INDUSTRY RESEARCH

2022 Report on State Retirement Systems: Funding Levels and Asset Allocations

Financial Overview

This is Wilshire's 2022 Report on State Retirement Systems: Funding Levels and Asset Allocation, which reports the aggregate funded status and asset allocation of over 100 U.S. state-sponsored defined benefit retirement systems. Wilshire has been compiling these statistics since 1990.

The Data

Financial data on public retirement systems have historically lacked the timeliness and uniform disclosure governing pension plans sponsored by publicly traded companies, making it difficult to conduct a study with data that are both current and consistent across systems. For this reason, our study methodology involves collecting data during the first quarter of each calendar year with the objective of acquiring as many reports as possible with a June 30 valuation date from the previous year. Even for systems with the desire to report in a timely manner, it often takes six months to a year before actuarial results are published. Ninety-five (95) of the 134 systems surveyed reported actuarial values on or after June 30, 2021.

This study reports the aggregate Total Pension Liability (TPL) values used for financial reporting under the accounting and financial reporting standards for state and local governments: Governmental Accounting Standards Board Statements No. 67 and 68 (GASB 67/68). Through these Statements, GASB and the financial industry have taken major steps to increase transparency and comparability of pension plan accounting. GASB's Statement 67, "Financial Reporting for Pension Plans," impacts annual pension reporting for plans; Statement 68, "Accounting and Financial Reporting for Pensions," impacts annual pension reporting for the employers contributing into government agency-sponsored pensions and applied to employers' financial reporting starting in June 2015.

Funded Ratio

This year's report is based on the financial statements reported by these state plan sponsors as of their last fiscal year end (FYE) measurement date – June 30, 2021, is the most frequent measurement date for plans in this year's report.

Wilshire estimates that the aggregate funded ratio was 83.3% at FYE 2021, which represents a 13.3% increase from FYE 2020 and marks the highest year-over-year increase since we started compiling these data.

Wilshire's estimate of the aggregate funded ratio as of March 31, 2022 (i.e., the most recent quarter-end as of this publication) is 81.4%. The 1.9% decrease from our FYE 2021 measurement is due to global market fluctuations resulting from the inflationary backdrop, interest rate hikes by the Fed, and geopolitical risks around Russia's invasion of Ukraine.

Exhibit 1 shows the aggregate reported funded status, asset, liability, and surplus/deficit values over the past six fiscal years.

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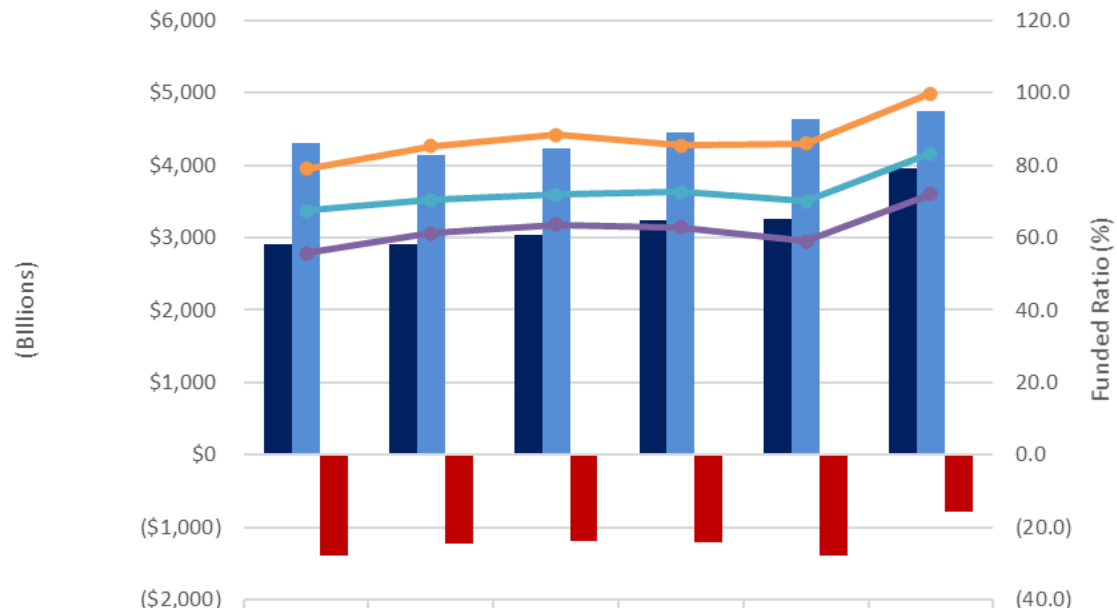
Exhibit 1: Funded Ratio History



	2016	2017	2018	2019	2020	2021
Assets	2,902	2,918	3,047	3,238	3,253	3,957
Liability	4,304	4,141	4,236	4,456	4,647	4,752
Deficit	(1,402)	(1,223)	(1,189)	(1,218)	(1,394)	(795)
25th Percentile	55.8	61.3	63.6	62.9	59.1	72.2
Aggregate	67.4	70.5	71.9	72.7	70.0	83.3
75th Percentile	79.2	85.4	88.5	85.4	86.0	99.8

Wilshire estimates that the aggregate Total Pension Liability (TPL) increased to $4.75 trillion as of FYE 2021, up 2.3%, or $105 billion, from $4.65 trillion as of FYE 2020. Aggregate assets increased to $3.96 trillion as of FYE 2021, up 21.7% ($704 billion) from $3.25 trillion as of FYE 2020. Largely due to the massive increase in aggregate assets, the aggregate shortfall is estimated to have decreased by $599 billion to $795 billion from $1.39 trillion. For the third consecutive year, this year's estimated aggregate asset value is the highest since Wilshire began reporting on state retirement system funding levels with this year's 25th percentile funded ratio rising above the median funded ratio of FYE 2020.

Attribution of Changes in Funding

Exhibit 2 shows the components of aggregate annual change in TPL and Plan Fiduciary Net Position ($, Billions).

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Exhibit 2: Changes in Asset and Liability Values

	($, Billions)	% of BoY
Total Pension Liability, BoY	$4,647.2	
Service Cost	90.3	1.94%
Interest Cost	318.2	6.85%
Benefit Payments	-263.8	-5.68%
Actuarial (Gains)/Losses	4.2	0.09%
Other	-44.3	-0.95%
Total Pension Liability, EoY	$4,751.8	2.25%
Plan Fiduciary Net Position, BoY	$3,252.8	
Total Contributions	163.5	5.03%
Actual Return on Assets	898.3	27.62%
Benefit Payments	-263.8	-8.11%
Other	-93.7	-2.88%
Plan Fiduciary Net Position, EoY	$3,957.2	21.65%

Liabilities

Wilshire estimates that the aggregate Total Pension Liability (TPL) increased to $4.75 trillion as of FYE 2021 up more than two percent from $4.65 trillion as of FYE 2020. The two largest components of the annual increase in aggregate TPL were continued annual benefit accruals, i.e., service cost, and interest cost.

- Service Cost, or continued annual benefit accruals, is estimated to have increased the TPL by 1.9%.
- Interest cost is similar to changes in the time value of money and is approximately equal to the discount rate as a percentage of the beginning of year TPL. The increase due to interest cost is estimated to be 6.9% for FYE 2021.
- Benefit payments are estimated to have decreased the TPL by 5.7%.
- Actuarial losses and “Other” in aggregate decreased the TPL by 0.9%.

Assets

Wilshire estimates that aggregate assets increased to $3.96 trillion as of FYE 2021, up more than 21% from $3.25 trillion as of FYE 2020. Significant positive investment returns, and contributions drove asset values to record levels for the third consecutive year and the fifth consecutive annual increase.

- Contributions increased the asset value by 5% for the year with nearly 30% coming from plan participants.
- Investment income increased the asset value by more than 27.6% for the year – the largest percent increase on record.
- Benefit payments are estimated to have decreased asset values by 8.1%.
- “Other” items are expected to have decreased asset values by 2.9%.

Exhibit 3 shows the components of change in TPL and Plan Fiduciary Net Position from Exhibit 2 and their relative impact on aggregate funded ratio change during the fiscal year.

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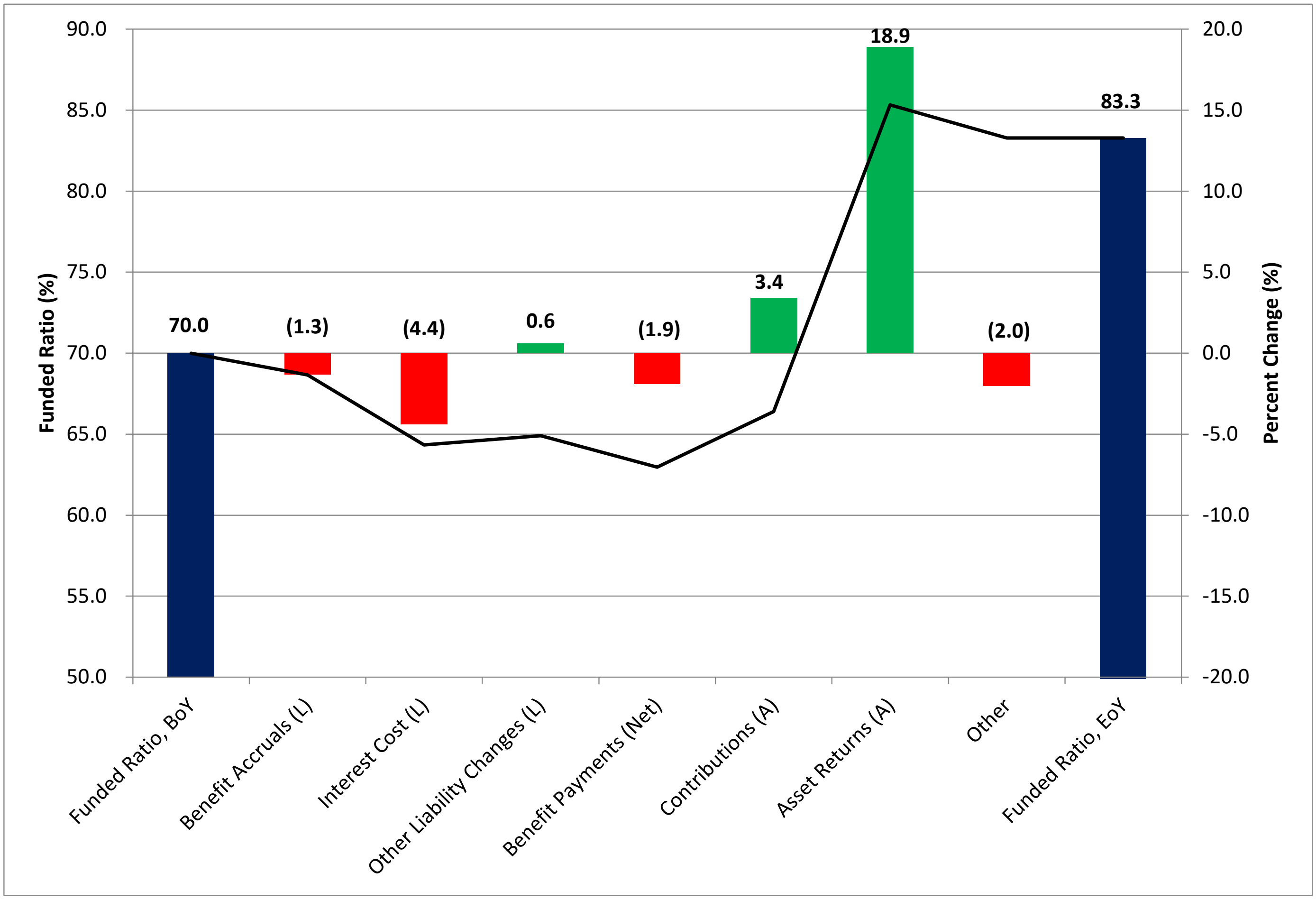
Exhibit 3: Changes in Annual Funded Ratio



Benefit accruals, interest cost and benefit payments decreased the funded ratio by close to eight percentage points which was more than offset by contributions and asset returns which increased funded levels by more than twenty-two percentage points.

Discount Rates

The discount rate represents the expected long-term rate of return on invested plan assets used to calculate liability values (present value of a stream of projected benefit payments). Discount rates have trended lower over the past several years with nearly one quarter of this year's study plans lowering their discount rate. The range for discount rates this year is 2.70% to 7.55% with a median of 7.00%, a 0.10% decrease compared to last year's median discount rate. For plans projected to run out of assets, GASB 67/68 requires the use of a blended discount rate using the plan's expected long-term rate of return on invested plan assets and the yield on a municipal bond high grade rate index. The calculation of the blended discount rate is based on a mandated projection methodology.

Exhibit 4 shows the distribution of discount rates used to calculate the TPL.

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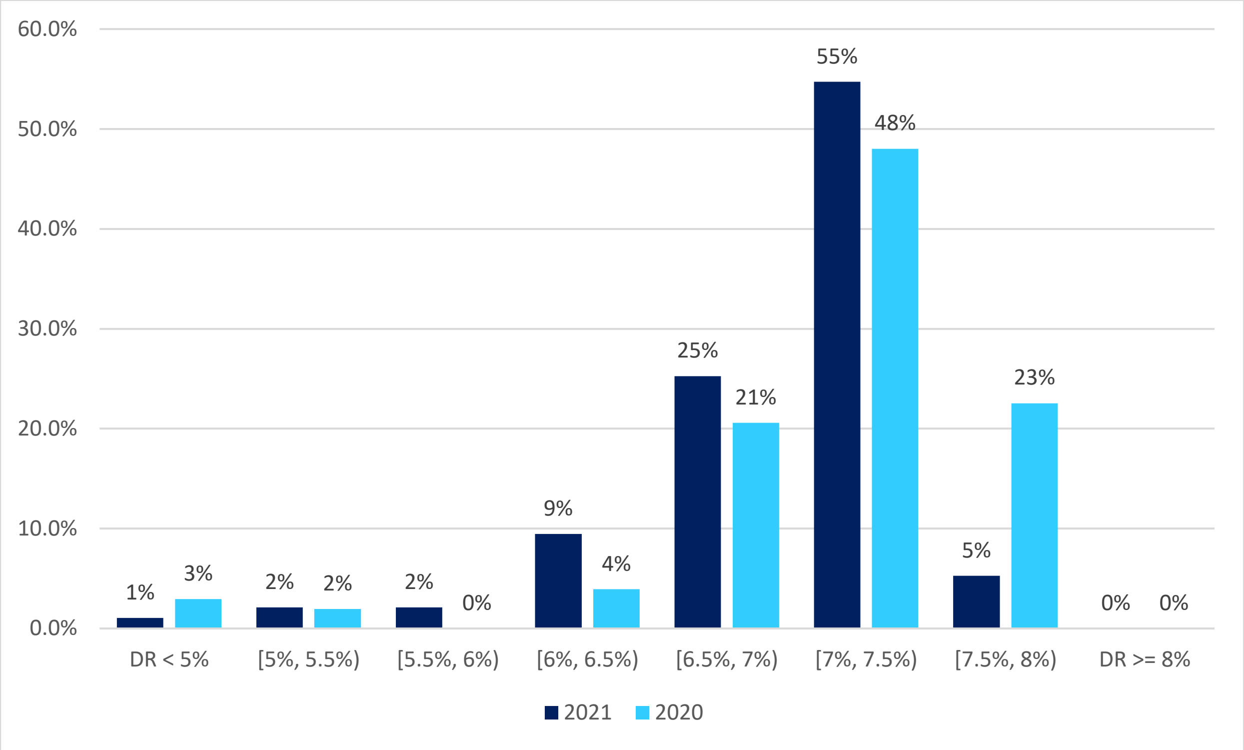
Exhibit 4: Distribution of Discount Rates*

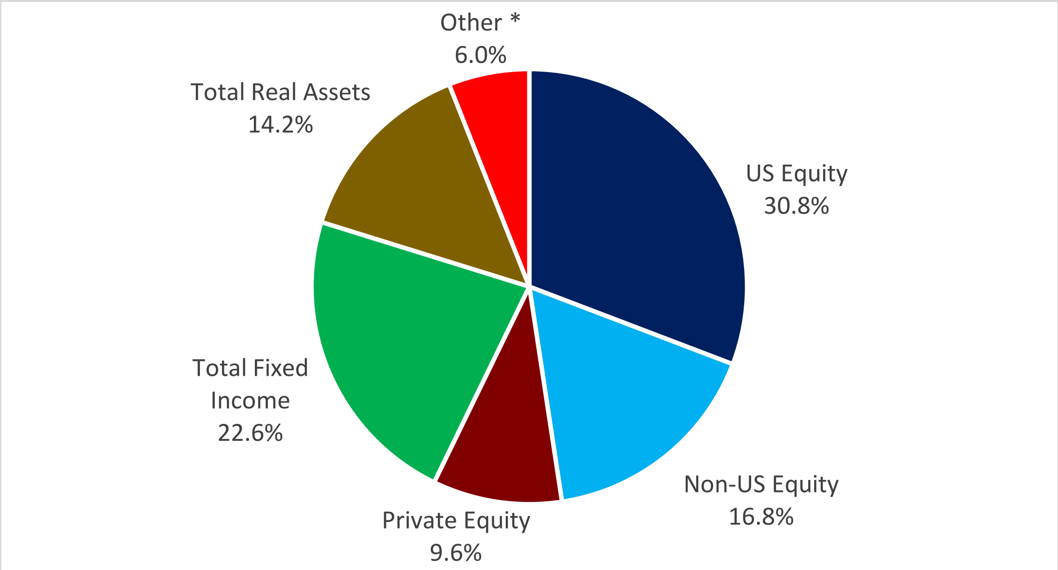


* The total may not sum to 100% due to rounding.

Pension Plan Asset Allocation

Exhibit 5 shows the aggregate asset allocation for State Retirement Systems.

Exhibit 5: Aggregate Asset Allocation



*Other refers to any other asset class for example Hedge Funds and Commodities

Exhibit 6 examines the change in aggregate asset allocation over the last ten years.

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Exhibit 6: Change in Aggregate Asset Allocation for State Pension Plans

				Change in Exposure		
	2011 (%)	2016 (%)	2021 (%)	11-16 (%)	16-21 (%)	11-21 (%)
Equity						
U.S. Equity	31.2	27.4	30.8	-3.8	3.4	-0.4
Non-U.S. Equity	19.9	18.8	16.8	-1.1	-2.0	-3.1
Private Equity	8.6	10.0	9.6	1.4	-0.4	1.0
Equity Subtotal	59.7	56.2	57.2	-3.5	1.0	-2.5
Total Fixed Income	25.1	24.6	22.6	-0.5	-2.0	-2.5
Total Real Assets	6.4	8.6	14.2	2.2	5.6	7.8
Other*	8.9	10.6	6.0	1.7	-4.6	-2.9
Return**	4.8	4.9	5.1	0.1	0.2	0.3
Risk**	11.6	11.4	11.9	-0.2	0.4	0.3

*Other refers to any other asset class for example Hedge Funds and Commodities.

**Return and Risk are based on Wilshire's current asset class assumptions (Exhibit 7).

Over the past ten years, the total allocation to total equity and to fixed income have both decreased by 2.5% which was more than offset by the close to eight percentage point increase in the allocation to real assets.

Exhibit 7 shows Wilshire's current long-term return and risk assumptions. The 10-year expected return for many asset classes are near-or-at their lowest point due to the historically low interest rate environment.

Exhibit 7: Wilshire's December 2021 Capital Market Assumptions

	Expected Return (%)		
	10-Year	30-Year	Risk (%)
U.S. Equity	4.50	6.30	17.00
Non-U.S. Equity	5.75	7.05	19.10
Private Equity	8.10	9.50	28.00
Fixed Income	2.00	3.65	4.25
Real Assets	5.90	6.95	14.00

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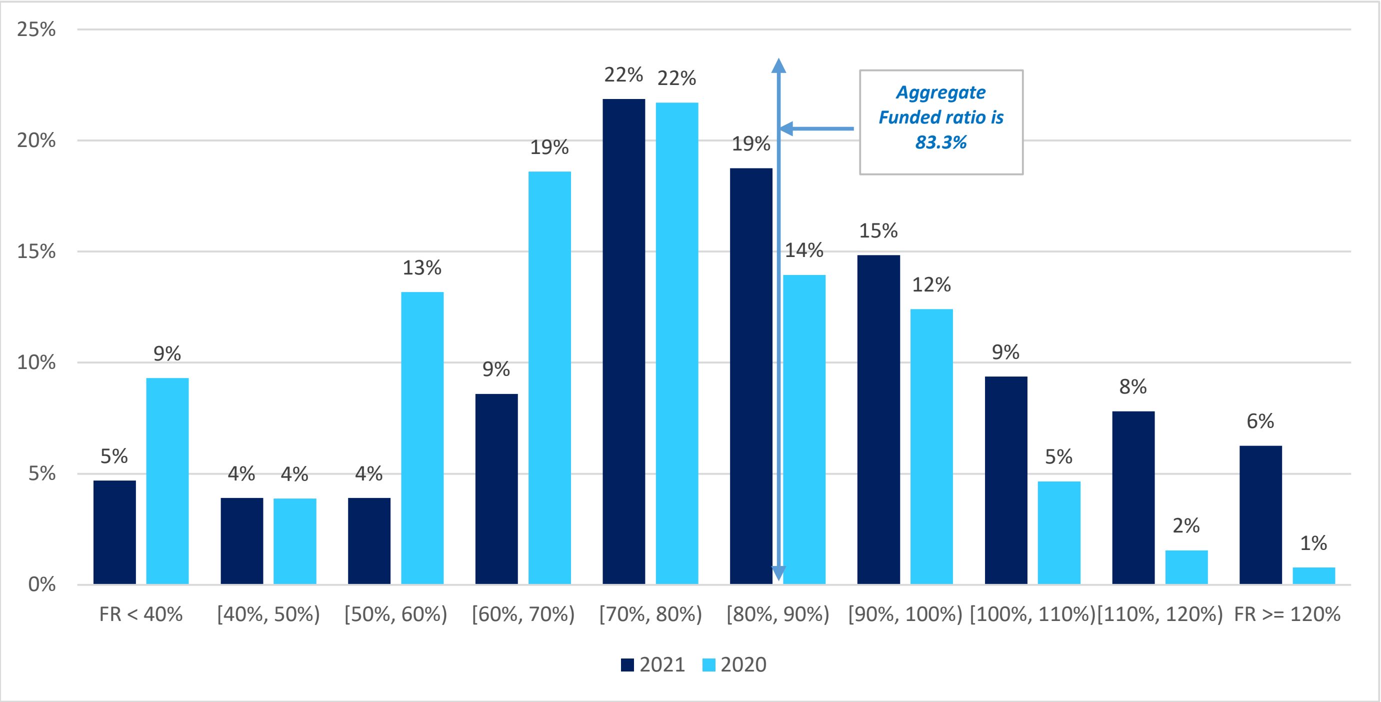
We conclude the report with Exhibit 8, which shows the distribution of funded ratios over the past two years. Within each 10% funded ratio bucket, distribution of plans with funded ratios below 70% decreased year-over-year. This decrease was offset by the increase in the distribution of plans with funded ratios above 80%.

Exhibit 8: Distribution of Funded Ratios*



* The total may not sum to 100% due to rounding.

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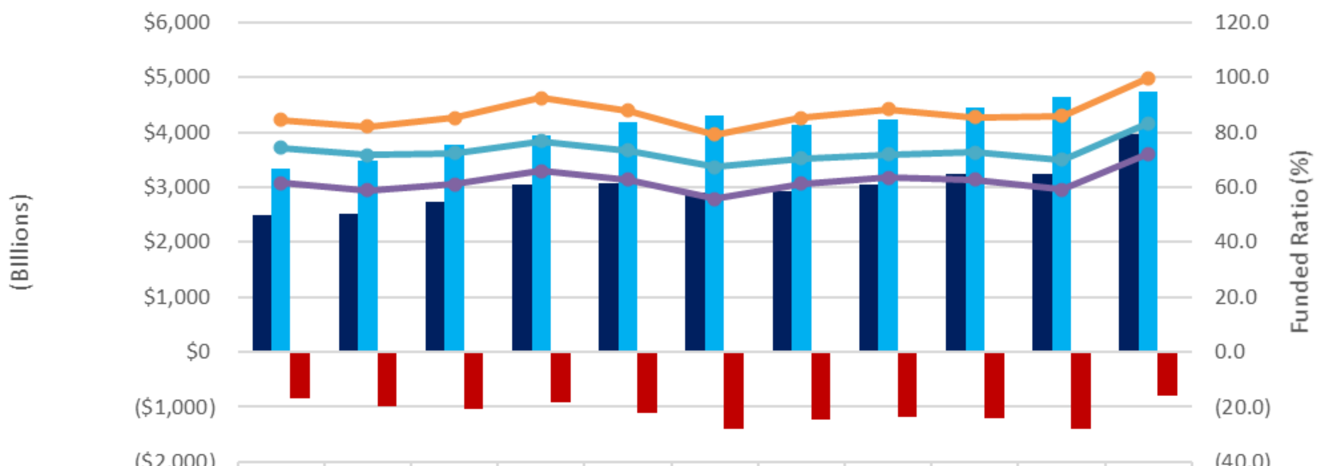
Appendix: Funded Ratio History

This appendix shows the aggregate reported funded status, asset, liability, and surplus/deficit values over the past ten (10) fiscal years.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Assets	2,493	2,507	2,731	3,041	3,075	2,902	2,918	3,047	3,238	3,253	3,957
Liability	3,349	3,496	3,775	3,951	4,188	4,304	4,141	4,236	4,456	4,647	4,752
Deficit	(856)	(989)	(1,044)	(910)	(1,113)	(1,402)	(1,223)	(1,189)	(1,218)	(1,394)	(795)
25th Percentile	61.7	59.0	61.1	66.0	62.7	55.8	61.3	63.6	62.9	59.1	72.2
Aggregate	74.4	71.7	72.4	77.0	73.4	67.4	70.5	71.9	72.7	70.0	83.3
75th Percentile	84.7	82.1	85.3	92.6	88.1	79.2	85.4	88.5	85.4	86.0	99.8

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