

February 2023



**Pennsylvania State Employees'
Retirement System – 457(b) Plan**

Fourth Quarter 2022

Executive Summary

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Market Environment

Equity and Fixed Income Markets Down Together in 2022

Declines for both stocks and bonds for three straight quarters are extremely unusual

Global equity markets down sharply in 2022 despite rebound in 4Q

- Similar impact across all equity market segments: developed, emerging, small cap

Fixed income down with sharply higher inflation and interest rates

- Bloomberg Aggregate: -13% for the year, worst year ever for the index by a wide margin
- CPI-U: +6.5% for the year ended Dec. 2022
- ▶ Number of times stocks and bonds have been down together
 - 38 quarters in almost 100 years, about 10% of the quarters
 - But just twice on annual basis
- ▶ Inflation at highest rate in decades
- ▶ Economic data show growth hit ‘pause’
 - GDP rose 2.9% in 4Q22, after a 3.2% rise in 3Q, a 0.6% drop in 2Q, and a 1.6% decline in 1Q.

Returns for Periods ended 12/31/22

	Quarter	Year to Date				
		1 Year	5 Years	10 Years	25 Years	
U.S. Equity						
Russell 3000	7.18	-19.21	-19.21	8.79	12.13	7.68
S&P 500	7.56	-18.11	-18.11	9.42	12.56	7.64
Russell 2000	6.23	-20.44	-20.44	4.13	9.01	7.13
Global ex-U.S. Equity						
MSCI World ex USA	16.18	-14.29	-14.29	1.79	4.59	4.65
MSCI Emerging Markets	9.70	-20.09	-20.09	-1.39	1.44	--
MSCI ACWI ex USA Small Cap	13.31	-19.97	-19.97	0.67	5.24	6.87
Fixed Income						
Bloomberg Aggregate	1.87	-13.01	-13.01	0.02	1.06	3.97
90-day T-Bill	0.84	1.46	1.46	1.26	0.76	1.91
Bloomberg Long Gov/Credit	2.61	-27.09	-27.09	-1.21	1.57	5.38
Bloomberg Global Agg ex-US	6.81	-18.70	-18.70	-3.07	-1.64	2.71
Real Estate						
NCREIF Property	-3.50	5.53	5.53	7.46	8.82	9.04
FTSE Nareit Equity	5.24	-24.37	-24.37	3.68	6.53	7.87
Alternatives						
CS Hedge Fund Index	0.92	1.06	1.06	4.25	4.24	5.81
Cambridge Private Equity*	-1.84	-3.77	-3.77	16.84	15.31	14.31
Bloomberg Commodity	2.22	16.09	16.09	6.44	-1.28	1.87
Gold Spot Price	9.22	-0.13	-0.13	6.88	0.86	7.64
Inflation - CPI-U	0.00	6.45	6.45	3.78	2.60	2.47

*Cambridge PE data through 09/30/22.

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	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%	6.55%
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%	1.46%
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%	1.06%
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	High Yield
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%	-11.19%
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	U.S. Fixed
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%	-13.01%
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. Equity
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%	-14.29%
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	Large Cap
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%	-18.11%
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. Fixed
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%	-18.70%
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	Emerging Markets
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%	-20.09%
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%	-20.44%

- 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

SECURE 2.0 Summary

Background

The SECURE 2.0 Act of 2022 (SECURE 2.0) was signed into law on Dec. 29, 2022

- ▶ The Act was folded into the \$1.7 trillion Consolidated Appropriations Act 2023
- ▶ Followed the Setting Every Community up for Retirement Enhancement (SECURE) Act of 2019
- ▶ Represents the next step in retirement plan legislation
- ▶ Contained nearly 100 provisions
- ▶ Largely focused on three areas:
 - increased savings and access
 - helping provide more distribution options
 - simplifying plan rules

The following slides summarize some of the most noteworthy provisions. Given the breadth and scope of the Act, there are still a few loose ends lawmakers will need to revisit in the coming year. Among those are amendments to securities laws to allow collective investment trusts in 403(b) plans and correcting an apparent drafting error that inadvertently eliminated all age-50 catch up contributions beginning in 2024. We expect these corrections to be made in a timely manner.

SECURE 2.0: Required Savings Provisions

Roth catch-up

- ▶ Beginning in 2024, participants who earn more than \$145,000 (for FICA purposes) in the prior year and are over age 50 will be limited to Roth catch-up contributions. Individuals earning \$145,000 or less will have the choice of pre-tax or Roth.
- ▶ DC plans without a Roth source will have to update the plan document, recordkeeping programming, and payroll feeds to include this new source.

'Long-term part-time' employees

- ▶ More liberal eligibility standards for “long-term part-time” employees beginning in 2025: Employees who complete 500 hours in two consecutive 12-month periods must be allowed to make deferrals. Plan sponsors are not required to provide matching contributions on these deferrals, and the deferrals do not need to be included in the nondiscrimination testing.

Mandatory automatic enrollment for new plans

- ▶ Automatic enrollment is mandatory for all new plans established after Dec. 29, 2022, with the automatic enrollment provisions effective no later than Jan. 1, 2025. The automatic deferral rate must be at least 3%, up to a maximum of 10%.
- ▶ The plans must also use automatic escalation, increasing participants' deferral rate by 1%, up to at least 10% but not more than 15%.

SECURE 2.0: Optional Savings Provisions

Enhanced catch-up for ages 60–63

- ▶ Starting Jan. 1, 2025, individuals ages 60 through 63 will be able to make catch-up contributions up to \$10,000 annually. Participants ages 50–59 or 64+ will be limited to the regular catch-up limit (currently \$7,500).

Emergency savings ‘side-car’ accounts in DC plans

- ▶ Only available for non-highly compensated employees and limited to \$2,500 total. These deferrals must be matched.
- ▶ Participants must be allowed at least monthly withdrawals, with no charge for the first four withdrawals each year.
- ▶ Must be invested in an interest-bearing deposit account or in an investment product designed to maintain the dollar value offered by a state- or federally regulated financial institution. This fund option does not need to be available for all contribution types.

Matching student loan payments

- ▶ Effective for plan years beginning after Dec. 31, 2023, employers may match student loan repayments as if they were regular employee deferrals in the DC plan. The match will have the same formula and vesting schedule as regular matching contributions.
- ▶ Employees will be required to certify annually to the employer that payments were made.

SECURE 2.0: Required Distribution Provisions

RMDs (required for participants but optional for DC plans)

- ▶ The age to begin taking required minimum distributions (RMDs) increases to age 73 in 2023 and to 75 in 2033.
 - For participants born before July 1, 1949, the required beginning age is 70½, and for those born between July 1, 1949–1950, the required start age is age 72.
- ▶ Beginning in 2024, RMDs will no longer be required from Roth accounts in DC plans, furthering the benefit of those accounts.
- ▶ In response to a common plan operational failure, the penalty for missing a RMD payment is reduced from 50% to 25%.

Administrative clean-up

- ▶ Clarifies that qualified birth or adoption repayments are limited to three years.
- ▶ Permits employers to rely on participant's self-certification of a hardship event and required amount.

SECURE 2.0: Optional Distribution Provisions

Emergency withdrawals

- ▶ Effective beginning after Dec. 31, 2023, SECURE 2.0 created a new distribution type for meeting unforeseeable or immediate financial needs relating to necessary personal or family emergency expenses.
- ▶ Participants are limited to one distribution per year and a maximum of \$1,000 (across the controlled group). Additional emergency withdrawals may not be taken for the following three calendar years unless they are repaid or equivalent amounts are contributed to the plan within three years.

Penalty-free withdrawal for individual in case of domestic abuse

- ▶ Effective for plan years beginning in 2024, participants may take one withdrawal in the year following the date that they were a victim of domestic abuse by a spouse or domestic partner. These withdrawals are limited to \$10,000 or 50% of the vested account balance. Participants can repay these amounts.
- ▶ “Domestic abuse” means physical, psychological, sexual, emotional, or economic abuse, including efforts to control, isolate, humiliate, or intimidate the victim, or to undermine the victim’s ability to reason independently, including by means of abuse of the victim’s child or another family member living in the household. Participant self-certifies that they are a victim.

Automatic small-dollar cash-outs

- ▶ The maximum amount that can be forced out will increase from \$5,000 to \$7,000 beginning with distributions made after Dec. 31, 2023.

SECURE 2.0: Administrative Provisions

Retirement lost and found (required provision)

- ▶ The Treasury Department is directed to develop an online searchable database with the plan administrator's contact information for participants seeking to recover outstanding balances.
- ▶ Plan administrators will be required to provide the name and taxpayer identification number of each participant or former participant in the plan (including small dollar balances that have been forced out of the plan).

Automatic portability (optional provision)

- ▶ Provides a safe harbor for plan sponsors to enable "automatic portability," where small-dollar balances forced out of a qualified DC plan can later be transferred to a subsequent employer's plan.
- ▶ The automatic portability provider will be a fiduciary. The provider will conduct monthly searches to identify balances that can be transferred into the subsequent employer's plan.
- ▶ This provision will be effective Dec. 29, 2023.

Notice requirements for unenrolled participants (optional provision)

- ▶ Beginning with the 2023 plan year, plan sponsors are not required to provide the annual notices (e.g., QDIA notice, fee disclosure) to participants who have not enrolled in the plan. Instead, so long as the participant received a Summary Plan Description (SPD) and initial required notices, they only need an annual reminder that they are eligible to participate in the plan.

Performance benchmarks for asset-allocation funds (optional provision)

- ▶ The DOL is directed to provide regulations within two years that establish a benchmark for asset-allocation funds (e.g., target date funds) that the plan fiduciaries may rely on.

SECURE 2.0: Miscellaneous

The saver's credit (required provision)

- ▶ The Saver's Credit helps lower- and middle-income Americans who contribute to a retirement plan by cutting up to \$1,000 (\$2,000 for married couples) off their tax bill when they file their annual tax return. Beginning in 2027, the Saver's Credit will transition into a government matching program for retirement plan contributions dubbed the "Saver's Match."
- ▶ Plan communications (e.g., SPD) may include descriptions of the Saver's Credit and should be adjusted when the change goes live.

Matching as Roth (optional provision)

- ▶ Beginning immediately, employers will be able to provide employees the option of receiving vested matching contributions or non-elective contributions to Roth accounts. Previously, matching contributions were made on a pre-tax basis.
- ▶ Technically, plans that allowed Roth in-plan conversions for employer contributions were able to offer this option prior to SECURE 2.0.
- ▶ Receiving the employer contribution in a Roth account, whether using SECURE 2.0 provisions or the Roth in-plan conversion, will result in additional taxable income to the participant in the current year. Employers will need to work out how to satisfy tax withholding from other compensation paid to the employee or through other means, and ultimately IRS guidance will likely be needed.
- ▶ Although this provision is available immediately, it may take time for recordkeepers to program for this new election and for payroll systems to be updated.

Department of Labor ESG and Proxy Voting Rule

Rule released in November 2022

- ▶ In November 2022, the U.S. Department of Labor (DOL) released the Final Rule on Prudence and Loyalty in Selecting Plan Investments and Exercising Shareholder Rights.
- ▶ The rule does not require that plan fiduciaries consider ESG factors when selecting investments but does provide that risk and return factors “may include the economic effects of climate change and other environmental, social, or governance factors on the particular investment or investment course of action.”
- ▶ The New Rule also clarifies standards for qualified default investment alternatives (QDIAs) and states that they are no different from those applied to other investments in that relevant risk-return factors must be the basis for determination.
- ▶ With regard to proxy voting and the exercise of shareholder rights, the Final Rule states that fiduciaries must exercise their shareholder rights prudently and for the benefit of participants and beneficiaries and not “subordinate” those interests to other objectives.
- ▶ The approach in the Final Rule regarding proxy voting is that proxies should be voted as part of the process of managing the plan’s investment in company stock unless a responsible plan fiduciary determines voting proxies may not be in the plan’s best interest (e.g., in cases when voting proxies may involve out-of-the-ordinary costs or unusual requirements).

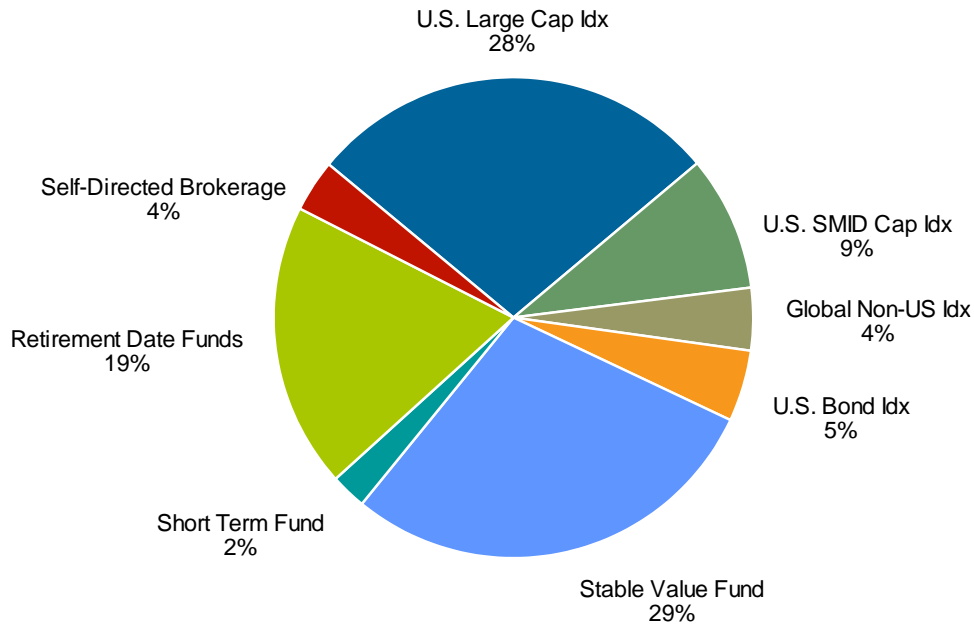
Callan

PA SERS 457(b) Plan Performance Review

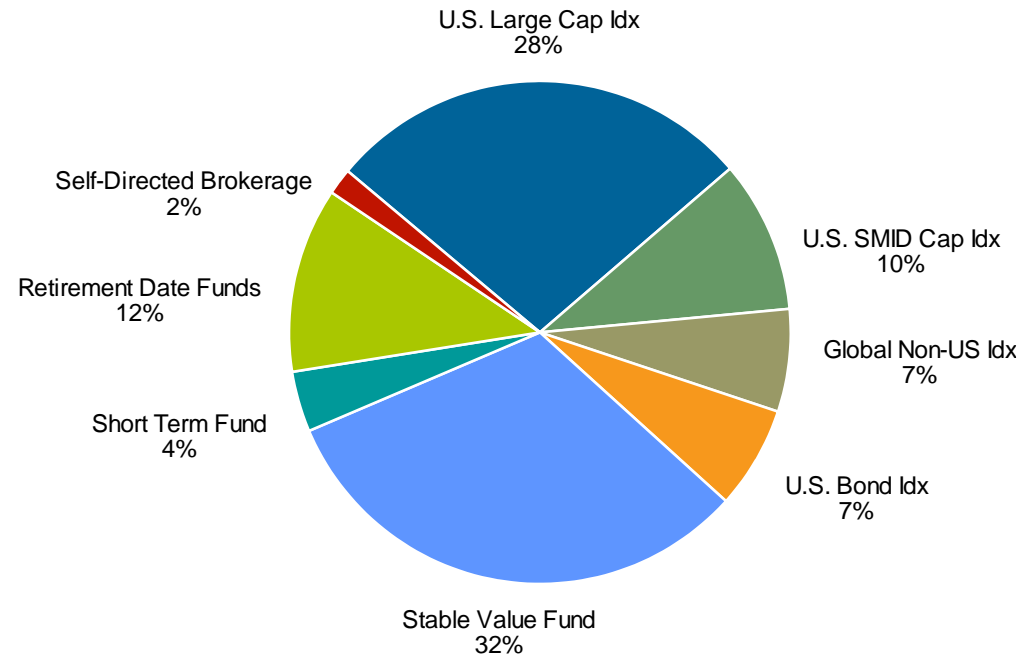
457(b) Plan Asset Allocation & Contributions

As of December 31, 2022

Asset Allocation



Contributions



Asset Allocation

As of December 31, 2022

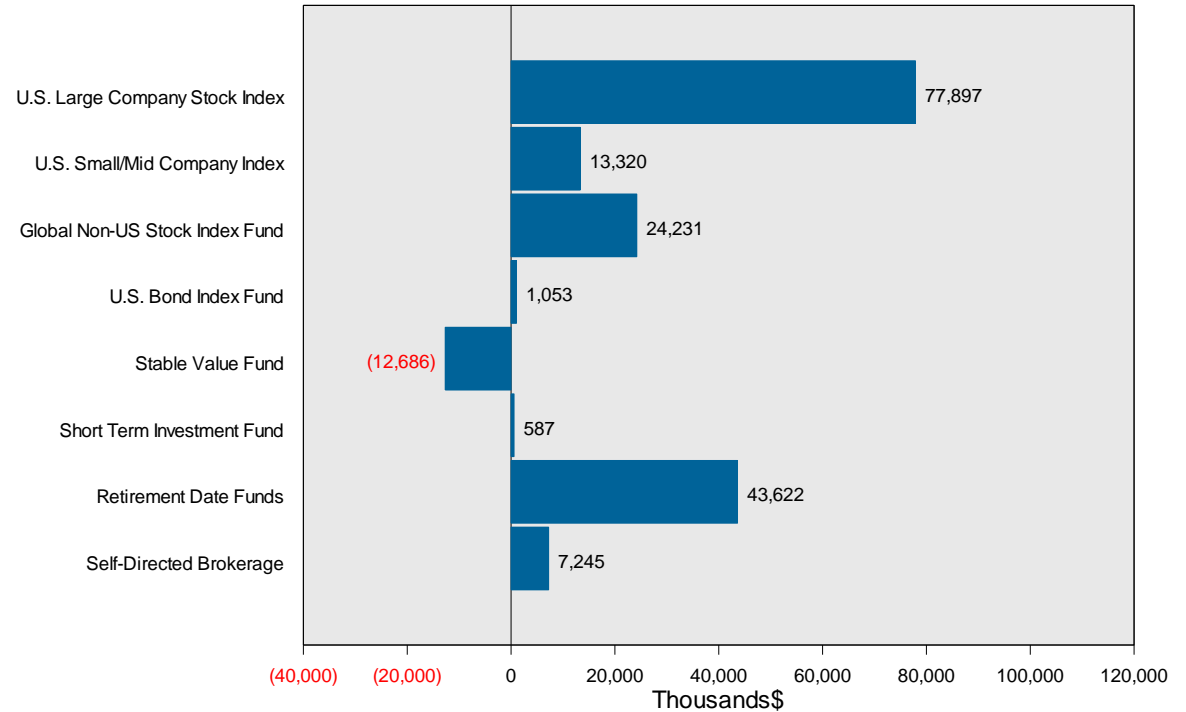
	December 31, 2022				September 30, 2022	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
SERS Retirement Date Funds	\$783,284,699	19.18%	\$(4,462,690)	\$48,085,044	\$739,662,345	18.83%
SERS Post Retirement Fund	210,416,638	5.15%	(4,516,920)	9,563,286	205,370,273	5.23%
SERS 2025 Retirement Fund	135,338,060	3.31%	(2,881,830)	6,855,091	131,364,799	3.34%
SERS 2030 Retirement Fund	129,067,552	3.16%	(215,077)	7,766,902	121,515,727	3.09%
SERS 2035 Retirement Fund	114,356,957	2.80%	20,493	7,906,276	106,430,188	2.71%
SERS 2040 Retirement Fund	73,003,480	1.79%	408,870	5,621,395	66,973,216	1.70%
SERS 2045 Retirement Fund	59,706,928	1.46%	794,476	5,034,260	53,878,192	1.37%
SERS 2050 Retirement Fund	37,897,076	0.93%	941,669	3,303,943	33,651,464	0.86%
SERS 2055 Retirement Fund	13,888,250	0.34%	648,026	1,199,584	12,040,640	0.31%
SERS 2060 Retirement Fund	5,390,397	0.13%	117,342	472,369	4,800,686	0.12%
SERS 2065 Retirement Fund	4,219,359	0.10%	220,260	361,939	3,637,160	0.09%
SERS U.S. Equity	\$1,510,656,214	36.99%	\$(7,255,585)	\$98,473,155	\$1,419,438,644	36.13%
SERS U.S. Large Company Index Fund	1,138,993,725	27.89%	(1,865,507)	79,762,638	1,061,096,594	27.01%
SERS U.S. SMID Company Index Fund	371,662,489	9.10%	(5,390,078)	18,710,517	358,342,050	9.12%
SERS Non-U.S. Equity	\$171,081,645	4.19%	\$2,913,899	\$21,317,370	\$146,850,376	3.74%
SERS Global Non-US Index Fund	171,081,645	4.19%	2,913,899	21,317,370	146,850,376	3.74%
SERS Fixed Income	\$1,475,415,528	36.13%	\$(21,093,264)	\$10,046,934	\$1,486,461,857	37.84%
SERS Short Term Investment Fund	96,846,484	2.37%	(210,465)	797,261	96,259,687	2.45%
SERS Stable Value Fund	1,180,750,128	28.91%	(18,343,079)	5,657,414	1,193,435,792	30.38%
SERS U.S. Bond Index Fund	197,818,916	4.84%	(2,539,720)	3,592,259	196,766,378	5.01%
Self-Directed Brokerage Account	\$143,184,718	3.51%	\$(1,659,301)	\$8,903,815	\$135,940,205	3.46%
Total Fund	\$4,083,622,804	100.0%	\$(31,556,941)	\$186,826,318	\$3,928,353,426	100.0%

Changes in Market Values and Contributions

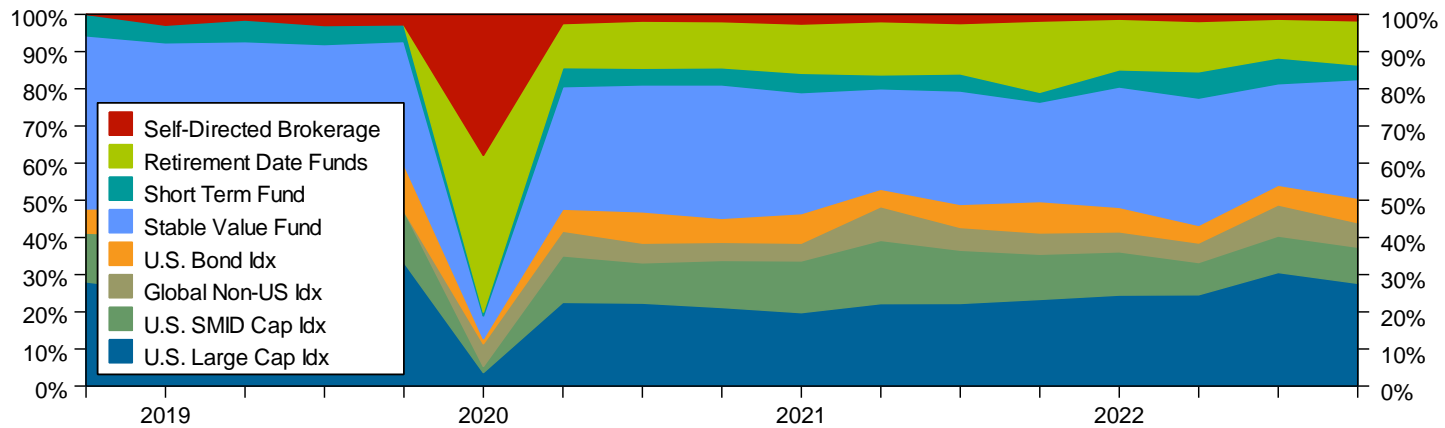
As of December 31, 2022

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

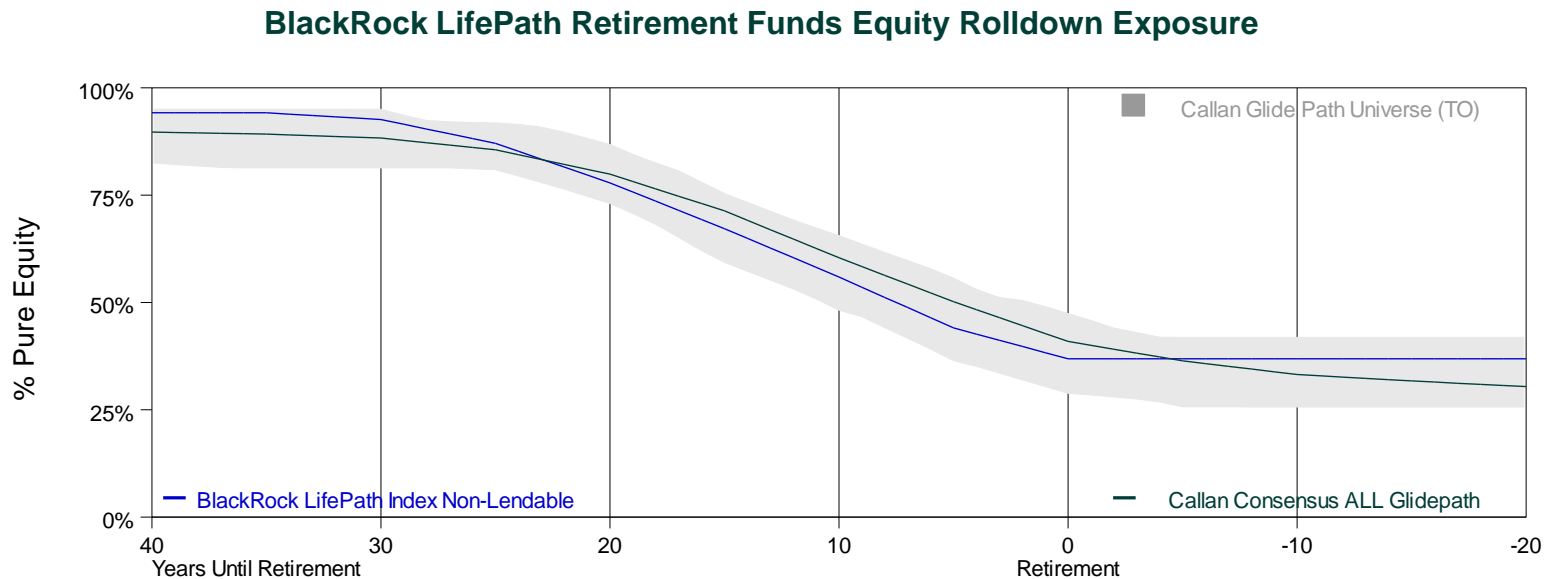
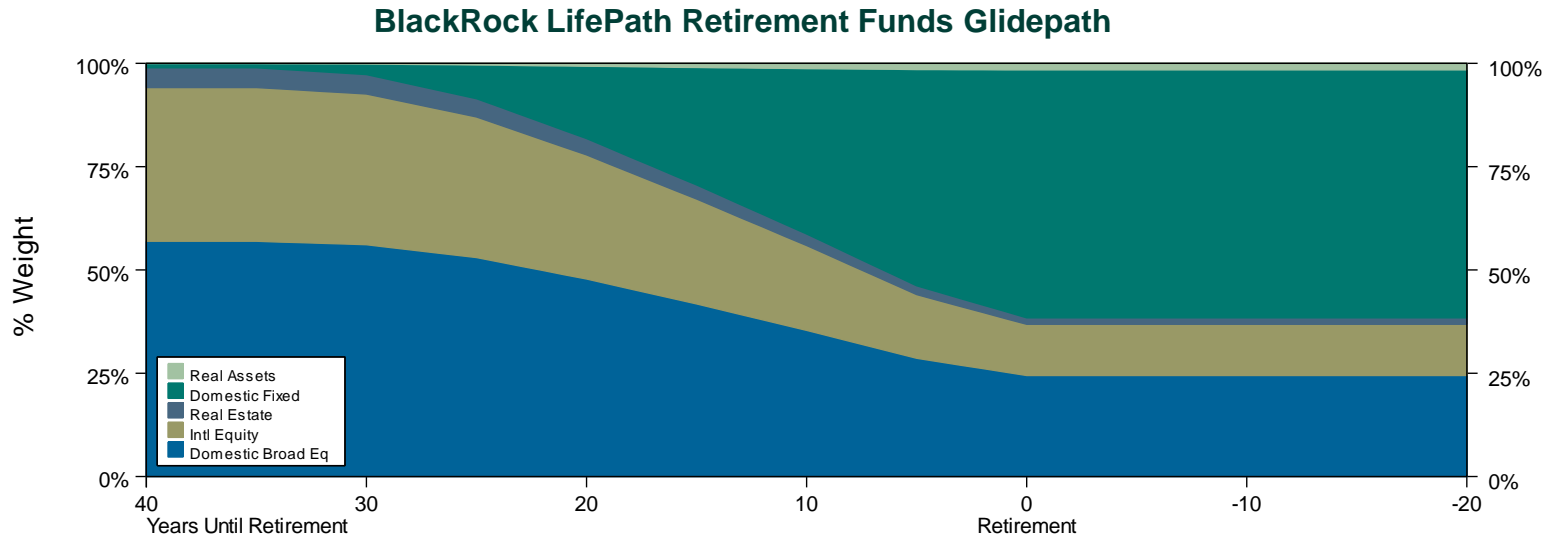


Historical Allocation of Contributions



BlackRock LifePath Retirement Funds

Glidepath and Equity Roll-down Exposure as of December 31, 2022



Cumulative Performance - Net of Fees

As of December 31, 2022

	Last Quarter	Last 1 Year	Last 3 Years	Last 5 Years
Net Performance				
Retirement Date Funds				
SERS Post Retirement Fund	4.69%	(14.63%)	0.74%	2.68%
BlackRock Post Retirement NL Index	4.75%	(14.54%)	0.75%	2.68%
Callan Tgt Date Ret Inc	4.22%	(12.88%)	0.58%	2.29%
SERS 2025 Retirement Fund	5.29%	(15.23%)	1.20%	3.18%
BlackRock 2025 NL Index	5.30%	(15.17%)	1.20%	3.16%
Callan Target Date 2025	5.90%	(15.16%)	1.73%	3.47%
SERS 2030 Retirement Fund	6.44%	(15.97%)	1.86%	3.78%
BlackRock 2030 NL Index	6.41%	(15.92%)	1.85%	3.75%
Callan Target Date 2030	6.71%	(16.04%)	2.32%	3.84%
SERS 2035 Retirement Fund	7.49%	(16.67%)	2.51%	4.35%
BlackRock 2035 NL Index	7.39%	(16.67%)	2.47%	4.29%
Callan Target Date 2035	7.65%	(16.80%)	2.84%	4.31%
SERS 2040 Retirement Fund	8.50%	(17.35%)	3.04%	4.83%
BlackRock 2040 NL Index	8.33%	(17.39%)	2.98%	4.75%
Callan Target Date 2040	8.39%	(17.40%)	3.27%	4.67%
SERS 2045 Retirement Fund	9.39%	(17.89%)	3.53%	5.21%
BlackRock 2045 NL Index	9.17%	(17.96%)	3.45%	5.11%
Callan Target Date 2045	8.93%	(17.94%)	3.54%	4.93%
SERS 2050 Retirement Fund	9.84%	(18.20%)	3.79%	5.40%
BlackRock 2050 NL Index	9.59%	(18.30%)	3.70%	5.29%
Callan Target Date 2050	9.23%	(18.04%)	3.67%	4.95%
SERS 2055 Retirement Fund	9.94%	(18.27%)	3.85%	5.44%
BlackRock 2055 NL Index	9.69%	(18.38%)	3.75%	5.33%
Callan Target Date 2055	9.28%	(18.20%)	3.70%	4.98%
SERS 2060 Retirement Fund	9.94%	(18.28%)	3.84%	5.43%
BlackRock 2060 NL Index	9.69%	(18.39%)	3.75%	5.32%
Callan Target Date 2060	9.23%	(18.21%)	3.78%	5.08%
SERS 2065 Retirement Fund	9.93%	(18.30%)	3.77%	-
BlackRock 2065 NL Index	9.70%	(18.40%)	3.74%	-
Callan Target Date 2065	9.24%	(18.60%)	3.72%	5.18%

Note: SERS Funds are the top fund in each grouping followed by each fund's respective benchmark and median peer. *Target Date funds replaced risk-based funds in 1Q20.

Cumulative Performance - Net of Fees

As of December 31, 2022

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
Net Performance				
Retirement Date Funds				
SERS Post Retirement Fund	4.21%	4.02%	4.17%	-
BlackRock Post Retirement NL Index	4.19%	3.99%	-	-
Callan Tgt Date Ret Inc	3.66%	3.51%	3.61%	4.29%
SERS 2025 Retirement Fund	5.24%	5.29%	4.37%	-
BlackRock 2025 NL Index	5.17%	5.25%	-	-
Callan Target Date 2025	5.49%	5.86%	4.69%	-
SERS 2030 Retirement Fund	6.01%	5.99%	4.70%	-
BlackRock 2030 NL Index	5.92%	5.96%	-	-
Callan Target Date 2030	6.15%	6.64%	4.93%	6.98%
SERS 2035 Retirement Fund	6.74%	6.66%	5.02%	-
BlackRock 2035 NL Index	6.62%	6.60%	-	-
Callan Target Date 2035	6.77%	7.24%	5.30%	-
SERS 2040 Retirement Fund	7.37%	7.23%	5.26%	-
BlackRock 2040 NL Index	7.22%	7.16%	-	-
Callan Target Date 2040	7.25%	7.60%	5.60%	7.57%
SERS 2045 Retirement Fund	7.84%	7.68%	5.43%	-
BlackRock 2045 NL Index	7.65%	7.60%	-	-
Callan Target Date 2045	7.54%	7.87%	5.74%	-
SERS 2050 Retirement Fund	8.03%	7.94%	5.59%	-
BlackRock 2050 NL Index	7.84%	7.87%	-	-
Callan Target Date 2050	7.59%	7.94%	5.71%	-
SERS 2055 Retirement Fund	8.05%	8.06%	-	-
BlackRock 2055 NL Index	7.87%	8.00%	-	-
Callan Target Date 2055	7.73%	8.07%	-	-

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.

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

Cumulative Performance - Net of Fees

As of December 31, 2022

	Last Quarter	Last 1 Year	Last 3 Years	Last 5 Years
Net Performance				
Domestic Equity				
SERS U.S. Large Company Index	7.55%	(18.12%)	7.67%	9.43%
S&P 500 Index	7.56%	(18.11%)	7.66%	9.42%
Callan Lg Cap Broad MF	7.90%	(18.55%)	6.51%	8.15%
SERS U.S. SMID Company Index	5.25%	(26.13%)	3.26%	5.06%
Dow Jones US Completion	5.05%	(26.56%)	2.93%	4.76%
Callan SMID Broad MFs	7.35%	(21.59%)	4.75%	6.04%
International Equity				
SERS Global Non-US Index	14.48%	(15.92%)	0.30%	1.14%
MSCI ACWI ex US	14.28%	(16.00%)	0.07%	0.88%
Callan Non US Equity MFs	17.05%	(15.77%)	0.84%	1.33%
Domestic Fixed Income				
SERS Short Term Investment Fund	0.90%	1.59%	0.77%	1.34%
3-month Treasury Bill	0.84%	1.46%	0.72%	1.26%
Callan Cash Database(1)	0.93%	1.07%	0.82%	1.39%
SERS Stable Value Fund	0.53%	1.73%	1.90%	2.12%
3-month Treasury Bill	0.84%	1.46%	0.72%	1.26%
Callan Stable Value	0.58%	1.95%	1.99%	2.22%
SERS U.S. Bond Index Fund	1.89%	(12.94%)	(2.71%)	0.02%
Blmbg Aggregate	1.87%	(13.01%)	(2.71%)	0.02%
Callan Core Bond MFs	1.77%	(13.47%)	(2.41%)	0.23%

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

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

Cumulative Performance - Net of Fees

As of December 31, 2022

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
Net Performance				
Domestic Equity				
SERS U.S. Large Company Index	11.49%	12.57%	8.84%	9.84%
S&P 500 Index	11.48%	12.56%	8.81%	9.80%
Callan Lg Cap Broad MF	10.31%	11.71%	8.19%	9.51%
SERS U.S. SMID Company Index	8.38%	9.74%	7.92%	10.32%
Dow Jones US Completion	8.10%	9.49%	7.66%	10.12%
Callan SMID Broad MFs	8.89%	9.84%	7.92%	9.82%
International Equity				
SERS Global Non-US Index	5.13%	3.95%	-	-
MSCI ACWI ex US	4.80%	3.80%	1.52%	6.73%
Callan Non US Equity MFs	4.36%	4.55%	2.37%	6.71%
Domestic Fixed Income				
SERS Short Term Investment Fund	1.20%	0.89%	0.87%	-
3-month Treasury Bill	1.07%	0.76%	0.68%	1.27%
Callan Cash Database(1)	1.30%	1.08%	1.19%	1.65%
SERS Stable Value Fund	2.06%	2.14%	2.72%	-
3-month Treasury Bill	1.07%	0.76%	0.68%	1.27%
Callan Stable Value	2.17%	2.13%	2.63%	3.16%
SERS U.S. Bond Index Fund	0.88%	1.02%	2.61%	3.06%
Blmbg Aggregate	0.89%	1.06%	2.66%	3.10%
Callan Core Bond MFs	1.09%	1.20%	2.99%	3.32%

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

*Funds not listed do not have longer term history.

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

Performance Summary & Expense Ratios as of December 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
Net of Fee Performance									
Retirement Date Funds									
SERS Post Retirement Fund Callan Tgt Date Ret Inc BlackRock Post Retirement NL Index	4.7 32	-14.6 79	0.7 45	2.7 25	4.2 19	4.0 19			0.08 76
SERS 2025 Retirement Fund Callan Target Date 2025 BlackRock 2025 NL Index	5.3 75	-15.2 53	1.2 69	3.2 64	5.2 65	5.3 83			0.08 74
SERS 2030 Retirement Fund Callan Target Date 2030 BlackRock 2030 NL Index	6.4 63	-16.0 48	1.9 68	3.8 52	6.0 58	6.0 79			0.08 72
SERS 2035 Retirement Fund Callan Target Date 2035 BlackRock 2035 NL Index	7.5 60	-16.7 46	2.5 69	4.3 46	6.7 53	6.7 79			0.08 74
SERS 2040 Retirement Fund Callan Target Date 2040 BlackRock 2040 NL Index	8.5 44	-17.3 49	3.0 62	4.8 35	7.4 36	7.2 74			0.08 71
SERS 2045 Retirement Fund Callan Target Date 2045 BlackRock 2045 NL Index	9.4 23	-17.9 48	3.5 50	5.2 28	7.8 30	7.7 65			0.08 74
SERS 2050 Retirement Fund Callan Target Date 2050 BlackRock 2050 NL Index	9.8 15	-18.2 56	3.8 43	5.4 17	8.0 15	7.9 50			0.08 71
SERS 2055 Retirement Fund Callan Target Date 2055 BlackRock 2055 NL Index	9.9 16	-18.3 52	3.8 36	5.4 14	8.1 12	8.1 52			0.08 78
SERS 2060 Retirement Fund Callan Target Date 2060 BlackRock 2060 NL Index	9.9 13	-18.3 52	3.8 45	5.4 18	8.0 19				0.08 77

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 December 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
SERS 2065 Retirement Fund Callan Target Date 2065 BlackRock 2065 NL Index	9.9 16 9.7 23	-18.3 34 -18.4 44	3.8 46 3.7 49						0.08 56
Domestic Equity									
SERS U.S. Large Company Index Callan Lg Cap Broad MF S&P 500 Index	7.6 51 7.6 50	-18.1 47 -18.1 47	7.7 32 7.7 32	9.4 27 9.4 28	11.5 17 11.5 17	12.6 26 12.6 26			0.02 100
SERS U.S. Small/Mid Company Index Callan SMID Broad MFs Dow Jones US Completion	5.3 70 5.1 71	-26.1 66 -26.6 67	3.3 65 2.9 68	5.1 70 4.8 73	8.4 60 8.1 67	9.7 57 9.5 62			0.03 98
International Equity									
SERS Global Non-U.S. Index Fund Callan Non US Equity MFs MSCI ACWI ex US	14.5 73 14.3 73	-15.9 52 -16.0 55	0.3 63 0.1 67	1.1 58 0.9 66	5.1 32 4.8 44	4.0 71 3.8 72			0.05 99
Domestic Fixed Income									
SERS Short Term Investment Fund Callan Cash Database 3-month Treasury Bill	0.9 73 0.8 90	1.6 33 1.5 36	0.8 55 0.7 68	1.3 66 1.3 86	1.2 77 1.1 92	0.9 79 0.8 93			0.00 100
Comments: Callan Cash Database includes STIF, enhanced cash, and money market funds.									
SERS Stable Value Fund Callan Stable Value 3-month Treasury Bill	0.5 19 0.8 1	1.7 27 1.5 55	1.9 12 0.7 99	2.1 11 1.3 91	2.1 8 1.1 97	2.1 1 0.8 99			
SERS U.S. Bond Index Fund Callan Core Bond MFs Blmbg Aggregate	1.9 32 1.9 34	-12.9 23 -13.0 28	-2.7 78 -2.7 78	0.0 68 0.0 68	0.9 87 0.9 86	1.0 76 1.1 69			0.02 98

Returns:
 above median
 third quartile
 fourth quartile

Return Consistency:
 above median
 third quartile
 fourth quartile

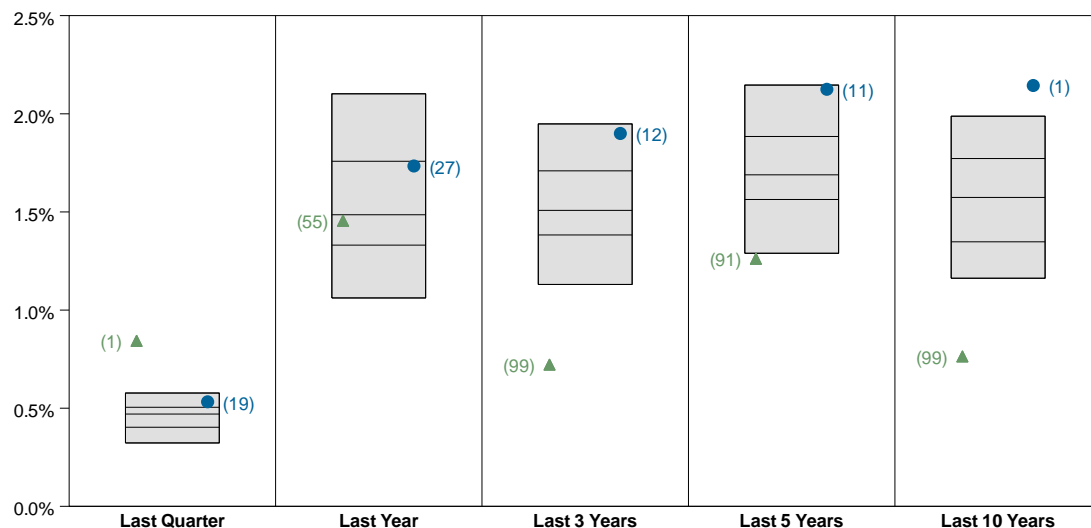
Risk Quadrant:

Expense Ratio:
 below median
 second quartile
 first quartile

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).

Stable Value Fund as of December 31, 2022

Performance vs Callan Stable Value CT (Institutional Net)



10th Percentile 0.58
 25th Percentile 0.50
 Median 0.47
 75th Percentile 0.40
 90th Percentile 0.32

SERS Stable Value Fund ● 0.53
 3-month Treasury Bill ▲ 0.84

Manager Diversification*	
Manager	Portfolio
Barksdale (DWDO Manager)	9.23%
Dodge & Cox	4.08%
Invesco	61.41%
Loomis Sayles	4.04%
PFM	9.19%
Ramirez (DWDO Manager)	9.20%
STIF	2.86%
Total	100%

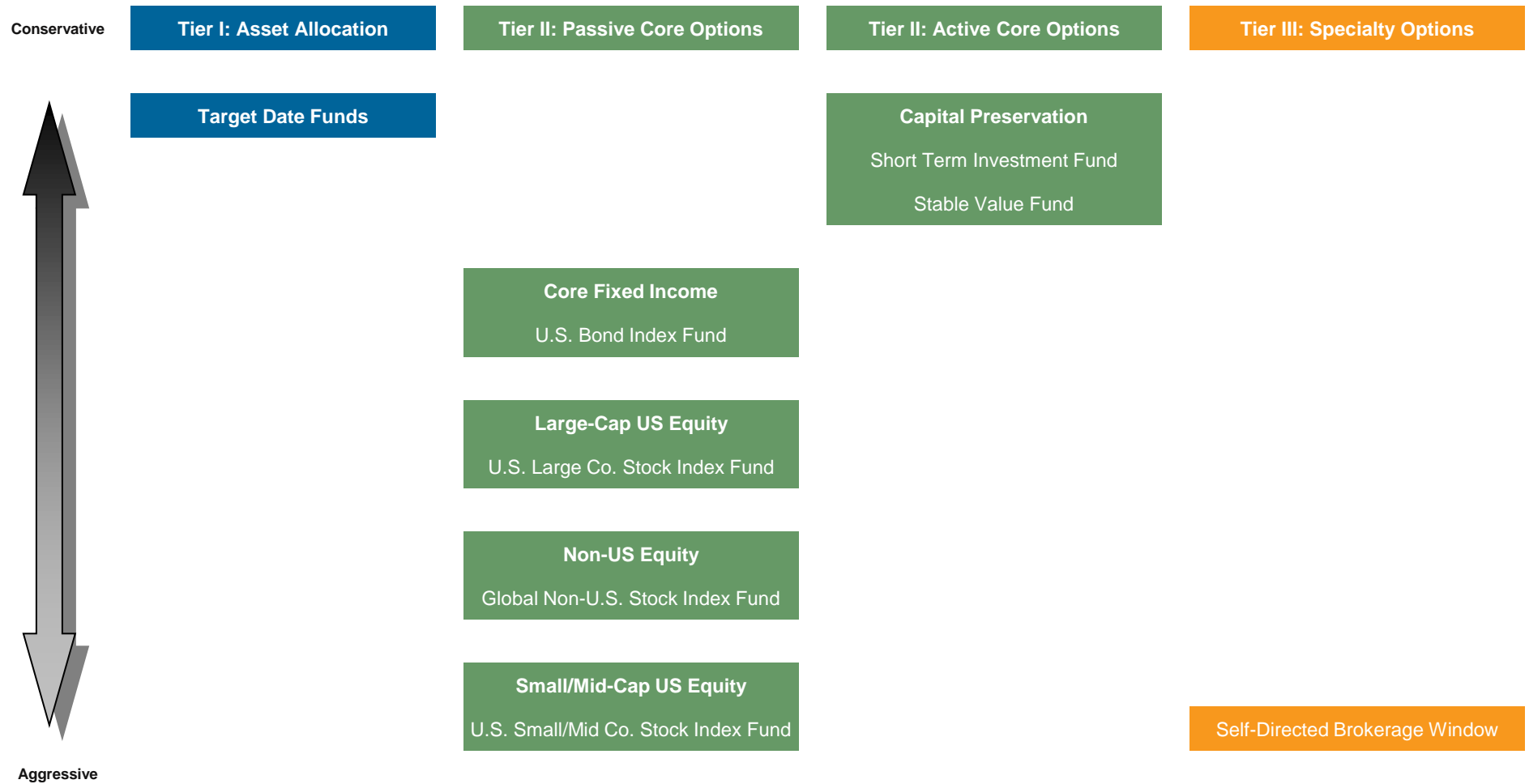
Wrap Provider Exposure*

Contract Issuer	Portfolio	Average Fee	Moody's Rating	S&P Rating	Fitch Rating
Nationwide Life Insurance	20.51%	0.15%	A1	A+	NR
Transamerica	20.39%	0.15%	A1	A+	WD
Prudential Insurance Co.	15.39%	0.15%	Aa3	AA-	AA-
RGA	15.39%	0.15%	A1	AA-	A
State Street Bank	12.83%	0.15%	Aa2	AA-	AA+
Pacific Life Insurance Co.	12.84%	0.15%	Aa3	AA-	AA-
	97.35%	0.15%			

*Source: Invesco

457(b) Plan Investment Structure

Lineup Mapped to Callan's Clean Sheet



Callan

Appendix – Callan Update

Published Research Highlights from 4Q22

Webinar: Rebalancing During this Unusual Market Environment



Considering Currency: A Guide for Institutional Investors



2022 Nuclear Decommissioning Funding Study



2022 ESG Survey



Recent Blog Posts

Unlocking the Secrets of the 'Data Vault'

Bo Abesamis

Index Selection Within TDF Benchmarks Can Make a Big Difference

Mark Andersen

Emerging Managers in Private Equity: A Guide for Success

David Smith

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

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