

NEW MEXICO EDUCATIONAL RETIREMENT BOARD (ERB) PENSION SOLVENCY ANALYSIS

Prepared by:

Pension Integrity Project at Reason Foundation

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About the Pension Integrity Project

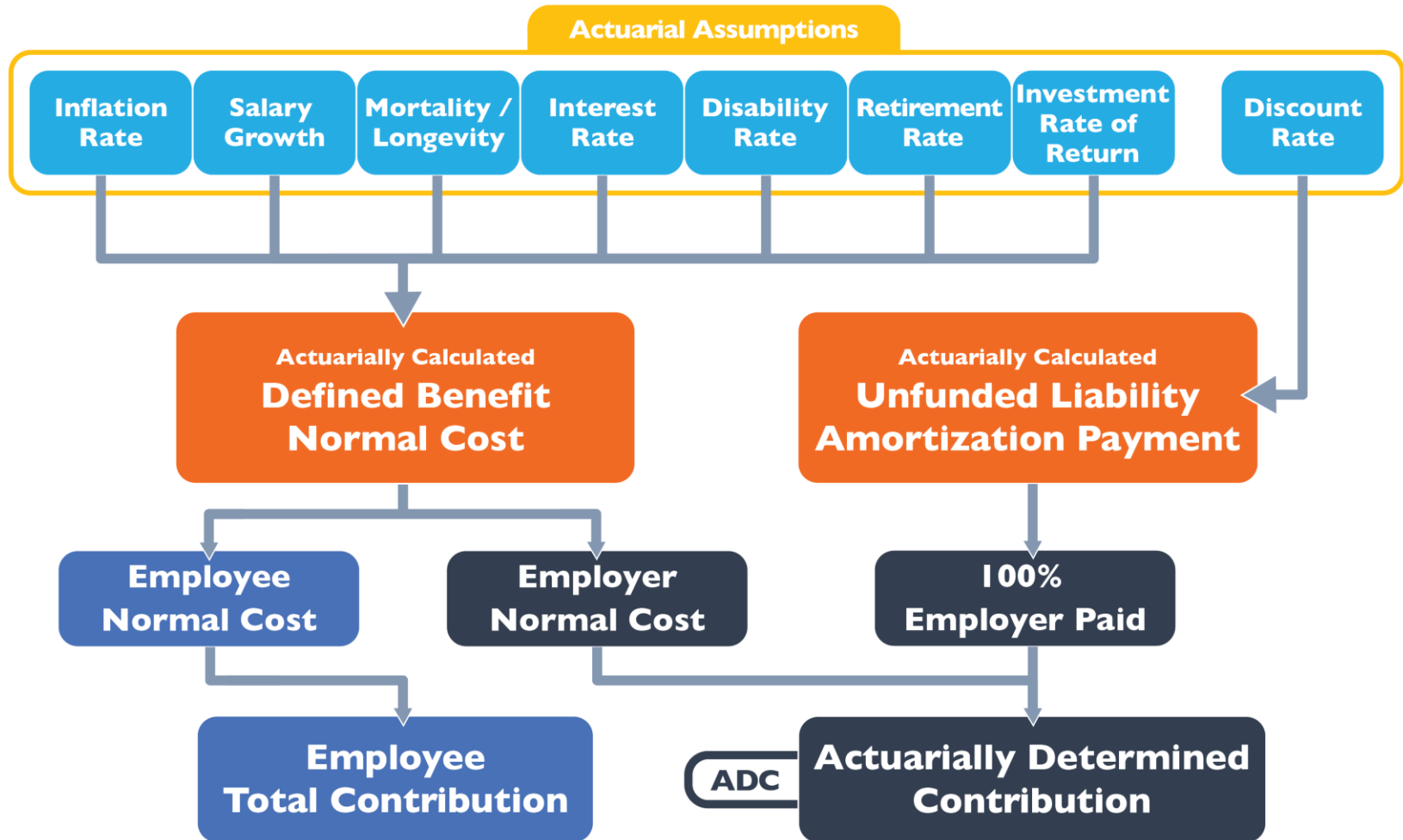


We offer pro-bono technical assistance to public officials to help them design and implement pension reforms that improve plan solvency and promote retirement security, including:

- *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

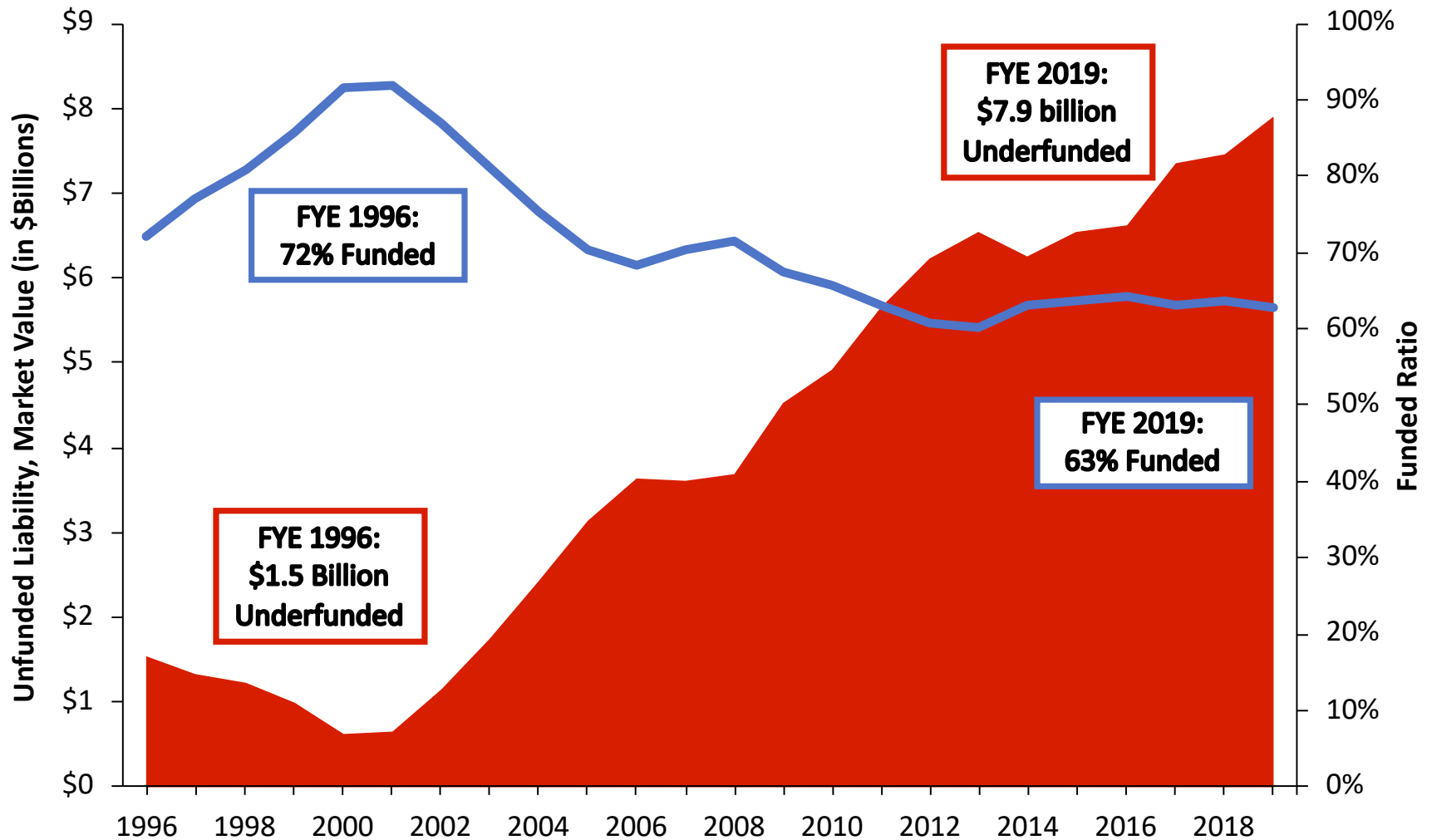


How a Pension Plan is Funded



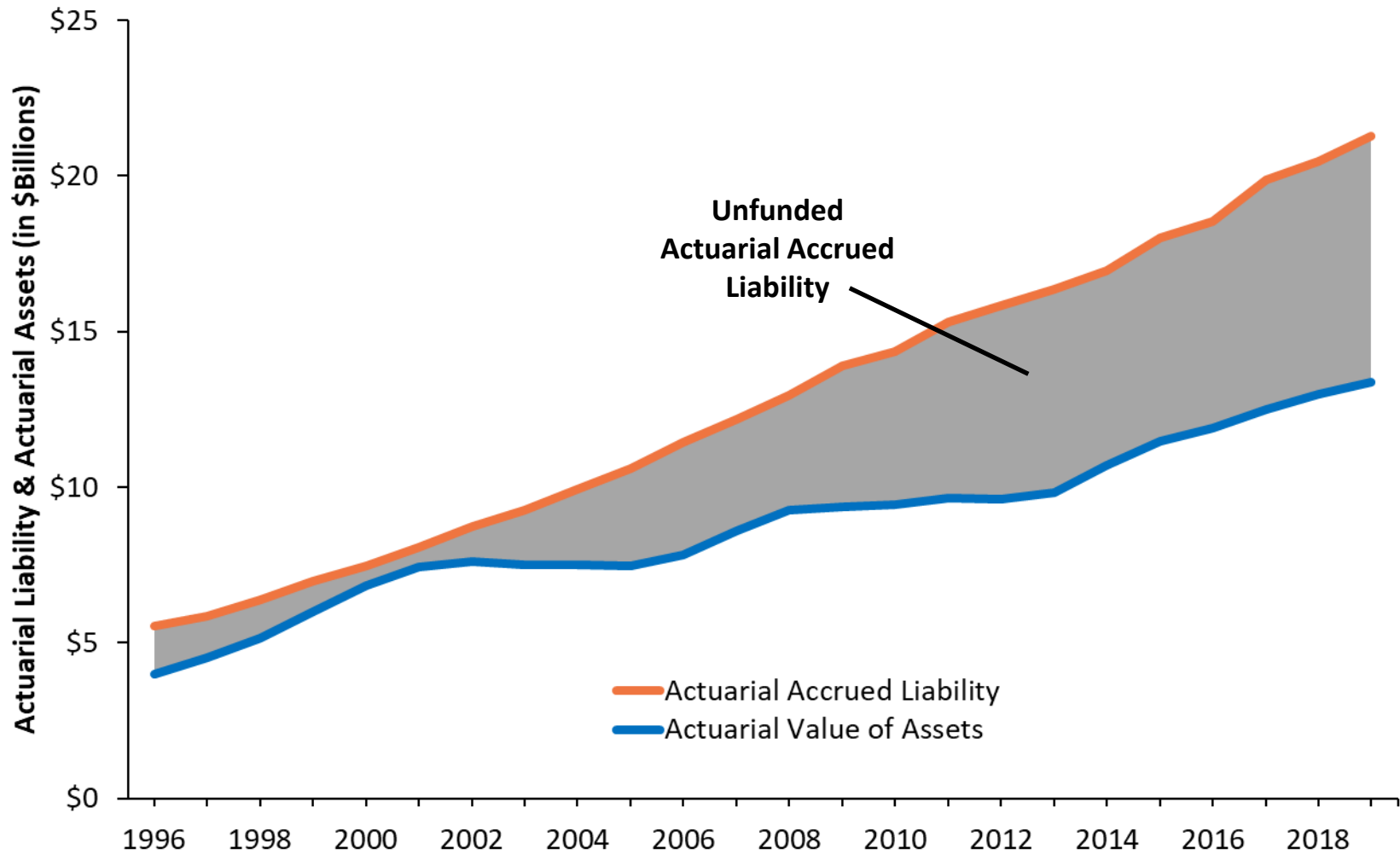


A History of ERB Solvency (1996-2019)



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

ERB Liabilities are Growing Faster than Assets



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



Makeup of ERB Contributions

	FY2019 Contributions	
	% of Payroll	\$ Value
Total Employee	10.70%	\$300,652,249
Employer (Normal Cost)	2.98%	\$85,879,052
Employer (Debt Amortization)	10.92%	\$314,697,732
Employer (ARP Debt Amortization)	3.00%	\$5,972,272
Total Employer	13.90%	\$406,549,056
Total ERS Contributions	24.6%	\$707,201,305

Statutorily set ERB employer contribution rates are consistently below Actuarially Determined Employer Contribution (ADEC) rates, which in 2019 was 20.78%.

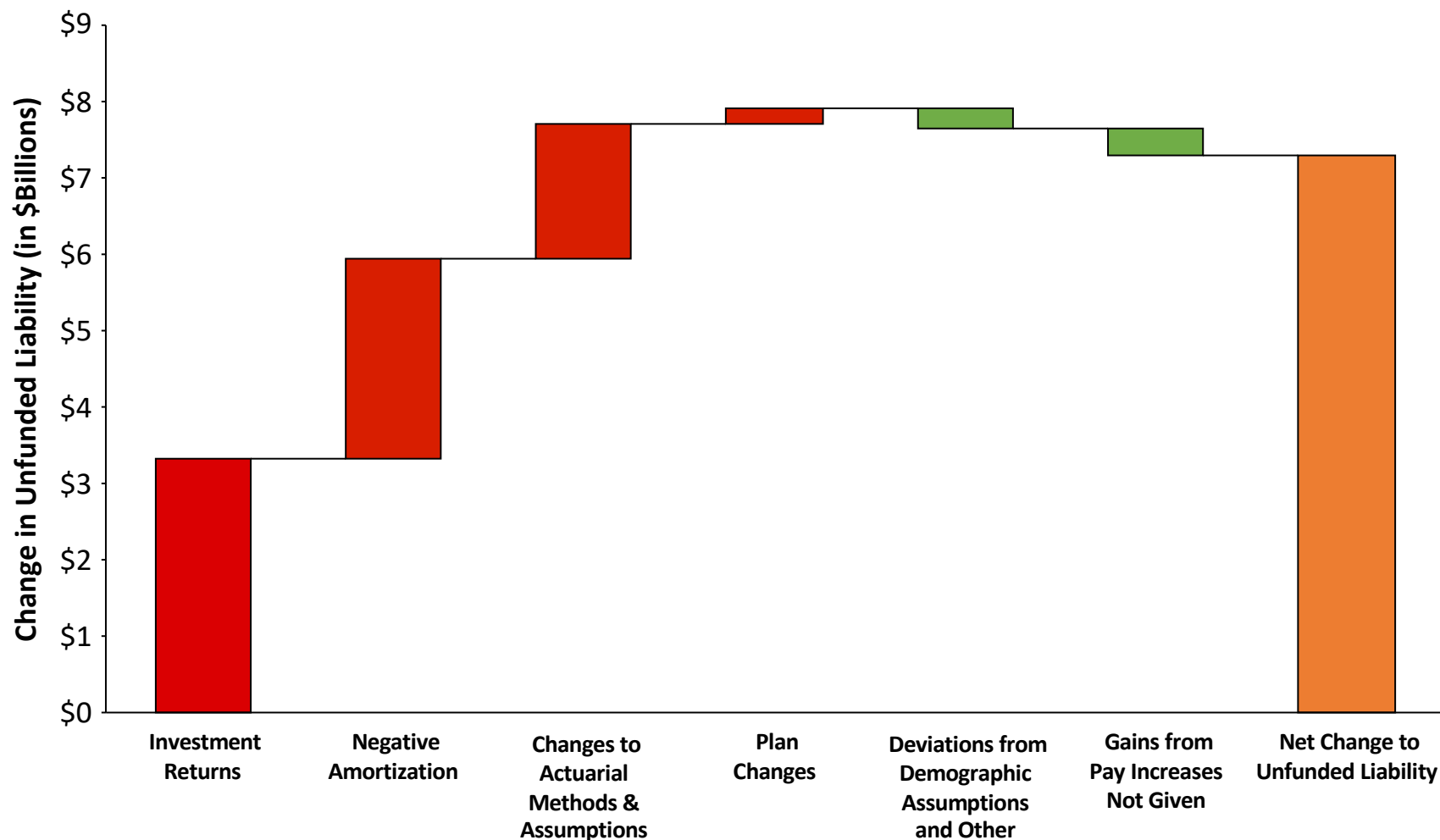
Source: Pension Integrity Project analysis of ERB actuarial valuation reports. The Alternative Retirement Plan (ARP) established in 1991 is a defined contribution plan managed by ERB and requires employers contribute 3% of payroll towards the defined benefit debt amortization according to actuarial reports.



CHALLENGES CONTINUING TO FACE ERB

The Causes of the Pension Debt

Actuarial Experience of ERB, 2001-2019





Driving Factors Behind ERB Challenges

1. **Deviations from Investment Return Assumptions** have been the largest contributor to the ERB unfunded liability, adding \$3.33 billion since 2001.
2. **Extended Amortization Timetables and Statutory Contribution Limits** have resulted in interest on ERB debt exceeding the actual debt payments (negative amortization) since 2003, adding a net \$2.6 billion in the unfunded liabilities.
3. **Changes in Actuarial Methods and Assumptions** have uncovered over \$1.76 billion in previously unrecognized unfunded liabilities over the last decade.
4. **Plan Changes**—such as HB854 of 2009, which froze and deferred contributions from some employers to employees—increased unfunded liability by \$228 million since 2009.
5. **Undervaluing Debt** through discounting methods has led to the tacit undercalculation of required contributions.



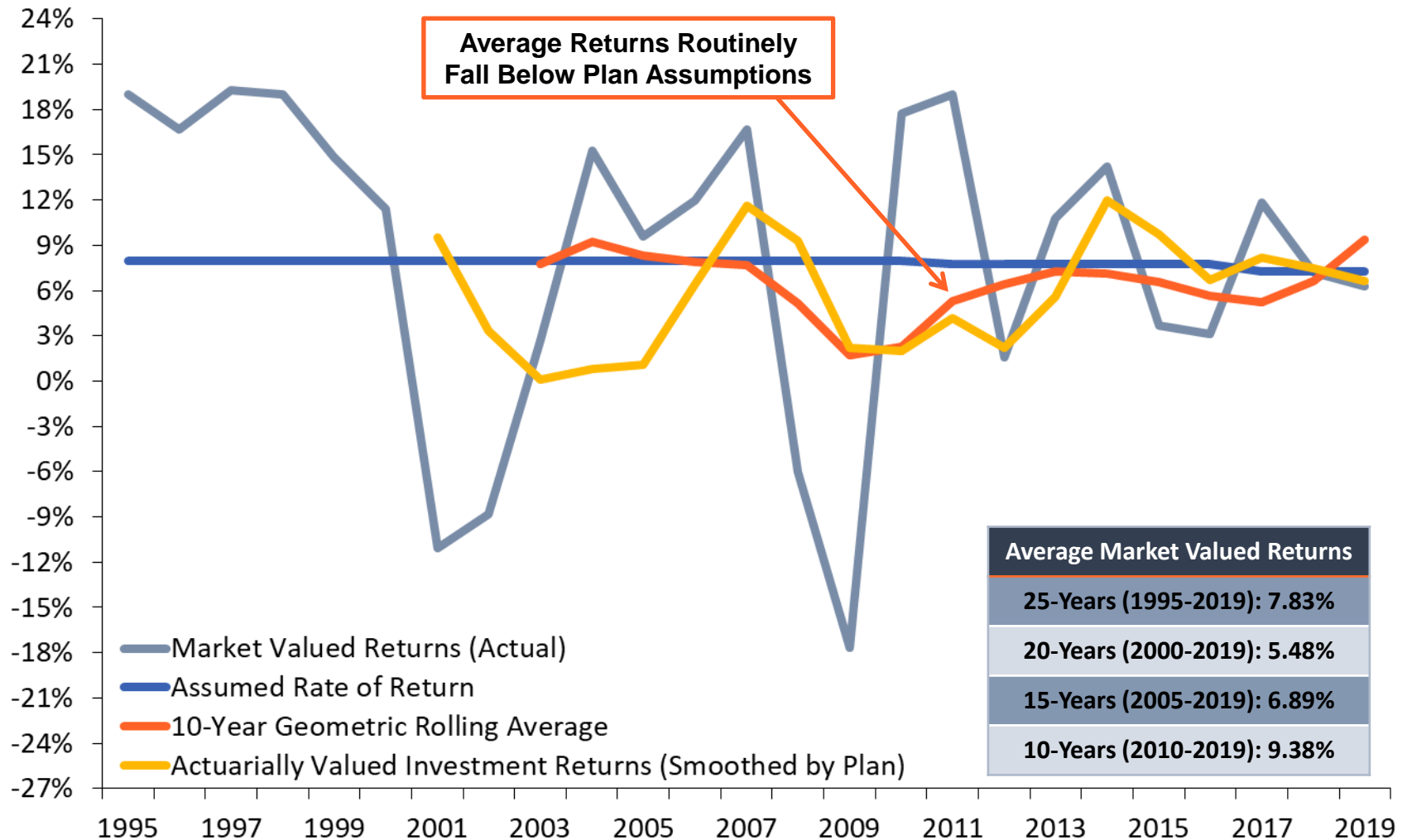
CHALLENGE I: ASSUMED RATE OF RETURN

- **Unrealistic Expectations:** Despite recently lowering the investment return assumption to 7.25%, ERB 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.



ERB Challenge I: Investment Returns

Investment Return History, 1995-2019



Source: Pension Integrity Project analysis of ERB valuation reports and CAFRs.
 The assumed return used by ERB was 8% until 2010, 7.75% until 2016 when it was changed to 7.25%.

ERB Challenge I: Investment Returns

Investment Returns vs. Assumptions



- ERB actuaries have historically used an 8% assumed rate of return to calculate proper annual contribution rates, slowly lowering the rate to 7.25% over the past two decades 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
25-Years (1996-2019): 7.83%	25-Years (1996-2019): 4.28%
20-Years (2001-2019): 5.48%	20-Years (2001-2019): 5.38%
15-Years (2006-2019): 6.89%	15-Years (2006-2019): 6.30%
10-Years (2011-2019): 9.38%	10-Years (2011-2019): 6.43%

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 ERB actuarial valuation reports.
Average market valued returns represent geometric means of the actual time-weighted returns.



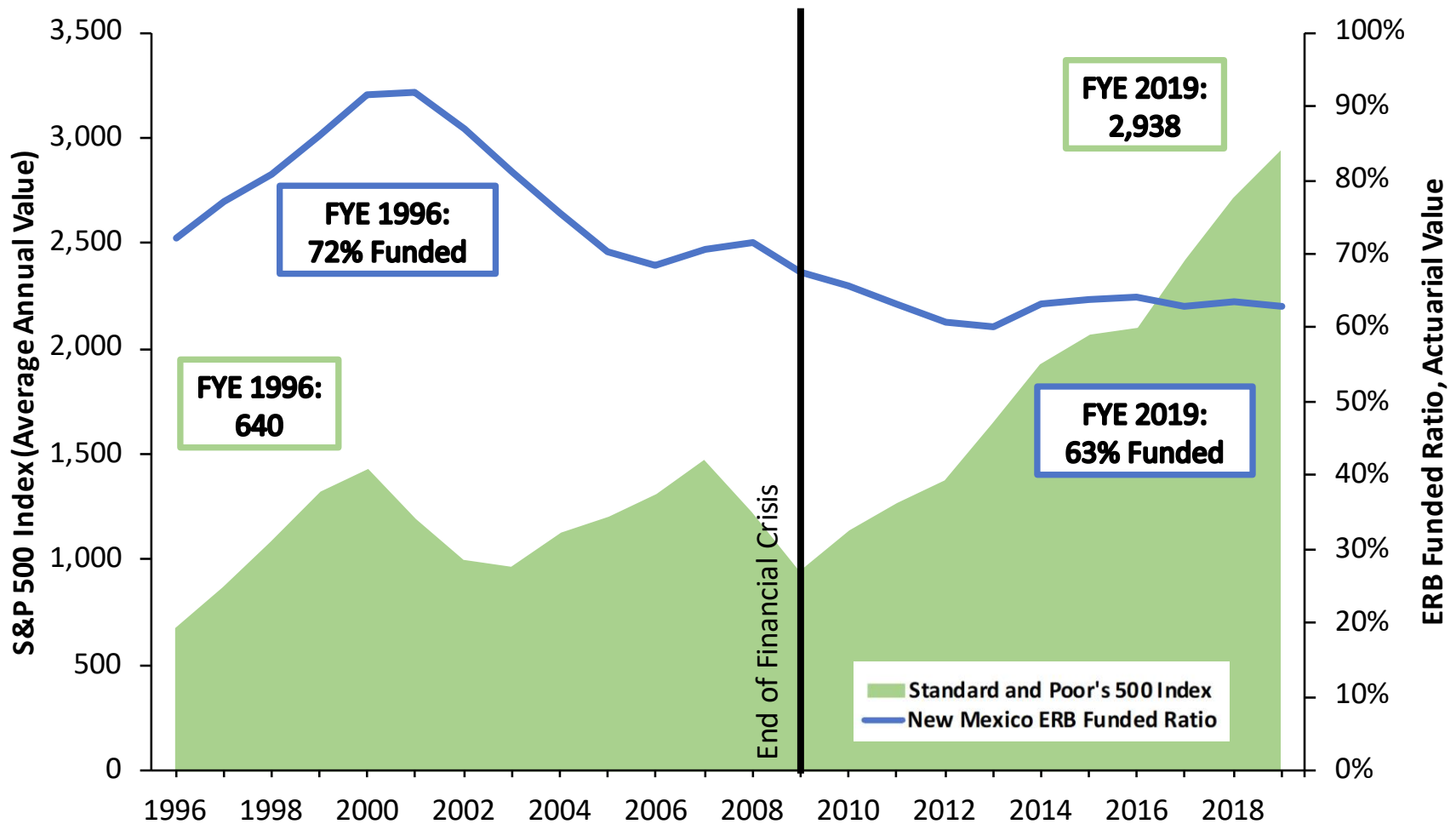
New Normal: The Market Has Changed

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%.
 - New phenomenon: negative interest rates, designates a collapse in global bond yields.
 - 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.
3. An August 2020 New Mexico ERB investment committee report showed annualized returns of 5.7% for the last 5 years, falling well below the plan’s return target of 7.25%.



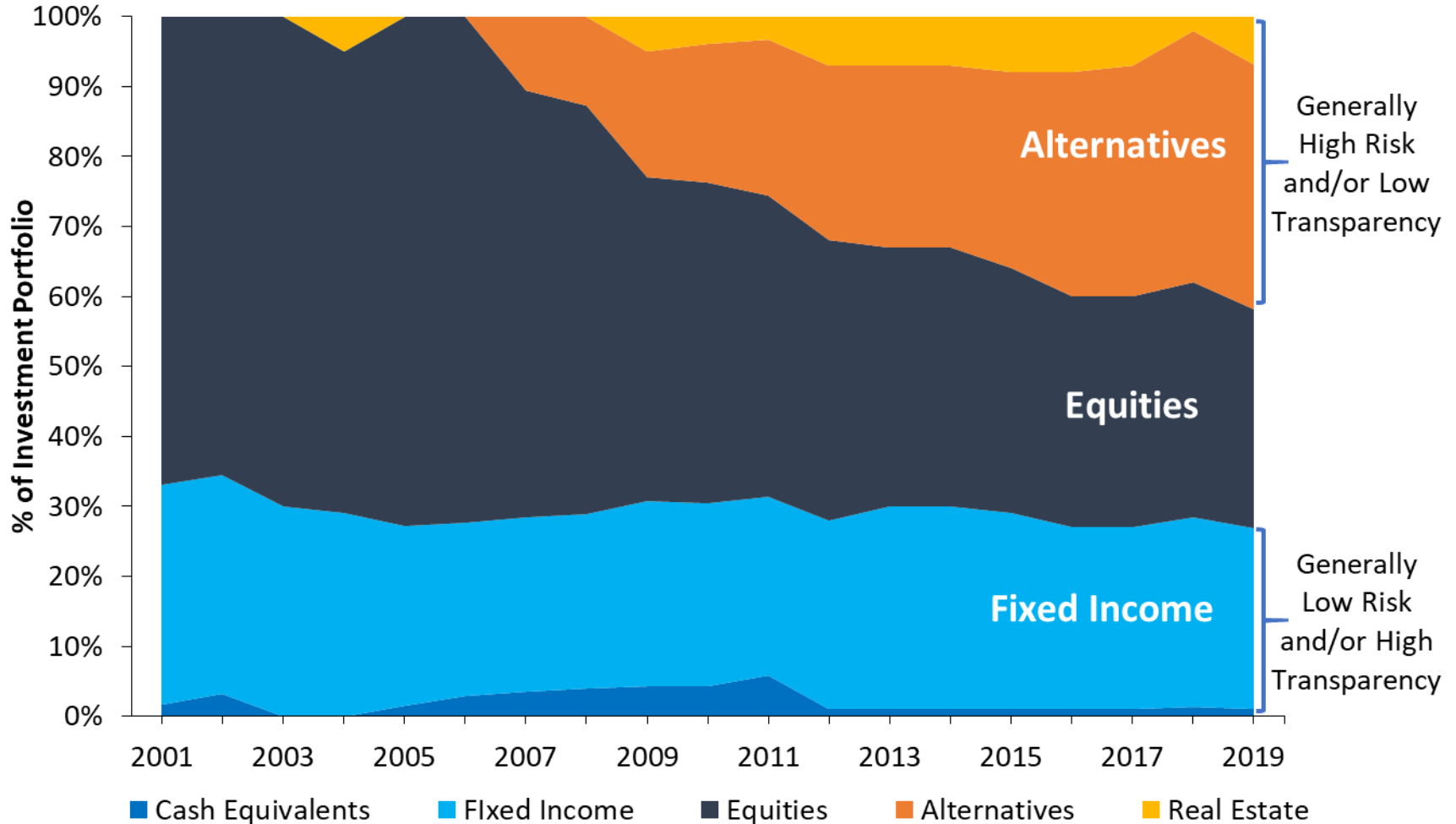
ERB Funded Ratio Did Not Recover Despite Historic Decade for Stock Market



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

ERB Asset Allocation (2001-2019)

Expanding Alternatives in Search for Yield



Source: Pension Integrity Project analysis of ERB actuarial valuation reports, CAFRs and quarterly Investment Performance Overviews.

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



Possible Rates of Return	Probability of ERB Achieving A Given Return Based On:							
	ERB Assumptions & Experience		Short-to-Mid-Term Market Forecast				Long-Term Market Forecast	
	Based on ERB Assumptions	ERB Historical Returns	Research Affiliates 10-Year Forecast	BNY Mellon 10-Year Forecast	Horizon 10-Year Market Forecast	JP Morgan 10-15 Year Forecast	Horizon 20-Year Market Forecast	BlackRock 20-Year Forecast
9.0%	25.8%	5.9%	7.7%	14.6%	18.2%	28.3%	28.4%	31.2%
8.0%	39.4%	12.7%	14.9%	24.6%	29.8%	43.7%	42.5%	44.7%
7.25%	50.9%	20.2%	22.2%	34.4%	40.5%	56.1%	53.7%	55.5%
6.5%	62.1%	30.6%	31.7%	46.1%	52.0%	67.7%	65.0%	65.7%
6.0%	69.0%	38.5%	38.9%	53.7%	59.6%	74.3%	71.5%	71.8%
5.5%	75.1%	47.2%	46.7%	61.4%	66.6%	80.7%	77.6%	77.5%
5.0%	80.8%	55.4%	54.0%	68.7%	72.9%	86.1%	83.0%	82.5%

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



ERB Assumptions & Experience

- A probability analysis of ERB historical returns over the past 19 years (2001-2019) indicates a very modest chance (20%) of hitting the plan's 7.25% assumed return.
- ERB's own investment return forecasts only imply a 51% chance of achieving their investment return target over the next 20 years.

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 ERB.
- Analysis of capital market assumptions publicly reported by the leading financial firms (Horizon, BNY Mellon, and Research Affiliates) suggests that over a 10-15 year period, ERB returns are likely to fall short of assumptions.

Long-Term Market Forecast

- Longer-term projections typically assume ERB 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 7.25% 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 7.25% or higher is about 55%, the probability of earning a rate of return below 5% is about 17%.



RISK ASSESSMENT

How resilient is New Mexico ERB to volatile market factors?

Important Funding Concepts



Employer Contribution Rates

- *Statutory Contributions*: ERB employers make annual payments based on a rate set in New Mexico state statute, meaning contributions remain static until changed by legislation
- *Actuarially Determined Employer Contribution (ADEC)*: Unlike statutory contributions, ADEC is the annual required amount ERB's consulting actuary has determined is needed to be contributed each year to avoid growth in pension debt and keep ERB solvent

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 current ERB assumptions using the plan's existing contribution and funding policy and shows the status quo before the 2020 market shock

Employer & Employee Rates

- The scenarios in this analysis assume that both employee & employer continuations will remain the same as current rates set at 10.7% and 14.15%, respectively.

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 ERB Using 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 -24.0% returns in 2020 for ERB, 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 Annual Return
2. 2020-23 Crisis + Average 6.0% Long-Term
3. 2020-23 Crisis + 2035-38 Crisis + Average 6.0% Long-Term
4. Scenario 2 + 5-Year Employer Contribution Freeze
5. Scenario 3 + 5-Year Employer Contribution Freeze

Scenario Comparison of Employer Costs

Scenarios	Statutory Contributions			Actuarial Contributions		
	30-Year Employer Contributions	2050 Unfunded Liability (Market Value)	Total All-in Employer Costs	30-Year Employer Contributions	2050 Unfunded Liability (Market Value)	Total All-in Employer Costs
Pre-Crisis Baseline	\$13.6 B	\$10.3 B	\$24.0 B	\$18.0 B	\$0.4 B	\$18.3 B
6% Constant Annual Return	\$13.6 B	\$18.0 B	\$31.6 B	\$21.9 B	\$4.4 B	\$26.4 B
2020-23 Crisis + Average 6%	\$13.6 B	\$22.6 B	\$36.3 B	\$24.2 B	\$2.2 B	\$26.4 B
Two Crises + Average 6%	\$13.6 B	\$22.8 B	\$36.5 B	\$24.6 B	\$1.7 B	\$26.2 B
2020-23 Crisis + Average 6% + 5-Year Cont. Freeze	\$13.5 B	\$23.6 B	\$37.0 B	\$25.4 B	\$2.5 B	\$27.9 B
Two Crises + Average 6% + 5-Year Cont. Freeze	\$13.5 B	\$23.7 B	\$37.2 B	\$25.8 B	\$1.9 B	\$27.6 B

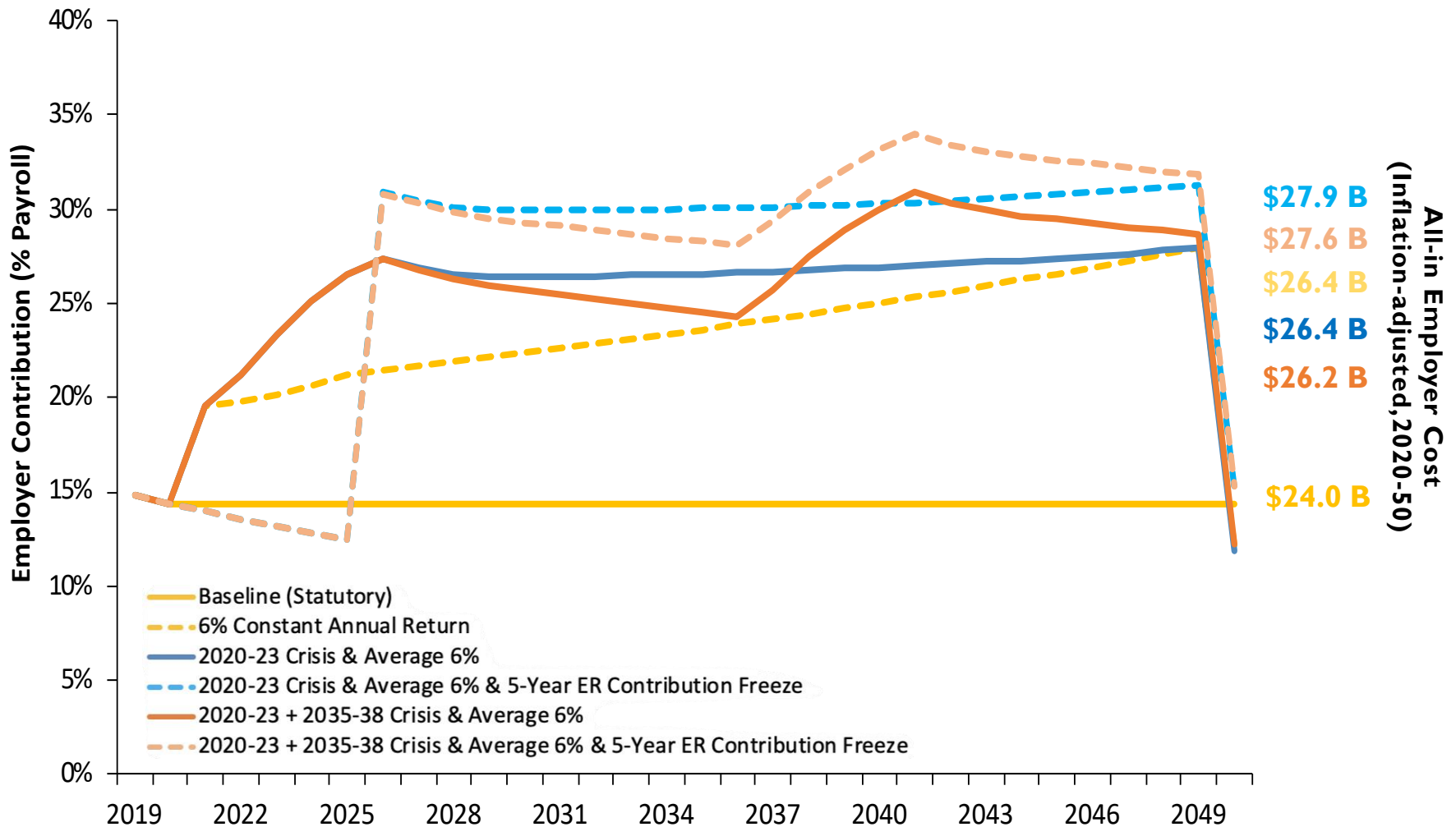
Source: Pension Integrity Project actuarial forecast of ERB. All values are rounded and adjusted for inflation. The “All-in Cost” includes all employer contributions (including amortization payments from Alternative Retirement Plan) over the 30-year timeframe, and the ending unfunded liability accrued by the end of the forecast period.

ERB Stress Testing: All-in Employer Cost Projections

How a Crisis Increases ERB Costs



Discount Rate: 7.25%, Assumed Return: 7.25%, Actual Return: Varying, Amo. Period: Current

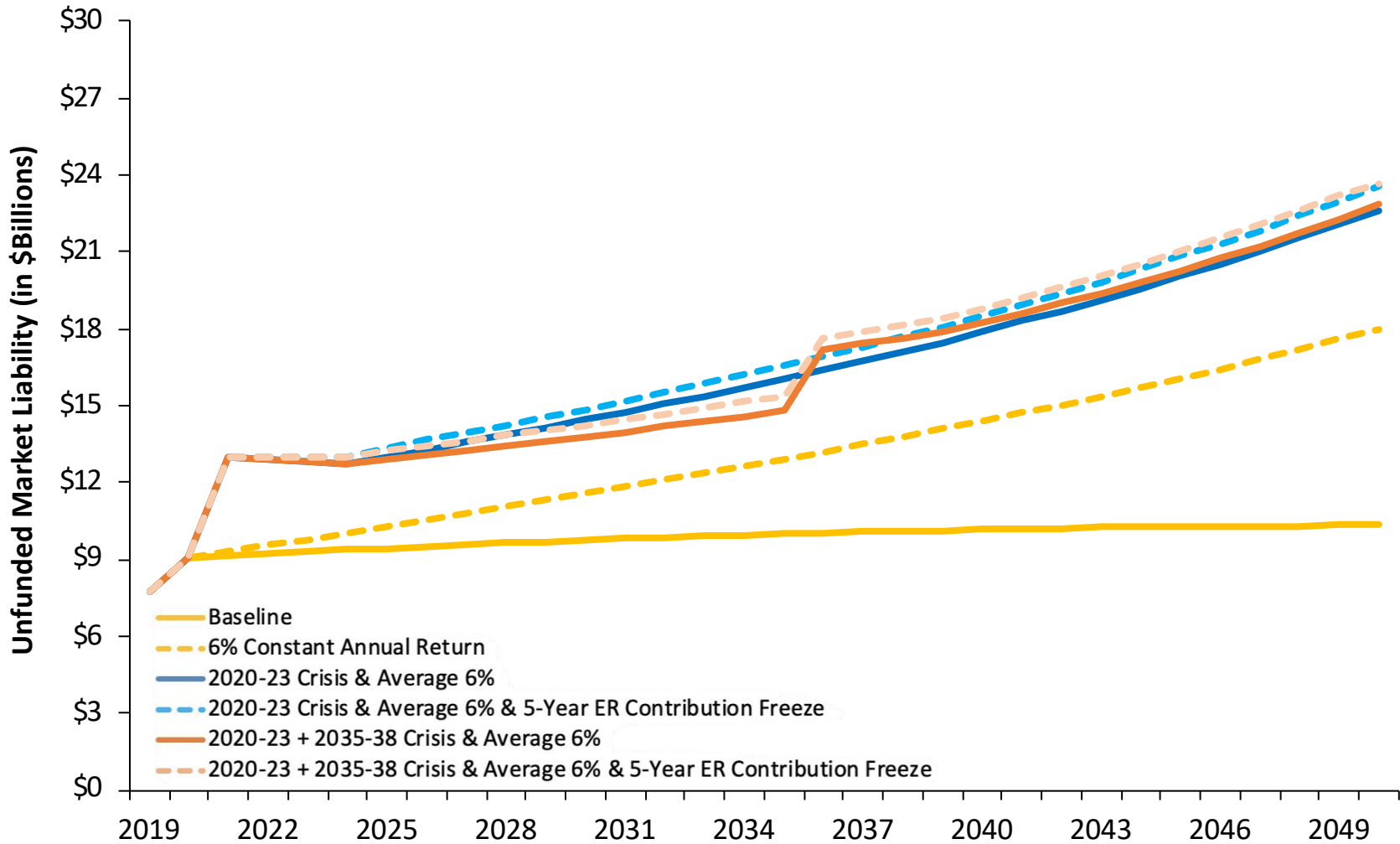


Source: Pension Integrity Project actuarial forecast of ERB. Values are rounded and adjusted for inflation. Baseline assumes State to make *statutory* contributions. Scenarios assume State to make *actuarial* contributions. The "All-in Cost" includes all employer contributions over the 30-year timeframe, and the ending unfunded liability accrued by the end of the forecast period.

ERB Stress Testing: Unfunded Liability Projections

Unfunded Liabilities Skyrocket Under Crisis Scenarios

Discount Rate: 7.25%, Assumed Return: 7.25%, Actual Return: Varying, Amo. Period: Current

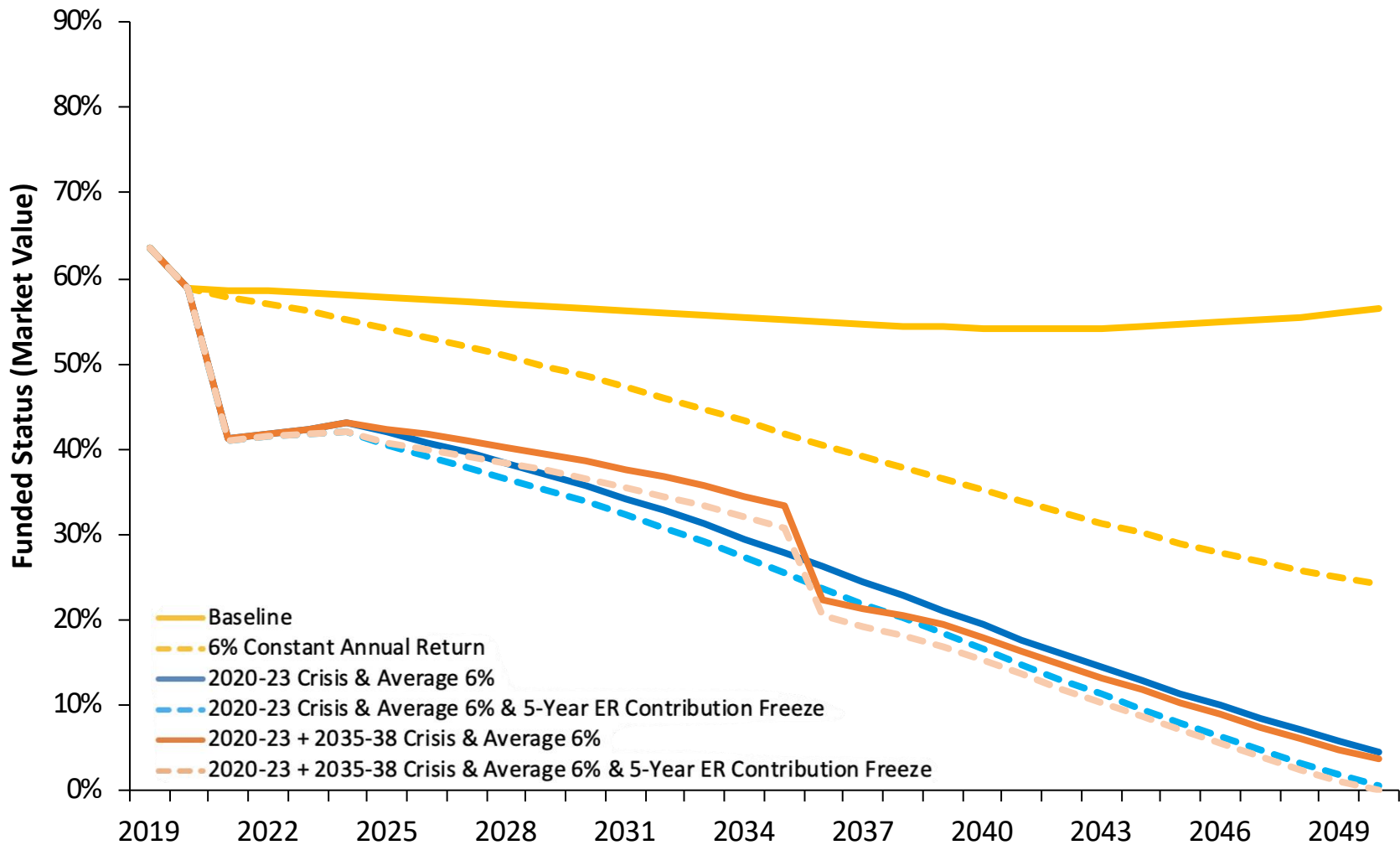


Source: Pension Integrity Project actuarial forecast of ERB. Values are rounded and adjusted for inflation. State is assumed to make **statutory** contributions. The "All-in Cost" includes all employer contributions over the 30-year timeframe, and the ending unfunded liability accrued by the end of the forecast period.

ERB Stress Testing: Funded Status Projections

ERB Solvency Degrades Under Crisis Scenarios

Discount Rate: 7.25%, Assumed Return: 7.25%, Actual Return: Varying, Amo. Period: Current



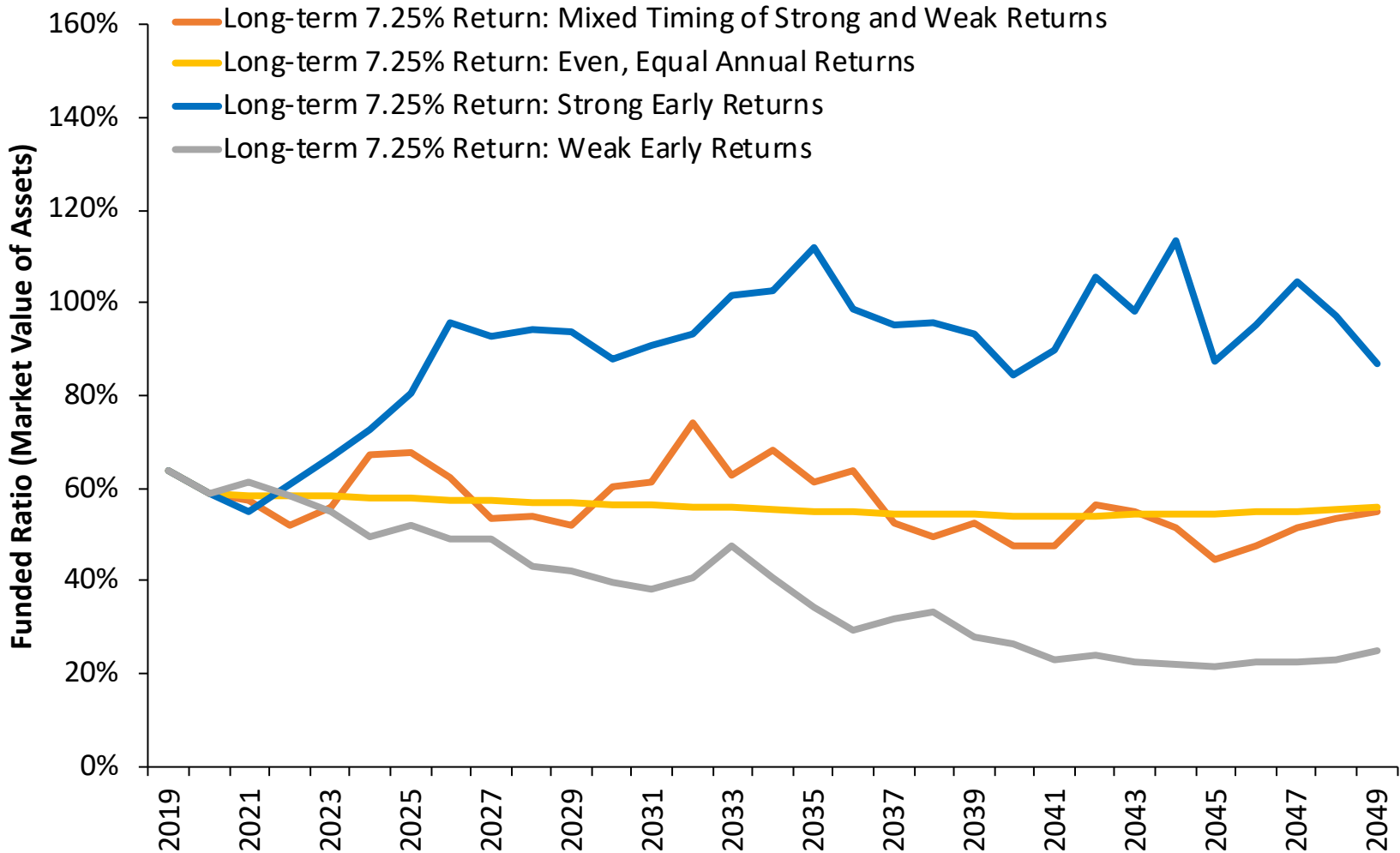
Source: Pension Integrity Project actuarial forecast of ERB. Values are rounded and adjusted for inflation. State is assumed to make **statutory** contributions. The "All-in Cost" includes all employer contributions over the 30-year timeframe, and the ending unfunded liability accrued by the end of the forecast period.



30-year Funded Ratio Forecast

All Paths to a 7.25% Average Return are Not Equal

Long-Term Average Returns of 7.25%



Source: Pension Integrity Project actuarial forecast of ERB plan. Strong early returns (TWRR = 7.26%, MWRR = 8.25%), Even, equal annual returns (Constant Return = 7.25%), Mixed timing of strong and weak returns (TWRR = 7.23%, MWRR = 7.26%), Weak early returns (TWRR = 7.24%, MWRR = 6.0%) Scenario assumes ERB pays statutory contribution rates. 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?

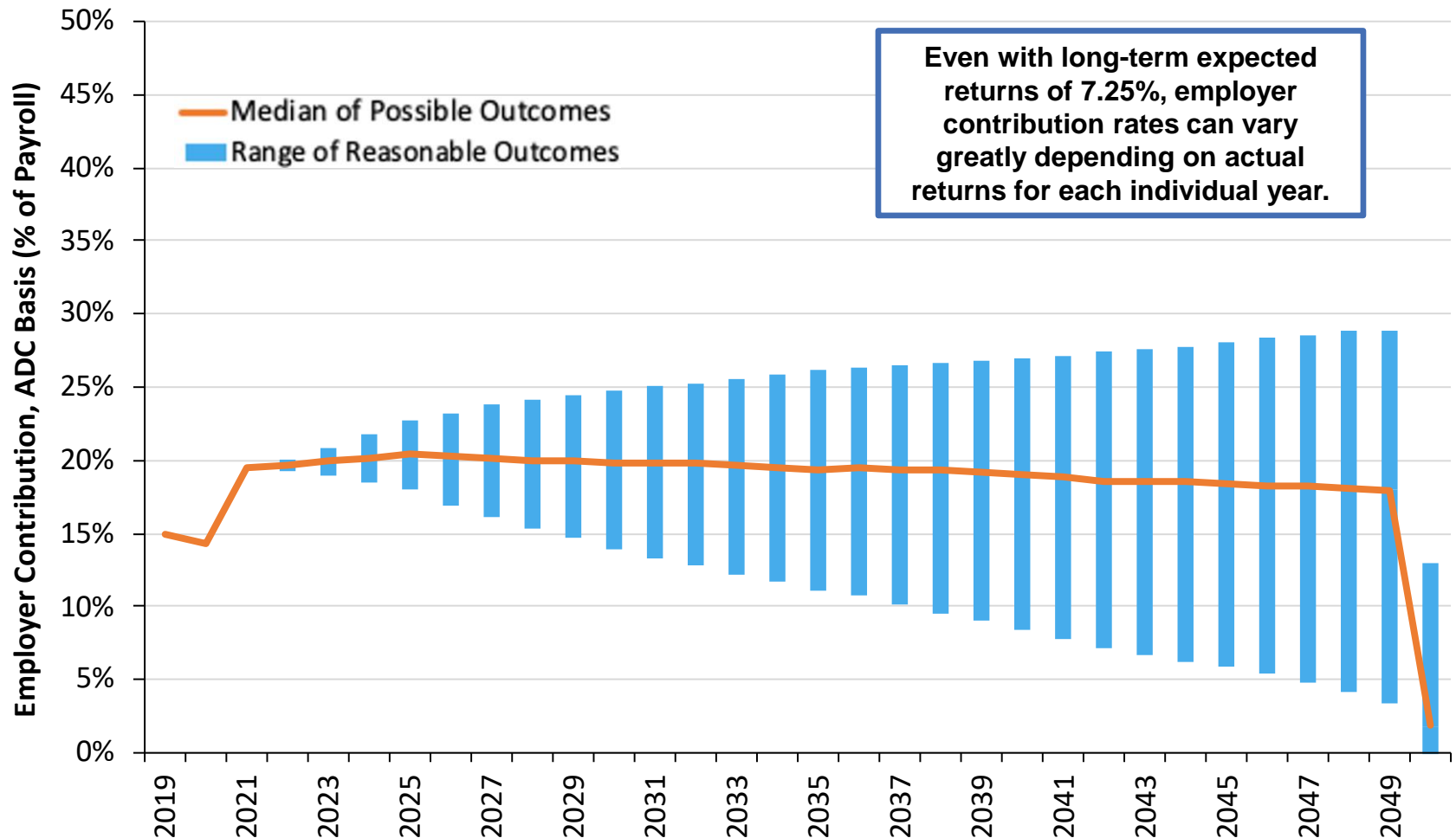
- Using a large sample of potential 30-year return scenarios can show the differences in how plan's funding will react to high or low investment fluctuations.
- The cone of displayed outcomes and the median illustrates the level of risk placed on the plan
- A narrow cone suggests a plan is more resilient—and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



30-year Employer Contribution Forecast (Conceptual ADEC Contribution Policy)

If ERB Performs as Expected, Rates Can Still Vary

Long-Term Average Returns of 7.25%

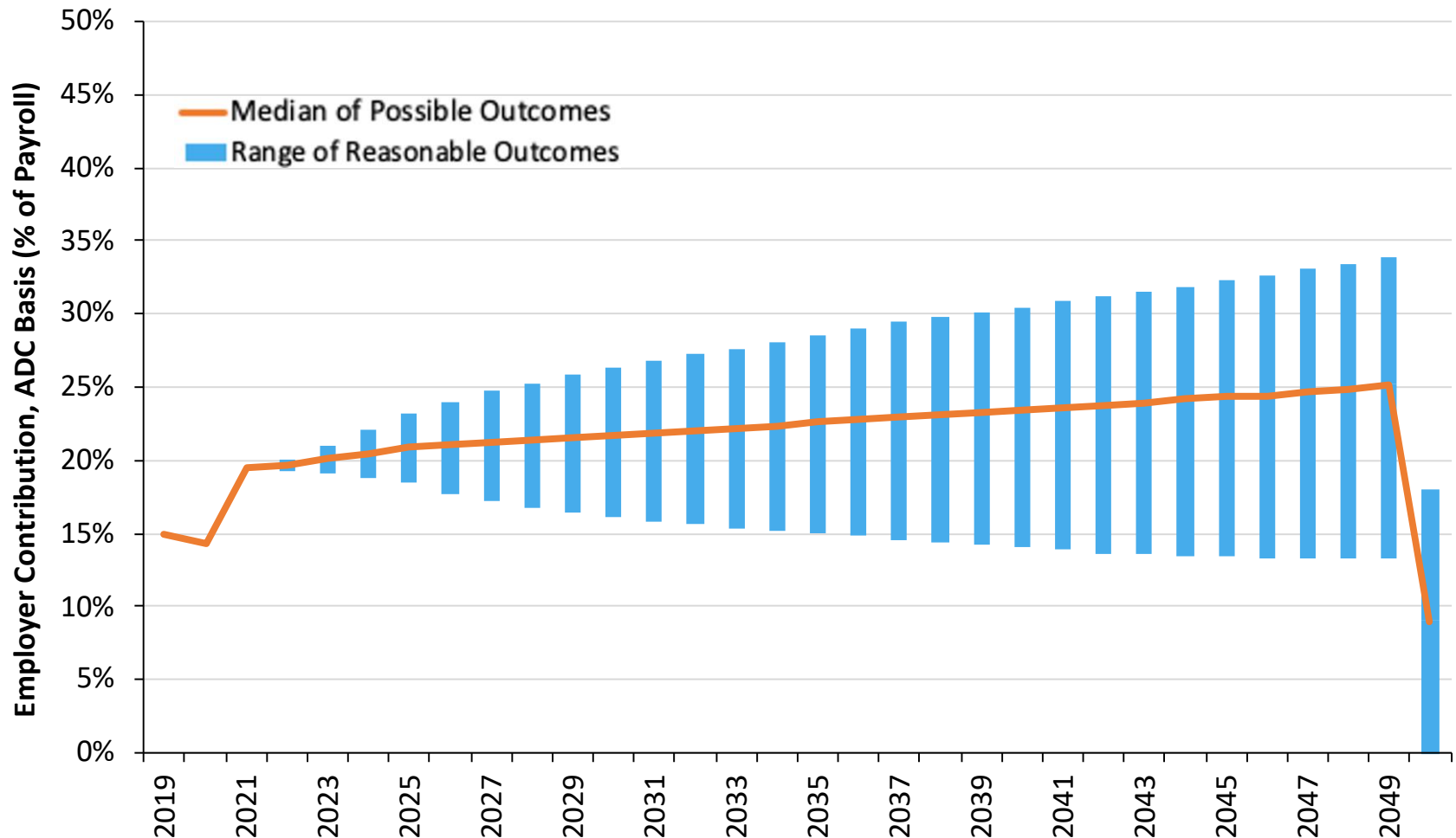


Source: Pension Integrity Project actuarial forecast of ERB plan based on plan's return and risk assumptions. Scenario assumes that the state pays 100% of the actuarially determined contribution each year. Range of Reasonable Outcomes represents the 50% of possible outcomes closest to the median.

30-year Employer Contribution Forecast (Conceptual ADEC Contribution Policy)

Under Lower Returns, Expect Higher Contribution Rates

Based on More Conservative Long-term Average Expected Returns



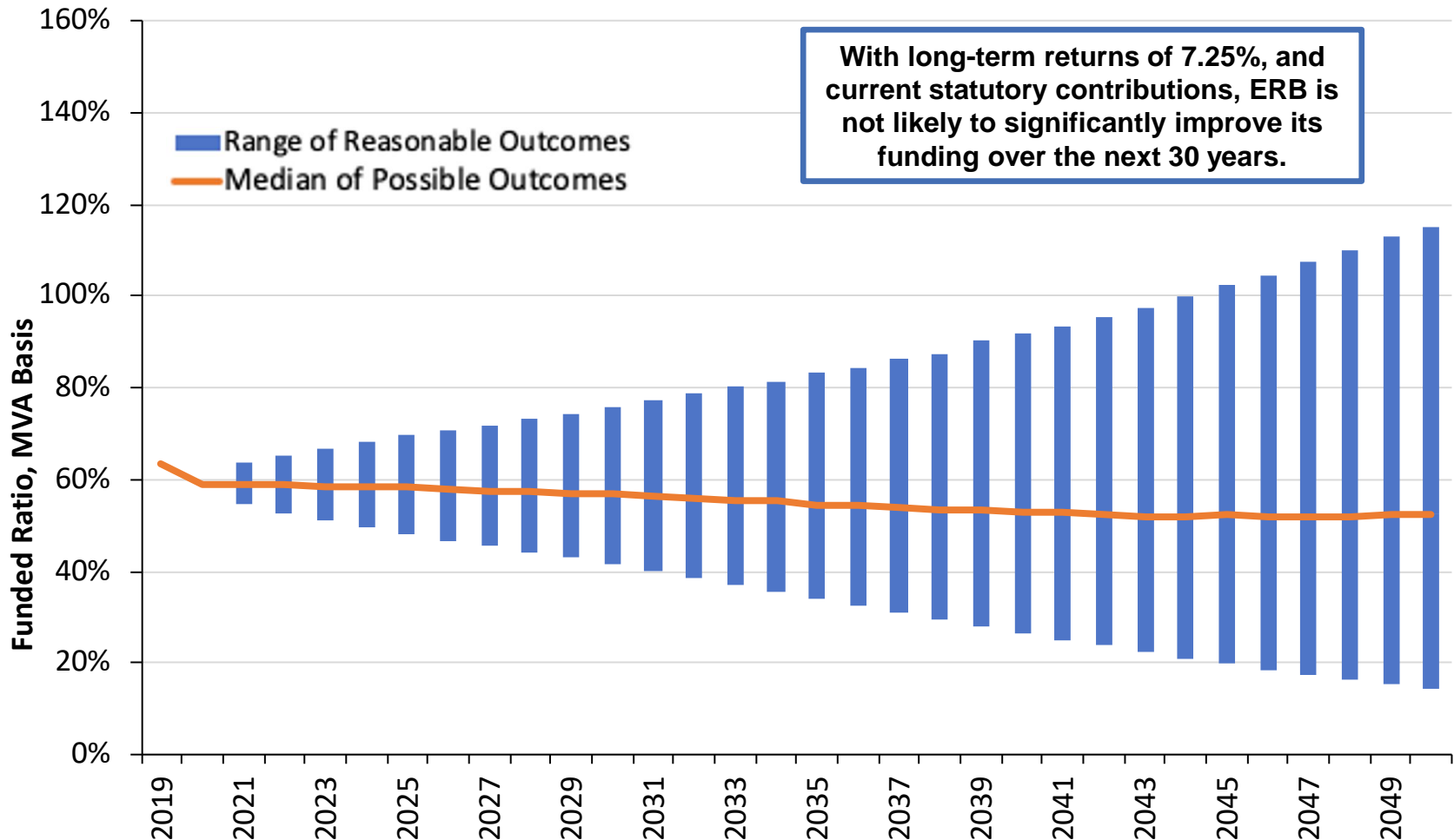
Source: Pension Integrity Project actuarial forecast of ERB plan using the return and risk assumptions of the Monte Carlo analysis. Conservative returns are 6.97%, which are the result of combining the short-term and long-term capital market assumptions from prominent financial firms.



30-year Funded Ratio Forecast (Statutory Contribution Policy)

Funded Ratios are Not Expected to Improve

Long-Term Average Returns of 7.25%



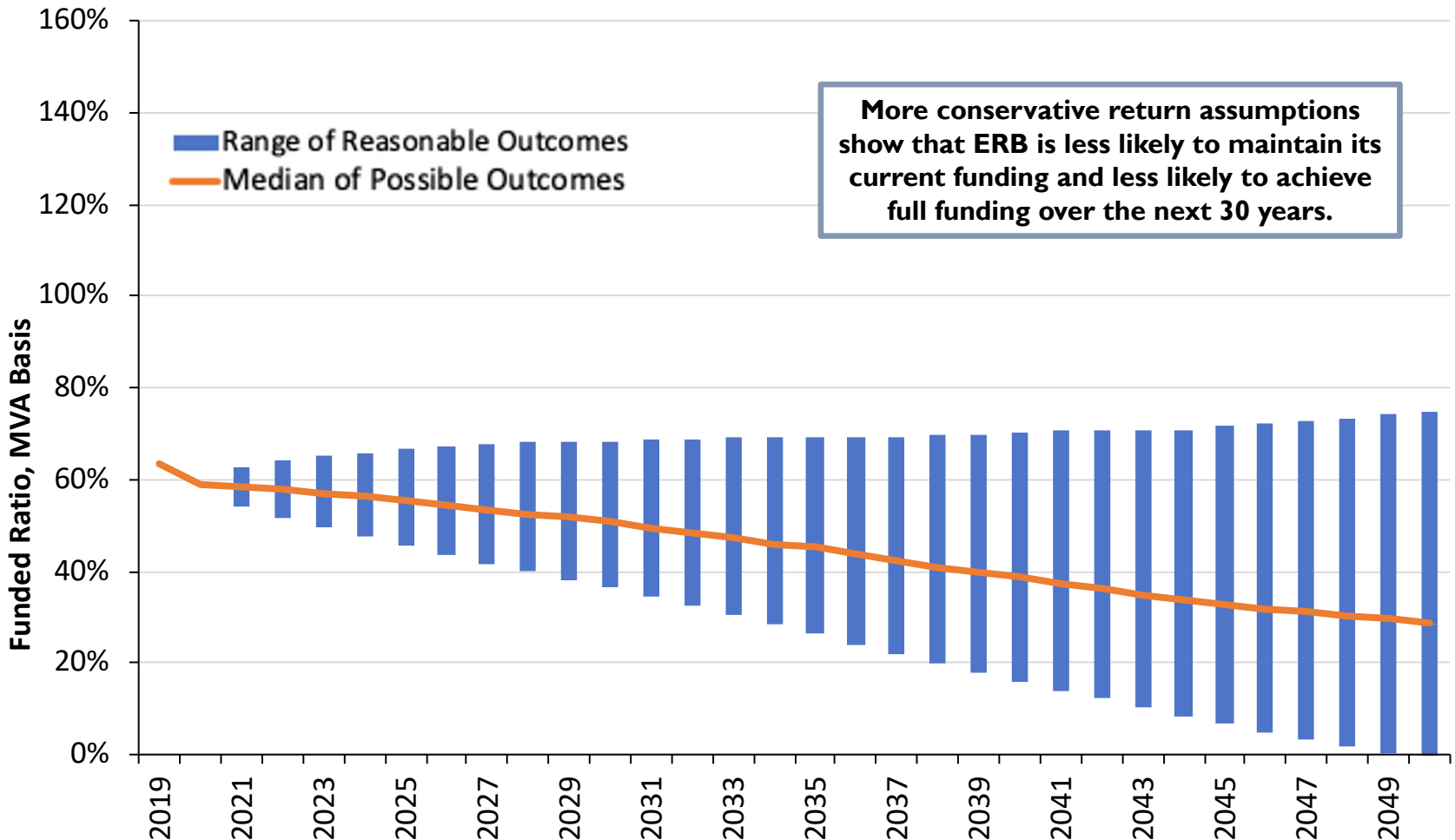
Source: Pension Integrity Project actuarial forecast of ERB plan based on ERB return and risk assumptions. Range of Reasonable Outcomes represents the 50% of possible outcomes closest to the median.



30-year Funded Ratio Forecast (Statutory Contribution Policy)

How Do Missed Returns Impact Funded Ratios?

Based on More Conservative Long-term Average Returns



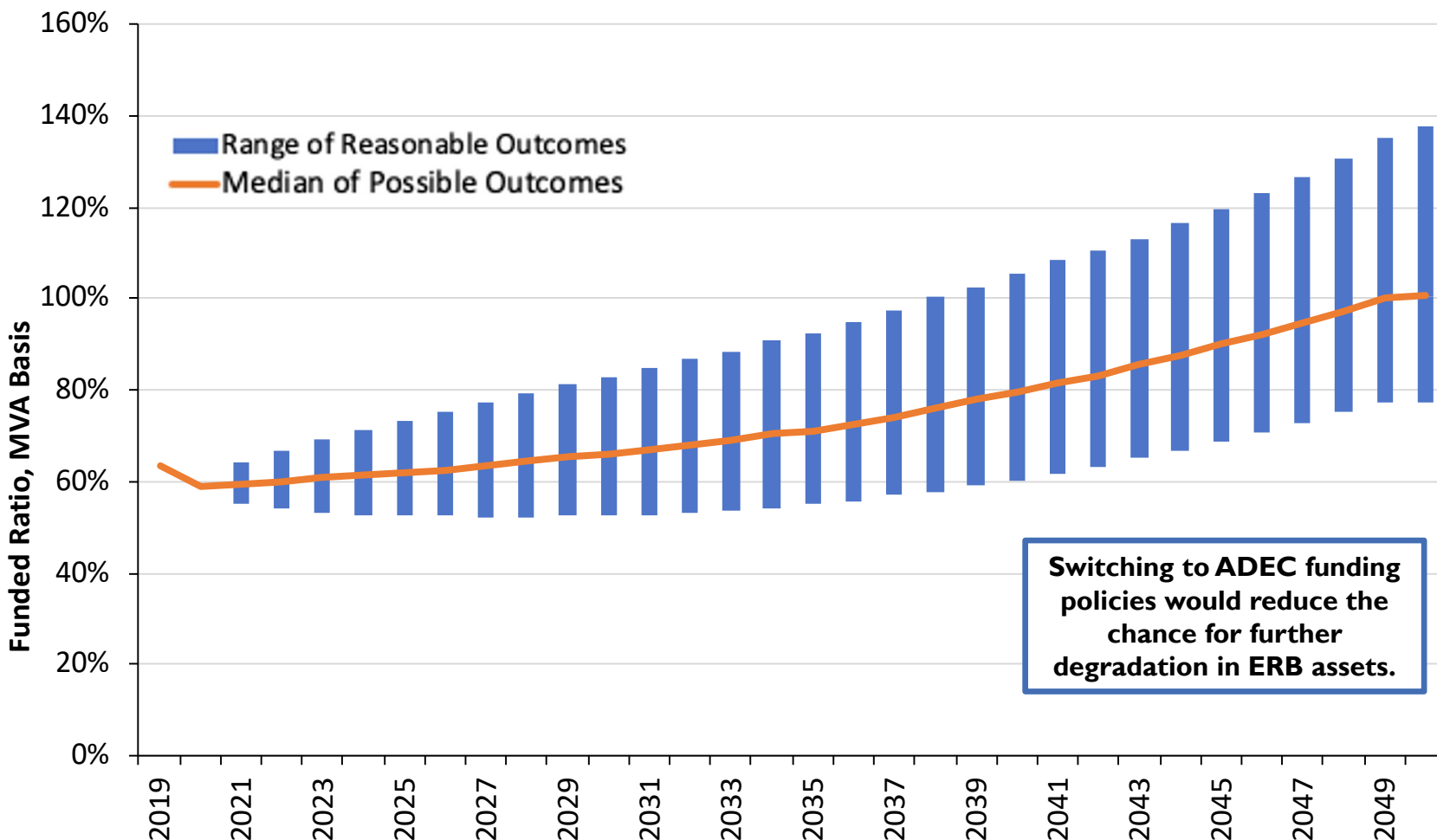
Source: Pension Integrity Project actuarial forecast of ERB plan using the return and risk assumptions of the Monte Carlo analysis. Conservative returns are 6.97%, which are the result of combining the short-term and long-term capital market assumptions from prominent financial firms.



30-year Funded Ratio Forecast (Conceptual ADEC Contribution Policy)

How do Contribution Methods Affect Funding?

Long-Term Average Returns of 7.25%



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

Sensitivity Analysis: Normal Cost Comparison Under Alternative Assumed Rates of Return



Amounts to be Paid in 2019-20 Contribution Fiscal Year, % of projected payroll

Assumed Return	Gross Normal Cost	Employer Normal Cost	Employee Normal Cost
7.25% (FYE 2020 Baseline)	13.68%	2.98%	10.70%
6.25%	15.40%	4.70%	10.70%
5.25%	17.48%	6.78%	10.70%
4.25%	20.02%	9.32%	10.70%

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 ERB CAFR.



CHALLENGE 2: INSUFFICIENT CONTRIBUTIONS & DEBT MANAGEMENT POLICIES

- For 16 of the past 19 years, employer contributions have fallen short of even the interest accrued on the pension debt, resulting in a need for much higher contributions today.

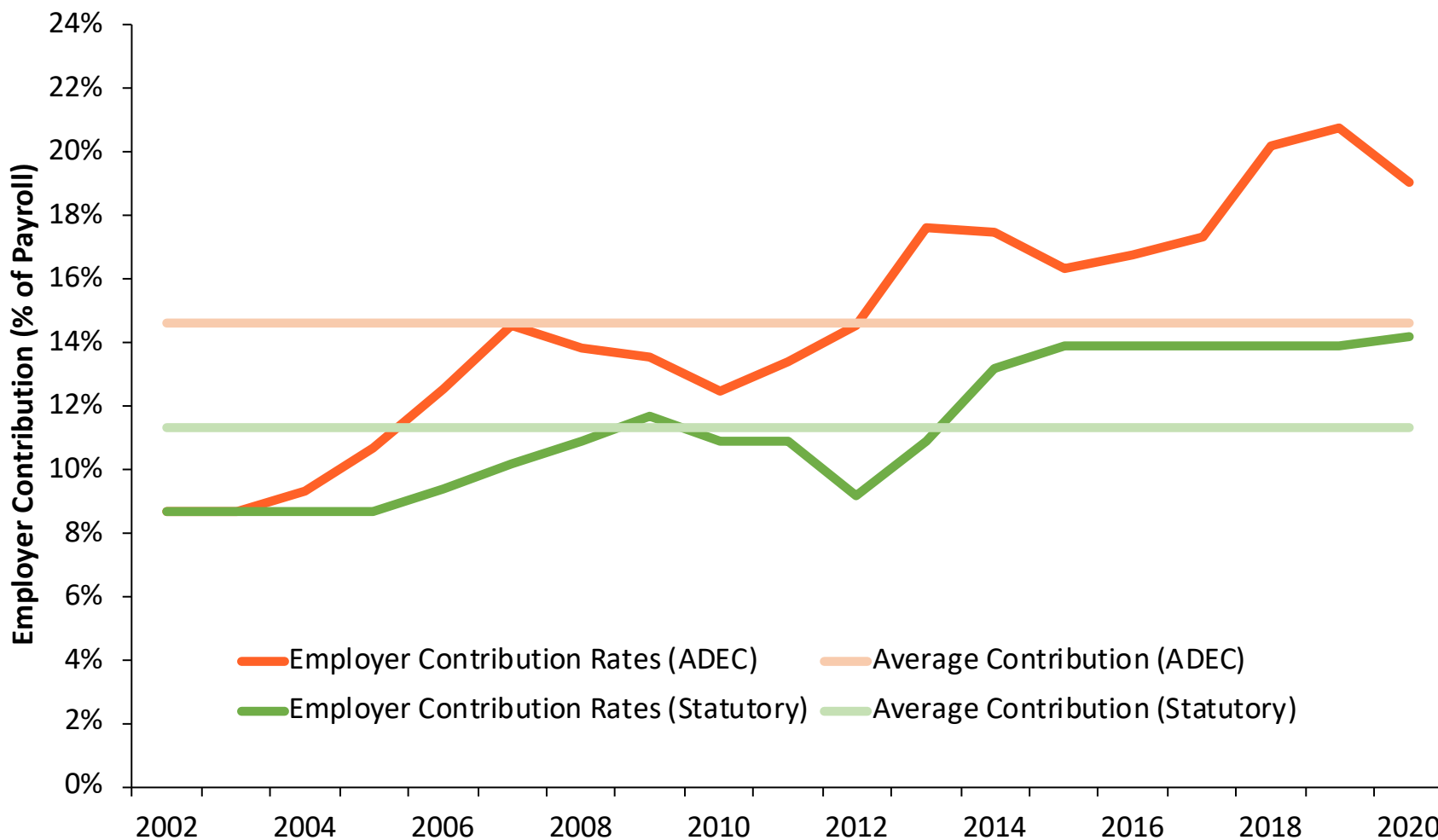
State Statutes Have Created a Structural Underfunding Problem for ERB



- Over the past decade, statutory employer contributions have routinely fallen below actuarially determined employer contribution (ADEC) rates.
- Employer contribution rates determined by legislative statute are not enough to keep up with the actual amount necessary to amortize the debt.
- **2019: Employer ADEC v. Statute**
 - *Statutory* Employer Contribution: 13.90% of payroll
 - *Actuarially Determined* Contribution: 20.78% of payroll

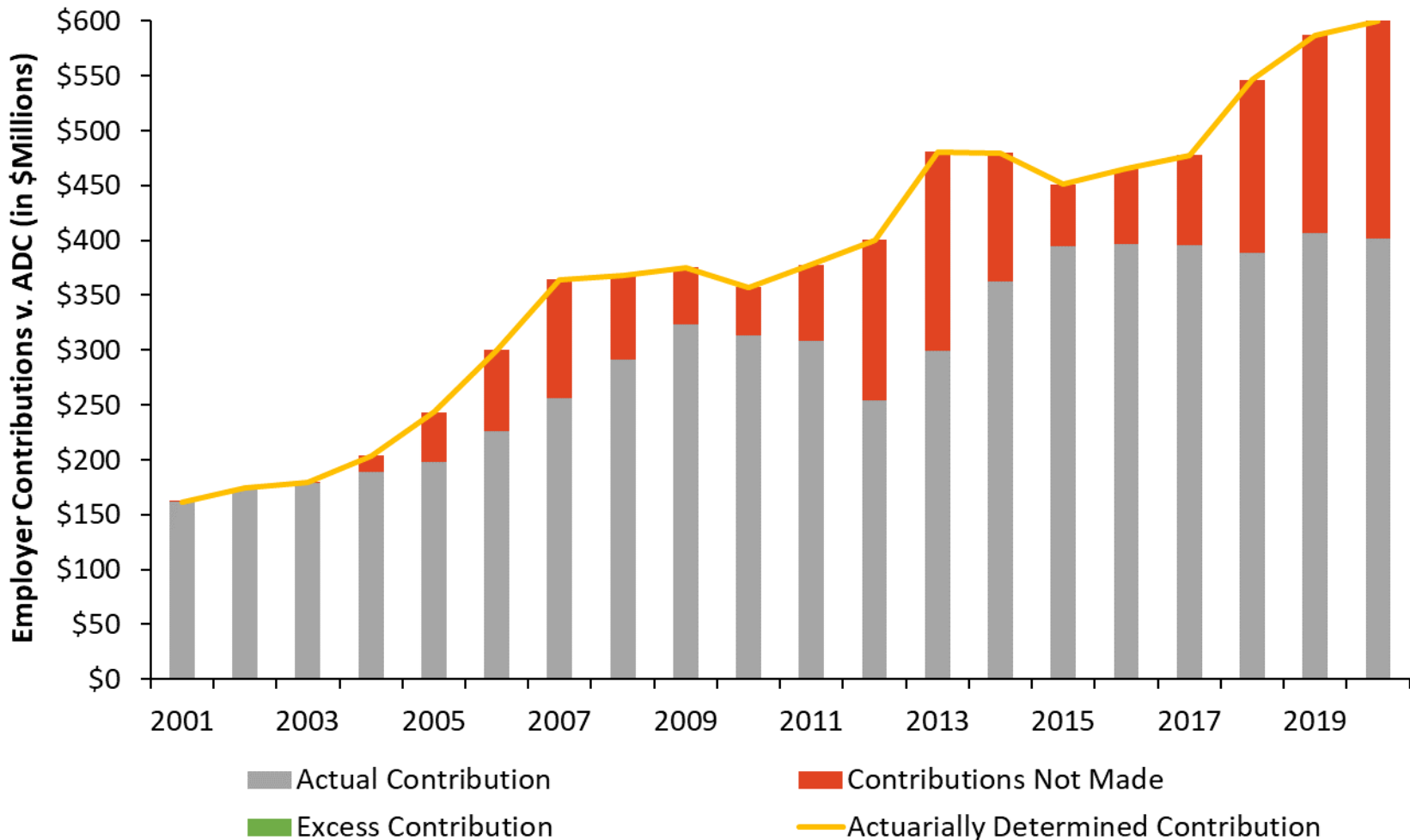
Employer Contribution Trend, 2002-2020

ADEC v. Statutory Contribution Rates



Actuarially Determined Employer Contribution History, 2001-2020

Actual v. Required Contributions



Source: Pension Integrity Project analysis of ERB actuarial reports and CAFRs. Years are contribution fiscal years.

Debt Management Policies

Shorting ERB Leads to Negative Amortization



- ERB valuation reports show volatile amortization periods falling well outside industry best practices and its own stated policy of a 30-year closed amortization schedule.
- Long amortization periods are indicators that plan amortization payments are insufficient to pay down ERB's unfunded liability and the interest that debt accrues.
- Since 2003, employer contributions have fallen below the interest accrued on ERB's unfunded liability (negative amortization), leaving ERB to fall further behind its obligations in absolute terms.
- Limiting ERB's amortization period to no more than 20 years and addressing any new unfunded liabilities in a given year on separate, short schedules is the most direct way to limit the impact of unfunded liabilities long-term.

**As of 2019,
the actual
amortization
period was
estimated by
ERB to be
“infinite.”**

Quick Facts:

- The Society of Actuaries recommends amortizing new unfunded pension liabilities over a 15 to 20-year period.

Negative Amortization: Understanding the Current Funding Policy



- With the employer contribution rate fixed in statute, ERB now faces an infinite amortization period, meaning it is not projected to ever pay off its unfunded liabilities.

ERB Amortization Period History:

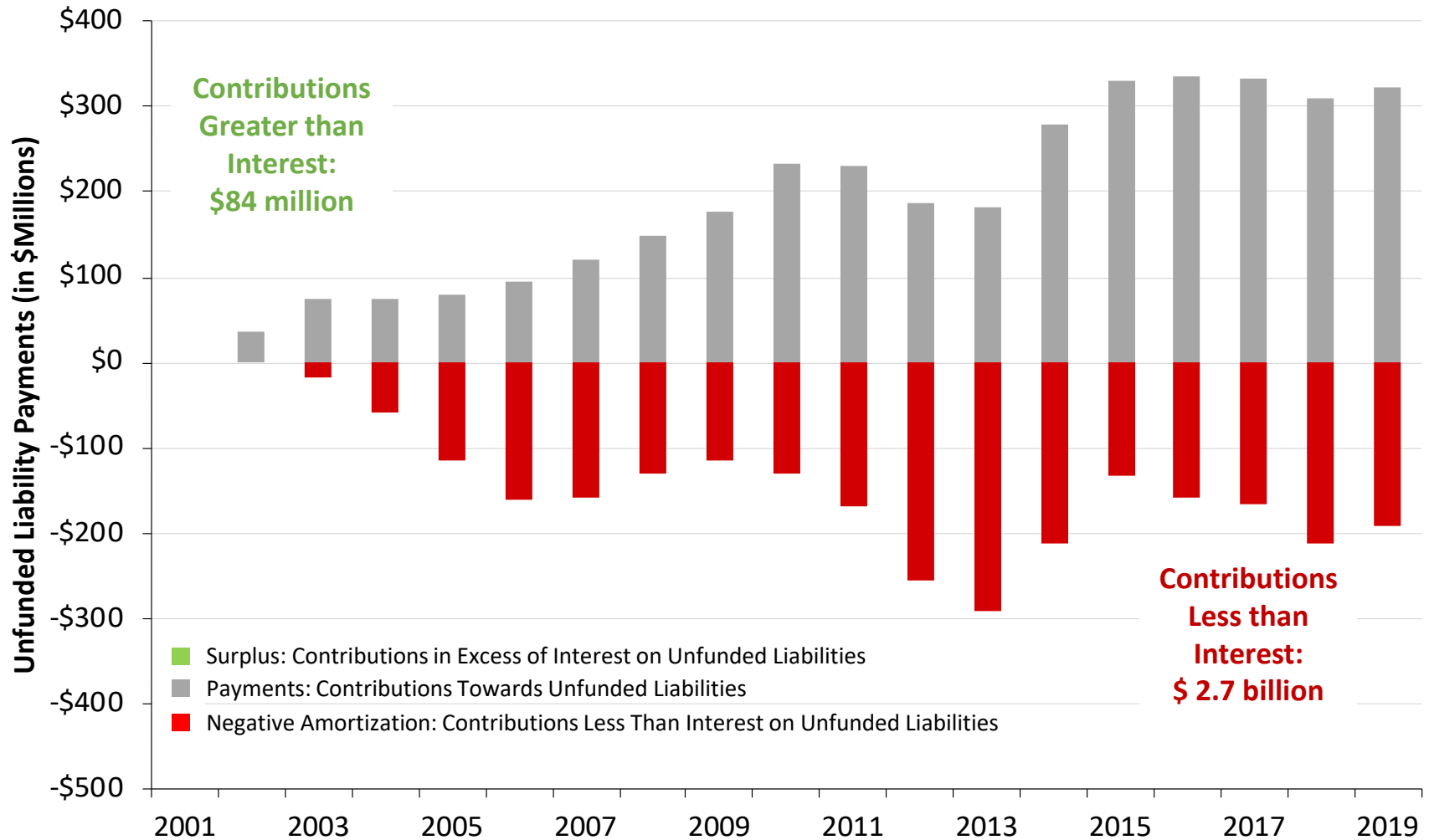
- 2019: Infinite-year amortization period
- 2017: 125-year amortization period
- 2014: 42-year amortization period
- 2013: 95-year amortization period

- These long amortization periods are indicators that plan amortization payments are not sufficient to pay down the unfunded liability and subsequent interest it accrues (i.e. *negative amortization*).
 - The Society of Actuaries recommends amortization periods of 15 to 20 years.
 - Longer periods result in larger long-term costs, so the shorter the amortization period, the better.

Debt Management Policies

Debt Interest v. Unfunded Liability Payments

ERB Negative Amortization Growth, 2001-2019

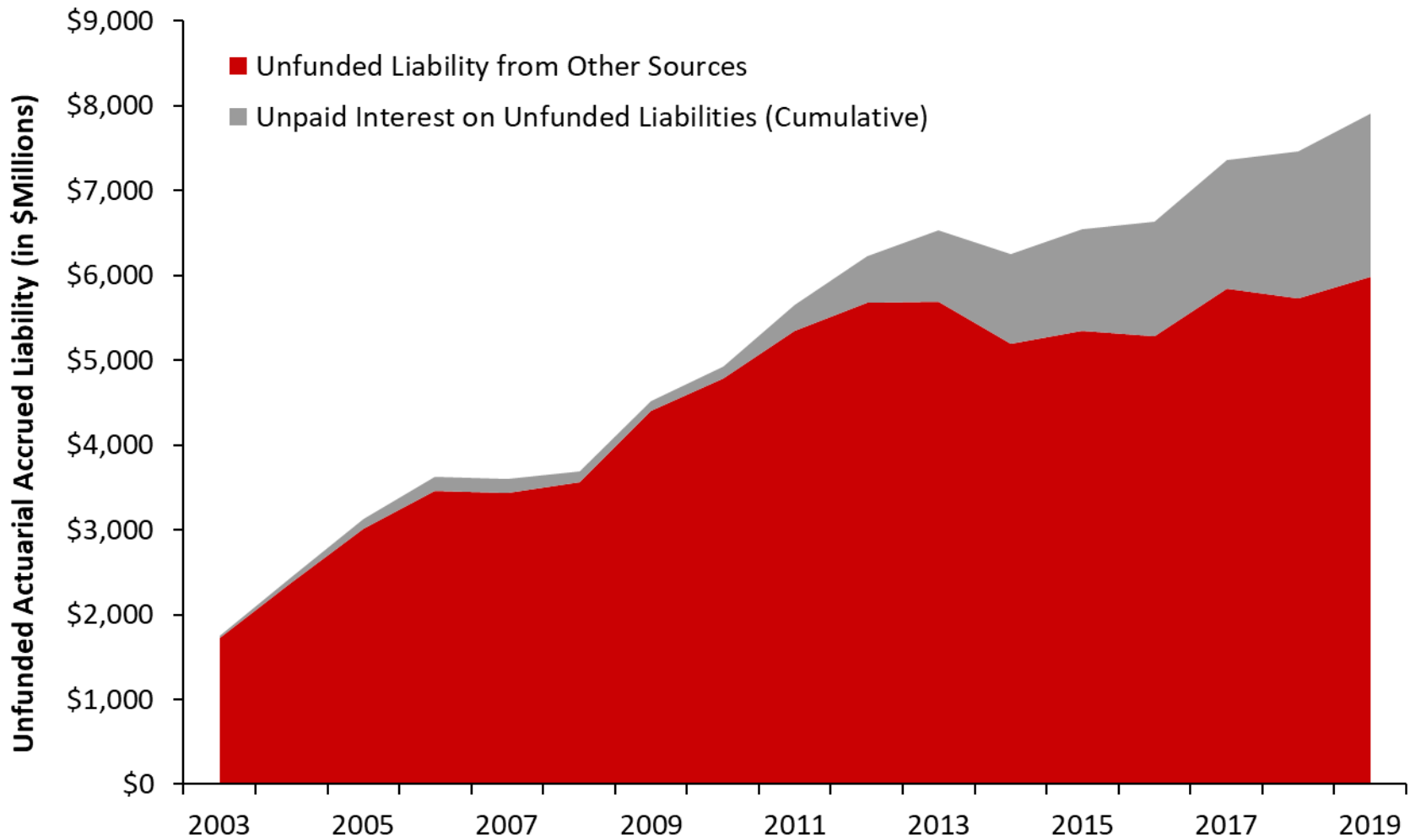


Source: Pension Integrity Project actuarial analysis of ERB valuation reports and CAFRs

Debt Management Policies

Interest Added to Unfunded Liability

ERB Negative Amortization Growth, 2001-2019

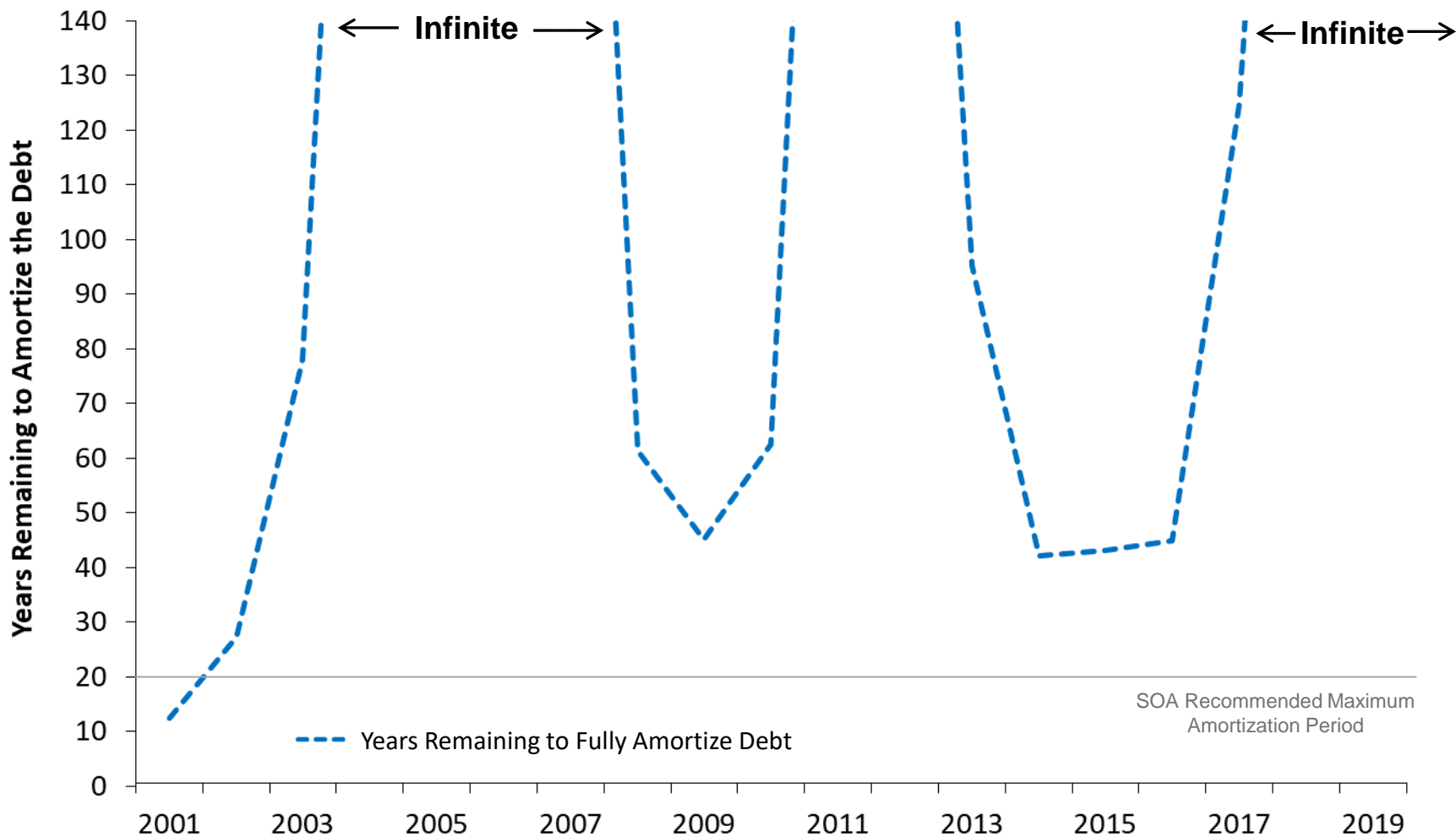


Source: Pension Integrity Project analysis of ERB actuarial valuation reports and CAFRs

Debt Management Policies

Long, Volatile Amortization Periods

ERB Negative Amortization Growth, 2001-2019



Source: Pension Integrity Project analysis of ERB actuarial valuation reports and CAFRs.
 The Society of Actuaries Blue Ribbon Panel recommends amortization periods not exceed 20 years..

Debt Management Policies

Back-Loaded Pension Debt Payments



ERB has a stated 30-year, closed, level-percentage amortization method to amortize accrued unfunded liability.

- What is level-percent of payroll amortization?
 - Sets the amortization payment as a fixed share of total member payroll
 - Very sensitive to missed assumptions
 - Often results in back-loaded pension debt payments, especially if payroll growth slows
- What does a long amortization period mean?
 - The amount of time over which ERB spreads debt payments
 - Actuaries find amortizing new debt longer than 20 years stretches payments too thin
 - Makes it more likely unfunded liabilities will never be paid off
 - Often leaves debt payments each year short of the interest accrued on the debt (e.g. negative amortization)



CHALLENGE 3: CHANGES TO ACTUARIAL ASSUMPTIONS AND METHODS

- The combination of unmet actuarial assumptions and slow-paced changes to those assumptions is increasing the size of unfunded liabilities



Challenges from Aggressive Actuarial Assumptions

Actual Experience Different from Actuarial Assumptions

(-) Flawed Contribution and Debt Management Policies

- Setting contribution rates in statute that are below ADEC and using optimistic return assumption resulted in interest on ERB debt exceeding the actual debt payments (aka negative amortization) and a net \$2.60 billion increase in the unfunded liability since 2001.

(-) Changes in Actuarial Assumptions and Methods

- ERB made alterations to its actuarial assumptions (e.g. changes in the assumed rate of return in 2011 and 2017) that have collectively unveiled \$1.76 billion of hidden unfunded liabilities from 2001-2019.

(+) Deviations from Service Retirement and Other Demographic Assumptions

- ERB's unfunded liability decreased by \$263 million between 2001-2019 due to misaligned demographic assumptions (including deviations from plan's withdrawal, retirement, disability, and mortality assumptions).

Challenges from Aggressive Actuarial Assumptions

Actual Experience Different from Actuarial Assumptions



(+) Overestimated Payroll Growth

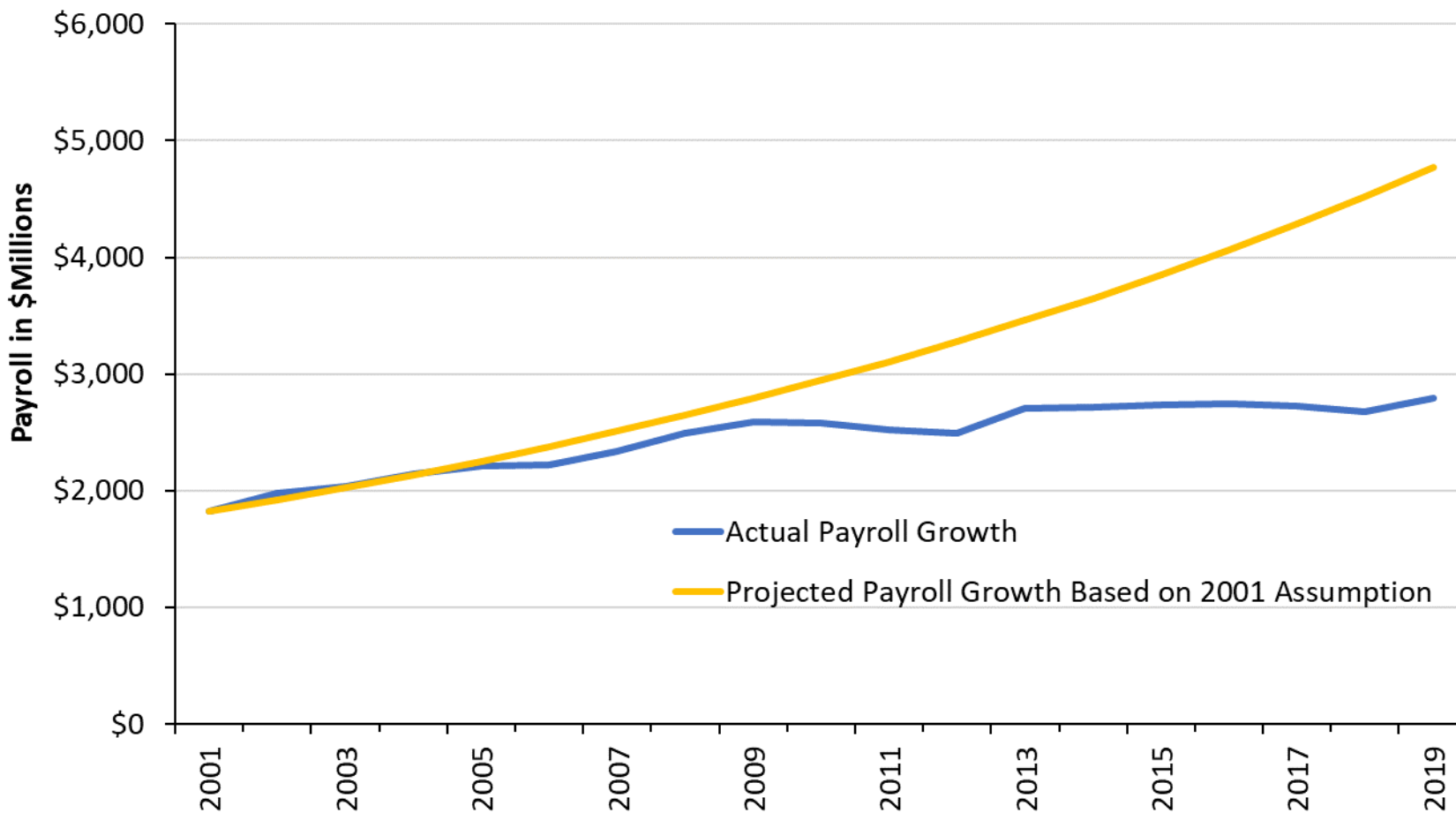
- ERB employers have not raised salaries as fast as expected, resulting in lower payrolls and thus lower earned pension benefits. This has meant a reduction in unfunded liabilities of \$371 million from 2001 to 2019.

(-) Overestimated Payroll Growth

- However, overestimating payroll growth is creating a long-term Challenge for ERB because of its 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). But when payroll does not grow as fast as expected, 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

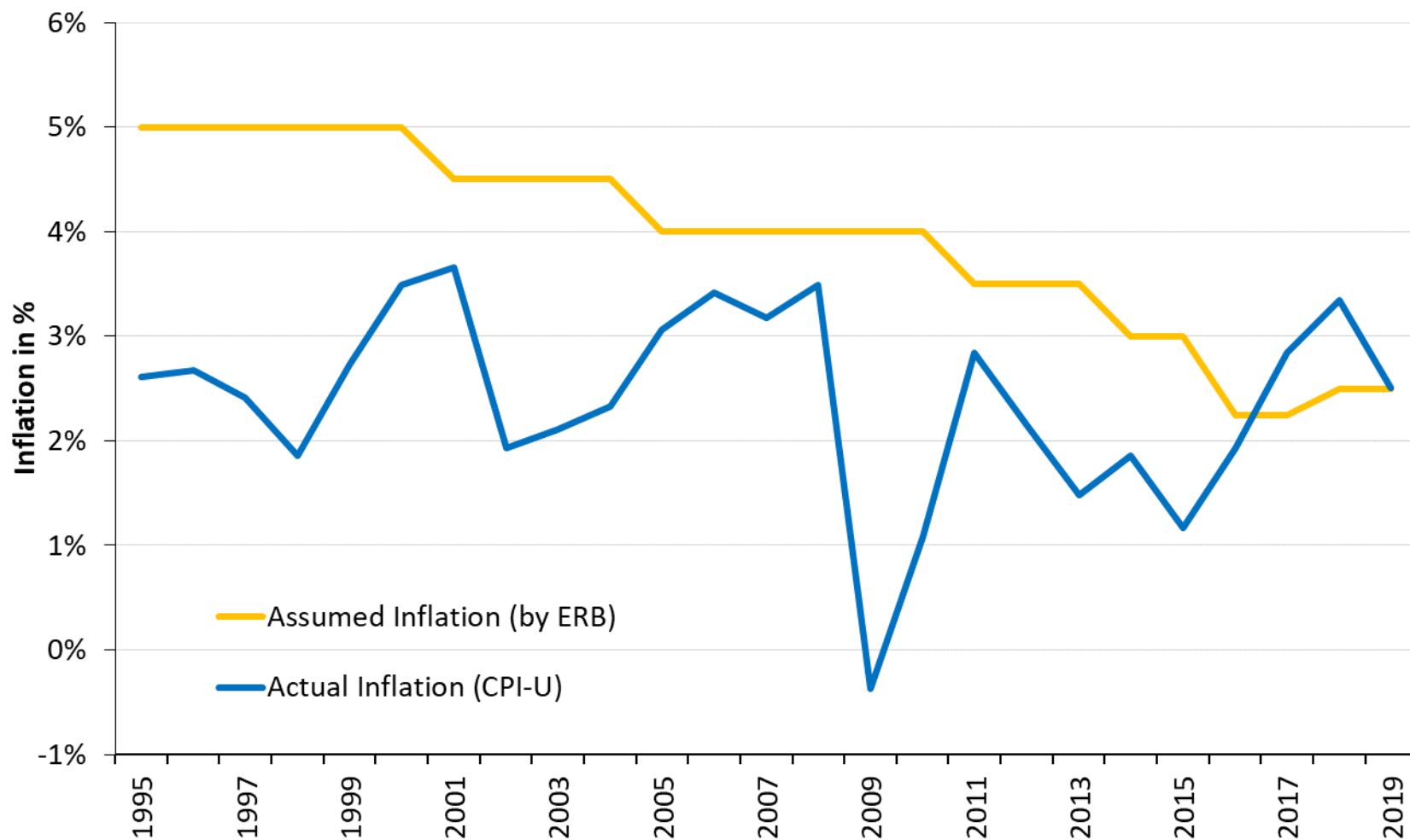
Actual Change in Payroll v. Assumption



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

Challenges from Aggressive Actuarial Assumptions

Actual Inflation v. Assumption

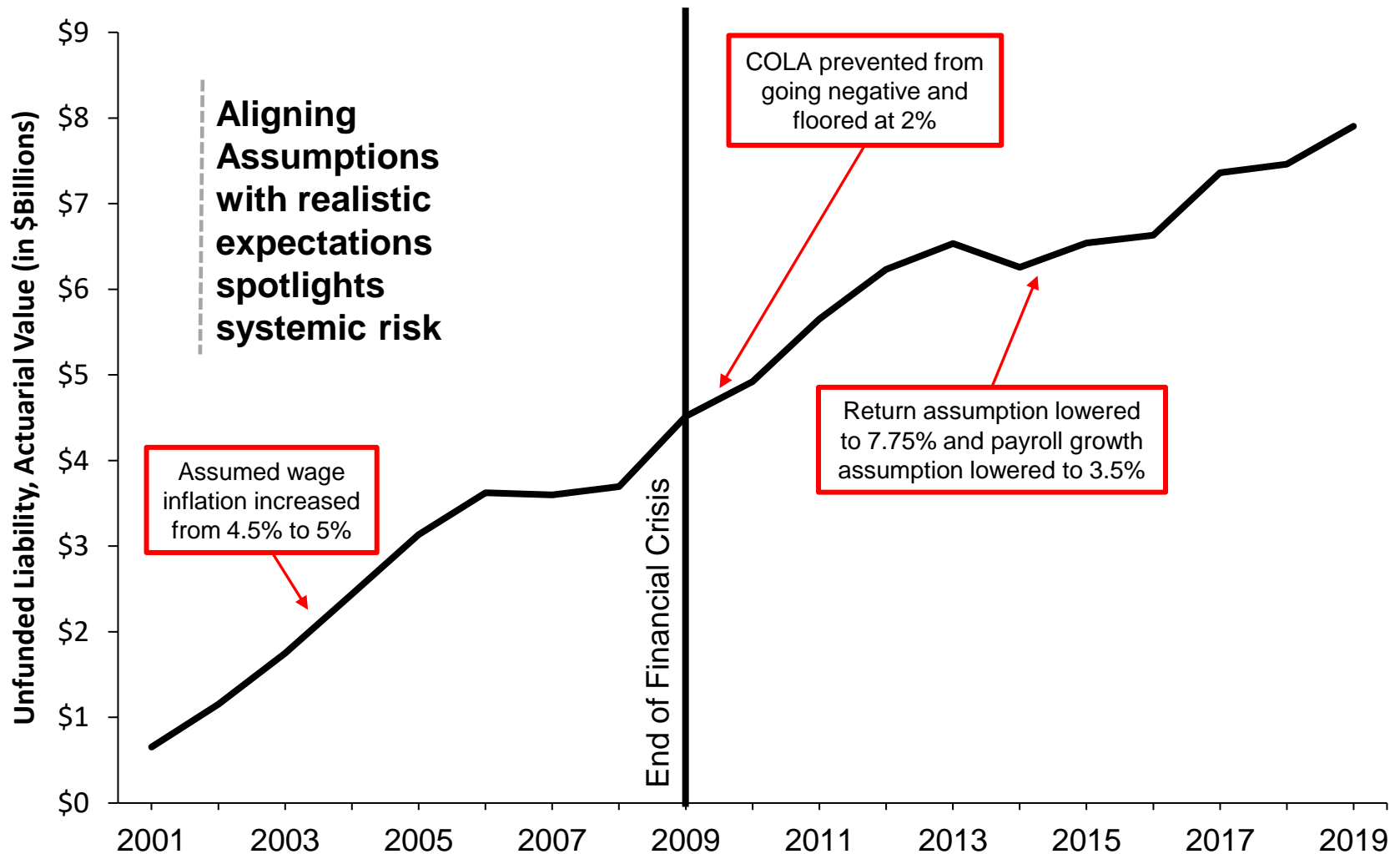


Source: Pension Integrity Project forecasting based on ERB actuarial valuation reports and CAFRs, and data from the Bureau of Labor Statistics.



Challenges from Aggressive Actuarial Assumptions

Assumption Changes Expose Hidden Unfunded Liabilities



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



CHALLENGE 4: PLAN CHANGES

- ERB reports changes in plan provisions or applicable law as a source of unfunded liability over the last two years.



Significant Recent Changes to ERB

HB657 (2003)	HB631 (2009)	HB854 (2009)
<ul style="list-style-type: none"> Allowed non-provisional education members (substitute teachers, etc.) to acquire retirement credits for periods of employment with the state. 1-year opt-in period for credits or refunds. Non-members choosing credits for earlier years are required, with their employer, to make contributions for that year plus interest. 	<ul style="list-style-type: none"> Employees can retire at any age but requires they have at least 30 years of service. If members are less than 67, or their age plus the number of years of earned service credit equals 80 (“Rule of 80”) or more but have 30 years of service, they receive a reduced benefit. 	<ul style="list-style-type: none"> Increased employer contribution rates to 11.65% in 2011, and to 13.9% in 2012. Maintained member contribution rate at 9.40%. Members earning \$20,000 or less contributed 7.9% in 2010 and 2011, while employers contributed 12.40% in 2010 and 13.10% in 2011.

Increases or the expansion to pension benefits without the proper funding can result in further accrual of unfunded liabilities even if all assumptions are correct over time.



CHALLENGE 5: DISCOUNT RATE AND UNDERVALUING DEBT

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

ERB 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 ERB — 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 ERB 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.

ERB Discount Rate

Methodology is Undervaluing Liabilities



2. Setting a discount rate too high leads to undervaluing the amount of accrued pension benefits:

- 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 New Mexico would pay out less than 100% of promised retirement income benefits to members and retirees.

- Article XX, Section 22D of the New Mexico Constitution recognizes that public pensions give rise to vested property rights, protected by due process. *Pierce v. State*, 910 P.2d 288 (determining that state retirement statutes created vested property rights, but not contract rights).

3. 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.

ERB Pension Debt Sensitivity

FYE 2020 Actuarial Liability Projections Under Varying Discount Rates

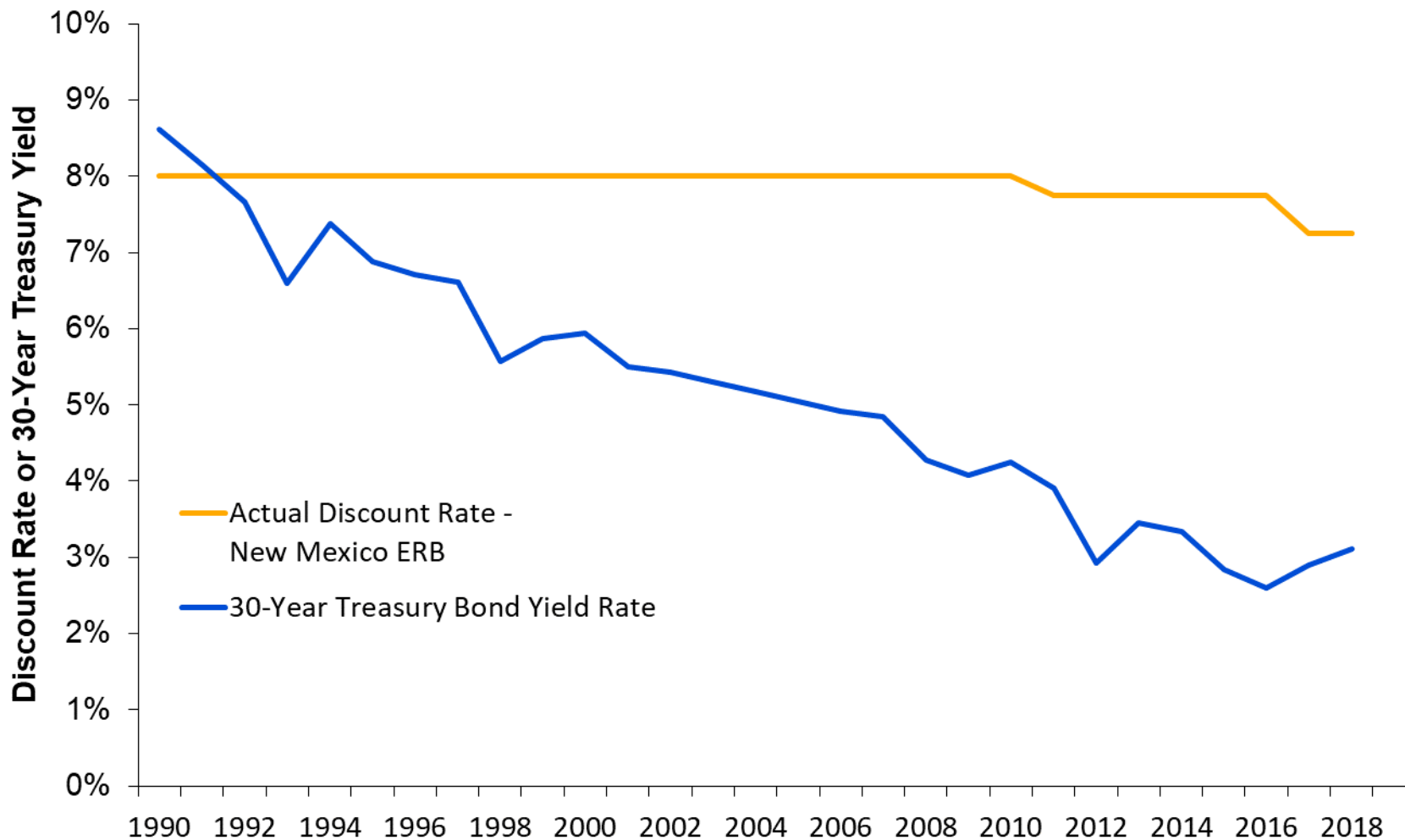


Discount Rate	Funded Ratio (Market Value)	Net Pension Liability (Market Value)	Total Pension Liability
7.25% (FYE 2020 Baseline)	58.7%	\$9.1 billion	\$22.0 billion
6.25%	52.2%	\$11.8 billion	\$24.7 billion
5.25%	46.0%	\$15.2 billion	\$28.1 billion
4.25%	40.1%	\$19.3 billion	\$32.2 billion

Note: Net pension liability and total pension 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 ERB CAFR.

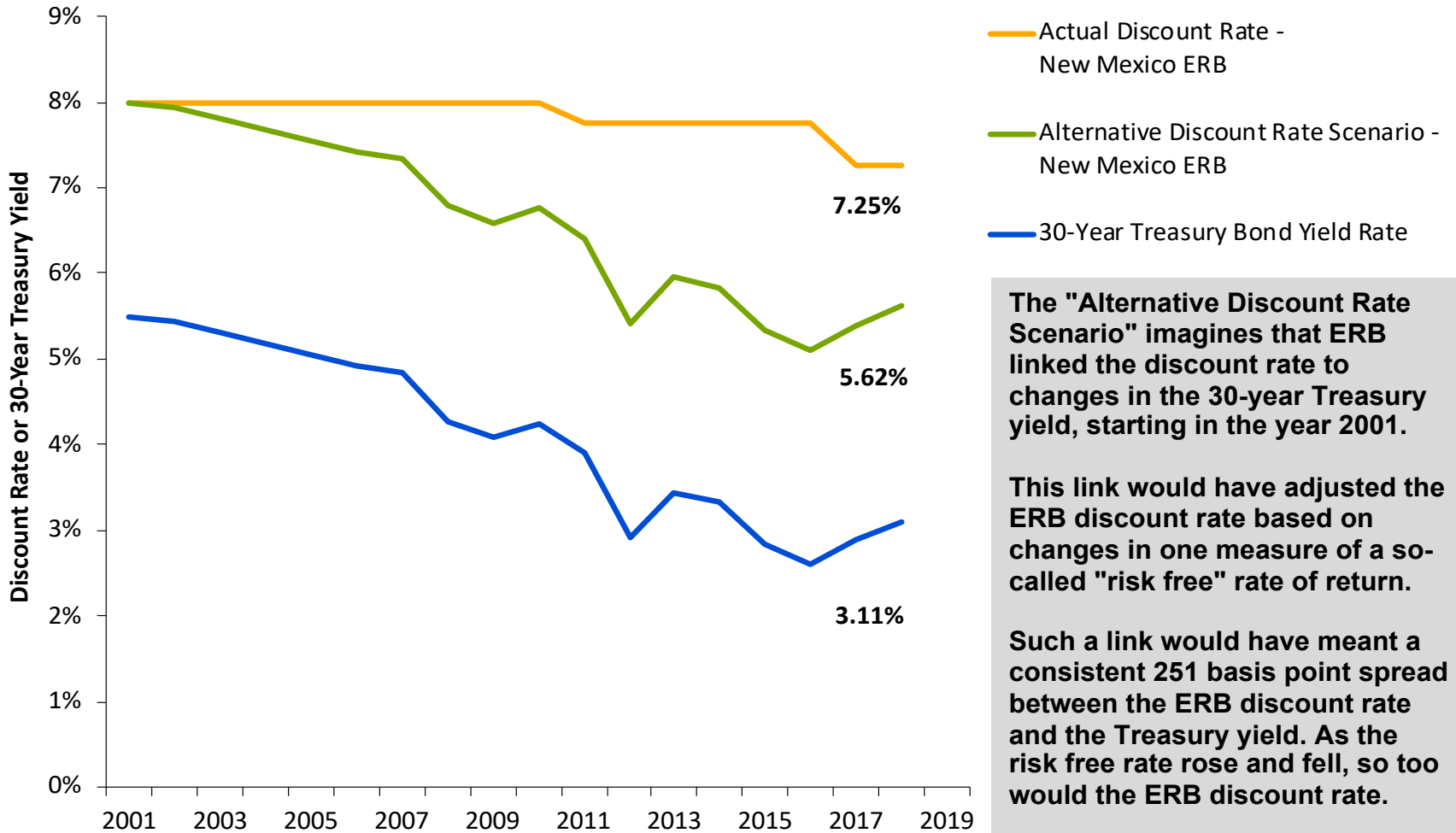
Source: Pension Integrity Project analysis of ERB actuarial reports and CAFRs. Projections are based on market value of assets and actuarial accrued liability. Figures are rounded.

Change in the Risk-Free Rate Compared to ERB Discount Rate (1990-2019)



Source: Federal Reserve average annual 30-Year Treasury constant maturity rate.

Change in the Risk-Free Rate Compared to ERB Discount Rate (2001-2019)



The "Alternative Discount Rate Scenario" imagines that ERB linked the discount rate to changes in the 30-year Treasury yield, starting in the year 2001.

This link would have adjusted the ERB 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 251 basis point spread between the ERB discount rate and the Treasury yield. As the risk free rate rose and fell, so too would the ERB discount rate.

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



CHALLENGE 6: THE EXISTING BENEFIT DESIGN DOES NOT WORK FOR EVERYONE

- The turnover rate for members of ERB suggests that the current retirement benefit design is not supporting goals for retention

ERB Employee Benefit Tier Overview



Benefit Tiers 1-3: (Final Average Salary) x (Years of Service) x (2.35%)

- **Tier 1**

- Membership began before July 1, 2010
- Eligible at 25 years of service or 65 years old and 5 years of service or Rule of 75
- COLA begins at age 65

- **Tier 2**

- Membership began on or after July 1, 2010 but prior to July 1, 2013
- Eligible at 30 years of service or 67 years old and 5 years of service or Rule of 80
- COLA begins at age 65

- **Tier 3**

- Membership began on or after July 1, 2013 but prior to July 1, 2019
- Eligible at 30 years of service or 67 years old and 5 years of service or Rule of 80
- COLA begins at age 67

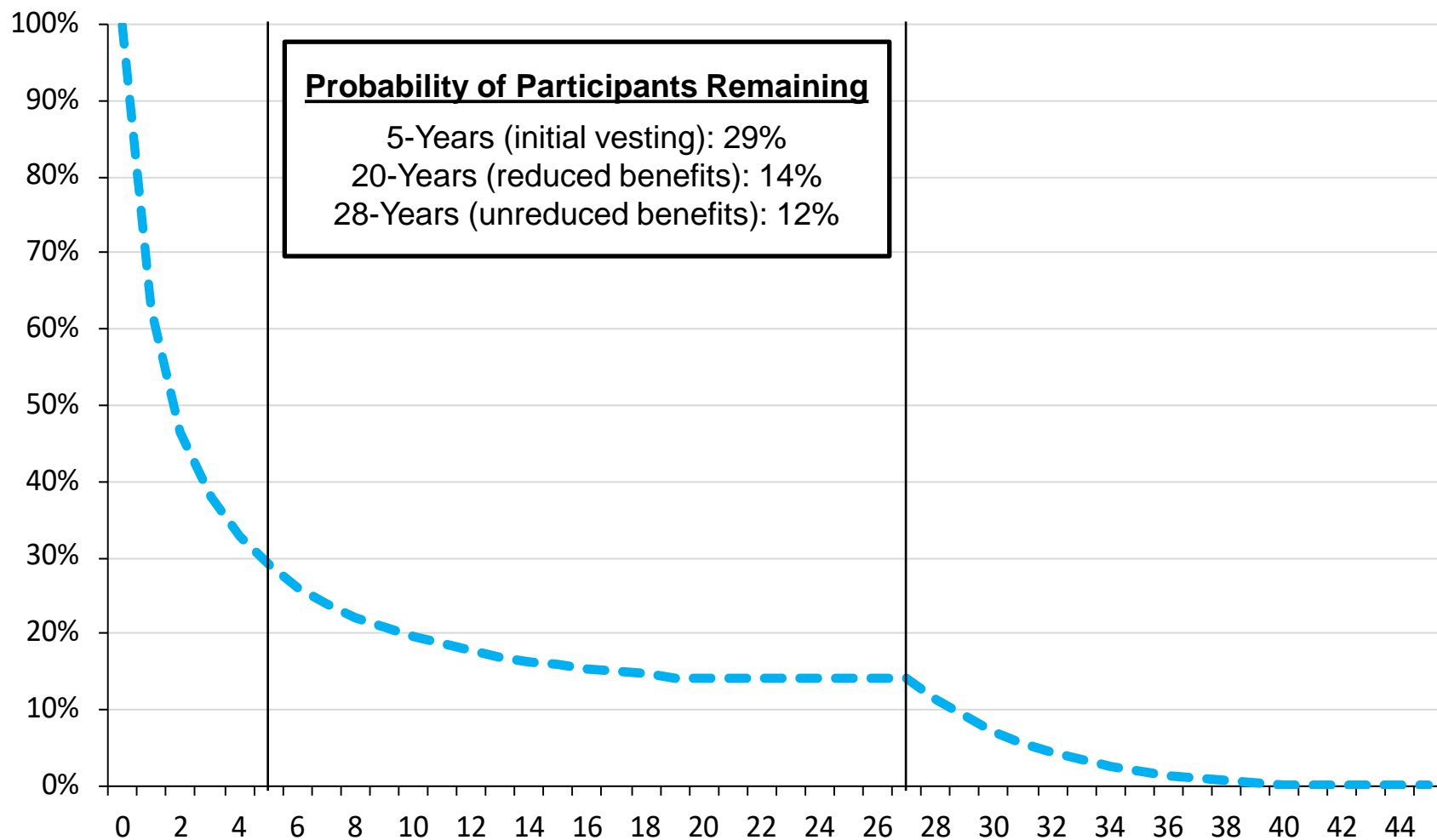
Benefit Tier 4 = (Final Average Salary) x (Graduated Multiplier)

- **Tier 4**

- Membership began on or after July 1, 2019
- Eligible at 30 years of service or 67 years old and 5 years of service or Rule of 80
- COLA begins at age 67
- Multiplier ranges from 1.35% to 3.35% depending on years of credited service



Probability of Members Remaining in ERB



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

Illustration is based on plan's Tier 2, Tier 3, Tier 4 assumptions and a hypothetical analysis of an average member hired at the age of 25



Do ERB Retirement Plans Work for All Employees?

- **71%** of new ERB members leave before 5 years
 - Tier 2, Tier 3, and Tier 4 employees must work 5 years before their benefits become vested.
 - Members who leave the plan before then must forfeit contributions their employer made on their behalf.
 - Another 15% of new members who are still working after 5 years will leave before 20 years of service.
- **12%** of all Tier 2, Tier 3, and Tier 4 members hired next year will still be working after reaching Rule of 80 threshold (Age + Years of Service), long enough to qualify for unreduced benefits
 - New Mexico ensures that all state employees have access to Social Security benefits.



Recruiting and Retaining Public Employees

■ Recruiting a 21st Century Workforce:

- There is little evidence that retirement plans — DB, DC, or other design — are a major factor in whether an individual wants to enter public employment.
- The most likely incentive to increase recruiting to the public workforce is increased salary.

■ Retaining Employees:

- If worker retention is a goal of the ERB system, it is clearly not working, as around 70% of employees leave within 5 years.
- After 20 to 25 years of service there is some retention effect, but the same incentives serve to push out workers in a sharp drop off after 30 years of service.



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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