

September 22, 2022



**Pennsylvania State Employees'
Retirement System – 401(a) Plan**

Second Quarter 2022

Executive Summary

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Callan

Market Environment

Equity and Fixed Income Markets Both Fell in 2Q22

Negative returns for stocks and bonds at the same time are unusual

Global equity markets down sharply following the invasion of Ukraine

- Similar impact across developed markets

Fixed income down with sharply higher inflation and interest rates

- Bloomberg Aggregate: -10.4% year-to-date
- CPI-U: +9.1% for the year ended 2Q22

Number of times stocks and bonds have been down together

- 37 quarters in almost 100 years, about 10% of the quarters
- But just twice on annual basis

Inflation spiked to highest rate in decades

Economic data show growth hit “pause”

- GDP fell 0.9% in 2Q22, after dropping 1.6% in 1Q22
- Forecasters have cut growth estimates for 2022 to 0%, or lower, and to 1.5% for 2023.

Returns for Periods ended 6/30/22

	1 Quarter	Year to Date	1 Year	5 Years	10 Years	25 Years
U.S. Equity						
Russell 3000	-16.70	-21.10	-13.87	10.60	12.57	8.06
S&P 500	-16.10	-19.96	-10.62	11.31	12.96	7.97
Russell 2000	-17.20	-23.43	-25.20	5.17	9.35	7.41
Global ex-U.S. Equity						
MSCI World ex USA	-14.66	-18.76	-16.76	2.66	5.37	4.07
MSCI Emerging Markets	-11.45	-17.63	-25.28	2.18	3.07	--
MSCI ACWI ex USA Small Cap	-17.55	-22.92	-22.45	2.55	6.22	5.68
Fixed Income						
Bloomberg Aggregate	-4.69	-10.35	-10.29	0.88	1.54	4.36
90-day T-Bill	0.10	0.14	0.17	1.11	0.64	1.96
Bloomberg Long Gov/Credit	-12.27	-21.88	-20.14	1.03	2.63	6.14
Bloomberg Global Agg ex-US	-11.01	-16.49	-18.78	-1.75	-1.06	2.83
Real Estate						
NCREIF Property	5.33	10.94	23.91	9.30	9.89	9.61
FTSE Nareit Equity	-17.00	-20.20	-6.27	5.30	7.39	8.67
Alternatives						
CS Hedge Fund	-2.30	-0.21	1.92	4.83	4.65	6.26
Cambridge Private Equity*	-1.51	3.61	22.01	20.68	16.50	15.43
Bloomberg Commodity	-5.66	18.44	24.27	8.39	-0.82	1.81
Gold Spot Price	-7.51	-1.16	2.02	7.79	1.20	6.97
Inflation - CPI-U	3.06	6.28	9.06	3.88	2.59	2.49

*Cambridge PE data through 03/31/22.

Sources: Bloomberg, Callan, Cambridge, Credit Suisse, FTSE Russell, MSCI, NCREIF, S&P Dow Jones Indices

Diversification Remains Key Risk Control

Periodic Table of Investment Returns

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2 Qtrs. 2022
Emerging Markets	Emerging Markets	Emerging Markets	Emerging Markets	Emerging Markets	U.S. Fixed	Emerging Markets	Small Cap	Real Estate Funds	Emerging Markets	Small Cap	Large Cap	Real Estate Funds	Small Cap	Emerging Markets	Real Estate Funds	Large Cap	Small Cap	Large Cap	Real Estate Funds
55.82%	25.55%	34.00%	32.17%	39.38%	5.24%	78.51%	26.85%	14.96%	18.23%	38.82%	13.69%	13.95%	21.31%	37.28%	7.36%	31.49%	19.96%	28.71%	12.00%
Small Cap	Non-U.S. Equity	Real Estate Funds	Non-U.S. Equity	Real Estate Funds	Non-U.S. Fixed	High Yield	Emerging Markets	U.S. Fixed	Non-U.S. Equity	Large Cap	Real Estate Funds	Large Cap	High Yield	Non-U.S. Equity	Cash Equivalent	Small Cap	Large Cap	Real Estate Funds	Cash Equivalent
47.25%	20.38%	20.15%	25.71%	14.84%	4.39%	58.21%	18.88%	7.84%	16.41%	32.39%	11.46%	1.38%	17.13%	24.21%	1.87%	25.52%	18.40%	21.02%	0.14%
Non-U.S. Equity	Small Cap	Non-U.S. Equity	Small Cap	Hedge Funds	Cash Equivalent	Non-U.S. Equity	Real Estate Funds	High Yield	Small Cap	Non-U.S. Equity	U.S. Fixed	U.S. Fixed	Large Cap	Large Cap	U.S. Fixed	Non-U.S. Equity	Emerging Markets	Small Cap	Hedge Funds
39.42%	18.33%	14.47%	18.37%	12.56%	2.06%	33.67%	15.26%	4.98%	16.35%	21.02%	5.97%	0.55%	11.96%	21.83%	0.01%	22.49%	18.31%	14.82%	-0.21%
High Yield	Non-U.S. Fixed	Hedge Funds	Large Cap	Non-U.S. Equity	Real Estate Funds	Small Cap	High Yield	Non-U.S. Fixed	Large Cap	Real Estate Funds	Small Cap	Cash Equivalent	Emerging Markets	Small Cap	High Yield	Emerging Markets	Non-U.S. Fixed	Non-U.S. Equity	U.S. Fixed
28.97%	12.54%	7.61%	15.79%	12.44%	-10.70%	27.17%	15.12%	4.36%	16.00%	12.90%	4.89%	0.05%	11.19%	14.65%	-2.08%	18.44%	10.11%	12.62%	-10.35%
Large Cap	Real Estate Funds	Large Cap	Real Estate Funds	Non-U.S. Fixed	Hedge Funds	Large Cap	Large Cap	Large Cap	High Yield	Hedge Funds	Hedge Funds	Hedge Funds	Real Estate Funds	Non-U.S. Fixed	Non-U.S. Fixed	High Yield	Non-U.S. Equity	Hedge Funds	High Yield
28.68%	12.00%	4.91%	15.27%	11.03%	-19.07%	26.47%	15.06%	2.11%	15.81%	9.73%	4.13%	-0.71%	7.79%	10.51%	-2.15%	14.32%	7.59%	8.23%	-14.19%
Non-U.S. Fixed	High Yield	Small Cap	Hedge Funds	U.S. Fixed	High Yield	Hedge Funds	Hedge Funds	Cash Equivalent	Real Estate Funds	High Yield	High Yield	Non-U.S. Equity	Non-U.S. Equity	High Yield	Hedge Funds	Hedge Funds	U.S. Fixed	High Yield	Non-U.S. Fixed
19.36%	11.13%	4.55%	13.86%	6.97%	-26.16%	18.57%	10.95%	0.10%	9.79%	7.44%	2.45%	-3.04%	2.75%	7.50%	-3.19%	9.31%	7.51%	5.28%	-16.49%
Hedge Funds	Large Cap	Cash Equivalent	High Yield	Large Cap	Small Cap	Non-U.S. Fixed	Non-U.S. Equity	Hedge Funds	Hedge Funds	Cash Equivalent	Cash Equivalent	Small Cap	U.S. Fixed	Hedge Funds	Large Cap	U.S. Fixed	High Yield	Cash Equivalent	Emerging Markets
15.44%	10.88%	3.06%	11.85%	5.49%	-33.79%	7.53%	8.95%	-2.52%	7.67%	0.07%	0.04%	-4.41%	2.65%	7.12%	-4.38%	8.72%	7.11%	0.05%	-17.63%
Real Estate Funds	Hedge Funds	High Yield	Non-U.S. Fixed	Cash Equivalent	Large Cap	U.S. Fixed	U.S. Fixed	Small Cap	U.S. Fixed	U.S. Fixed	Emerging Markets	High Yield	Non-U.S. Fixed	Real Estate Funds	Small Cap	Non-U.S. Fixed	Hedge Funds	U.S. Fixed	Non-U.S. Equity
8.28%	9.64%	2.74%	8.16%	5.00%	-37.00%	5.93%	6.54%	-4.18%	4.21%	-2.02%	-2.19%	-4.47%	1.49%	6.66%	-11.01%	5.09%	6.36%	-1.54%	-18.76%
U.S. Fixed	U.S. Fixed	U.S. Fixed	Cash Equivalent	High Yield	Non-U.S. Equity	Cash Equivalent	Non-U.S. Fixed	Non-U.S. Equity	Non-U.S. Fixed	Emerging Markets	Non-U.S. Fixed	Non-U.S. Fixed	Hedge Funds	U.S. Fixed	Non-U.S. Equity	Real Estate Funds	Cash Equivalent	Emerging Markets	Large Cap
4.10%	4.34%	2.43%	4.86%	1.87%	-43.56%	0.21%	4.95%	-12.21%	4.09%	-2.60%	-3.09%	-6.02%	1.25%	3.54%	-14.09%	4.39%	0.67%	-2.54%	-19.96%
Cash Equivalent	Cash Equivalent	Non-U.S. Fixed	U.S. Fixed	Small Cap	Emerging Markets	Real Estate Funds	Cash Equivalent	Emerging Markets	Cash Equivalent	Non-U.S. Fixed	Non-U.S. Equity	Emerging Markets	Cash Equivalent	Cash Equivalent	Emerging Markets	Cash Equivalent	Real Estate Funds	Non-U.S. Fixed	Small Cap
1.15%	1.33%	-8.65%	4.33%	-1.57%	-53.33%	-30.40%	0.13%	-18.42%	0.11%	-3.08%	-4.32%	-14.92%	0.33%	0.86%	-14.57%	2.28%	0.34%	-7.05%	-23.43%

- Bloomberg Barclays Corp High Yield ● Bloomberg Barclays Global Aggregate ex US ● Bloomberg Barclays US Aggregate
- Credit Suisse Hedge Fund ● ICE BofAML US 3-Month Treasury Bill ● MSCI Emerging Markets ● MSCI World ex USA
- NFI-ODCE (value-weighted net) ● Russell 2000 ● S&P 500

DC Industry Topics

SECURE 2.0 Status Update

Securing a Strong Retirement Act passed the House this year (called the SECURE 2.0 Act).

The Senate has two versions moving through its committee process.

- Senate HELP Committee advanced the RISE & SHINE Act.
- Senate Finance Committee passed the EARN Act.

Congress will work to reconcile these three bills.

Expected SECURE 2.0 Features

CITs to be available for 403(b) plans

Required minimum distributions (RMDs) pushed back to age 75

Allowing a company match for those paying off student loans

Many other features to expand coverage and saving

Other Topics

DOL expected to release final ESG rules later this year

DOL expected to reengage on Fiduciary Rule

DOL cautions plan sponsors on adding cryptocurrencies to plans

Callan DC Insights: Learning from Litigation

Takeaway: Callan issued a number of DC Insights in 2020 on trends in litigation centered on the fiduciary duties outlined in the Employee Retirement Income Security Act (ERISA). We are revisiting this topic with a series of DC Insights focused on litigation themes and the impact of specific cases. Please note: If you would like to discuss any of these topics in greater detail, reach out to your Callan consultant.

Background: Callan reviewed 165 lawsuits filed against mid- to mega-sized defined contribution (DC) plans (\$175 million to \$10 billion-plus) over the past four years. For ERISA litigation, 2020 was a bumper year, with 73 new cases filed. After the U.S. Supreme Court agreed to hear *Hughes v. Northwestern* in September 2021, the rate of new lawsuits slowed and a number of stays were granted pending that decision. As a result, 2021 saw nearly half of 2020's volume, with only 39 lawsuits. After the decision was issued in January 2022, the rate of litigation resumed. Year to date, 2022 has seen 32 new lawsuits, with nearly 140 lawsuits in process.

The complaints filed between January 2019 and August 2022 show that the litigation spans industries, plan sizes, plaintiffs' counsel, and allegations.

- Plan sponsors in the financial services industry were most likely to be subject to these complaints (20%), closely followed by health care (17%; excludes biotech and pharmaceuticals, which were tracked separately), technology (14%), and manufacturing (13%).
- While a high volume of law firms filed new lawsuits (38) during the time period under review, 21 of those filed only one lawsuit.
- The law firms with the highest number of cases settled less often than law firms with fewer cases. One law firm that filed 55 cases has seen 13% dismissed and 24% settled, with the rest pending. Of those settled, the average settlement was \$1.8 million or 0.26% of plan assets. The law firm with the second highest number of cases in this time period filed 19 cases, with 21% dismissed and 5% settled. Law firms that settled more often (over 55% of cases were settled) filed 10 or fewer lawsuits during this period. The settlement value of those cases fell between \$8.8 million and \$9.6 million.
- Nearly 50 lawsuits in this review were settled (28%). Across all cases to have reached a settlement, it took approximately two years to get to a settlement from the date the suit was filed.
- It is notable that one-third of settlements were with plans containing funds that were proprietary to the plan sponsor. The settlements for plans with proprietary funds were 2.5x those without proprietary funds (\$15.8 million compared to \$6.3 million).

Callan DC Insights: Learning from Litigation (Continued)

- The most common allegation was a breach of prudence, cited in 77% of cases compared to 61% that included a claim of breach of loyalty. These breaches are tied to varying elements of ongoing plan management: 83% of lawsuits challenged some facet of fund selection, and 63% focused on the target date fund suite. Also, 75% challenged administrative fees and other elements of plan services.
- The median plan assets in new lawsuits filed during this time period was \$1.65 billion, and the median participant count was 17,500. The average amount of plan assets in these lawsuits was \$5.7 billion with 67,500 participants on average.

Bottom Line: The ongoing pace of new litigation reinforces the need to continue managing and reviewing fees, funds, and services. Plan sponsors should continue to carefully monitor investment options, review plan fees, and follow any written governance documentation, including the investment policy statement. Additionally, plan fiduciaries should document the process and decisions made around vendor selection and fees to demonstrate their due diligence.

In the coming weeks, Callan will be exploring a select few litigation themes for DC plans. Be on the lookout for these short summaries.

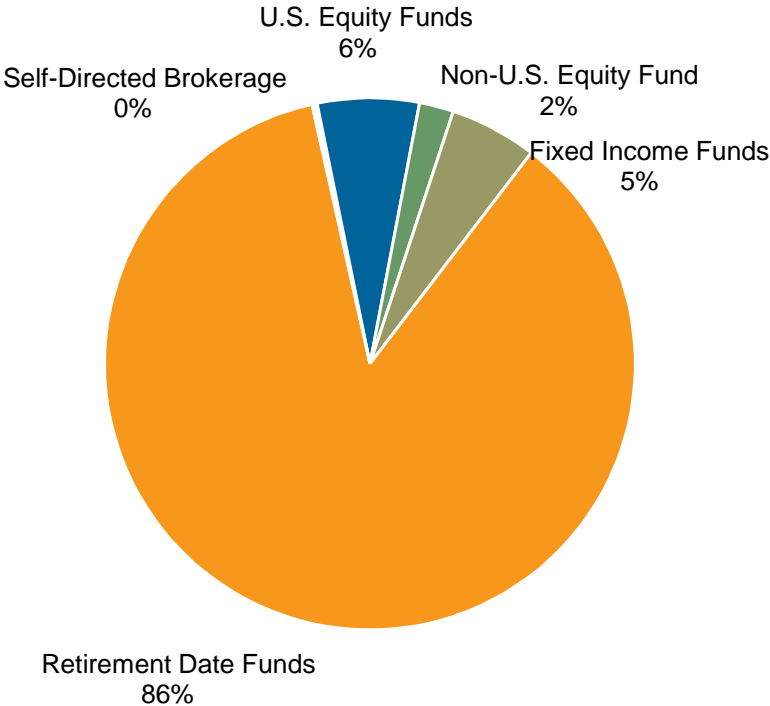
Callan

PA SERS 401(a) Plan Performance Review

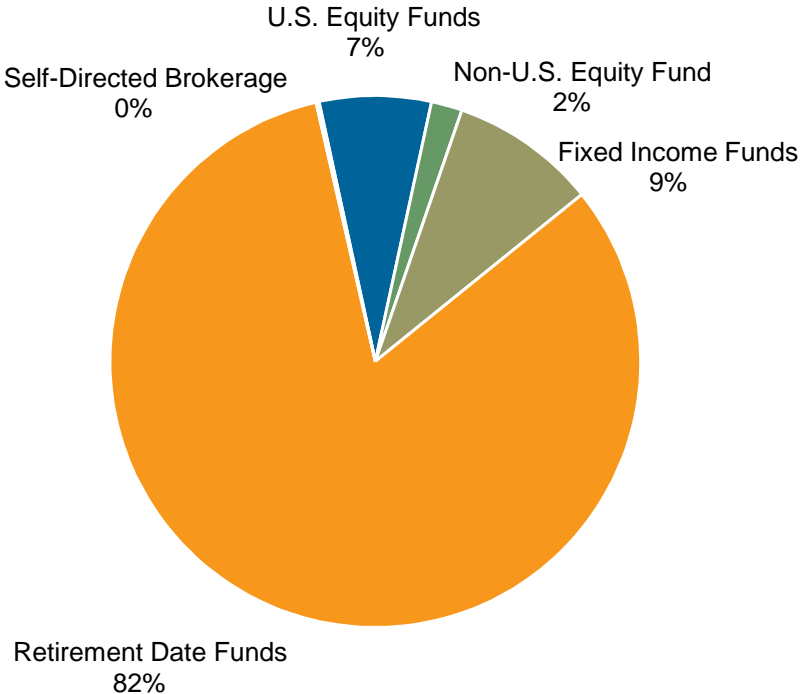
401(a) Plan Asset Allocation & Contributions

As of June 30, 2022

Asset Allocation



Contributions



Asset Allocation

As of June 30, 2022

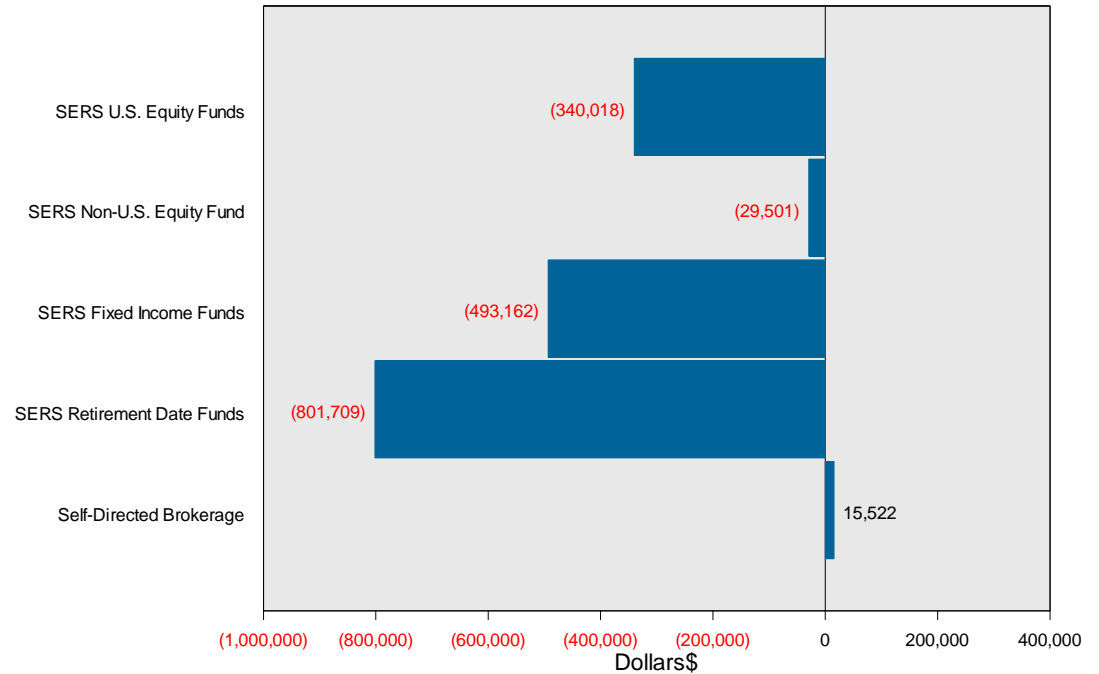
	June 30, 2022				March 31, 2022	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
SERS Retirement Date Funds	\$67,379,844	86.13%	\$9,250,418	\$(10,052,126)	\$68,181,553	85.36%
SERS Post Retirement Fund	1,154,857	1.48%	112,854	(108,868)	1,150,871	1.44%
SERS 2025 Retirement Fund	3,314,161	4.24%	373,623	(341,245)	3,281,783	4.11%
SERS 2030 Retirement Fund	6,605,531	8.44%	1,112,086	(750,494)	6,243,938	7.82%
SERS 2035 Retirement Fund	8,140,001	10.41%	1,012,472	(1,075,619)	8,203,148	10.27%
SERS 2040 Retirement Fund	7,812,917	9.99%	1,181,572	(1,112,054)	7,743,399	9.69%
SERS 2045 Retirement Fund	7,816,450	9.99%	858,916	(1,250,230)	8,207,764	10.28%
SERS 2050 Retirement Fund	9,113,409	11.65%	1,225,649	(1,511,033)	9,398,793	11.77%
SERS 2055 Retirement Fund	9,129,583	11.67%	1,344,046	(1,523,027)	9,308,564	11.65%
SERS 2060 Retirement Fund	8,545,383	10.92%	1,086,048	(1,436,214)	8,895,549	11.14%
SERS 2065 Retirement Fund	5,747,553	7.35%	943,152	(943,343)	5,747,744	7.20%
SERS U.S. Equity	\$4,862,842	6.22%	\$577,715	\$(917,734)	\$5,202,860	6.51%
SERS U.S. Large Company Idx Fund	2,973,578	3.80%	279,442	(539,315)	3,233,450	4.05%
SERS U.S. All Company Idx Fund	1,262,664	1.61%	209,344	(232,066)	1,285,386	1.61%
SERS U.S. SMID Company Idx Fund	626,600	0.80%	88,928	(146,352)	684,024	0.86%
SERS Non-U.S. Equity	\$1,668,150	2.13%	\$208,289	\$(237,791)	\$1,697,651	2.13%
SERS Global Non-U.S. Index Fund	1,668,150	2.13%	208,289	(237,791)	1,697,651	2.13%
SERS Fixed Income	\$4,179,919	5.34%	\$(445,369)	\$(47,792)	\$4,673,080	5.85%
SERS Short Term Investment Fund	2,925,767	3.74%	(665,727)	5,557	3,585,937	4.49%
SERS U.S. Short Term Bond Idx Fund	31,229	0.04%	4,325	(183)	27,086	0.03%
SERS U.S. TIPS Index Fund	244,409	0.31%	17,371	(15,501)	242,539	0.30%
SERS U.S. Bond Index Fund	978,514	1.25%	198,661	(37,665)	817,518	1.02%
SERS Self-Directed Brokerage	\$136,750	0.17%	\$23,899	\$(8,376)	\$121,227	0.15%
Total Fund	\$78,227,504	100.0%	\$9,614,951	\$(11,263,819)	\$79,876,372	100.0%

Changes in Market Values and Contributions

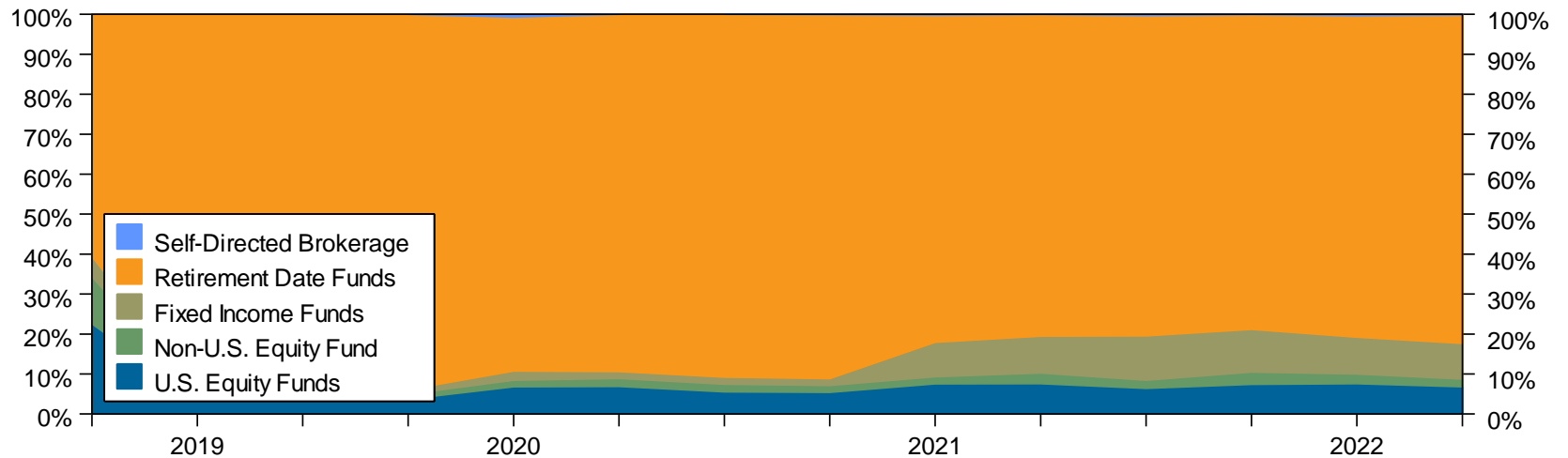
As of June 30, 2022

- The chart to the right shows the change in fund values across the various investment options for the quarter ended June 30, 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 fund by the participants (and any matching done by the company)
3. Transfers between funds by the participants.



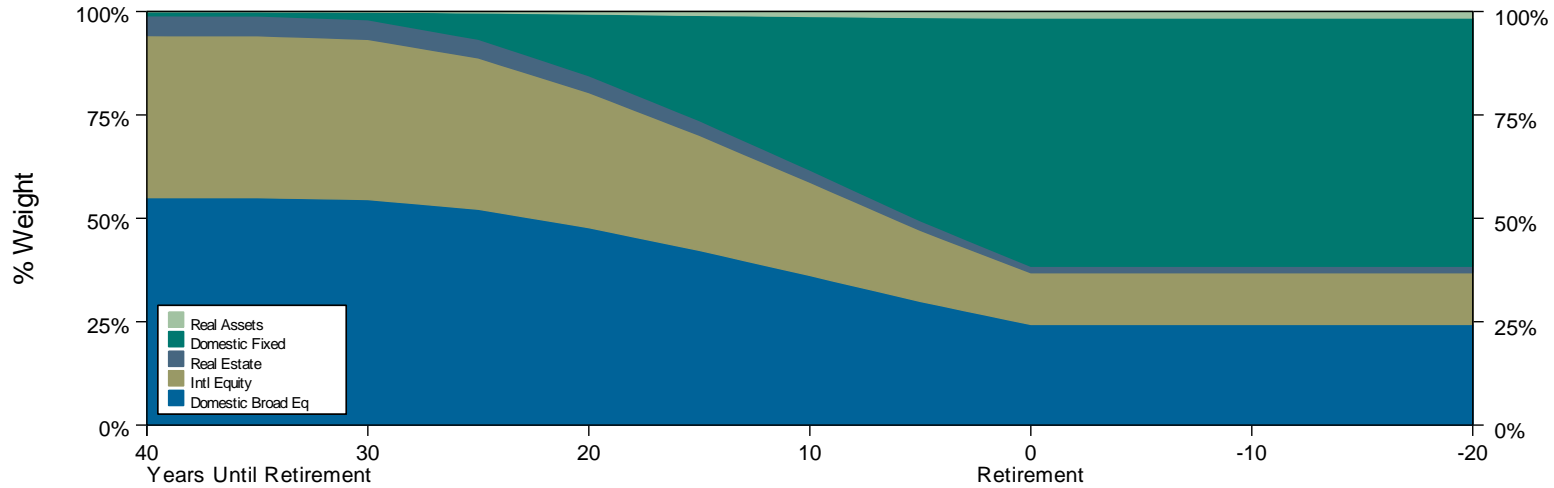
Historical Allocation of Contributions



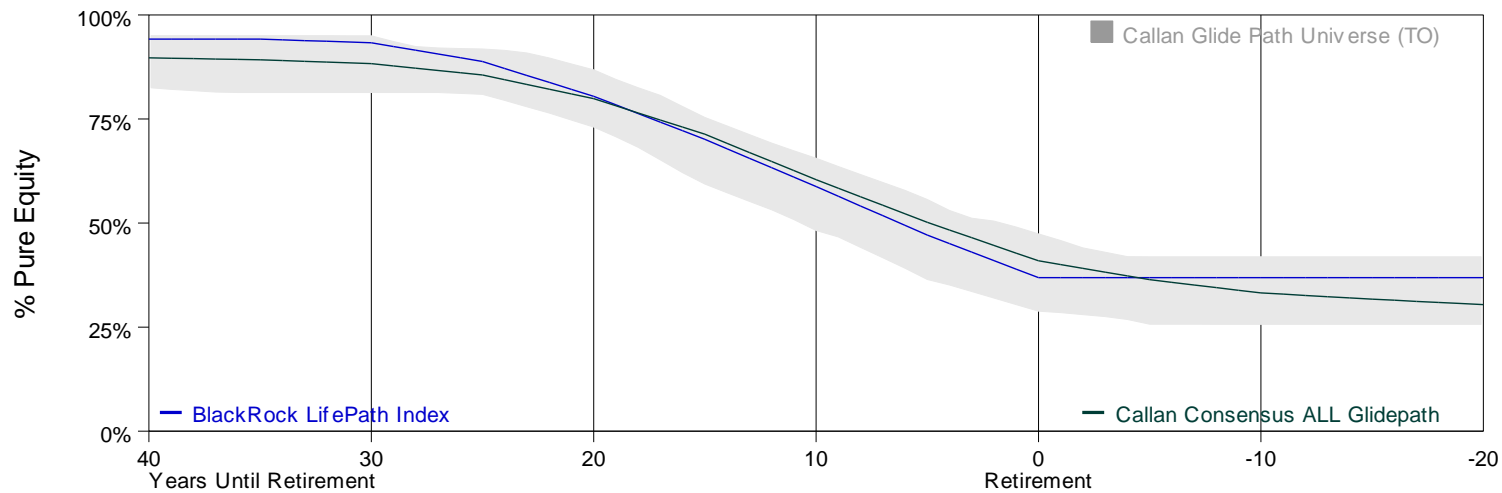
Blackrock LifePath Retirement Funds

Glidepath and Equity Roll-down Exposure as of June 30, 2022

BlackRock LifePath Retirement Funds Glidepath



BlackRock LifePath Retirement Funds Equity Roll-down Exposure



Cumulative Performance - Net of Fees

As of June 30, 2022

	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance					
Target Date Funds					
SERS Post Retirement Fund	(9.03%)	(13.69%)	(11.68%)	2.78%	3.93%
BlackRock Post Retirement Index	(9.14%)	(13.75%)	(11.68%)	2.72%	3.90%
Callan Tgt Date Ret Inc	(8.32%)	(12.87%)	(10.82%)	2.17%	3.20%
SERS 2025 Retirement Fund	(9.88%)	(14.50%)	(12.10%)	3.48%	4.75%
BlackRock 2025 Index	(10.04%)	(14.58%)	(12.11%)	3.42%	4.69%
Callan Target Date 2025	(10.33%)	(15.31%)	(12.67%)	3.62%	4.91%
SERS 2030 Retirement Fund	(11.21%)	(15.80%)	(12.88%)	4.21%	5.41%
BlackRock 2030 Index	(11.44%)	(15.90%)	(12.92%)	4.14%	5.33%
Callan Target Date 2030	(11.50%)	(16.64%)	(13.74%)	4.16%	5.37%
SERS 2035 Retirement Fund	(12.43%)	(17.02%)	(13.64%)	4.90%	6.03%
BlackRock 2035 Index	(12.73%)	(17.15%)	(13.71%)	4.82%	5.93%
Callan Target Date 2035	(12.61%)	(17.95%)	(14.44%)	4.81%	5.87%
SERS 2040 Retirement Fund	(13.58%)	(18.20%)	(14.41%)	5.47%	6.54%
BlackRock 2040 Index	(13.95%)	(18.34%)	(14.51%)	5.36%	6.43%
Callan Target Date 2040	(13.55%)	(18.71%)	(15.13%)	5.26%	6.23%
SERS 2045 Retirement Fund	(14.55%)	(19.20%)	(15.11%)	5.93%	6.92%
BlackRock 2045 Index	(14.97%)	(19.36%)	(15.25%)	5.79%	6.77%
Callan Target Date 2045	(14.20%)	(19.29%)	(15.41%)	5.62%	6.48%
SERS 2050 Retirement Fund	(15.11%)	(19.80%)	(15.56%)	6.13%	7.07%
BlackRock 2050 Index	(15.56%)	(19.97%)	(15.72%)	6.00%	6.93%
Callan Target Date 2050	(14.48%)	(19.57%)	(15.68%)	5.63%	6.48%
SERS 2055 Retirement Fund	(15.25%)	(19.95%)	(15.68%)	6.16%	7.09%
BlackRock 2055 Index	(15.71%)	(20.14%)	(15.86%)	6.03%	6.95%
Callan Target Date 2055	(14.62%)	(19.79%)	(15.83%)	5.63%	6.58%
SERS 2060 Retirement Fund	(15.26%)	(19.96%)	(15.69%)	6.14%	7.07%
BlackRock 2060 Index	(15.71%)	(20.15%)	(15.86%)	6.03%	6.95%
Callan Target Date 2060	(14.72%)	(19.87%)	(15.90%)	5.67%	6.63%
SERS 2065 Retirement Fund	(15.26%)	(19.97%)	(15.71%)	-	-
BlackRock 2065 Index	(15.72%)	(20.16%)	(15.88%)	-	-
Callan Target Date 2065	(14.99%)	(20.40%)	(17.37%)	5.70%	6.52%

Note: SERS Funds are the top fund in each grouping followed by each fund's respective benchmark and median peer.

Cumulative Performance - Net of Fees

As of June 30, 2022

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
Net Performance				
Target Date Funds				
SERS Post Retirement Fund	4.04%	4.57%	4.51%	-
BlackRock Post Retirement Index	4.01%	4.53%	4.48%	5.29%
Callan Tgt Date Ret Inc	3.48%	3.96%	3.76%	3.79%
SERS 2025 Retirement Fund	4.91%	6.00%	4.51%	-
BlackRock 2025 Index	4.85%	5.94%	4.45%	5.97%
Callan Target Date 2025	4.98%	6.55%	4.63%	-
SERS 2030 Retirement Fund	5.52%	6.70%	4.75%	-
BlackRock 2030 Index	5.43%	6.61%	4.69%	6.28%
Callan Target Date 2030	5.63%	7.30%	4.83%	6.00%
SERS 2035 Retirement Fund	6.11%	7.35%	4.99%	-
BlackRock 2035 Index	5.99%	7.24%	4.90%	6.56%
Callan Target Date 2035	6.07%	7.89%	5.18%	-
SERS 2040 Retirement Fund	6.58%	7.91%	5.17%	-
BlackRock 2040 Index	6.45%	7.78%	5.05%	6.78%
Callan Target Date 2040	6.39%	8.27%	5.43%	6.23%
SERS 2045 Retirement Fund	6.92%	8.35%	5.27%	-
BlackRock 2045 Index	6.76%	8.20%	5.15%	6.98%
Callan Target Date 2045	6.61%	8.46%	5.32%	-
SERS 2050 Retirement Fund	7.05%	8.61%	-	-
BlackRock 2050 Index	6.89%	8.46%	5.32%	7.37%
Callan Target Date 2050	6.62%	8.49%	5.56%	-
SERS 2055 Retirement Fund	7.06%	8.76%	-	-
BlackRock 2055 Index	6.91%	8.62%	-	-
Callan Target Date 2055	6.69%	8.63%	-	-

Note: SERS Funds are the top fund in each grouping followed by each fund's respective benchmark and median peer.

Funds not listed do not have longer term history.

Cumulative Performance - Net of Fees

As of June 30, 2022

	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance					
Domestic Equity					
SERS U.S. Large Company Index Fund	(16.11%)	(19.96%)	(10.62%)	10.61%	11.32%
S&P 500 Index	(16.10%)	(19.96%)	(10.62%)	10.60%	11.31%
Callan Lg Cap Broad MF	(16.14%)	(20.32%)	(12.66%)	8.69%	10.17%
SERS U.S. All Company Index Fund	(16.72%)	(21.12%)	(13.89%)	9.71%	10.54%
Russell 3000 Index	(16.70%)	(21.10%)	(13.87%)	9.77%	10.60%
Callan Multi Cap Brd MF	(15.56%)	(20.61%)	(14.21%)	7.70%	8.56%
SERS U.S. SMID Company Idx Fund	(20.54%)	(27.84%)	(29.54%)	4.86%	6.60%
Dow Jones US Completion	(20.66%)	(28.09%)	(29.99%)	4.57%	6.34%
Callan SMID Broad MFs	(17.10%)	(24.47%)	(21.97%)	5.77%	6.91%
International Equity					
SERS Global Non-U.S. Index Fund	(13.22%)	(18.15%)	(19.18%)	1.61%	2.78%
MSCI ACWI ex US	(13.73%)	(18.42%)	(19.42%)	1.35%	2.50%
Callan Non US Equity MFs	(13.46%)	(19.79%)	(19.63%)	1.45%	2.31%
Domestic Fixed Income					
SERS Short Term Investment Fund	0.16%	0.18%	0.20%	0.66%	1.18%
3-month Treasury Bill	0.10%	0.14%	0.17%	0.63%	1.11%
Callan Cash Database(1)	0.13%	0.03%	0.05%	0.72%	1.27%
SERS U.S. Short Term Bond Idx Fund	(0.63%)	(3.10%)	(3.58%)	0.30%	-
Blmbg Gov/Cred 1-3 Yr	(0.63%)	(3.11%)	(3.56%)	0.31%	1.07%
Callan Short US Govt MFs	(0.93%)	(3.89%)	(4.56%)	(0.11%)	0.67%
SERS U.S. TIPS Index Fund	(6.09%)	(8.88%)	(5.15%)	3.03%	-
Blmbg US TIPS	(6.08%)	(8.92%)	(5.14%)	3.04%	3.21%
Callan TIPS MFs	(6.14%)	(8.72%)	(5.38%)	3.04%	3.06%
SERS U.S. Bond Index Fund	(4.74%)	(10.30%)	(10.31%)	(0.95%)	0.87%
Blmbg Aggregate	(4.69%)	(10.35%)	(10.29%)	(0.93%)	0.88%
Callan Core Bond MFs	(5.07%)	(10.68%)	(10.70%)	(0.60%)	1.12%

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

Cumulative Performance - Net of Fees

As of June 30, 2022

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
Net Performance				
Domestic Equity				
SERS U.S. Large Company Index Fund	11.16%	12.97%	8.58%	9.12%
S&P 500 Index	11.14%	12.96%	8.54%	9.08%
Callan Lg Cap Broad MF	9.90%	12.16%	8.16%	8.78%
SERS U.S. All Company Index Fund	10.39%	12.55%	-	-
Russell 3000 Index	10.43%	12.57%	8.36%	9.14%
Callan Multi Cap Brd MF	8.20%	11.10%	7.02%	8.45%
SERS U.S. SMID Company Idx Fund	6.78%	10.37%	7.48%	9.58%
Dow Jones US Completion	6.53%	10.12%	7.23%	9.39%
Callan SMID Broad MFs	7.05%	10.44%	7.49%	8.91%
International Equity				
SERS Global Non-U.S. Index Fund	3.20%	5.04%	-	-
MSCI ACWI ex US	2.92%	4.83%	1.58%	5.78%
Callan Non US Equity MFs	2.71%	5.47%	2.15%	5.58%
Domestic Fixed Income				
SERS Short Term Investment Fund	1.01%	0.76%	0.94%	-
3-month Treasury Bill	0.89%	0.64%	0.75%	1.25%
Callan Cash Database(1)	1.13%	0.92%	1.15%	1.58%
Blmbg Gov/Cred 1-3 Yr	1.04%	1.01%	1.89%	2.21%
Callan Short US Govt MFs	0.62%	0.63%	1.79%	2.05%
Blmbg US TIPS	2.82%	1.73%	3.92%	4.44%
Callan TIPS MFs	2.68%	1.59%	3.62%	4.10%
SERS U.S. Bond Index Fund	1.39%	1.51%	3.22%	3.54%
Blmbg Aggregate	1.42%	1.54%	3.26%	3.57%
Callan Core Bond MFs	1.62%	1.78%	3.58%	3.81%

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

*Funds not listed do not have longer term history.

Performance Summary & Expense Ratios as of June 30, 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
Net of Fee Performance									
Target Date Funds									
SERS Post Retirement Fund Callan Tgt Date Ret Inc	-9.0 70	-11.7 70	2.8 29	3.9 11	4.0 13	4.6 20			0.08 75
BlackRock Post Retirement Index	-9.1 79	-11.7 70	2.7 34	3.9 17	4.0 14	4.5 20			
SERS 2025 Retirement Fund Callan Target Date 2025	-9.9 28	-12.1 39	3.5 58	4.7 54	4.9 56	6.0 77			0.08 74
BlackRock 2025 Index	-10.0 33	-12.1 39	3.4 62	4.7 56	4.8 63	5.9 80			
SERS 2030 Retirement Fund Callan Target Date 2030	-11.2 34	-12.9 33	4.2 47	5.4 47	5.5 54	6.7 74			0.08 72
BlackRock 2030 Index	-11.4 49	-12.9 33	4.1 56	5.3 54	5.4 61	6.6 78			
SERS 2035 Retirement Fund Callan Target Date 2035	-12.4 40	-13.6 26	4.9 47	6.0 41	6.1 47	7.4 74			0.08 74
BlackRock 2035 Index	-12.7 56	-13.7 29	4.8 50	5.9 46	6.0 55	7.2 78			
SERS 2040 Retirement Fund Callan Target Date 2040	-13.6 52	-14.4 29	5.5 40	6.5 26	6.6 35	7.9 70			0.08 72
BlackRock 2040 Index	-13.9 72	-14.5 33	5.4 44	6.4 33	6.4 44	7.8 71			
SERS 2045 Retirement Fund Callan Target Date 2045	-14.6 71	-15.1 33	5.9 27	6.9 21	6.9 32	8.3 59			0.08 74
BlackRock 2045 Index	-15.0 89	-15.2 39	5.8 35	6.8 33	6.8 39	8.2 70			
SERS 2050 Retirement Fund Callan Target Date 2050	-15.1 85	-15.6 42	6.1 26	7.1 13	7.1 21	8.6 44			0.08 72
BlackRock 2050 Index	-15.6 98	-15.7 55	6.0 29	6.9 19	6.9 30	8.5 53			
SERS 2055 Retirement Fund Callan Target Date 2055	-15.3 86	-15.7 40	6.2 22	7.1 12	7.1 21	8.8 44			0.08 77
BlackRock 2055 Index	-15.7 97	-15.9 53	6.0 27	6.9 21	6.9 36	8.6 51			
SERS 2060 Retirement Fund Callan Target Date 2060	-15.3 81	-15.7 40	6.1 25	7.1 17	7.1 30				0.08 78
BlackRock 2060 Index	-15.7 98	-15.9 49	6.0 30	6.9 26	6.9 54				

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

Note: For returns, each SERS Fund and corresponding benchmark return are shown with their respective peer group rankings. For returns, lower peer group rankings are more desirable (e.g. 25th percentile equates to top quartile performance). Expense Ratio: Higher peer group rankings are more desirable (e.g. 75th percentile equates to bottom quartile/cheapest fees).

Performance Summary & Expense Ratios as of June 30, 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
SERS 2065 Retirement Fund Callan Target Date 2065 BlackRock 2065 Index	-15.3 77 -15.7 95	-15.7 26 -15.9 30							0.08 50
Domestic Equity									
SERS U.S. Large Company Stock Index Fund Callan Lg Cap Broad MF S&P 500 Index	-16.1 50 -16.1 50	-10.6 43 -10.6 43	10.6 24 10.6 24	11.3 36 11.3 36	11.2 27 11.1 27	13.0 35 13.0 35			0.02 100
SERS U.S. All Company Index Fund Callan Multi Cap Brd MF Russell 3000 Index	-16.7 61 -16.7 61	-13.9 48 -13.9 48	9.7 27 9.8 26	10.5 27 10.6 26	10.4 21 10.4 20	12.5 22 12.6 21			0.03 99
U.S. Small/Mid Company Stock Index Fund Callan SMID Broad MFs Dow Jones US Completion	-20.5 69 -20.7 70	-29.5 76 -30.0 77	4.9 62 4.6 63	6.6 53 6.3 55	6.8 57 6.5 58	10.4 52 10.1 54			0.03 100
International Equity									
SERS Global Non-U.S. Index Fund Callan Non US Equity MFs MSCI ACWI ex US	-13.2 46 -13.7 53	-19.2 48 -19.4 48	1.6 46 1.4 54	2.8 40 2.5 45	3.2 38 2.9 45	5.0 57 4.8 69			0.05 99
Domestic Fixed Income									
SERS Short Term Investment Fund Callan Cash Database 3-month Treasury Bill	0.2 43 0.1 54	0.2 42 0.2 43	0.7 72 0.6 78	1.2 73 1.1 87	1.0 77 0.9 89	0.8 77 0.6 90			0.00 100
Comments: Callan Cash Database includes STIF, enhanced cash, and money market funds.									
SERS U.S. Short Term Bond Idx Fund Callan Short US Govt MFs Blmbg Gov/Cred 1-3 Yr	-0.6 19 -0.6 19	-3.6 30 -3.6 30	0.3 21 0.3 21		1.1 15 1.0 15	1.0 11			0.02 100
SERS U.S. TIPS Index Fund Callan TIPS MFs Blmbg US TIPS	-6.1 47 -6.1 47	-5.1 43 -5.1 43	3.0 51 3.0 50		3.2 35 2.8 28	1.7 25			0.02 99

Returns:
 above median
 third quartile
 fourth quartile

Return Consistency:
 above median
 third quartile
 fourth quartile

Risk Quadrant:

Expense Ratio:
 below median
 second quartile
 first quartile

Note: For returns, each SERS Fund and corresponding benchmark return are shown with their respective peer group rankings. For returns, lower peer group rankings are more desirable (e.g. 25th percentile equates to top quartile performance). Expense Ratio: Higher peer group rankings are more desirable (e.g. 75th percentile equates to bottom quartile/cheapest fees).

Performance Summary & Expense Ratios as of June 30, 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
SERS U.S. Bond Index Fund	-4.7 ²²	-10.3 ²⁹	-0.9 ⁸⁰	0.9 ⁷⁶	1.4 ⁸⁹	1.5 ⁹³			0.02 ⁹⁸
Callan Core Bond MFs									
Blmbg Aggregate	-4.7 ¹³	-10.3 ²⁸	-0.9 ⁷⁸	0.9 ⁷⁶	1.4 ⁸⁷	1.5 ⁸⁵			

Returns:
 above median
 third quartile
 fourth quartile

Return Consistency:
 above median
 third quartile
 fourth quartile

Risk Quadrant:

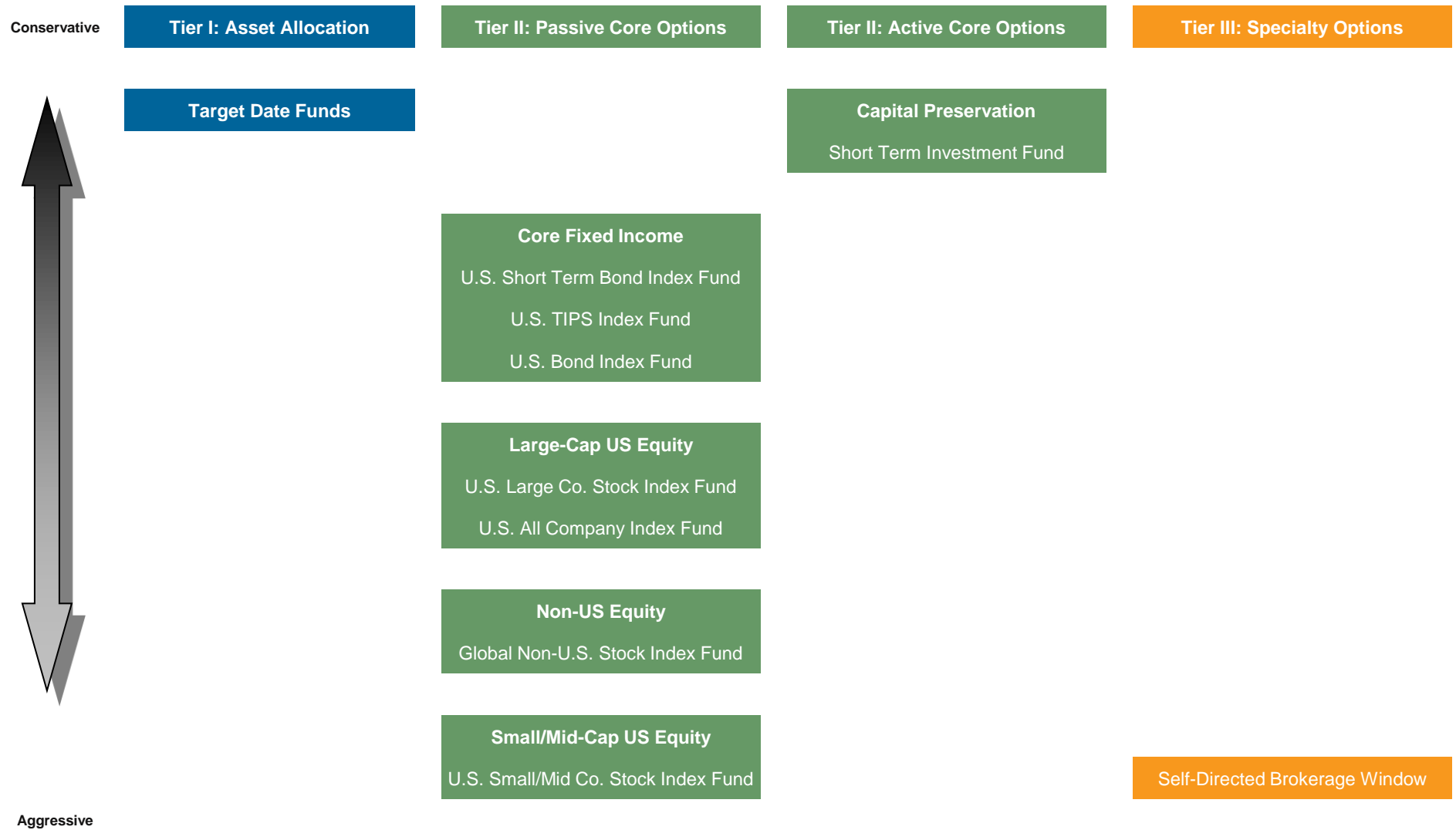
 Return
 Risk

Expense Ratio:
 below median
 second quartile
 first quartile

Note: For returns, each SERS Fund and corresponding benchmark return are shown with their respective peer group rankings. For returns, lower peer group rankings are more desirable (e.g. 25th percentile equates to top quartile performance). Expense Ratio: Higher peer group rankings are more desirable (e.g. 75th percentile equates to bottom quartile/cheapest fees).

401(a) Plan Investment Structure

Lineup Mapped to Callan's Clean Sheet



Callan

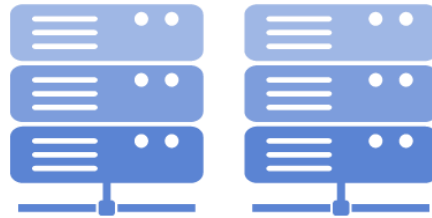
Appendix – Callan Update

Published Research Highlights from 2Q22

Research Café: ESG Interview Series



Investing in Data Centers: The Real Assets of the Digital Age



Webinar: Pension Risk Transfer



Do Active Fixed Income Managers Add Value With Sector Rotation?



Recent Blog Posts

Best Practices to Make Sure Investors and Their Managers Are in Sync

Jan Mende

Rising Interest Rates Spur Look at Structured Credit

Nathan Wong

SEC Proposes Rule to Enhance ESG Disclosures for Investments

Kristin Bradbury

Additional Reading

Alternatives Focus quarterly newsletter

Active vs. Passive quarterly charts

Capital Markets Review quarterly newsletter

Monthly Updates to the Periodic Table

Market Pulse Flipbook quarterly markets update

Real Estate Indicators market outlook

Callan Institute Events

Upcoming conferences, workshops, and webinars

Callan College

Intro to Alternatives

This course is for institutional investors, including trustees and staff members of public plans, corporate plans, and nonprofits. This session familiarizes trustees and staff with alternative investments like private equity, hedge funds, and real estate and how they can play a key role in any portfolio. In our “Callan College” on Alternatives, you will learn about the importance of allocations to alternatives, and how to consider integrating, evaluating, and monitoring them.

Join our next VIRTUAL session via Zoom (2 sessions, 3 hours each):
August 24-25, 2022

Intro to Investments—Learn the Fundamentals

This course is for institutional investors, including trustees and staff members of public plans, corporate plans, and nonprofits. This session familiarizes trustees and staff with basic investment theory, terminology, and practices.

Join our next VIRTUAL session via Zoom (3 sessions, 2–3 hours each):
September 20–22, 2022

Mark Your Calendar

2022 October Regional Workshops

October 18, 2022
Denver

October 20, 2022
San Francisco

Callan Institute’s 2023 National Conference

April 2-4, 2023
Scottsdale, Arizona

Watch your email for further details and an invitation.

Webinars & Research Café Sessions

Market Intelligence

October 14, 2022 – 9:30am (PT)

Callan Updates

Firm updates by the numbers, as of June 30, 2022

Total Associates: ~200

Ownership

- 100% employees
- 67% of employees are equity owners
- 55% of shareholders identify as women or minority

Total General and Investment Consultants: more than 55

Total Specialty and Research Consultants: more than 80

Total CFA/CAIA/FRMs: more than 55

Total Institutional Investor Clients: more than 475

Assets Under Advisement: more than \$4 trillion

Key Hires

- Craig Chaikin, CFA, SVP, Denver Consulting
- Emily Hylton, SVP, Atlanta Consulting
- Christina Mays, VP, Real Assets Consulting
- Nicole Wubben, SVP, Global Manager Research

“Callan has been offering alternatives investment consulting services for more than 30 years. The demand for our services is greater than ever as institutional investors increase their allocations to alternative investments. As a result, we’ve been expanding our already robust research resources and capabilities to support them.” — Pete Keliuotis, EVP, Callan’s Alternatives Consulting Group



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