

THE
PEW
CHARITABLE TRUSTS

Public Pension Stress Testing: Montana

LEGISLATIVE FINANCE COMMITTEE MEETING (66TH LEGISLATURE)

HELENA, MONTANA

AUGUST 11, 2020

DAVID DRAINE, SENIOR OFFICER

BEN HENKEN, ASSOCIATE

STRENGTHENING PUBLIC SECTOR RETIREMENT SYSTEMS

The Pew Charitable Trusts

- An independent, nonprofit and nonpartisan research and policy organization.
- “Driven by the power of knowledge to solve today’s most challenging problems.”
- Our mission is to:
 - Improve public policy
 - Inform the public
 - Invigorate civic life

Pew’s Public Sector Retirement Systems Project

- Research since 2007 includes 50-state trends on public pensions and retiree benefits related to funding, investments, governance, plan design, and retirement security.
- Technical assistance for states and cities since 2011.

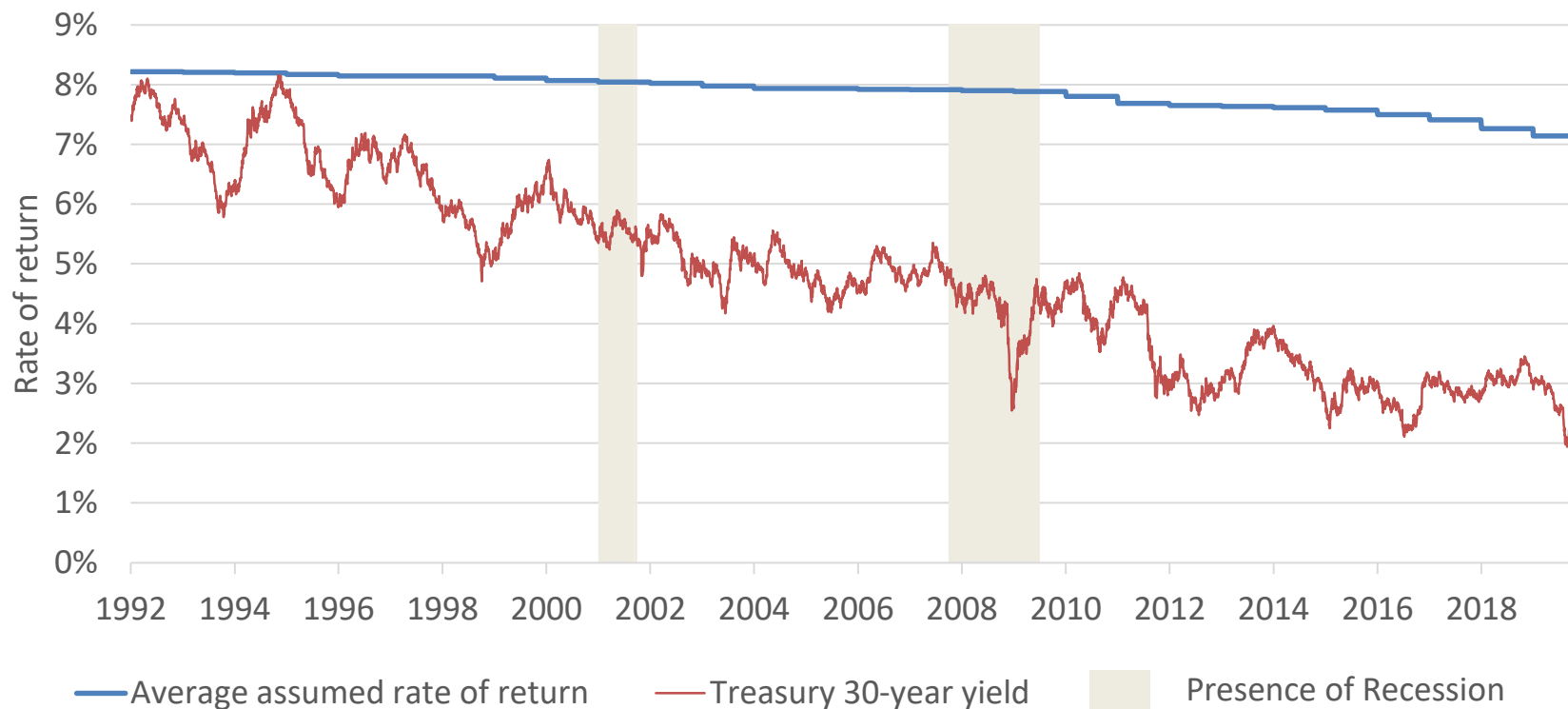
Background

- After nearly ten years of economic recovery, public pension debt still remains at historically high levels. Now the emergence of the COVID-19 pandemic is putting strains on pension plans and state budgets.
- Stress testing provides state officials with a tool to understand how pension plans and state budgets will weather economic downturns and volatile investment markets and to test the impact of policy decisions.
- Pew was invited by the Pensions and Local Trends Legislative Finance Subcommittee to prepare a stress test analysis of Montana's major pension systems based on our [Foundation for Public Pension Risk Reporting](#) to be reviewed at their May 4th meeting.
- Our analysis found that the state's current funding policy may not be sufficient to improve funded status if investment returns fall short of expectations. Additionally, in a severe market downturn, there is a risk of insolvency.

Pension Fund Risk Premium at Historic High

Plan's average assumed rate of return remains relatively stable, while bond yields have declined

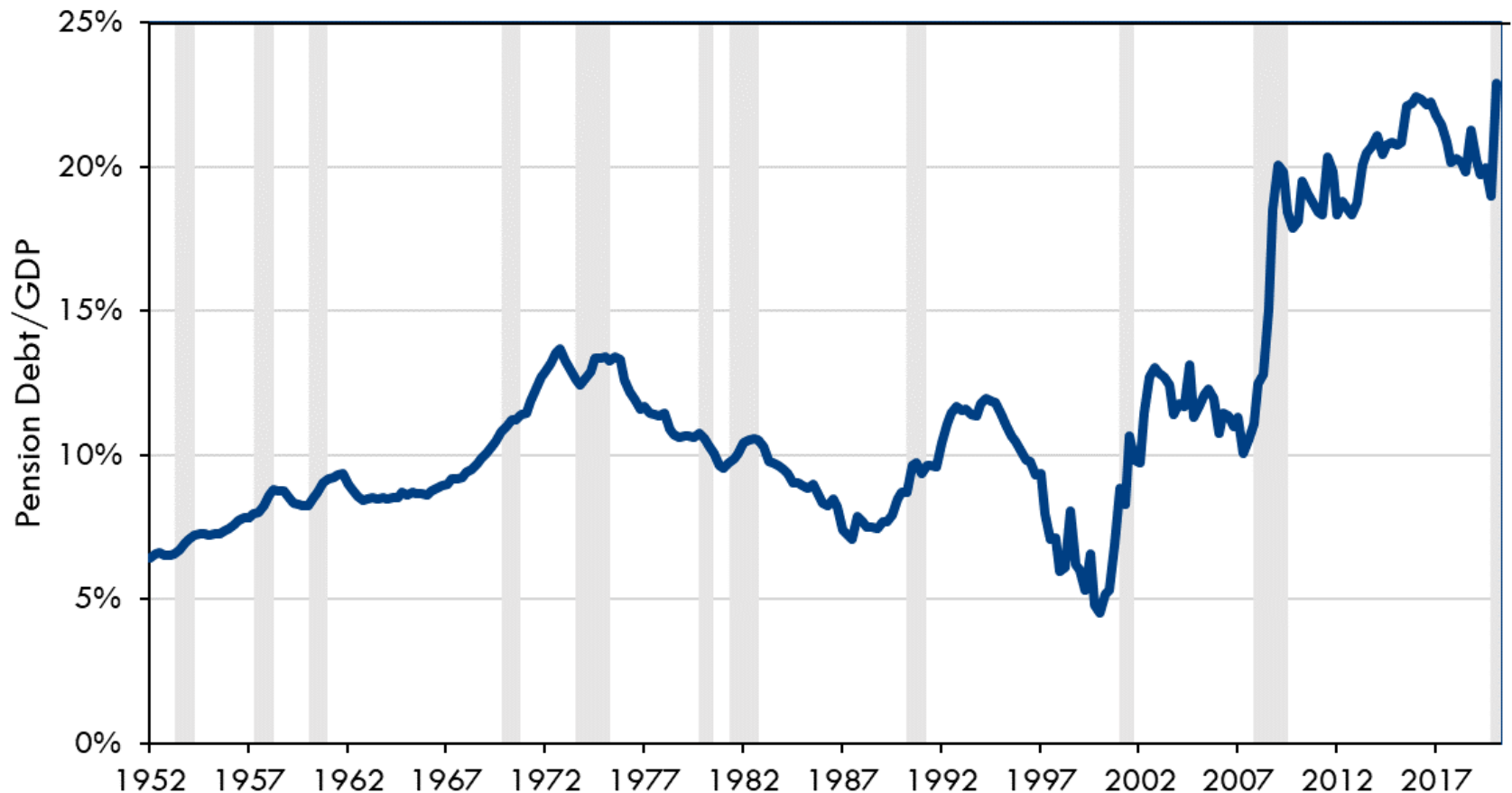
Investment Risk: Target Return vs. 30-Year Treasury



Sources: Pew analysis of comprehensive annual financial reports, actuarial valuations, and related reports from states; U.S. Treasury data; and Center for Retirement Research at Boston College, Center for State and Local Government Excellence and National Association of State Retirement Administrators, Public Plans Data

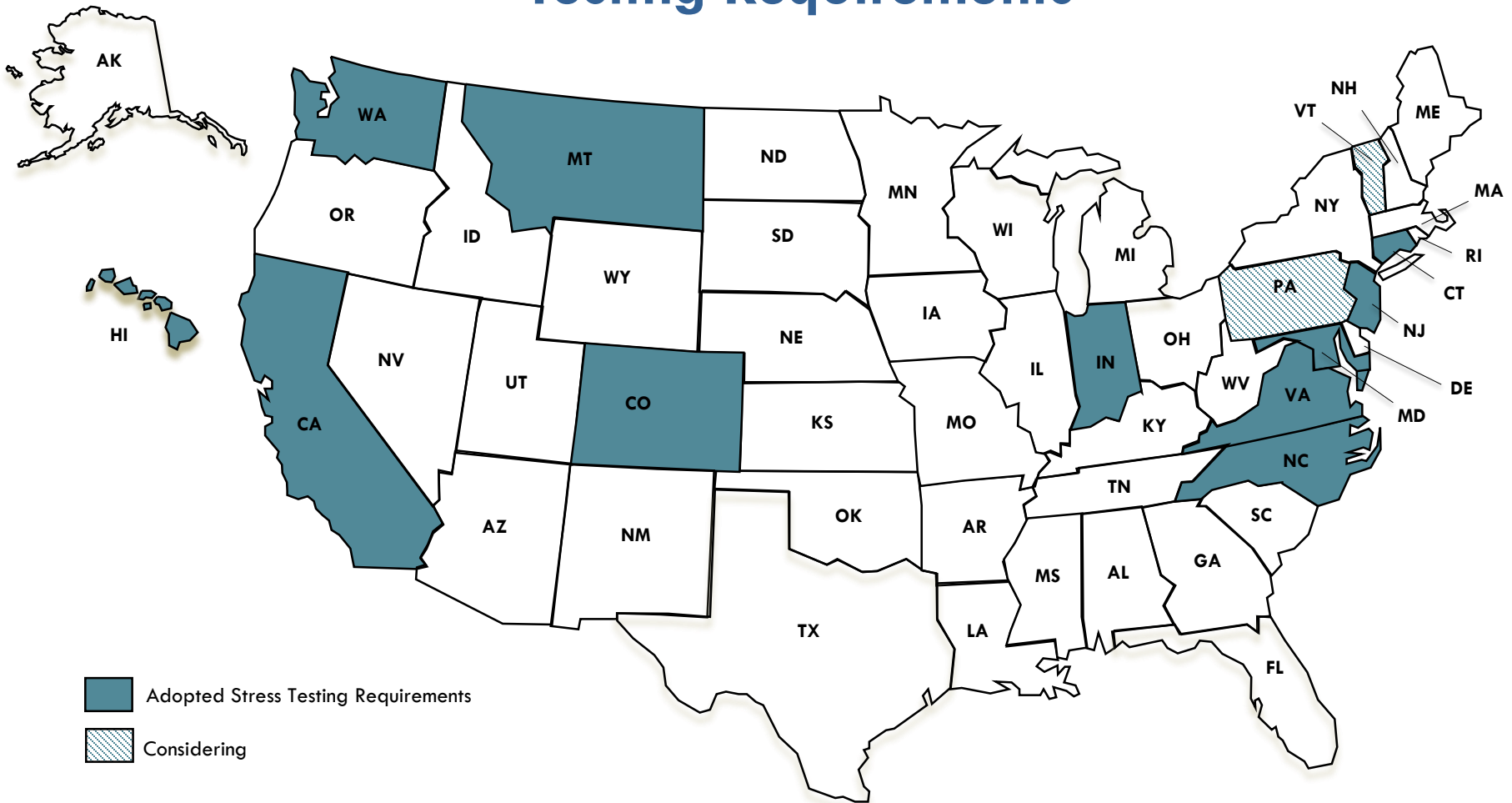
State Pension Debt Remains at Historically High Levels

Pension Debt as a Share of GDP (Aggregate of 50 States)



Sources: The Federal Reserve and U.S. Department of Commerce Bureau of Economic Analysis

States that have Enacted or are Considering Stress Testing Requirements



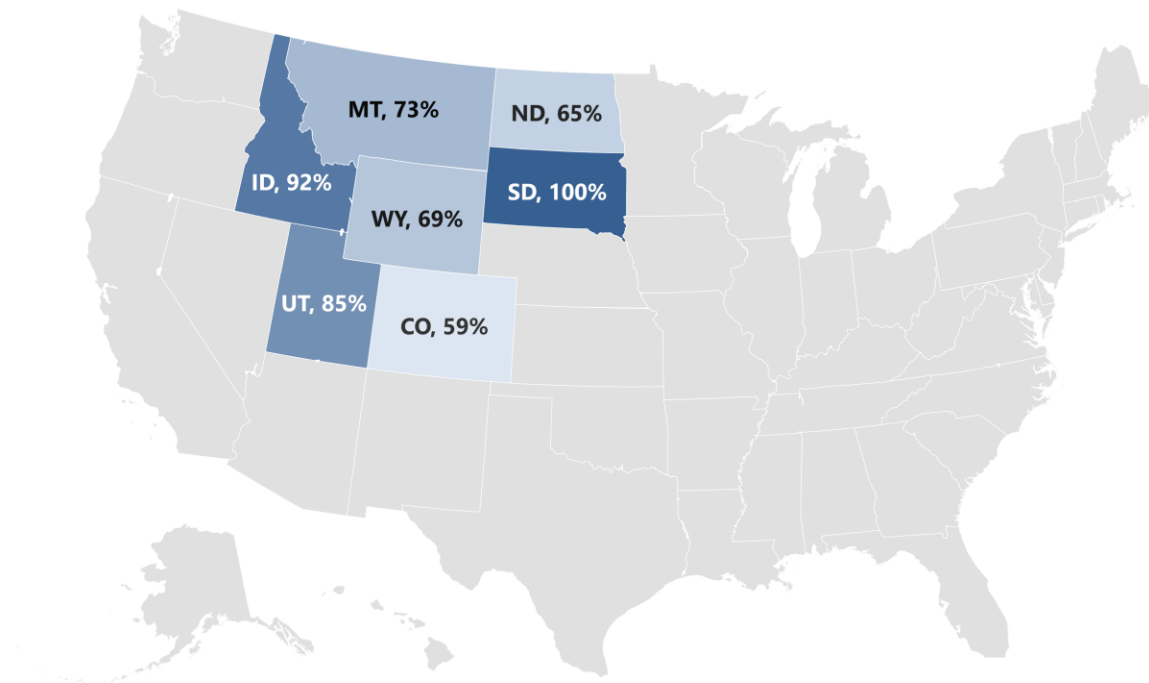
Note: Map is as of August 2020.

Montana Stress Test Results

Fiscal Position on a National and Regional Level

- As of 2018, Montana's:
 - Funded ratio was 72.6% (**24th** in the nation).
 - Nationally, public pension plans were 71% funded.

Regional Comparison: Funded Ratio



Montana Stress Test

ASSUMPTIONS

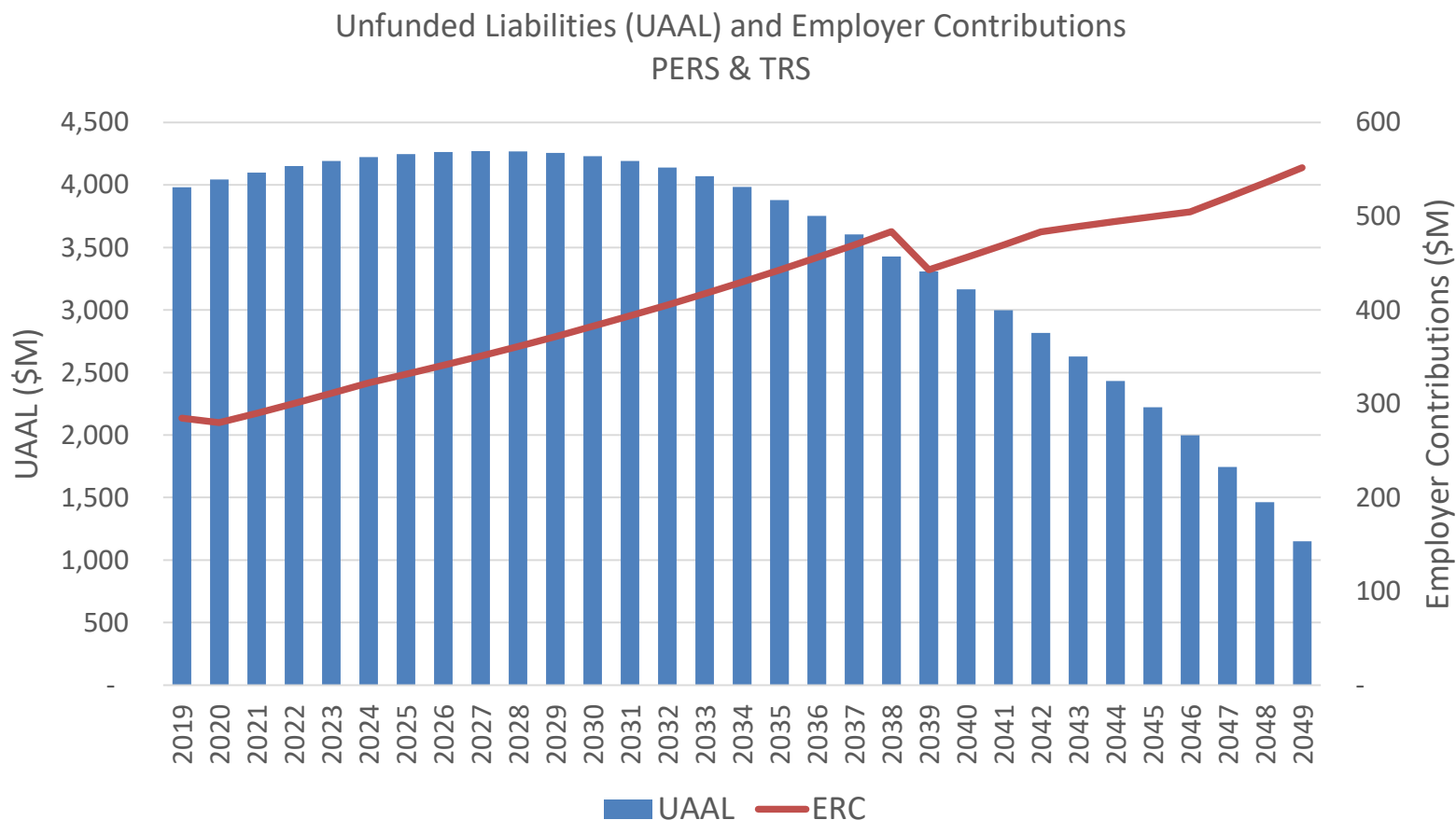
- Forward-looking analysis: Completed by Pew's external actuaries based on publicly available plan documents.
- PERS and TRS modeled separately; results then aggregated for presentation.
- Model based on **2019** Actuarial Valuations and do not include the impact of COVID-19.
- We modeled the baseline and two downside economic scenarios:
 - **Baseline**
 - **5% Returns**
 - **Asset Shock**: -25% return in year 1, 3 year recovery, long-term returns of 5%

Results Highlights

- The 2013 reforms helped improve the fiscal health of both plans, increasing pension assets by more than \$600 million and improving the combined funded ratio of PERS and TRS by approximately 5 percentage points.
- However, contribution levels under current policies may be insufficient to improve funded status if long-term investment returns are lower than the plans' current assumptions. We estimate a 63% chance that funding will decline and a 6% chance of insolvency under current policy.
- Applying an actuarial funding policy to Montana's pension plans would allow current policy to be sustainable across a range of outcomes.

Funding Progress on Track in Baseline Scenario

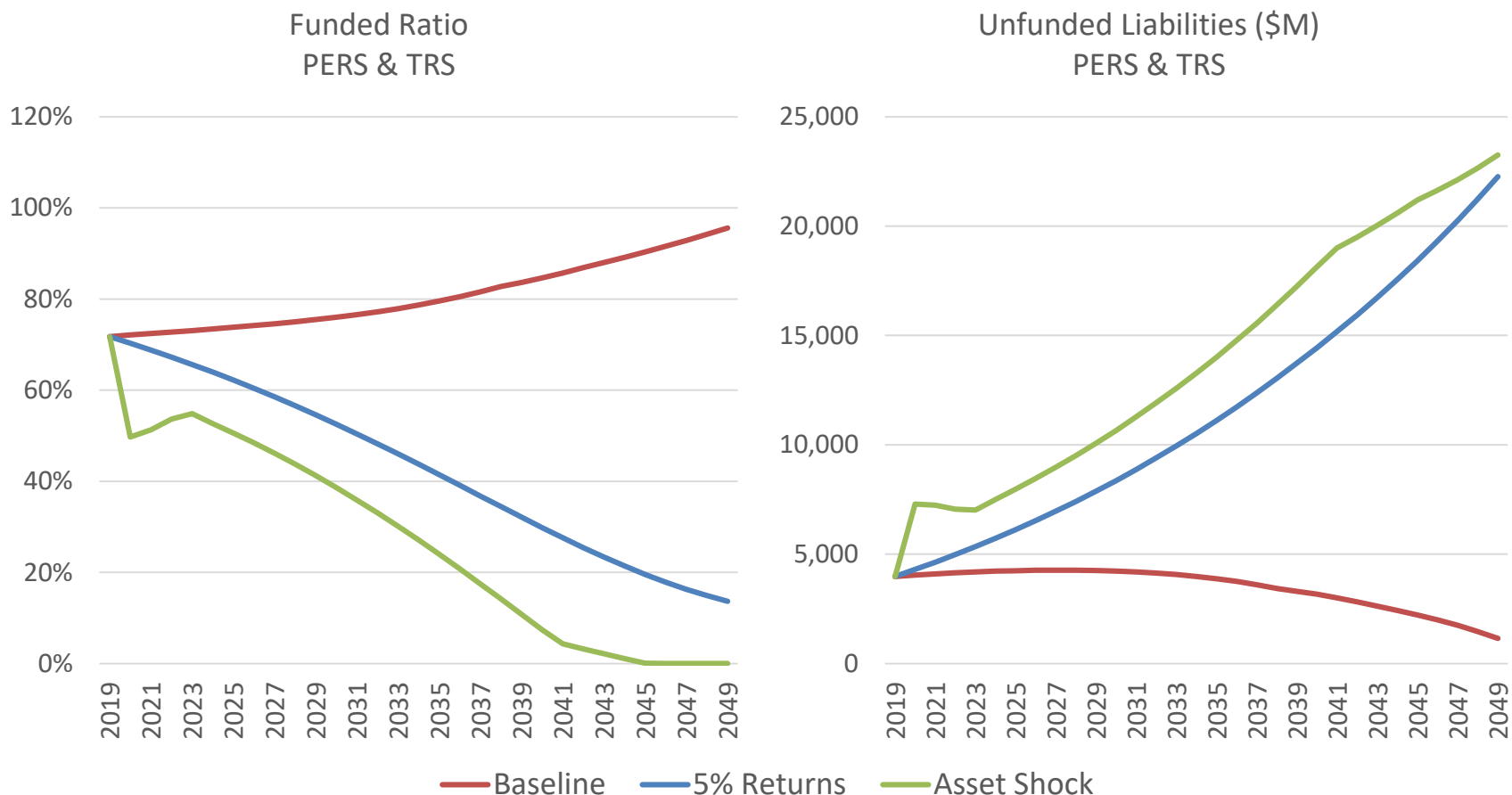
Roughly $\frac{3}{4}$ of the current pension debt will be paid off by 2049 – with full funding expected soon after – if all actuarial and investment return assumptions are met



Source: The Terry Group and The Pew Charitable Trusts

Plan Finances Deteriorate in Downside Scenarios

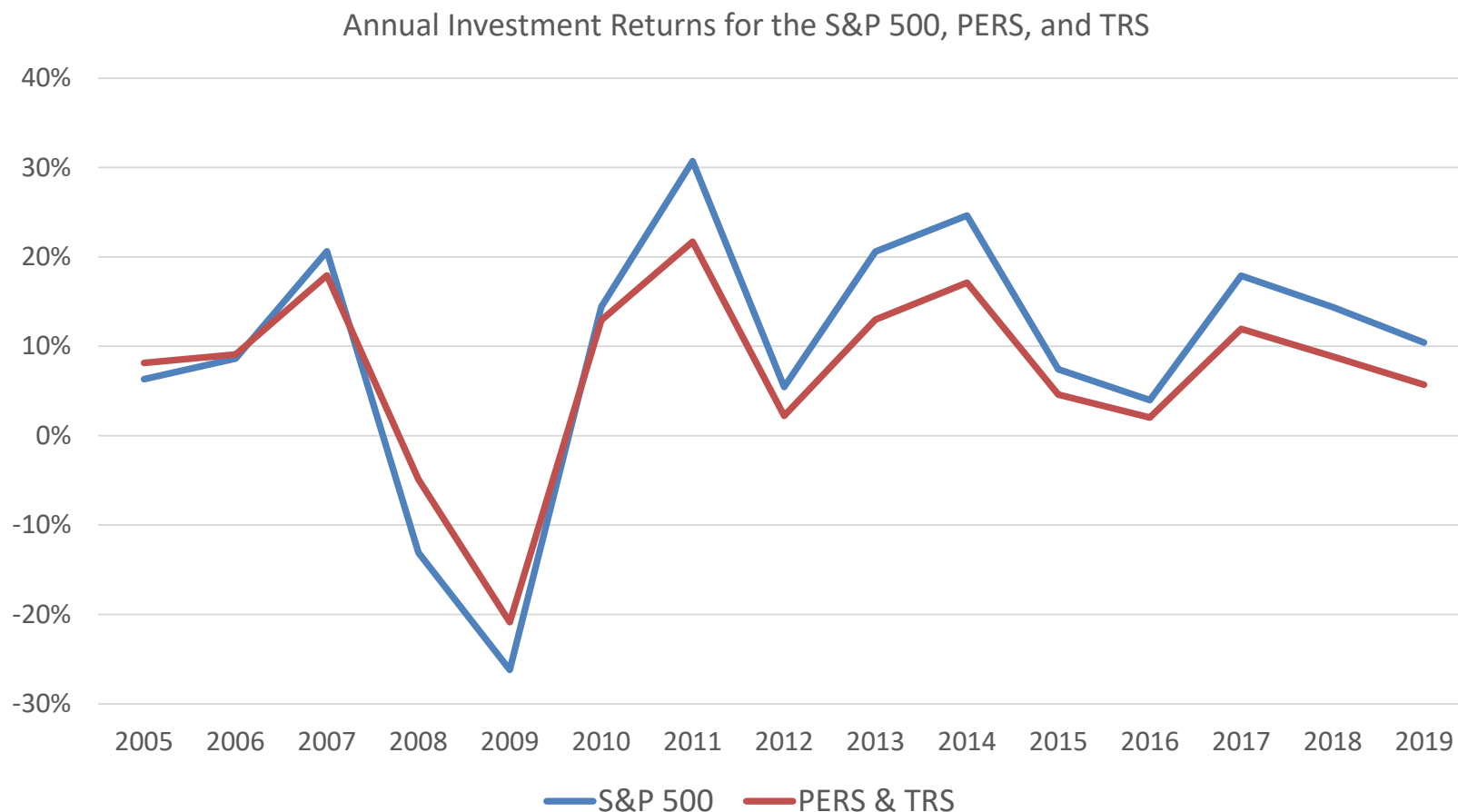
Improved funding relies on hitting return target



Source: The Terry Group and The Pew Charitable Trusts

Plan Investment Performance Follows the Stock Market

PERS and TRS investment returns tend to exhibit the same high volatility from year to year



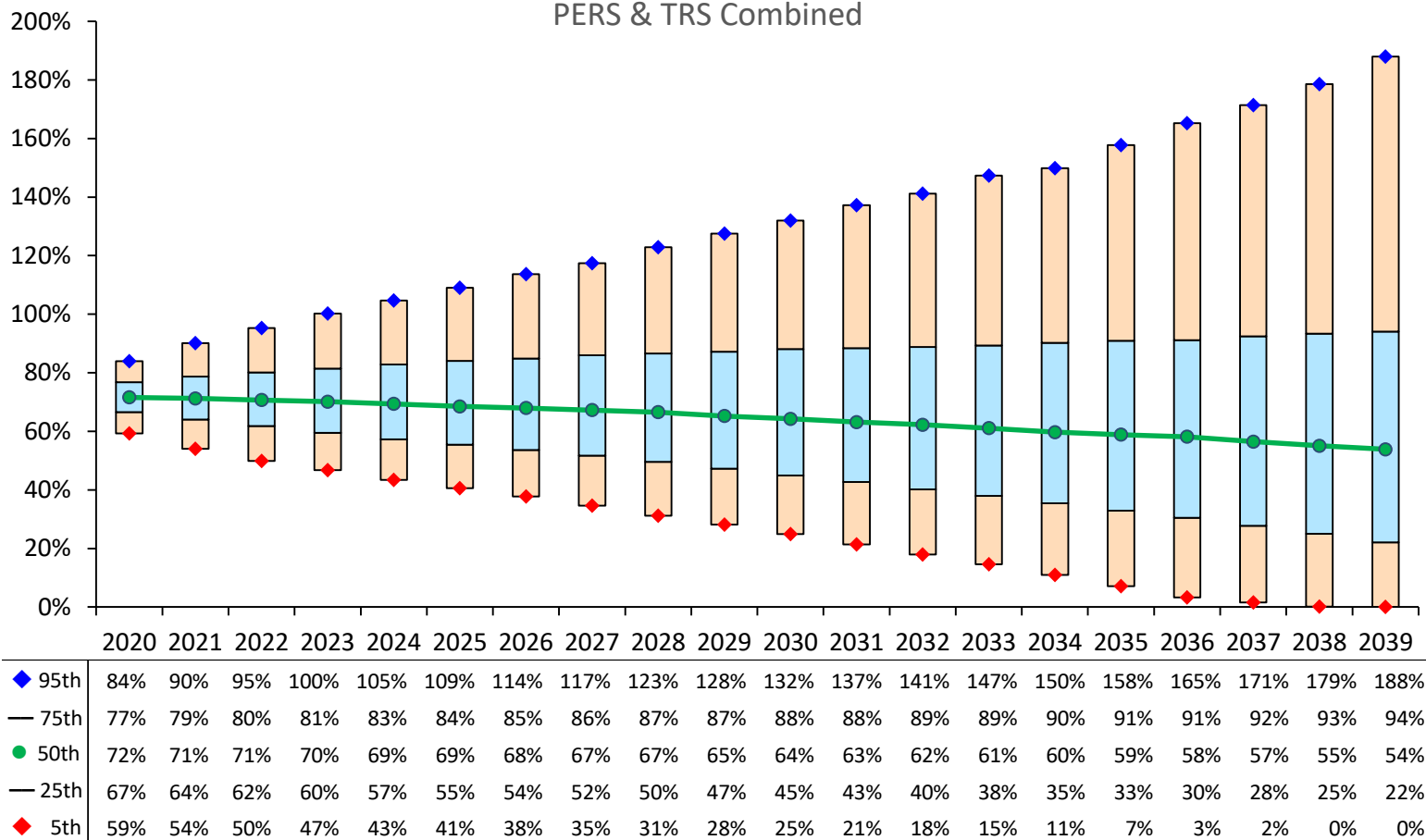
Source: The Terry Group and The Pew Charitable Trusts

PRELIMINARY RESULTS

Simulation Analysis Shows Uncertainty

Plan funding could take starkly different paths depending on how investments perform, with a more than 50% chance of having lower funding in 2039

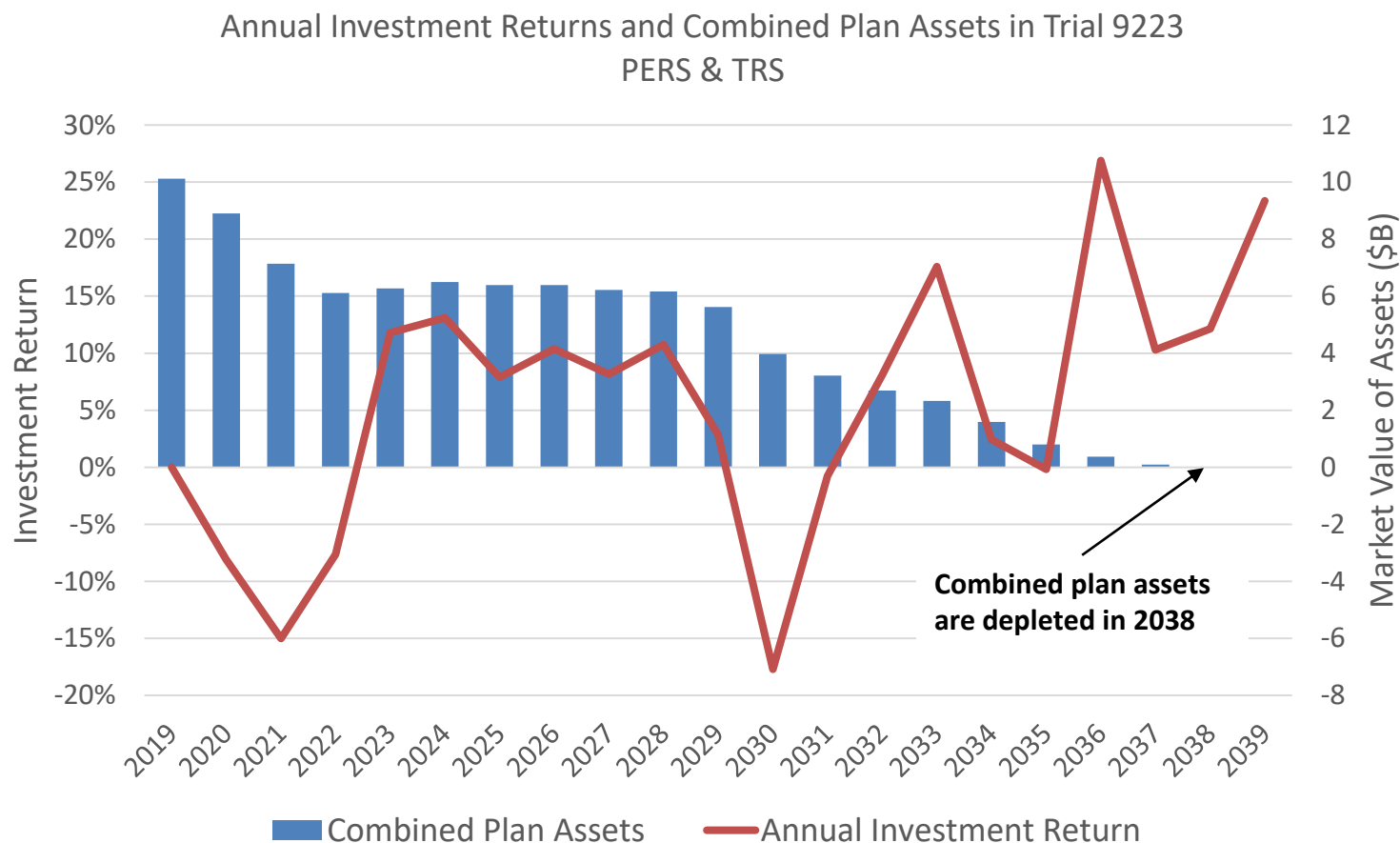
Range of Projected Funded Ratios
PERS & TRS Combined



Source: The Terry Group and The Pew Charitable Trusts

Financial Distress Could Arise Quickly

Trial 9223 shows how two asset shocks in a span of 10 years could drive both plans into insolvency without changes in plan policy

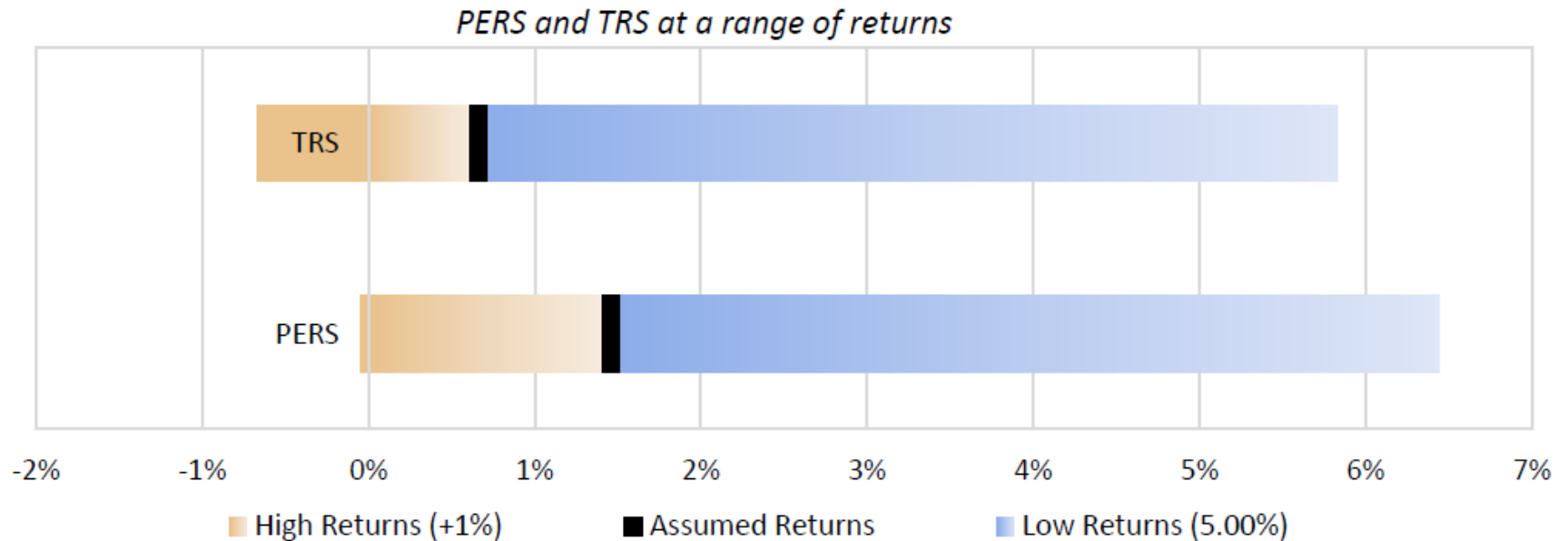


Source: The Terry Group and The Pew Charitable Trusts

PRELIMINARY RESULTS

Sensitivity Analysis of New Benefit Cost

Costs for new hire benefits could vary substantially if returns fall short.



- New employees pay the bulk of the cost of new benefits under current assumptions.
- If long-term returns are 5%, that would increase costs by 5 percent of payroll.

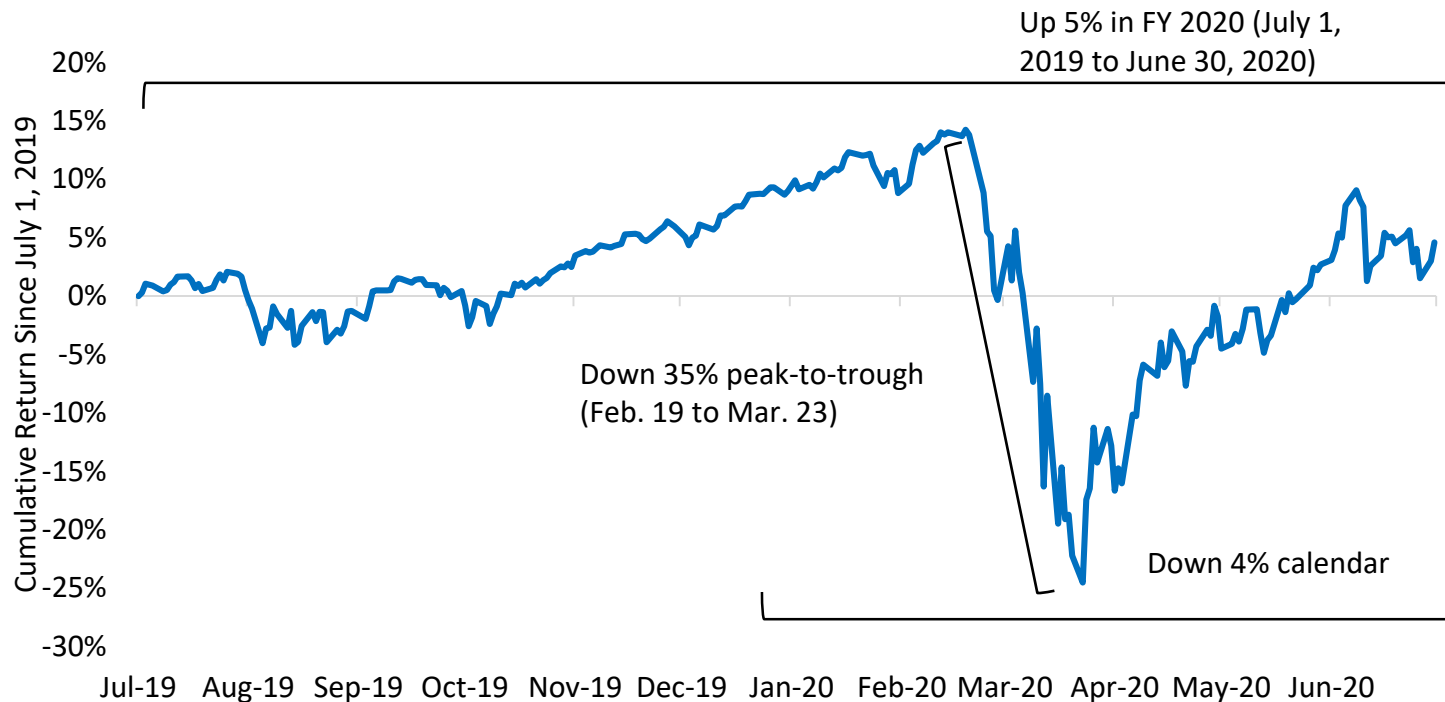
Note: Expected returns are 7.65% for PERS and 7.5% for TRS. High returns are 8.65% for PERS and 8.5% for TRS.

Source: The Terry Group and The Pew Charitable Trusts

Historic Market Volatility Post-COVID

Equities up 5% in FY 2020 despite huge losses earlier in the calendar year.

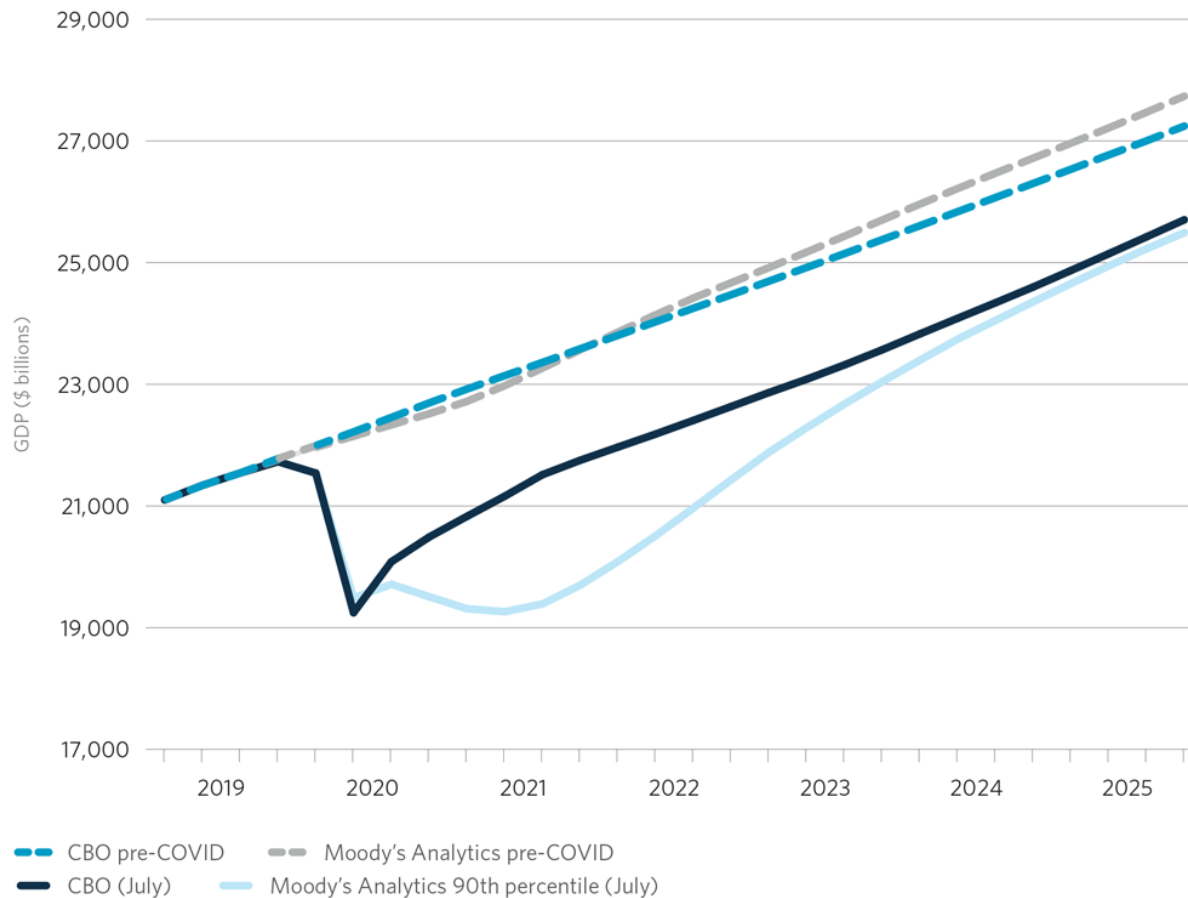
S&P 500 Cumulative Returns Since July 1, 2019



Note: Data from Standard & Poor Dow Jones Indices LLC via Federal Reserve Economic Data (FRED)

Pandemic to Have Major Impact on GDP

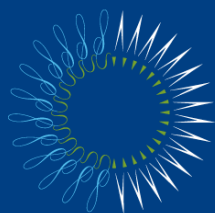
States expecting revenue losses from associated reduction in economic output.



Note: Moody's Analytics pre-COVID forecast is the baseline (50th percentile) Moody's Analytics 90th percentile forecast is a downside scenario, representing a 90th percentile outcome for GDP—or an outcome worse than 90% of all possible scenarios.

Conclusion

- Montana, under current policy, depends on hitting investment targets to get to full funding and significant shortfalls could lead to declining assets or insolvency.
- Regular stress testing analysis, as currently required, would enable policymakers and plan administrators to regularly monitor the pension system and evaluate any potential changes going forward.
- State pension plans will face additional challenges from COVID-19, both in terms of budget stresses for plan sponsors and additional volatility in plan investments.
- A actuarial funding policy allows pension funding to adjust to market performance and would allow current policy to be sustainable across a range of scenarios.



THE
PEW
CHARITABLE TRUSTS

David Draine
ddraine@pewtrusts.org
pewtrusts.org/publicpensions

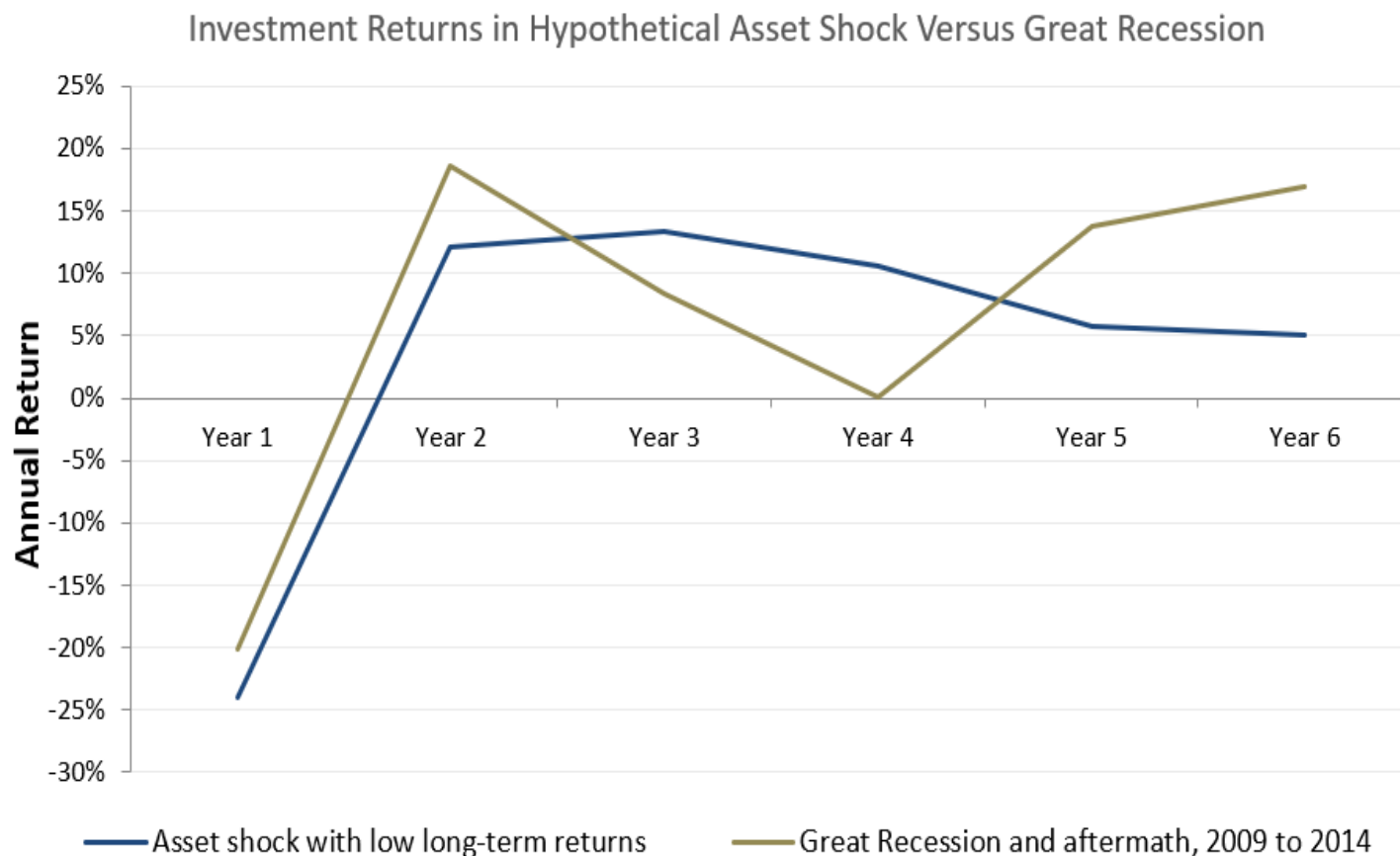
Ben Henken
bhenken@pewtrusts.org
pewtrusts.org/publicpensions

pewtrusts.org

Appendix

Pew's Asset Shock Scenario

Investment returns are similar to those during Great Recession



Question: Why Pew's asset shock vs. a simple 20% loss in year 1?

Source: The Pew Charitable Trusts, The Terry Group, and FactSet Research Systems Inc.

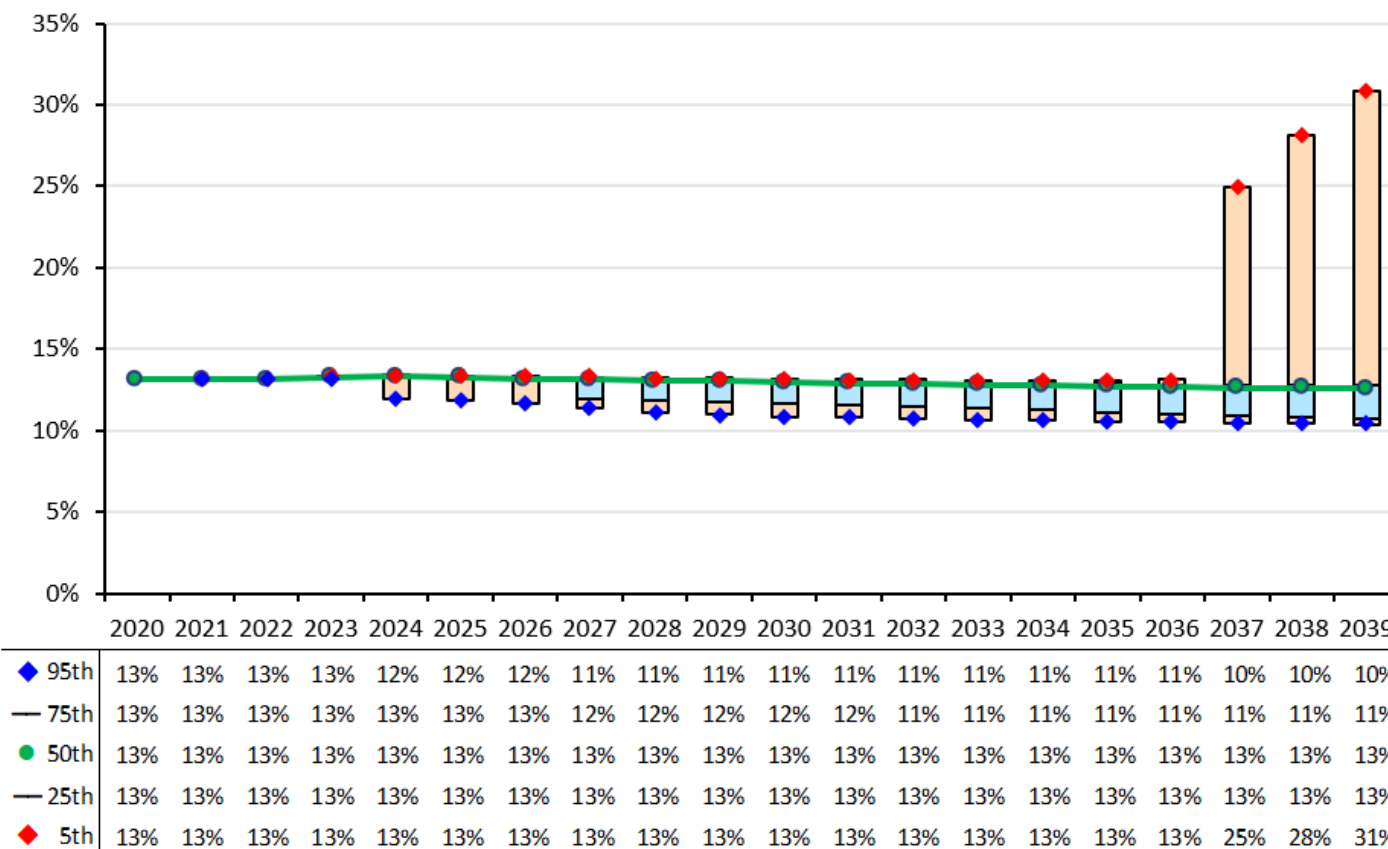
Based on Federal Reserve's "2017 Supervisory Scenarios for Annual Stress Tests Required under the Dodd-Frank Act Stress Testing Rules."

Range of Projected Employer Contribution Rates

Rates are expected to remain stable due to fixed-rate contribution policy; although unlikely, huge increases will come into effect if PAYGO benefits are required

FIGURE 5 – Alternative

Range of Projected Employer Contribution Rates (% of Payroll), PERS and TRS Combined



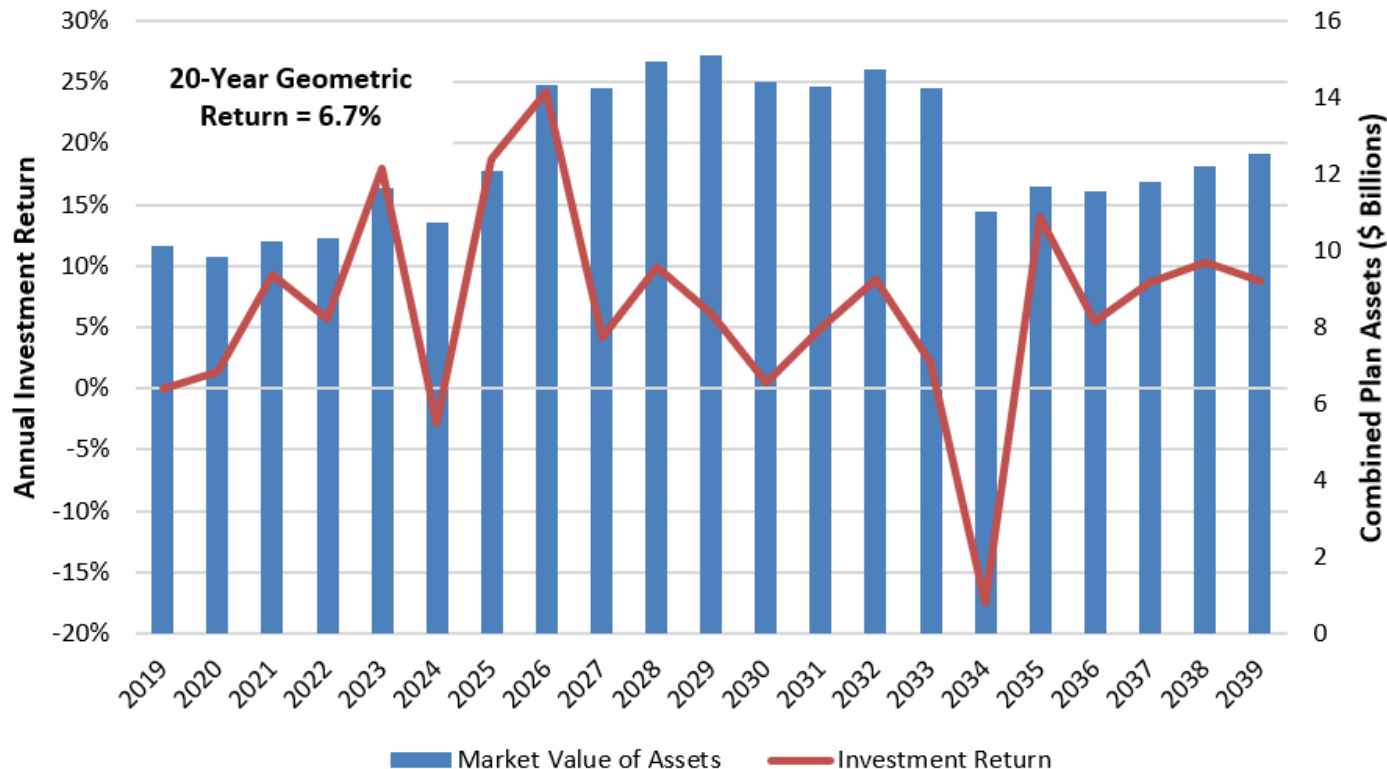
Question: What is the range of possible outcomes for the ERC rate?

Source: The Terry Group and The Pew Charitable Trusts

Stochastic Trial 7792

Mid-phase rise and late decline cause the funded ratio to drop to 66% by 2039 even with above average returns throughout much of the period

FIGURE 6 – Alternative
Annual Investment Returns and Combined Plan Assets in Stochastic Trial 7792



Question: What happens in a trial with a mid-period rise in assets and late decline?

Source: The Terry Group and The Pew Charitable Trusts

Key Pension Terms

- **Actuarial Required Contribution (ARC)** – This is the sum of the actuarial cost of benefits earned in the current year (called service cost or normal cost) and an additional payment on the unfunded actuarial accrued liability (UAAL) called the amortization payment. Also referred to as the Actuarially Determined Employer Contribution (ADEC)
- **Assumed Rate of Return** – Estimated return on investments used by actuaries to project the rate of return on plan assets and calculate the value of plan liabilities.
- **Funded Ratio** – Assets divided by the actuarial accrued liabilities. A measure of fiscal health.
- **Net Amortization** – A measure of whether state pension funding policies are sufficient to reduce, or amortize, pension debt in the near term.
- **Pension Debt** – The difference between the actuarial accrued liability and the value of plan assets on hand. Also referred to as the Unfunded Actuarial Accrued Liability (UAAL).