GTAA	Real Assets
10th Percentile	64.24	36.00	4.84	20.64	2.56	0.17	0.00	4.83
25th Percentile	57.00	35.07	3.70	13.20	0.98	0.00	0.00	0.18
Median	54.17	30.82	0.96	9.38	0.58	0.00	0.00	0.00
75th Percentile	51.39	27.20	0.00	6.90	0.00	0.00	0.00	0.00
90th Percentile	49.82	19.94	0.00	2.90	0.00	0.00	0.00	0.00

<b>SERS 2045 Retirement Fund - Target</b>	●	51.31	35.81	4.43	8.08	-	-	-	0.37
Callan Tgt Dt Idx 2045	▲	54.96	29.44	2.31	10.28	1.09	0.29	1.04	0.58

# SERS 2045 Retirement Fund Period Ended March 31, 2022

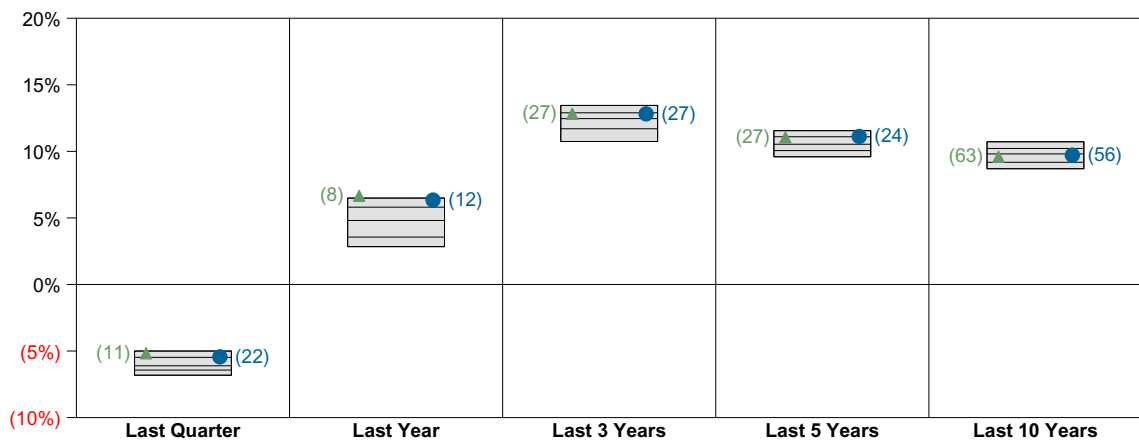
## Investment Philosophy

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

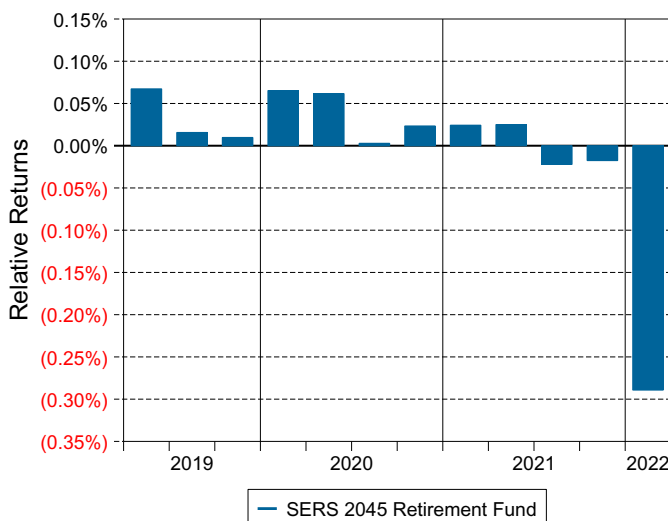
- SERS 2045 Retirement Fund's portfolio posted a (5.44)% return for the quarter placing it in the 22 percentile of the Callan Target Date 2045 group for the quarter and in the 12 percentile for the last year.
- SERS 2045 Retirement Fund's portfolio underperformed the LifePath Index 2045 CB by 0.27% for the quarter and underperformed the LifePath Index 2045 CB for the year by 0.32%.

## Performance vs Callan Target Date 2045 (Net)

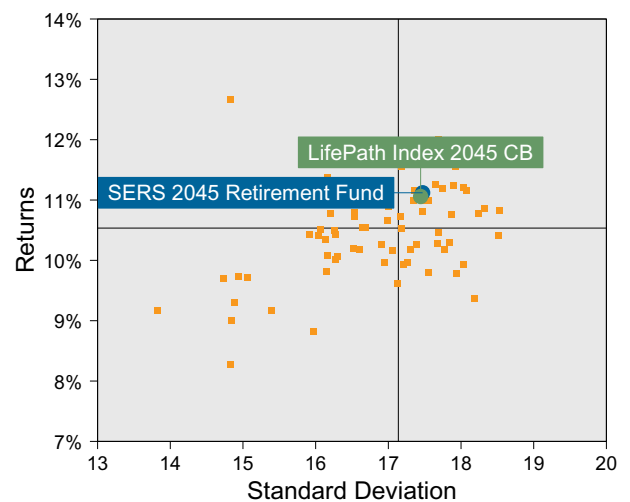


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	(5.00)	6.49	13.45	11.56	10.72
25th Percentile	(5.47)	5.81	12.90	11.10	10.22
Median	(6.11)	4.81	12.46	10.53	9.81
75th Percentile	(6.43)	3.56	11.70	10.06	9.18
90th Percentile	(6.82)	2.84	10.74	9.59	8.70
<b>SERS 2045 Retirement Fund</b>	<b>(5.44)</b>	<b>6.34</b>	<b>12.82</b>	<b>11.12</b>	<b>9.71</b>
LifePath Index 2045 CB	(5.16)	6.67	12.83	11.06	9.61

## Relative Return vs LifePath Index 2045 CB



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



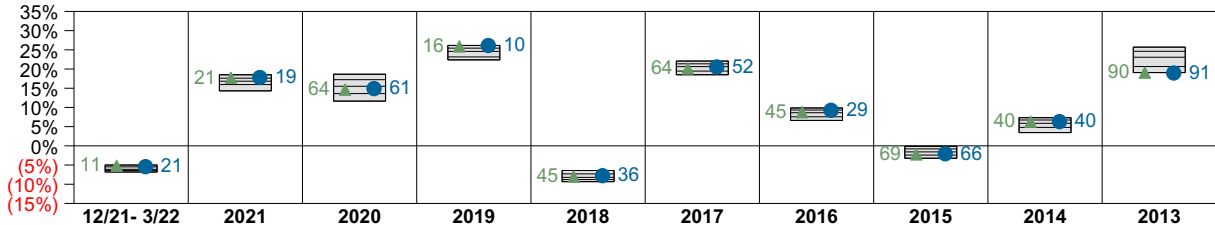


# SERS 2045 Retirement Fund Return Analysis Summary

## Return Analysis

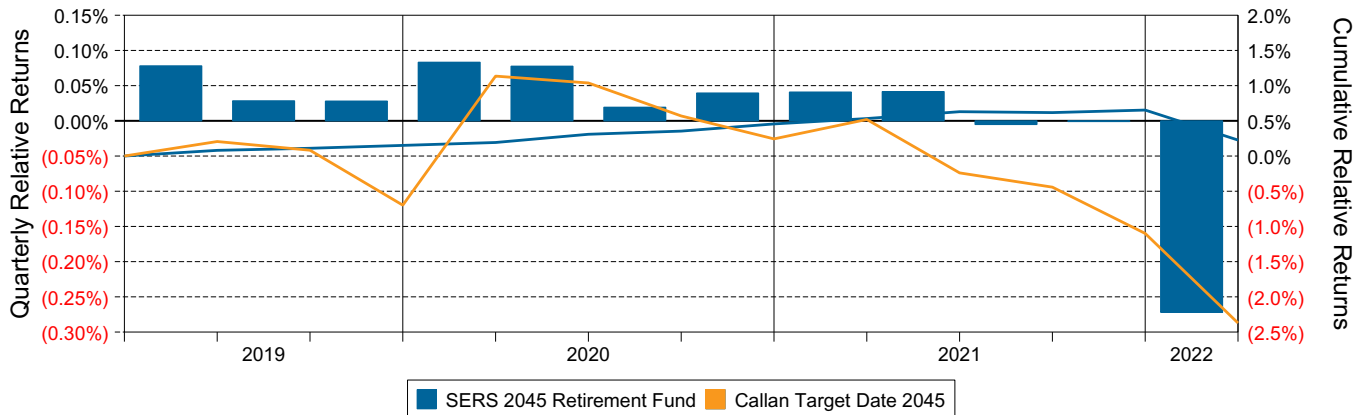
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

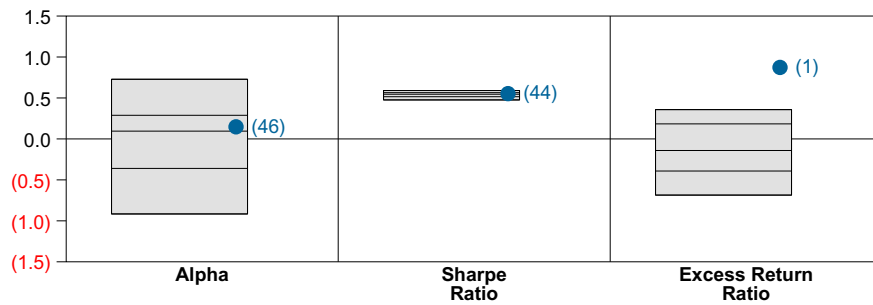


10th Percentile	(5.00)	18.51	18.65	26.14	(6.43)	22.08	9.86	(0.12)	7.33	25.70
25th Percentile	(5.47)	17.61	17.23	25.44	(7.30)	21.36	9.32	(0.79)	6.73	24.63
Median	(6.11)	16.83	15.52	24.60	(8.21)	20.63	8.63	(1.57)	5.87	23.08
75th Percentile	(6.43)	15.96	13.61	23.16	(8.78)	19.47	7.56	(2.41)	4.80	20.66
90th Percentile	(6.82)	14.32	11.64	22.38	(9.33)	18.51	6.62	(3.23)	3.45	19.08
<b>SERS 2045 Retirement Fund</b>	<b>(5.42)</b>	<b>17.79</b>	<b>14.90</b>	<b>26.12</b>	<b>(7.78)</b>	<b>20.54</b>	<b>9.25</b>	<b>(2.07)</b>	<b>6.30</b>	<b>18.97</b>
LifePath Index 2045 CB	(5.16)	17.70	14.65	25.90	(7.99)	20.15	8.77	(2.22)	6.31	19.09

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



### Risk Adjusted Return Measures vs LifePath Index 2045 CB Rankings Against Callan Target Date 2045 (Net) Seven Years Ended March 31, 2022



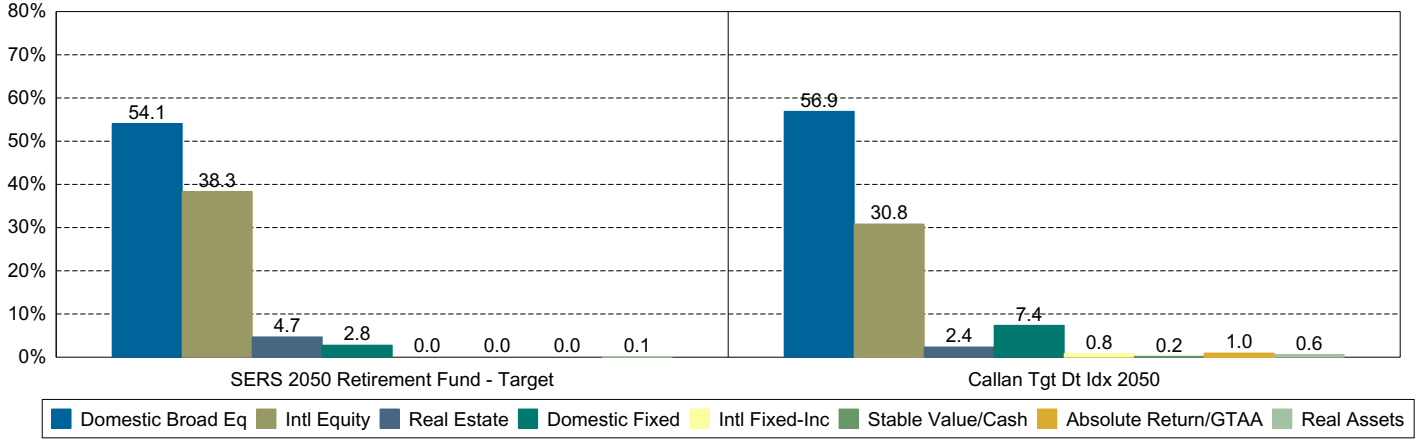
10th Percentile	0.73	0.59	0.36
25th Percentile	0.29	0.56	0.18
Median	0.10	0.55	(0.14)
75th Percentile	(0.36)	0.52	(0.39)
90th Percentile	(0.92)	0.48	(0.69)
<b>SERS 2045 Retirement Fund</b>	<b>0.15</b>	<b>0.55</b>	<b>0.87</b>

# SERS 2050 Retirement Fund

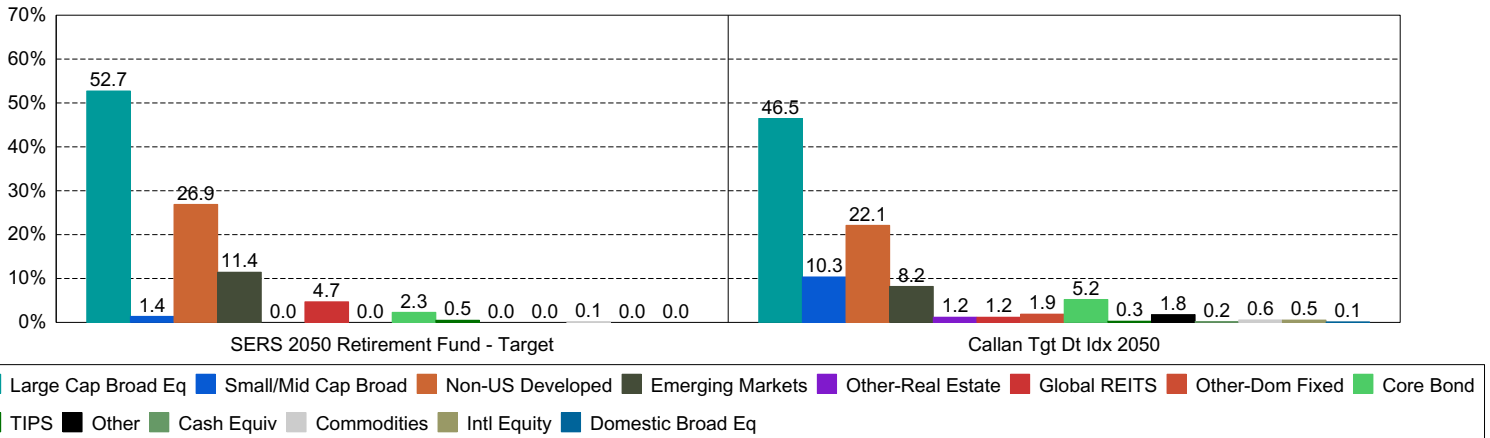
## Target Date Fund Asset Allocation as of March 31, 2022

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.

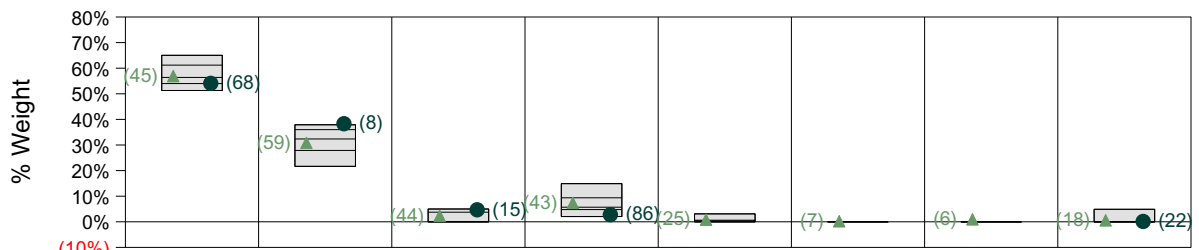
### Macro-Level Asset Allocation



### 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	65.04	37.91	5.00	14.90	3.10	0.00	0.00	4.89
25th Percentile	61.20	36.00	3.75	9.38	0.62	0.00	0.00	0.00
Median	56.40	32.35	0.06	5.70	0.35	0.00	0.00	0.00
75th Percentile	54.00	27.87	0.00	4.78	0.00	0.00	0.00	0.00
90th Percentile	51.29	21.66	0.00	2.05	0.00	0.00	0.00	0.00

<b>SERS 2050 Retirement Fund - Target</b>	●	54.09	38.31	4.69	2.78	-	-	0.13
Callan Tgt Dt Idx 2050	▲	56.90	30.83	2.35	7.37	0.82	0.95	0.56

# SERS 2050 Retirement Fund Period Ended March 31, 2022

## 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

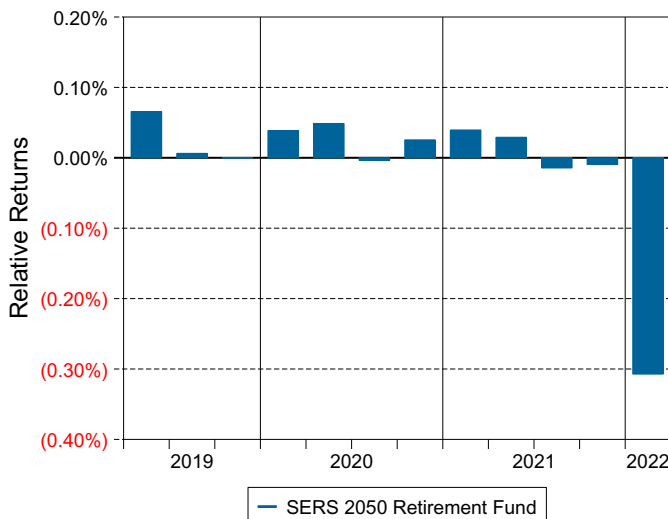
- SERS 2050 Retirement Fund's portfolio posted a (5.52)% return for the quarter placing it in the 27 percentile of the Callan Target Date 2050 group for the quarter and in the 10 percentile for the last year.
- SERS 2050 Retirement Fund's portfolio underperformed the LifePath Index 2050 CB by 0.29% for the quarter and underperformed the LifePath Index 2050 CB for the year by 0.32%.

## Performance vs Callan Target Date 2050 (Net)

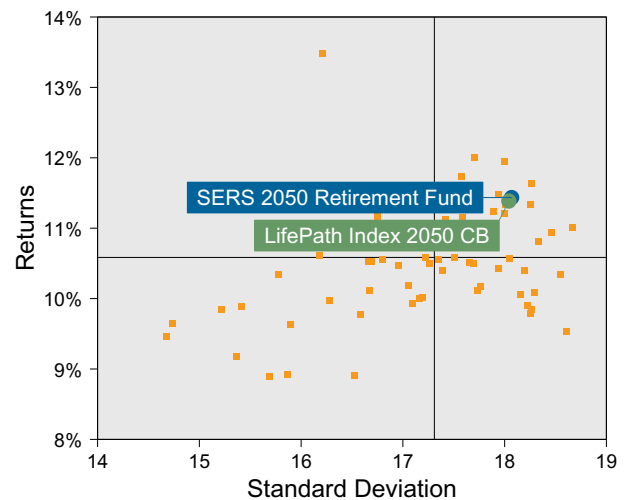


10th Percentile	(5.01)	6.79	13.45	11.49	10.76
25th Percentile	(5.50)	5.80	12.92	11.12	10.29
Median	(6.13)	4.96	12.53	10.58	9.90
75th Percentile	(6.50)	3.64	11.88	10.08	9.31
90th Percentile	(6.92)	2.98	10.98	9.65	8.89
<b>SERS 2050 Retirement Fund</b>	<b>(5.52)</b>	6.73	13.27	11.44	10.02
LifePath Index 2050 CB	(5.23)	7.05	13.30	11.39	9.91

## Relative Return vs LifePath Index 2050 CB



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

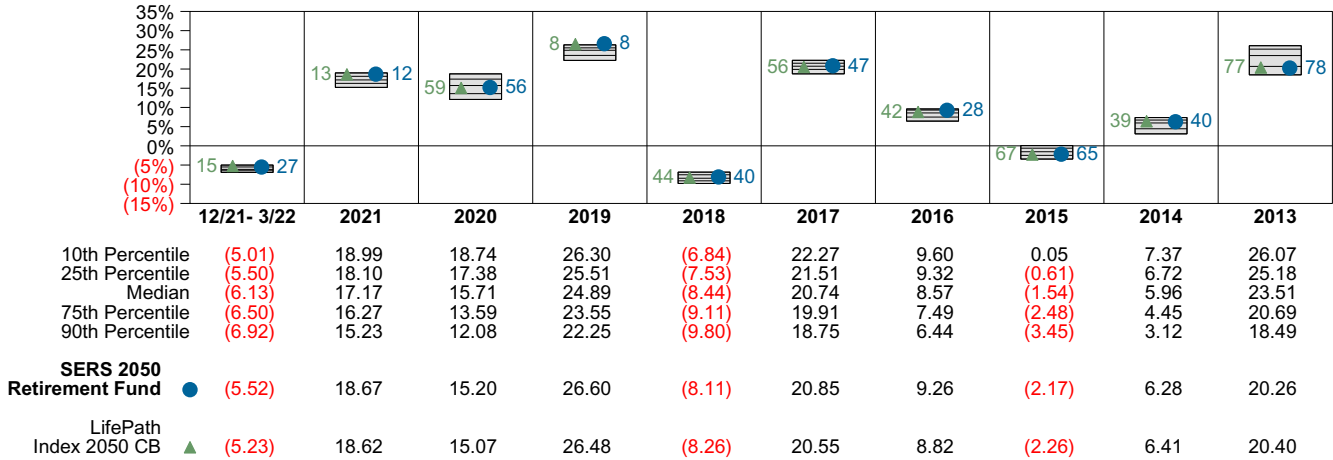


# SERS 2050 Retirement Fund Return Analysis Summary

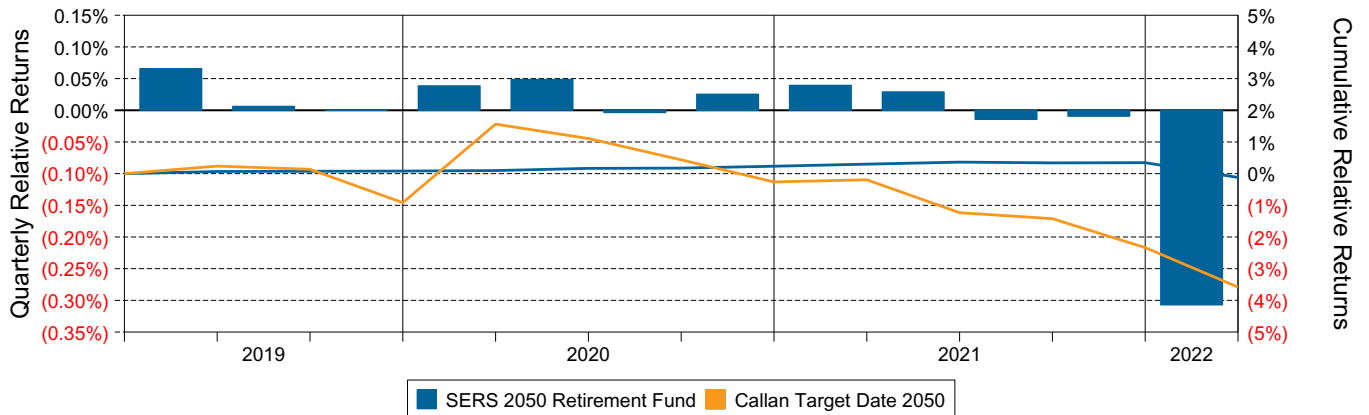
## Return Analysis

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.

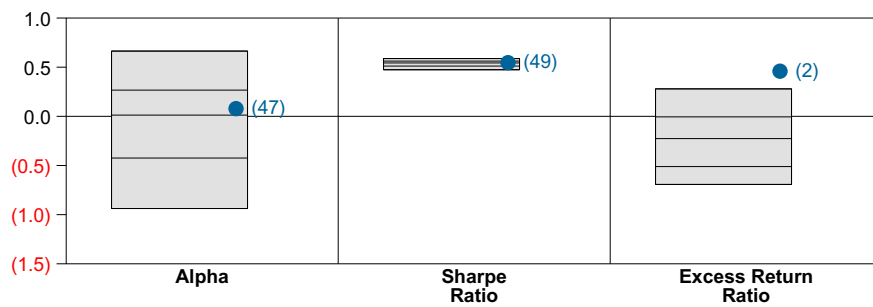
### Performance vs Callan Target Date 2050 (Net)



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



### Risk Adjusted Return Measures vs LifePath Index 2050 CB Rankings Against Callan Target Date 2050 (Net) Seven Years Ended March 31, 2022

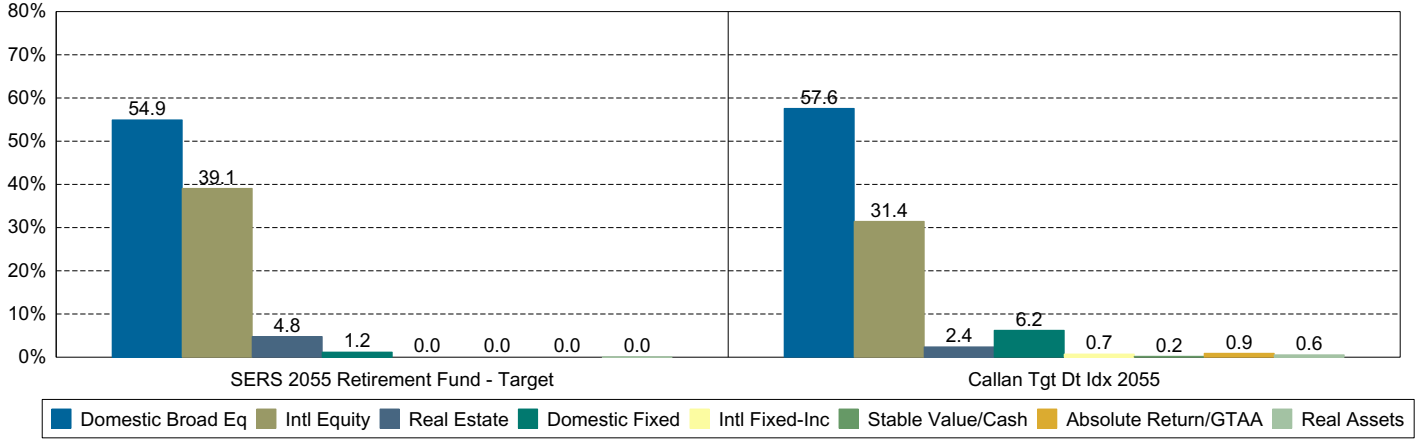


# SERS 2055 Retirement Fund

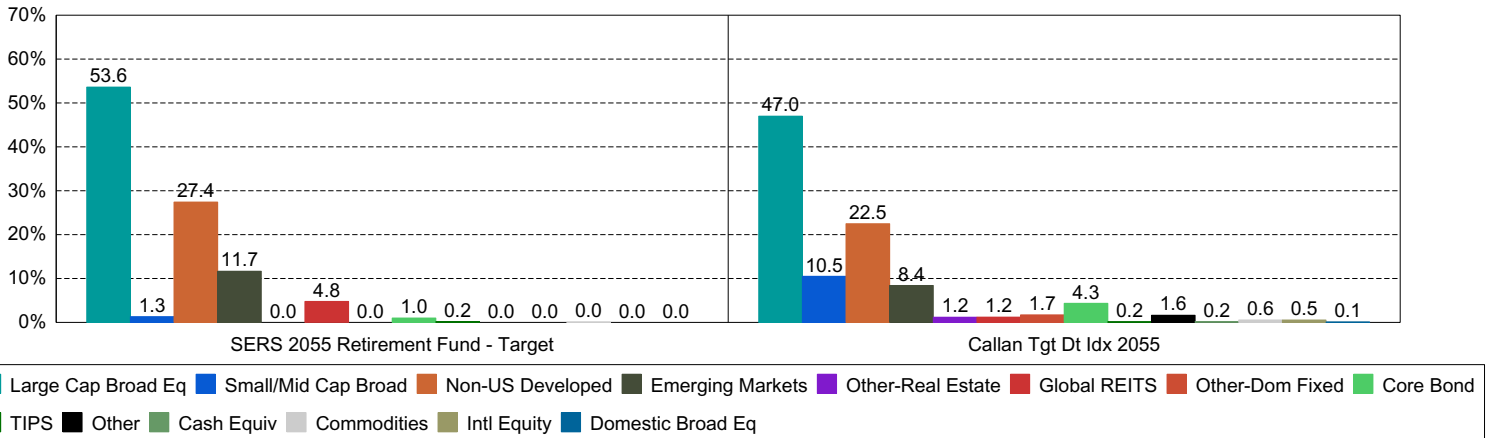
## Target Date Fund Asset Allocation as of March 31, 2022

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.

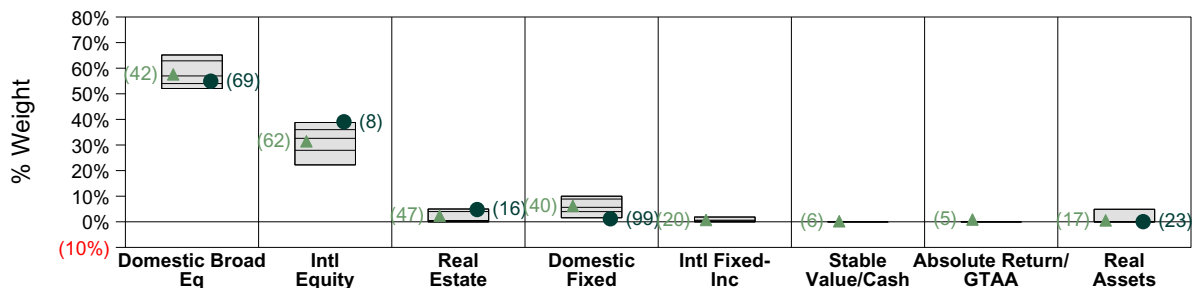
### Macro-Level Asset Allocation



### 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	38.80	5.00	10.00	1.86	0.00	0.00	4.90
25th Percentile	62.88	36.00	4.00	8.89	0.62	0.00	0.00	0.01
Median	56.98	32.60	0.50	5.65	0.35	0.00	0.00	0.00
75th Percentile	54.00	27.93	0.00	3.98	0.00	0.00	0.00	0.00
90th Percentile	52.07	22.23	0.00	1.58	0.00	0.00	0.00	0.00
<b>SERS 2055 Retirement Fund - Target</b>	● 54.93	39.07	4.78	1.18	-	-	-	0.05
Callan Tgt Dt Idx 2055	▲ 57.58	31.44	2.38	6.22	0.72	0.20	0.90	0.55

# SERS 2055 Retirement Fund Period Ended March 31, 2022

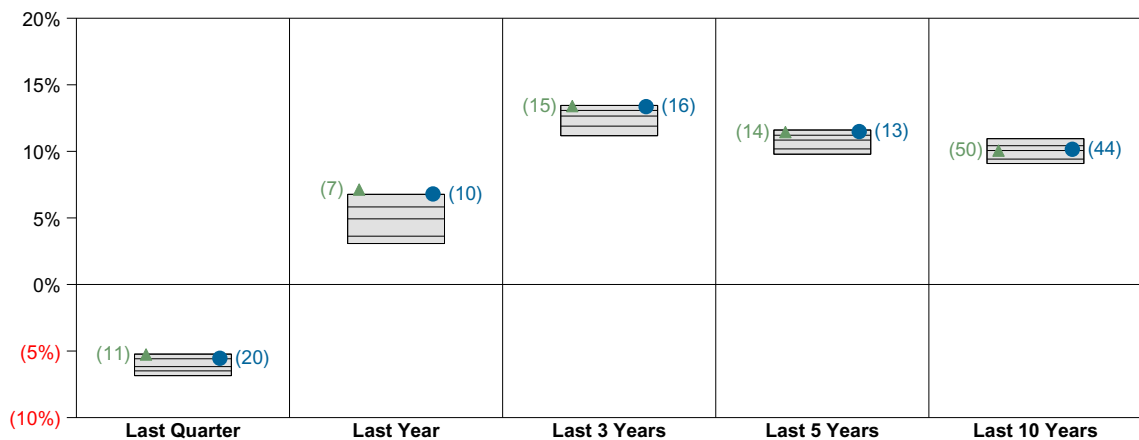
## Investment Philosophy

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

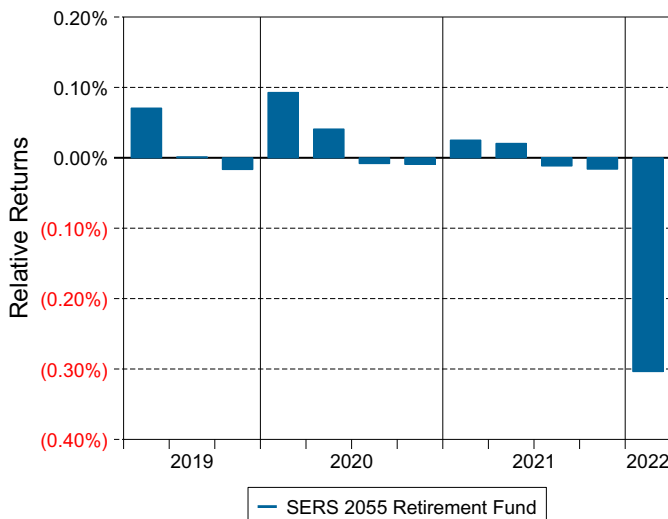
- SERS 2055 Retirement Fund's portfolio posted a (5.54)% return for the quarter placing it in the 20 percentile of the Callan Target Date 2055 group for the quarter and in the 10 percentile for the last year.
- SERS 2055 Retirement Fund's portfolio underperformed the LifePath Index 2055 CB by 0.29% for the quarter and underperformed the LifePath Index 2055 CB for the year by 0.33%.

## Performance vs Callan Target Date 2055 (Net)

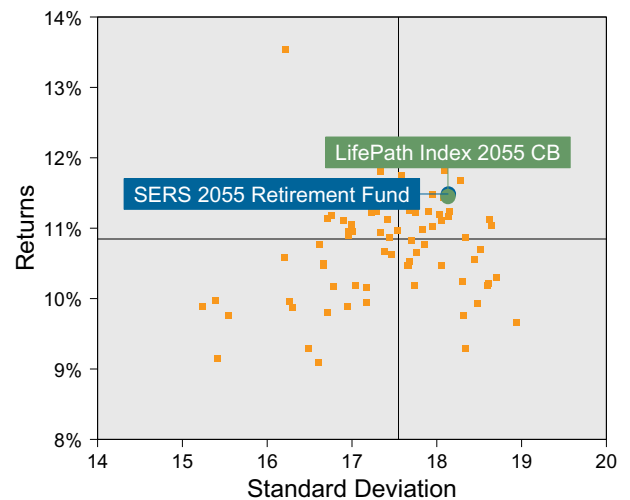


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	(5.23)	6.77	13.45	11.60	10.95
25th Percentile	(5.58)	5.82	13.07	11.21	10.42
Median	(6.17)	4.93	12.65	10.85	10.06
75th Percentile	(6.49)	3.63	11.90	10.19	9.42
90th Percentile	(6.85)	3.08	11.17	9.79	9.09
<b>SERS 2055 Retirement Fund</b>	<b>(5.54)</b>	<b>6.80</b>	<b>13.36</b>	<b>11.49</b>	<b>10.16</b>
LifePath Index 2055 CB	(5.26)	7.13	13.40	11.45	10.06

## Relative Return vs LifePath Index 2055 CB



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

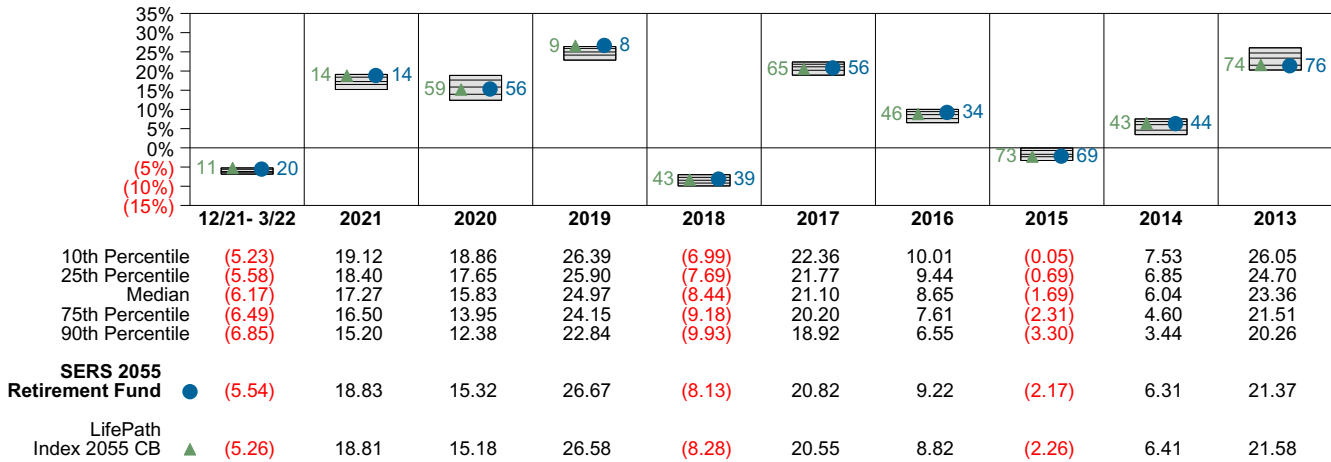


# SERS 2055 Retirement Fund Return Analysis Summary

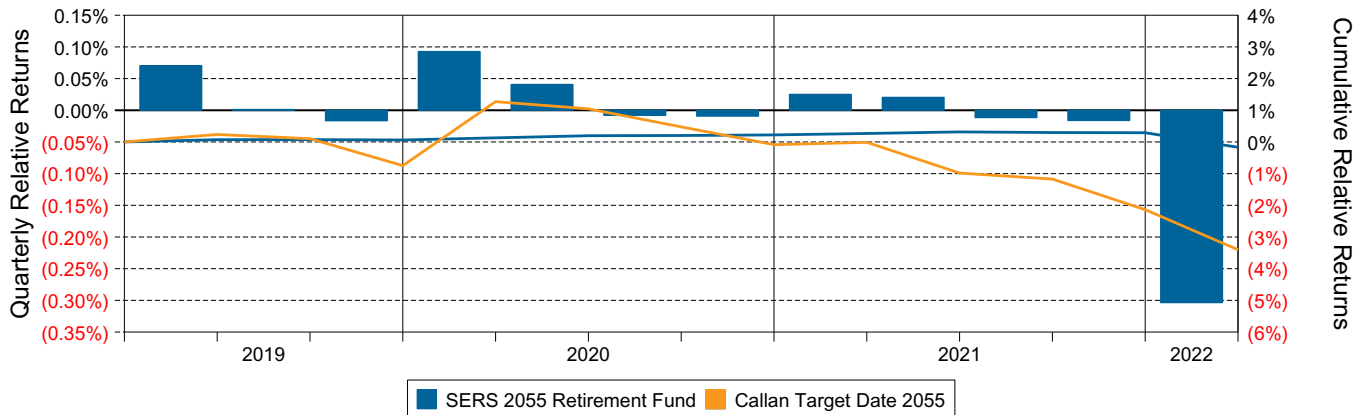
## Return Analysis

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

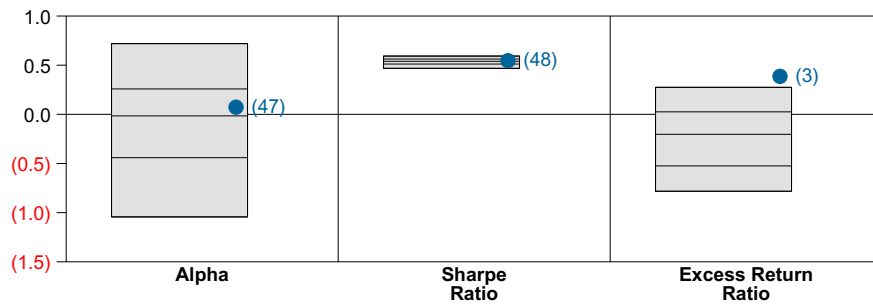
### Performance vs Callan Target Date 2055 (Net)



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



### Risk Adjusted Return Measures vs LifePath Index 2055 CB Rankings Against Callan Target Date 2055 (Net) Seven Years Ended March 31, 2022



# SERS 2060 Retirement Fund Period Ended March 31, 2022

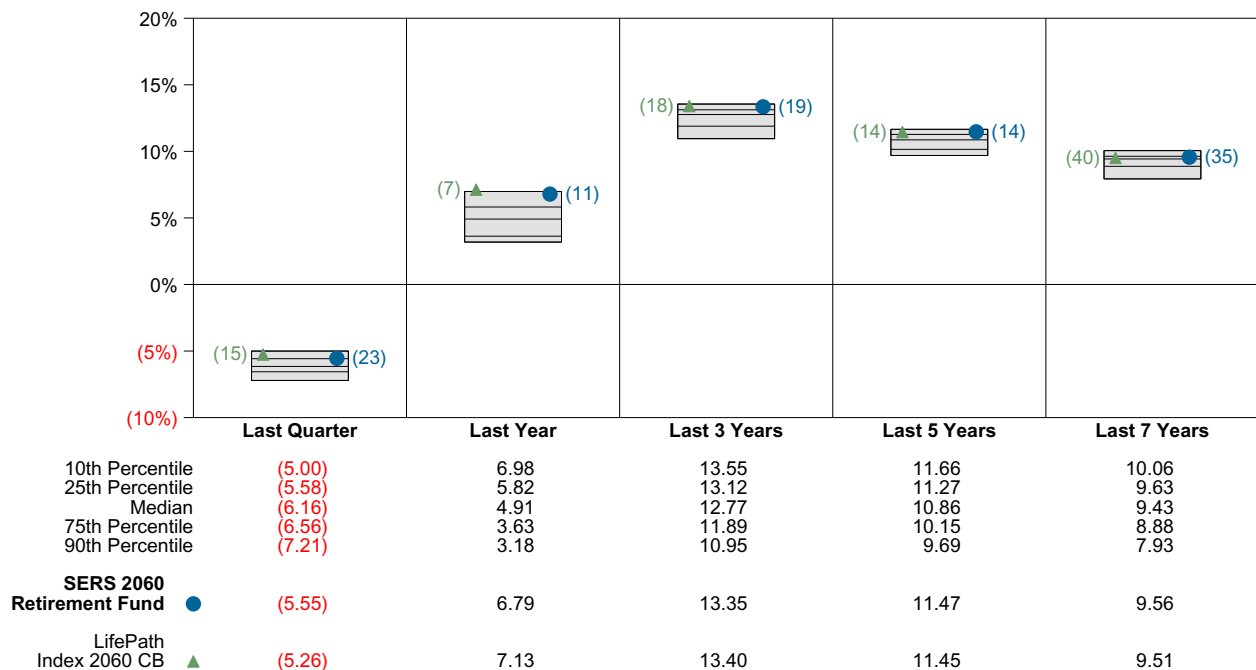
## Investment Philosophy

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.

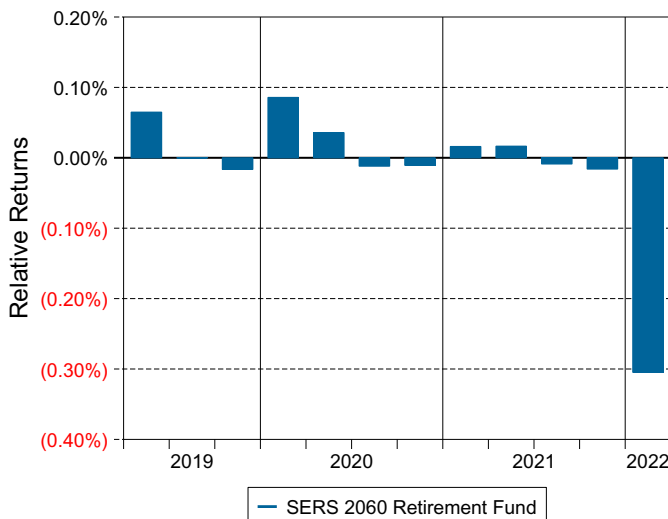
## Quarterly Summary and Highlights

- SERS 2060 Retirement Fund's portfolio posted a (5.55)% return for the quarter placing it in the 23 percentile of the Callan Target Date 2060 group for the quarter and in the 11 percentile for the last year.
- SERS 2060 Retirement Fund's portfolio underperformed the LifePath Index 2060 CB by 0.29% for the quarter and underperformed the LifePath Index 2060 CB for the year by 0.34%.

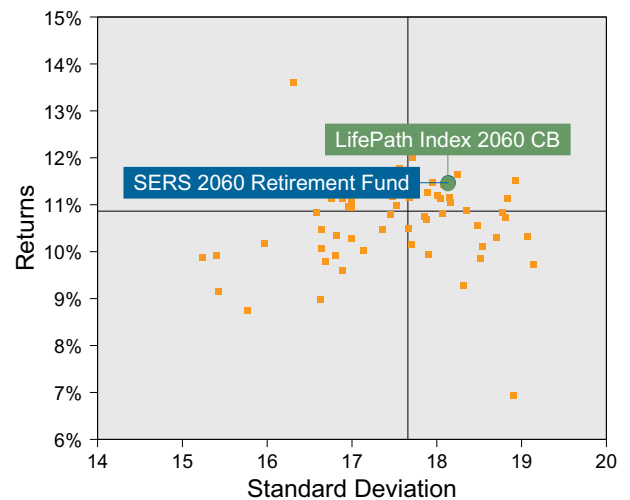
## Performance vs Callan Target Date 2060 (Net)



## Relative Return vs LifePath Index 2060 CB



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



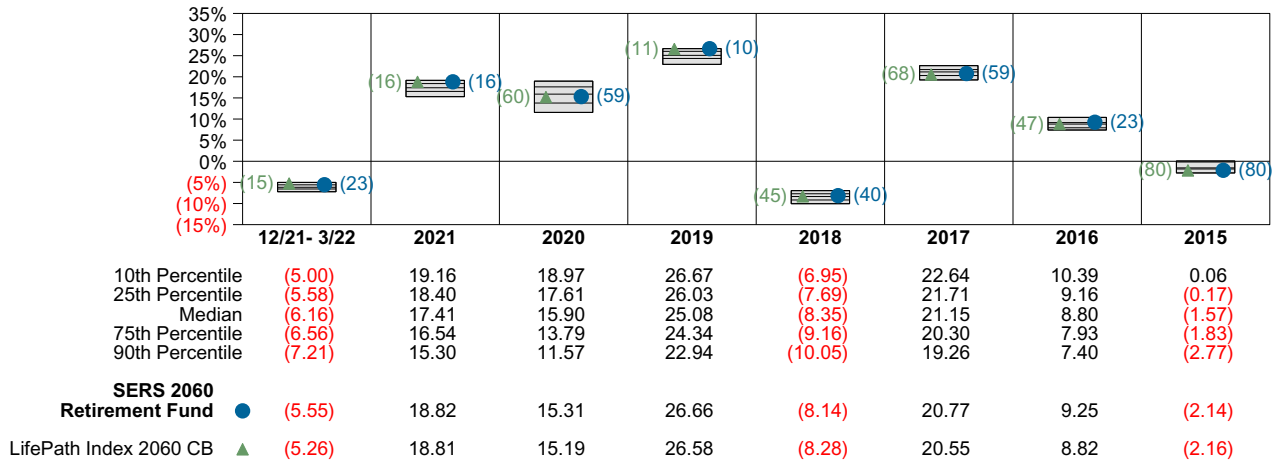


# SERS 2060 Retirement Fund Return Analysis Summary

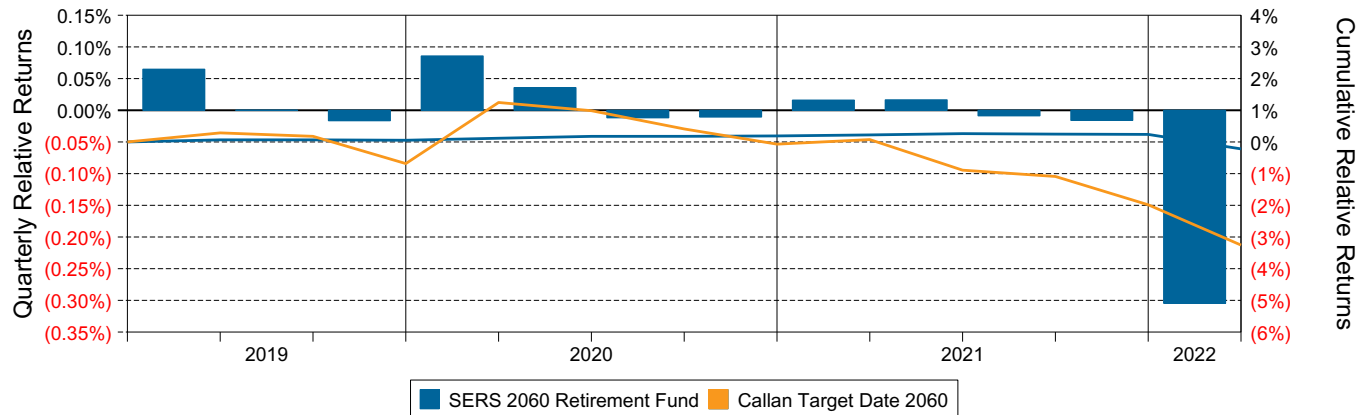
## Return Analysis

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

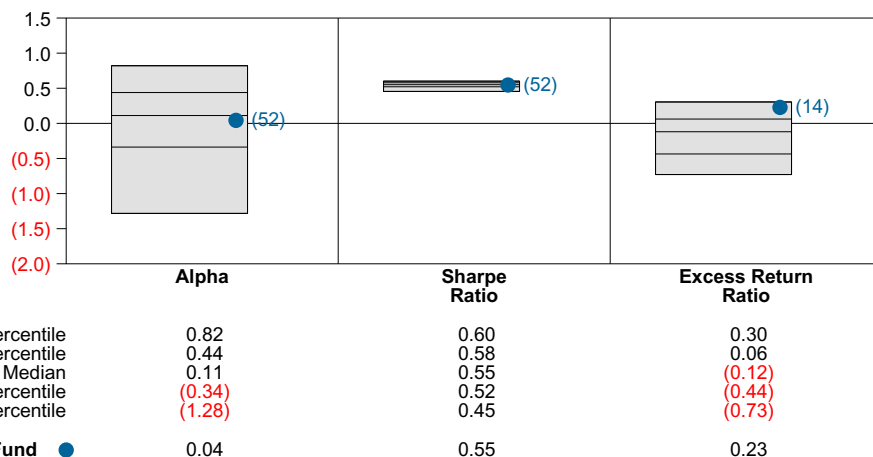
### Performance vs Callan Target Date 2060 (Net)



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



### Risk Adjusted Return Measures vs LifePath Index 2060 CB Rankings Against Callan Target Date 2060 (Net) Seven Years Ended March 31, 2022



# SERS 2065 Retirement Fund Period Ended March 31, 2022

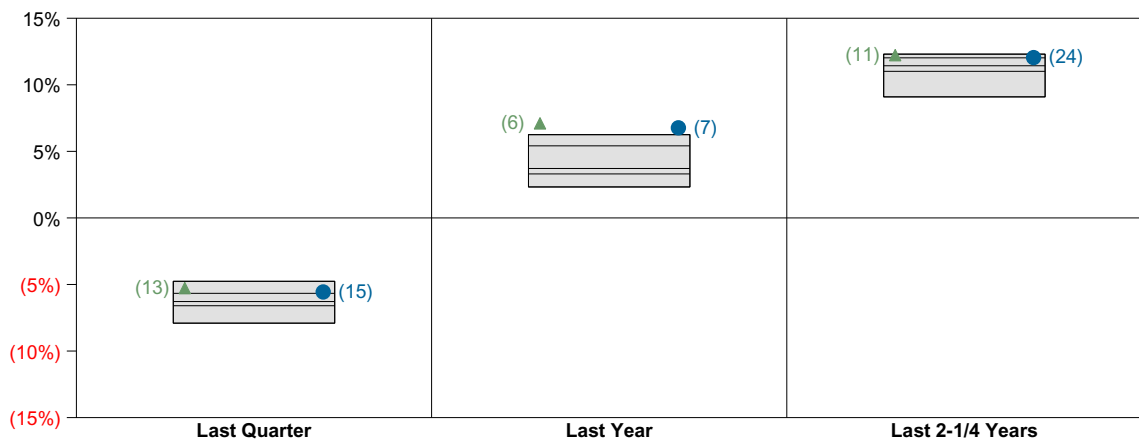
## Investment Philosophy

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

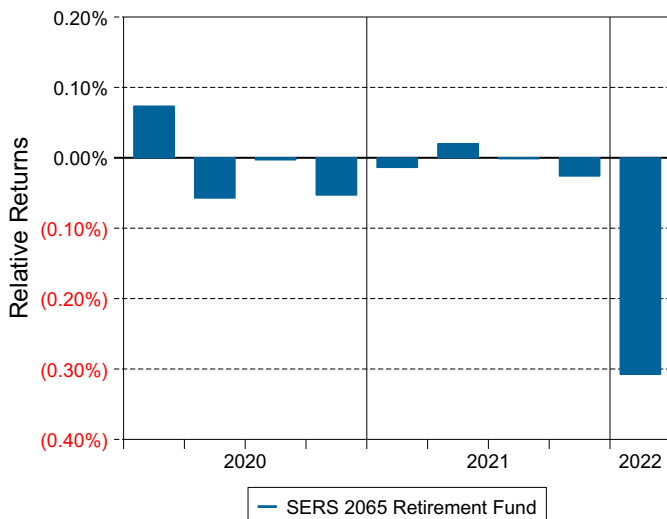
- SERS 2065 Retirement Fund's portfolio posted a (5.56)% return for the quarter placing it in the 15 percentile of the Callan Target Date 2065 group for the quarter and in the 7 percentile for the last year.
- SERS 2065 Retirement Fund's portfolio underperformed the LifePath Index 2065 CB by 0.29% for the quarter and underperformed the LifePath Index 2065 CB for the year by 0.34%.

## Performance vs Callan Target Date 2065 (Net)

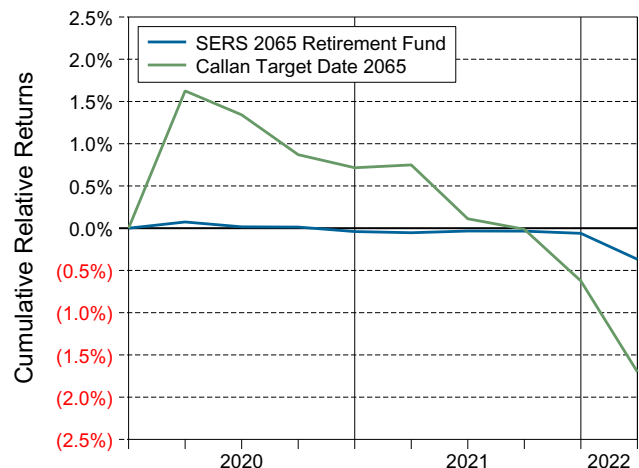


	Last Quarter	Last Year	Last 2-1/4 Years
10th Percentile	(4.76)	6.25	12.30
25th Percentile	(5.67)	5.41	12.02
Median	(6.28)	3.71	11.43
75th Percentile	(6.60)	3.31	11.01
90th Percentile	(7.91)	2.32	9.09
<b>SERS 2065 Retirement Fund</b>	<b>(5.56)</b>	<b>6.77</b>	<b>12.04</b>
LifePath Index 2065 CB	(5.27)	7.11	12.23

## Relative Return vs LifePath Index 2065 CB



## Cumulative Returns vs LifePath Index 2065 CB





# SERS U.S. Large Company Index Period Ended March 31, 2022

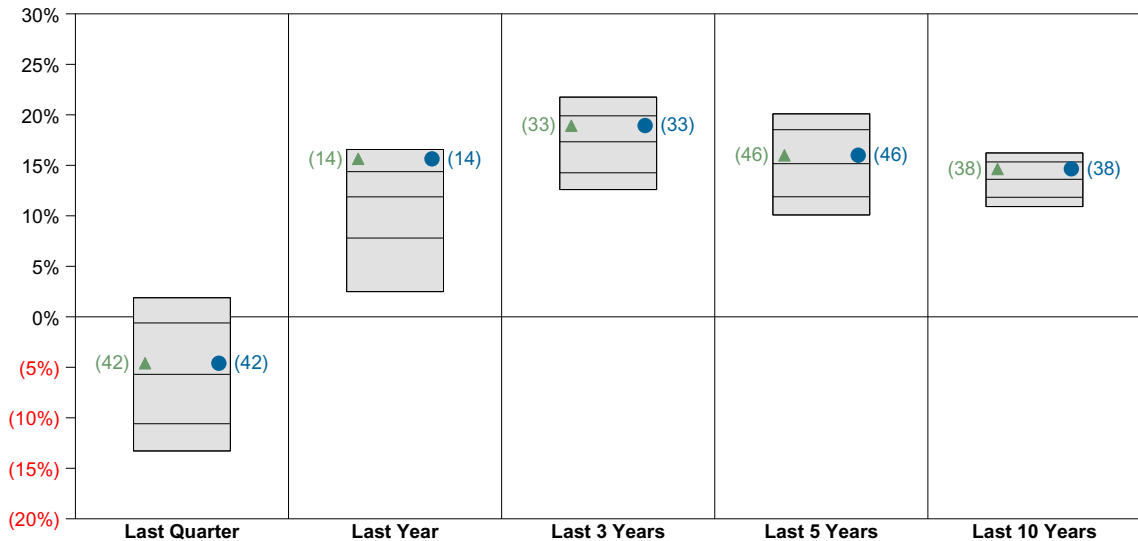
## Investment Philosophy

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 (4.60)% return for the quarter placing it in the 42 percentile of the Callan Large Cap Broad Equity Mut Funds group for the quarter and in the 14 percentile for the last year.
- SERS U.S. Large Company Index's portfolio outperformed the S&P 500 Index by 0.00% for the quarter and underperformed the S&P 500 Index for the year by 0.00%.

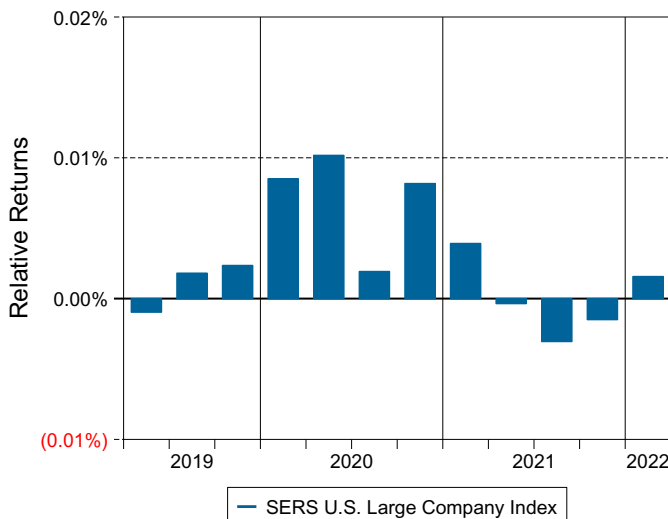
## Performance vs Callan Large Cap Broad Equity Mut Funds (Institutional Net)



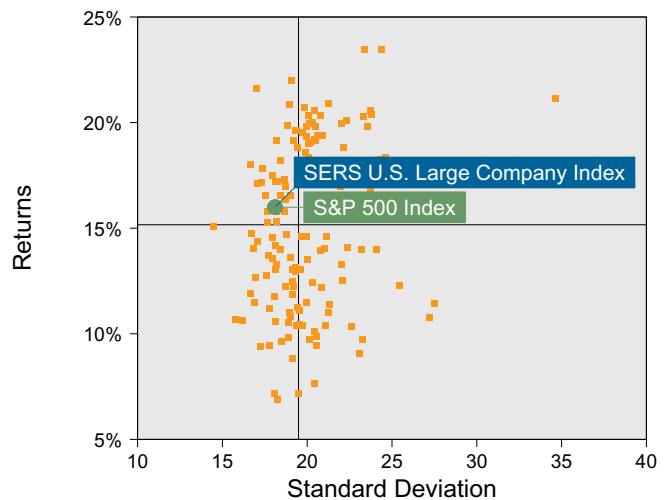
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	1.89	16.57	21.75	20.10	16.23
25th Percentile	(0.61)	14.37	19.90	18.53	15.34
Median	(5.70)	11.88	17.33	15.16	13.62
75th Percentile	(10.59)	7.80	14.26	11.89	11.84
90th Percentile	(13.28)	2.49	12.60	10.08	10.92

SERS U.S. Large Company Index	(4.60)	15.64	18.94	16.00	14.65
S&P 500 Index	(4.60)	15.65	18.92	15.99	14.64

## Relative Return vs S&P 500 Index



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

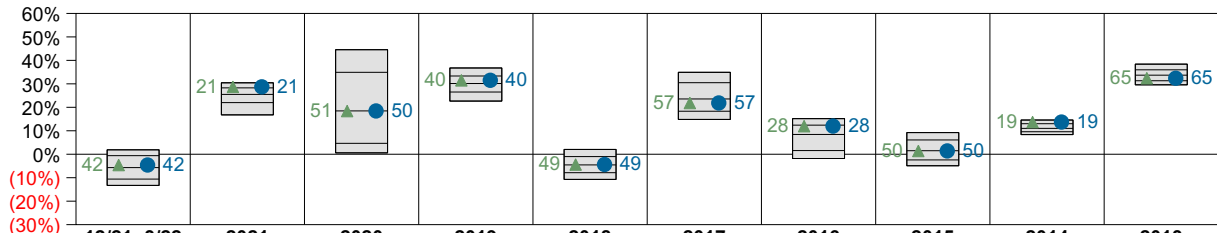


# SERS U.S. Large Company Index Return Analysis Summary

## 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.

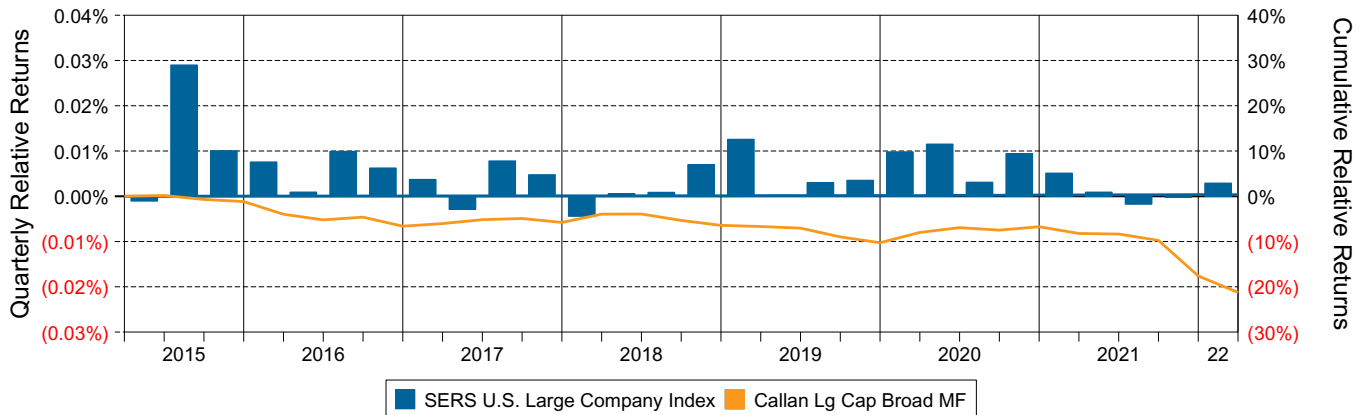
### Performance vs Callan Large Cap Broad Equity Mut Funds (Institutional Net)



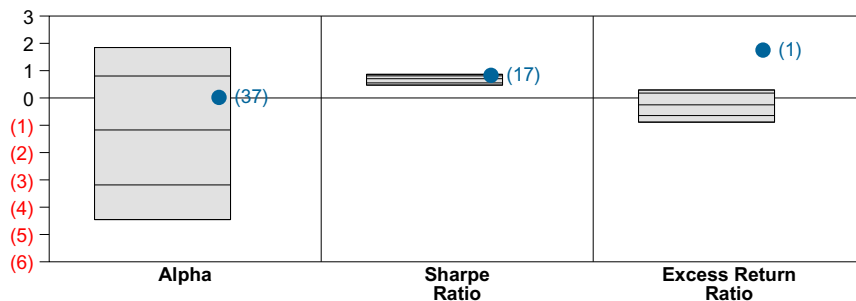
	12/21- 3/22	2021	2020	2019	2018	2017	2016	2015	2014	2013
10th Percentile	1.89	30.44	44.54	36.76	2.05	34.91	15.17	9.23	14.58	38.40
25th Percentile	(0.61)	28.29	34.90	33.34	(1.00)	30.48	12.39	6.09	13.01	35.98
Median	(5.70)	25.50	18.47	30.14	(4.54)	23.56	8.43	1.50	11.02	33.69
75th Percentile	(10.59)	22.00	4.64	26.51	(7.86)	18.33	1.56	(2.42)	9.59	31.31
90th Percentile	(13.28)	16.77	0.58	22.66	(10.72)	14.82	(1.82)	(4.91)	8.38	29.58

SERS U.S. Large Company Index	(4.60)	28.71	18.44	31.51	(4.38)	21.85	11.99	1.41	13.72	32.39
S&P 500 Index	(4.60)	28.71	18.40	31.49	(4.38)	21.83	11.96	1.38	13.69	32.39

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



### Risk Adjusted Return Measures vs S&P 500 Index Rankings Against Callan Large Cap Broad Equity Mut Funds (Institutional Net) Seven Years Ended March 31, 2022



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	1.85	0.87	0.29
25th Percentile	0.80	0.81	0.18
Median	(1.17)	0.71	(0.25)
75th Percentile	(3.18)	0.55	(0.64)
90th Percentile	(4.45)	0.47	(0.89)

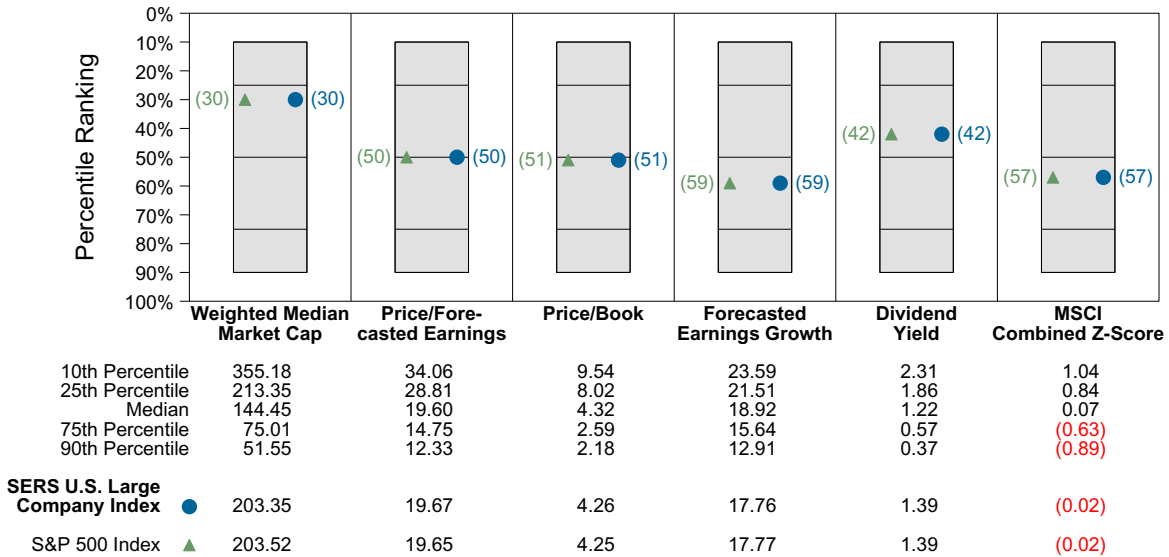
SERS U.S. Large Company Index	0.02	0.83	1.75
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# SERS U.S. Large Company Index Equity Characteristics Analysis Summary

## Portfolio Characteristics

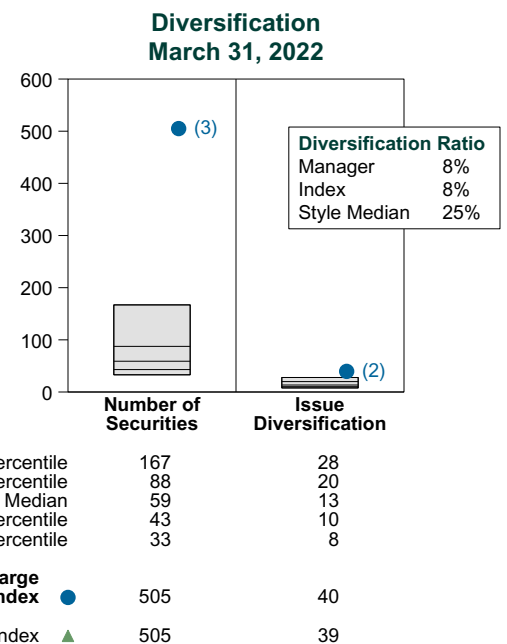
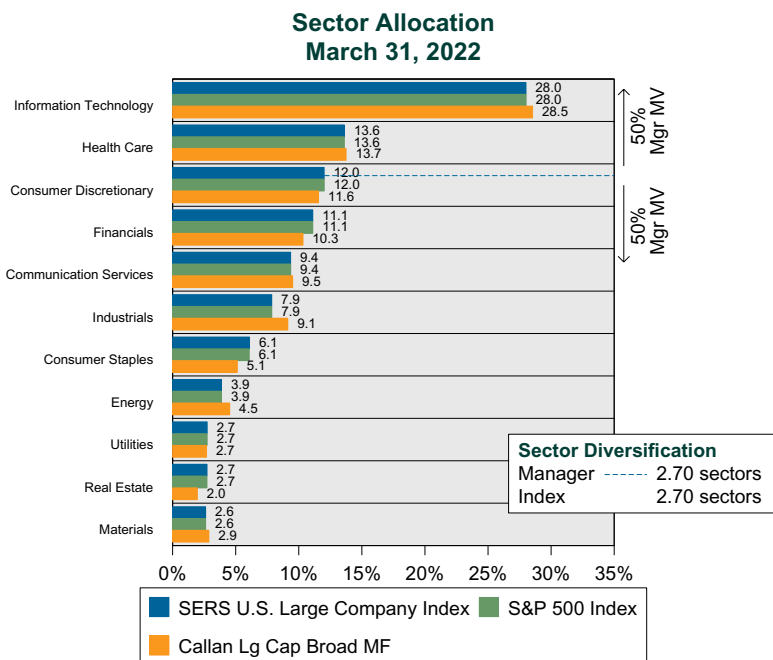
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Broad Equity Mut Funds as of March 31, 2022



## 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, 2022

### 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	\$228,458	7.1%	(1.54)%	2849.54	27.43	0.50%	11.00%
Microsoft Corp	Information Technology	\$195,064	6.0%	(8.14)%	2311.36	29.66	0.80%	17.15%
Amazon.Com	Consumer Discretionary	\$120,394	3.7%	(2.23)%	1658.81	59.63	0.00%	34.80%
Tesla Mtrs Inc	Consumer Discretionary	\$76,132	2.4%	1.97%	1113.71	96.10	0.00%	37.15%
Alphabet Inc Cl A	Communication Services	\$70,596	2.2%	(3.99)%	836.50	22.99	0.00%	20.00%
Alphabet Inc Cl C	Communication Services	\$65,471	2.0%	(3.48)%	881.58	23.11	0.00%	20.00%
Nvidia Corp	Information Technology	\$57,569	1.8%	(7.21)%	684.88	46.75	0.06%	26.30%
Berkshire Hathaway Inc Del Cl B New	Financials	\$54,544	1.7%	18.03%	454.42	25.84	0.00%	76.73%
Facebook Inc Cl A	Communication Services	\$43,332	1.3%	(33.89)%	513.45	17.22	0.00%	20.70%
Unitedhealth Group	Health Care	\$40,536	1.3%	1.86%	479.83	22.79	1.14%	14.54%

### 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
Occidental Petroleum	Energy	\$4,266	0.1%	96.17%	53.16	9.01	0.92%	23.64%
Mosaic Co New	Materials	\$2,083	0.1%	69.61%	24.49	6.43	0.68%	(15.11)%
Halliburton Co	Energy	\$2,855	0.1%	66.21%	34.03	19.71	1.27%	62.70%
Apa Corp	Energy	\$1,246	0.0%	54.32%	14.34	5.61	1.21%	26.20%
Marathon Oil Corp	Energy	\$1,650	0.1%	53.45%	18.35	8.25	1.12%	10.66%
Baker Hughes A Ge Co Cl A	Energy	\$2,783	0.1%	52.36%	35.22	25.86	1.98%	50.90%
Cf Inds Hldgs Inc	Materials	\$1,844	0.1%	46.22%	21.55	7.30	1.16%	62.70%
Hess Corp	Energy	\$2,499	0.1%	45.16%	33.16	15.66	1.40%	55.36%
Cabot Oil & Gas Corp	Energy	\$1,854	0.1%	44.99%	21.87	9.04	4.00%	33.27%
Chevron Corp New	Energy	\$26,485	0.8%	40.22%	317.12	13.11	3.49%	8.45%

### 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
Epam Sys Inc	Information Technology	\$1,427	0.0%	(55.63)%	16.87	29.29	0.00%	24.90%
Etsy Inc	Consumer Discretionary	\$1,331	0.0%	(43.24)%	15.79	32.41	0.00%	39.45%
Paypal Holdings Inc	Information Technology	\$11,371	0.4%	(38.67)%	134.73	23.40	0.00%	16.94%
Netflix Inc	Communication Services	\$14,043	0.4%	(37.82)%	166.30	31.62	0.00%	17.20%
Ipg Photonics	Information Technology	\$328	0.0%	(36.24)%	5.81	21.35	0.00%	25.40%
Ceridian Hcm Hldg Inc	Information Technology	\$784	0.0%	(34.56)%	10.40	151.57	0.00%	12.50%
Facebook Inc Cl A	Communication Services	\$43,332	1.3%	(33.89)%	513.45	17.22	0.00%	20.70%
Align Technology Inc	Health Care	\$2,698	0.1%	(33.66)%	34.35	32.85	0.00%	32.56%
Moderna Inc	Health Care	\$5,118	0.2%	(32.18)%	69.42	7.48	0.00%	-
Mohawk Industries	Consumer Discretionary	\$582	0.0%	(31.83)%	7.89	8.05	0.00%	1.50%

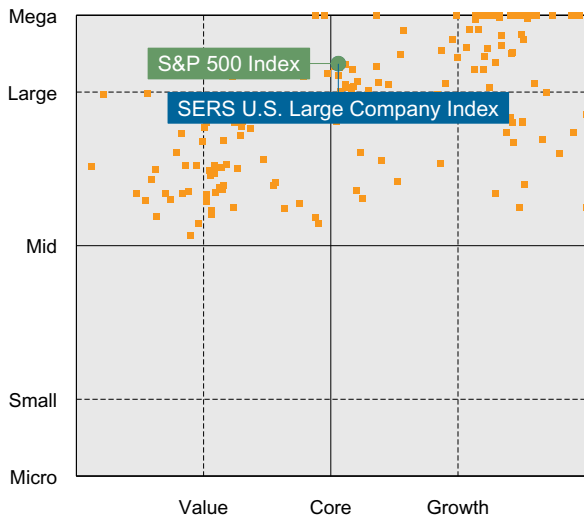
# Historical Holdings Based Style Analysis

## SERS U.S. Large Company Index

### For Three Years Ended March 31, 2022

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.

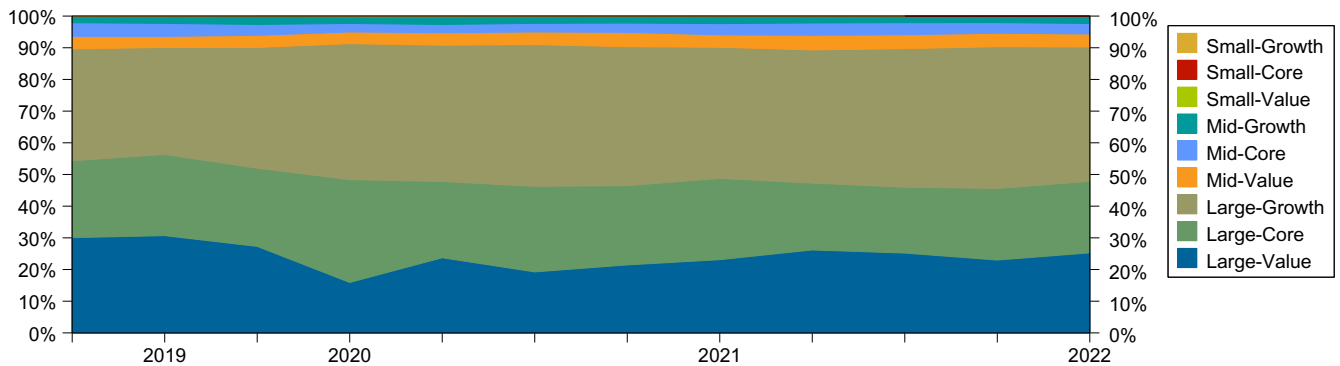
**Average Style Map vs Callan Lg Cap Broad MF Holdings for Three Years Ended March 31, 2022**



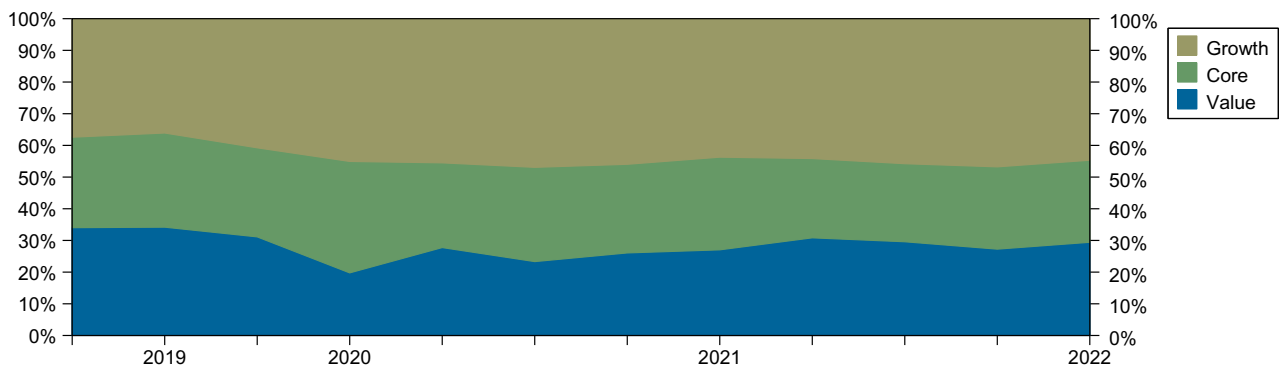
**Average Style Exposure Matrix Holdings for Three Years Ended March 31, 2022**

	24.3% (96)	24.7% (96)	41.3% (85)	90.3% (277)
Large	24.3% (96)	24.7% (96)	41.4% (85)	90.3% (277)
Mid	4.1% (100)	3.4% (76)	2.2% (45)	9.7% (221)
Small	0.0% (5)	0.0% (2)	0.0% (1)	0.1% (8)
Micro	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
<b>Total</b>	<b>28.4% (201)</b>	<b>28.1% (174)</b>	<b>43.6% (131)</b>	<b>100.0% (506)</b>
	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, 2022

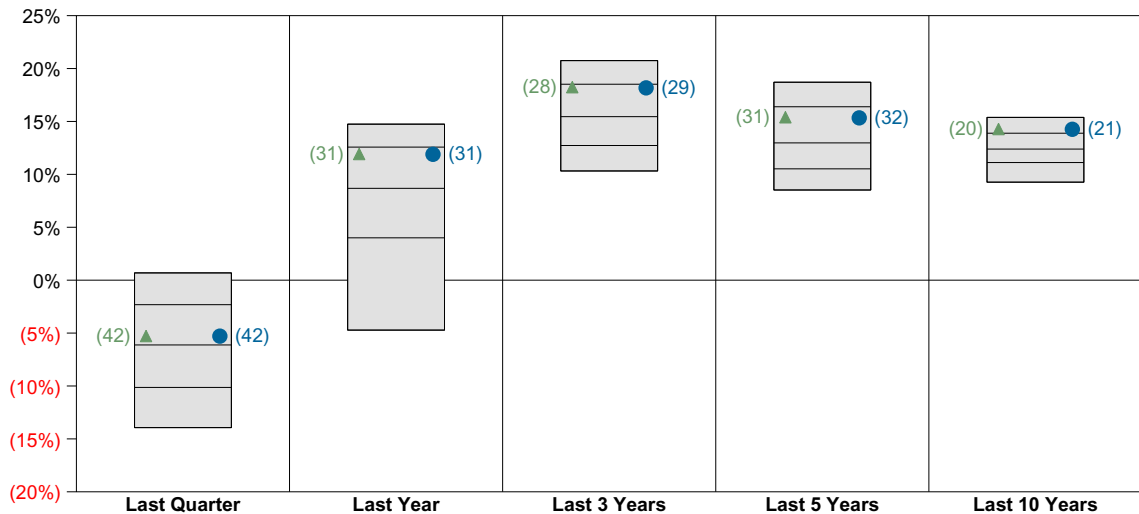
### Investment Philosophy

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 (5.29)% return for the quarter placing it in the 42 percentile of the Callan Multi Cap Broad Mutual Funds group for the quarter and in the 31 percentile for the last year.
- SERS U.S. All Company Index Fund's portfolio underperformed the Russell 3000 Index by 0.01% for the quarter and underperformed the Russell 3000 Index for the year by 0.03%.

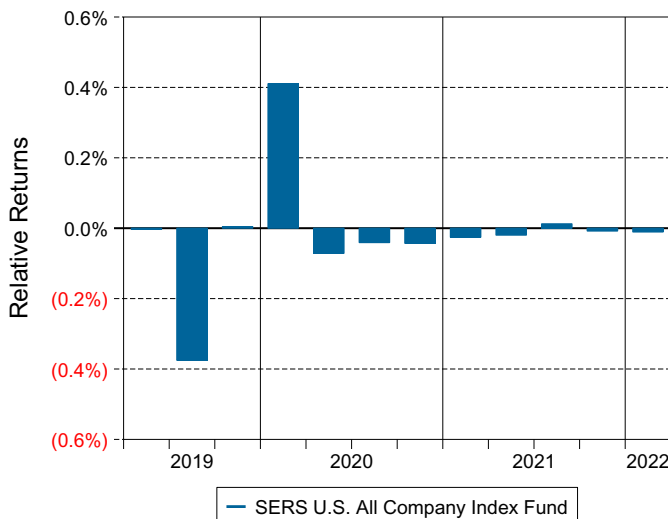
### Performance vs Callan Multi Cap Broad Mutual Funds (Institutional Net)



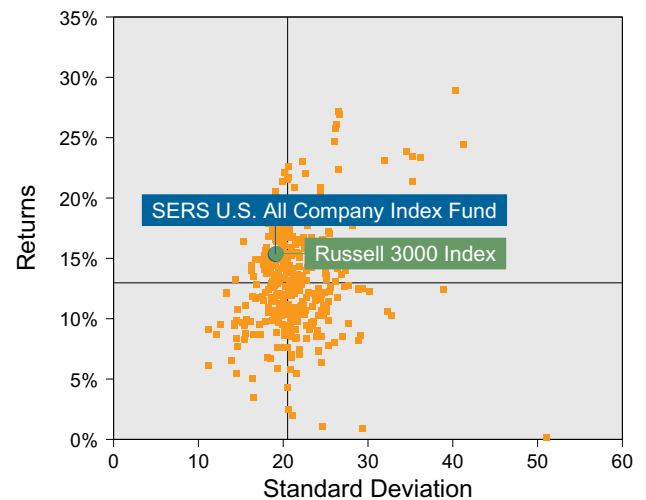
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	0.69	14.75	20.75	18.71	15.38
25th Percentile	(2.32)	12.57	18.52	16.39	13.89
Median	(6.12)	8.68	15.45	12.97	12.39
75th Percentile	(10.14)	4.00	12.73	10.52	11.12
90th Percentile	(13.93)	(4.72)	10.32	8.52	9.26

<b>SERS U.S. All Company Index Fund</b>	<b>(5.29)</b>	11.90	18.17	15.34	14.26
<b>Russell 3000 Index</b>	<b>(5.28)</b>	11.92	18.24	15.40	14.28

### Relative Return vs Russell 3000 Index



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

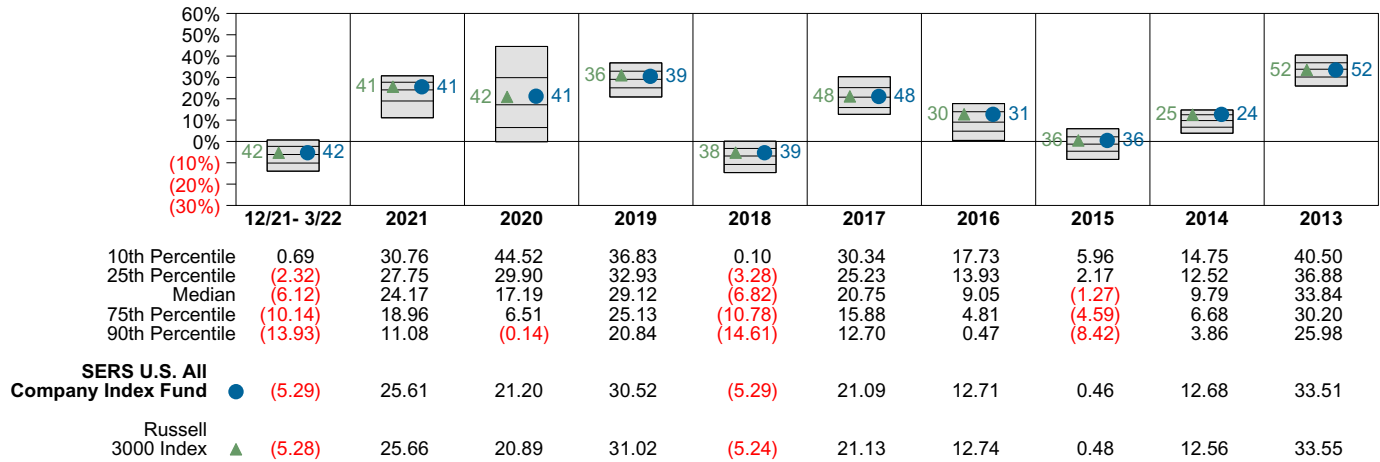


# SERS U.S. All Company Index Fund Return Analysis Summary

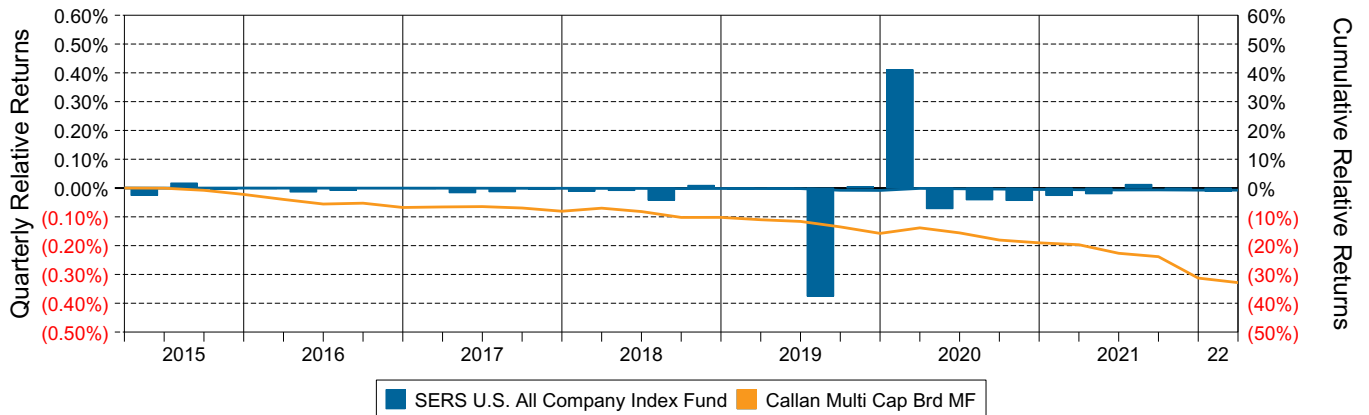
## Return Analysis

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

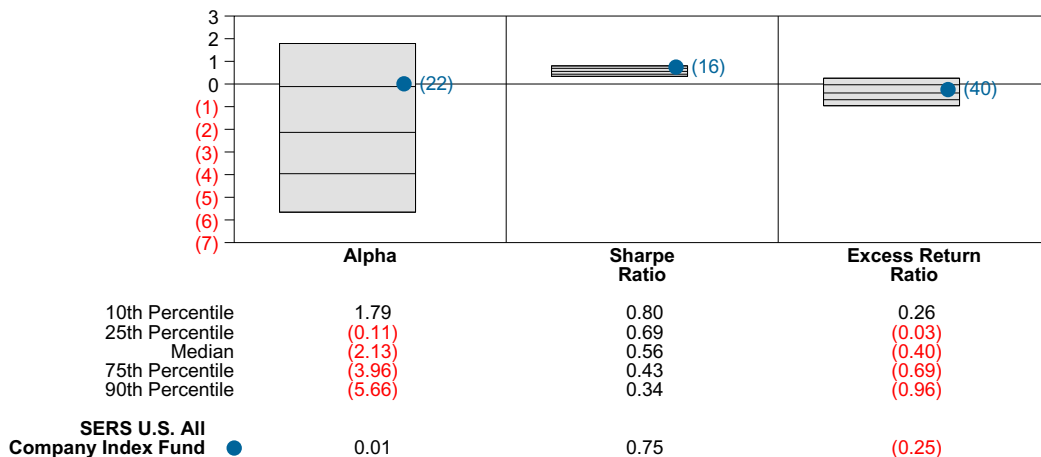
### Performance vs Callan Multi Cap Broad Mutual Funds (Institutional Net)



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



### Risk Adjusted Return Measures vs Russell 3000 Index Rankings Against Callan Multi Cap Broad Mutual Funds (Institutional Net) Seven Years Ended March 31, 2022

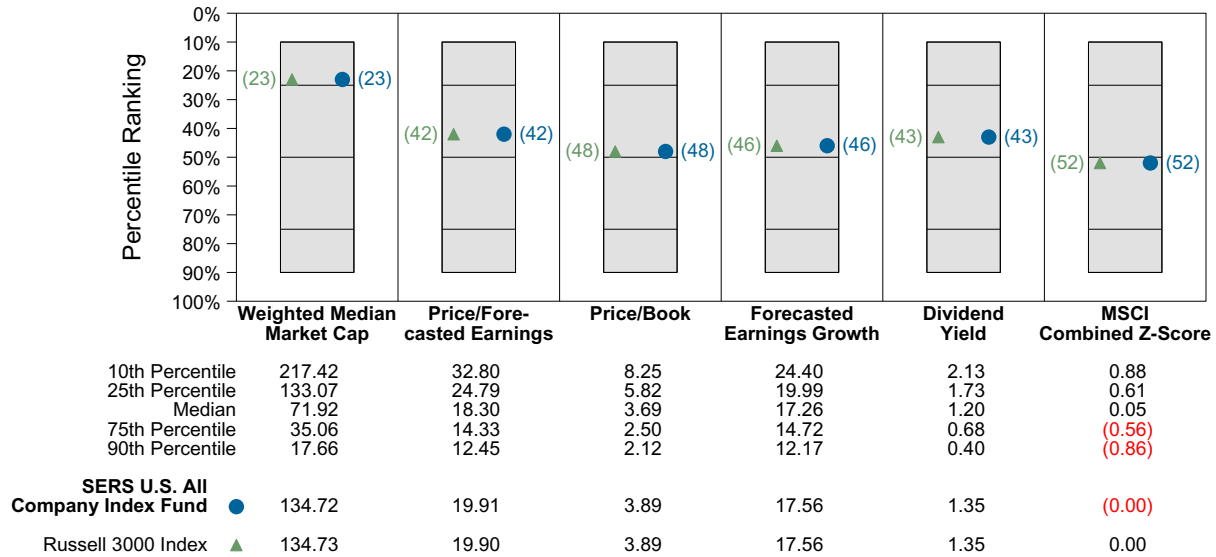


# SERS U.S. All Company Index Fund Equity Characteristics Analysis Summary

## Portfolio Characteristics

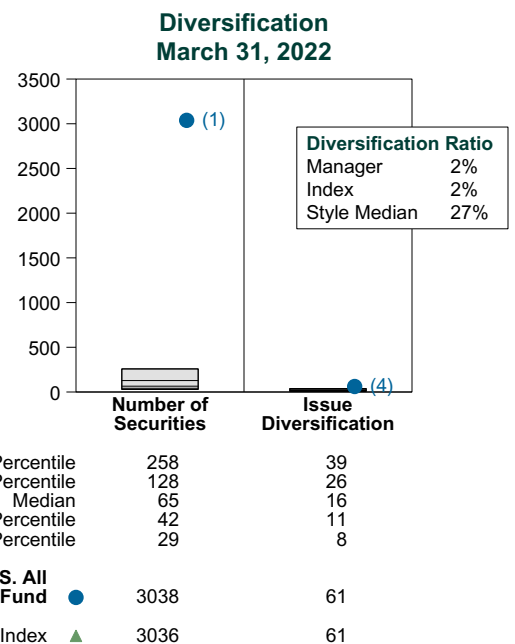
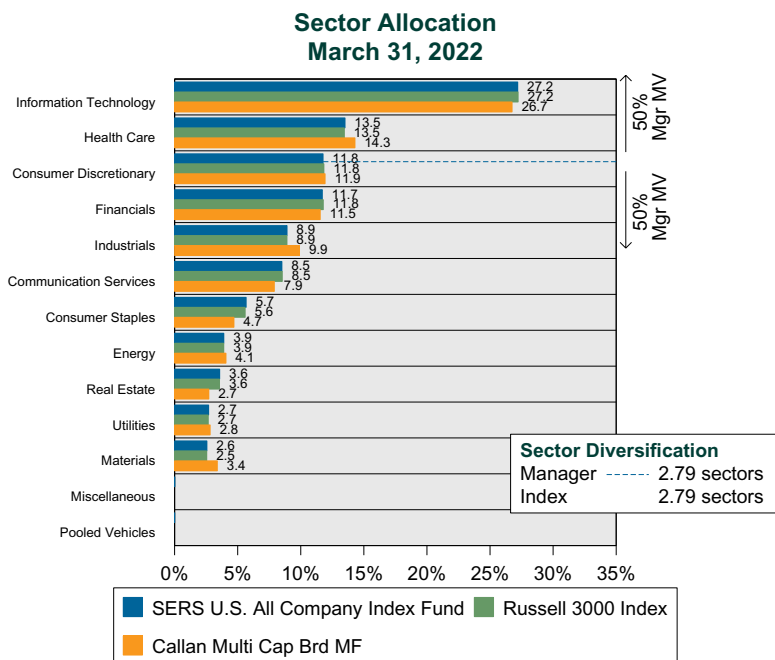
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Multi Cap Broad Mutual Funds as of March 31, 2022



## 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, 2022

### 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	\$76,983	6.0%	(1.54)%	2849.54	27.43	0.50%	11.00%
Microsoft Corp	Information Technology	\$66,367	5.2%	(8.14)%	2311.36	29.66	0.80%	17.15%
Amazon.Com	Consumer Discretionary	\$40,415	3.1%	(2.23)%	1658.81	59.63	0.00%	34.80%
Tesla Mtrs Inc	Consumer Discretionary	\$25,618	2.0%	1.97%	1113.71	96.10	0.00%	37.15%
Alphabet Inc Cl A	Communication Services	\$23,894	1.9%	(3.99)%	836.50	22.99	0.00%	20.00%
Alphabet Inc Cl C	Communication Services	\$22,066	1.7%	(3.48)%	881.58	23.11	0.00%	20.00%
Nvidia Corp	Information Technology	\$18,645	1.5%	(7.21)%	684.88	46.75	0.06%	26.30%
Berkshire Hathaway Inc Del Cl B New	Financials	\$18,487	1.4%	18.03%	454.42	25.84	0.00%	76.73%
Facebook Inc Cl A	Communication Services	\$14,649	1.1%	(33.89)%	513.45	17.22	0.00%	20.70%
Unitedhealth Group	Health Care	\$13,697	1.1%	1.86%	479.83	22.79	1.14%	14.54%

### 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
Nextier Oilfield Solutions I	Energy	\$46	0.0%	160.24%	2.25	15.66	0.00%	-
Peabody Energy Corp New Com Par	Energy	\$61	0.0%	143.62%	3.39	4.08	0.00%	(26.67)%
Rpc Inc	Energy	\$21	0.0%	135.02%	2.31	27.50	1.87%	(12.41)%
Soc Telemed Inc Cl A	Health Care	\$4	0.0%	133.53%	0.30	(5.96)	0.00%	-
Kosmos Energy Ltd	Energy	\$92	0.0%	107.79%	3.27	6.38	0.00%	(22.79)%
Tidewater Inc	Energy	\$25	0.0%	103.05%	0.90	(12.41)	0.00%	9.33%
Team Inc	Industrials	\$2	0.0%	102.74%	0.10	(0.45)	0.00%	(27.64)%
Golar Lng Ltd Bermuda Shs	Energy	\$71	0.0%	100.00%	2.68	26.91	0.00%	4.00%
U S Silica Hldgs Inc	Energy	\$38	0.0%	98.52%	1.41	198.51	0.00%	(5.44)%
Occidental Petroleum	Energy	\$1,368	0.1%	96.17%	53.16	9.01	0.92%	23.64%

### 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
Kodiak Sciences Inc	Health Care	\$7	0.0%	(90.89)%	0.40	(1.25)	0.00%	-
Aligos Therapeutics Inc Com	Health Care	\$1	0.0%	(81.88)%	0.09	(0.86)	0.00%	-
Mei Pharma Inc	Health Care	\$2	0.0%	(77.43)%	0.08	(0.83)	0.00%	-
Applied Therapeutics Inc	Health Care	\$1	0.0%	(76.42)%	0.06	(0.68)	0.00%	-
Cid Created On Bank Faith For Id 035	Health Care	\$2	0.0%	(76.24)%	0.11	(0.66)	0.00%	-
Vroom Inc	Consumer Discretionary	\$7	0.0%	(75.37)%	0.36	(0.78)	0.00%	(16.00)%
Bioatla Inc	Health Care	\$2	0.0%	(74.53)%	0.18	(1.85)	0.00%	-
Accelerate Diagnostics Inc	Health Care	\$1	0.0%	(72.42)%	0.10	(1.26)	0.00%	19.36%
Laird Superfood	Consumer Staples	\$0	0.0%	(72.31)%	0.03	(1.38)	0.00%	-
Society Pass Inc	Communication Services	\$0	0.0%	(71.46)%	0.07	(6.91)	0.00%	-

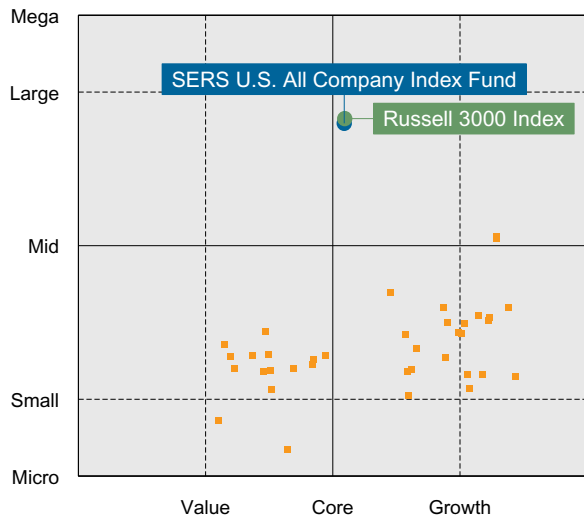
# Historical Holdings Based Style Analysis

## SERS U.S. All Company Index Fund

### For Three and 1/2 Years Ended March 31, 2022

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.

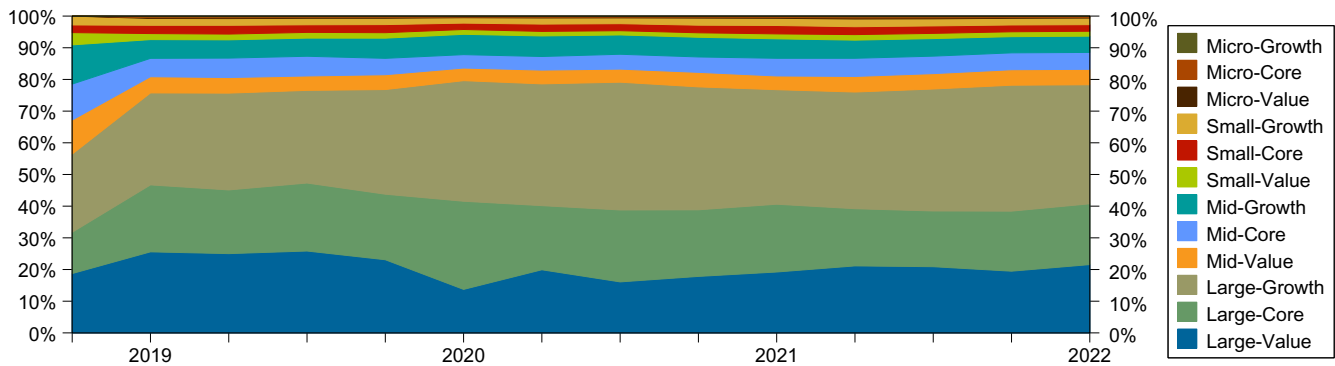
**Average Style Map vs Callan SMID Broad MFs Holdings for Three and 1/2 Years Ended March 31, 2022**



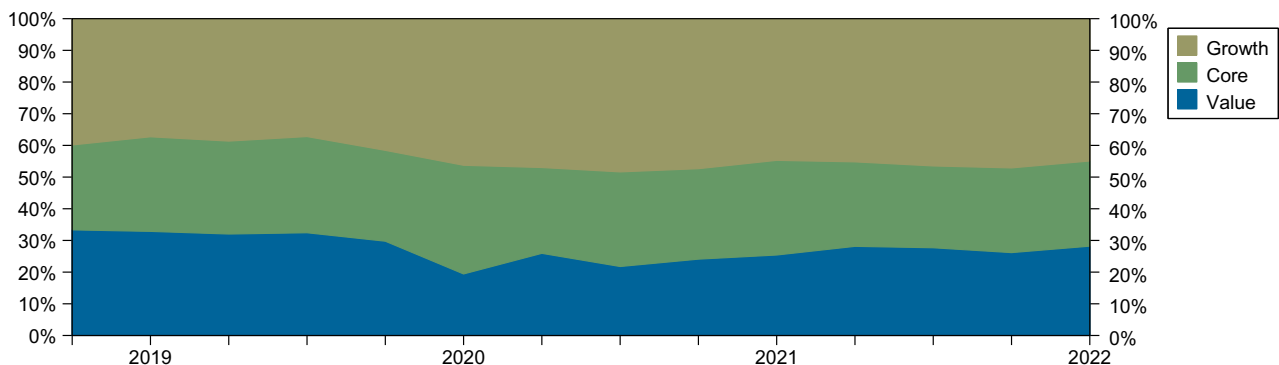
**Average Style Exposure Matrix Holdings for Three and 1/2 Years Ended March 31, 2022**

	Value	Core	Growth	Total
Large	20.6% (94)	20.2% (95)	35.1% (98)	<b>75.9% (287)</b>
	20.9% (98)	21.0% (98)	35.5% (103)	<b>77.4% (299)</b>
Mid	5.1% (164)	5.7% (204)	6.4% (224)	<b>17.2% (592)</b>
	4.6% (166)	5.3% (207)	5.9% (227)	<b>15.8% (600)</b>
Small	1.8% (295)	2.4% (471)	2.1% (371)	<b>6.3% (1137)</b>
	1.6% (310)	2.4% (496)	2.1% (392)	<b>6.1% (1198)</b>
Micro	0.2% (304)	0.3% (368)	0.1% (159)	<b>0.7% (831)</b>
	0.3% (324)	0.3% (401)	0.2% (174)	<b>0.7% (899)</b>
Total	<b>27.7% (857)</b>	<b>28.6% (1138)</b>	<b>43.7% (852)</b>	<b>100.0% (2847)</b>
	<b>27.4% (898)</b>	<b>29.0% (1202)</b>	<b>43.6% (896)</b>	<b>100.0% (2996)</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, 2022

## 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.

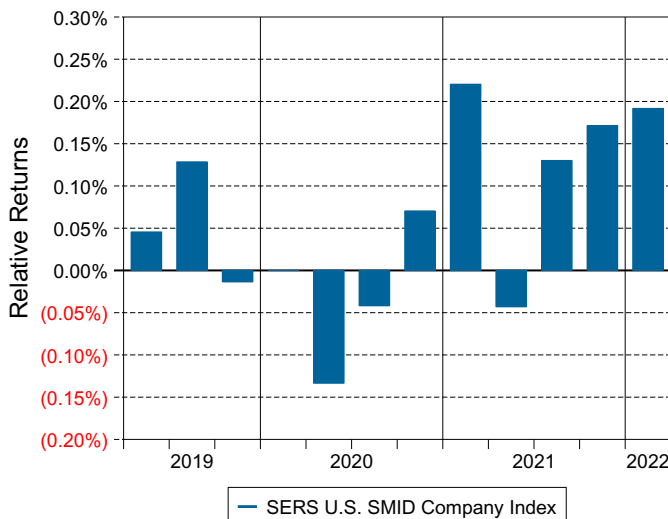
## Quarterly Summary and Highlights

- SERS U.S. SMID Company Index's portfolio posted a (9.19)% return for the quarter placing it in the 53 percentile of the Callan Small/MidCap Broad Mutual Funds group for the quarter and in the 66 percentile for the last year.
- SERS U.S. SMID Company Index's portfolio outperformed the Dow Jones US Completion by 0.17% for the quarter and outperformed the Dow Jones US Completion for the year by 0.43%.

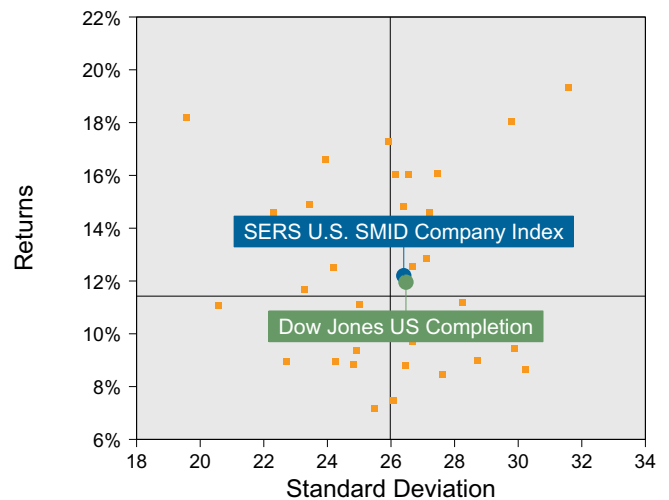
## Performance vs Callan Small/MidCap Broad Mutual Funds (Institutional Net)



## Relative Return vs Dow Jones US Completion



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

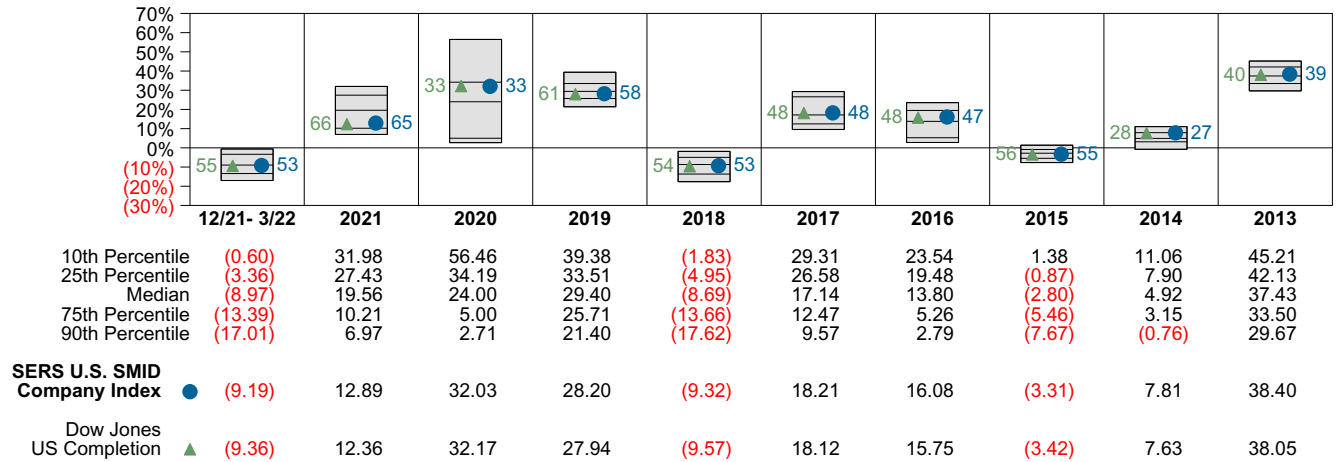


# SERS U.S. SMID Company Index Return Analysis Summary

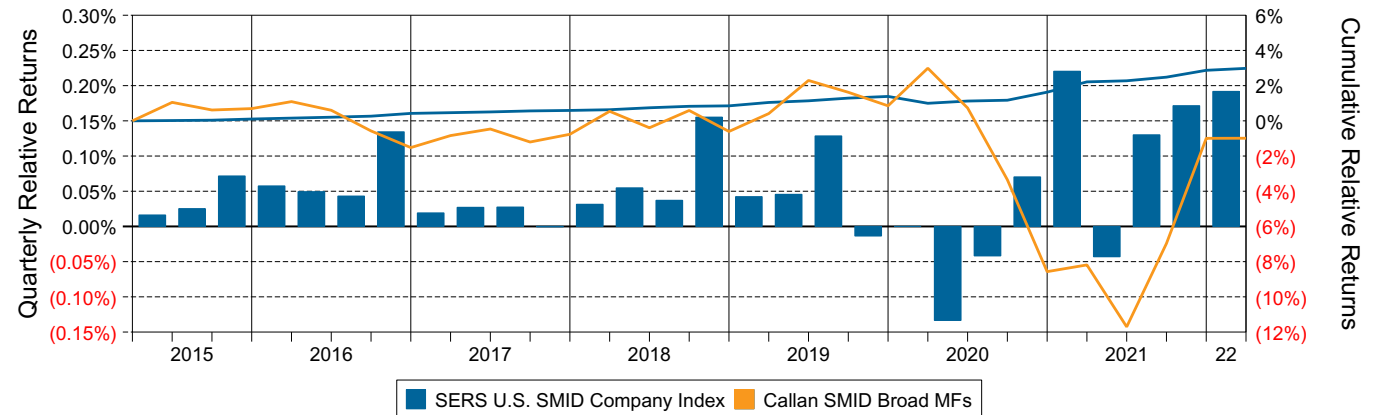
## Return Analysis

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.

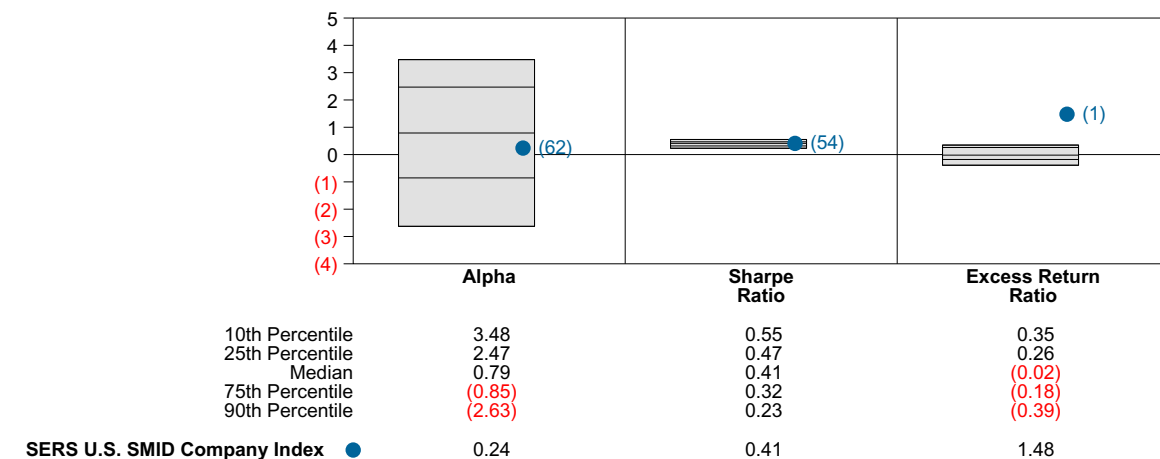
### Performance vs Callan Small/MidCap Broad Mutual Funds (Institutional Net)



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



### Risk Adjusted Return Measures vs Dow Jones US Completion Rankings Against Callan Small/MidCap Broad Mutual Funds (Institutional Net) Seven Years Ended March 31, 2022

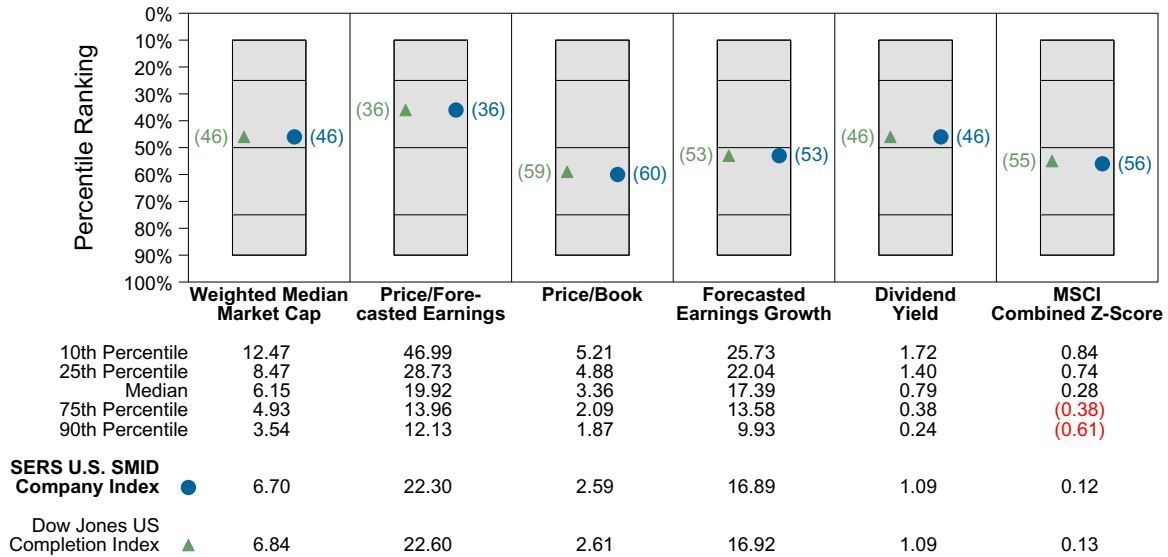


# SERS U.S. SMID Company Index Equity Characteristics Analysis Summary

## Portfolio Characteristics

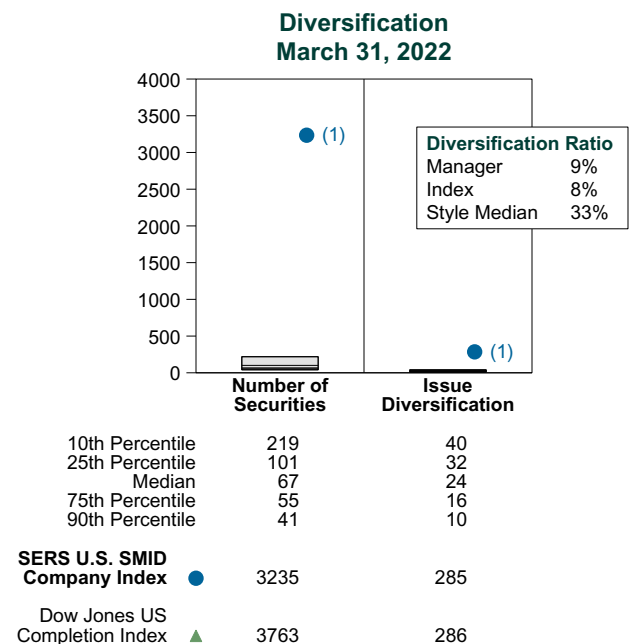
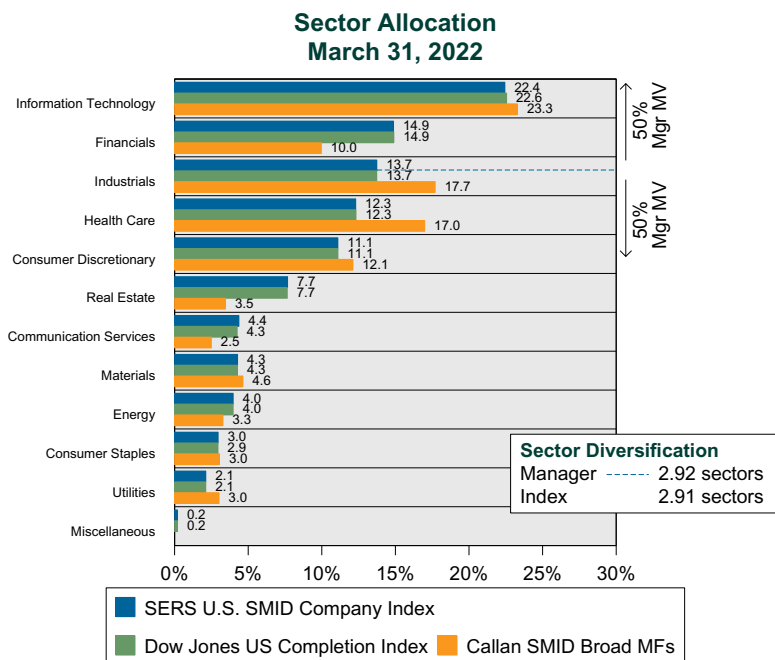
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Small/MidCap Broad Mutual Funds as of March 31, 2022



## 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, 2022

### 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
Blackstone Group Inc Com Cl A	Financials	\$8,261	1.2%	(0.82)%	88.91	22.72	3.95%	23.82%
Square Inc Cl A	Information Technology	\$6,279	0.9%	(16.04)%	70.29	86.48	0.00%	47.45%
Palo Alto Networks Inc	Information Technology	\$5,675	0.8%	11.81%	61.31	73.71	0.00%	23.83%
Marvell Technology Group Ltd	Information Technology	\$5,591	0.8%	(17.98)%	60.80	30.00	0.33%	42.14%
Airbnb Inc Cl A Com Usd0.0001 Cl A	Consumer Discretionary	\$5,504	0.8%	3.16%	63.75	113.97	0.00%	-
Uber Technologies Inc	Industrials	\$5,501	0.8%	(14.91)%	69.75	(80.18)	0.00%	-
Snowflake Inc Cl A	Information Technology	\$4,993	0.7%	(32.36)%	72.08	1199.63	0.00%	-
CrowdStrike Hldgs Inc Cl A	Information Technology	\$4,369	0.6%	10.91%	47.70	192.93	0.00%	66.03%
Workday Inc Cl A	Information Technology	\$4,270	0.6%	(12.34)%	46.93	63.12	0.00%	14.27%
Lululemon Athletica Inc	Consumer Discretionary	\$3,971	0.6%	(6.70)%	44.82	38.43	0.00%	29.90%

### 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
Hycroft Mining Holding Corp Com Cl A	Materials	\$11	0.0%	277.05%	0.45	(41.82)	0.00%	-
Nine Energy Svc Inc	Energy	\$4	0.0%	273.79%	0.12	(5.64)	0.00%	-
Voyager Therapeutics Inc	Health Care	\$20	0.0%	181.14%	0.29	(4.85)	0.00%	-
Nextier Oilfield Solutions I	Energy	\$141	0.0%	160.24%	2.25	15.66	0.00%	-
Peabody Energy Corp New Com Par	Energy	\$215	0.0%	143.62%	3.39	4.08	0.00%	(26.67)%
Splash Beverage Group Inc	Miscellaneous	\$7	0.0%	143.15%	0.10	(4.44)	0.00%	-
Seacor Marine Holdings Inc Com	Energy	\$18	0.0%	137.37%	0.21	(3.96)	0.00%	-
Rpc Inc	Energy	\$72	0.0%	135.02%	2.31	27.50	1.87%	(12.41)%
Soc Telemed Inc Cl A	Health Care	\$23	0.0%	133.53%	0.30	(5.96)	0.00%	-
Nextdecade Corp	Energy	\$22	0.0%	132.29%	0.82	(9.59)	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
Neonode Inc Com Par	Information Technology	\$2	0.0%	-	0.08	(48.64)	0.00%	18.70%
Polarityte Inc	Health Care	\$0	0.0%	-	0.02	(0.94)	0.00%	66.95%
Onconova Therapeutics Inc	Health Care	\$3	0.0%	-	0.04	(2.25)	0.00%	-
Kodiak Sciences Inc	Health Care	\$24	0.0%	(90.89)%	0.40	(1.25)	0.00%	-
Aligos Therapeutics Inc Com	Health Care	\$2	0.0%	(81.88)%	0.09	(0.86)	0.00%	-
Electric Last Mile Solutns I Class A	Consumer Discretionary	\$6	0.0%	(79.66)%	0.18	(6.36)	0.00%	-
Esports Entmt Group Inc	Consumer Discretionary	\$1	0.0%	(79.42)%	0.03	(0.54)	0.00%	-
Mei Pharma Inc	Health Care	\$6	0.0%	(77.43)%	0.08	(0.83)	0.00%	-
Baudax Bio Inc	Health Care	\$0	0.0%	(76.96)%	0.01	(0.75)	0.00%	-
Applied Therapeutics Inc	Health Care	\$4	0.0%	(76.42)%	0.06	(0.68)	0.00%	-

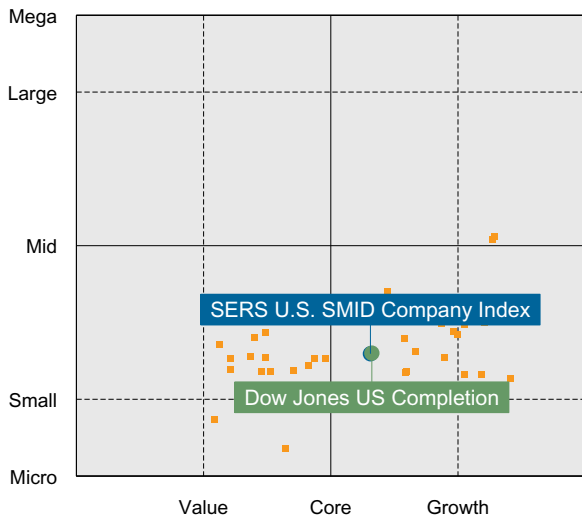
# Historical Holdings Based Style Analysis

## SERS U.S. SMID Company Index

### For Three Years Ended March 31, 2022

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.

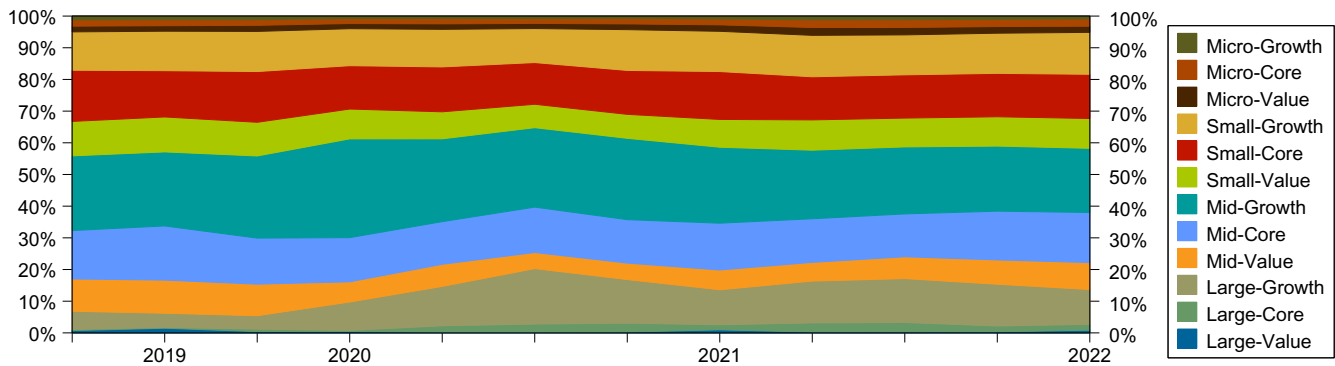
**Average Style Map vs Callan SMID Broad MFs Holdings for Three Years Ended March 31, 2022**



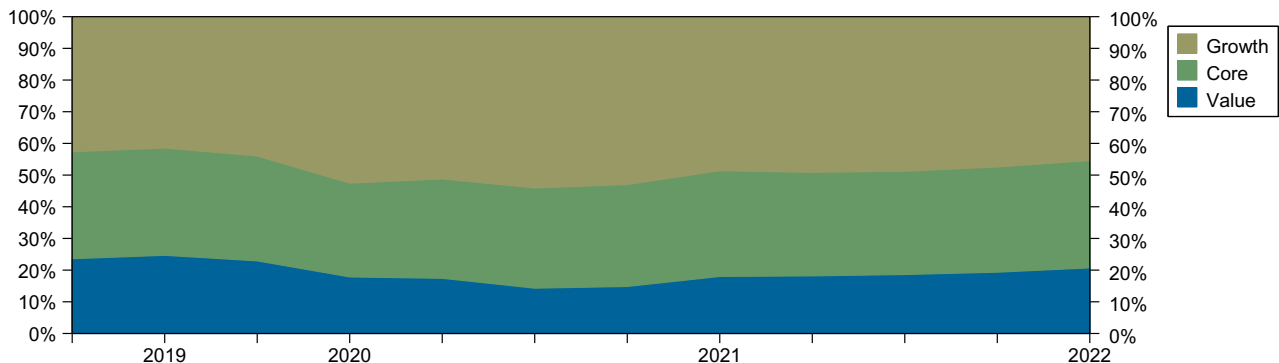
**Average Style Exposure Matrix Holdings for Three Years Ended March 31, 2022**

	0.5% (2)	1.7% (4)	10.8% (19)	<b>13.0% (25)</b>
Large	0.5% (2)	1.7% (4)	10.9% (19)	<b>13.1% (25)</b>
Mid	7.5% (66)	14.6% (136)	24.0% (184)	<b>46.1% (386)</b>
	7.4% (66)	14.6% (135)	24.1% (185)	<b>46.1% (386)</b>
Small	9.3% (297)	14.3% (522)	12.4% (399)	<b>36.0% (1218)</b>
	9.2% (297)	14.3% (520)	12.4% (402)	<b>35.8% (1219)</b>
Micro	1.9% (529)	2.0% (543)	1.0% (202)	<b>4.9% (1274)</b>
	1.8% (685)	2.1% (815)	1.0% (255)	<b>4.9% (1755)</b>
<b>Total</b>	<b>19.2% (894)</b>	<b>32.6% (1205)</b>	<b>48.2% (804)</b>	<b>100.0% (2903)</b>
	<b>19.0% (1050)</b>	<b>32.7% (1474)</b>	<b>48.3% (861)</b>	<b>100.0% (3385)</b>
	Value	Core	Growth	<b>Total</b>

### 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, 2022

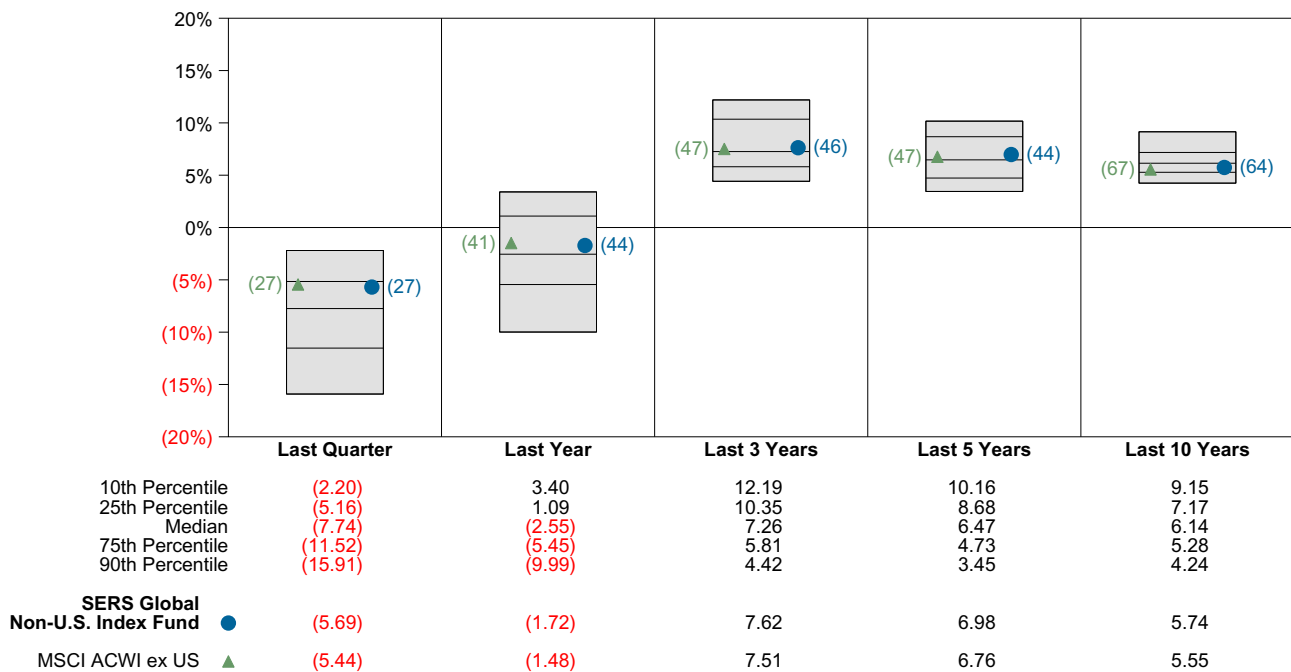
### Investment Philosophy

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.

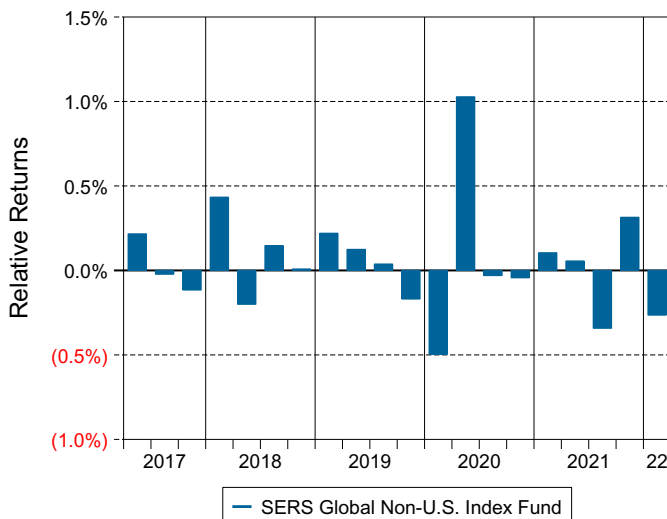
### Quarterly Summary and Highlights

- SERS Global Non-U.S. Index Fund's portfolio posted a (5.69)% return for the quarter placing it in the 27 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 44 percentile for the last year.
- SERS Global Non-U.S. Index Fund's portfolio underperformed the MSCI ACWI ex US by 0.25% for the quarter and underperformed the MSCI ACWI ex US for the year by 0.23%.

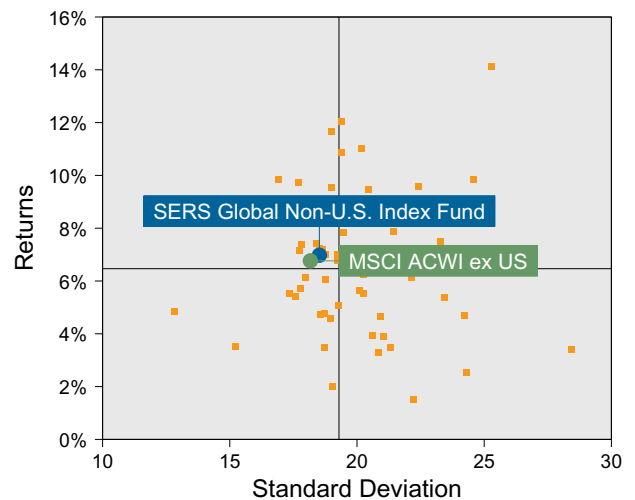
### Performance vs Callan Non US Equity Mutual Funds (Institutional Net)



### Relative Return vs MSCI ACWI ex US



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

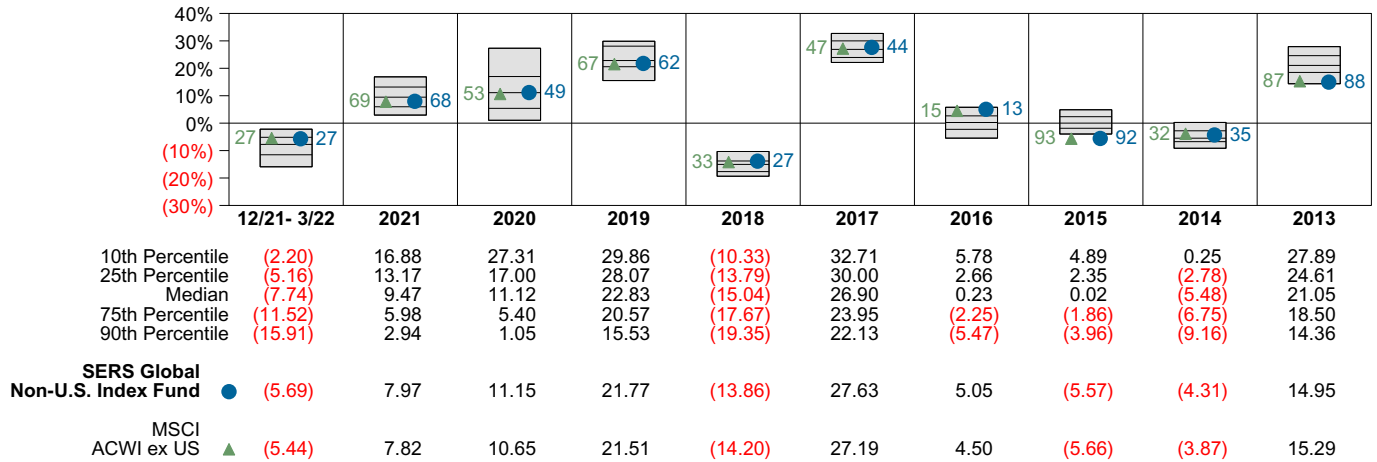


# SERS Global Non-U.S. Index Fund Return Analysis Summary

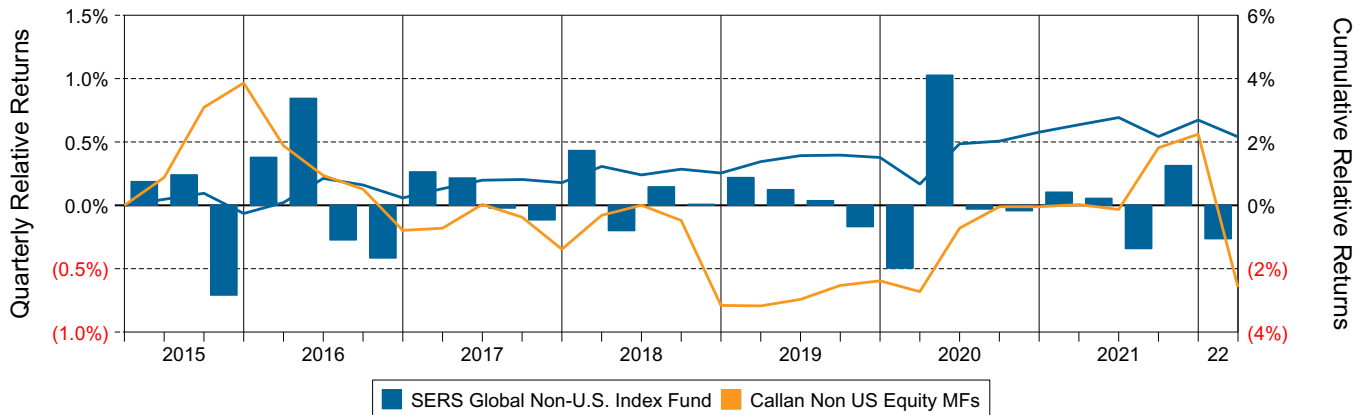
## Return Analysis

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.

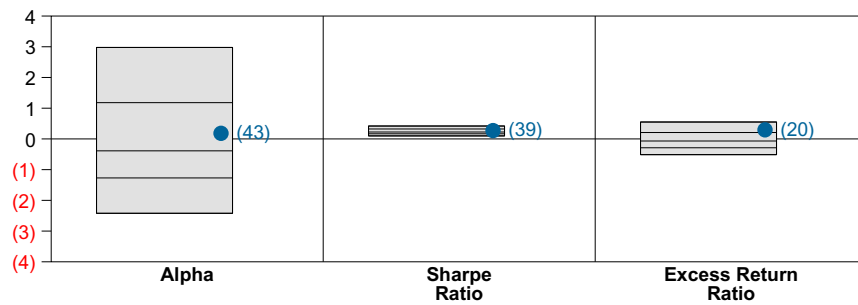
### Performance vs Callan Non US Equity Mutual Funds (Institutional Net)



### Cumulative and Quarterly Relative Returns 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, 2022

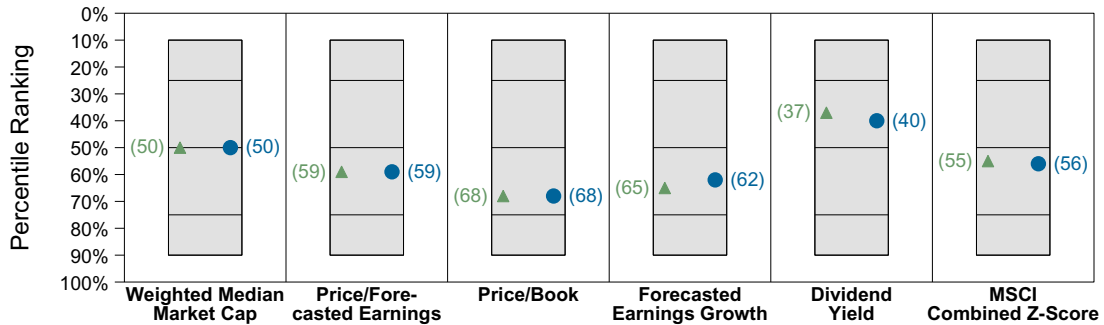


# SERS Global Non-U.S. Index Fund Equity Characteristics Analysis Summary

## 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, 2022

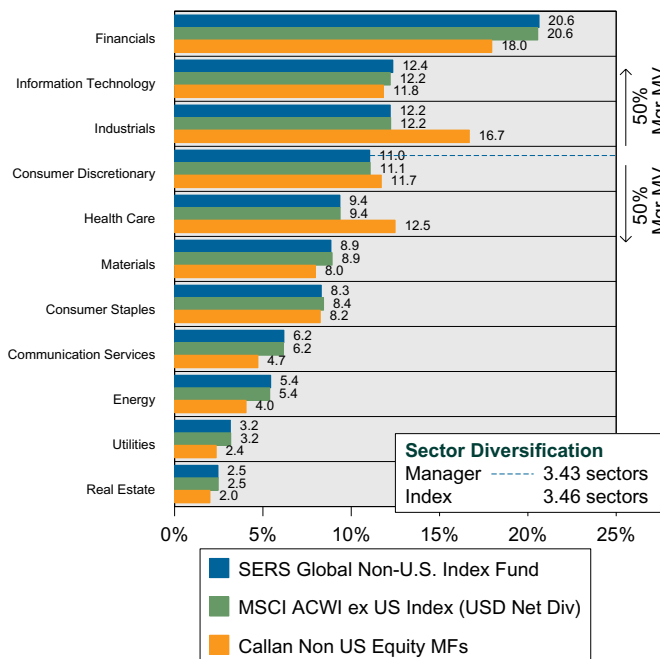


	Weighted Median Market Cap	Price/Forecasted Earnings	Price/Book	Forecasted Earnings Growth	Dividend Yield	MSCI Combined Z-Score
10th Percentile	66.16	23.23	3.86	21.42	3.52	0.91
25th Percentile	53.16	18.44	3.02	18.57	2.95	0.47
Median	40.14	14.81	2.14	16.19	2.49	0.13
75th Percentile	30.66	12.00	1.50	14.31	1.79	(0.23)
90th Percentile	17.43	9.82	1.24	12.66	1.32	(0.63)
<b>SERS Global Non-U.S. Index Fund</b>	● 40.03	13.19	1.74	15.31	2.73	(0.01)
MSCI ACWI ex US Index (USD Net Div)	▲ 40.18	13.32	1.74	14.86	2.77	0.02

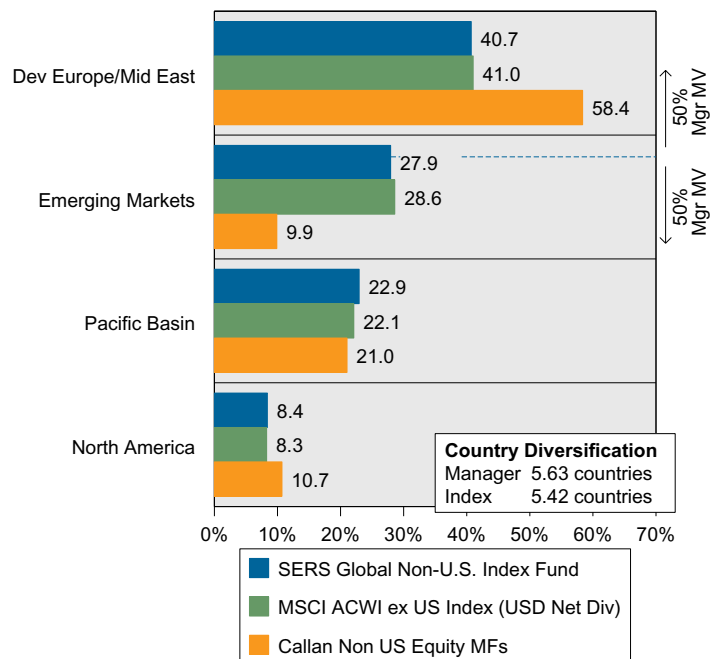
## Sector Weights

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, 2022



### Regional Allocation March 31, 2022



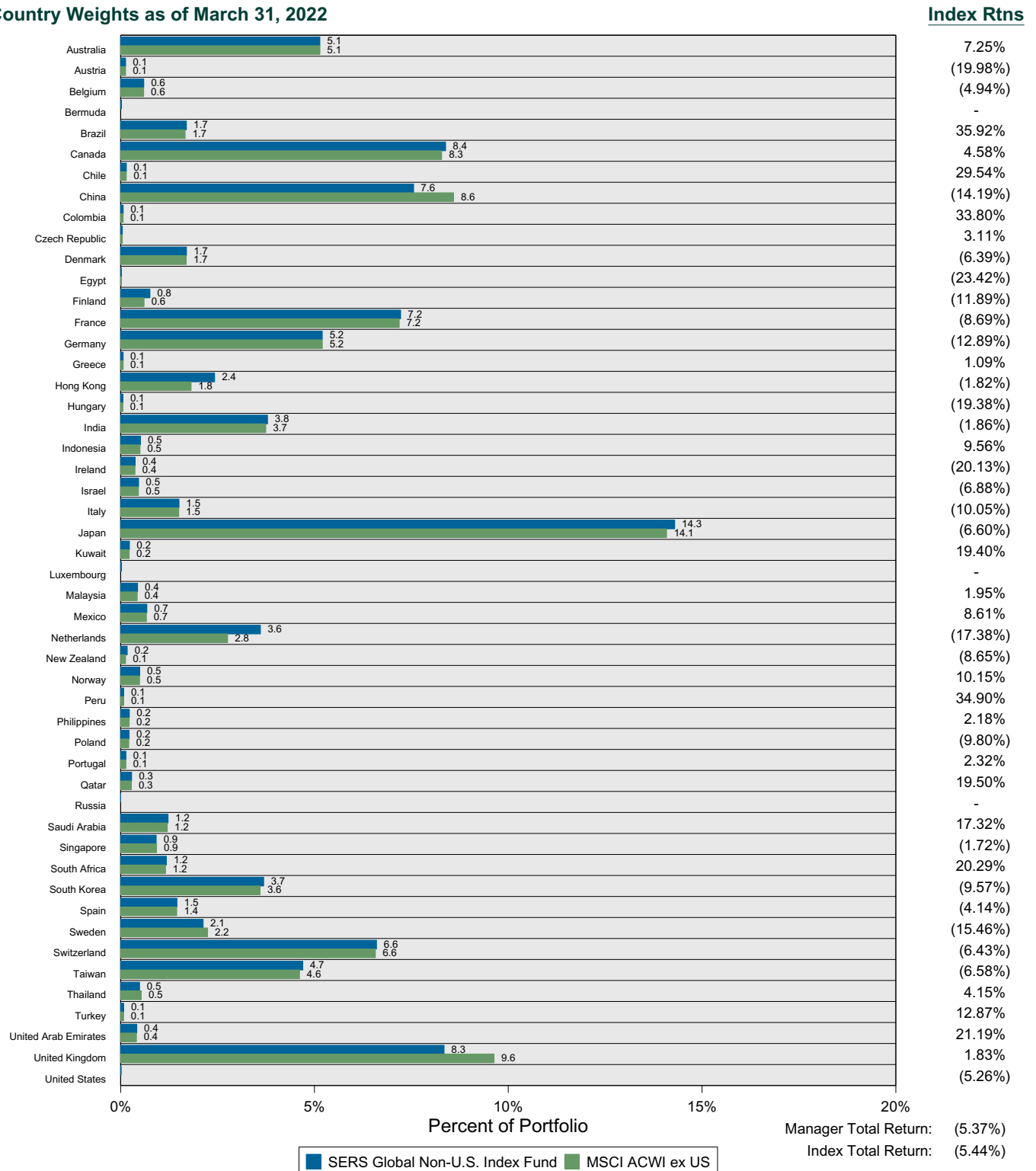
# Country Allocation

## 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, 2022. 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, 2022



## SERS Global Non-U.S. Index Fund Top 10 Portfolio Holdings Characteristics as of March 31, 2022

### 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	\$34,709	2.0%	(5.80)%	540.33	18.93	1.84%	20.38%
Nestle S A Shs Nom New	Consumer Staples	\$24,494	1.4%	(6.61)%	367.68	25.23	2.33%	7.59%
Asml Holding N V Asml Rev Stk Spl	Information Technology	\$18,688	1.1%	(15.55)%	275.88	34.86	0.90%	18.14%
Roche Hldgs Ag Basel Div Rts Ctf	Health Care	\$18,637	1.1%	(1.82)%	279.76	17.56	2.54%	6.90%
Samsung Electronics Co Ltd Ord	Information Technology	\$18,632	1.1%	(12.42)%	342.80	9.57	2.07%	25.70%
Tencent Holdings Limited Shs Par Hkd	Communication Services	\$18,562	1.1%	(15.46)%	459.30	20.57	0.43%	14.88%
Alibaba Group Holding Ltd	Consumer Discretionary	\$14,648	0.9%	(5.56)%	310.46	12.98	0.00%	3.42%
Shell Plc Shs A	Energy	\$14,233	0.8%	27.61%	209.68	6.55	3.19%	80.50%
Astrazeneca Plc Ord	Health Care	\$13,761	0.8%	15.42%	206.70	19.20	2.07%	15.70%
Lvmh Moet Hennessy Lou Vuitt Ord	Consumer Discretionary	\$13,378	0.8%	(12.60)%	364.71	24.09	1.54%	12.40%

### 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
Grupo Financiero Inbursa Ord Ser O	Financials	\$313	0.0%	76.48%	12.92	13.40	3.60%	8.03%
Atacadao Distribuicao Comerc Common	Consumer Staples	\$157	0.0%	73.10%	9.41	17.17	2.42%	32.00%
Shijiazhuang Yiling Pharm. 'a'	Health Care	\$12	0.0%	71.21%	8.82	31.81	2.13%	5.43%
Saudi Arabian Mining	Materials	\$1,029	0.1%	70.83%	43.96	23.07	0.00%	(8.76)%
Sociedad Quimica Y Minera De Pfd Shs	Materials	\$793	0.0%	69.32%	12.34	33.08	2.30%	16.02%
Bolsa De Mercadorias	Financials	\$1,381	0.1%	68.06%	20.16	17.99	5.03%	5.82%
Kumba Iron Ore Ltd Shs	Materials	\$195	0.0%	63.68%	14.45	8.07	15.75%	14.50%
Yanzhou Coal Mining A	Energy	\$9	0.0%	63.22%	18.43	10.15	1.56%	45.38%
Alinma Bank	Financials	\$691	0.0%	62.27%	20.71	21.10	1.93%	19.36%
Hypermarcas S A Shs	Health Care	\$211	0.0%	61.81%	5.16	14.42	3.19%	5.50%

### 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
Magnit	Consumer Staples	\$0	0.0%	(99.93)%	5.14	7.89	12.99%	(21.60)%
Phosagro Ojsc Sponsored Gdr Reg S	Materials	\$0	0.0%	(99.78)%	12.65	3.28	11.00%	(19.35)%
Novatek Jt Stk Co Gdr Reg S	Energy	\$0	0.0%	(99.75)%	0.20	0.03	1095.91%	(6.71)%
Tcs Group Holding Plc	Financials	\$0	0.0%	(96.32)%	0.64	0.67	0.26%	59.89%
Polymetal International	Materials	\$0	0.0%	(78.66)%	1.92	2.17	23.71%	12.75%
Yandex N V Shs Class A	Communication Services	\$0	0.0%	(71.49)%	6.12	21.67	0.00%	14.32%
Huabao Intl Hldgs Ltd Shs	Materials	\$35	0.0%	(69.60)%	1.80	16.41	3.52%	(2.39)%
I Mab Sponsored Ads	Health Care	\$42	0.0%	(65.67)%	1.34	(9.59)	0.00%	26.00%
Bank For Fr Trd Vneshtgbank Shs	Financials	\$0	0.0%	(62.57)%	3.12	-	7.07%	8.09%
Logan Property Holdings	Real Estate	\$25	0.0%	(62.52)%	1.62	0.85	47.98%	7.14%



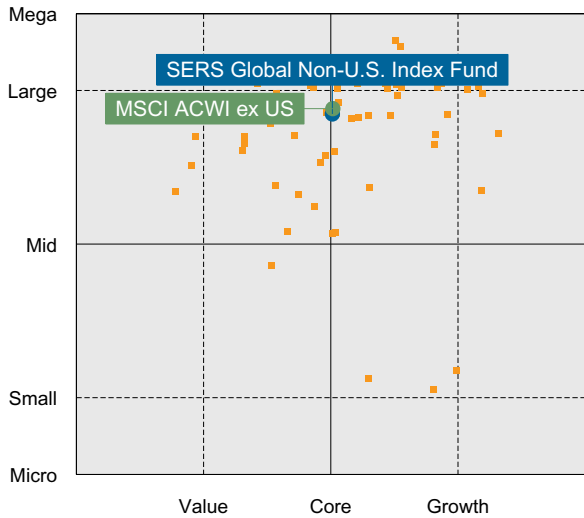
# Historical Holdings Based Style Analysis

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

### For Three Years Ended March 31, 2022

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.

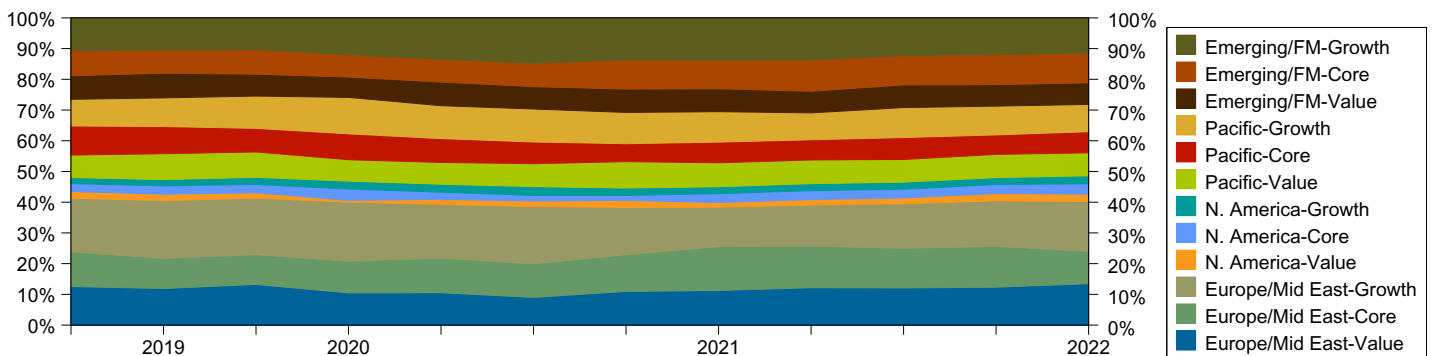
**Average Style Map vs Callan Non US Equity MFs Holdings for Three Years Ended March 31, 2022**



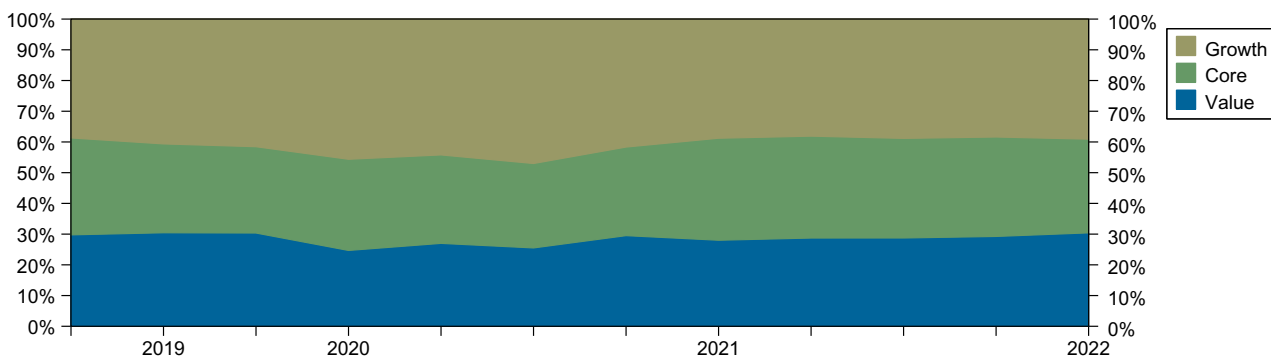
**Average Style Exposure Matrix Holdings for Three Years Ended March 31, 2022**

	Value	Core	Growth	Total
Europe/ Mid East	11.7% (130)	11.6% (121)	16.4% (158)	39.7% (409)
	12.0% (143)	11.5% (124)	17.0% (175)	40.5% (442)
N. America	1.9% (25)	2.7% (29)	2.4% (29)	6.9% (83)
	1.9% (27)	2.7% (31)	2.4% (33)	7.0% (91)
Pacific	7.7% (149)	7.4% (136)	9.9% (149)	25.0% (434)
	7.4% (150)	7.1% (136)	9.5% (149)	24.0% (435)
Emerging/ FM	7.3% (421)	8.7% (353)	12.4% (351)	28.4% (1125)
	7.4% (481)	8.7% (419)	12.4% (415)	28.5% (1315)
<b>Total</b>	<b>28.5% (725)</b>	<b>30.4% (639)</b>	<b>41.0% (687)</b>	<b>100.0% (2051)</b>
	28.8% (801)	30.0% (710)	41.3% (772)	100.0% (2283)

**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, 2022

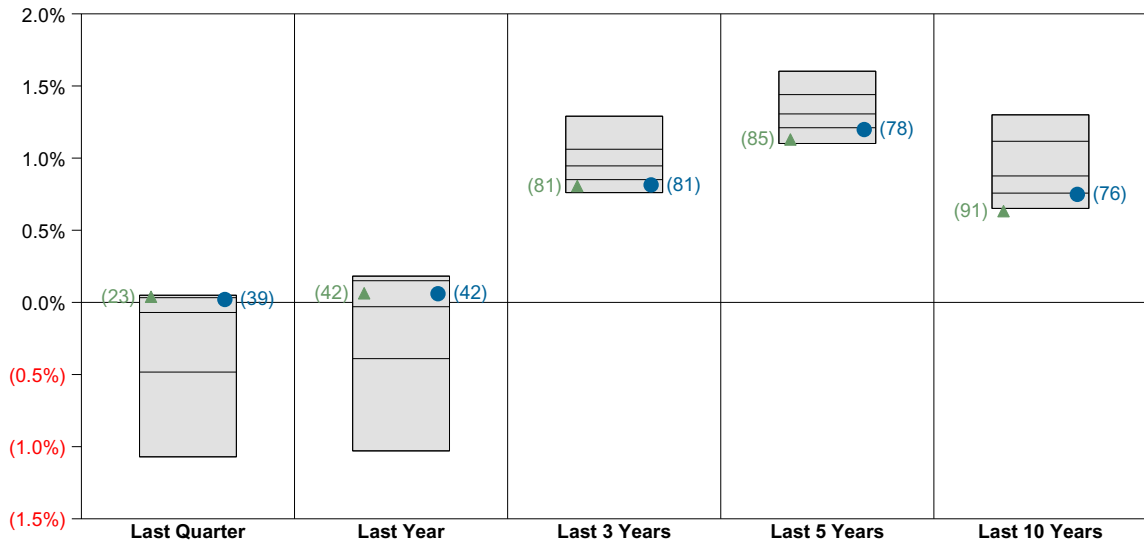
### Investment Philosophy

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 0.02% return for the quarter placing it in the 39 percentile of the Callan Cash Database group for the quarter and in the 42 percentile for the last year.
- SERS Short Term Investment Fund's portfolio underperformed the 3-month Treasury Bill by 0.02% for the quarter and underperformed the 3-month Treasury Bill for the year by 0.00%.

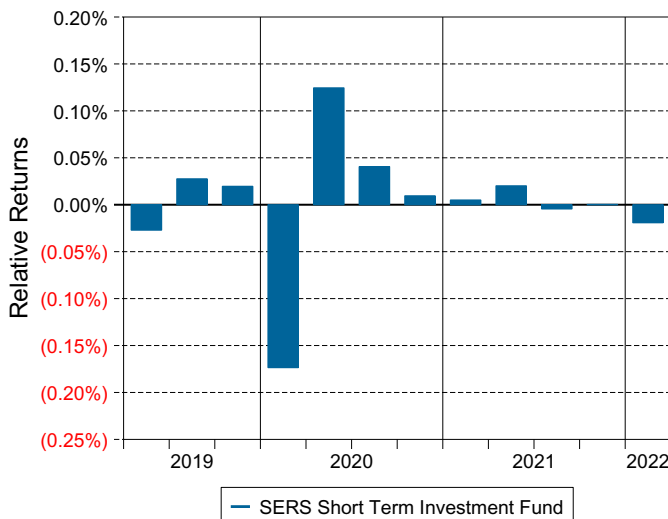
### Performance vs Callan Cash Database (Gross)



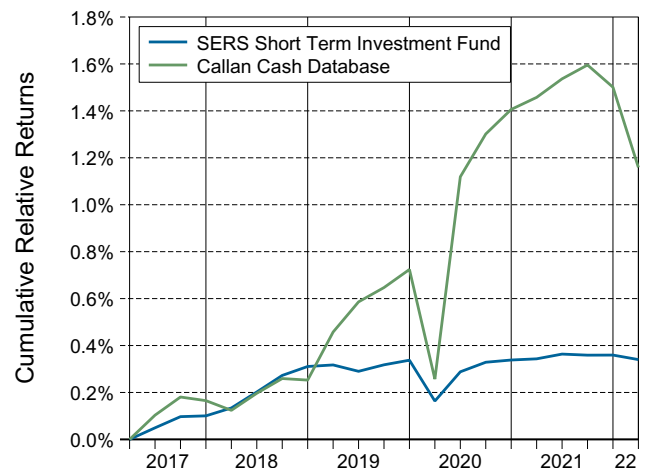
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	0.05	0.18	1.29	1.60	1.30
25th Percentile	0.03	0.15	1.06	1.44	1.12
Median	(0.07)	(0.03)	0.95	1.31	0.88
75th Percentile	(0.48)	(0.39)	0.85	1.21	0.76
90th Percentile	(1.07)	(1.03)	0.76	1.10	0.65

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
<b>SERS Short Term Investment Fund</b> ●	0.02	0.06	0.81	1.20	0.75
3-month Treasury Bill ▲	0.04	0.06	0.81	1.13	0.63

### Relative Return vs 3-month Treasury Bill



### Cumulative Returns vs 3-month Treasury Bill

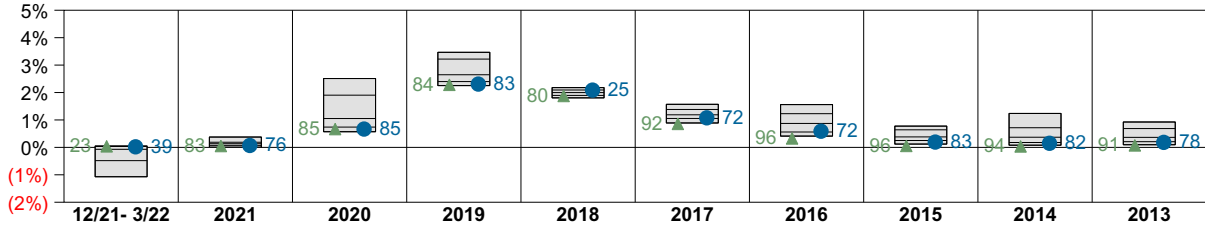


# SERS Short Term Investment Fund Return Analysis Summary

## Return Analysis

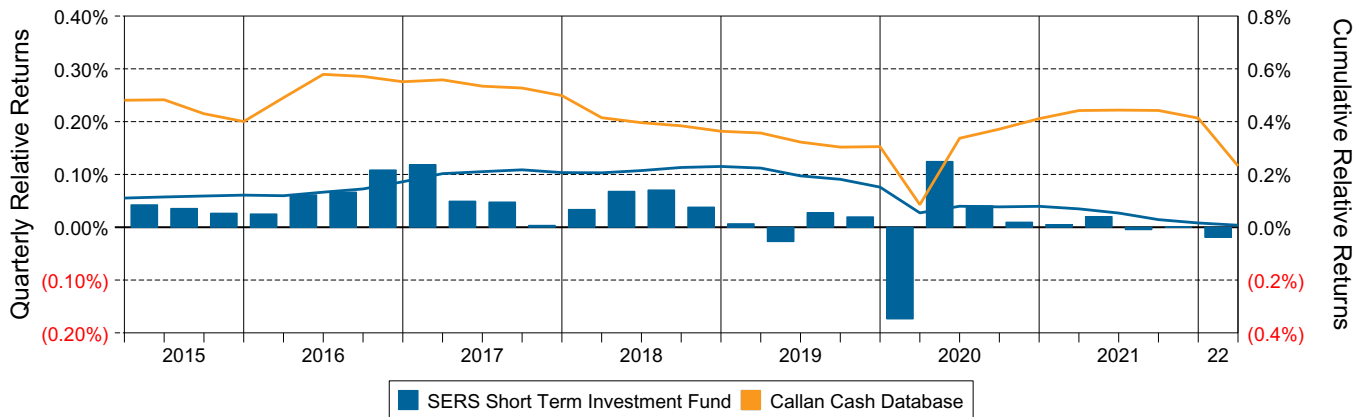
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and 12 quarter rolling manager returns versus the appropriate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

### Performance vs Callan Cash Database (Gross)

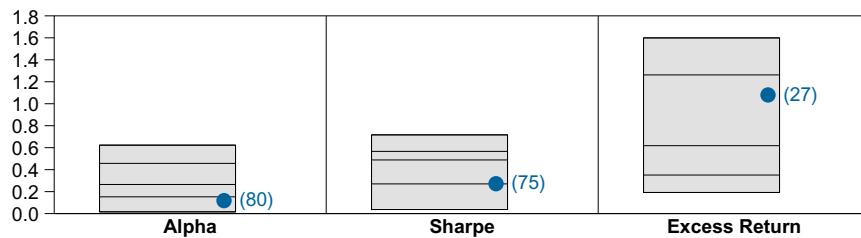


	12/21- 3/22	2021	2020	2019	2018	2017	2016	2015	2014	2013
10th Percentile	0.05	0.38	2.51	3.47	2.18	1.57	1.56	0.78	1.24	0.93
25th Percentile	0.03	0.19	1.90	3.22	2.09	1.38	1.23	0.64	0.72	0.69
Median	(0.07)	0.13	1.05	2.65	2.00	1.19	0.87	0.38	0.37	0.37
75th Percentile	(0.48)	0.07	0.74	2.40	1.89	1.05	0.56	0.25	0.18	0.21
90th Percentile	(1.07)	0.01	0.57	2.25	1.81	0.89	0.41	0.12	0.08	0.10
<b>SERS Short Term Investment Fund</b>	● 0.02	0.07	0.67	2.31	2.09	1.08	0.59	0.19	0.15	0.18
3-month Treasury Bill	▲ 0.04	0.05	0.67	2.28	1.87	0.86	0.33	0.05	0.03	0.07

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



### Risk Adjusted Return Measures vs 3-month Treasury Bill Rankings Against Callan Cash Database (Gross) Seven Years Ended March 31, 2022



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.62	0.72	1.60
25th Percentile	0.46	0.57	1.26
Median	0.26	0.49	0.62
75th Percentile	0.15	0.27	0.35
90th Percentile	0.02	0.04	0.19
<b>SERS Short Term Investment Fund</b>	● 0.12	● 0.27	● 1.08

# SERS U.S. Short Term Bond Idx Fund

## Period Ended March 31, 2022

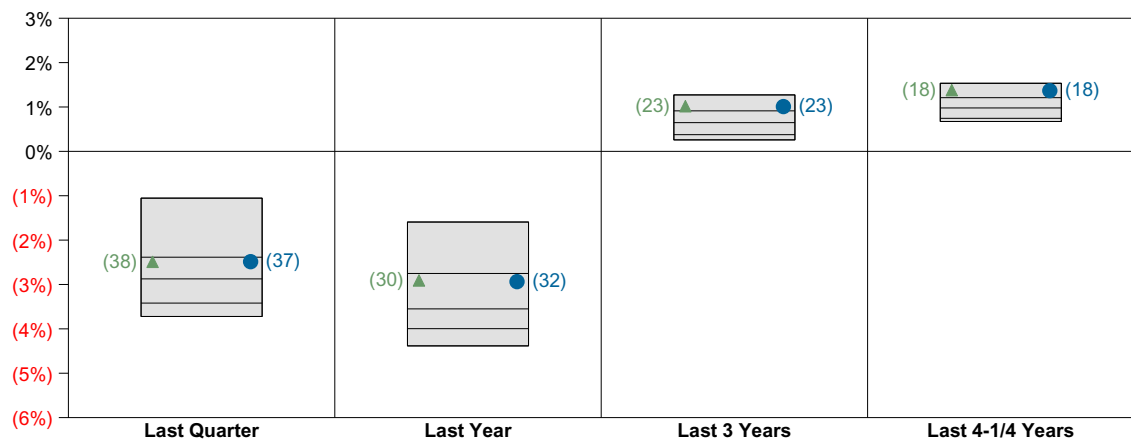
### Investment Philosophy

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

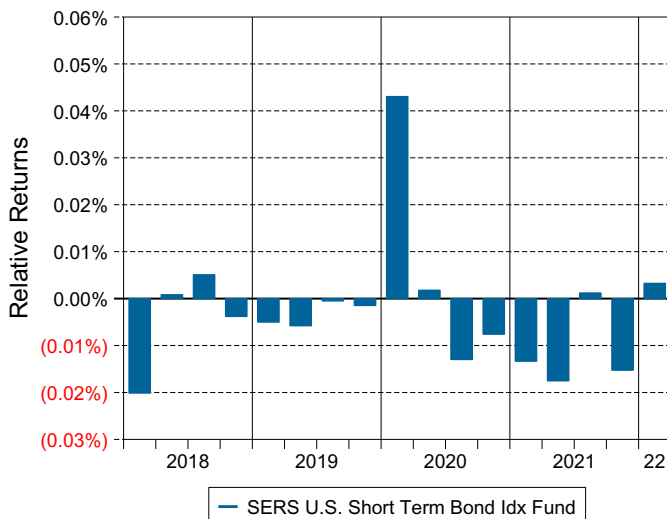
- SERS U.S. Short Term Bond Idx Fund's portfolio posted a (2.49)% return for the quarter placing it in the 37 percentile of the Callan Short US Gov Bond Mut Funds group for the quarter and in the 32 percentile for the last year.
- SERS U.S. Short Term Bond Idx Fund's portfolio outperformed the Blmbg Gov/Cred 1-3 Yr by 0.00% for the quarter and underperformed the Blmbg Gov/Cred 1-3 Yr for the year by 0.03%.

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

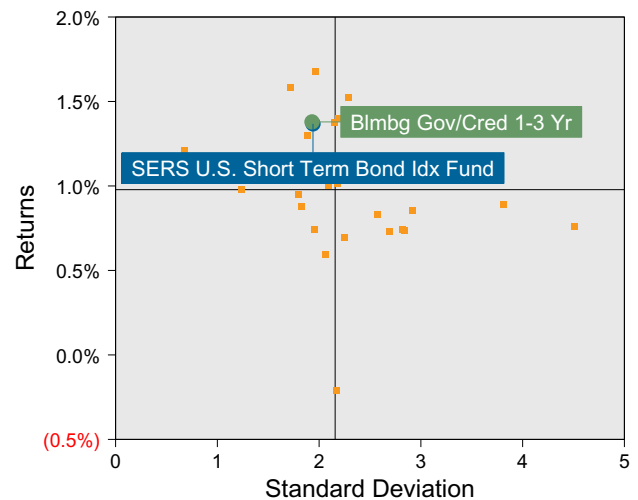


	Last Quarter	Last Year	Last 3 Years	Last 4-1/4 Years
10th Percentile	(1.05)	(1.59)	1.27	1.53
25th Percentile	(2.39)	(2.75)	0.91	1.21
Median	(2.87)	(3.55)	0.65	0.98
75th Percentile	(3.42)	(4.00)	0.38	0.74
90th Percentile	(3.72)	(4.38)	0.26	0.67
<b>SERS U.S. Short Term Bond Idx Fund</b>	<b>(2.49)</b>	<b>(2.94)</b>	<b>1.01</b>	<b>1.37</b>
<b>Blmbg Gov/Cred 1-3 Yr</b>	<b>(2.49)</b>	<b>(2.91)</b>	<b>1.02</b>	<b>1.38</b>

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



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



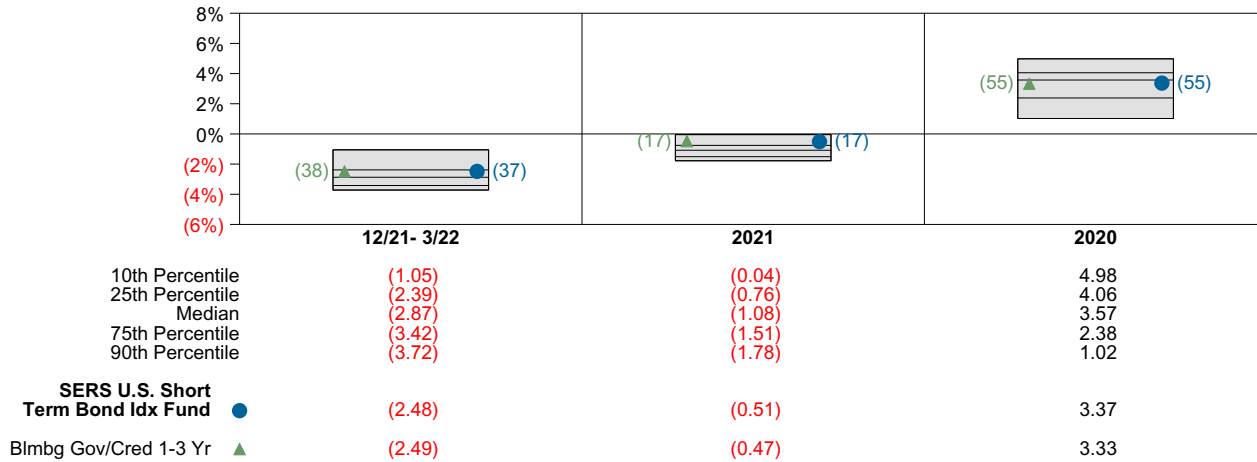
# SERS U.S. Short Term Bond Idx Fund

## Return Analysis Summary

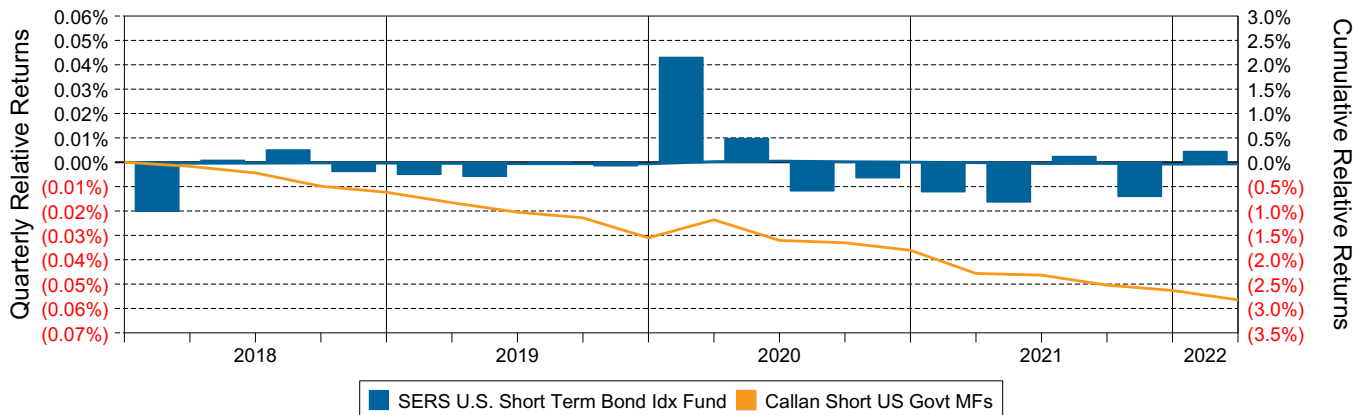
### Return Analysis

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)



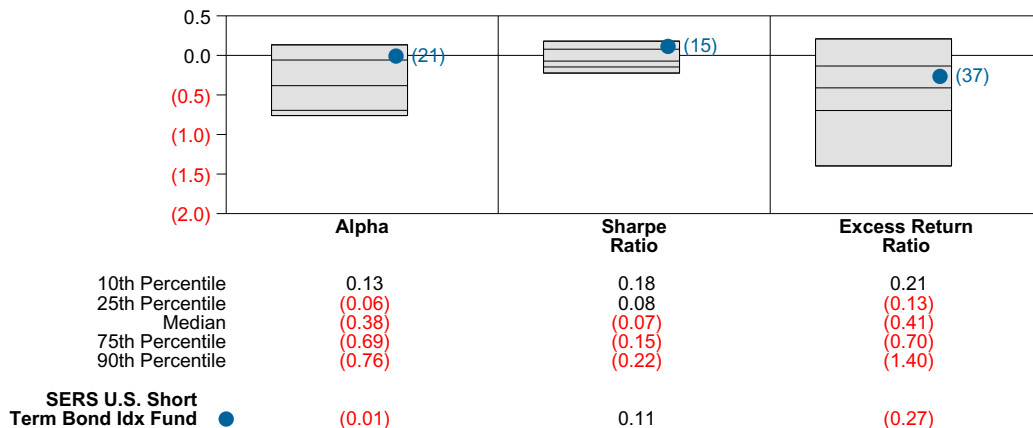
### Cumulative and Quarterly Relative Returns vs Blmbg Gov/Cred 1-3 Yr



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

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

#### Four and One-Quarter Years Ended March 31, 2022



# SERS U.S. Short Term Bond Idx Fund

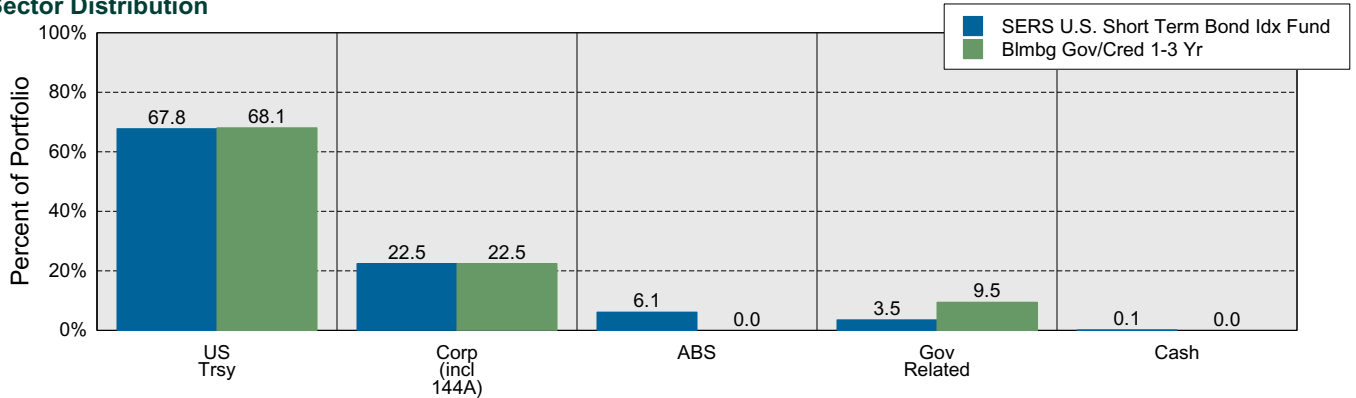
## Portfolio Characteristics Summary

### As of March 31, 2022

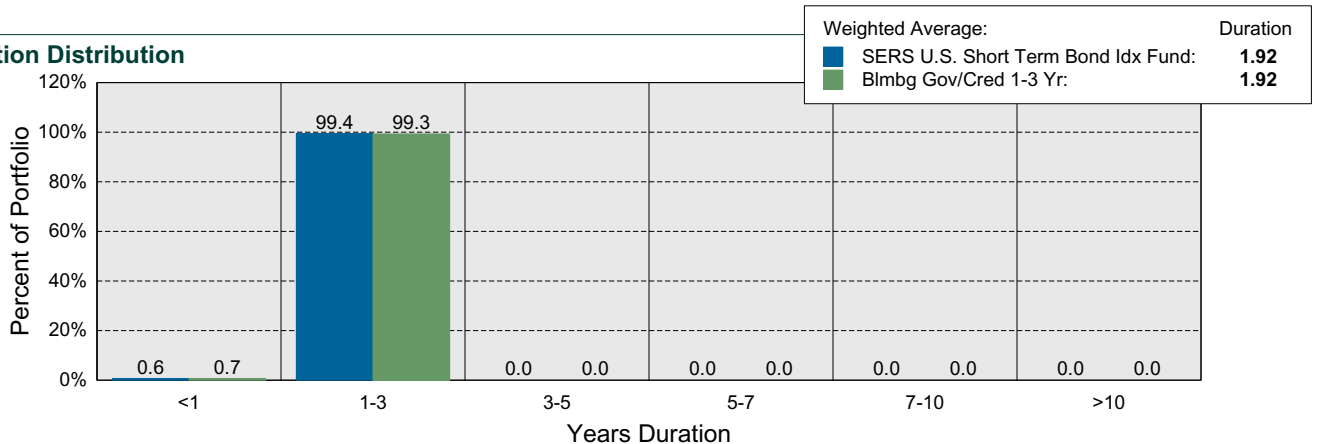
#### Portfolio Structure Comparison

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.

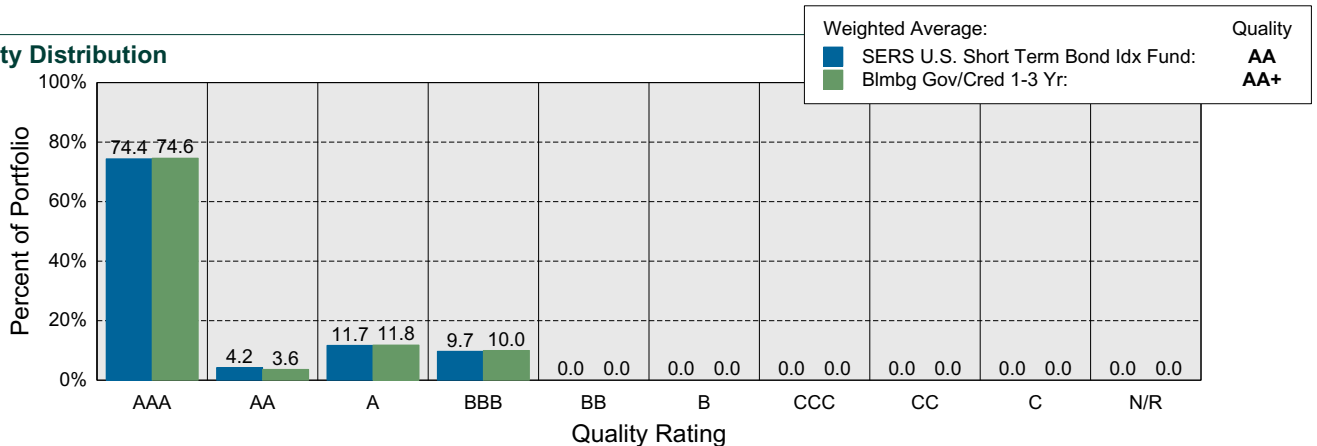
#### Sector Distribution



#### Duration Distribution



#### Quality Distribution



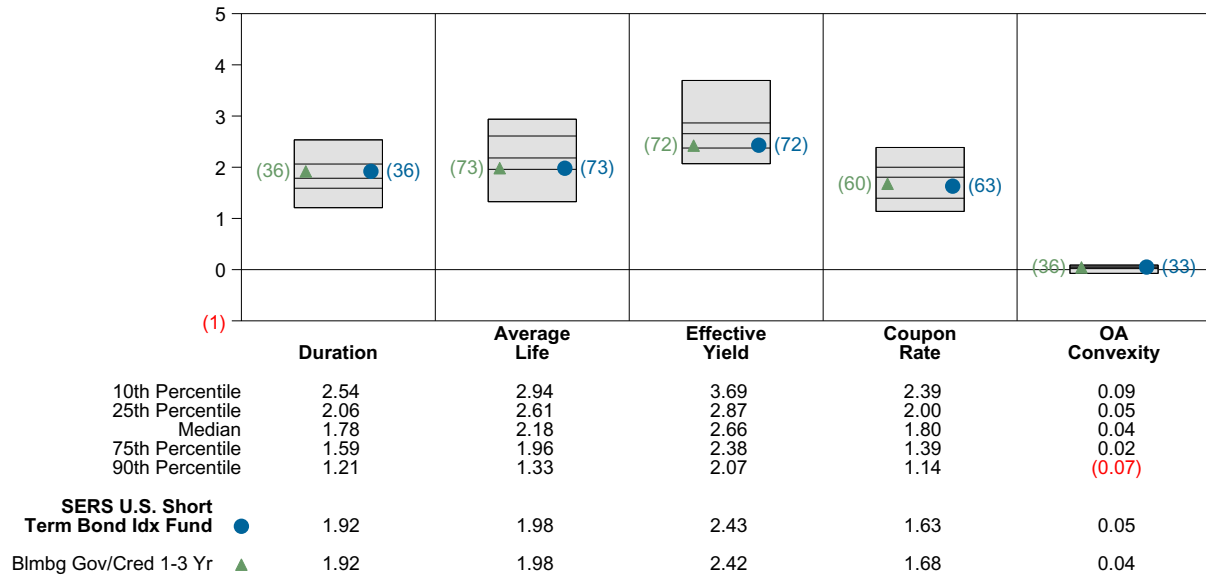
# SERS U.S. Short Term Bond Idx Fund

## Bond Characteristics Analysis Summary

### Portfolio Characteristics

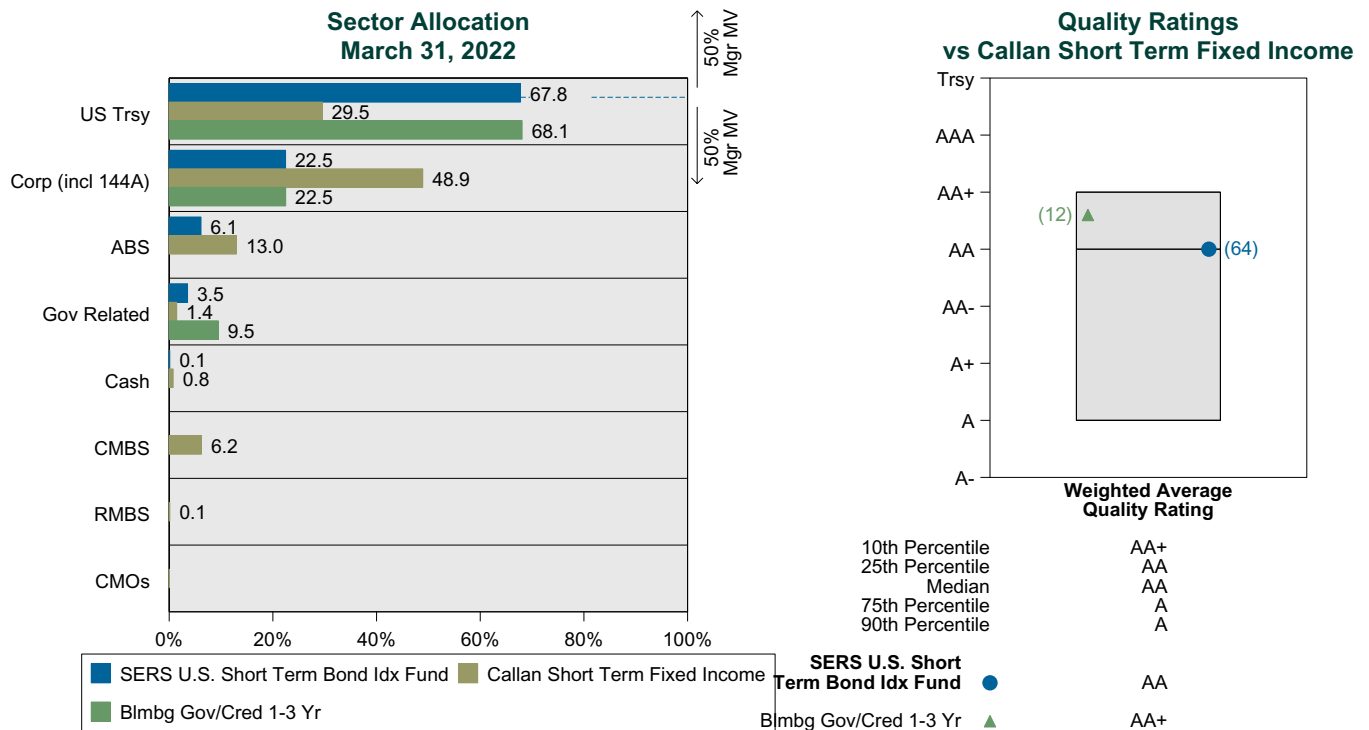
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

### Fixed Income Portfolio Characteristics Rankings Against Callan Short Term Fixed Income as of March 31, 2022



### 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, 2022

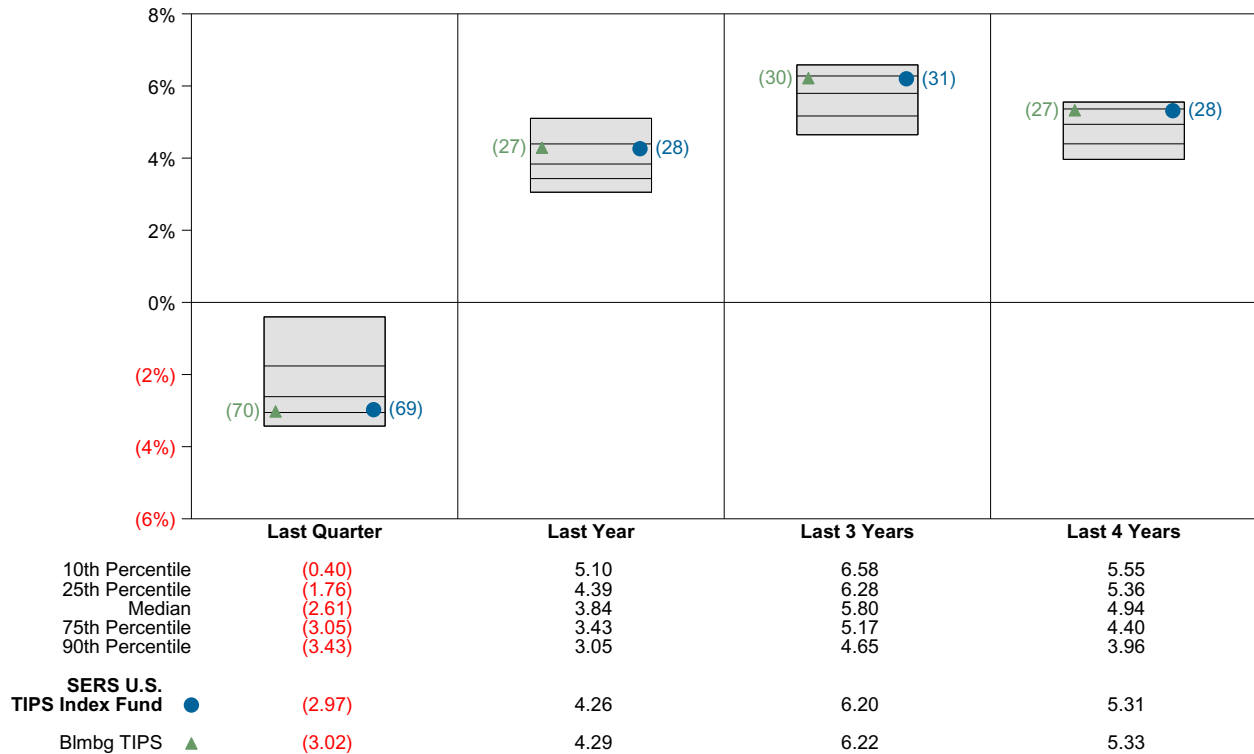
### Investment Philosophy

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

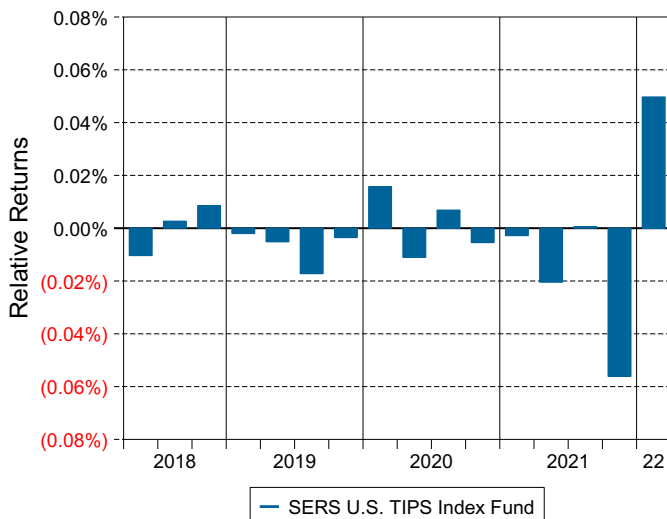
### Quarterly Summary and Highlights

- SERS U.S. TIPS Index Fund's portfolio posted a (2.97)% return for the quarter placing it in the 69 percentile of the Callan Treas Infl Prot Securities MFs group for the quarter and in the 28 percentile for the last year.
- SERS U.S. TIPS Index Fund's portfolio outperformed the Blmbg TIPS by 0.05% for the quarter and underperformed the Blmbg TIPS for the year by 0.03%.

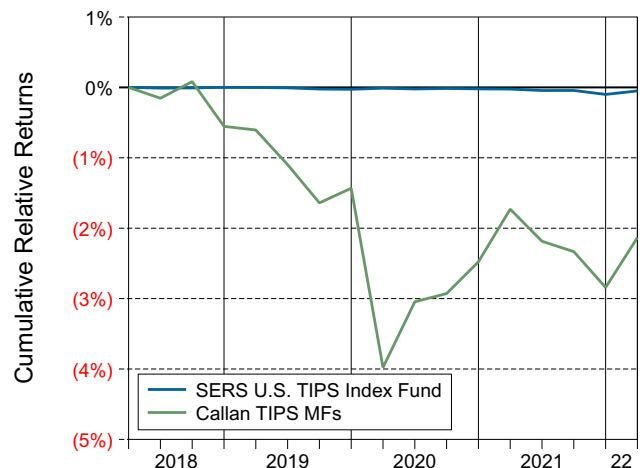
### Performance vs Callan Treas Infl Prot Securities MFs (Institutional Net)



### Relative Return vs Blmbg TIPS



### Cumulative Returns vs Blmbg TIPS

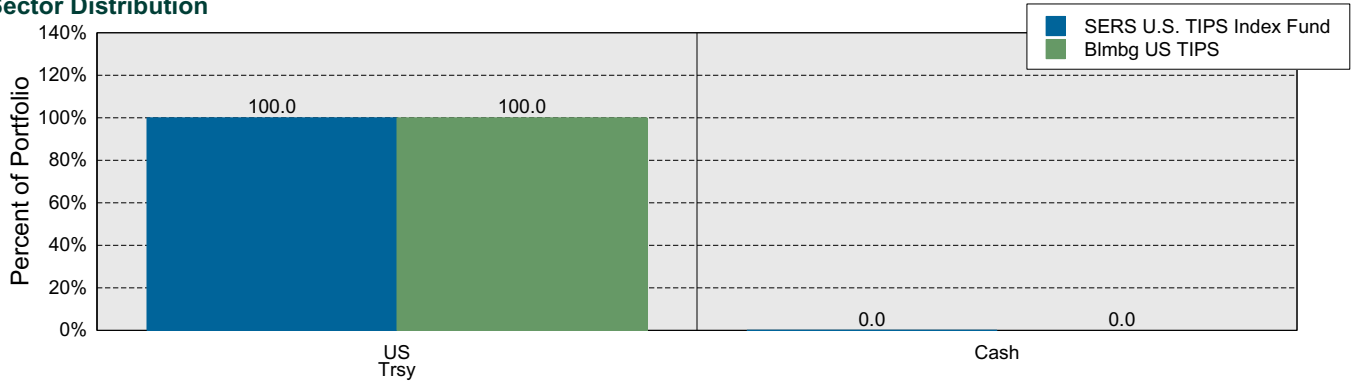


**SERS U.S. TIPS Index Fund**  
**Portfolio Characteristics Summary**  
**As of March 31, 2022**

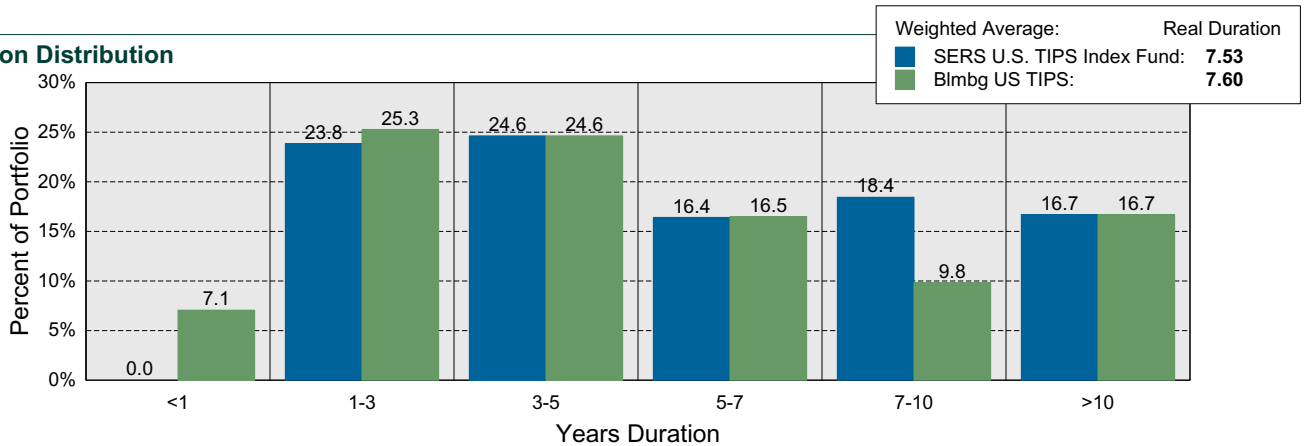
**Portfolio Structure Comparison**

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.

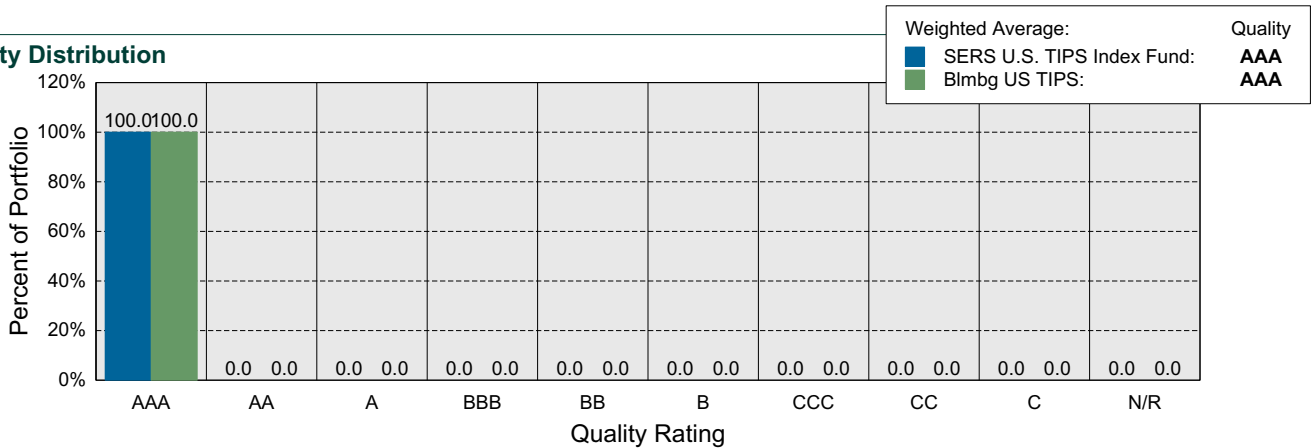
**Sector Distribution**



**Duration Distribution**



**Quality Distribution**

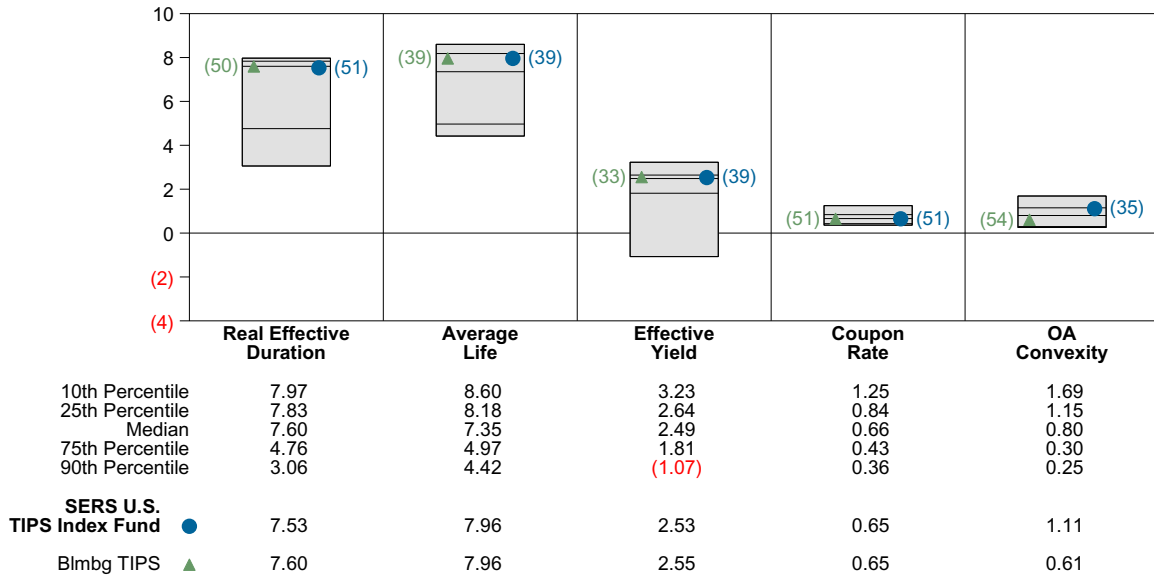


# SERS U.S. TIPS Index Fund Bond Characteristics Analysis Summary

## Portfolio Characteristics

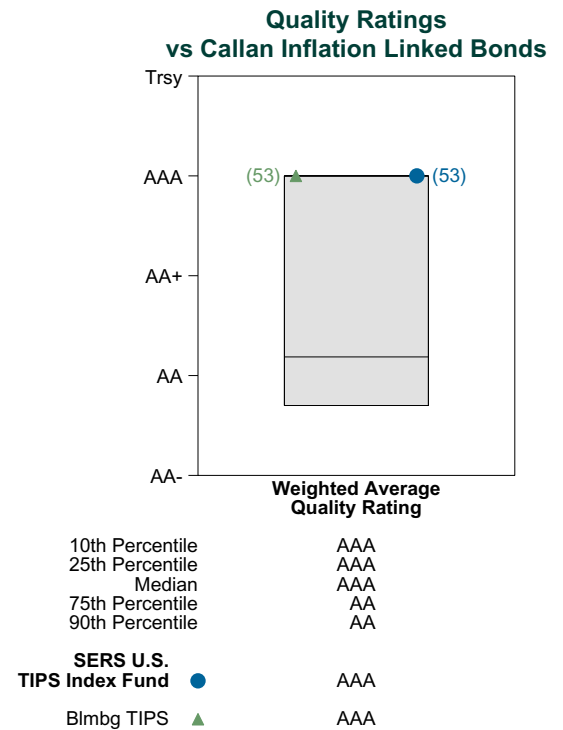
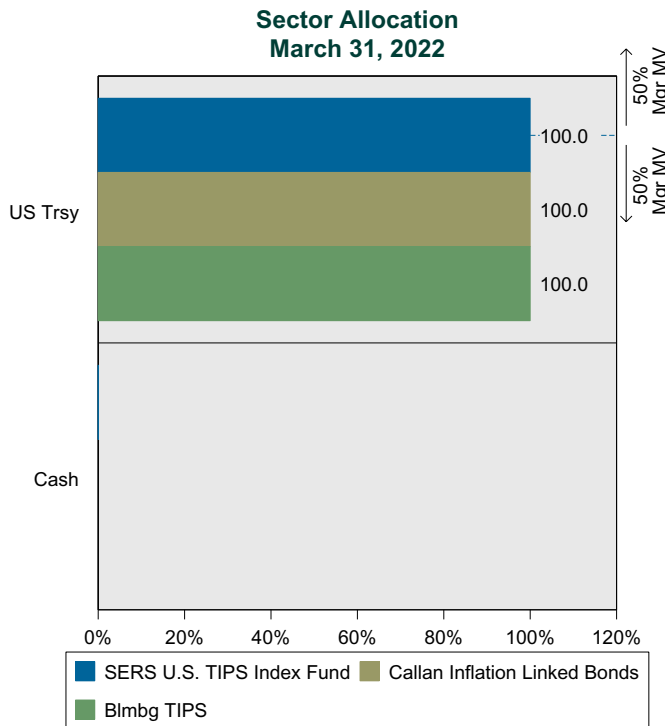
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of March 31, 2022



## 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, 2022

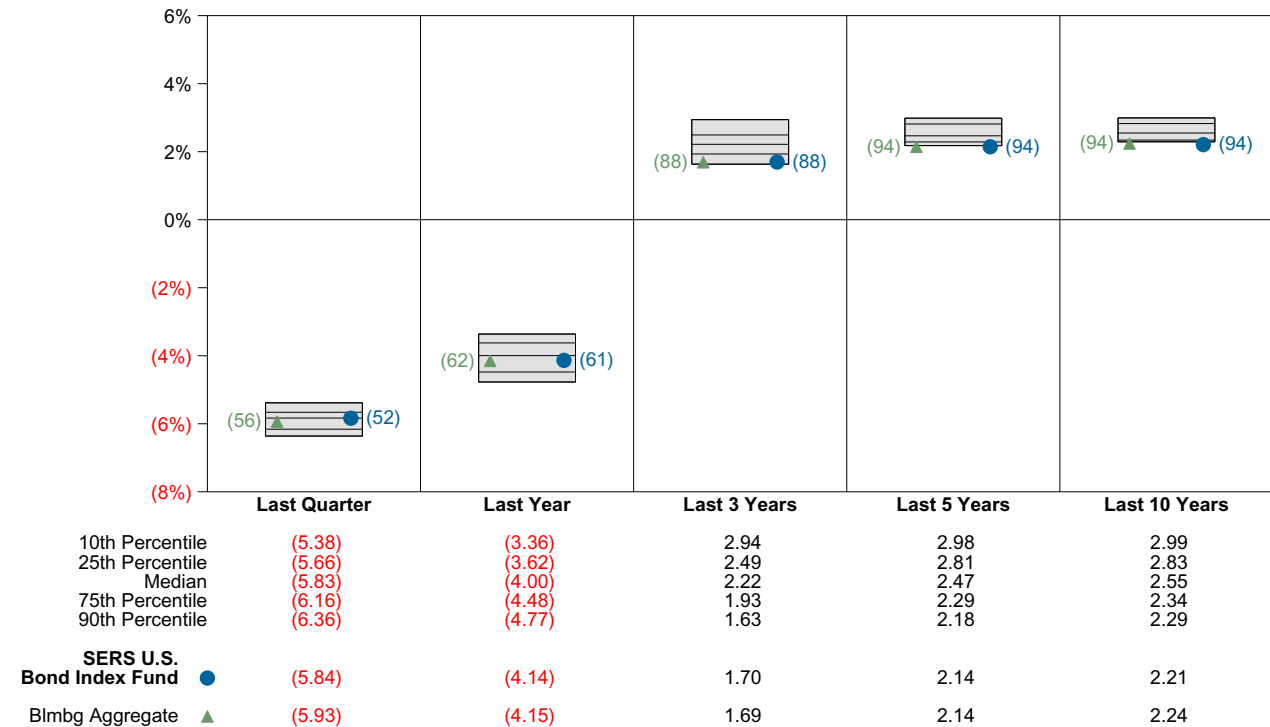
### Investment Philosophy

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

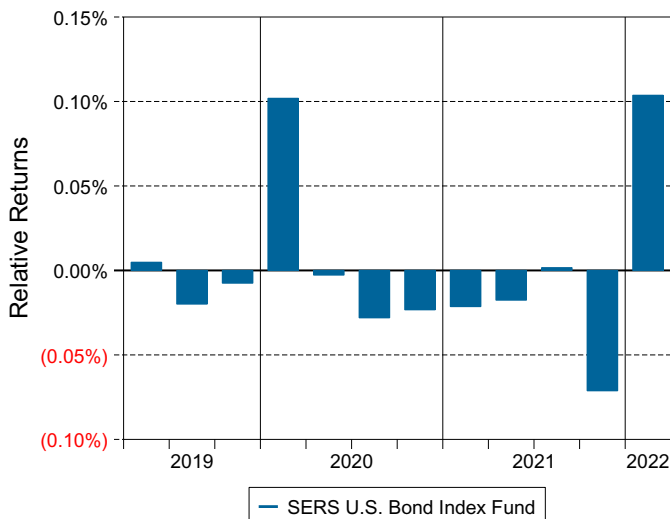
### Quarterly Summary and Highlights

- SERS U.S. Bond Index Fund's portfolio posted a (5.84)% return for the quarter placing it in the 52 percentile of the Callan Core Bond Mutual Funds group for the quarter and in the 61 percentile for the last year.
- SERS U.S. Bond Index Fund's portfolio outperformed the Blmbg Aggregate by 0.10% for the quarter and outperformed the Blmbg Aggregate for the year by 0.02%.

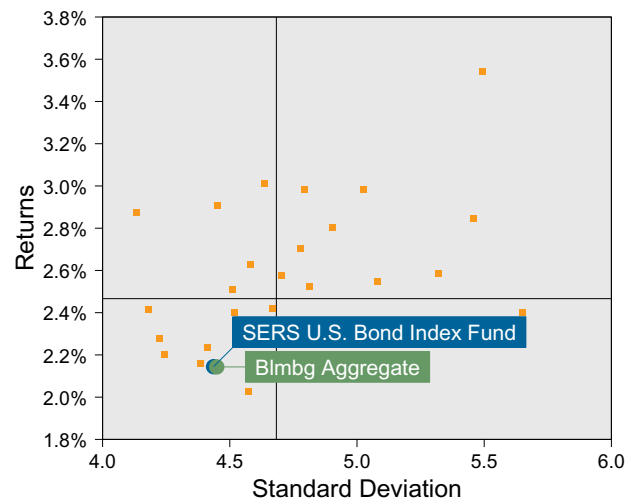
### Performance vs Callan Core Bond Mutual Funds (Institutional Net)



### Relative Return vs Blmbg Aggregate



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

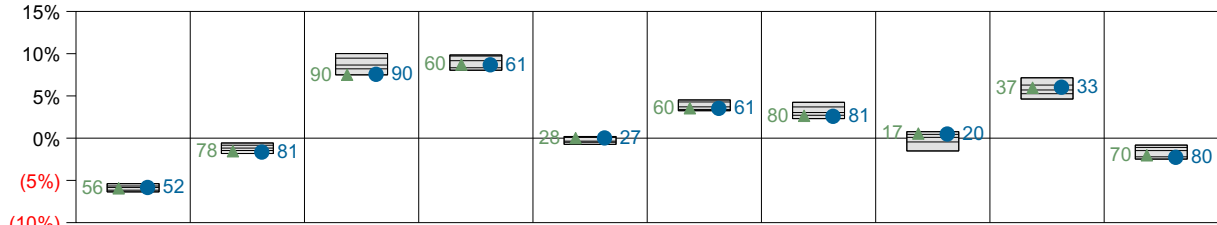


# SERS U.S. Bond Index Fund Return Analysis Summary

## 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.

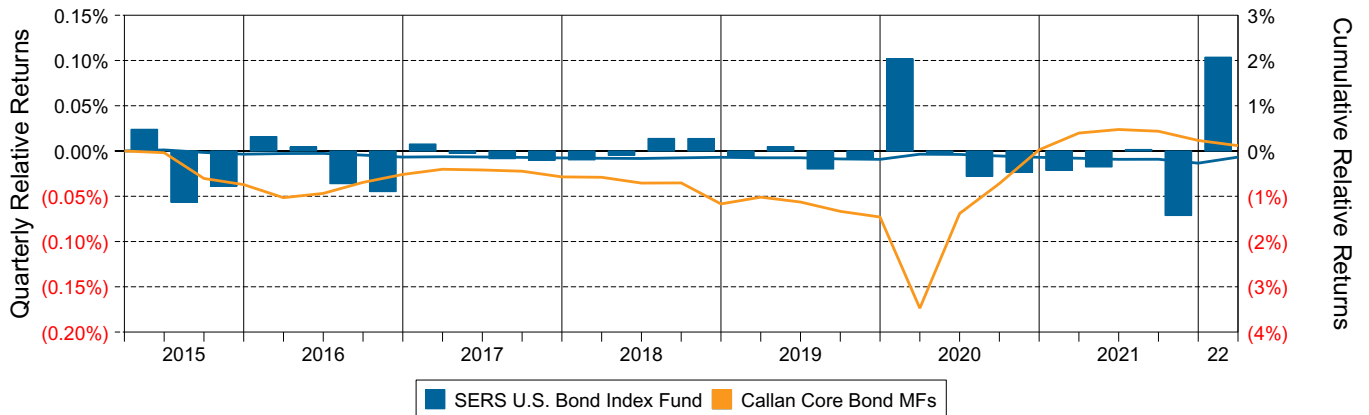
### Performance vs Callan Core Bond Mutual Funds (Institutional Net)



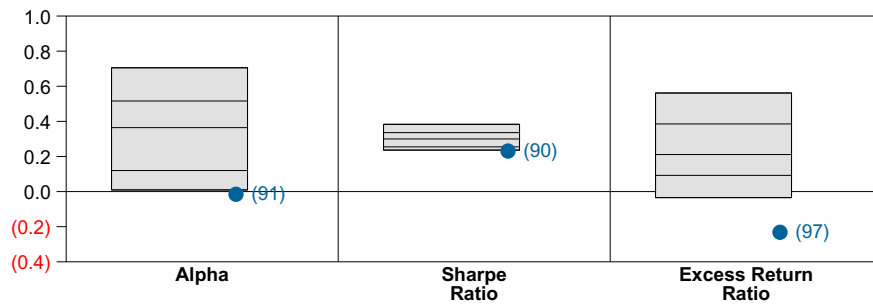
	12/21- 3/22	2021	2020	2019	2018	2017	2016	2015	2014	2013
10th Percentile	(5.38)	(0.57)	10.01	9.85	0.20	4.52	4.25	0.77	7.15	(0.82)
25th Percentile	(5.66)	(0.84)	9.47	9.72	0.09	4.28	3.70	0.45	6.29	(1.10)
Median	(5.83)	(1.17)	8.65	9.17	(0.35)	3.71	3.03	0.10	5.71	(1.47)
75th Percentile	(6.16)	(1.46)	8.21	8.33	(0.49)	3.40	2.71	(0.45)	5.26	(2.21)
90th Percentile	(6.36)	(1.82)	7.49	8.04	(0.73)	3.25	2.31	(1.52)	4.63	(2.48)

SERS U.S. Bond Index Fund	●	(5.84)	(1.65)	7.56	8.69	0.02	3.53	2.59	0.49	6.03	(2.26)
Blmbg Aggregate	▲	(5.93)	(1.54)	7.51	8.72	0.01	3.54	2.65	0.55	5.97	(2.02)

### Cumulative and Quarterly Relative Returns vs Blmbg Aggregate



### Risk Adjusted Return Measures vs Blmbg Aggregate Rankings Against Callan Core Bond Mutual Funds (Institutional Net) Seven Years Ended March 31, 2022



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.71	0.38	0.56
25th Percentile	0.52	0.34	0.39
Median	0.36	0.30	0.21
75th Percentile	0.12	0.25	0.09
90th Percentile	0.01	0.24	(0.03)
SERS U.S. Bond Index Fund	● (0.02)	0.23	(0.23)

# SERS U.S. Bond Index Fund

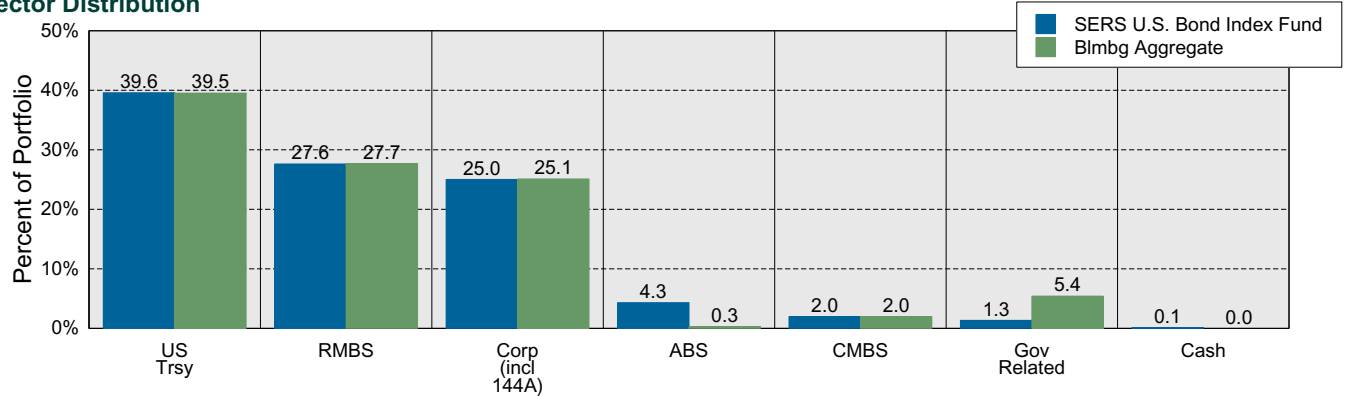
## Portfolio Characteristics Summary

### As of March 31, 2022

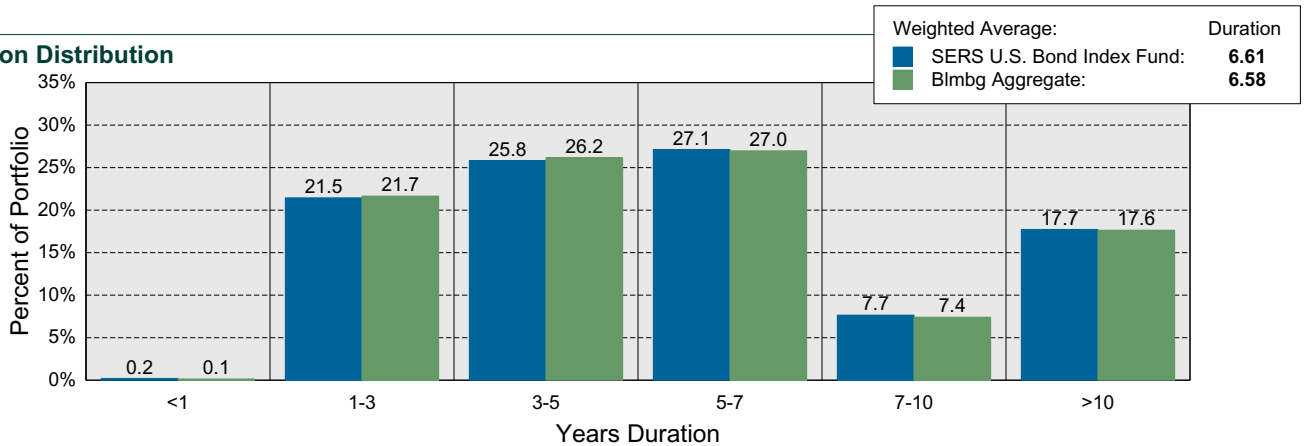
#### Portfolio Structure Comparison

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.

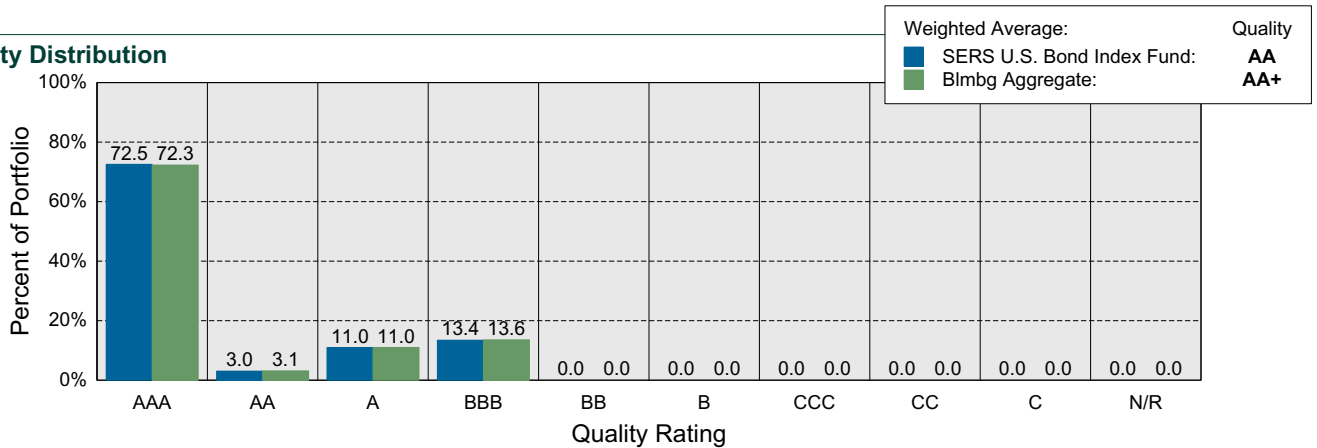
#### Sector Distribution



#### Duration Distribution



#### Quality Distribution



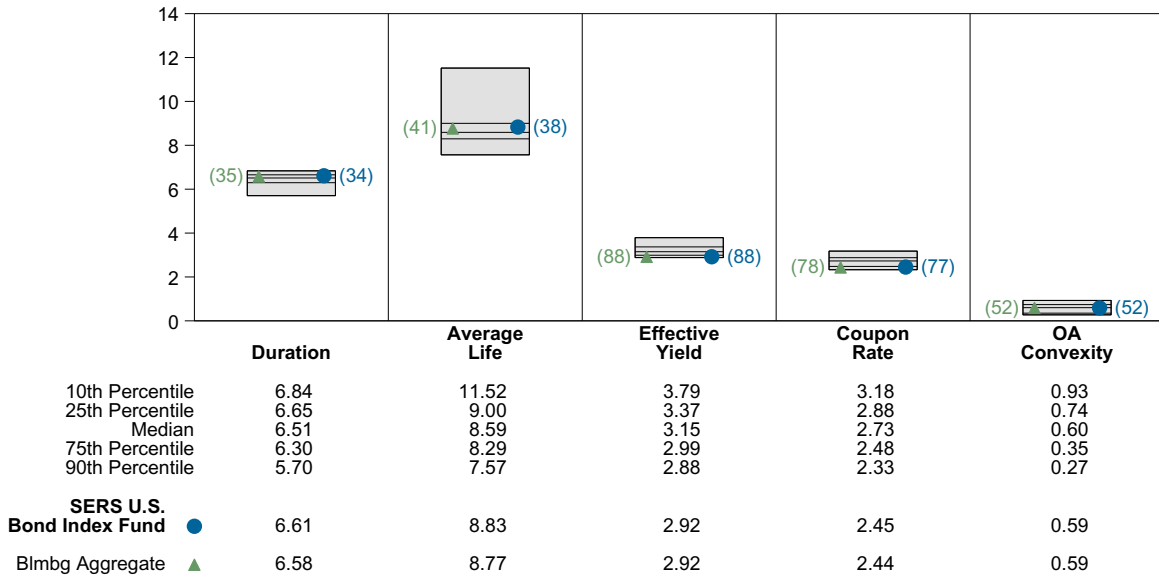
# SERS U.S. Bond Index Fund

## Bond Characteristics Analysis Summary

### Portfolio Characteristics

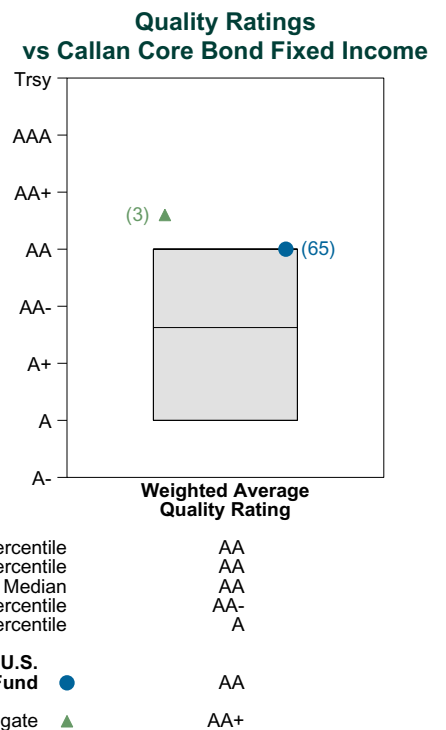
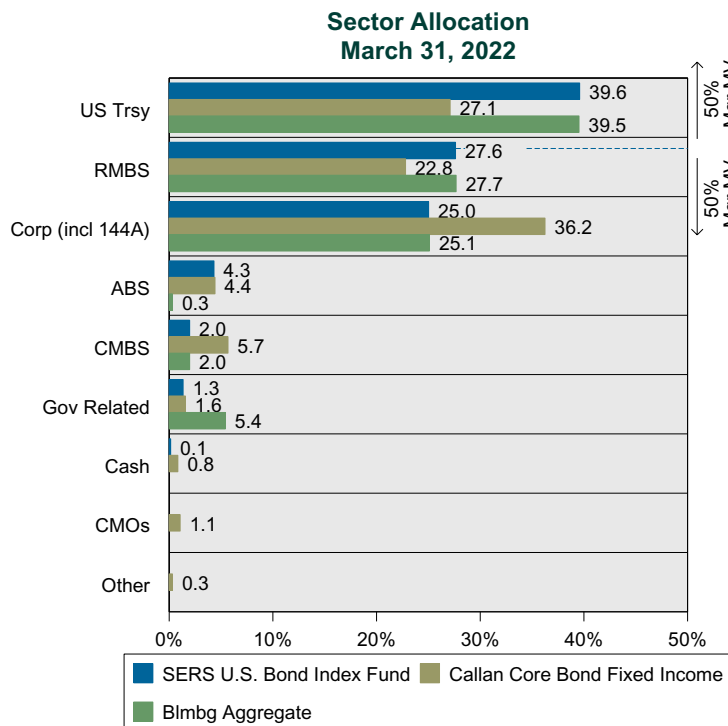
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

### Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of March 31, 2022



### 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 Aggregate** is a combination of the Mortgage Backed Securities Index and the intermediate and long-term components of the Government/Credit Bond Index.

## International Equity Market Indicators

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

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## Callan Databases

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

### Equity Funds

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

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

### Fixed Income Funds

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

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

### Balanced Funds

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

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

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## Risk/Reward Statistics

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

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

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

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

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

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

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

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

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

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## Risk/Reward Statistics

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

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

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

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

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

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

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

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



## Quarterly Highlights

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

## New Research from Callan's Experts

**[Alternatives Focus: Outlook for Hedge Funds](#)** | Joe McGuane analyzes hedge fund performance in 2021 and provides his outlook for the asset class in 2022.

**[2022-2031 Capital Markets Assumptions](#)** | A white paper detailing the process involved in creating our 2022-2031 Capital Markets Assumptions and the reasoning behind them. You can also view our interactive webpage and charticle featuring this year's assumptions.

**[2022 Defined Contribution Trends Survey](#)** | This survey provides extensive information for DC plan sponsors to use in improving and benchmarking their plans.

**[Callan Periodic Table of Investment Returns & Collection](#)** | The Periodic Table of Investment Returns depicts annual returns for key asset classes, ranked from best to worst performance for each calendar year. Expanding upon our Classic Periodic Table, the Collection offers additional versions focused on equity, fixed income, institutional investors, and alternatives such as real estate, private equity, and hedge funds. Other tables compare the performance of key indices to zero and to inflation.

## Blog Highlights

**[DOL Weighs in on Cryptocurrencies in DC Plans](#)** | The U.S. Department of Labor issued a compliance assistance bulletin, which does not carry the force of law, regarding offering cryptocurrency investments in a defined contribution plan, with a number of stern warnings about the potential fiduciary challenges.

**[Hedge Funds and Ukraine: A Guide for Institutional Investors](#)** | This post provides an analysis of the performance of hedge funds through the end of February, categorized by strategy type, and how they have been grappling with the Ukraine crisis.

**[Why It Was a Tough 4Q21 for Large Cap Growth Managers](#)** |

With rising case counts stemming from the Omicron variant, and concerns about interest rates and inflation, volatility in the markets spiked in 4Q21. For large cap growth investment managers, pro-cyclical positioning generally hurt portfolios given those fears. More than 90% of large cap growth managers underperformed the benchmark for the quarter.

**[Risky Business Update: Rising Inflation and Continued Uncertainty Challenge Investors](#)** |

Using our proprietary Capital Markets Assumptions, we found that investors in 2022 needed to take on over five times as much risk as they did 30 years ago to earn the same nominal return.

## Quarterly Periodicals

**[Private Equity Trends, 4Q21](#)** | A high-level summary of private equity activity in the quarter through all the investment stages

**[Active vs. Passive Charts, 4Q21](#)** | A comparison of active managers alongside relevant benchmarks over the long term

**[Market Pulse Flipbook, 4Q21](#)** | 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, 4Q21](#)** | 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, 4Q21](#)** | Commentary on developments for hedge funds and multi-asset class (MAC) strategies

**[Real Assets Reporter, 4Q21](#)** | A summary of market activity for real assets and private real estate during the quarter

## Events

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

*Please mark your calendar and look forward to upcoming invitations:*

### Research Café: How to Navigate Private Equity Fees and Terms (webinar)

May 11, 2022 at 9:30am PT

### June Regional Workshop

June 7, 2022 – Atlanta

June 9, 2022 – Portland

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

## Education: By the Numbers

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**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

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## Education

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

### Introduction to Investments

July 26-27, 2022 – San Francisco

September 20-22 – Virtual

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

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



"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









