

February 2023



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

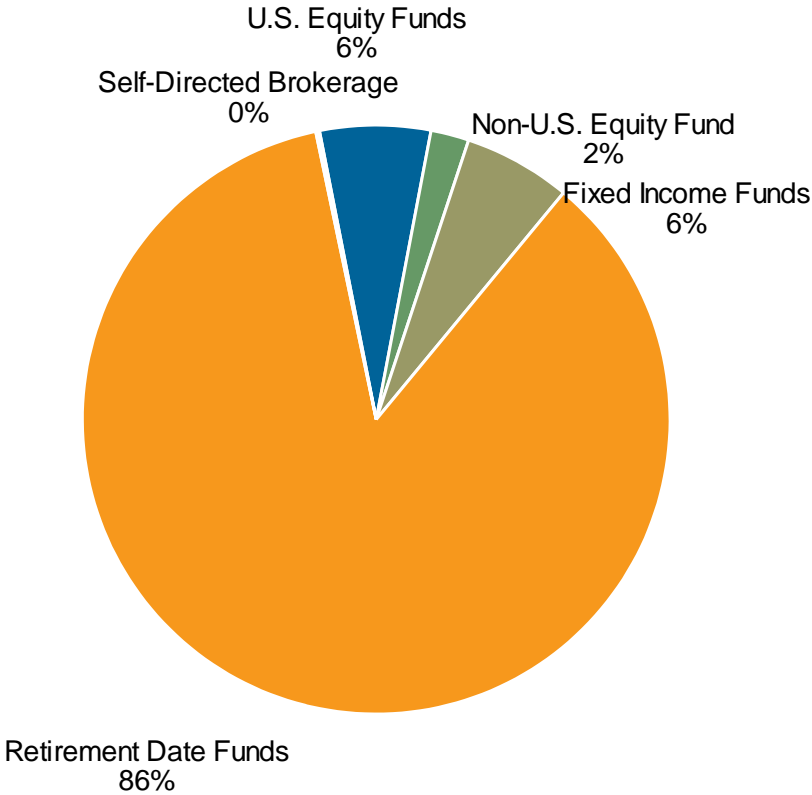
Callan

PA SERS 401(a) Plan Performance Review

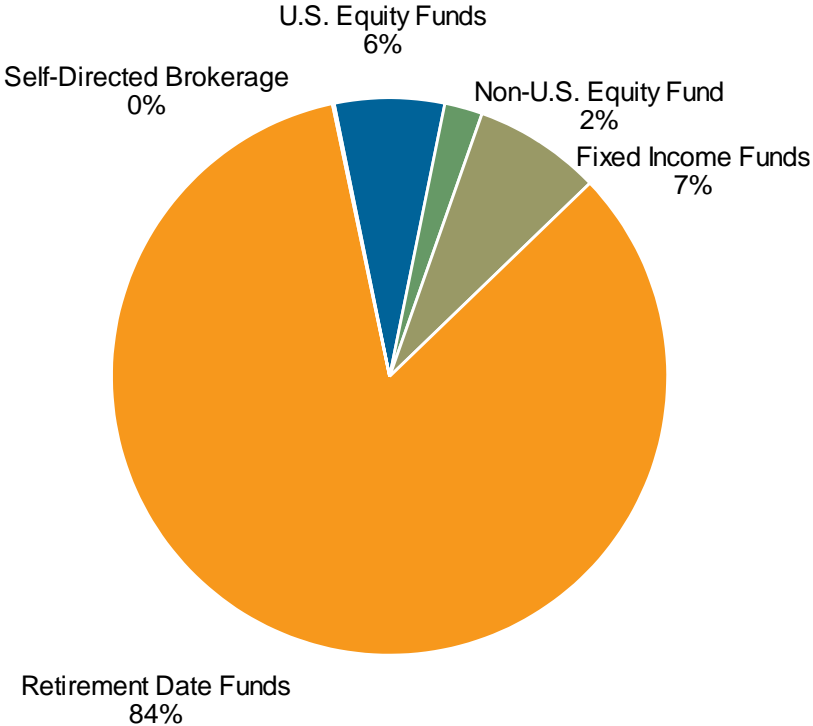
401(a) Plan Asset Allocation & Contributions

As of December 31, 2022

Asset Allocation



Contributions



Asset Allocation

As of December 31, 2022

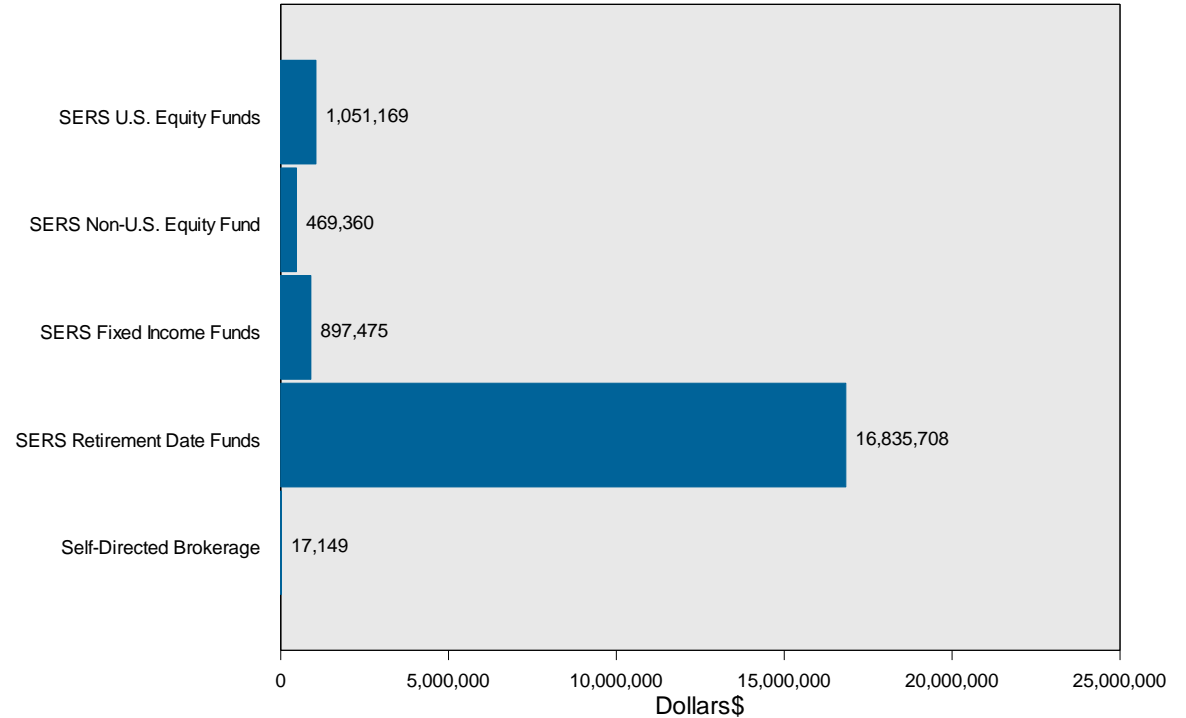
| | December 31, 2022 | | | September 30, 2022 | | |
|--------------------------------------|----------------------|---------------|---------------------|--------------------|---------------------|---------------|
| | Market Value | Weight | Net New Inv. | Inv. Return | Market Value | Weight |
| SERS Retirement Date Funds | \$88,490,050 | 85.70% | \$10,441,186 | \$6,394,525 | \$71,654,339 | 85.32% |
| SERS Post Retirement Fund | 1,469,918 | 1.42% | 180,351 | 59,058 | 1,230,510 | 1.47% |
| SERS 2025 Retirement Fund | 3,972,636 | 3.85% | 379,561 | 182,874 | 3,410,200 | 4.06% |
| SERS 2030 Retirement Fund | 9,261,728 | 8.97% | 941,563 | 511,923 | 7,808,242 | 9.30% |
| SERS 2035 Retirement Fund | 9,243,344 | 8.95% | 1,063,347 | 574,731 | 7,605,267 | 9.06% |
| SERS 2040 Retirement Fund | 10,552,325 | 10.22% | 1,493,252 | 731,812 | 8,327,261 | 9.92% |
| SERS 2045 Retirement Fund | 10,841,016 | 10.50% | 1,273,063 | 836,282 | 8,731,670 | 10.40% |
| SERS 2050 Retirement Fund | 11,702,247 | 11.33% | 1,169,653 | 956,996 | 9,575,597 | 11.40% |
| SERS 2055 Retirement Fund | 11,918,863 | 11.54% | 1,379,193 | 971,276 | 9,568,394 | 11.39% |
| SERS 2060 Retirement Fund | 11,291,321 | 10.94% | 1,325,232 | 921,026 | 9,045,064 | 10.77% |
| SERS 2065 Retirement Fund | 8,236,654 | 7.98% | 1,235,970 | 648,548 | 6,352,135 | 7.56% |
| SERS U.S. Equity | \$6,314,447 | 6.12% | \$678,774 | \$372,395 | \$5,263,278 | 6.27% |
| SERS U.S. Large Company Index Fund | 4,081,932 | 3.95% | 532,408 | 244,151 | 3,305,373 | 3.94% |
| SERS U.S. All Company Index Fund | 1,465,625 | 1.42% | 91,002 | 94,038 | 1,280,585 | 1.52% |
| SERS U.S. SMID Company Index Fund | 766,890 | 0.74% | 55,364 | 34,206 | 677,320 | 0.81% |
| SERS Non-U.S. Equity | \$2,165,623 | 2.10% | \$212,225 | \$257,135 | \$1,696,263 | 2.02% |
| SERS Global Non-U.S. Index Fund | 2,165,623 | 2.10% | 212,225 | 257,135 | 1,696,263 | 2.02% |
| SERS Fixed Income | \$6,128,770 | 5.94% | \$834,798 | \$62,677 | \$5,231,295 | 6.23% |
| SERS Short Term Investment Fund | 4,592,993 | 4.45% | 622,944 | 38,056 | 3,931,992 | 4.68% |
| SERS U.S. Short Term Bond Index Fund | 130,477 | 0.13% | 85,350 | 676 | 44,451 | 0.05% |
| SERS U.S. TIPS Index Fund | 335,887 | 0.33% | 60,132 | 5,866 | 269,889 | 0.32% |
| SERS U.S. Bond Index Fund | 1,069,413 | 1.04% | 66,372 | 18,079 | 984,963 | 1.17% |
| SERS Self-Directed Brokerage | \$156,695 | 0.15% | \$13,858 | \$3,291 | \$139,546 | 0.17% |
| Total Fund | \$103,255,585 | 100.0% | \$12,180,840 | \$7,090,024 | \$83,984,721 | 100.0% |

Changes in Market Values and Contributions

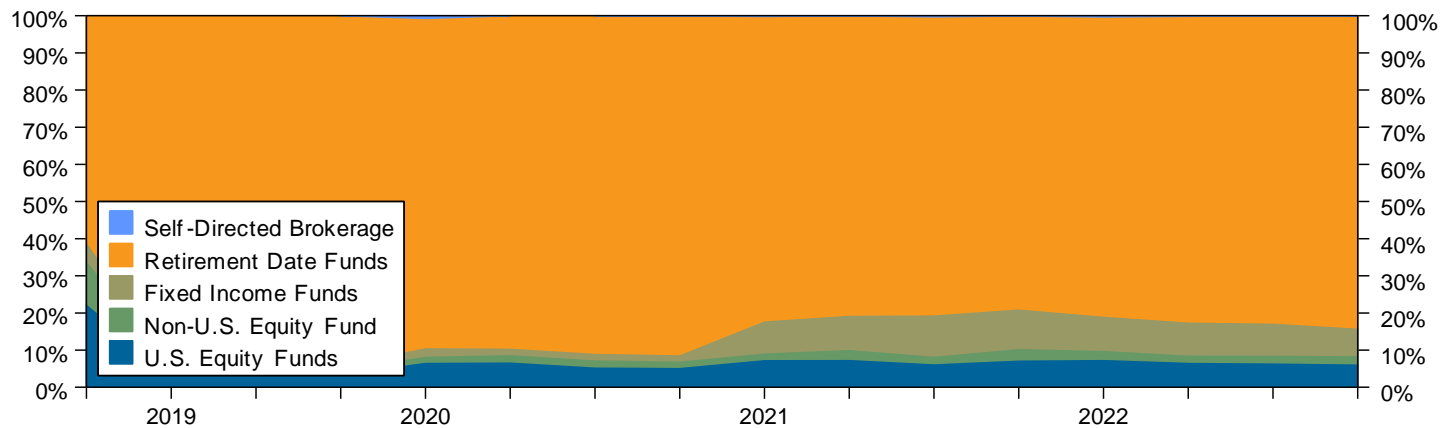
As of December 31, 2022

- 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.



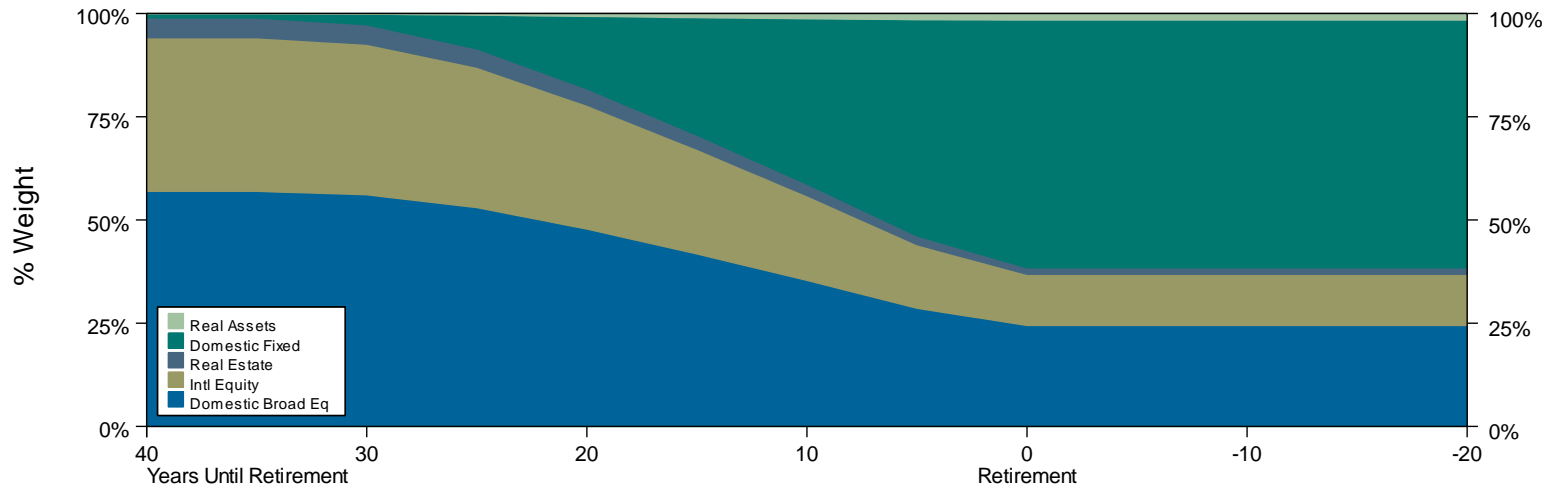
Historical Allocation of Contributions



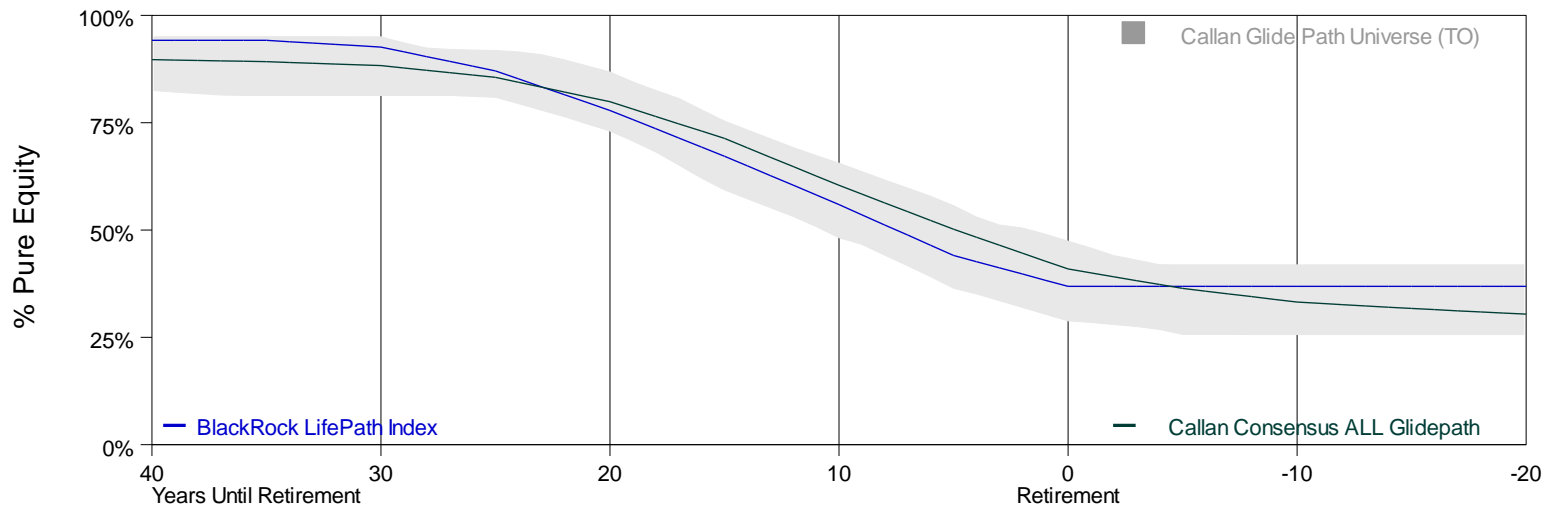
BlackRock LifePath Retirement Funds

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

BlackRock LifePath Retirement Funds Glidepath



BlackRock LifePath Retirement Funds Equity Roll-down Exposure



Cumulative Performance - Net of Fees

As of December 31, 2022

| | Last Quarter | Last 1 Year | Last 3 Years | Last 5 Years |
|---------------------------------|-----------------|-------------------|--------------------|--------------------|
| Net Performance | | | | |
| Target Date Funds | | | | |
| SERS Post Retirement Fund | 4.69% | (14.63%) | 0.74% | 2.68% |
| BlackRock Post Retirement 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 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 Index | 6.41% | (15.92%) | 1.86% | 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 Index | 7.39% | (16.67%) | 2.48% | 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 Index | 8.33% | (17.38%) | 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 Index | 9.17% | (17.96%) | 3.45% | 5.10% |
| 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 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 Index | 9.69% | (18.38%) | 3.76% | 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 Index | 9.69% | (18.39%) | 3.75% | 5.33% |
| Callan Target Date 2060 | 9.23% | (18.21%) | 3.78% | 5.08% |
| SERS 2065 Retirement Fund | 9.93% | (18.30%) | 3.77% | - |
| BlackRock 2065 Index | 9.70% | (18.40%) | 3.75% | - |
| 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.

Cumulative Performance - Net of Fees

As of December 31, 2022

| | Last 7 Years | Last 10 Years | Last 15 Years | Last 20 Years |
|---------------------------------|--------------------|---------------------|---------------------|---------------------|
| Net Performance | | | | |
| Target Date Funds | | | | |
| SERS Post Retirement Fund | 4.21% | 4.02% | 4.17% | - |
| BlackRock Post Retirement Index | 4.18% | 4.00% | 4.16% | 5.24% |
| 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 Index | 5.17% | 5.25% | 4.33% | 6.29% |
| Callan Target Date 2025 | 5.49% | 5.86% | 4.69% | - |
| | | | | |
| SERS 2030 Retirement Fund | 6.01% | 5.99% | 4.70% | - |
| BlackRock 2030 Index | 5.92% | 5.94% | 4.65% | 6.70% |
| Callan Target Date 2030 | 6.15% | 6.64% | 4.93% | 6.98% |
| | | | | |
| SERS 2035 Retirement Fund | 6.74% | 6.66% | 5.02% | - |
| BlackRock 2035 Index | 6.63% | 6.58% | 4.94% | 7.06% |
| Callan Target Date 2035 | 6.77% | 7.24% | 5.30% | - |
| | | | | |
| SERS 2040 Retirement Fund | 7.37% | 7.23% | 5.26% | - |
| BlackRock 2040 Index | 7.23% | 7.13% | 5.16% | 7.37% |
| Callan Target Date 2040 | 7.25% | 7.60% | 5.60% | 7.57% |
| | | | | |
| SERS 2045 Retirement Fund | 7.84% | 7.68% | 5.43% | - |
| BlackRock 2045 Index | 7.66% | 7.57% | 5.32% | 7.68% |
| Callan Target Date 2045 | 7.54% | 7.87% | 5.74% | - |
| | | | | |
| SERS 2050 Retirement Fund | 8.03% | 7.94% | 5.59% | - |
| BlackRock 2050 Index | 7.85% | 7.83% | 5.49% | 8.07% |
| Callan Target Date 2050 | 7.59% | 7.94% | 5.71% | - |
| | | | | |
| SERS 2055 Retirement Fund | 8.05% | 8.06% | - | - |
| BlackRock 2055 Index | 7.89% | 7.96% | - | - |
| 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.

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 Fund | 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. All Company Index Fund | 7.19% | (19.23%) | 7.13% | 8.73% |
| Russell 3000 Index | 7.18% | (19.21%) | 7.07% | 8.79% |
| Callan Multi Cap Brd MF | 8.27% | (18.29%) | 6.08% | 7.35% |
| SERS U.S. SMID Company Idx Fund | 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-U.S. Index Fund | 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 U.S. Short Term Bond Idx Fund | 0.89% | (3.69%) | (0.32%) | 0.91% |
| Blmbg Gov/Cred 1-3 Yr | 0.89% | (3.69%) | (0.32%) | 0.92% |
| Callan Short US Govt MFs | 0.65% | (5.22%) | (0.90%) | 0.33% |
| SERS U.S. TIPS Index Fund | 2.08% | (11.76%) | 1.22% | - |
| Blmbg US TIPS | 2.04% | (11.85%) | 1.21% | 2.11% |
| Callan TIPS MFs | 1.98% | (11.88%) | 1.13% | 1.99% |
| 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.

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 Fund | 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. All Company Index Fund | 10.99% | 12.11% | - | - |
| Russell 3000 Index | 11.04% | 12.13% | 8.66% | 9.88% |
| Callan Multi Cap Brd MF | 9.44% | 10.73% | 7.61% | 9.34% |
| SERS U.S. SMID Company Idx Fund | 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-U.S. Index Fund | 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% |
| BImbg Gov/Cred 1-3 Yr | 0.96% | 0.88% | 1.54% | 2.00% |
| Callan Short US Govt MFs | 0.49% | 0.40% | 1.35% | 1.76% |
| BImbg US TIPS | 2.60% | 1.12% | 3.05% | 3.85% |
| Callan TIPS MFs | 2.51% | 0.96% | 2.88% | 3.53% |
| SERS U.S. Bond Index Fund | 0.88% | 1.02% | 2.61% | 3.06% |
| BImbg 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.

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 | | | | | | | | | |
| Target Date Funds | | | | | | | | | |
| SERS Post Retirement Fund Callan Tgt Date Ret Inc | 4.7 32 | -14.6 79 | 0.7 45 | 2.7 25 | 4.2 19 | 4.0 19 | | | 0.08 76 |
| BlackRock Post Retirement Index | 4.7 31 | -14.5 78 | 0.7 45 | 2.7 25 | 4.2 20 | 4.0 20 | | | |
| SERS 2025 Retirement Fund Callan Target Date 2025 | 5.3 75 | -15.2 53 | 1.2 69 | 3.2 64 | 5.2 65 | 5.3 83 | | | 0.08 74 |
| BlackRock 2025 Index | 5.3 75 | -15.2 52 | 1.2 70 | 3.2 64 | 5.2 71 | 5.2 84 | | | |
| SERS 2030 Retirement Fund Callan Target Date 2030 | 6.4 63 | -16.0 48 | 1.9 68 | 3.8 52 | 6.0 58 | 6.0 79 | | | 0.08 72 |
| BlackRock 2030 Index | 6.4 68 | -15.9 46 | 1.9 68 | 3.7 55 | 5.9 65 | 5.9 80 | | | |
| SERS 2035 Retirement Fund Callan Target Date 2035 | 7.5 60 | -16.7 46 | 2.5 69 | 4.3 46 | 6.7 53 | 6.7 79 | | | 0.08 74 |
| BlackRock 2035 Index | 7.4 67 | -16.7 46 | 2.5 70 | 4.3 50 | 6.6 60 | 6.6 80 | | | |
| SERS 2040 Retirement Fund Callan Target Date 2040 | 8.5 44 | -17.3 49 | 3.0 62 | 4.8 35 | 7.4 36 | 7.2 74 | | | 0.08 71 |
| BlackRock 2040 Index | 8.3 54 | -17.4 50 | 3.0 66 | 4.8 39 | 7.2 51 | 7.1 77 | | | |
| SERS 2045 Retirement Fund Callan Target Date 2045 | 9.4 23 | -17.9 48 | 3.5 50 | 5.2 28 | 7.8 30 | 7.7 65 | | | 0.08 74 |
| BlackRock 2045 Index | 9.2 37 | -18.0 51 | 3.4 53 | 5.1 37 | 7.7 43 | 7.6 71 | | | |
| SERS 2050 Retirement Fund Callan Target Date 2050 | 9.8 15 | -18.2 56 | 3.8 43 | 5.4 17 | 8.0 15 | 7.9 50 | | | 0.08 71 |
| BlackRock 2050 Index | 9.6 27 | -18.3 60 | 3.7 49 | 5.3 23 | 7.9 34 | 7.8 57 | | | |
| SERS 2055 Retirement Fund Callan Target Date 2055 | 9.9 16 | -18.3 52 | 3.8 36 | 5.4 14 | 8.1 12 | 8.1 52 | | | 0.08 78 |
| BlackRock 2055 Index | 9.7 30 | -18.4 57 | 3.8 44 | 5.3 19 | 7.9 32 | 8.0 58 | | | |
| SERS 2060 Retirement Fund Callan Target Date 2060 | 9.9 13 | -18.3 52 | 3.8 45 | 5.4 18 | 8.0 19 | | | | 0.08 77 |
| BlackRock 2060 Index | 9.7 26 | -18.4 57 | 3.8 51 | 5.3 28 | 7.9 48 | | | | |

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 Index | 9.9 16 | -18.3 34 | 3.8 46 | | | | | | 0.08 56 |
| Domestic Equity | | | | | | | | | |
| SERS U.S. Large Company Stock Index Fund Callan Lg Cap Broad MF S&P 500 Index | 7.6 51 | -18.1 47 | 7.7 32 | 9.4 27 | 11.5 17 | 12.6 26 | | | 0.02 100 |
| SERS U.S. All Company Index Fund Callan Multi Cap Brd MF Russell 3000 Index | 7.2 57 | -19.2 53 | 7.1 36 | 8.7 25 | 11.0 23 | 12.1 21 | | | 0.03 99 |
| U.S. Small/Mid Company Stock Index Fund Callan SMD Broad MFs Dow Jones US Completion | 5.3 70 | -26.1 66 | 3.3 65 | 5.1 70 | 8.4 60 | 9.7 57 | | | 0.03 98 |
| International Equity | | | | | | | | | |
| SERS Global Non-U.S. Index Fund Callan Non US Equity MFs MSCI ACWI ex US | 14.5 73 | -15.9 52 | 0.3 63 | 1.1 58 | 5.1 32 | 4.0 71 | | | 0.05 99 |
| Domestic Fixed Income | | | | | | | | | |
| SERS Short Term Investment Fund Callan Cash Database 3-month Treasury Bill | 0.9 73 | 1.6 33 | 0.8 55 | 1.3 66 | 1.2 77 | 0.9 79 | | | 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 | 0.9 17 | -3.7 20 | -0.3 10 | 0.9 5 | | | | | 0.02 100 |
| SERS U.S. TIPS Index Fund Callan TIPS MFs Blmbg US TIPS | 2.1 44 | -11.8 45 | 1.2 44 | | | | | | 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 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 U.S. Bond Index Fund | 1.9 32 | -12.9 23 | -2.7 78 | 0.0 68 | 0.9 87 | 1.0 76 | | | 0.02 98 |
| Callan Core Bond MFs | 1.9 34 | -13.0 28 | -2.7 78 | 0.0 68 | 0.9 86 | 1.1 69 | | | |
| Blmbg Aggregate | | | | | | | | | |

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).

401(a) Plan Investment Structure

Lineup Mapped to Callan's Clean Sheet



Callan

Appendix – Callan Update

Published Research Highlights from 4Q22

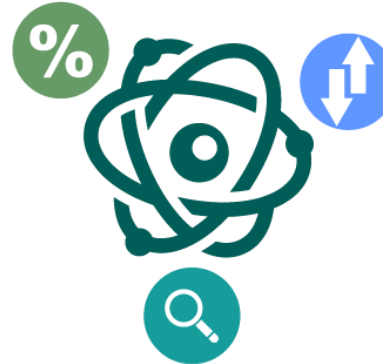
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