TEACHERS' RETIREMENT SYSTEM OF LOUISIANA (TRSL) PENSION SOLVENCY ANALYSIS

Prepared by:

Pension Integrity Project at Reason Foundation

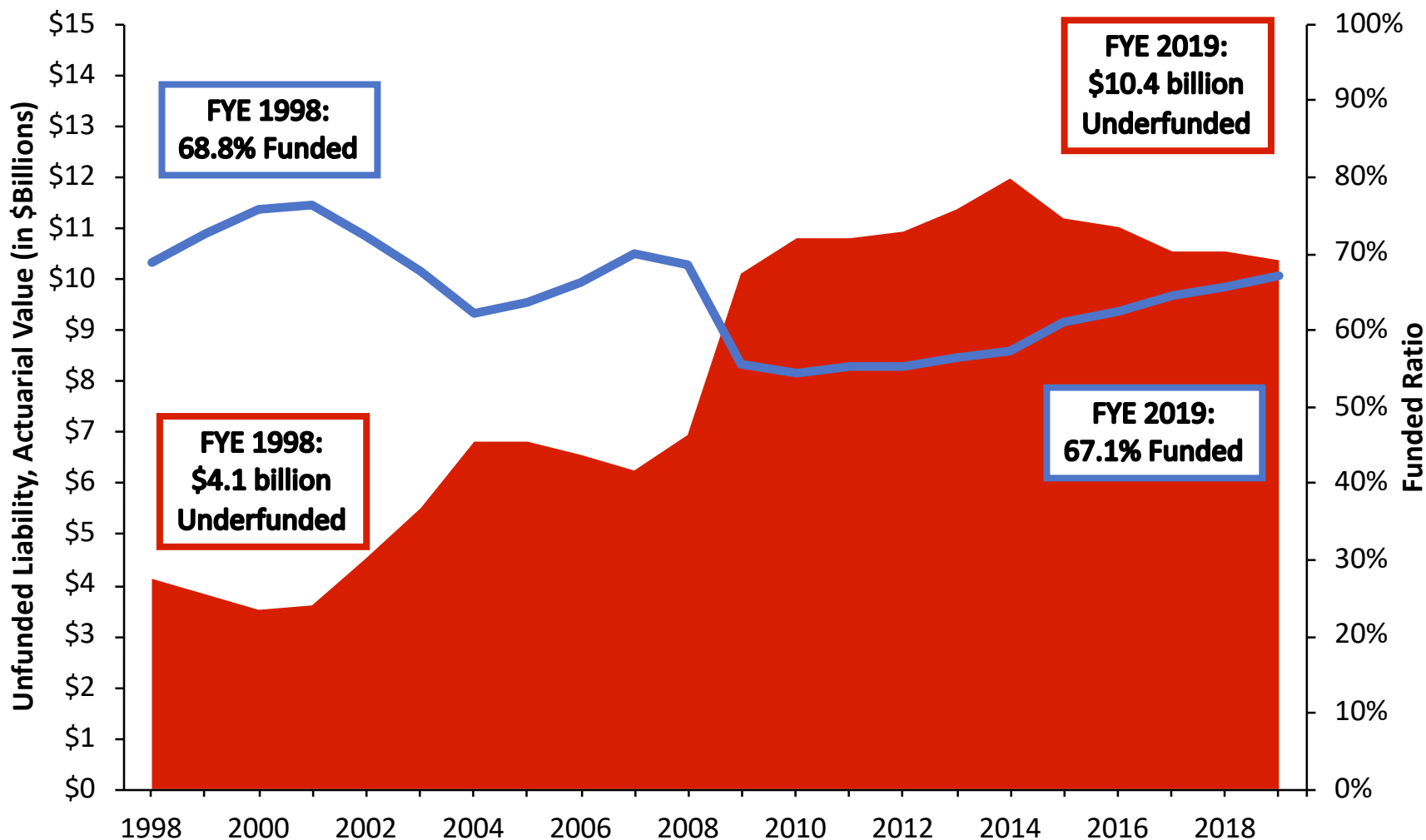**November 9, 2020**

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 (1998-2019)

FYE 1998:
68.8% Funded

FYE 2019:
$10.4 billion
Underfunded

FYE 1998:
$4.1 billion
Underfunded

FYE 2019:
67.1% Funded

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

TRSL Liabilities are Growing Faster than Assets
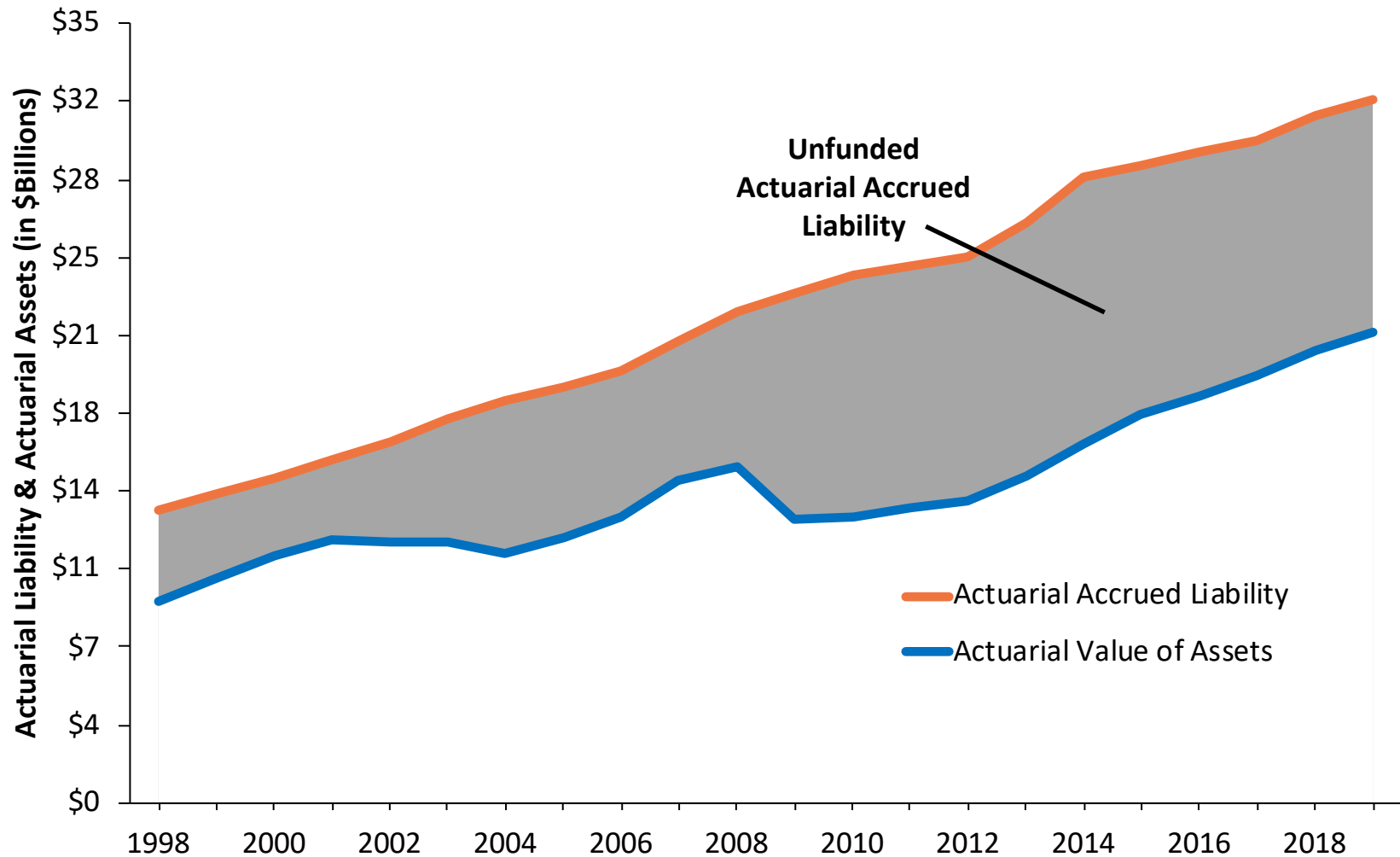
Source: Pension Integrity Project analysis of TRSL actuarial valuation reports and CAFR.

TRSL Unfunded Liabilities are Growing Faster than the Louisiana Economy

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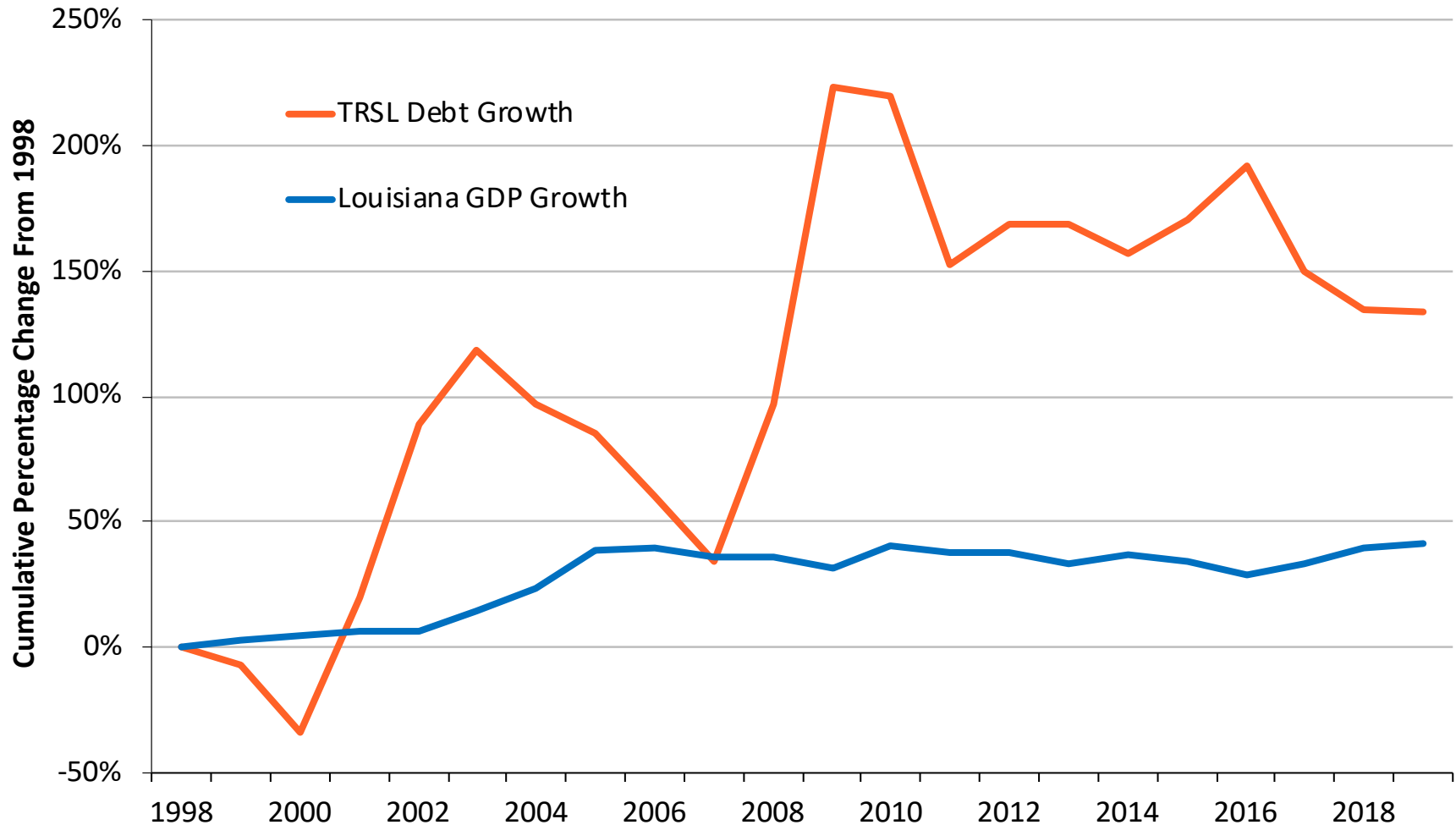
Makeup of TRSL Contributions

	FY2019 Contributions	
	% of Payroll	$ Value
Total Employee	8.0%	$328,587,112
Employer (Normal Cost)	3.18%	$147,209,555
Employer (Debt Amortization)	22.22%	$1,022,868,659
Total Employer	25.4%	$1,170,078,214
Total TRSL Contributions	33.4%	$1,498,665,326

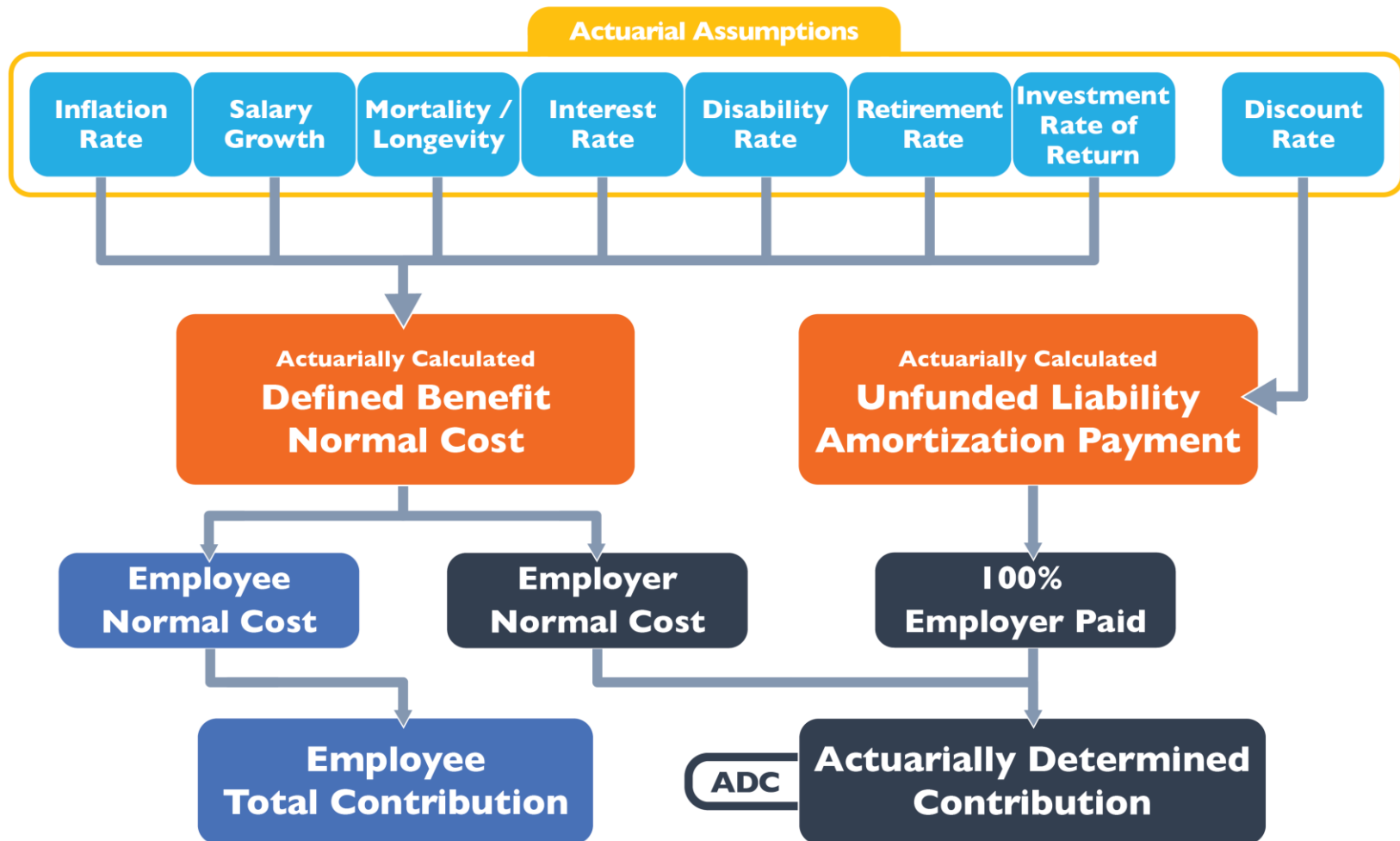Plan actuaries determine TRSL contribution rates annually based on the previous year's experience.

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

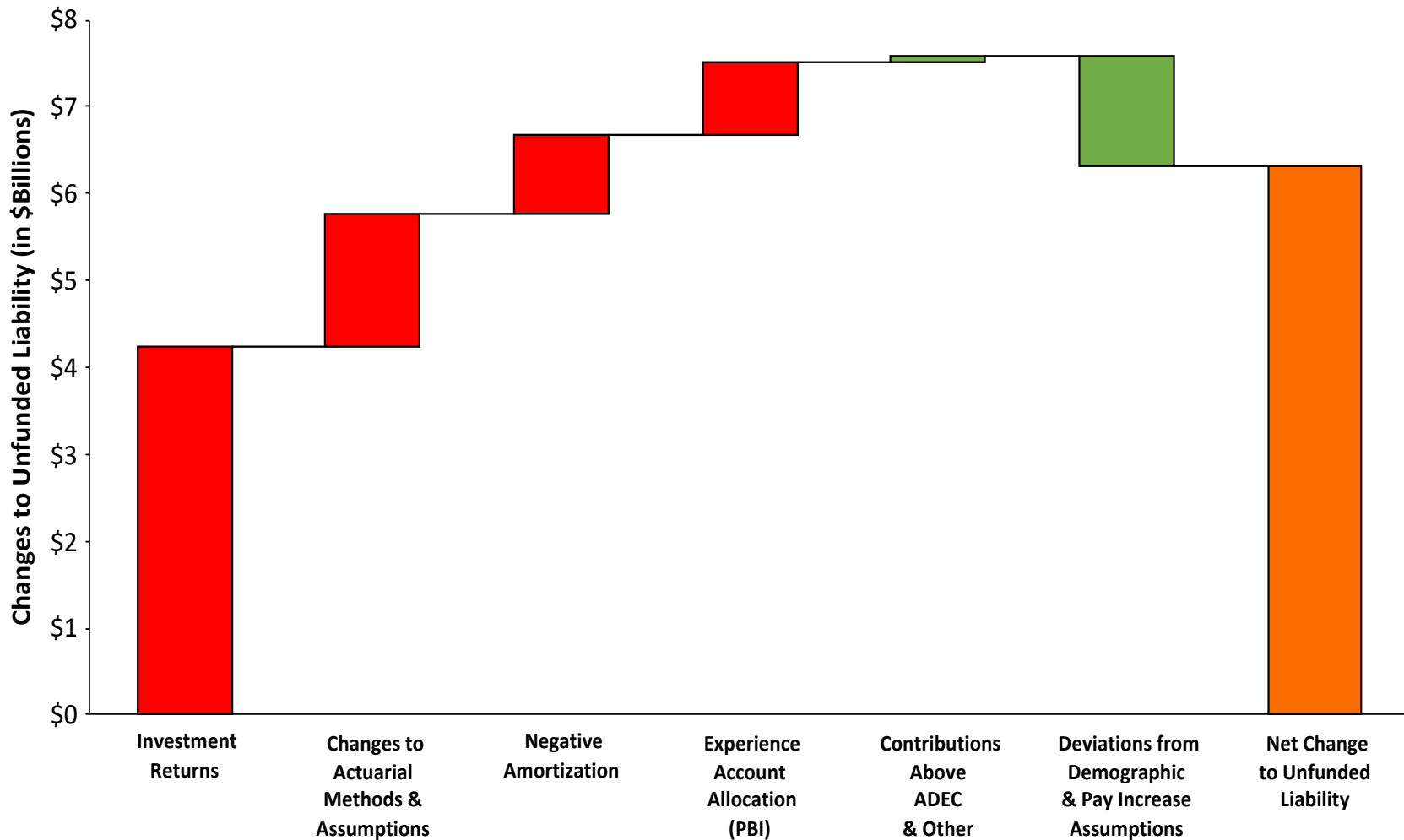# CHALLENGES CONTINUING TO FACE TRSL

How a Pension Plan is Funded

The Causes of the Pension Debt
Actuarial Experience of TRSL, 2000-2019

Source: Pension Integrity Project analysis of TRSL valuation reports and CAFRs. Data represents cumulative unfunded liability by gain/loss category. Negative Amortization reflects contributions below accrued debt interest. "Other" is described as those gains or losses not explicitly categorized.

Driving Factors of TRSL Challenges

1. **Deviations from Investment Return Assumptions** have been the largest contributor to the TRSL unfunded liability, adding $4.2 billion since 2000.

2. **Changes to Actuarial Methods and Assumptions** have exposed roughly $1.5 billion in hidden and unfunded liabilities since 2000.

3. **Extended Amortization Timetables** have resulted in accrued interest exceeding actual debt payments (aka negative amortization) over the last two decades and a net $904 million increase in the unfunded liability.

4. **Experience Account Allocations** redirect 50% of positive investment returns to fund ad hoc permanent benefit increases instead of increasing future earnings and have added roughly $833 million to the unfunded liability since 2000.

5. **Undervaluing Debt** through discounting methods has led to the tacit undercalculation of required contributions.
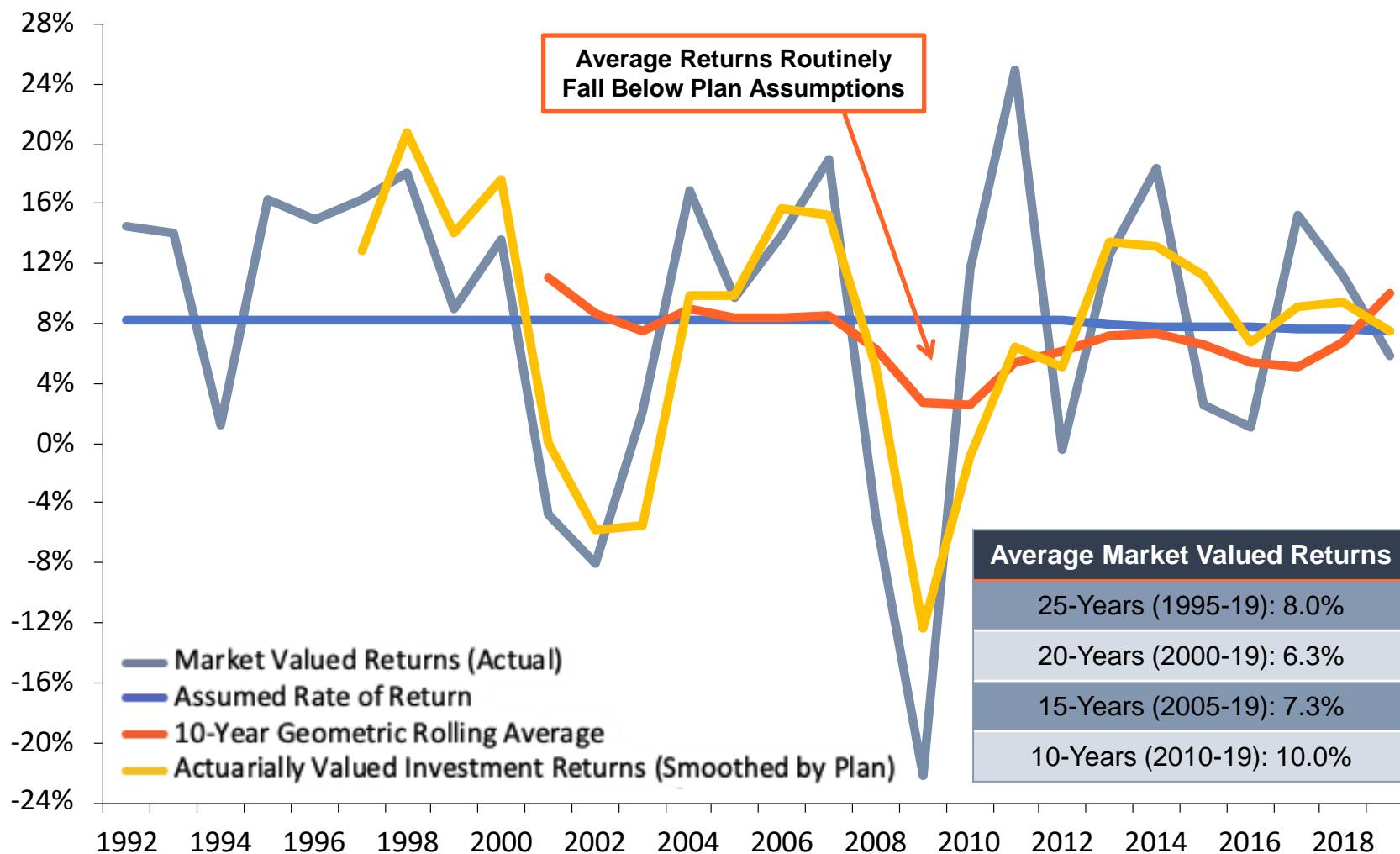
CHALLENGE 1:
ASSUMED RATE OF RETURN

- **Unrealistic Expectations:** The assumed return assumption (ARR) set for TRSL is exposing taxpayers to significant investment underperformance risk.

- **Underpricing Contributions:** Using an overly optimistic investment return assumption leads to underpricing benefits and an undercalculated actuarially determined contribution rate.

TRSL Challenge I: Investment Returns
Investment Return History, 1992-2019

Average Returns Routinely Fall Below Plan Assumptions

Average Market Valued Returns		
25-Years (1995-19): 8.0%		
20-Years (2000-19): 6.3%		
15-Years (2005-19): 7.3%		
10-Years (2010-19): 10.0%		

Legend:
- Market Valued Returns (Actual)
- Assumed Rate of Return
- 10-Year Geometric Rolling Average
- Actuarially Valued Investment Returns (Smoothed by Plan)

Source: Pension Integrity Project analysis of TRSL actuarial valuation reports and CAFRs. Rate of return assumptions prior to FYE1996 are kept at 8.25%.

TRSL Challenge I: Investment Returns
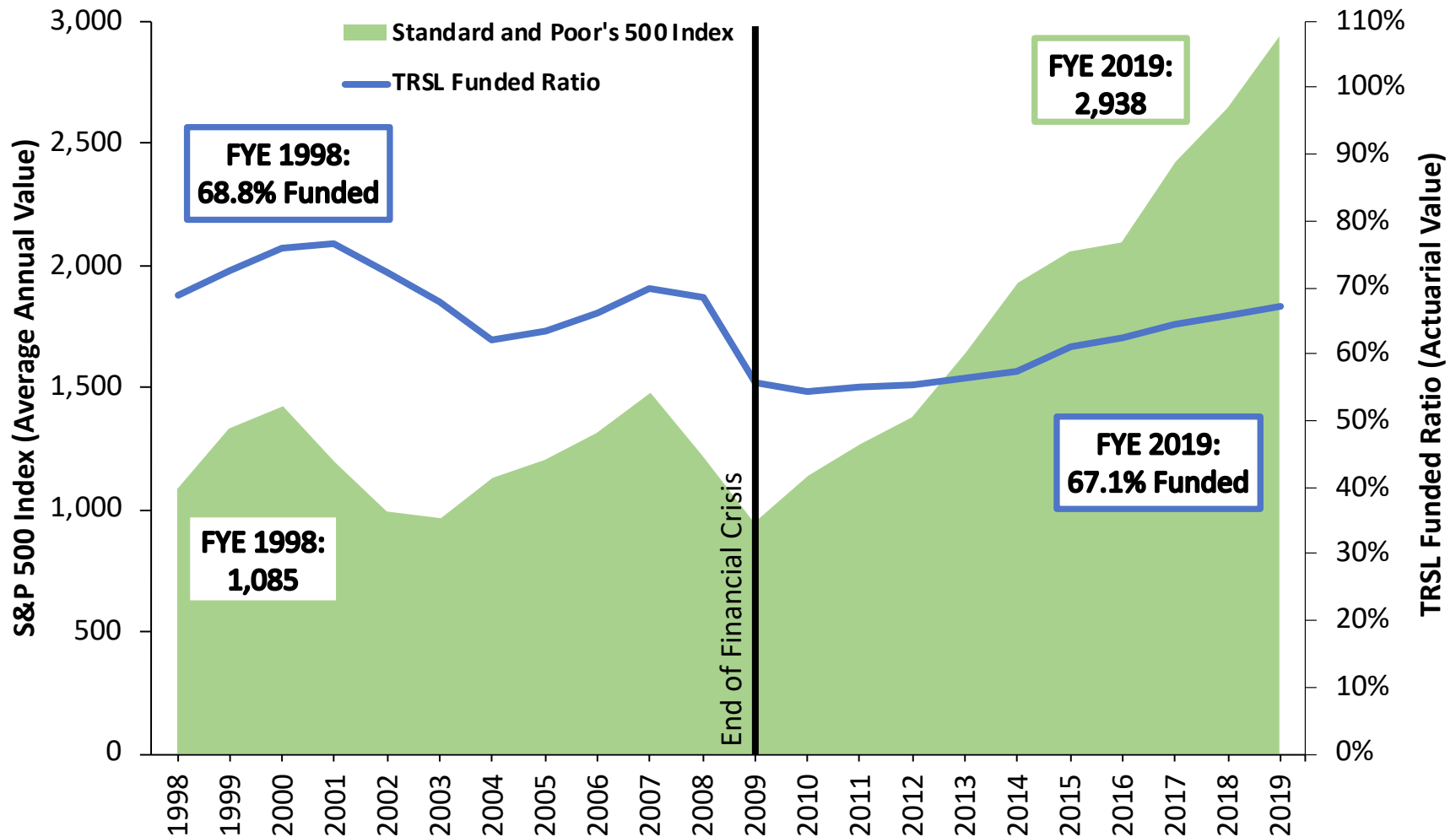
Investment Returns vs. Assumptions

- TRSL actuaries have historically used an 8.25% assumed rate of return to calculate member and employer contributions, slowly lowering the rate to 7.55% over the past two decades in response to significant market changes.

- Based on the research conducted by the Louisiana Legislative Auditor's (LLA) actuary, among many independent national experts in forecasting inflation and investment returns, the LLA's actuary found that 7.50% is the very upper end of a range of reasonableness around the most appropriate return assumption determined to be 7.00%.

- Average long-term portfolio returns have not matched long-term assumptions during certain periods of time:

Average Market Valued Returns	Average Actuarially Valued Returns
25-Years (1995-2019): 7.96%	25-Years (1995-2019): 7.76%
20-Years (2000-2019): 6.30%	20-Years (2000-2019): 6.54%
15-Years (2005-2019): 7.26%	15-Years (2005-2019): 7.76%
10-Years (2010-2019): 10.03%	10-Years (2010-2019): 8.12%

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 TRSL actuarial valuation reports and CAFRs. Average market valued returns represent geometric means of the actual time-weighted returns. "2018 Actuarial Valuation Report on the Teachers' Retirement System of Louisiana," by Gabriel, Roeder, Smith & Company on behalf of the Louisiana Legislative Auditor, State of Louisiana (2019)

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

Source: Pension Integrity Project analysis of TRSL 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 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 around 8% in the 1990s to consistently less or around 3% today.
   - Globally, interest rates are at ultralow historic levels, while market liquidity continues to be restrained by financial regulations.

2. McKinsey & Co. forecast the returns to equities will be 20% to 50% lower over the next two decades compared to the previous three decades.
   - Using their forecast, the best-case scenario for a 60/40 portfolio of equities and bonds is likely to earn less than a 5% return.

3. As TRSL waits for "recovery" its unfunded liabilities continue to grow.

TRSL Asset Allocation (1999-2019)
Expanding Risk in Search for Yield
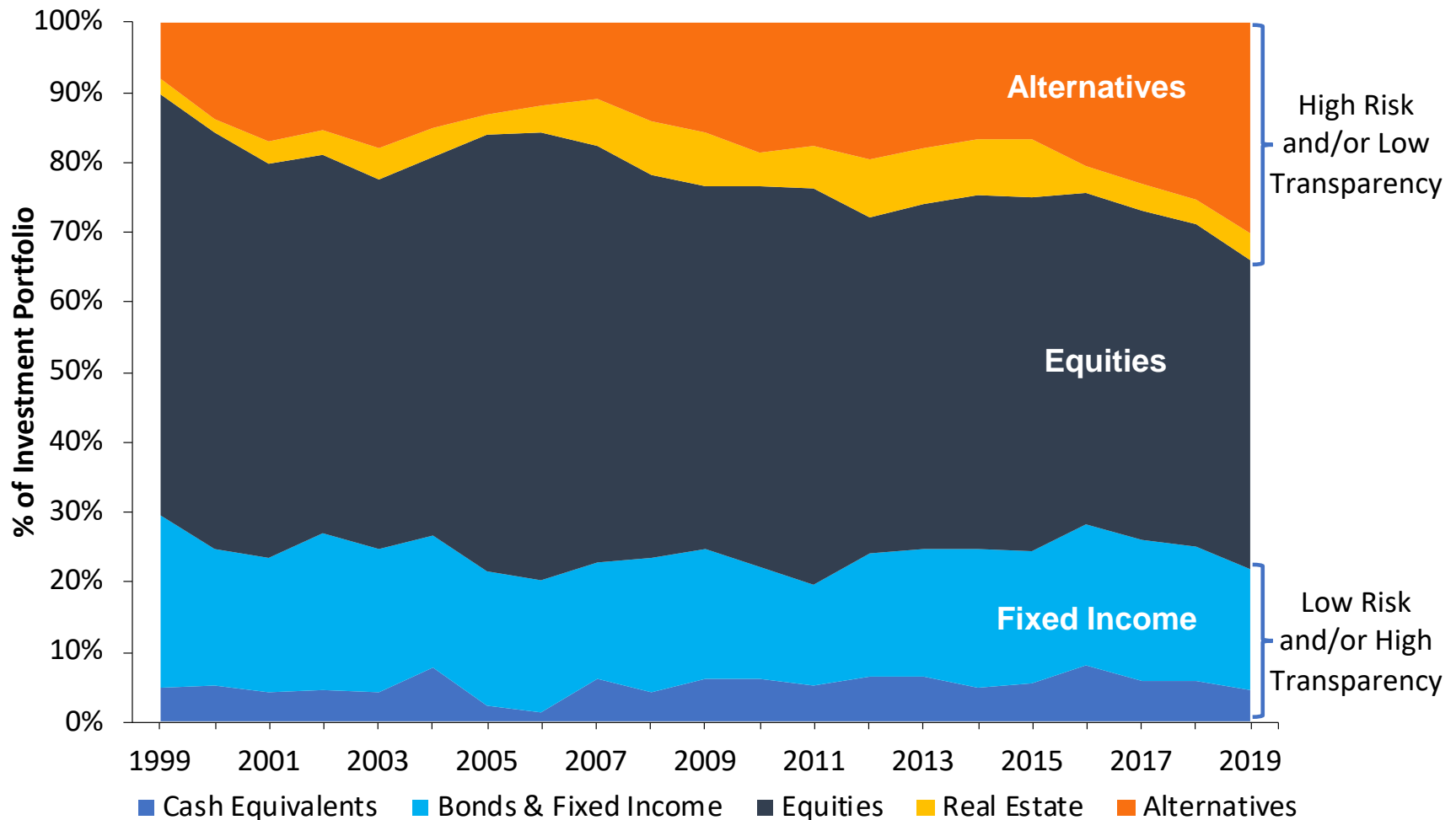
Source: Pension Integrity Project analysis of TRSL actuarial valuation reports and CAFRS.
Cash Equivalents show domestic and international short-term investments, with maturity of one year or less.

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

Possible Rates of Return	Probability of TRSL Achieving A Given Return Based On:							
	TRSL Assumptions & Experience		Short-Term Market Forecast				Long-Term Market Forecast	
	Based on TRSL Assumptions	TRSL Historical Returns	Research Affiliates 10-Year Forecast	BNY Mellon 10-Year Forecast	JP Morgan 10-15 Year Forecast	Horizon 10-Year Market Forecast	BlackRock 20-Year Forecast	Horizon 20-Year Market Forecast
9.0%	29.9%	15.0%	9.3%	14.2%	17.0%	23.1%	33.0%	34.8%
8.0%	42.5%	26.0%	17.0%	25.9%	28.3%	34.6%	45.3%	48.0%
7.5%	49.7%	32.7%	21.9%	32.8%	35.0%	41.5%	51.9%	55.2%
7.0%	56.1%	40.1%	27.5%	40.3%	41.8%	48.1%	58.5%	61.9%
6.5%	63.2%	47.4%	34.1%	48.1%	49.2%	55.3%	64.9%	68.5%
6.0%	69.3%	54.8%	40.7%	56.1%	56.7%	62.2%	71.1%	74.5%
5.0%	80.6%	70.0%	55.2%	71.4%	71.5%	74.3%	81.6%	84.0%

Source: Pension Integrity Project Monte Carlo model based on TRSL 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 TRSL.
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 TRSL Achieving Various Rates of Return

TRSL Assumptions & Experience

- A probability analysis of TRSL historical returns over the past 20 years (2000-2019) indicates only a modest chance (33%) of hitting the plan's 7.5% assumed return.
- TRSL actuaries calculate a 50% chance of achieving their investment return target each year.

Short-Term Market Forecast

- Returns over the short to medium term can have significant negative effects on funding outcomes for mature pension plans with large negative cash flows like TRSL.
- Analysis of capital market assumptions publicly reported by leading financial firms (BlackRock, BNY Mellon, JPMorgan, and Research Affiliates) suggests that over a 10-15 year period, TRSL returns are likely to fall short of assumptions.

Long-Term Market Forecast

- Longer-term projections typically assume TRSL 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 7.5% being likely also show a significant chance that the actual long-term average return will fall far shorter than expected.
  - ✓ For example, according to BlackRock's 20-year forecast the probability of achieving an average return of 7.5% or higher is about 52%, the probability of earning a rate of return below 5% is about 16%.

RISK ASSESSMENT

- How resilient is TRSL to volatile market factors?

Important Funding Concepts

Employer Contribution Rates

- TRSL receives Actuarially Determined Employer Contributions (ADEC) based on the annual required amount consulting actuaries determine is needed each year to avoid growth in pension debt and to keep TRSL solvent.

All-in Employer Cost

- The true cost of most U.S. public pensions is not only in the annual contributions, but also in whatever unfunded liabilities remain at the end of a forecast period. 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 reflects current TRSL assumptions using existing contribution and funding policy. The current baseline rate shows the status quo before the 2020 market shock.

Employer & Employee Rates

- The scenarios in this analysis assume that both employee and employer contributions will reflect ADEC requirements and will not fall below statutory minimums. The difference between required and actual dollar amounts would be amortized over 5-year period.

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 TRSL, 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.
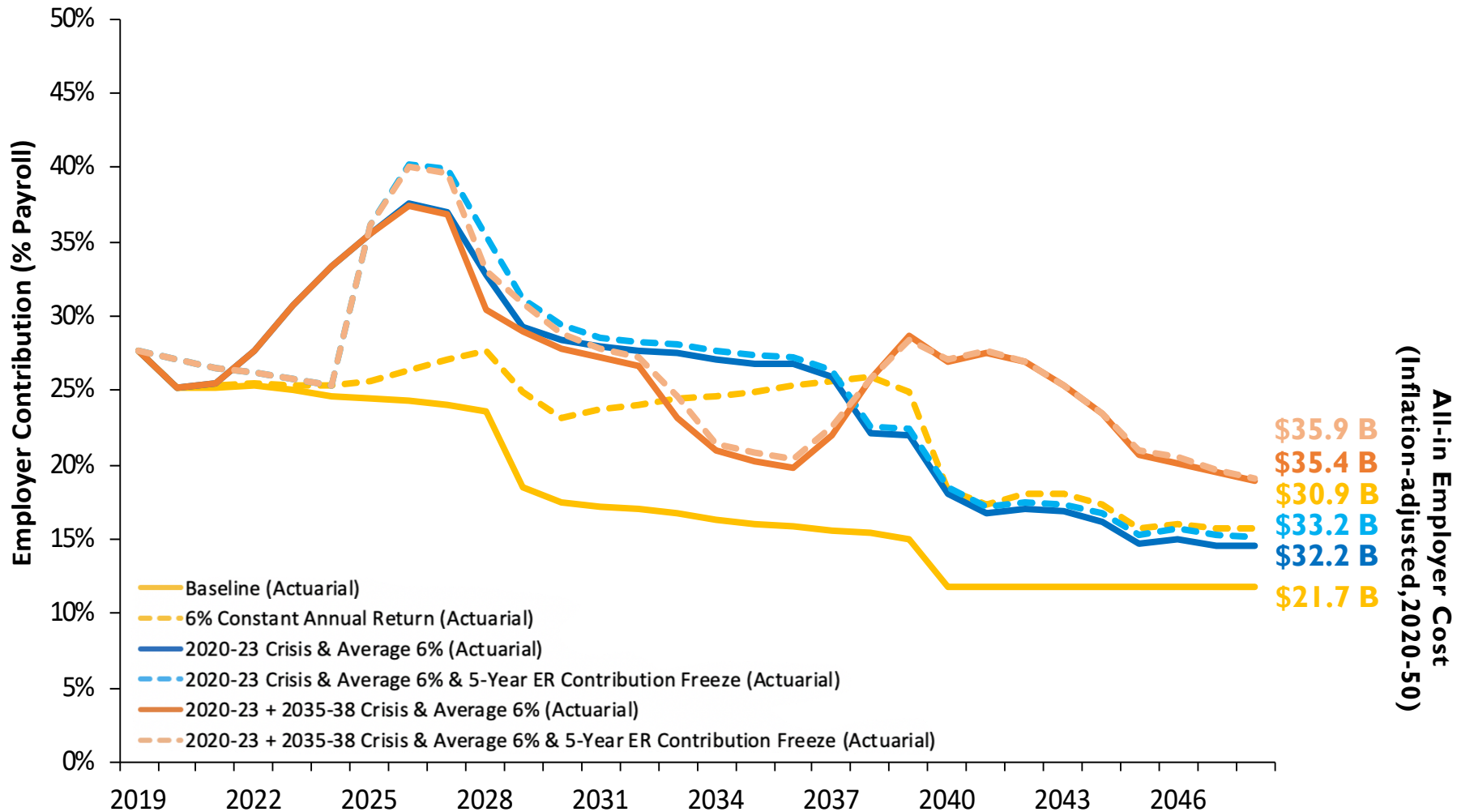
Stress Testing Scenarios:

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

TRSL Stress Testing: All-in Employer Cost Projections
How a Crisis Increases TRSL Costs
Discount Rate: 7.50%, Assumed Return: 7.50%, Actual Return: Varying, Amo. Period: Current

Source: Pension Integrity Project actuarial forecast of TRSL. 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 2019 7.5% discount rate and not the revised 7.45%.

TRSL 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
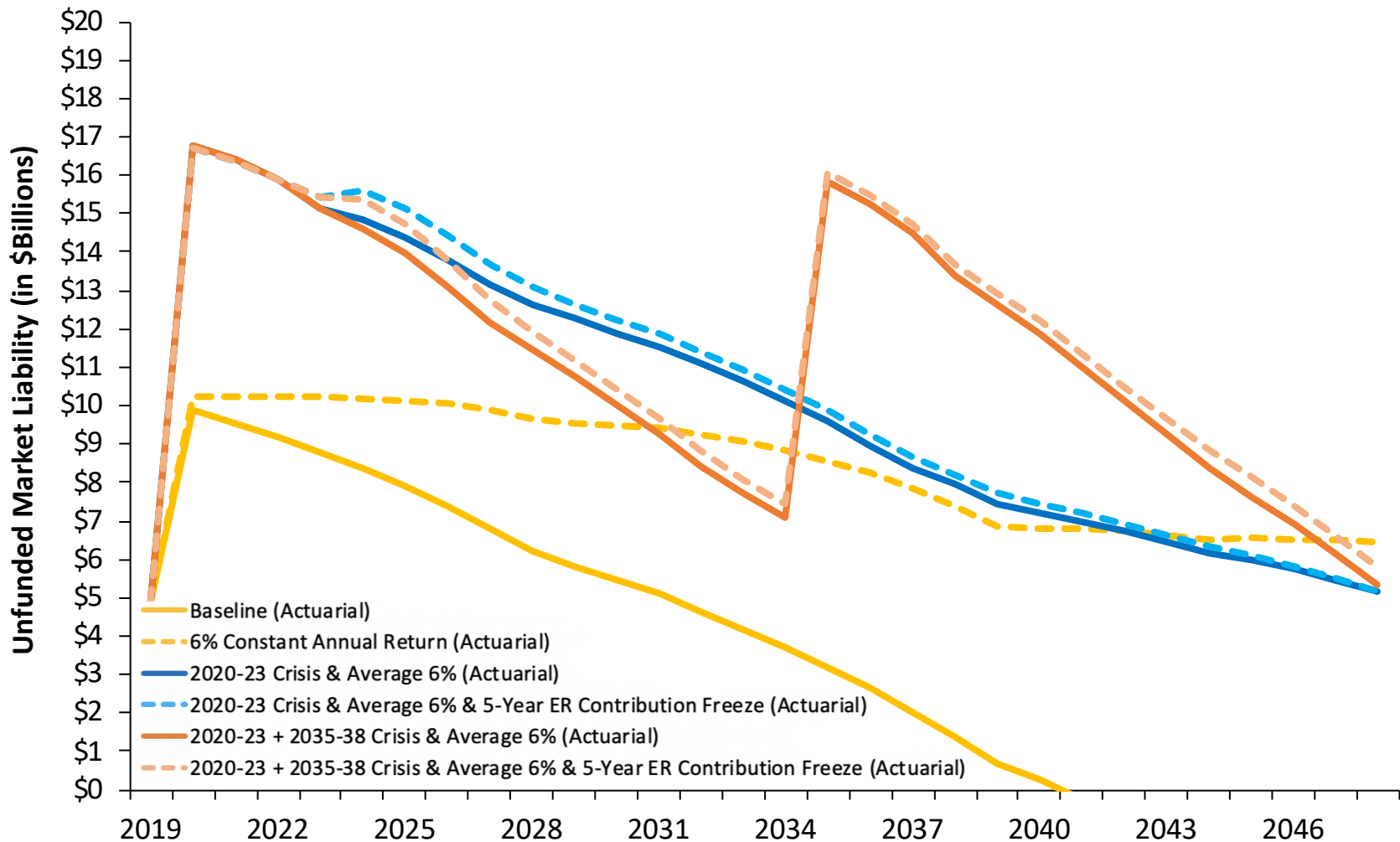

Source: Pension Integrity Project actuarial forecast of TRSL. Values are rounded and adjusted for inflation. State is assumed to make 100% *actuarially* required contributions. The "All-in Cost" includes all employer contributions over the 30-year timeframe, and the ending unfunded liability accrued by the end of the forecast period. Projections are based on the 2019 7.5% discount rate and not the revised 7.45%.

TRSL 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

Legend:
- Baseline (Actuarial)
- 6% Constant Annual Return (Actuarial)
- 2020-23 Crisis & Average 6% (Actuarial)
- 2020-23 Crisis & Average 6% & 5-Year ER Contribution Freeze (Actuarial)
- 2020-23 + 2035-38 Crisis & Average 6% (Actuarial)
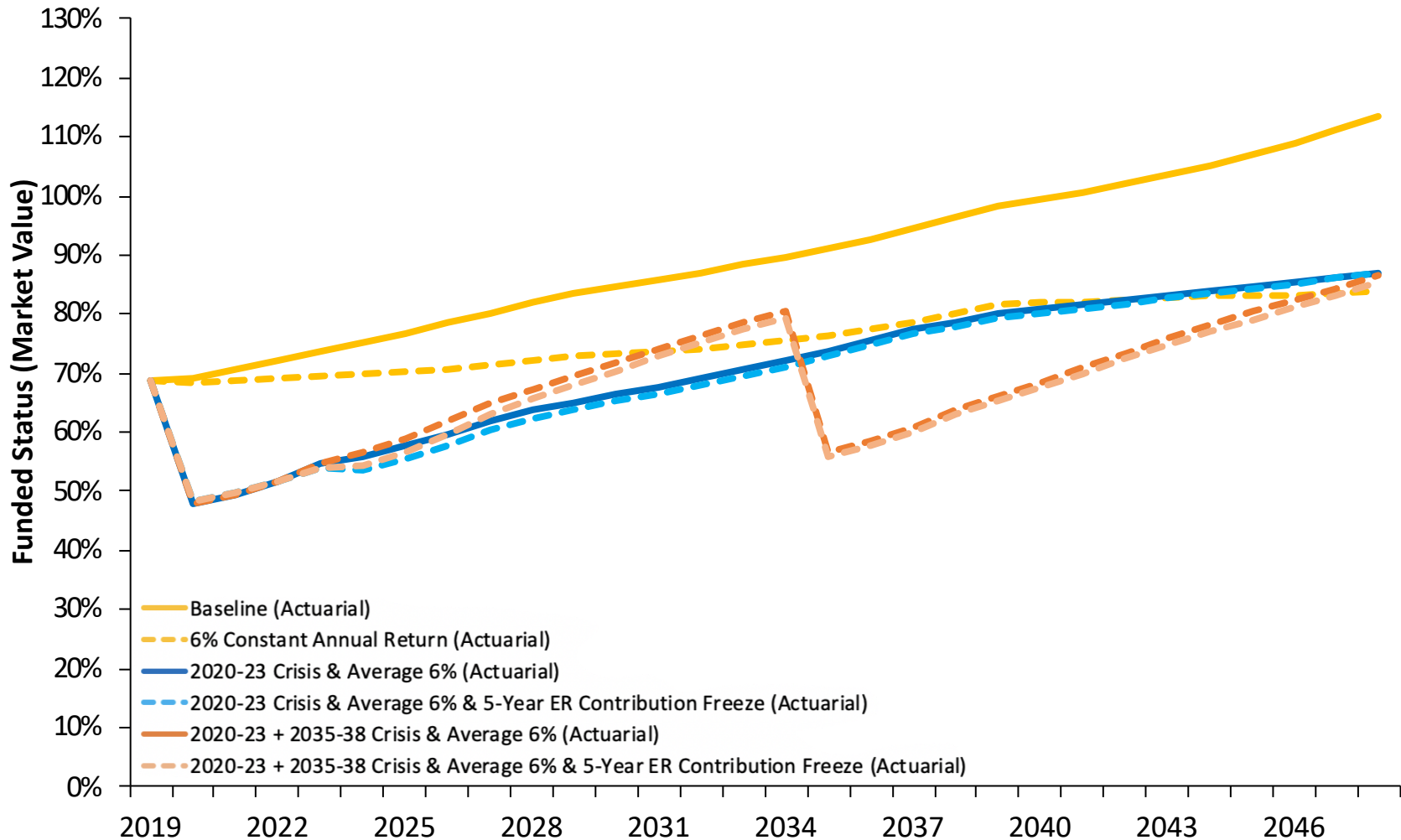- 2020-23 + 2035-38 Crisis & Average 6% & 5-Year ER Contribution Freeze (Actuarial)

Source: Pension Integrity Project actuarial forecast of TRSL. 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 2019 7.5% discount rate and not the revised 7.45%.

TRSL Stress Testing: All-in Employer Cost Projections

How a Crisis Increases TRSL Costs

Discount Rate: 7.50%, Assumed Return: 7.50%, Actual Return: Varying, Amo. Period: Current
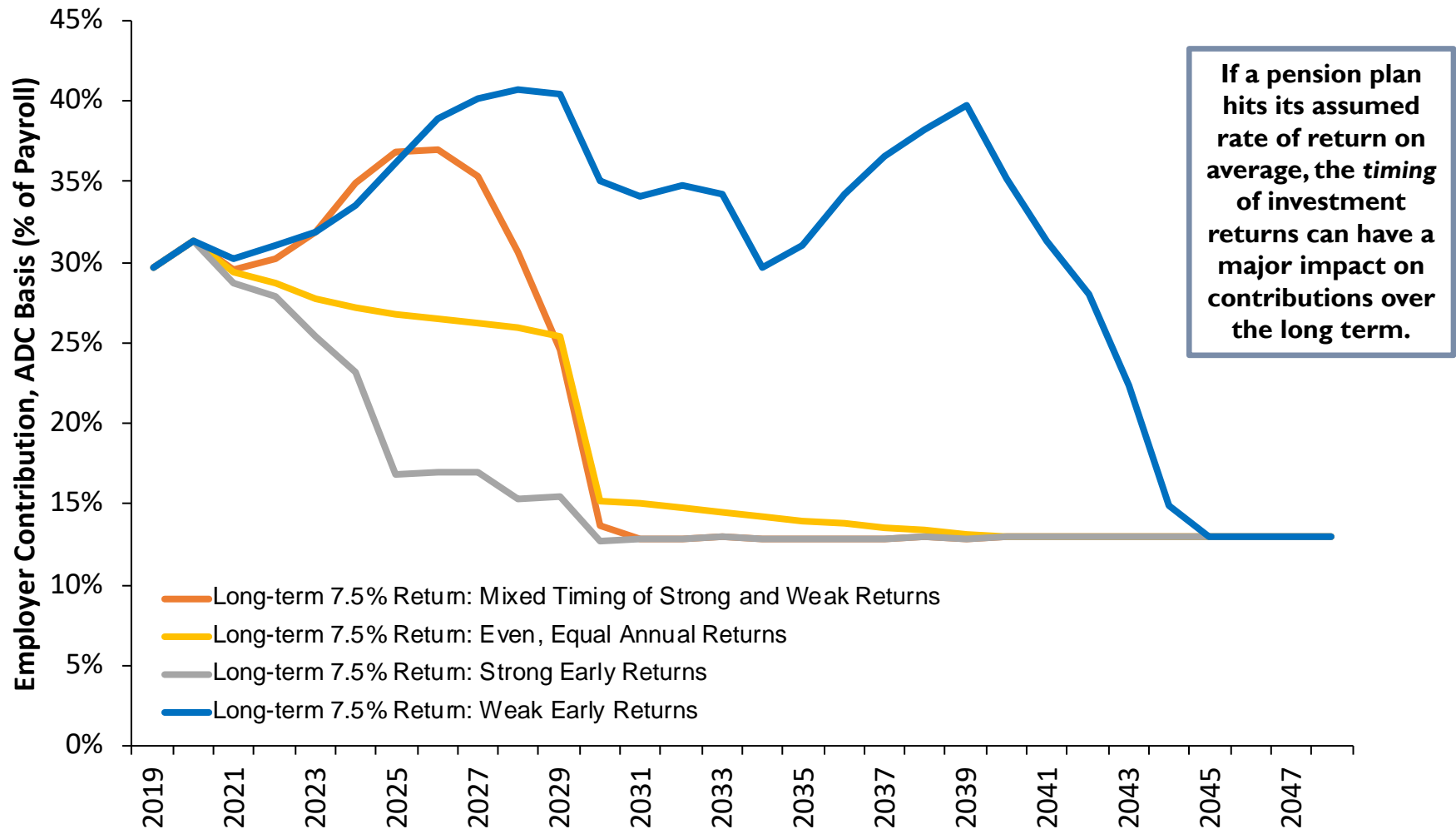
Scenarios	Actuarial Contributions		Total All-in Employer Costs
	30-Year Employer Contributions	2048 Unfunded Liability (Market Value)	
Pre-Crisis Baseline	$21.9 B	-$0.2 B	$21.7 B
6% Constant Annual Return	$27.8 B	$3.1 B	$30.9 B
2020-23 Crisis + Average 6%	$30.6 B	$2.3 B	$32.8 B
Two Crises + Average 6%	$32.1 B	$3.3 B	$35.4 B
2020-23 Crisis + Average 6% + 5-Year Cont. Freeze	$30.9 B	$2.3 B	$33.2 B
Two Crises + Average 6% + 5-Year Cont. Freeze	$32.3 B	$3.6 B	$35.9 B

Source: Pension Integrity Project actuarial forecast of TRSL. 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 2019 7.5% discount rate and not the revised 7.45%.

30-year Employer contribution Forecast

All Paths to a 7.50% Average Return Are Not Equal

Long-Term Average Returns of 7.50%

> 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.

Y-axis: Employer Contribution, ADC Basis (% of Payroll) — 0% to 45%

Legend:
- Long-term 7.5% Return: Mixed Timing of Strong and Weak Returns
- Long-term 7.5% Return: Even, Equal Annual Returns
- Long-term 7.5% Return: Strong Early Returns
- Long-term 7.5% Return: Weak Early Returns

Source: Pension Integrity Project actuarial forecast of TRSL plan. Strong early returns (TWRR = 7.5%, MWRR = 8.92%), Even annual returns (Constant Return = 7.5%), Mixed timing of strong and weak returns (TWRR = 7.5%, MWRR = 7.5%), Weak early returns (TWRR = 7.5%, MWRR = 6.52%). Scenario assumes TRSL pays actuarially required rate each year. Years are TRSL fiscal years.

Forecasting the Impact of Market Volatility

Random Variable Analysis

What is it?	**Why use it?**

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
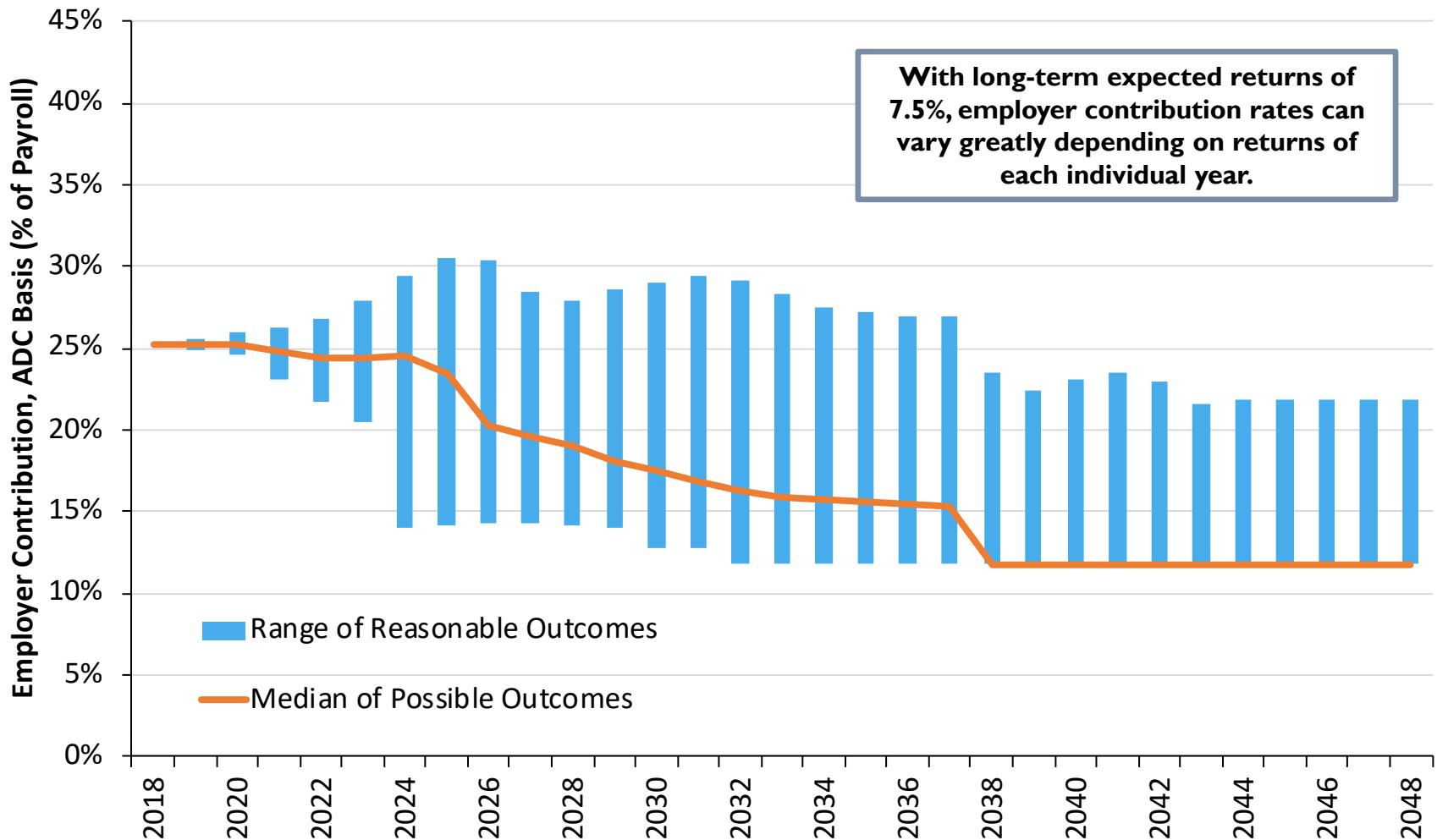Based on Long-term Average Returns of 7.5%
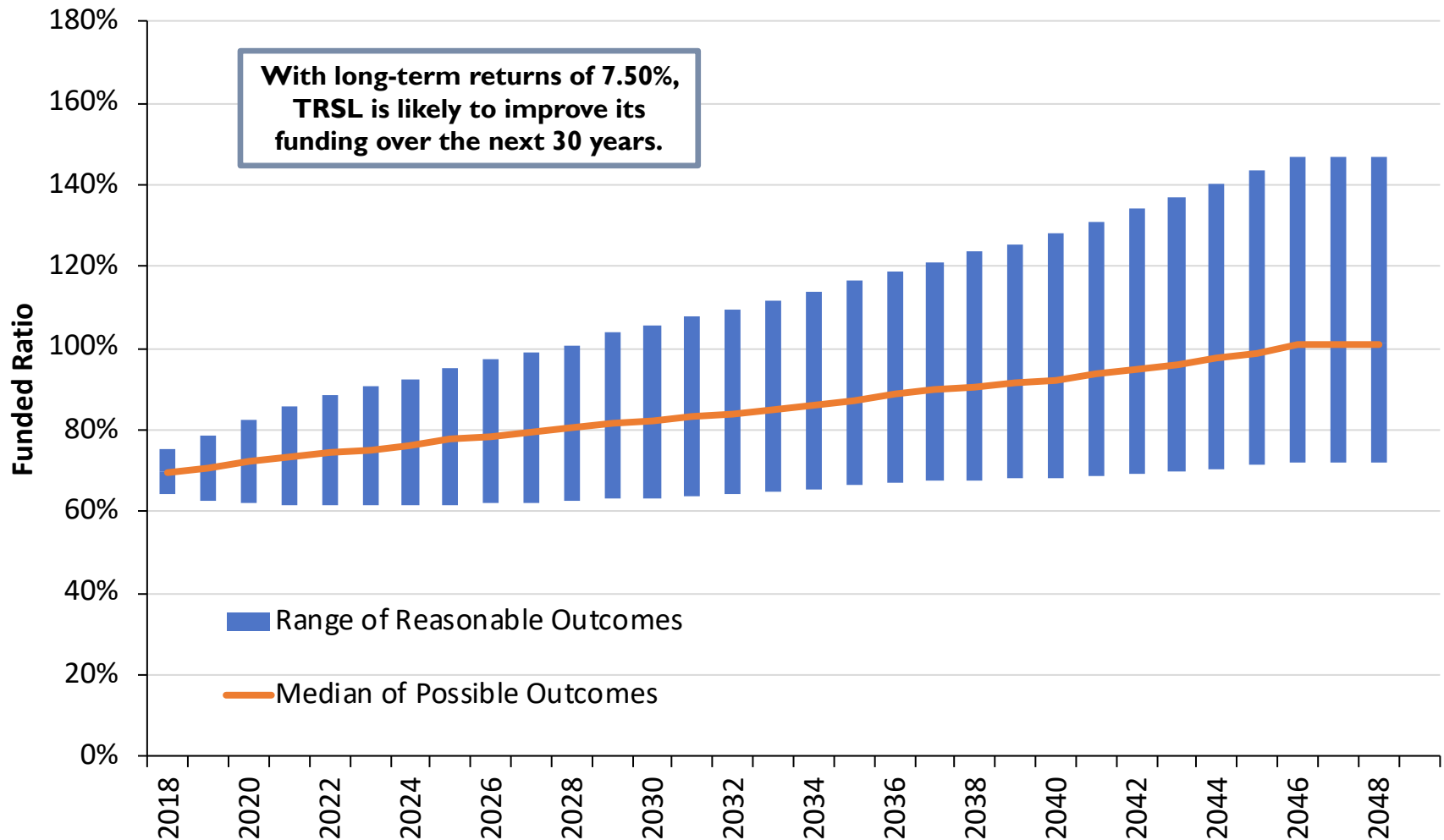
Source: Pension Integrity Project actuarial forecast of TRSL plan based on TRSL return and risk assumptions.
Range of Reasonable Outcomes represents the 50% of possible outcomes closest to the median.

30-year Employer Contribution Forecast
If TRSL Performs as Expected, Rates Can Still Vary

Based on Long-term Average Returns of 7.5%

> **With long-term expected returns of 7.5%, employer contribution rates can vary greatly depending on returns of each individual year.**

Employer Contribution, ADC Basis (% of Payroll)

Range of Reasonable Outcomes
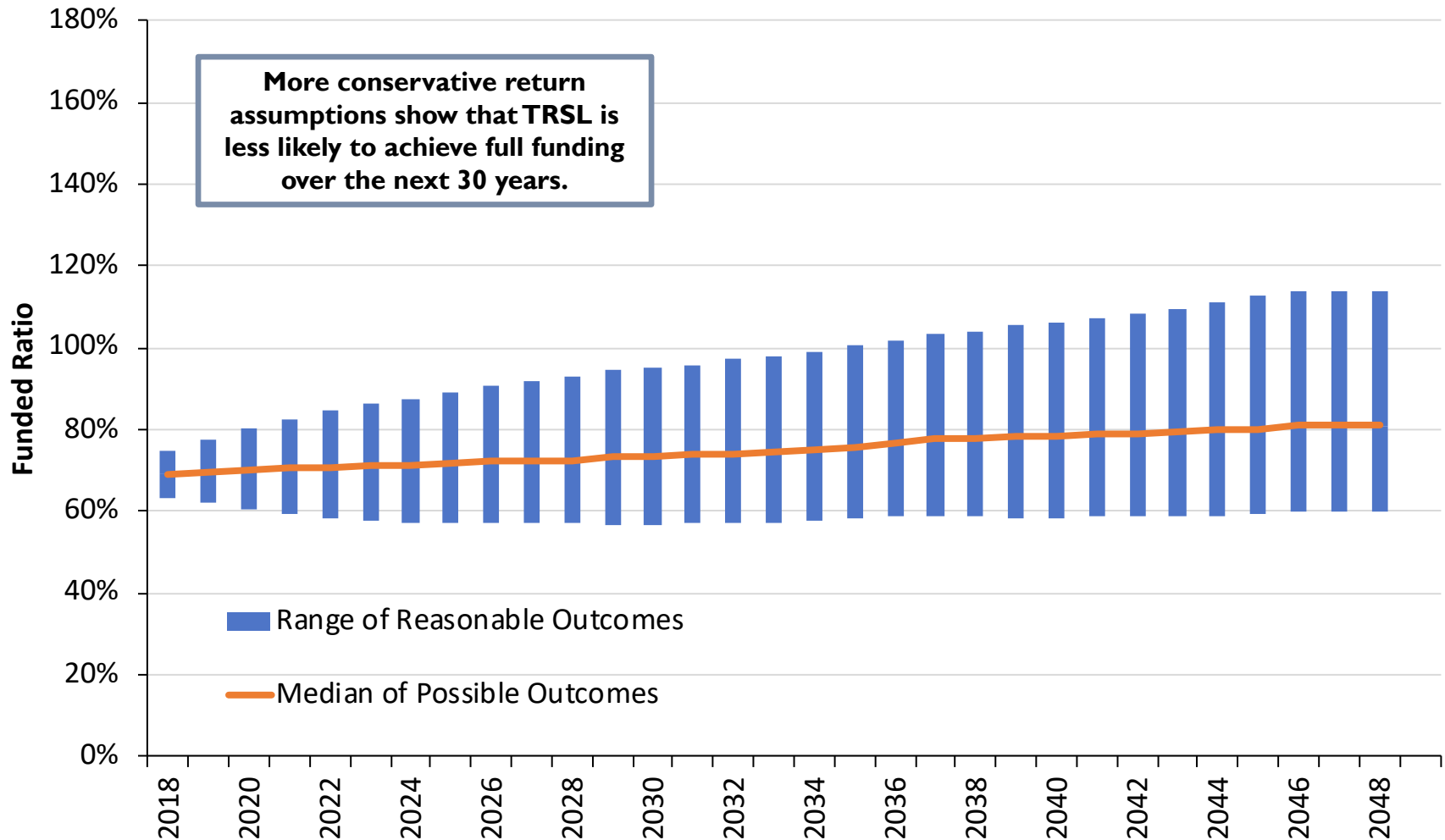
Median of Possible Outcomes

Source: Pension Integrity Project actuarial forecast of TRSL plan based on TRSL return and risk assumptions.
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

> **More conservative return assumptions show that TRSL is less likely to achieve full funding over the next 30 years.**

Funded Ratio

- Range of Reasonable Outcomes
- Median of Possible Outcomes

Source: Pension Integrity Project actuarial forecast of TRSL plan using the return and risk assumptions of the Monte Carlo analysis. Conservative returns are 7.12%, which are the result of combining the long-term capital market assumptions from four prominent financial firms

Sensitivity of Normal Cost Under Alternative Assumed Rates of Return

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

Assumed Return	Gross Normal Cost	Employer Normal Cost	Employee Normal Cost
7.55% (FYE 2019 Baseline)	11.18%	3.18%	8%
6.55%	11.83%	3.83%	8%
5.55%	12.64%	4.64%	8%
4.55%	13.66%	5.66%	8%

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.

Source: Pension Integrity Project forecasting analysis based on TRSL actuarial valuation reports.
Normal Cost represents a weighted aggregate for 4 sub-plans. Aggregate NC is determined for all plans: Regular Teachers, Lunch A & B, and Higher Education combined.

CHALLENGE 2: 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 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

(-) Outdated Actuarial Assumptions and Methods

- TRSL's unfunded liability has increased by $1.55 billion between 2000-2019 due to needed updates to actuarial assumptions, such as lowering the assumed rate of return, and actuarial methods.

(-) Experience Account (Permanent Benefit Increases)

- TRSL's unfunded liability has increased by $832 billion between 2000-2019 because assumptions pertaining to allocations to and withdrawals from the Experience Account meant to fund PBIs (i.e. COLAs) deviated with what TRSL actually experience over the last two decades.

Challenges from Aggressive Actuarial Assumptions
Actual Experience Different from Actuarial Assumptions

(+) Withdrawal Rate, Service Retirement, and Salary Increase Assumptions

1. TRSL's unfunded liability has decreased by $1.25 billion between 2000-2019 due to misaligned demographic and salary increase assumptions.

2. 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.

   - TRSL members have been retiring later than expected, receiving fewer pension checks.

   - TRSL 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.

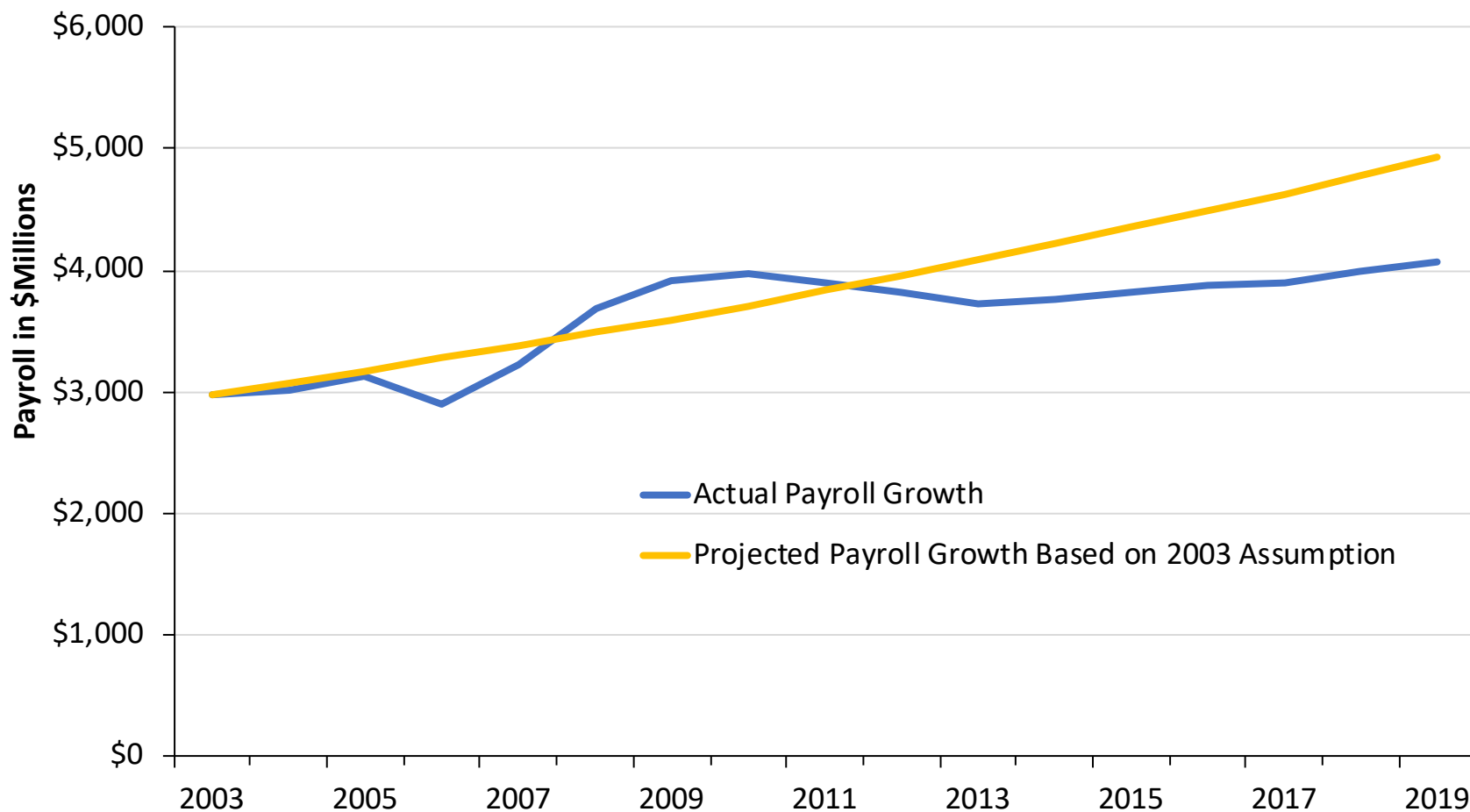## Challenges from Aggressive Actuarial Assumptions
Actual Experience Different from Actuarial Assumptions

(-) Overestimated Payroll Growth

1. Overestimating payroll growth may create a long-term Challenge for TRSL in combination with the level-percentage of payroll amortization method used by the plan.

2. This method *backloads pension debt payments* by assuming that future payrolls will be larger than today (a reasonable assumption).

3. 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.
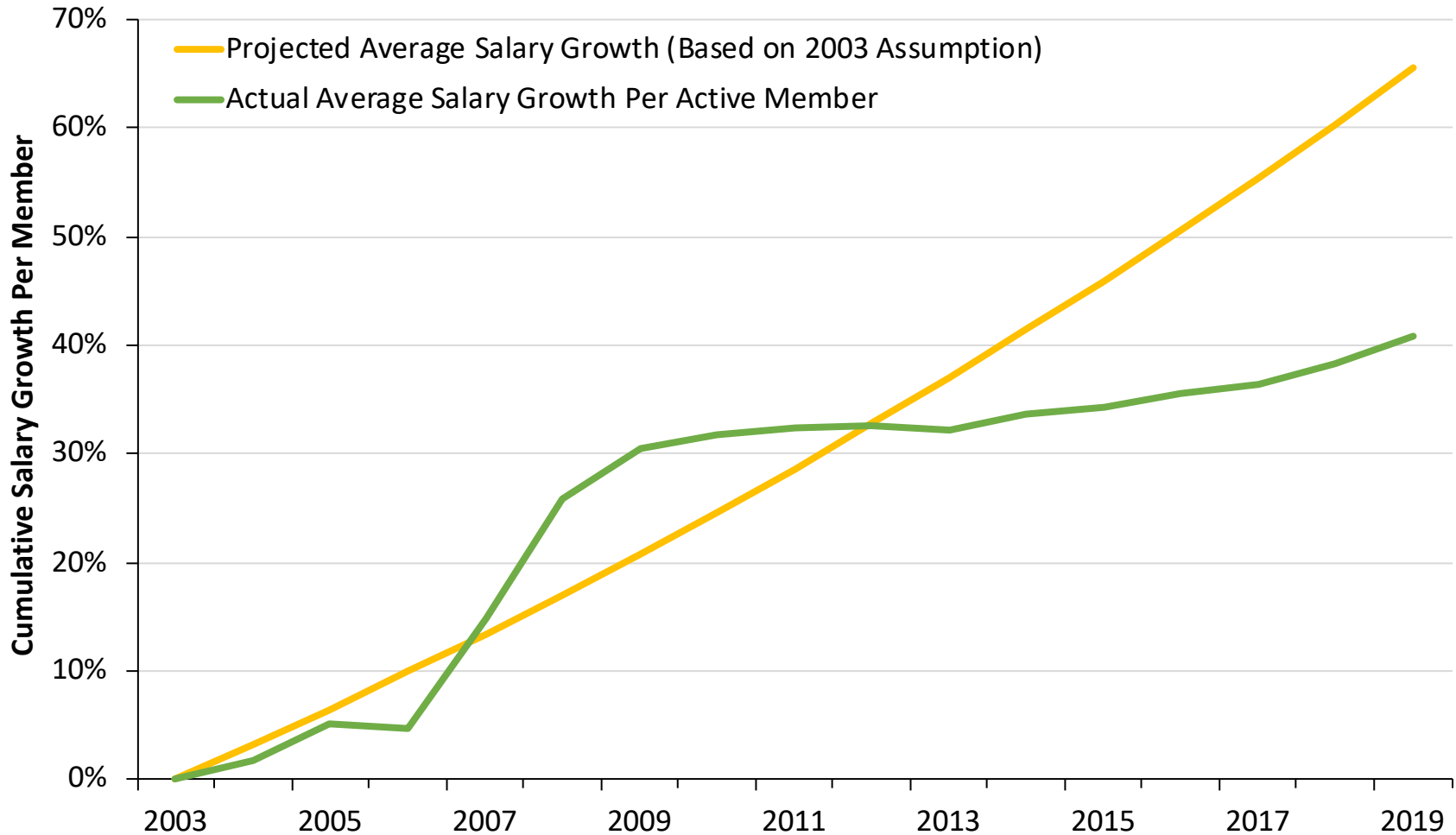
Challenges from Aggressive Actuarial Assumptions, Actual Change in Payroll v. Assumption

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

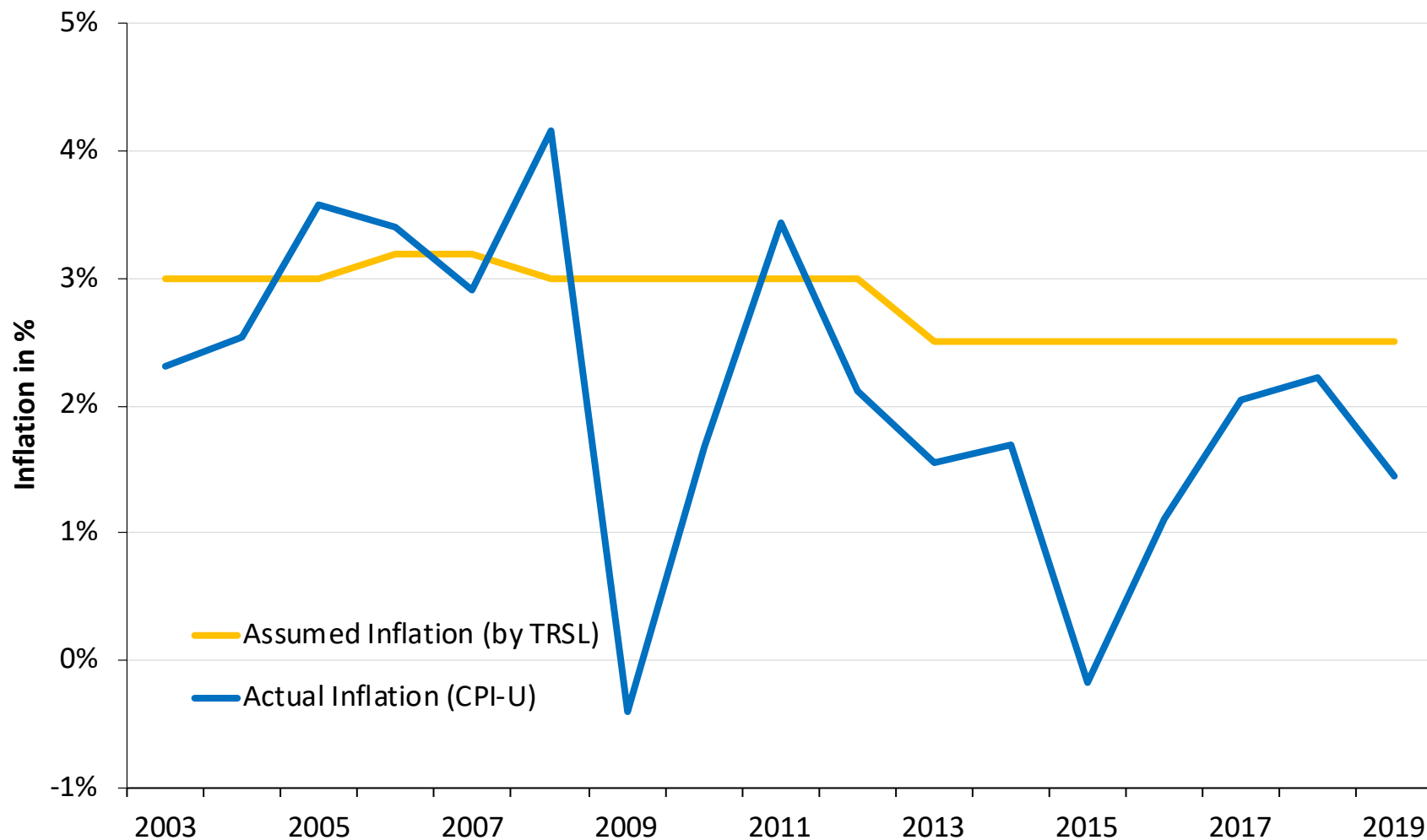# Challenges from Aggressive Actuarial Assumptions
Actual Change in Average Salary v. Assumption

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

Challenges from Aggressive Actuarial Assumptions
Actual Inflation vs. Assumption

Source: Pension Integrity Project analysis TRSL actuarial valuation reports and CPI-U data from the Bureau of Labor Statistics.

Assumption Changes Expose Hidden Unfunded Liabilities
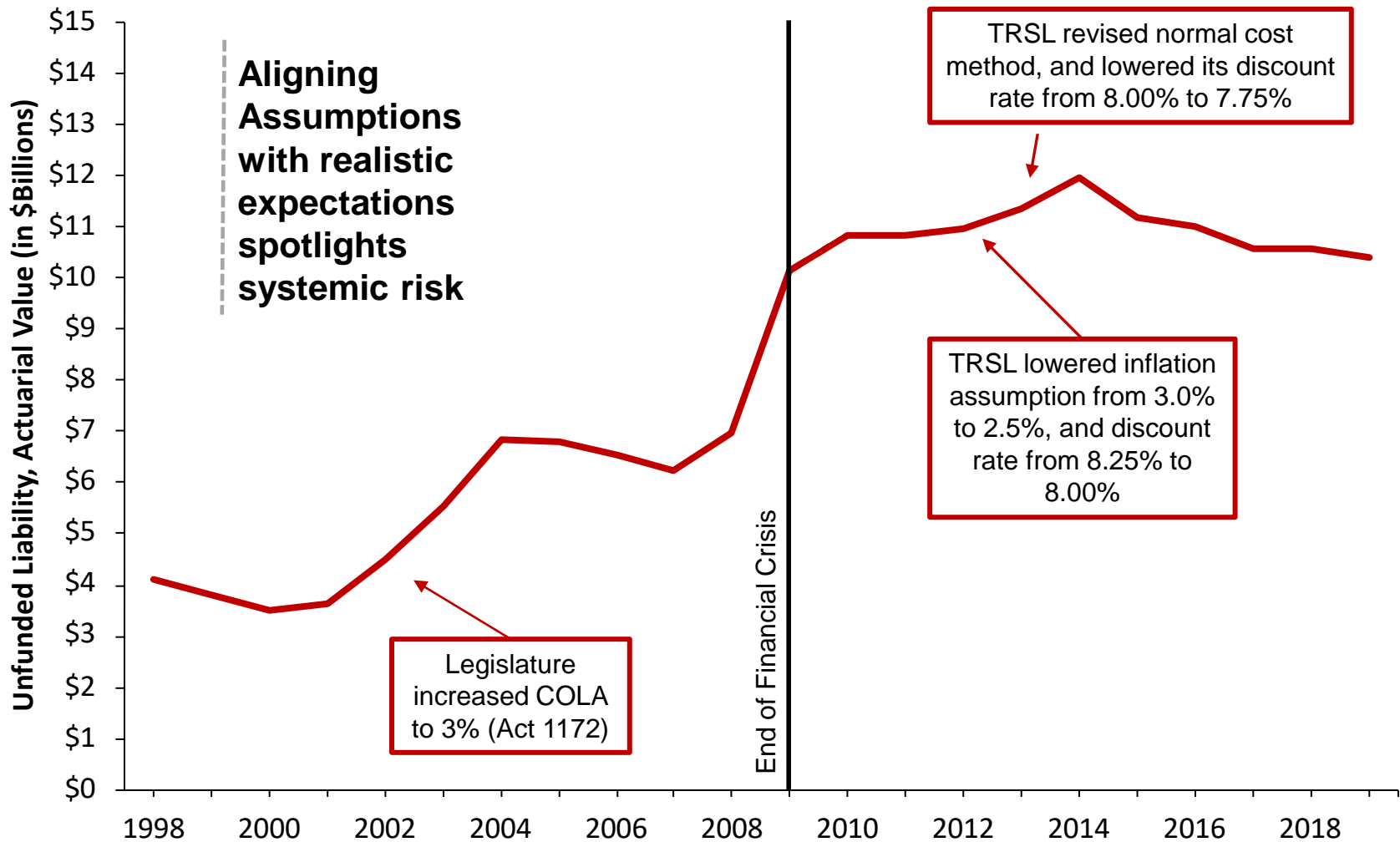
Aligning Assumptions with realistic expectations spotlights systemic risk

Legislature increased COLA to 3% (Act 1172)

End of Financial Crisis

TRSL revised normal cost method, and lowered its discount rate from 8.00% to 7.75%

TRSL lowered inflation assumption from 3.0% to 2.5%, and discount rate from 8.25% to 8.00%

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

CHALLENGE 3:
NEGATIVE AMORTIZATION

- Methods for paying off unfunded liabilities have made the existing pension debt Challenges worse.

- The interest accrued on unfunded liabilities routinely exceeds amortization payments, adding $1.2 billion to the unfunded liability since 2000.

Actuarial Methods Have Created a Structural Underfunding Challenge for TRSL

1. Negative amortization: The TRSL actuary reports that contributions available to cover the unfunded liability are less than the interest accruing on the pension debt each year.

2. In <u>13 of the past 20 years</u>, 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.

3. The 30-year amortization in use by TRSL is greater than the Society of Actuaries' recommended funding period of 15 to 20 years, resulting in higher overall costs for the plan.

Understanding Current Funding Policy: Negative Amortization

1. New benefits accrued by members but unfunded are amortized using a 30-year closed, layered amortization schedule.

2. 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.

3. 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.

Louisiana TRSL Negative Amortization Growth, 2000-2019
Interest on the Debt v. Accrued Liability Payments
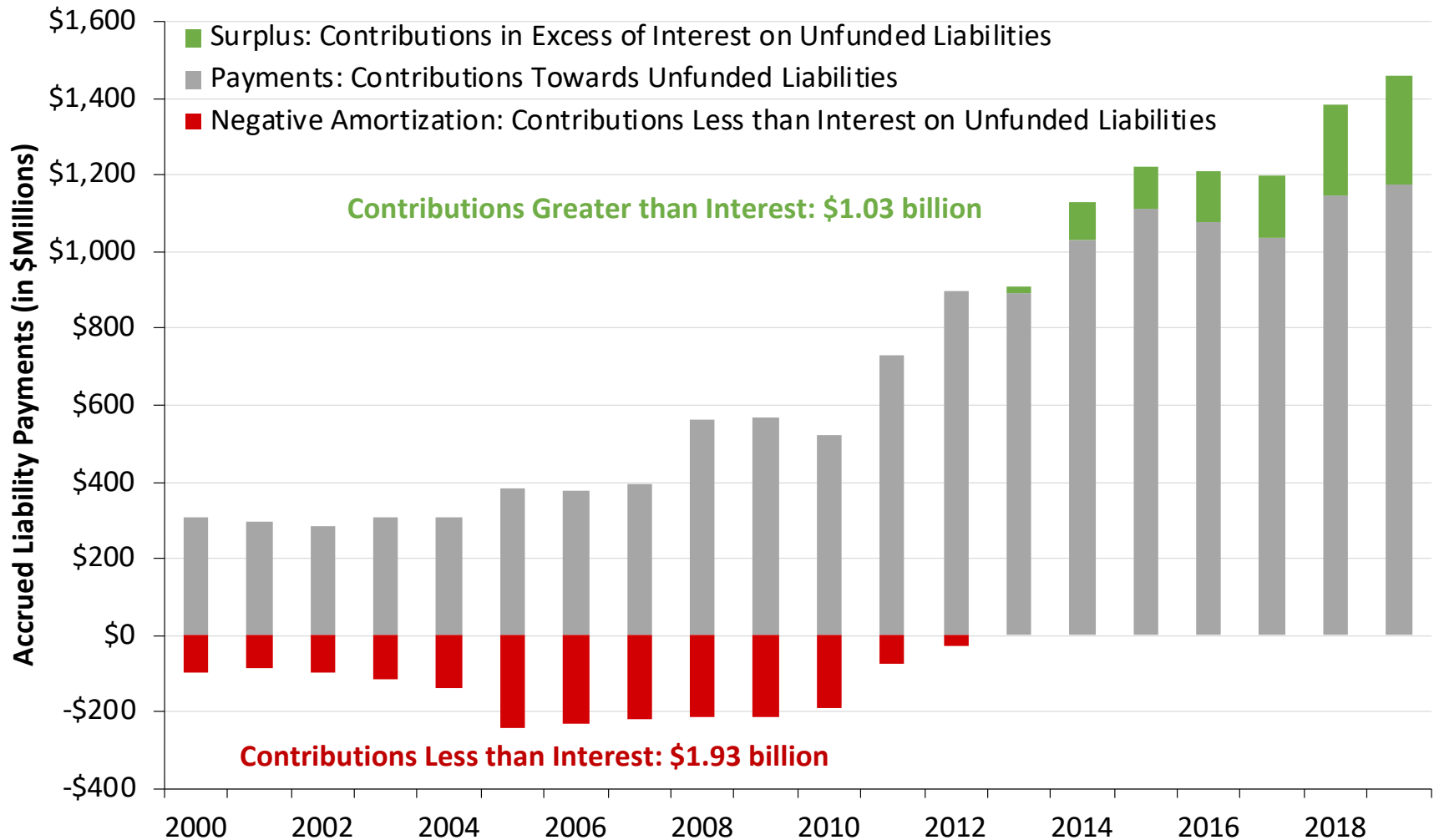
Source: Pension Integrity Project actuarial analysis of of Louisiana TRSL plan valuation reports and CAFRs

Louisiana TRSL Negative Amortization Growth, 2000-2019
Interest on the Debt as a Portion of Unfunded Liability
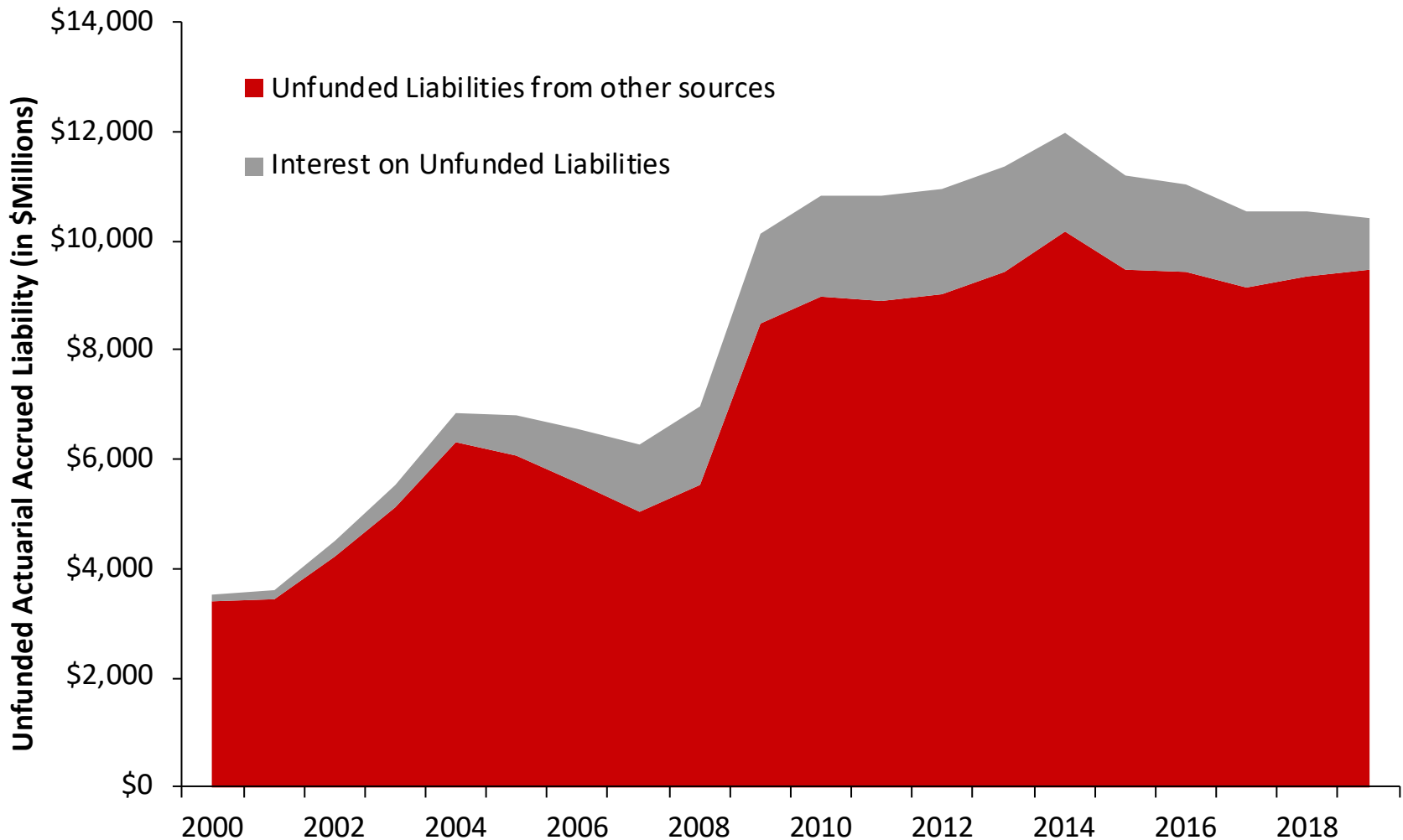
Source: Pension Integrity Project analysis of Louisiana TRSL actuarial valuation reports and CAFRs

CHALLENGE 4: PERMANENT BENEFIT INCREASES

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

Experience Account Allocations

TRSL's unfunded liability increased by $832 million between 2000-2019 as a result of 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, TRSL 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 Deprive TRSL of Needed Cash Flow

- According to a 2018 Louisiana Legislative Auditor report featuring a stochastic analysis of PBI funding, during each of the next 20 years there is a 30% to 45% chance of a transfer to the Experience Account (approximately two out of every five years).

  > *Once a transfer occurs, it may not be used for anything other than benefit increases.*

- Such asset transfers prevent TRSL from using the full benefit of investment gains above the return assumption to help pay down unfunded liabilities faster, generating long-term savings relative to the current fiscal forecast.

PBIs Complicate Pension Cost Projections

- The current actuarial method used by TRSL assumes an implicit recognition of future COLAs by *reducing the rate of return assumption*.

- This creates confusion for both plan administrators and members and makes estimating the costs of providing PBIs—and ultimately, core pensions—more complicated.

- In 2017 the TRSL assumed 8.20% would be the total rate of return (net of investment-related expenses). TRSL then reduced the rate of return assumption by 0.40% to accommodate the estimated cost of PBI transfers and by another 0.10% for administrative expenses - resulting in a final discount rate of 7.70%.

"Confusion may result from the board and actuary's use of an implicit recognition of gainsharing COLAs by reducing the net return assumption by 40 basis points and by another 10 basis points to reflect administrative expenses to obtain the final discount rate. It could be construed as misleading to disclose the return assumption as being 7.70%."
-Gabriel, Roeder, Smith & Company, Louisiana Legislative Auditor Actuary

Source: "2018 Actuarial Valuation Report on the Teachers' Retirement System of Louisiana," produced by Gabriel, Roeder, Smith & Company on behalf of the Louisiana Legislative Auditor, State of Louisiana (2019)

Probability of Asset Transfers to Fund PBI

Source: "2018 Actuarial Valuation Report on the Teachers' Retirement System of Louisiana," produced by Gabriel, Roeder, Smith & Company on behalf of the Louisiana Legislative Auditor, State of Louisiana (2019)

Average PBI Rate Expected to be Paid Out

Source: "2018 Actuarial Valuation Report on the Teachers' Retirement System of Louisiana," produced by Gabriel, Roeder, Smith & Company on behalf of the Louisiana Legislative Auditor, State of Louisiana (2019)

CHALLENGE 5: DISCOUNT RATE AND UNDERVALUING DEBT

- The discount rate undervalues the measured value of existing pension obligations

TRSL 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 TRSL — 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 TRSL 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 2014/2015
7.75% for FY 2015/2016
7.70% for FY 2016/2017
7.65% for FY 2017/2018
7.55% for FY 2018/2019
7.45% for FY 2019/2020

TRSL 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.

TRSL Pension Debt Sensitivity
FYE 2019 Unfunded Liability Under Varying Discount Rates

Discount Rate	Funded Ratio (Market Value)	Unfunded Liability (Market Value)	Actuarial Accrued Liability
7.55% (Current Baseline)	68.6%	$9.92 billion	$31.57 billion
6.55%	60.4%	$13.79 billion	$34.84 billion
5.55%	54.4%	$17.67 billion	$38.71 billion
4.55%	48.6%	$22.29 billion	$43.33 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 TRSL CAFR.

Source: Pension Integrity Project analysis of TRSL 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

Legend:
- Actual Discount Rate - Louisiana TRSL
- Alternative Discount Rate Scenario - Louisiana TRSL
- 30-Year Treasury Bond Yield Rate

7.55%

4.89%

2.58%

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

This link would have seved to adjust the TRSL 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 TRSL discount rate and the Treasury yield. As the risk free rate rose and fell, so too would the TRSL discount rate.

Source: Pension Integrity Project analysis of Louisiana TRSL actuarial reports and Treasury yield data from the Federal Reserve
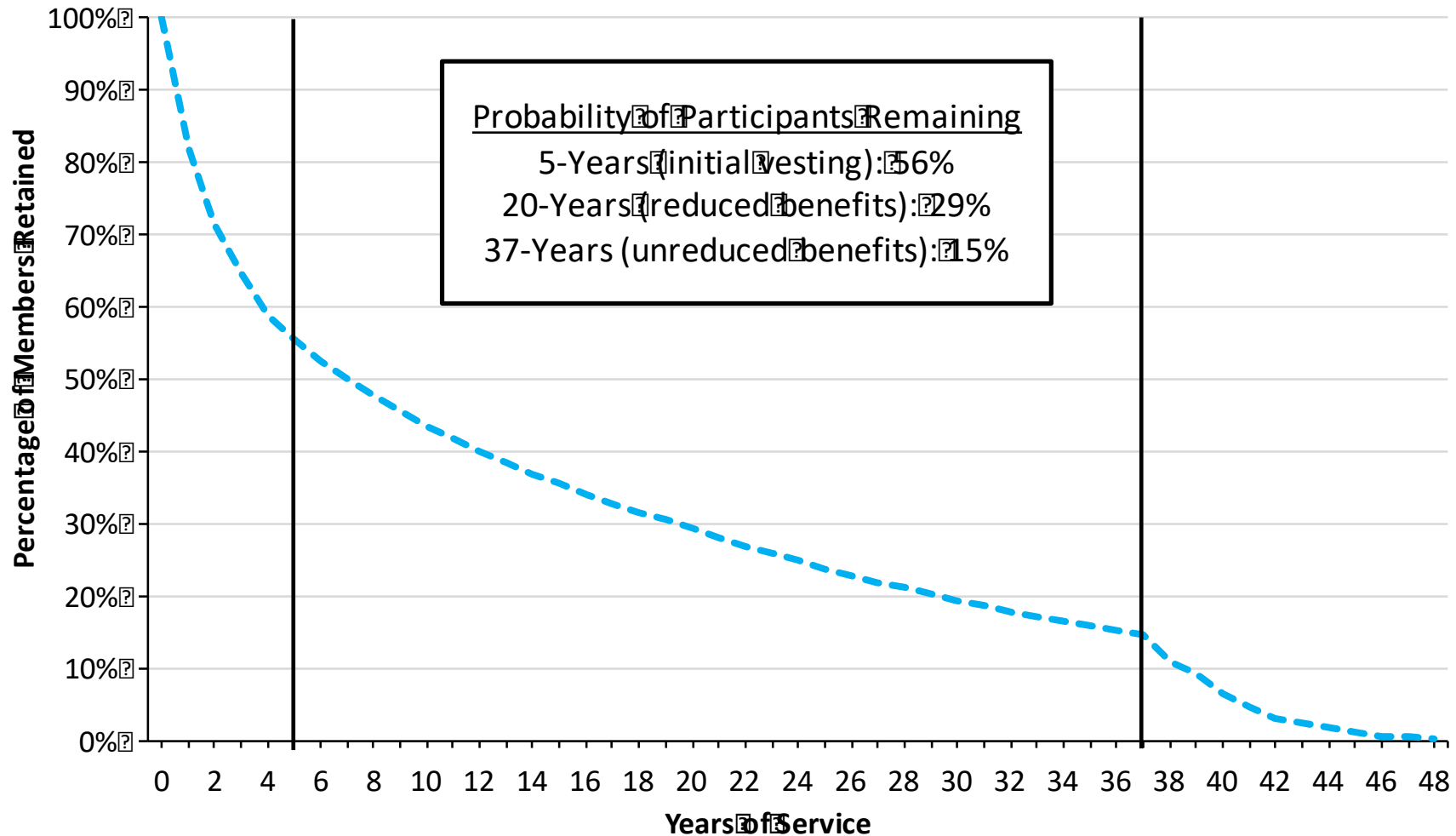
CHALLENGE 6:
THE EXISTING BENEFIT DESIGN DOES NOT WORK FOR EVERYONE

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

Probability of Regular Teachers Remaining in TRSL

Probability of Participants Remaining
5-Years (initial vesting): 56%
20-Years (reduced benefits): 29%
37-Years (unreduced benefits): 15%

Source: Pension Integrity Project analysis of TRSL actuarial reports and CAFRs. Retention probabilities are shown for Regular K-12 Teachers only.

Does TRSL Retirement Plan Work for All Employees?

- **44%** of new teachers/educators leave before 5 years (vesting)
  - This teacher turnover rate exceeds the national occupation averages.

- Only **29%** of all teachers hired next year will still be working after 20 years, long enough to qualify for a reduced benefit.

- **15%** of all teachers hired on or after 2015 will still be working after 37 years, long enough to qualify for full benefits

- Just **30%** of Louisiana teachers will "break even" on their pensions, according to TeacherPensions.org
  - Analysis by the Thomas B. Fordham Institute shows that a new teacher in the Jefferson Parish Public School System must remain in the pension system for **29 years** for the present value of their pension benefits to at least match the value of their own contributions.

Source: Pension Integrity Project analysis of TRSL 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 layering period for new unfunded liabilities would save the state billions in interest payments over the long run.

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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