2026

Independent Fiscal Office

PSERS Stress Test Impact Analysis

Annual Report

Act 128 of 2020 amended Title 24 of the Pennsylvania Consolidated Statutes to require the Public School Employees' Retirement System (PSERS) to conduct an annual stress test of the system and submit the results to the Governor, the General Assembly and the Independent Fiscal Office (IFO). The act directs the IFO to produce a report that summarizes the results, including the ratio of projected employer contributions to projected state General Fund revenues under a scenario analysis.

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PSERS Stress Test Impact Analysis

Introduction

Act 128 of 2020 requires the Independent Fiscal Office (IFO) to summarize the results from the annual Public School Employees' Retirement System (PSERS) Stress Testing Analysis Report ("the report").[1] A stress test compares a set of simulations to certified baseline projections to illustrate the impact that changes in policy, economic or demographic variables could have on a pension system. Act 128 requires that PSERS conduct three types of analyses based on published industry guidelines: (1) scenario, (2) simulation and (3) sensitivity.[2] The IFO summary must include the ratio of projected employer contributions to projected state revenues under the scenario analysis.

The report includes a baseline projection, 11 scenarios, a simulation (stochastic) analysis, a liquidity analysis, and a sensitivity analysis. The IFO selected three scenarios to summarize:

- **Scenario 1: Excess Investment Return** - Investment returns are 2% above the baseline for the first 20 years, then revert to the baseline.
- **Scenario 2: Low Investment Return** - Investment returns are 2% below the baseline for the first 20 years, then revert to the baseline.
- **Scenario 3: One-Time Large Investment Loss** - The system experiences a large investment loss (-20%) in the first year (fiscal year 2025-26), then reverts to the baseline.

The subsections that follow provide a brief description of (1) the methodology used by the IFO to compute the ratio of PSERS employer pension contributions to General Fund revenues and (2) PSERS baseline projections. The three summary scenarios then follow. The analysis concludes with results from the simulation and sensitivity analyses included in the PSERS report.

Methodology

The PSERS report projects the share of payroll required to meet employer contributions for fiscal years (FY) 2024-25 through FY 2054-55. This analysis only reflects revenue projections and pension contributions attributable to the General Fund from the state appropriation made through the Pennsylvania Department of Education (PDE) and focuses on impacts from FY 2026-27 to FY 2054-55.

General Fund revenue estimates for FY 2026-27 are from the IFO's Initial Revenue Estimate.[3] Revenues from FY 2027-28 to FY 2030-31 reflect growth rates from the IFO's most recent five-year Fiscal Outlook.[4] For FY 2031-32 and beyond, tax revenues are assumed to grow at the same rate as nominal state GDP (S&P Global, May 2026) while nontax revenues grow at a rate of 2% per annum.

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1 See: Pennsylvania Public School Employees' Retirement System Stress Testing Analysis Report Prepared as of June 30, 2025 (March 2026).

2 A scenario analysis alters a specific parameter or assumed return for a single year or multiple years but does not change the long-term rate of return assumed by the system. A simulation analysis allows future returns to be determined stochastically (i.e., randomly, as opposed to a single deterministic return) over the 30-year window. A sensitivity analysis changes the assumed rate of return in all future years by a specified percentage, such as 1.0 percentage point higher or lower, to display the impact on current funding status.

3 See: Initial Revenue Estimate FY 2026-27 (May 2026).

4 See: Pennsylvania Fiscal Outlook: FY 2025-26 to FY 2030-31 (November 2025).

The IFO also projects the state's share of the employer contributions attributable to qualified school employees in the office's five-year Fiscal Outlook. Projections made in this analysis differ from that report due to these payroll-related factors:

(1) State Share of Employer Contributions: In the most recent Fiscal Outlook, the IFO assumes that the state share of the employer contributions is approximately 58% for qualified public school employees. However, the stress test report uses an alternative payroll projection which includes charter school employees (a share of which is not reimbursed by the state). Therefore, this analysis assumes that the state share of employer contributions is 55.25% of projected payroll.

(2) Assumed Payroll Levels: To conduct the stress test, PSERS used the June 30, 2025 Actuarial Valuation to project payroll and other factors. In addition to differences in personnel included in projected payroll (noted above), payroll data used in the Fiscal Outlook are from school district payroll data and internal PSERS projections and could diverge materially from actuarially determined payroll projections.

In addition to payroll differences, the annual state appropriation includes funding for (1) the PSERS Premium Assistance Program and (2) the Act 5 Defined Contribution (DC) share. The Premium Assistance Program helps eligible retirees pay for healthcare coverage through their public school employer health plans or the PSERS sponsored group health insurance program. To better reflect the projected appropriation value, the IFO assumed the employer contribution share for premium assistance costs was approximately 0.6% of payroll per year. For DC contributions, PSERS provided the IFO with projections that range from 0.51% of payroll in FY 2026-27 to 2.12% in FY 2054-55.

Baseline Projections

The table on the next page displays PSERS' baseline projections, which assumes a net investment return of 7.00% for all future years. For this report, the FY 2025-26 contribution level is unchanged across all scenarios as the appropriation for that year has been established and is treated as final. That year is not included in totals for any table in this report and is displayed for informational purposes only.

For FY 2025-26, the state General Fund appropriation is equal to 6.7% of General Fund revenues and decreases to 0.4% by FY 2046-47. From FY 2026-27 to FY 2054-55, the forecast projects that the Commonwealth will contribute $45.8 billion in General Fund revenues (2.0% of total revenues) to local school districts for employee pensions.

The baseline projections also include employer contributions as a share of total payroll (i.e., the effective contribution rate). Baseline effective employer contribution rates begin at 33.6% in FY 2026-27, peak at 38.0% in FY 2034-35, and decline to 3.5% by FY 2054-55 (projections adjusted to include funding for the Premium Assistance Program and Act 5 DC amounts). The final column of the table displays the system's projected funded status in the baseline scenario at the end of the calendar/valuation year. If these projections hold, then the system would be fully funded by the end of FY 2040-41 and finish the projection period with a funded status of 101.9%.

PSERS Baseline Projections

Fiscal Year	Gen. Fund Revenue	Total Emp. Contr. Rate	Gen. Fund Contribution	Share of Revenue	Funded Ratio
2025-26	$48.8	34.0%	$3.25	6.7%	68.6%
2026-27	49.6	33.6	3.13	6.3	70.8
2027-28	50.4	34.2	3.21	6.4	73.1
2028-29	51.7	34.7	3.27	6.3	75.6
2029-30	53.2	35.2	3.35	6.3	78.5
2030-31	54.6	35.8	3.42	6.3	80.9
2031-32	56.4	36.2	3.48	6.2	83.7
2032-33	58.6	36.9	3.58	6.1	86.9
2033-34	60.8	37.6	3.67	6.0	90.4
2034-35	63.2	38.0	3.75	5.9	93.9
2035-36	65.6	21.3	2.11	3.2	95.6
2036-37	68.0	17.1	1.72	2.5	96.9
2037-38	70.3	15.2	1.53	2.2	98.0
2038-39	72.7	13.1	1.33	1.8	99.0
2039-40	75.2	11.4	1.16	1.5	99.8
2040-41	77.8	9.8	1.01	1.3	100.4
2041-42	80.4	5.5	0.57	0.7	100.6
2042-43	83.1	4.3	0.44	0.5	100.7
2043-44	85.9	4.0	0.42	0.5	100.8
2044-45	88.9	4.2	0.44	0.5	100.9
2045-46	91.9	3.9	0.41	0.5	101.0
2046-47	95.0	3.7	0.40	0.4	101.1
2047-48	98.3	3.7	0.40	0.4	101.1
2048-49	101.6	3.6	0.40	0.4	101.2
2049-50	105.1	3.6	0.41	0.4	101.3
2050-51	108.8	3.5	0.40	0.4	101.4
2051-52	112.6	3.6	0.42	0.4	101.6
2052-53	116.5	3.5	0.42	0.4	101.7
2053-54	120.6	3.5	0.43	0.4	101.8
2054-55	124.8	3.5	0.44	0.4	101.9
Total	**$2,341.8**	**15.1%**	**$45.8**	**2.0%**	**--**

Note: Dollars in billions. Employer contribution rates based on data from PSERS, General Fund projections by the IFO. Funded status refers to end of valuation year (i.e., FY 2025-26 is as of June 30, 2026).

Scenario 1: Excess Investment Return

The first scenario displays the impact on employer contributions due to an unexpected 2% overperformance (9% net investment return) for the first 20 years. This scenario results in cumulative savings of $4.6 billion, a 10.1% reduction to baseline employer contributions. The system would be fully funded by the end of FY 2034-35 and funded at 218.5% by the end of FY 2054-55 (not shown). Overall, General Fund appropriations for employer contributions would equal 1.8% of General Fund revenues over the period, a 0.2 percentage point reduction from the baseline.

Excess Investment Return (2% Overperformance)

Fiscal Years Ending	Gen. Fund Revenue	Projected GF Contr.	Share of Revenue	Change from Baseline	
				Percent	Amount
2027-33	$374.5	$23.0	6.2%	-1.8%	-$0.4
2034-40	$475.9	$11.8	2.5%	-22.7%	-$3.5
2041-47	$603.0	$3.0	0.5%	-20.2%	-$0.8
2048-55	$888.4	$3.3	0.4%	0.0%	$0.0
Total	**$2,341.8**	**$41.1**	**1.8%**	**-10.1%**	**-$4.6**

Note: Dollars in billions. Employer contribution rates from PSERS, General Fund projections by the IFO.

Scenario 2: Low Investment Return

The second scenario displays results from 2% underperformance (5% net investment return) for the first 20 years. In this scenario, General Fund appropriations for employer contributions increase by 69.5% compared to the baseline. The additional $31.8 billion in employer contributions greatly exceeds the savings displayed in the 2% overperformance scenario ($4.6 billion) because compounding losses require perpetually higher contributions to offset prior year shortfalls. By the end of the projection period, the funded ratio is 73.5%, 28.4 percentage points lower than the baseline (not shown).

Low Investment Return (2% Underperformance)

Fiscal Years Ending	Gen. Fund Revenue	Projected GF Contr.	Share of Revenue	Change from Baseline	
				Percent	Amount
2027-33	$374.5	$23.9	6.4%	1.7%	$0.4
2034-40	$475.9	$18.7	3.9%	22.7%	$3.5
2041-47	$603.0	$13.1	2.2%	253.7%	$9.4
2048-55	$888.4	$21.8	2.5%	557.7%	$18.5
Total	**$2,341.8**	**$77.6**	**3.3%**	**69.5%**	**$31.8**

Note: Dollars in billions. Employer contribution rates from PSERS, General Fund projections by the IFO.

Scenario 3: One-Time Large Investment Loss

The final scenario considers the impact of a single-year large investment loss. The scenario assumes a -20% net investment return in FY 2025-26 and then an immediate reversion to the baseline rate of return for all future years.

One-Time Large Investment Loss (-20% Return in FY 2025-26)

Fiscal Years Ending	Gen. Fund Revenue	Projected GF Contr.	Share of Revenue	Change from Baseline	
				Percent	Amount
2027-33	$374.5	$25.5	6.8%	8.7%	$2.0
2034-40	$475.9	$22.9	4.8%	49.8%	$7.6
2041-47	$603.0	$14.2	2.4%	283.4%	$10.5
2048-55	$888.4	$16.0	1.8%	383.2%	$12.7
Total	**$2,341.8**	**$78.6**	**3.4%**	**71.9%**	**$32.9**

Note: Dollars in billions. Employer contribution rates from PSERS, General Fund projections by the IFO.

The significant investment loss increases employer contributions by $32.9 billion over the projection period. Required employer contributions are 3.4% of projected General Fund revenues (1.4 percentage points above the baseline), and the system achieves 96.4% funded status at the end of FY 2054-55 (5.5 percentage points lower than the baseline). The initial funded status (FY 2025-26) would be 66.8% (not shown), 1.8 percentage points lower than the baseline.

Summary of Simulation and Sensitivity Analyses

In addition to various scenarios, the report includes a simulation analysis and sensitivity analysis. The **Simulation Analysis** is a stochastic analysis that uses results from 5,000 randomized investment returns over a 30-year period to illustrate the likelihood of potential outcomes for the system. The analysis presents five potential outcomes from the simulations based on percentiles from the distribution of outcomes. These potential outcomes are:

- 95th Percentile: Upside simulation with strong favorable results. Highly unlikely.
- 75th Percentile: A favorable, plausible outcome, but unlikely.
- 50th Percentile: The expected outcome based on current funding policy.
- 25th Percentile: An unfavorable, plausible outcome, but unlikely.
- 5th Percentile: Downside simulation with strong unfavorable results. Highly unlikely.

The table on the next page displays geometric average returns over 30 years, 30-year differentials from the baseline scenario and final funded-ratios at the end of year 30 (final column) based on the analysis.

Summary Results from Simulation Analysis

Distribution Percentiles	Average Return (%)	Additional Contributions		Final Fund. Ratio
		Total	State GF	
95th-Upside	10.9%	-$17.8	-$9.8	541.0%
75th-Favorable	9.0%	-$10.8	-$6.0	263.6%
50th-Expected	7.7%	-$2.4	-$1.3	150.3%
Baseline	7.0%	--	--	101.9%
25th-Unfavorable	6.4%	$36.4	$20.1	90.8%
5th-Downside	4.4%	$107.5	$59.4	52.7%

Note: Dollars in billions. Data from PSERS, calculations by the IFO. "Baseline" reflects baseline simulation used for scenario analyses. Additional contributions reflect changes compared to baseline and include premium assistance and defined contribution amounts. Final Funded Ratio is based on actuarial value of assets.

Results from the **Sensitivity Analysis** do not facilitate an analysis of single year impacts over a 30-year window. Instead, the analysis is used to quantify the initial impact on funding status that a change in the assumed 7.00% net investment rate of return would have on several metrics in the first projection year. It should be noted that the discount rate used to value future liabilities would change to match the assumed rate of return, which reinforces the impact that assumed returns have on liability and funded ratios.

Summary Results from Sensitivity Analysis

Assumed Invest. Return Rate	Change from Baseline (%)	Unfunded Liability	Change in Liability	Funded Ratio
8.0%	+1.0%	$28.0	-$11.6	74.7%
7.0%	--	$39.6	--	67.6%
6.0%	-1.0%	$53.4	$13.8	60.7%

Note: Dollars in billions. Funded Ratio reflects market value of assets. Computations by the IFO.

Comparison to Historical Results

The final table summarizes select results from the 2023 to 2026 stress test reports. For each year, the change in projected General Fund costs is shown relative to the baseline for (1) the three investment scenarios (overperformance, underperformance and large investment loss) and (2) the distribution percentiles from the simulation (stochastic) analysis.

Changes to Baseline General Fund Costs (2023 to 2026 Reports)

	2023	2024	2025	2026
Baseline GF Cost	$46.5	$53.0	$50.8	$45.8
Scenario Analysis				
Overperformance (+2%)	-$8.9	-$8.2	-$6.8	-$4.6
Underperformance (-2%)	+$29.0	+$25.7	+$31.0	+$31.8
Large Investment Loss (-20%)	--	--	+$32.0	+$32.9
Simulation Analysis				
95th Percentile	-$27.1	-$15.6	-$12.3	-$9.8
75th Percentile	-$17.3	-$11.4	-$8.1	-$6.0
50th Percentile	-$4.6	-$6.0	-$2.6	-$1.3
25th Percentile	+$20.2	+$11.0	+$20.2	+$20.1
5th Percentile	+$60.9	+$46.1	+$56.0	+$59.4

Note: Dollars in billions. Year represents the year of the Stress Test Analysis Report. A Large Investment Loss scenario was not included in the 2023 and 2024 reports.