



## **Risk Reporting for Public Pensions: A Starting Point**

### **Government Fiscal Sustainability Workgroup**

**October 23, 2018**

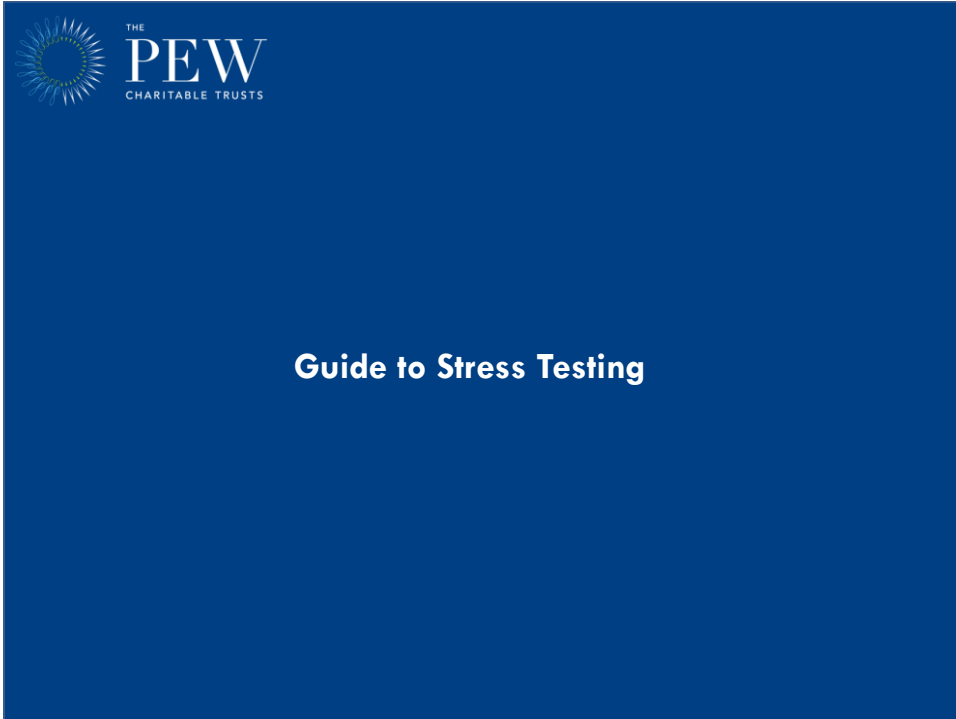
**David Draine, Senior Officer**  
**Public Sector Retirement Systems Project**

### **The Pew Charitable Trusts**

- More than 40 active, evidence-based research projects
- Projects include public safety, immigration, elections, transportation, pensions, and state tax incentives
- All follow a common approach: data-driven, inclusive, and transparent

### **Pew's Public Sector Retirement Systems Project**

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

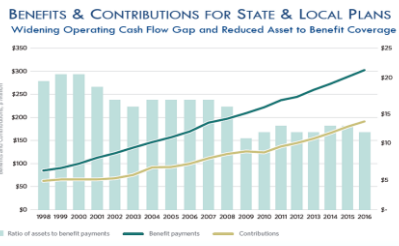
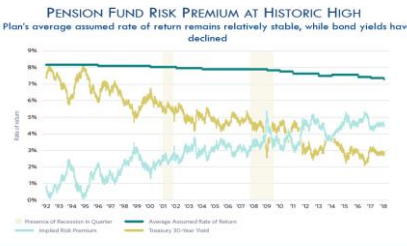
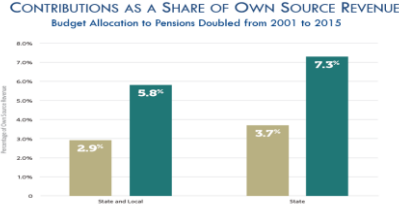
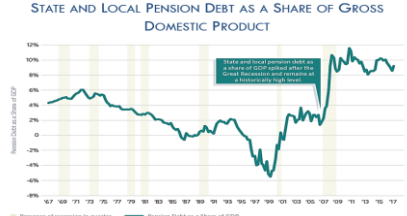


## WHAT IS STRESS TESTING?

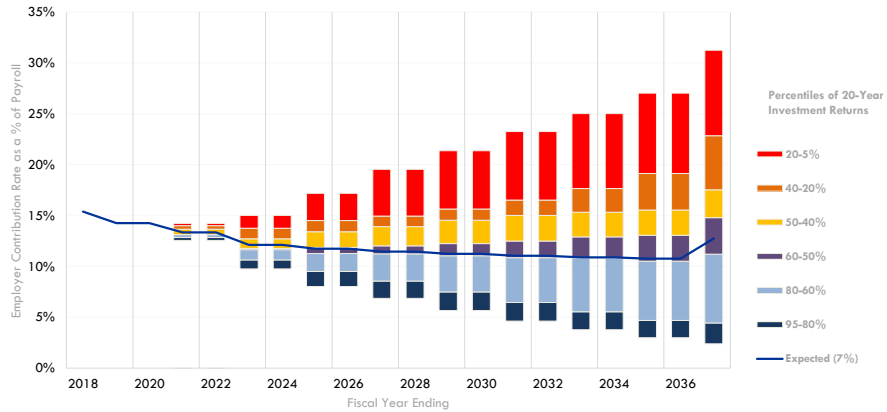
- Simulation technique used to assess the impact of different economic conditions on pension balance sheets and governmental budgets.
- Central to emerging actuarial reporting standards (Actuarial Standard of Practice No. 51.)
- Budget tool to help policymakers plan for the next recession and better manage economic uncertainty.

## PUBLIC PENSIONS VULNERABLE TO NEXT ECONOMIC DOWNTURN

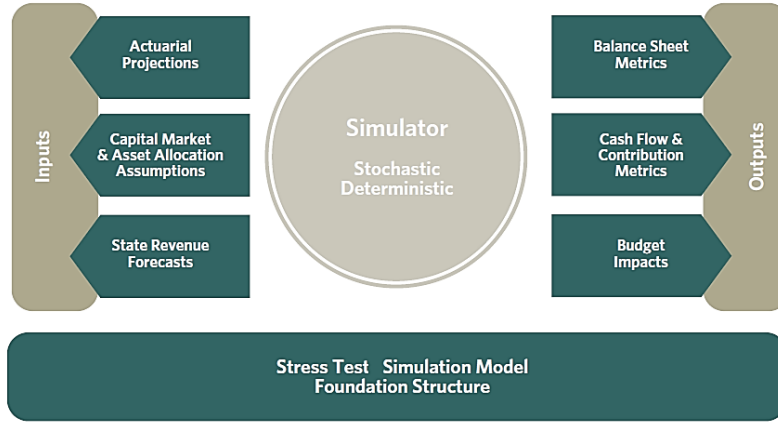
In aggregate, state and local pension systems have never been more exposed to market volatility, based on fiscal measures and economic outlook



## EXAMPLE SIMULATION: SENSITIVITY OF ANNUAL REQUIRED CONTRIBUTIONS TO INVESTMENT RETURNS

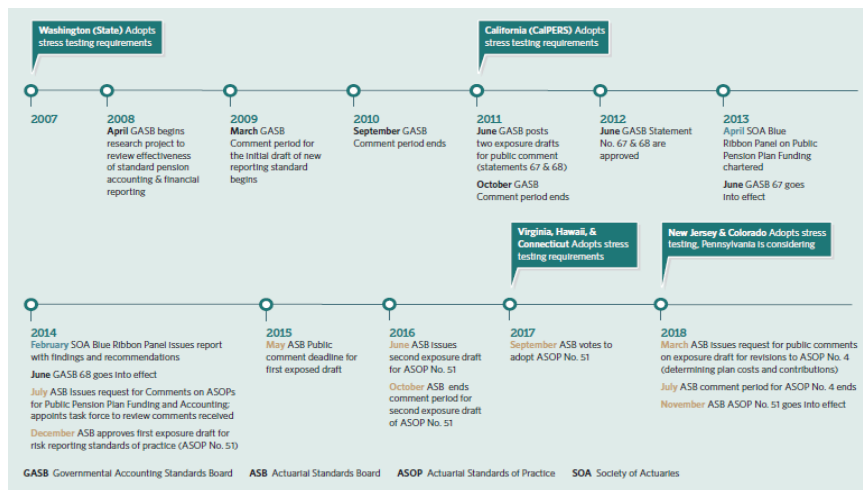


## STRESS TESTING SIMULATION MODEL FOUNDATION STRUCTURE



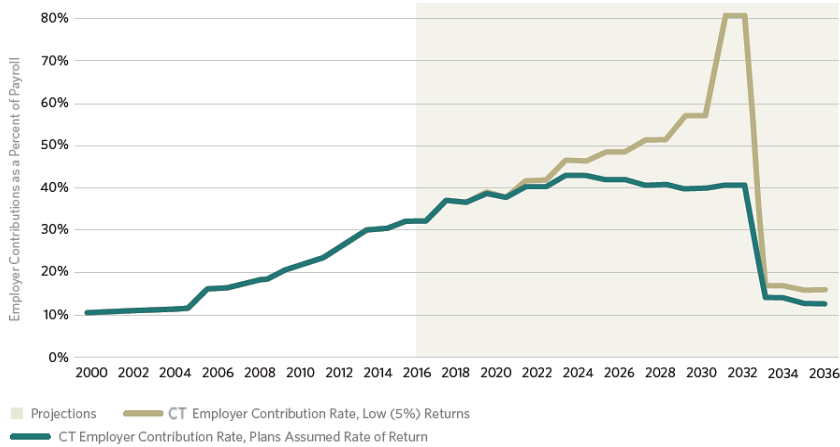
## RISK REPORTING DEVELOPMENTS FOR PUBLIC PENSIONS

Recent changes in reporting standards have led to increased momentum among states in adopting stress testing.



## PREPARING FOR UNEXPECTED COSTS: CONNECTICUT'S EMPLOYER CONTRIBUTION RATES OVER TIME

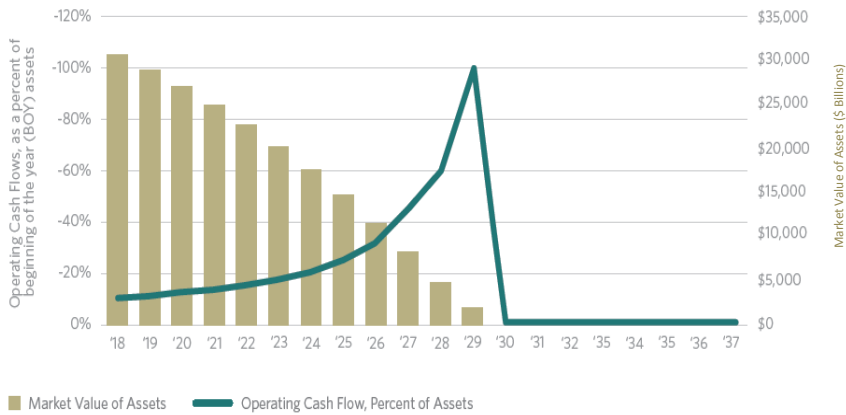
Under plan's assumed rate of return compared to a low return scenario



Note: Assumes actual investment returns of 5 percent and the state adheres to current funding policies or statutes as written (state policy assumption.) Source: The Pew Charitable Trust and The Terry Group, based on publicly available Comprehensive Annual Financial Reports (CAFR), actuarial reports and valuations, other public documents, or as provided by plan officials.

## NEW JERSEY'S PROJECTED ASSETS AND OPERATING CASH FLOW

If investment returns are lower than expected (fixed at 5%) and assuming contributions are made as a fixed percentage of own source revenue (OSR)

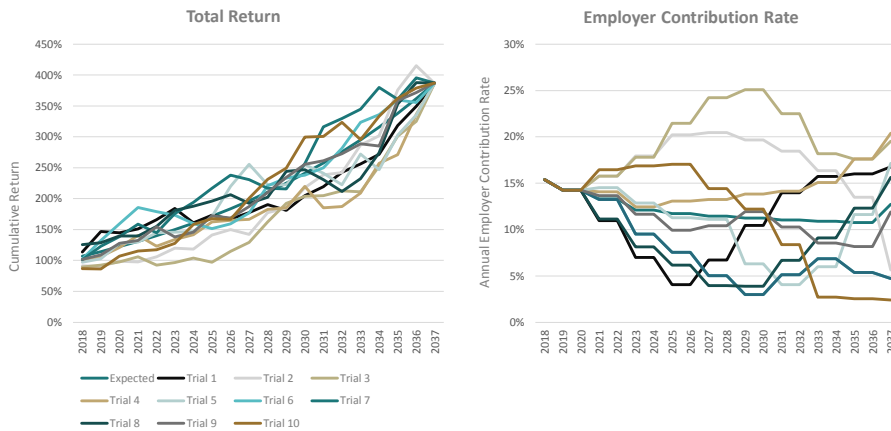


Notes: Data for the New Jersey Public Employees Retirement System (PERS)-state portion only- and the Teacher Pension Annuity Fund (TPAF) plans.

Sources: The Pew Charitable Trust and The Terry Group, based on publicly available Comprehensive Annual Financial Reports (CAFR), actuarial reports and valuations, or other public documents, or as provided by plan officials.

## RISKY INVESTMENTS WILL CAUSE VOLATILITY IN COST

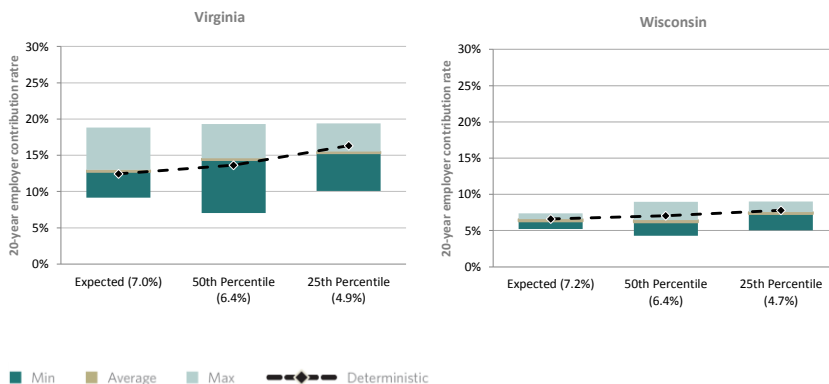
### Virginia's Stress Test Results Show How 10 Different Trials with the Same Long-term Returns Have Very Different Employer Costs over the 20-Year Projection



Notes: Each line represents one trial using Pew's stress testing model to project annual returns and the employer contribution rate for the Virginia Retirement System. The first trial shown uses the expected rate of return assumption for the annual return; the subsequent 10 trials use Pew's capital market assumptions to simulate 20 years of returns. Each trial has a geometric average return of 7% over 20 years.

## Contribution Volatility, Virginia and Wisconsin

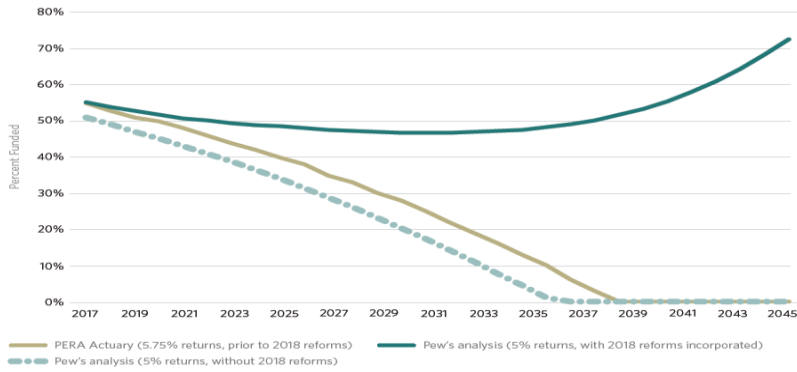
Contribution policies can help manage investment volatility



Source: Analysis by The Pew Charitable Trusts and The Terry Group, based on publicly available Comprehensive Annual Financial Reports (CAFR), actuarial reports and valuations, or other public documents, or as provided by plan officials

## COLORADO'S PROJECTED FUNDED STATUS BEFORE AND AFTER PENSION REFORMS

Funded Status for PERA's State Division, Under Lower than Expected Investment Returns



Notes: Projections based on Colorado's Public Employees Retirement Systems (PERA) 2016 valuation. Reform projections do not include changes to the definition of payroll as outlined in the final legislation as we anticipate the effect on fiscal impact to be minor. Additionally, our model simplified the risk sharing features to be fully on in low return scenarios. Finally, a 20% take-up rate for the DC plan was assumed. Sources: The Pew Charitable Trusts and the Terry Group

## PENNSYLVANIA'S IFO USES STRESS TESTING

Using risk analysis to assess potential policy changes allows policymakers to consider the full impact of pension legislation.

ARR Reduction	Cash Flow			Present Value at 3.6%			Present Value at 7.25/7.5%		
	PSERS	SERS	Total	PSERS	SERS	Total	PSERS	SERS	Total
100 basis points	\$4,196	\$2,294	\$6,490	\$1,884	\$1,040	\$2,924	\$926	\$494	\$1,420
200 basis points	8,392	4,589	12,981	3,768	2,079	5,847	1,853	988	2,841

Notes: Amounts in millions. Present value as of June 30, 2018. ARR is the assumed rate of return. Basis point reduction is applied to the ARR for the respective system.

Notes: Pennsylvania Independent Fiscal Office Actuarial Note for Amendments 01354 and 01558 to Senate Bill 1; June 3, 2017.

## WHY IS STRESS TESTING IMPORTANT FOR STATE AND LOCAL GOVERNMENTS?

- Pension risk reporting is coming - Actuarial Standard of Practice (ASOP) No. 51 goes into effect this November.
- State budgets are more vulnerable to the next recession.
- Provides a scorecard to assess current and proposed policies, based on a range of possible market outcomes.

Ultimately...

**What gets Measured gets Managed!**

## OBJECTIVES FOR STRESS TEST REPORT

- **Assessing the impact of investment risk on government budgets**
- **Evaluating the impact of contribution risk on pension plan solvency**
- **Quantifying the range of likely costs for current benefits**
- **Assessing the impact of volatility on employer contributions**
- **Evaluating the impact of proposed policy changes**



## CONCLUSION: KEY TAKEAWAYS

- Stress testing and risk reporting needs to be tailored to the information needs of key stakeholders while meeting five key objectives.
- While actuarial analysis will always be the starting point, well-designed analyses should be geared towards long-term budget planning and policy decision making.
- More complete results would have helped states avoid costly mistakes, adopt more sustainable contribution policies, better understand their short- and long-term fiscal situations, and improve plan design decisions.



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