LOUISIANA STATE EMPLOYEES' RETIREMENT SYSTEM (LASERS) PENSION SOLVENCY ANALYSIS

Prepared by:

Pension Integrity Project at Reason Foundation

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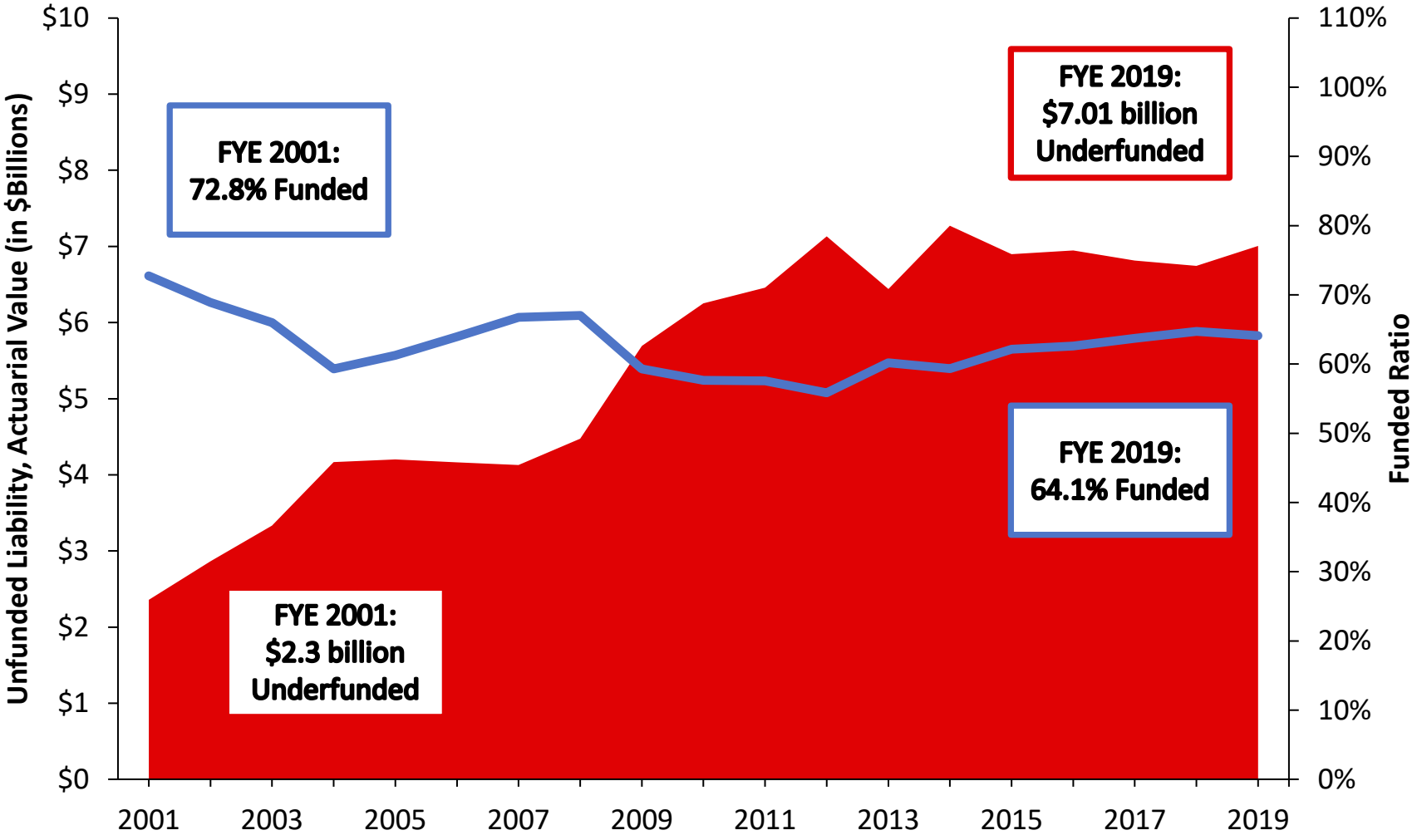
reason FOUNDATION

About the Pension Integrity Project

We offer pro-bono technical assistance to public officials to help them design and implement pension reforms that improve plan solvency and promote retirement security, including:

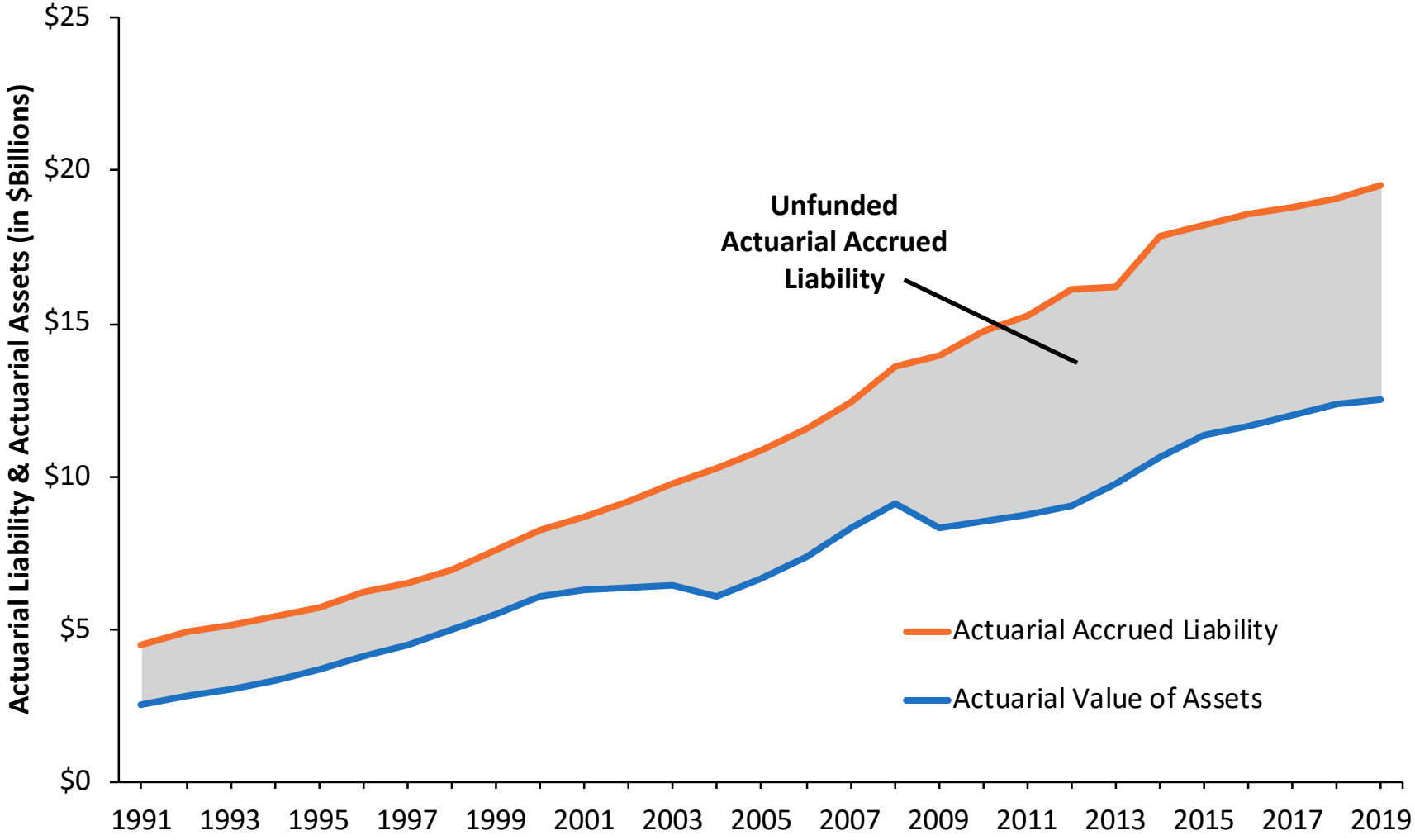
- *Customized analysis* of pension system design, trends
- *Independent actuarial modeling* of reform scenarios
- Consultation and modeling around *custom policy designs*
- Latest pension reform *research and case studies*
- *Peer-to-peer mentoring* from state and local officials who have successfully enacted pension reforms
- Assistance with *stakeholder outreach*, engagement and relationship management
- Design and execution of *public education programs* and media campaigns

A History of Weakening Solvency (2001-2019)



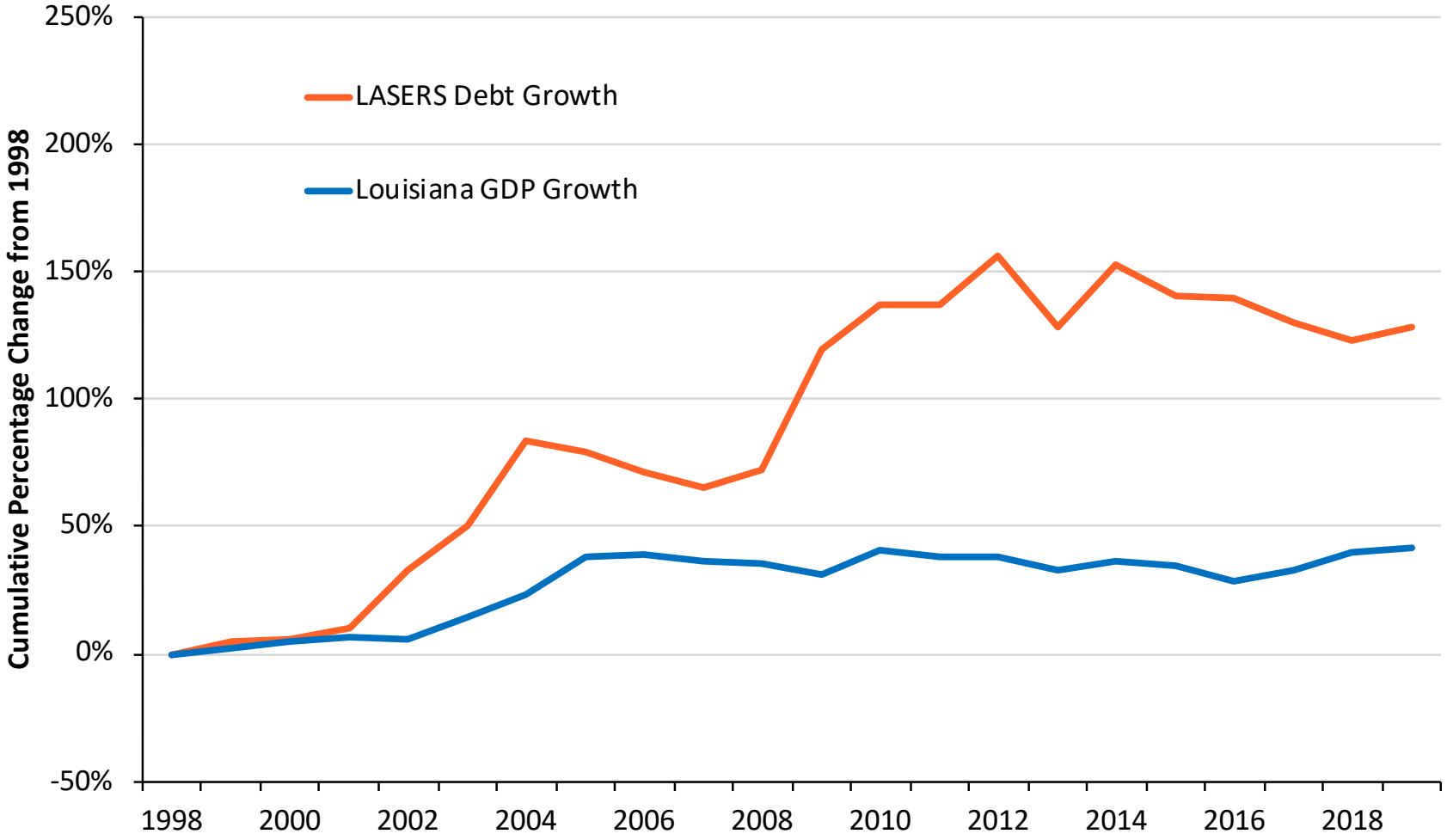
Source: Pension Integrity Project analysis of LASERS actuarial valuation reports and CAFRs.

LASERS Liabilities are Growing Faster than Assets



Source: Pension Integrity Project analysis of LASERS actuarial valuation reports through FY2019.

LASERS Unfunded Liabilities are Growing Faster than the Louisiana Economy



Source: Pension Integrity Project analysis of LASERS valuation reports, CAFRs, and data from the Bureau of Labor Statistics and Federal Reserve of St. Louis.

Makeup of LASERS Contributions

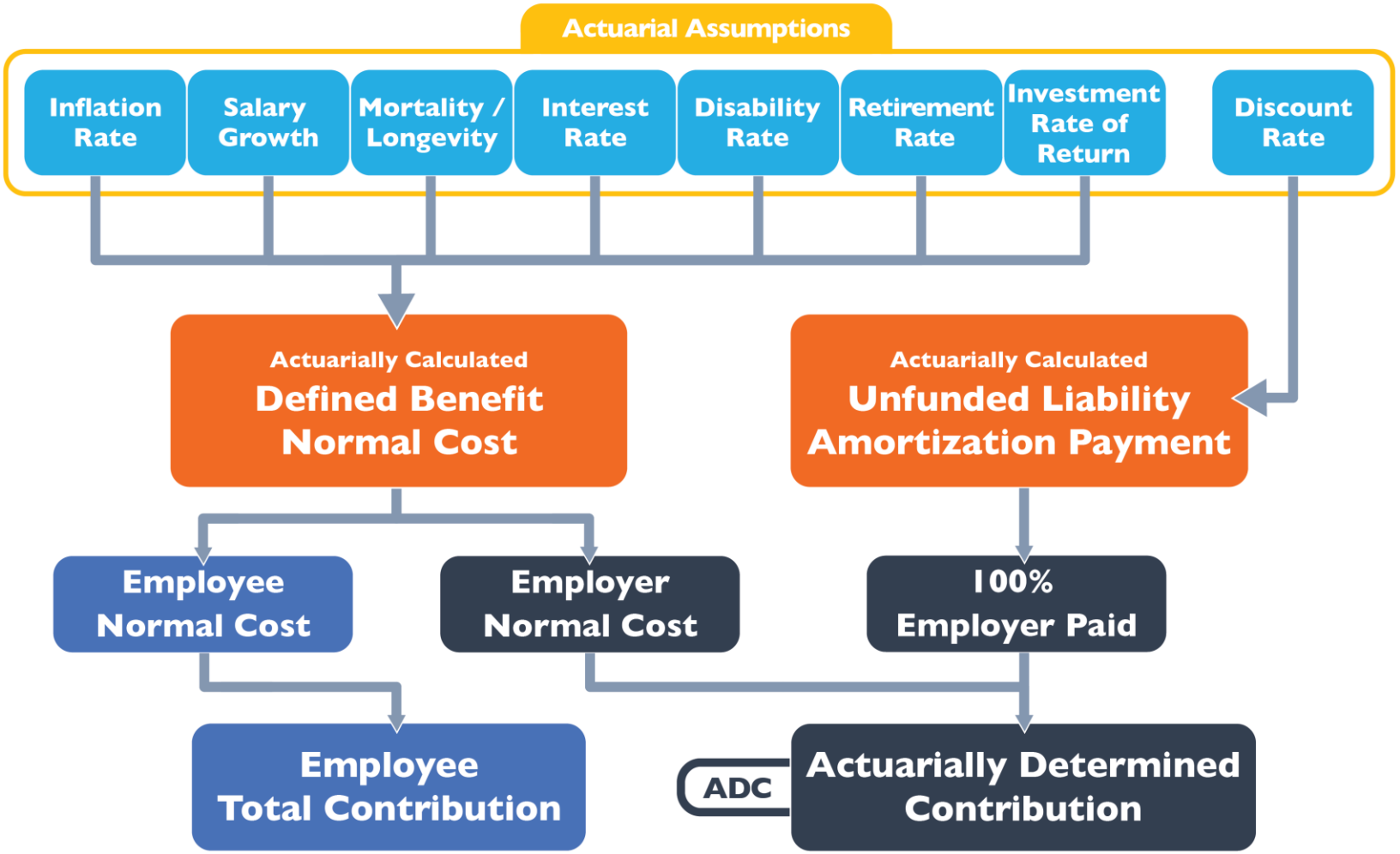
	FY2019 Contributions	
	% of Payroll	$ Value
Total Employee	8.05%	$157,280,757
Employer (Normal Cost)	3.24%	$63,303,591
Employer (Debt Amortization)	36.76%	$718,683,815
Total Employer	40%	$781,987,406
Total LASERS Contributions	48.05%	$939,268,163

In FY 2020, contributions to pay down legacy LASERS pension debt are scheduled to begin increasing by 2% for employers every year until the plan is fully funded.

Source: Pension Integrity Project analysis of LASERS actuarial valuation reports. Employer Normal Cost includes 0.5% in administrative expenses. The Original Amortization Base is legacy debt scheduled to be paid off by 2029

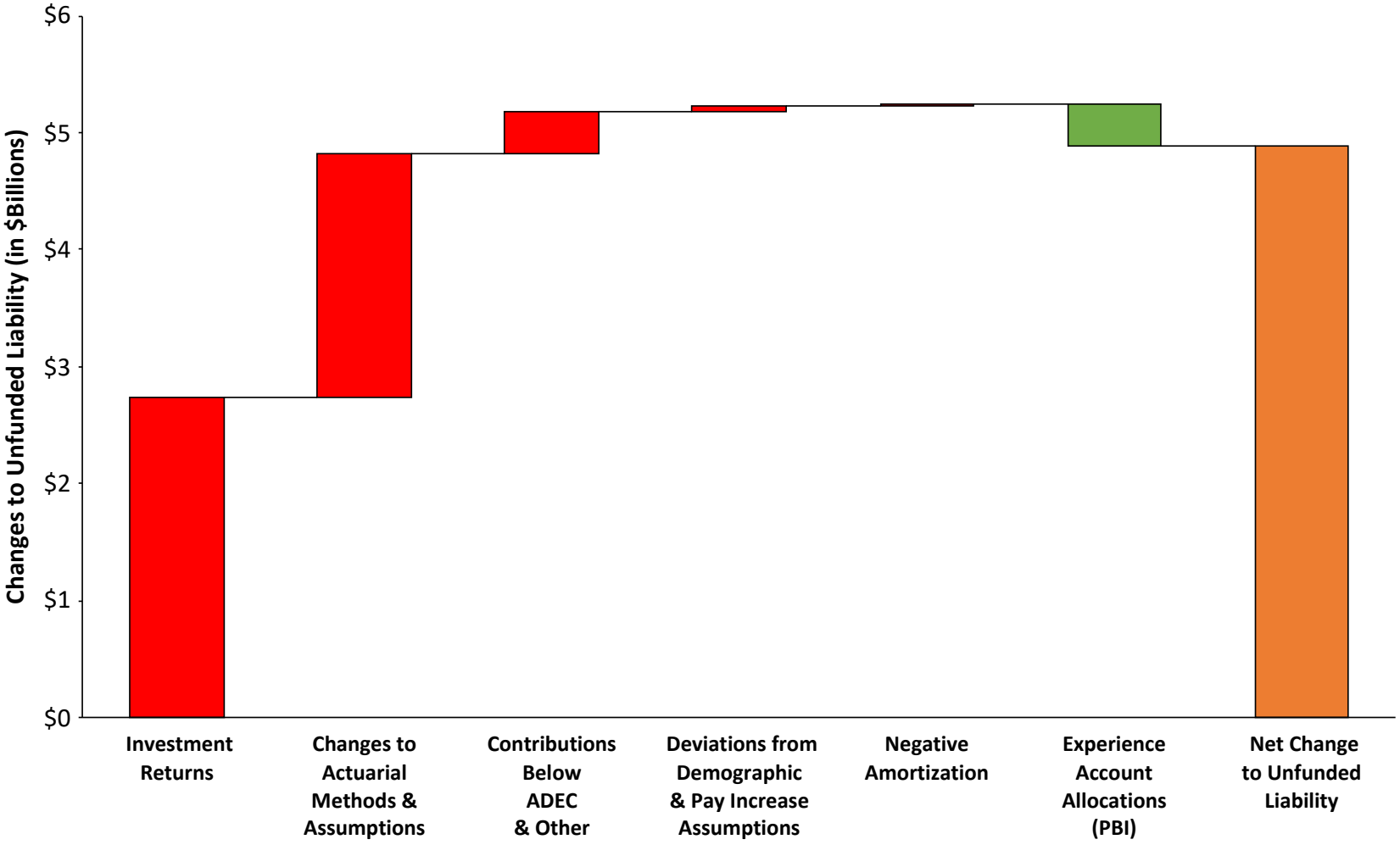
CHALLENGES CONTINUING TO FACE LASERS

How a Pension Plan is Funded



The Causes of the Pension Debt

Actuarial Experience of LASERS, 2000-2019



Source: Pension Integrity Project analysis of LASERS valuation reports and CAFRs. Data represents cumulative unfunded liability by gain/loss category. Negative Amortization reflects contributions below accrued debt interest. "Other" represents uncategorized accrued liabilities. Experience Account Allocations fund ad hoc permanent benefit increases.

Driving Factors Jeopardizing Plan Resiliency

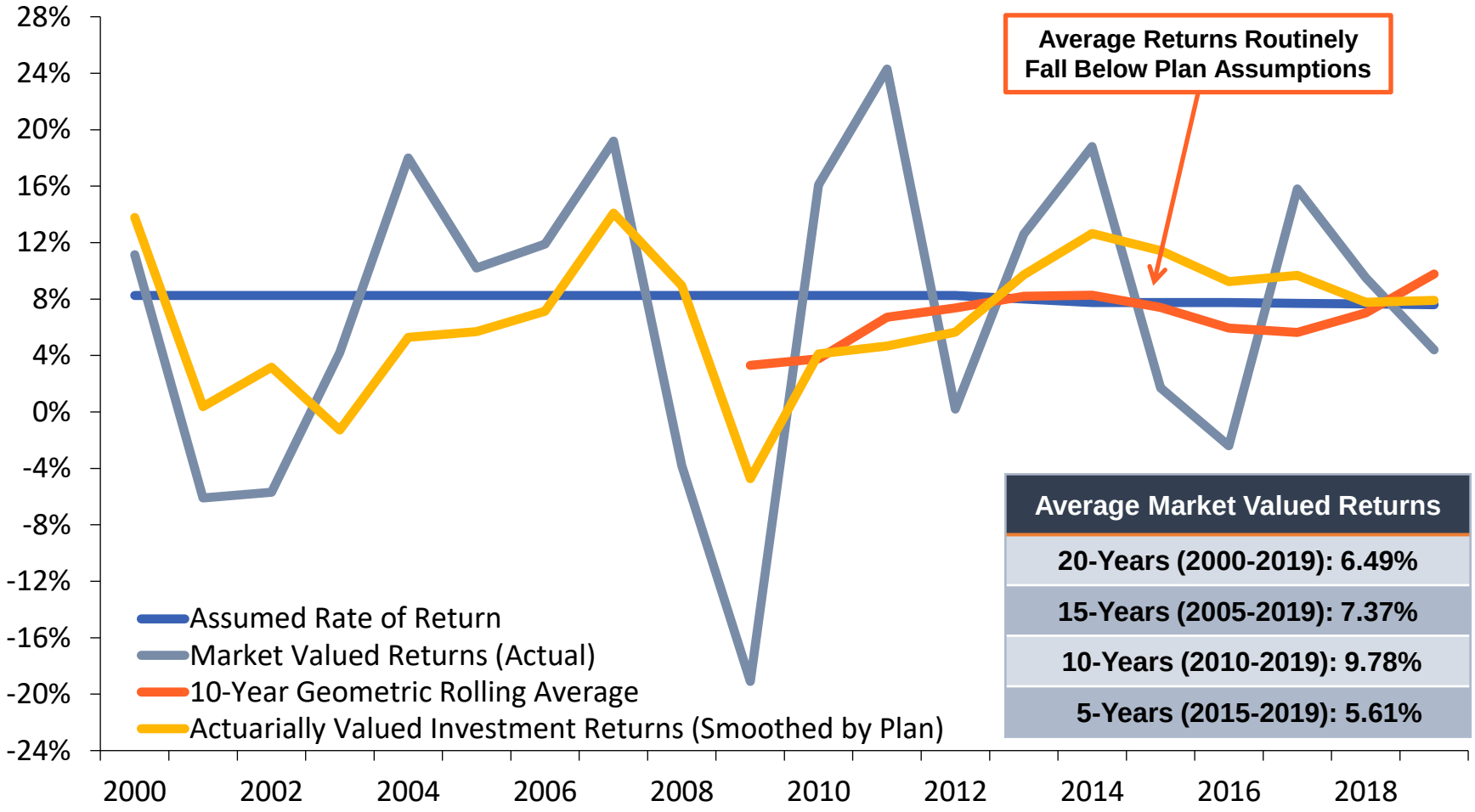
1. **Deviations from Investment Return Assumptions** have been the largest contributor to the unfunded liability growth, adding $2.7 billion to the unfunded liability since 2000.
2. **Deviations and Needed Changes to Actuarial Methods and Assumptions** – including deviations from the plan's withdrawal, retirement, disability, and mortality assumptions - have revealed roughly $2.1 billion in additional unfunded liability since 2000.
3. **Funding & Debt Management Policies** have resulted in funding shortfalls and accrued interest exceeding amortization payments (aka negative amortization) netting $373 million increase in the unfunded liability since 2000.
4. **Undervaluing Debt** through discounting methods has led to an under calculation of required contributions.

CHALLENGE 1: ASSUMED RATE OF RETURN

- **Unrealistic Expectations:** Despite recently lowering the investment return assumption to 7.6%, LASERS remains exposed to significant investment risk.
- **Underpricing Contributions:** Using an overly optimistic investment return assumption leads to underpricing benefits and an undercalculated actuarially determined contribution rate.

LASERS Problem: Underperforming Assets

Investment Return History, 2000-2019



Source: Pension Integrity Project analysis of LASERS actuarial valuation reports and CAFRs.

LASERS Challenge 1: Investment Returns

Investment Returns vs. Assumptions

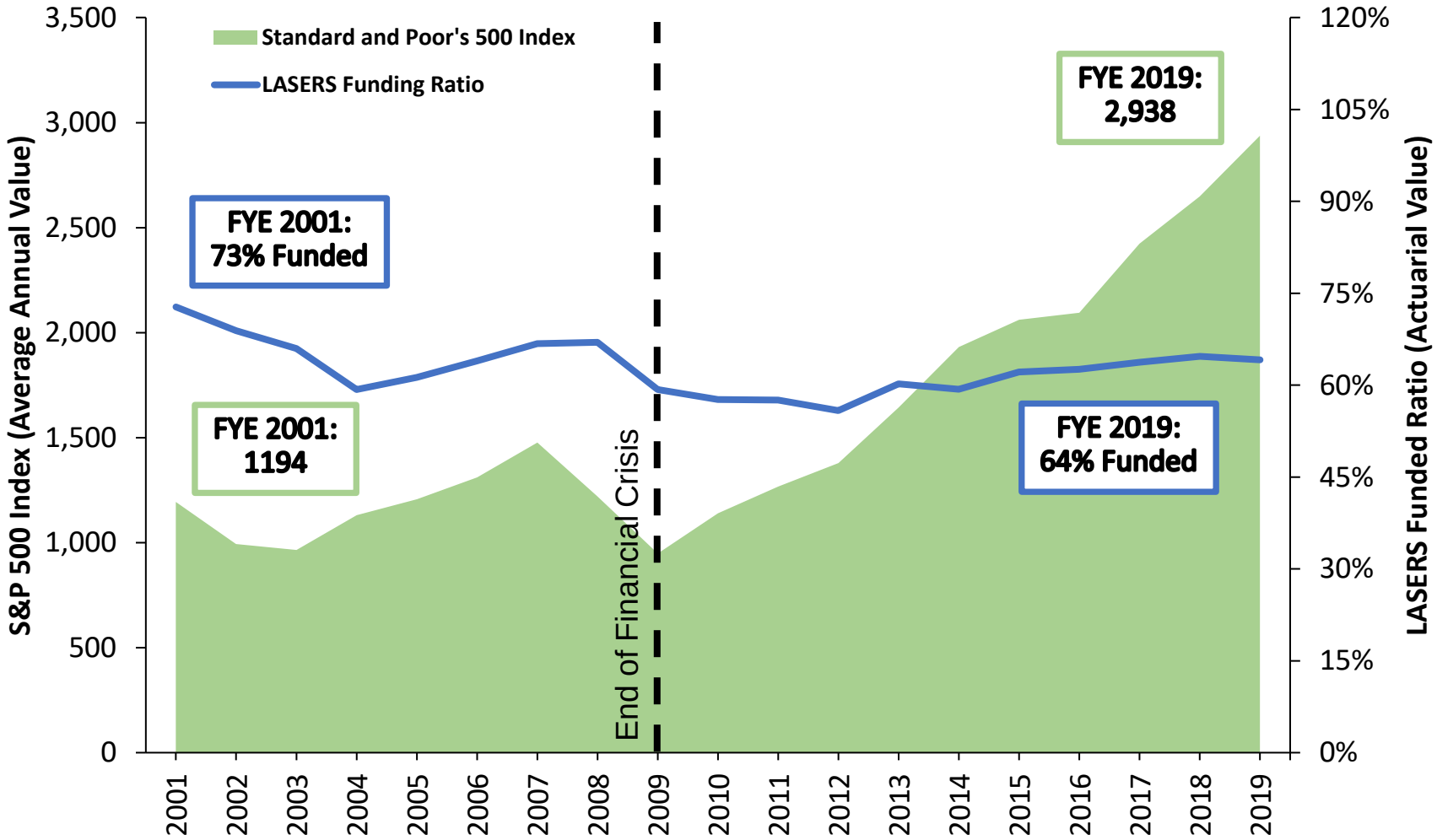
- LASERS actuaries have historically used an 8.25% assumed rate of return to calculate member and employer contributions, slowly lowering the rate to 7.5% by 2021 in response to significant market changes.
- Average long-term portfolio returns have not matched long-term assumptions over different periods of time:

Average Market Valued Returns	Average Actuarially Valued Returns
20-Years (2000-2019): 6.49%	20-Years (2000-2019): 6.65%
15-Years (2005-2019): 7.37%	15-Years (2005-2019): 7.51%
10-Years (2010-2019): 9.78%	10-Years (2010-2019): 8.25%
5-Years (2015-2019): 5.61%	5-Years (2015-2019): 9.20%

Note: Past performance is not the best measure of future performance, but it does help provide some context to the challenge created by having an excessively high assumed rate of return.

Source: Pension Integrity Project analysis of LASERS actuarial valuation reports. Average market valued returns represent geometric means of the actual time-weighted returns.

LASERS Funded Ratio Did Not Recover Despite Historic Decade for Stock Market



Source: Pension Integrity Project analysis of LASERS actuarial valuation reports and Yahoo Finance data.

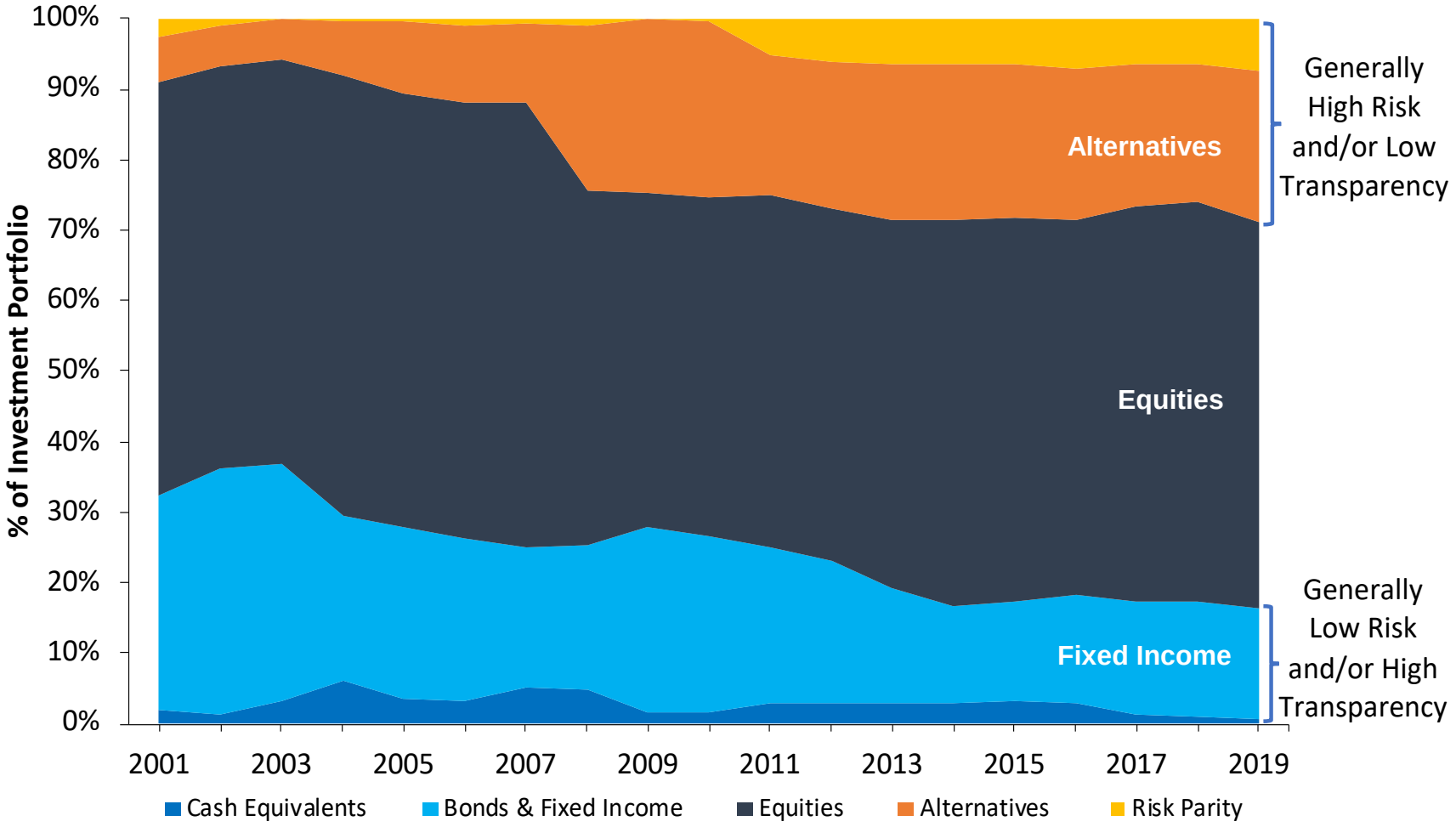
New Normal: The Market Has Changed

The “new normal” for institutional investing suggests that achieving even a 6% average rate of return in the future is optimistic.

1. Over the past two decades there has been a steady change in the nature of institutional investment returns.
   - 30-year Treasury yields have fallen from near 8% in the 1990s to consistently less than 3%.
   - Globally, interest rates are at ultralow historic levels, while market liquidity continues to be restrained by financial regulations.
   - The U.S. just experienced the longest economic recovery in history, yet average growth rates in GDP and inflation are below expectations.
2. McKinsey & Co. forecast the returns on equities will be 20% to 50% lower over the next two decades compared to the previous three decades.
   - Using their forecasts, the best-case scenario for a 70/30 portfolio of equities and bonds is likely to earn around 5% return.

LASERS Asset Allocation (2001-2019)

Expanding Alternatives in Search for Yield



Source: Pension Integrity Project analysis of LASERS actuarial valuation reports, CAFRs. Risk Parity is a low risk, low fee active managed fund of bonds, stocks, etc.

Probability Analysis: Measuring the Likelihood of LASERS Achieving Various Rates of Return

Possible Rates of Return	Probability of LASERS Achieving A Given Return Based On:							
	Assumptions & Experience		Short-Term Market Forecast				Long-Term Market Forecast	
	Based on LASERS Assumptions	LASERS Historical Returns	Research Affiliates 10-Year Forecast	JP Morgan 10-15 Year Forecast	Research Affiliates 10-Year Forecast	Horizon 10-Year Market Forecast	BlackRock 20-Year Forecast	Horizon 20-Year Market Forecast
9.0%	31.9%	16.3%	16.1%	19.5%	20.5%	27.0%	40.8%	40.2%
8.0%	43.7%	27.4%	24.8%	30.8%	31.4%	38.5%	52.8%	52.0%
7.5%	49.9%	33.9%	30.4%	37.3%	37.6%	44.4%	58.8%	57.9%
7.0%	56.7%	41.8%	36.3%	44.3%	44.6%	50.7%	64.6%	64.0%
6.5%	62.7%	50.0%	42.5%	51.3%	51.3%	56.7%	69.9%	69.5%
6.0%	68.5%	57.6%	48.8%	58.1%	58.0%	63.0%	75.0%	74.9%
5.0%	78.2%	72.4%	61.5%	71.0%	70.6%	74.2%	83.4%	83.7%

Source: Pension Integrity Project Monte Carlo model based on LASERS asset allocation and reported expected returns by asset class.
Forecasts of returns by asset class generally by BNYM, JPMC, BlackRock, Research Affiliates, and Horizon Actuarial Services were matched to the specific asset class of LASERS. Probability estimates are approximate as they are based on the aggregated return by asset class. For complete methodology contact Reason Foundation.

Probability Analysis: Measuring the Likelihood of LASERS Achieving Various Rates of Return

LASERS Assumptions & Experience

- A probability analysis of LASERS historical returns over the past 18 years (2001-2018) indicates a very modest chance (34%) of hitting the plan's recently adopted 7.50% assumed return.
- LASERS' own investment return forecasts imply a 50% chance of achieving their investment return target over the next 20 years.

Short-Term Market Forecast

- Returns over the short to medium term can outweigh long-term effects on funding and costs.
- Analysis of capital market assumptions publicly reported by the leading financial firms (BlackRock, BNY Mellon, JPMorgan, and Research Affiliates) suggests that over a 10-15 year period, LASERS returns are likely to fall short of assumptions.

Long-Term Market Forecast

- Longer-term projections typically assume LASERS investment returns will revert back to historical averages.
  - ✓ The "reversion to mean" assumption should be viewed with caution given historical changes in interest rates and a variety of other market conditions that increase uncertainty over longer projection periods, relative to shorter ones.
- Forecasts showing long-term returns near 7.50% being likely also show a significant chance that the actual long-term average return will fall far shorter than expected.
  - ✓ For example, according to the BlackRock's 20-year forecast, while the probability of achieving an average return of 7.50% or higher is about 59%, the probability of earning a rate of return below 5% is about 17%.

RISK ASSESSMENT

- How resilient is LASERS to volatile market factors?

Important Funding Concepts

Employer Contribution Rates

- *Actuarially Determined Employer Contribution (ADEC)*: Annual contributions to LASERS are set to cover the amount its consulting actuary determines is needed each year to avoid growth in pension debt and keep the plan solvent, commonly referenced to as an ADEC funding policy.

All-in Employer Cost

- The true cost of a pension is not only in the annual contributions, but also in whatever unfunded liabilities remain. The ”All-in Employer Cost” combines the total amount paid in employer contributions and adds what unfunded liabilities remain at the end of the forecasting window.

Baseline Rates

- The baseline describes LASERS’ current assumptions using the plan’s existing contribution and funding policy and shows the status quo as of FY2020 including FY2021 plan return projections.

Employer & Employee Rates

- Employer rates are based on ADEC while employee rates are fixed in statute. The following scenarios assume contributions do not fall below statutory minimums.

Quick Note:

With actuarial experiences of public pension plans varying from one year to the next, and potential rounding and methodological differences between actuaries, projected values shown onwards are not meant for budget planning purposes. **For trend and policy discussions only.**

Stress Testing Crisis Simulations

Stress on the Economy:

- Market watchers expect dwindling consumption and incomes to severely impact near-term tax collections – applying more pressure on state and local budgets.
- Revenue declines are likely to undermine employers' ability to make full pension contributions, especially for those relying on more volatile tax sources (e.g., sales taxes) and those with low rainy-day fund balances.
- Many experts expect continued market volatility, and the Federal Reserve is expected to keep interest rates near 0% for years and only increase rates in response to longer-term inflation trends.

Methodology:

- Adapting the Dodd-Frank stress testing methodology for banks and Moody's Investors Service recession preparedness analysis, the following scenarios assume one year of -25.06% returns in 2020 for LASERS, followed by three years of 11% average returns.
- Recognizing expert consensus regarding a diminishing capital market outlook, the scenarios assume a long-term investment return on 6% once markets rebound.
- Given the increased exposure to volatile global markets and rising frequency of Black Swan economic events, we include a scenario incorporating a second Black Swan crisis event in 2035.
- In the event plan sponsors are unable to appropriate their full actuarially determined or statutory contributions amid budget stress, additional scenarios show the impact of a five-year employer contribution freeze.

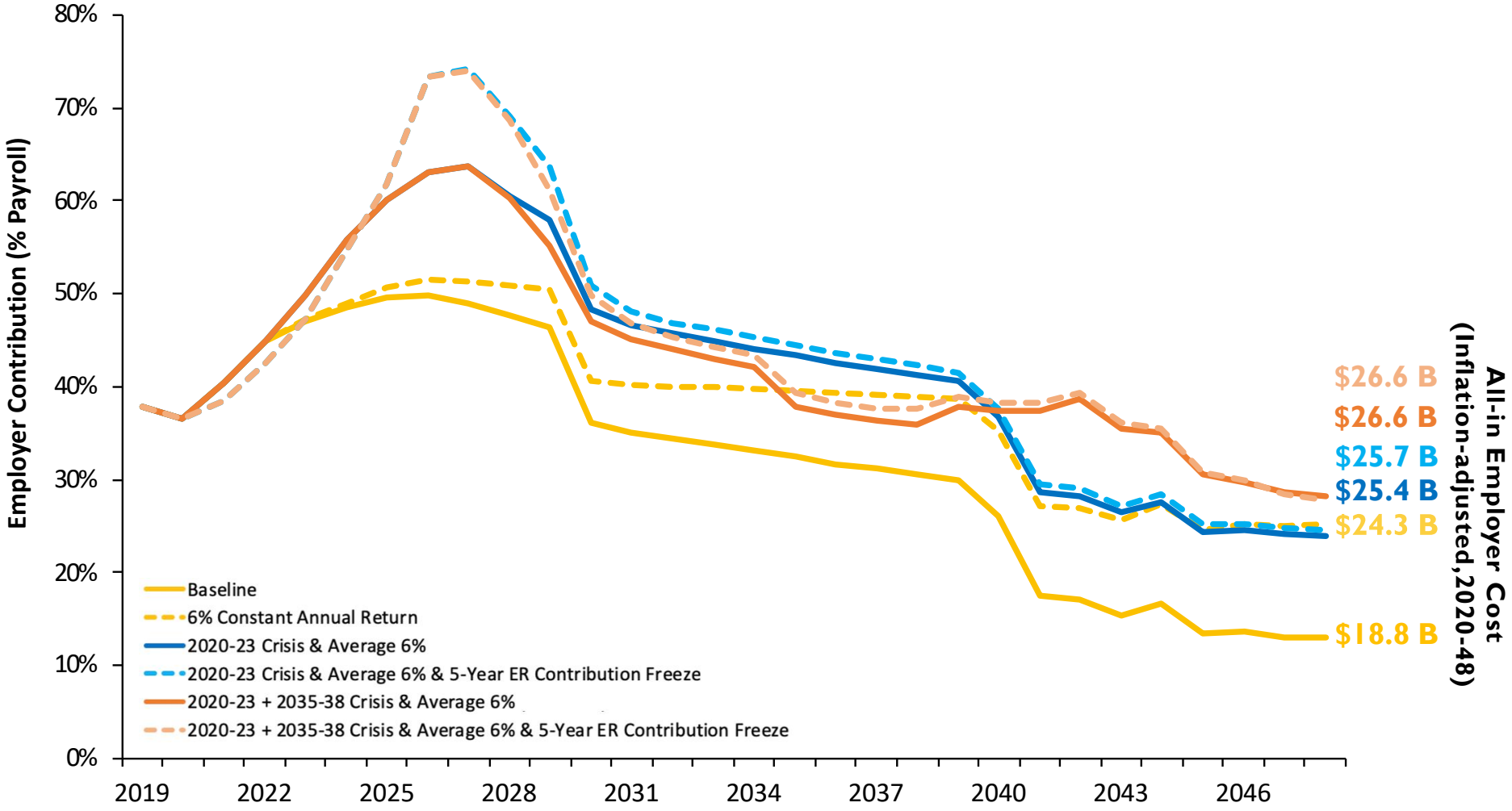
Stress Testing Scenarios:

1. 6% Constant Return
2. 2020-23 Crisis + Average 6.0% Long-Term
3. 2020-23 Crisis + 2035-38 Crisis + Average 6.0% Long-Term
4. Scenario 1 + 5-Year Employer Contribution Freeze
5. Scenario 2 + 5-Year Employer Contribution Freeze

LASERS Stress Testing: All-in Employer Cost Projections

How a Crisis Increases LASERS Costs

Discount Rate: 7.50%, Assumed Return: 7.50%, Actual Return: Varying, Amo. Period: Current

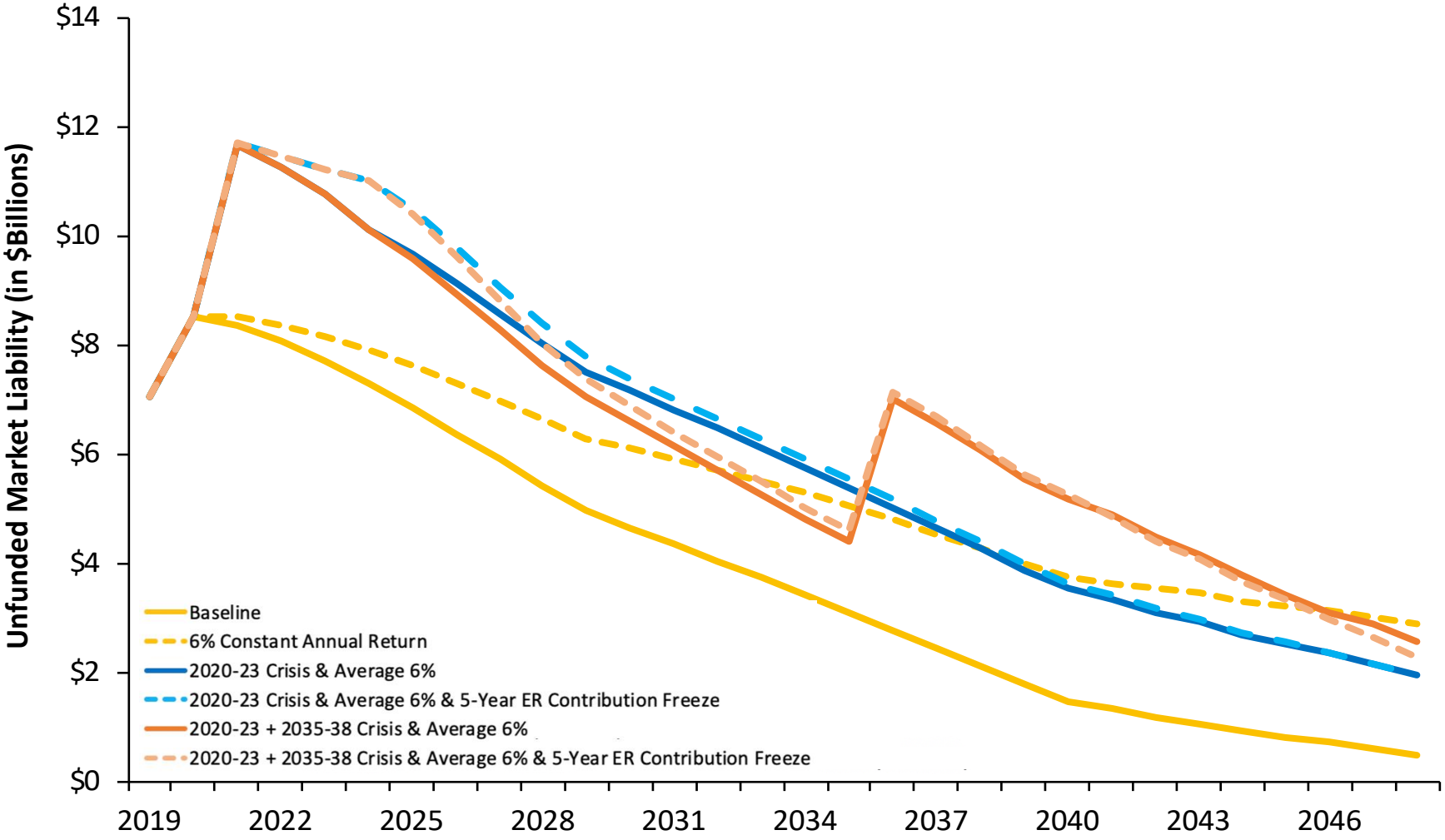


Source: Pension Integrity Project actuarial forecast of LASERS. All values are rounded and adjusted for inflation. State is assumed to make 100% *actuarially* required contributions. The "All-in Cost" includes all employer contributions over the 30-year timeframe, and the ending unfunded liability accrued by the end of the forecast period. Projections are based on the previous 7.5% discount rate and not the revised 7.45%.

LASERS Stress Testing: Unfunded Liability Projections

Unfunded Liabilities Perpetuate Under Crisis Scenarios

Discount Rate: 7.50%, Assumed Return: 7.50%, Actual Return: Varying, Amo. Period: Current

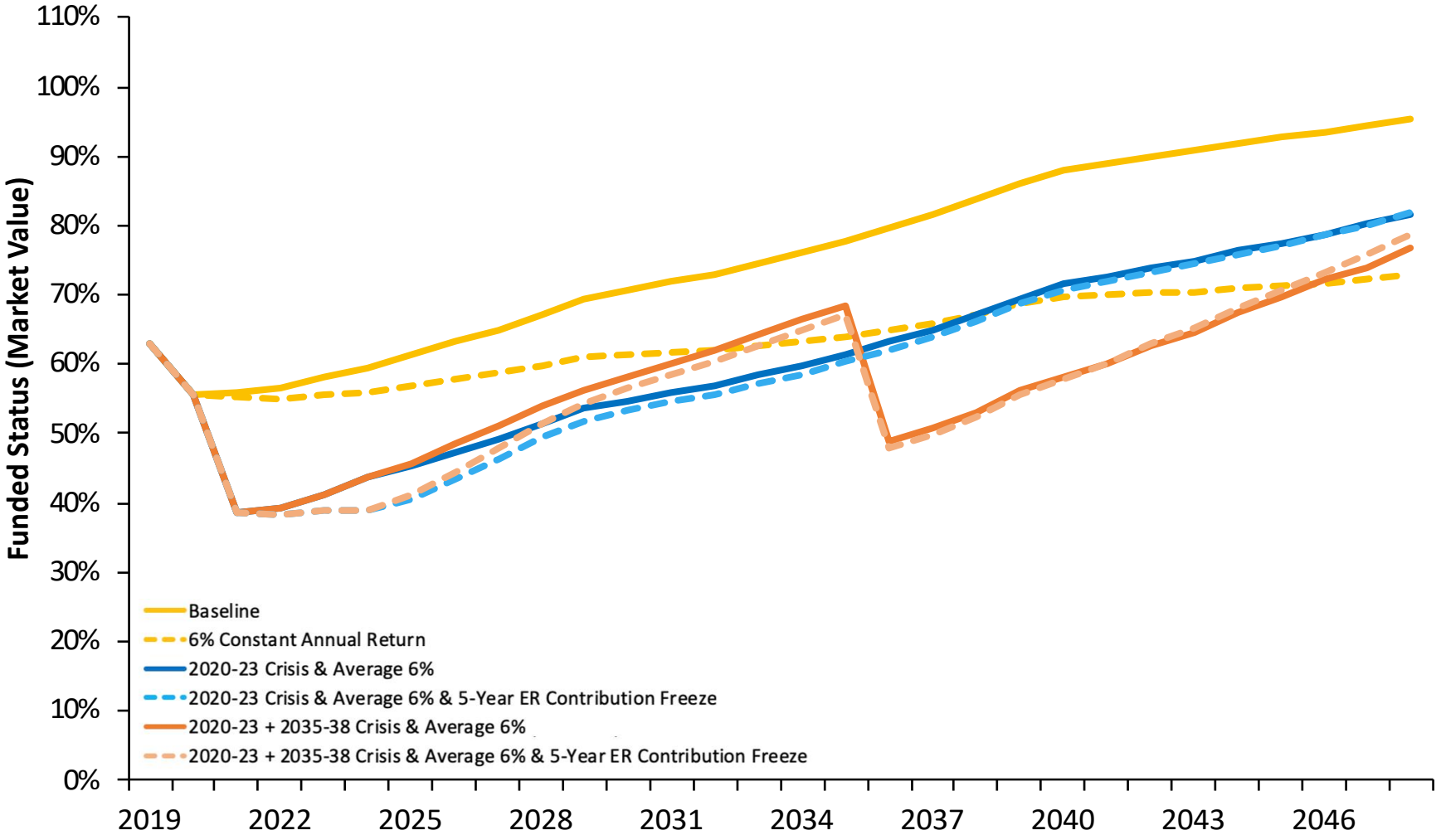


Source: Pension Integrity Project actuarial forecast of LASERS. Values are rounded and adjusted for inflation. State is assumed to make 100% *actuarially* required contributions. The "All-in Cost" includes all employer contributions over the 30-year timeframe, and the ending unfunded liability accrued by the end of the forecast period. Projections are based on the previous 7.5% discount rate and not the revised 7.45%.

LASERS Stress Testing: Unfunded Liability Projections

Unfunded Benefits Remain Under Crisis Scenarios

Discount Rate: 7.50%, Assumed Return: 7.50%, Actual Return: Varying, Amo. Period: Current



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LASERS Stress Testing: All-in Employer Cost Projections

How a Crisis Increases LASERS Costs

Discount Rate: 7.50%, Assumed Return: 7.50%, Actual Return: Varying, Amo. Period: Current

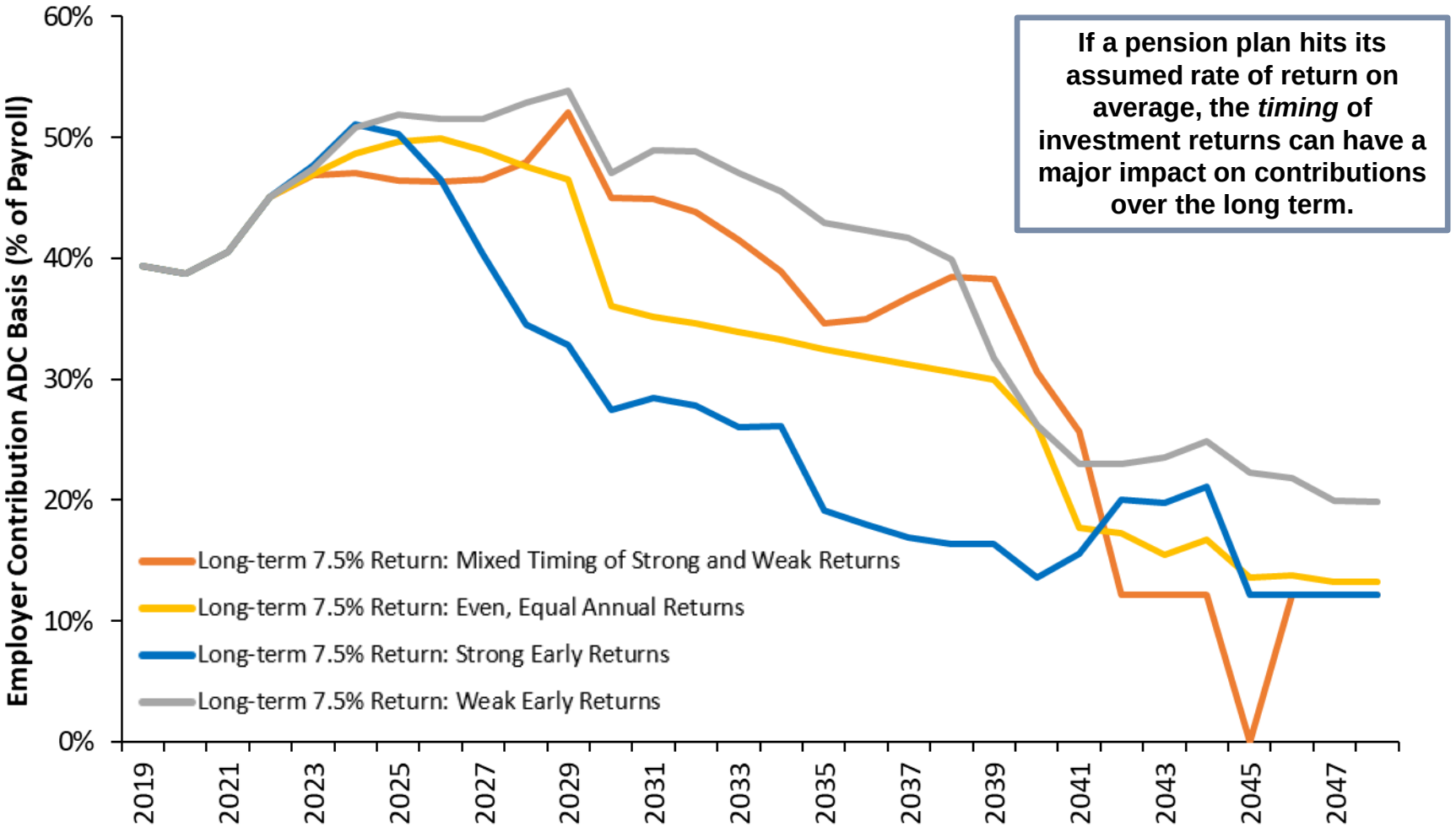
Scenarios	Actuarial Contributions		
	30-Year Employer Contributions	2048 Unfunded Liability (Market Value)	Total All-in Employer Costs
Pre-Crisis Baseline	$18.2 B	$0.5 B	$18.8 B
6% Constant Annual Return	$21.6 B	$2.7 B	$24.3 B
2020-23 Crisis + Average 6%	$23.5 B	$1.8 B	$25.4 B
Two Crises + Average 6%	$23.9 B	$2.7 B	$26.6 B
2020-23 Crisis + Average 6% + 5-Year Cont. Freeze	$23.8 B	$1.8 B	$25.7 B
Two Crises + Average 6% + 5-Year Cont. Freeze	$24.2 B	$2.5 B	$26.7 B

Source: Pension Integrity Project actuarial forecast of LASERS. Values are rounded and adjusted for inflation. State is assumed to make 100% *actuarially* required contributions. The "All-in Cost" includes all employer contributions over the 30-year timeframe, and the ending unfunded liability accrued by the end of the forecast period. Projections are based on the previous 7.5% discount rate and not the revised 7.45%.

30-year Funded Ratio Forecast

All Paths to a 7.5% Average Return are Not Equal

Long-Term Average Returns of 7.5%



If a pension plan hits its assumed rate of return on average, the *timing* of investment returns can have a major impact on contributions over the long term.

Source: Pension Integrity Project actuarial forecast of LASERS plan. Strong early returns (TWRR = 7.2%, MWRR = 8.0%), Even, equal annual returns (Constant Return = 7.25%), Mixed timing of strong and weak returns (TWRR = 7.3%, MWRR = 7.2%), Weak early returns (TWRR = 7.2%, MWRR = 6.3%) Scenario assumes that LASERS pays statutory contribution rates each year. Years are plan's fiscal years.

Forecasting the Impact of Market Volatility

Random Variable Analysis

What is it?

- Model generates 10,000 different random investment return scenarios, creating ranges in required contributions and funding outcomes
- This analysis displays 50 percent of all outcomes that are closest to the median outcome

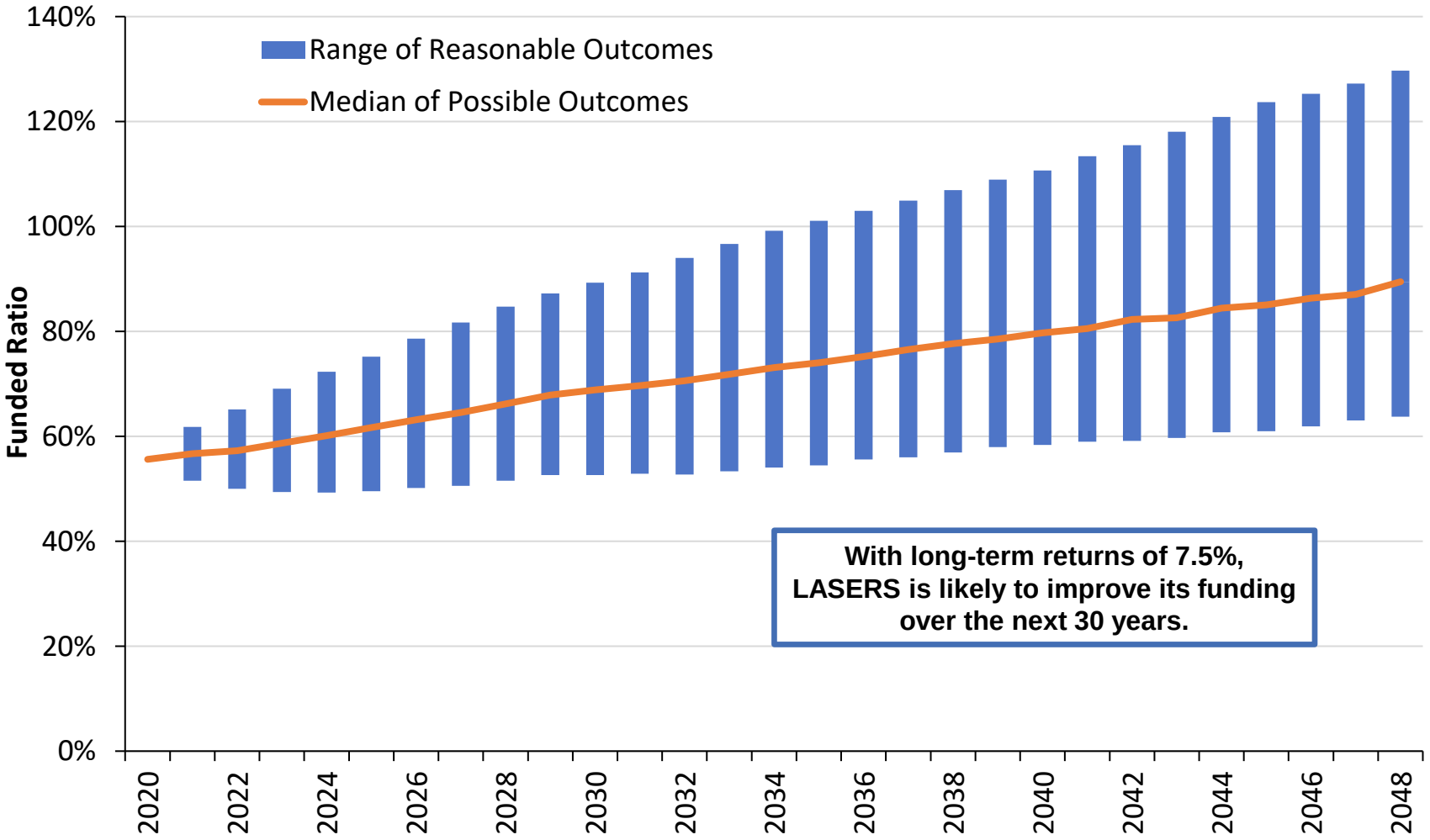
Why use it?

- Using a large sample of potential 30-year return scenarios can show the differences in how plan's funding will react to high or low investment fluctuations.
- The cone of displayed outcomes and the median illustrates the level of risk placed on the plan
- A narrow cone suggests a plan is more resilient—and has less investment risk—than that of a wider cone

30-year Funded Ratio Forecast

Funded Ratios are Expected to Improve

Based on Long-term Average Returns of 7.5%

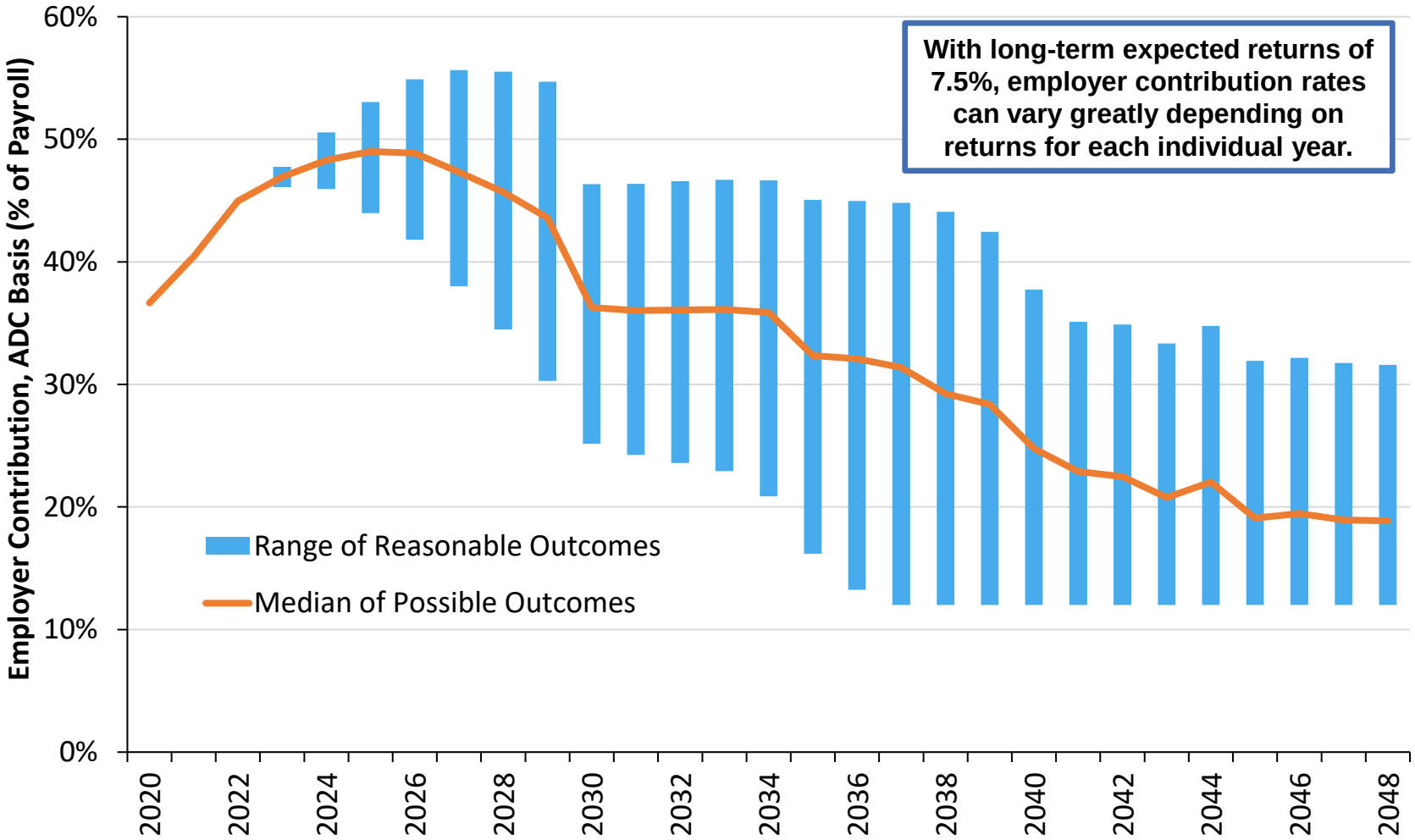


Source: Pension Integrity Project actuarial forecast of LASERS plan based on LASERS return and risk assumptions.
Range of Reasonable Outcomes represents the 50% of possible outcomes closest to the median.

30-year Employer Contribution Forecast

If LASERS Performs as Expected, Rates Can Still Vary

Based on Long-term Average Returns of 7.5%

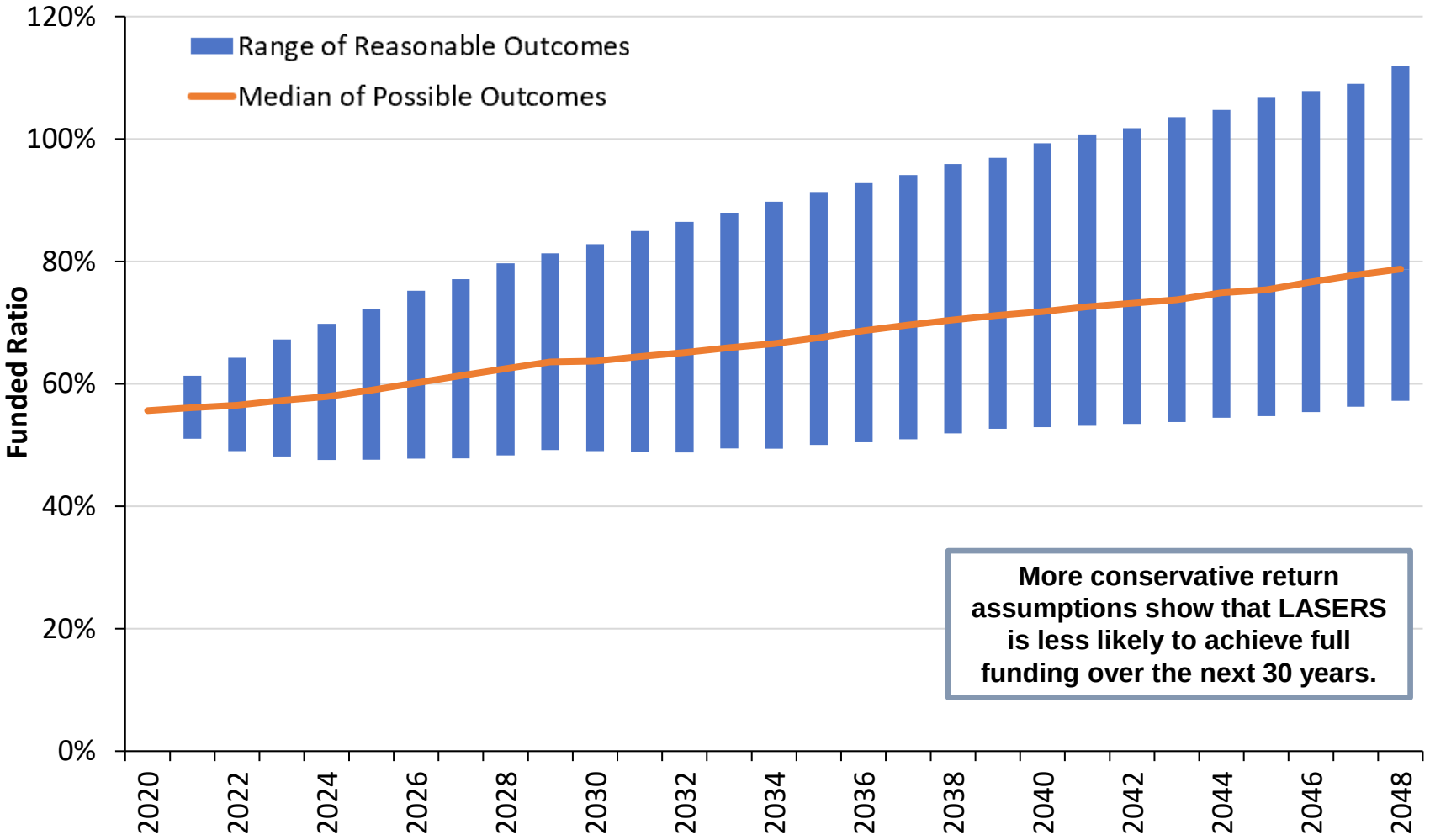


Source: Pension Integrity Project actuarial forecast of LASERS plan based on LASERS return and risk assumptions. Scenario assumes that the state pays 100% of the actuarially determined contribution each year. Range of Reasonable Outcomes represents the 50% of possible outcomes closest to the median.

30-year Funded Ratio Forecast

How Do Missed Returns Impact Funded Ratios?

Based on More Conservative Long-term Average Returns



Source: Pension Integrity Project actuarial forecast of LASERS plan using the return and risk assumptions of the Monte Carlo analysis. Conservative returns are 6.13%, which are the result of combining the short-term and long-term capital market assumptions from prominent financial firms.

Sensitivity of Normal Cost Under Alternative Assumed Rates of Return

Amounts to be Paid in 2019 Contribution Fiscal Year, % of projected payroll

	Gross Normal Cost	Employer Normal Cost	Employee Normal Cost
7.60% Assumed Return (FYE 2020 Baseline)	11.29%	3.24%	8.05%
7.50% Assumed Return	11.35%	3.30%	8.05%
6.50% Assumed Return	11.98%	3.93%	8.05%
5.50% Assumed Return	12.76%	4.71%	8.05%

Note: These alternative gross normal cost figures should be considered approximate guides to how much more normal cost should be under different discount rates. Any policy changes should be based on more precise normal cost forecasts using detailed plan data. Alternative normal cost rates based reported liability sensitivity from the FYE 2019 LASERS CAFR.

Source: Pension Integrity Project forecasting analysis based on LASERS actuarial valuation reports.

CHALLENGE 2: DEVIATIONS AND NEEDED CHANGES TO ACTUARIAL ASSUMPTIONS AND METHODS

- Failure to meet actuarial assumptions, and delay in updating those assumptions, has led to an underestimation of the total pension liability.
- Adjusting actuarial assumptions and methods to reflect the changing demographics and new normal in investment markets exposes hidden pension cost by uncovering existing but unreported unfunded liabilities.

Challenges from Aggressive Actuarial Assumptions

Actual Experience Different from Actuarial Assumptions

(-) Actuarial Assumption and Methods

- LASERS made alterations to its actuarial assumptions (e.g. changes in the assumed rate of return in 2012 and 2014) that have collectively unveiled $2.10 billion of hidden unfunded liabilities from 2000-2019.

(-) Extended Amortization Timetables and Statutory Contribution Limits

- Setting contribution rates in statute that are below ADEC and using optimistic return assumption resulted in interest on LASERS debt exceeding the actual debt payments (aka negative amortization) and a net $370 million increase in the unfunded liability since 2000.

Challenges from Aggressive Actuarial Assumptions

Actual Experience Different from Actuarial Assumptions

(-) Deviations from Service Retirement and Other Demographic Assumptions

- LASERS's unfunded liability has increased by $50 million between 2000-2019 due to misaligned demographic assumptions (including deviations from plan's withdrawal, retirement, disability, and mortality assumptions).
- This likely stems from a combination of one or more of the following factors:
  - ✓ Actual withdrawal rates before members have reached either a reduced or normal retirement threshold have been higher than anticipated.
  - ✓ LASERS members have been retiring later than expected, receiving fewer pension checks.
  - ✓ LASERS employers have not raised salaries as fast as expected, resulting in lower payrolls and thus lower earned pension benefits - a common case for many state-level pension plans.

Challenges from Aggressive Actuarial Assumptions

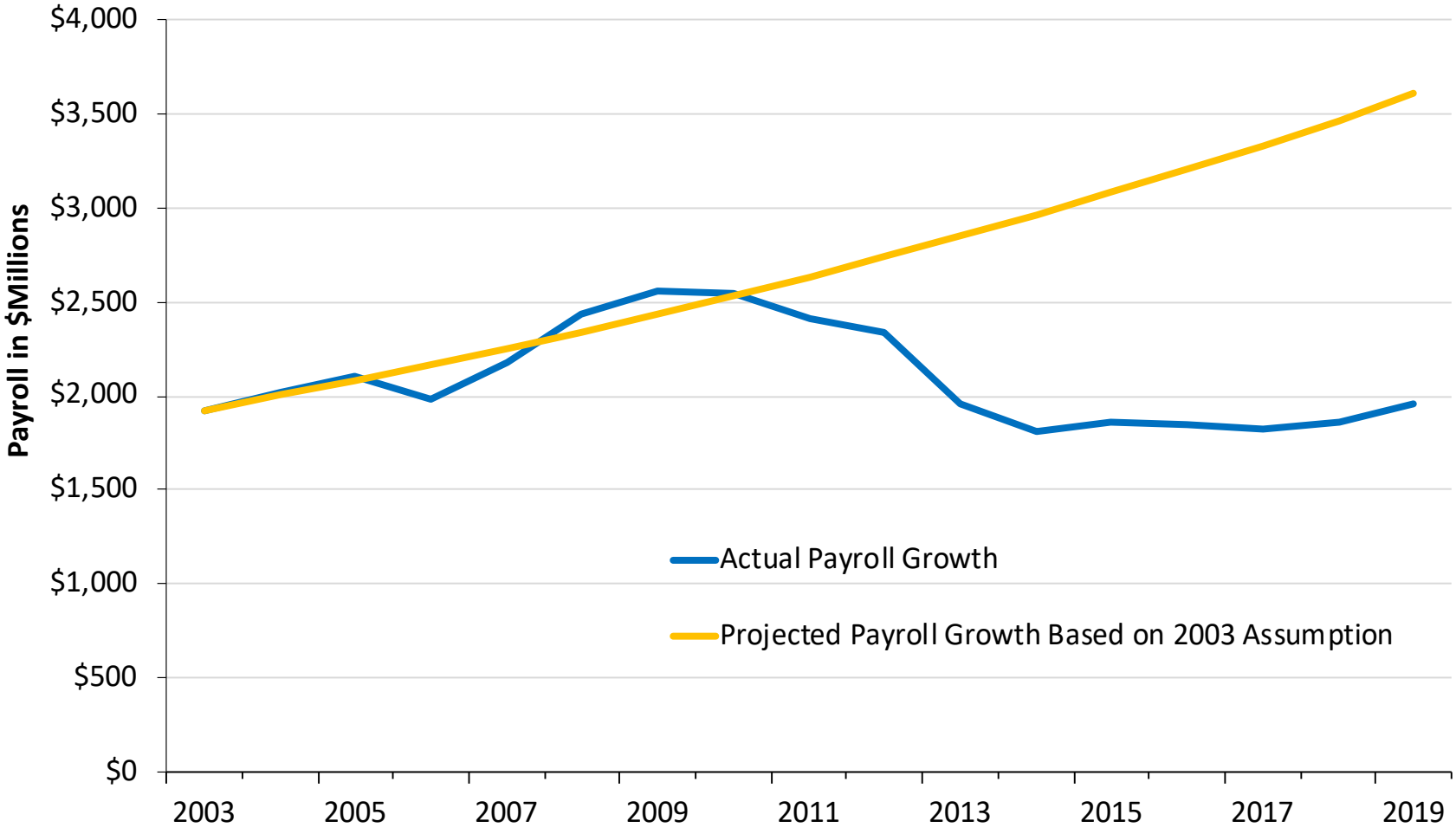
Actual Experience Different from Actuarial Assumptions

(-) Overestimated Payroll Growth

- Overestimating payroll growth may create a long-term Challenge for LASERS in combination with the level-percentage of payroll amortization method used by the plan.
- This method *backloads pension debt payments* by assuming that future payrolls will be larger than today (a reasonable assumption).
- While in and of itself, a growing payroll is a reasonable assumption, if payroll does not grow as fast as assumed, employer contributions must rise as a percentage of payroll.
  - ✓ This means the amortization method combined with the inaccurate assumption is delaying debt payments.

Challenges from Aggressive Actuarial Assumptions

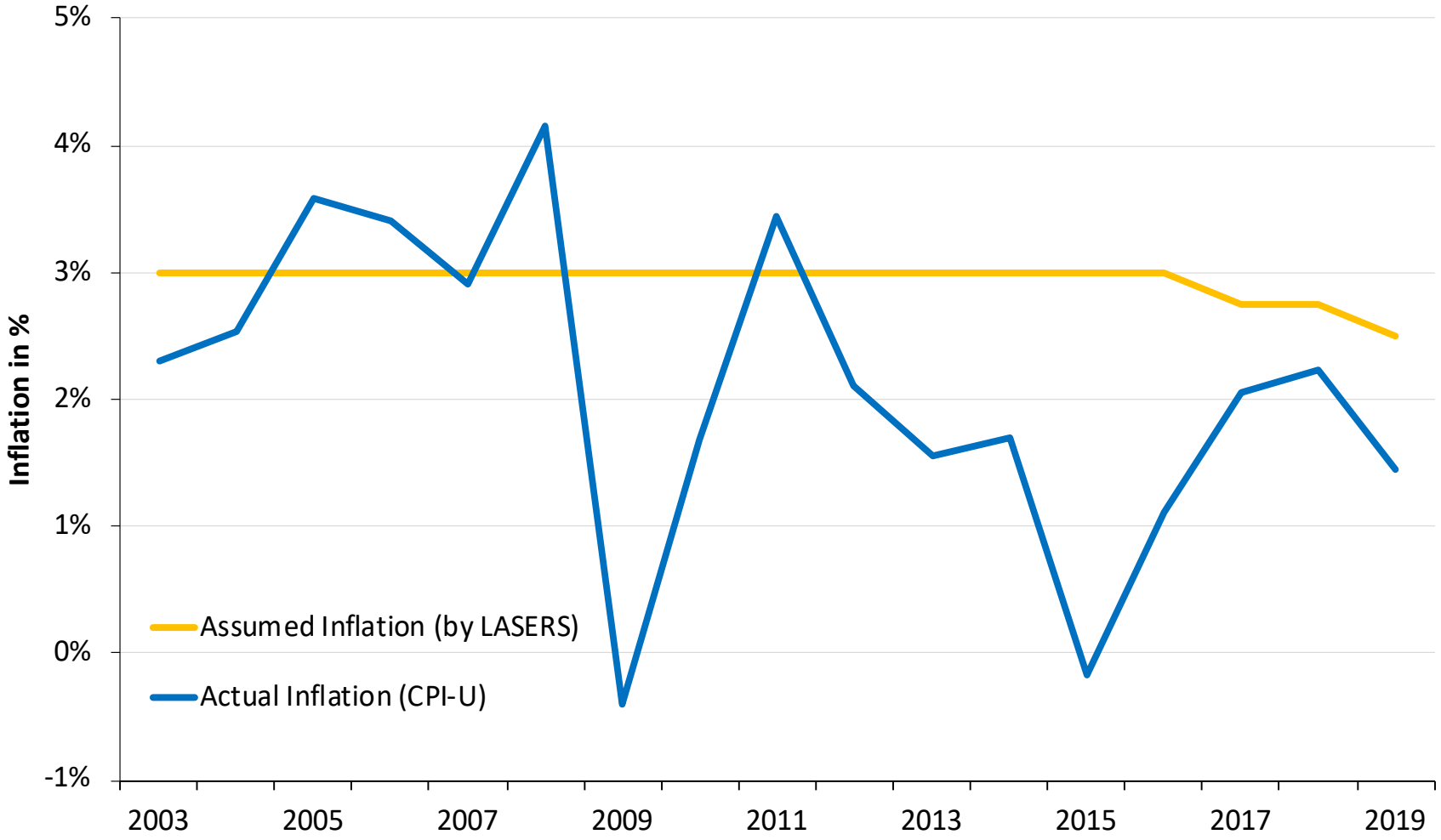
Actual Change in Payroll v. Assumption



Source: Pension Integrity Project analysis of LASERS actuarial valuation reports and CAFRs. Years represent fiscal year ended dates.

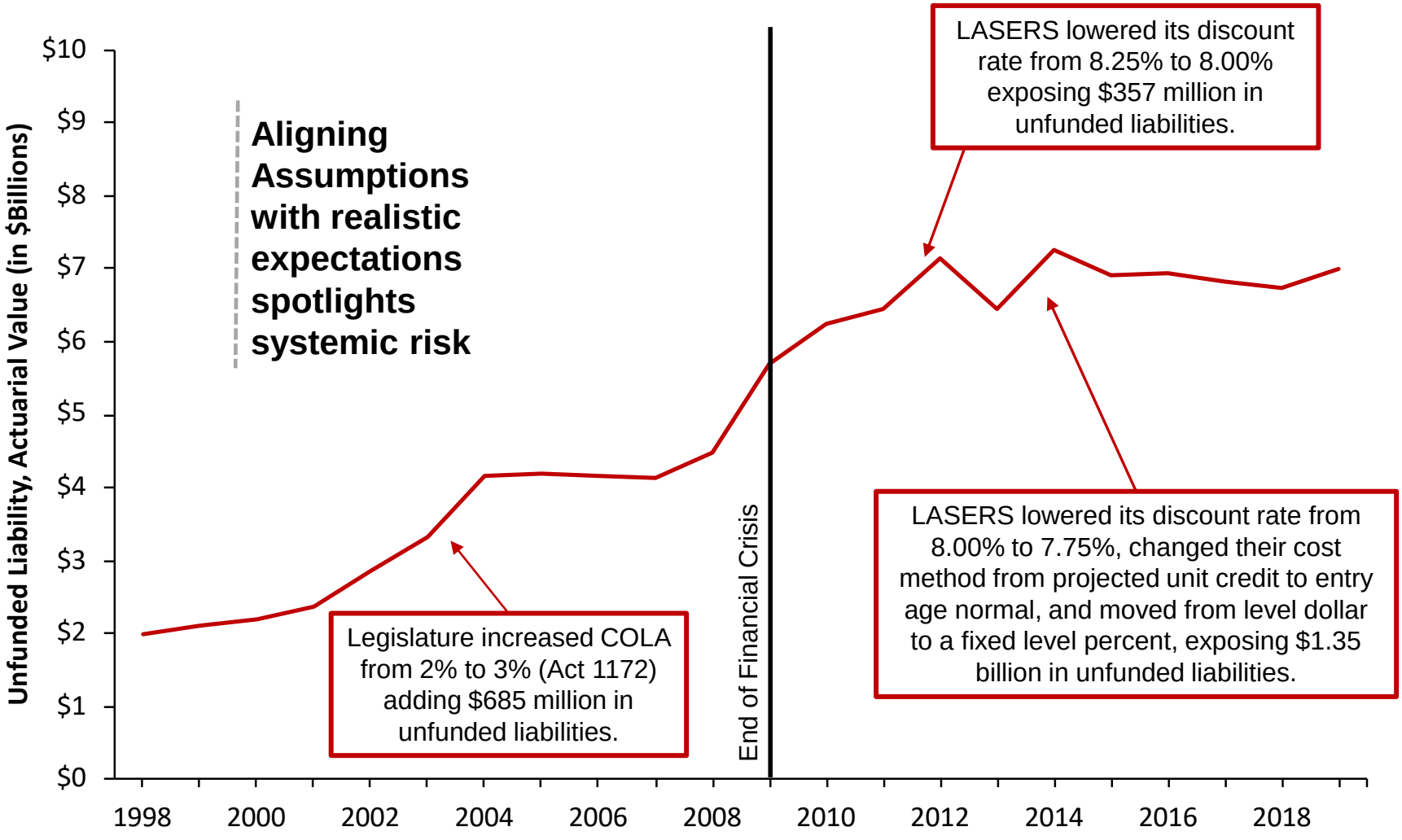
Challenges from Aggressive Actuarial Assumptions

Actual Inflation v. Assumption



Source: Pension Integrity Project forecasting based on LASERS actuarial valuation reports and CAFRs, and data from the Bureau of Labor Statistics.

Assumption Changes Expose Hidden Unfunded Liabilities



Source: Pension Integrity Project analysis of LASERS actuarial valuation reports.

CHALLENGE 3: FUNDING & DEBT MANAGEMENT POLICIES

- Methods for paying off unfunded liabilities have made the existing pension debt Challenges worse.
- The interest accrued on unfunded liabilities exceeded amortization payments in most of the last twenty years, adding $22 million to the unfunded liability since 2000.

Actuarial Methods Have Created a Structural Underfunding Challenge for LASERS

- Negative amortization: The LASERS actuary reported that contributions available to cover the unfunded liability were less than the interest accruing on the pension debt for a decade (2002-13).
- In 12 of the past 20 years, employer contributions have been less than the interest accrued on the pension debt (i.e. negative amortization), which allowed for the unfunded liability to grow in absolute terms.
- The 30-year amortization in use by LASERS for all new unfunded liabilities is greater than the Society of Actuaries' recommended funding period of 15 to 20 years, resulting in higher overall costs for the plan.
  - ✓ Due to the long 30-year closed amortization schedule used to pay off the annual unfunded liability prior to Act 497 of 2009, employer pension contributions have not always kept up with the interest accrued on the pension debt.

Understanding Current Funding Policy: Projecting ADEC Rates

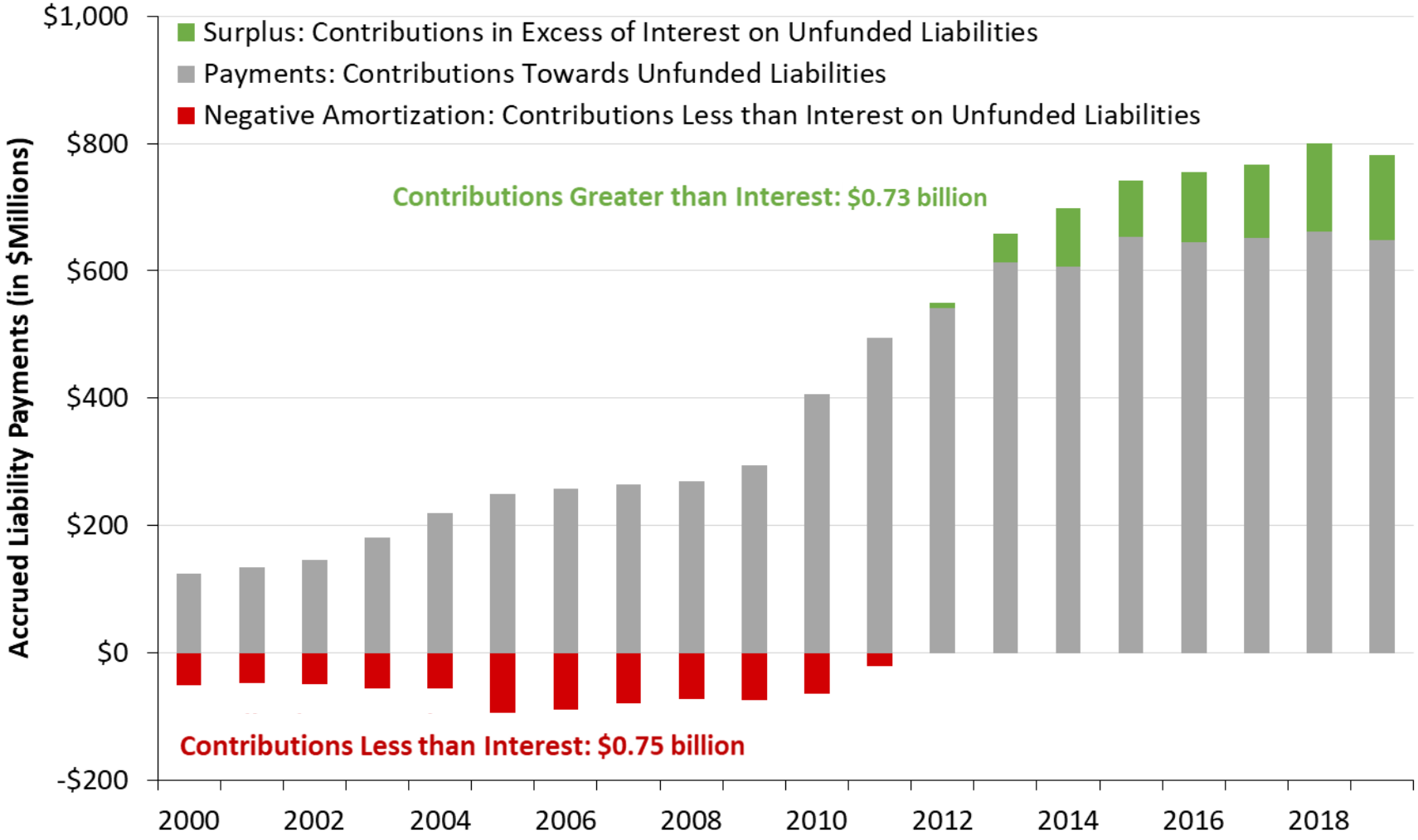
- LASERS actuaries set ADEC rates by making yearly assumptions likes investment returns and the amount to be diverted to the Experience Account over the next year to pay for future PBI allocations.
- If the projected ADEC contribution rate differs from the system's experience over the next year the system can experience an actuarial gain or loss.
- If LASERS experiences a loss, the projected ADEC rate falls short of what was actuarially required that year, while the PBI allocation can still increase in value.

LASERS Valuation Report 2019, page 81

Understanding Current Funding Policy: Negative Amortization

- Any new unfunded liabilities that accrue in a given year are amortized using a 30-year closed, layered amortization schedule.
- By setting amortization period closing dates for legacy debt (FYE 2029 for debt accrued before 2001; FYE 2040 for debt accrued from 2001 to 2008), Act 497 ensured that the legacy unfunded liability will eventually be eliminated.
- However, given the long, 30-year closed amortization schedules used to pay off the annual unfunded liability prior to Act 497 of 2009, employer pension contributions have not always kept up with the interest accrued on the pension debt.

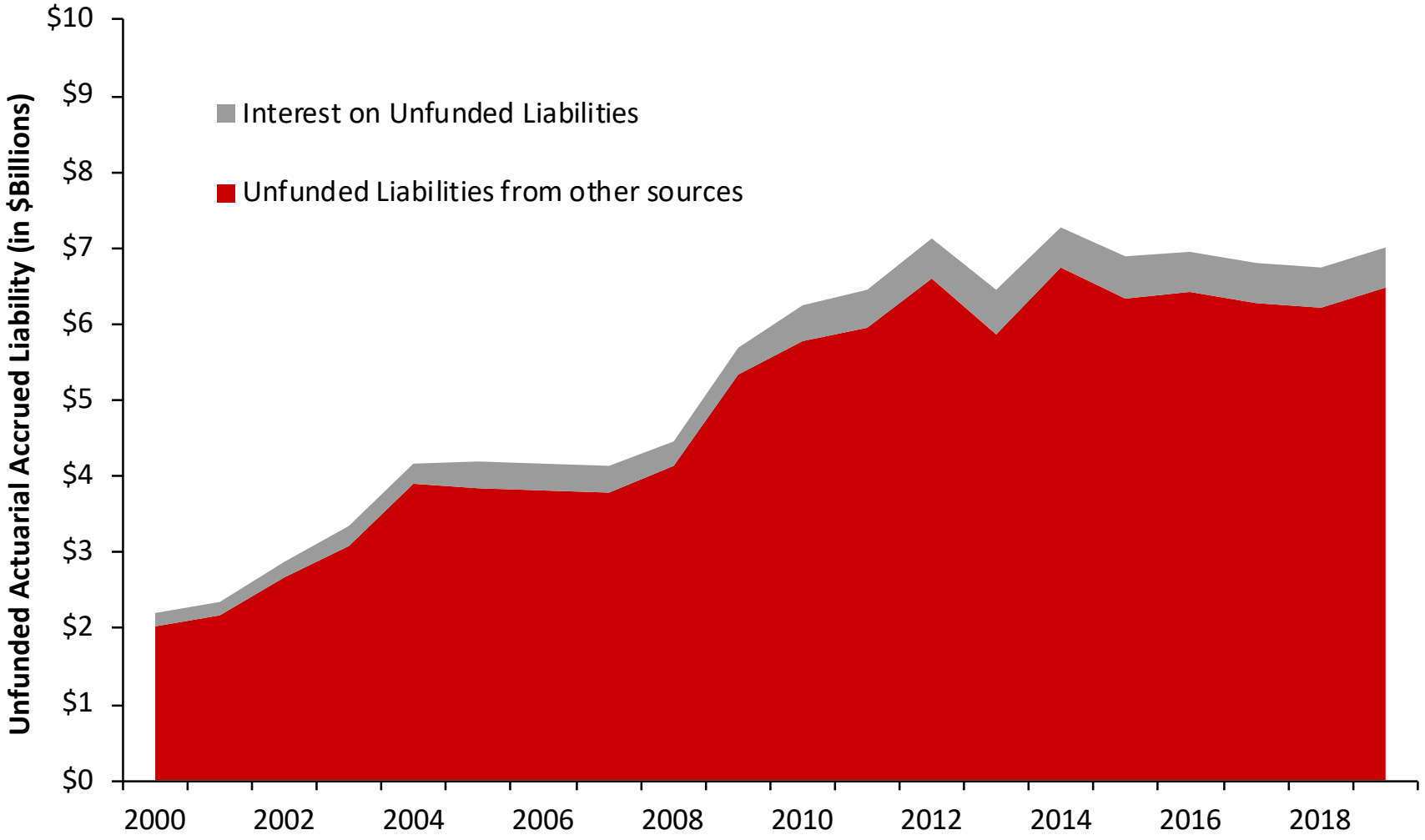
LASERS Negative Amortization Growth, 2000-2019
Interest on the Debt v. Accrued Liability Payments



Source: Pension Integrity Project actuarial analysis of LASERS plan valuation reports and CAFRs

Louisiana LASERS Negative Amortization Growth, 2000-2019

Interest on the Debt as a Portion of Unfunded Liability



Source: Pension Integrity Project analysis of Louisiana LASERS actuarial valuation reports and CAFRs

CHALLENGE 4: PERMANENT BENEFIT INCREASES

- The PBI mechanism deprives LASERS of the extra cash flow needed to pre-fund primary pension benefits and pay down the debt faster

Experience Account Allocations

LASERS's unfunded liability decreased by $357 million between 2000-2019 as a result of the legislature not granting a specific type of ad hoc cost of living adjustments (COLA) for retired members, known as permanent benefit increases (PBI).

- More transparent and commonly used methods used by pension systems to adjust retiree benefits over time are fixed prefunded, annual COLAs, or preferably, prefunded COLAs linked to the change in consumer price index. Both are usually factored into annual normal cost.
- Under Title 11 of the Louisiana Revised Statutes, LASERS can grant PBIs by skimming 50% off positive investment returns above the first $200 million and putting them into an "experience account" used to pay out PBI benefits.

PBIs Complicate Pension Cost Projections

- The current actuarial method used by LASERS assumes an implicit recognition of future COLAs by *reducing the rate of return assumption* by expected average transfers into the experience account.
- This creates confusion for both plan administrators and members and makes estimating the costs of providing PBIs—and ultimately, core pensions—more complicated.
- These so-called "implicit adjustments" to the return assumption lack transparency.

For example, in FY 2018 the LASERS assumed 8.05% total rate of return (net of investment-related expenses). LASERS then reduced the rate of return assumption by 0.40% to accommodate the estimated cost of PBI transfers - resulting in a final discount rate of 7.65%.

CHALLENGE 5: DISCOUNT RATE AND UNDERVALUING DEBT

- The discount rate undervalues existing pension obligations.

LASERS Discount Rate Methodology is Undervaluing Liabilities

1. **The "discount rate" for a public pension plan should reflect the risk inherent in the pension plan's liabilities**:
   - Most public sector pension plans — including LASERS— use the assumed rate of return and discount rate interchangeably, even though each serve a different purpose.

The **Assumed Rate of Return** (ARR) adopted by LASERS estimates what the plan will return on average in the long run and is used to calculate contributions needed each year to fund the plans.

The **Discount Rate** (DR), on the other hand, is used to determine the net present value of all of the already promised pension benefits and supposed to reflect the risk of the plan sponsor not being able to pay the promised pensions.

Discount Rate for Projected Contributions
8.00% for FY 2012/2013
7.75% for FY 2013/2014
7.70% for FY 2016/2017
7.65% for FY 2017/2018
7.60% for FY 2018/2019
7.55% for FY 2020/2021

LASERS Discount Rate Methodology is Undervaluing Liabilities

2. **Setting a discount rate too high will lead to undervaluing the amount of pension benefits actually promised**:
   - If a pension plan is choosing to target a high rate of return with its portfolio of assets, and that high assumed return is then used to calculate/discount the value of existing promised benefits, the result will likely be that the actuarially recognized amount of accrued liabilities is undervalued.

3. **It is reasonable to conclude that there is almost no risk that Louisiana would not pay out all retirement benefits promised to members and retirees.**
   - The state constitutional contract clauses provide an explicit protection of accrued past benefits when employee is vested.

4. **The discount rate used to account for this minimal risk should be appropriately low.**
   - The higher the discount rate used by a pension plan, the higher the implied assumption of risk for the pension obligations.

LASERS Pension Debt Sensitivity

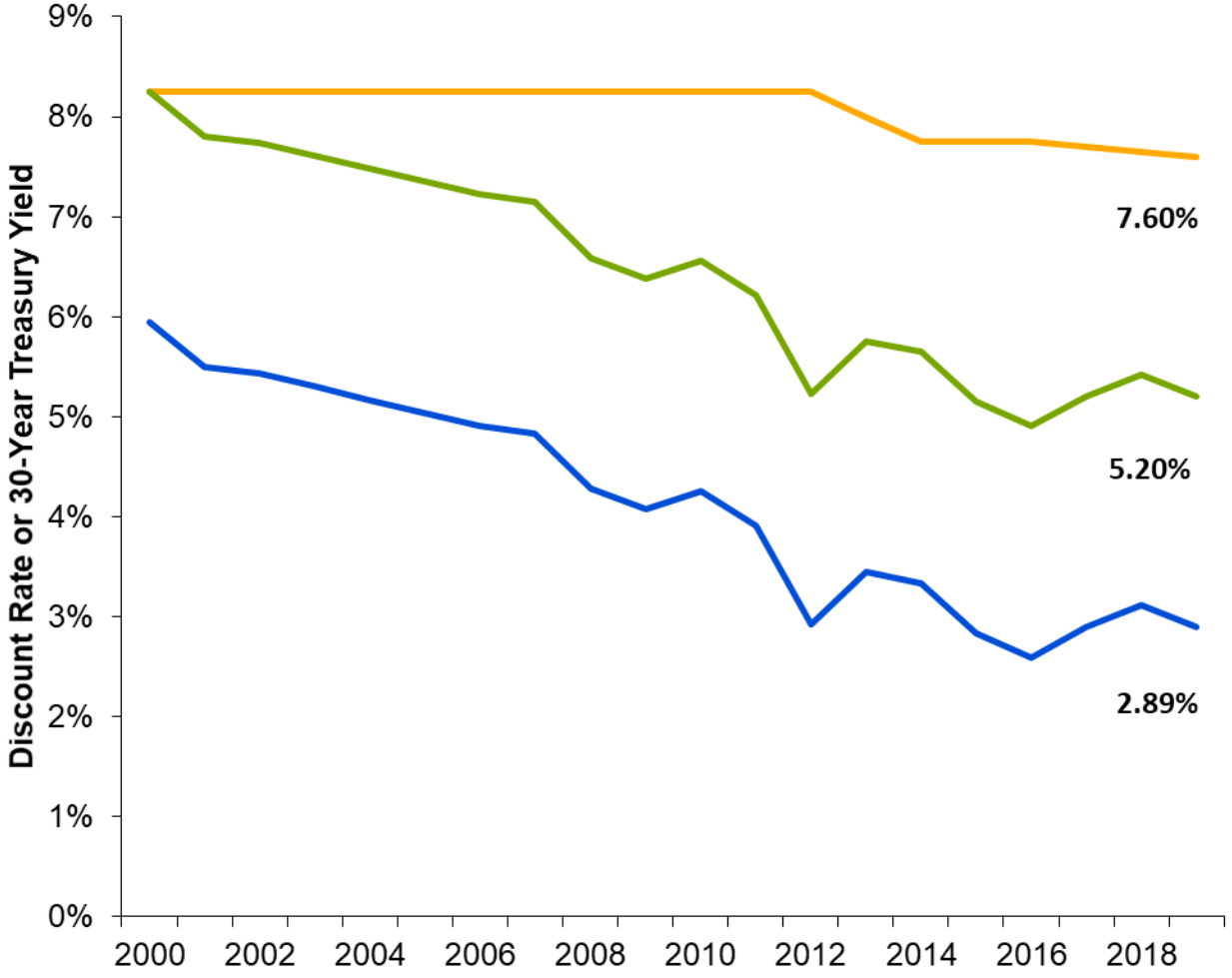
FYE 2019 Unfunded Liability Under Varying Discount Rates

Discount Rate	Funded Ratio (Market Value)	Unfunded Liability (Market Value)	Actuarial Accrued Liability
7.6% (Current Baseline)	62.9%	$7.24 billion	$19.53 billion
6.6%	57.3%	$9.14 billion	$21.43 billion
5.6%	51.9%	$11.40 billion	$23.68 billion
4.6%	46.6%	$14.07 billion	$26.35 billion

Note: Both baseline and alternative unfunded liability figures should be considered approximate guides to unfunded liability projections under various discount rates. Any policy changes should be based on more precise actuarial liability forecasts using detailed plan data. Alternative unfunded liability is based on reported liability sensitivity from the FYE 2019 LASERS CAFR.

Source: Pension Integrity Project analysis of LASERS actuarial valuation reports and projections using actuarial modeling; figures are rounded

Comparing Change in Discount Rate to the Change in the Risk Free Rate, 2000-2019



The "Alternative Discount Rate Scenario" imagines that LASERS linked the discount rate to changes in the 30-year Treasury yield, starting in the year 2000.

This link would have served to adjust the LASERS discount rate based on changes in one measure of a so-called "risk free" rate of return.

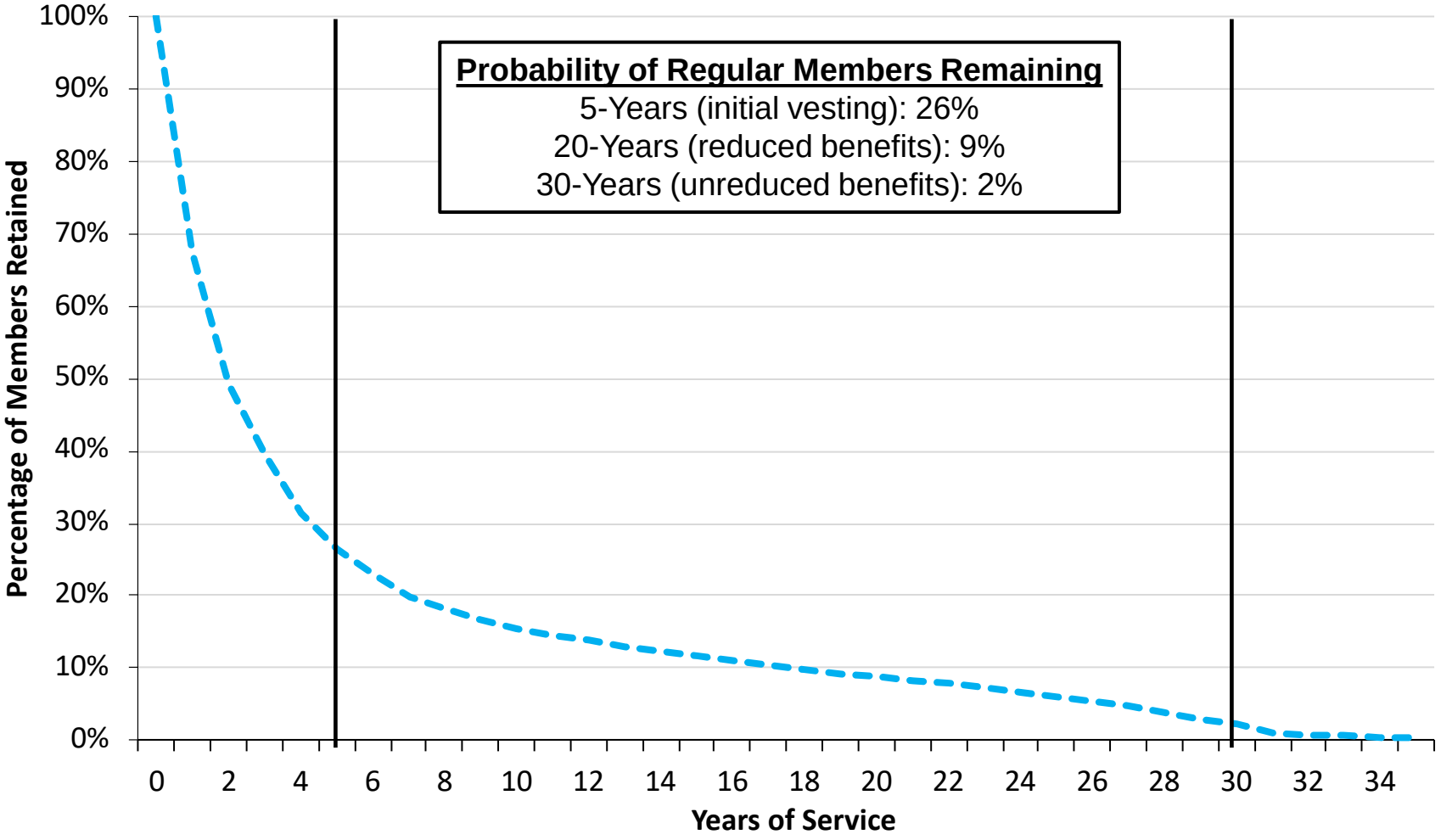
Such a link would have meant a consistent 231 basis point spread between the LASERS discount rate and the Treasury yield. As the risk free rate rose and fell, so too would the LASERS discount rate.

Source: Pension Integrity Project analysis of LASERS actuarial reports and Treasury yield data from the Federal Reserve

CHALLENGE 5: THE EXISTING BENEFIT DESIGN DOES NOT WORK FOR EVERYONE

- The turnover rate for LASERS members suggests that the current retirement benefit design may not encourage the most effective retention rates.

Probability of Regular Employees Remaining in LASERS



Source: Pension Integrity Project analysis of LASERS actuarial reports and CAFRs. Retention probabilities are shown for Regular Members only.

Does LASERS Retirement Plan Work for All Employees?

- **74%** of new members leave before 5 years (vesting).
- Only **9%** of all members hired next year will still be working after 20 years, long enough to qualify for a reduced benefit.
- **2%** of all members hired on or after 2015 will still be working after 30 years, long enough to qualify for full benefits.

Source: Pension Integrity Project analysis of LASERS turnover, withdrawal, and retirement assumptions. Estimated percentages are based on the expectations used by the plan actuaries; if actual experience is deviates substantially from the assumptions then these forecasts would need to be adjusted accordingly.

FRAMEWORK FOR SOLUTIONS & REFORM

Objectives of Good Reform

- **Keeping Promises:** Ensure the ability to pay 100% of the benefits earned and accrued by active workers and retirees
- **Retirement Security:** Provide retirement security for all current and future employees
- **Predictability:** Stabilize contribution rates for the long-term
- **Risk Reduction:** Reduce pension system exposure to financial risk and market volatility
- **Affordability:** Reduce long-term costs for employers/taxpayers and employees
- **Attractive Benefits:** Ensure the ability to recruit 21st Century employees
- **Good Governance:** Adopt best practices for board organization, investment management, and financial reporting

Practical Policy Framework

1. Adopt better funding policy, risk assessment, and actuarial assumptions
   - Lower the assumed rate of return to align with independent actuarial recommendations.
   - These changes should aim at minimizing risk and contribution rate volatility for employers and employees
2. Establish a plan to pay off the unfunded liability as quickly as possible.
   - The Society of Actuaries Blue Ribbon Panel recommends amortization schedules be no longer than 15 to 20 years
   - Reducing the amortization schedule would save the state billions in interest payments.
3. Review current plan options to improve retirement security
   - Consider offering additional retirement options that create a pathway to lifetime income for employees that do not stay in public service.

Questions?

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