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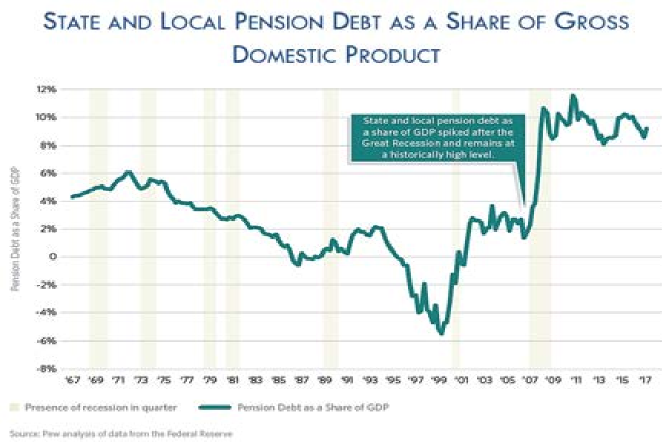
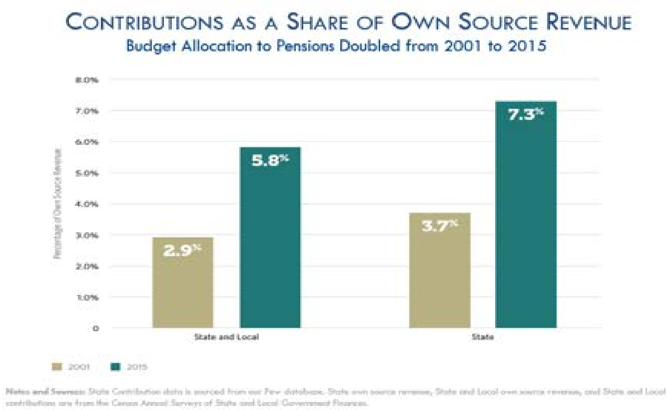
STRESS TESTING FOR PUBLIC SECTOR RETIREMENT SYSTEMS





In 2017, state and local governments reported total unfunded pension liabilities of $1.6 trillion – a larger deficit in both absolute terms and as a percent of U.S. gross domestic product (GDP) than at any time before the Great Recession. This deficit matters because more taxpayer dollars are needed each year to make up the difference, crowding out budgets for other essential government services. Looking forward, consistent under-funding, budget pressures, risky investment policies, and rising benefit costs make public pension systems more vulnerable than they have ever been to an economic downturn.

In response, actuarial and governmental accounting standards are being implemented to ensure that lawmakers and stakeholders are better informed of the financial risks they face for their public retirement systems. In fact, the Actuarial Standards Board recently adopted a new Standard of Practice, (ASOP No. 51), for public plan actuaries on reporting risks related to pension obligations, cost, and contributions. The new guidelines, which go into effect this November, are a significant culmination of over 10 years of efforts in the field to act on recommendations made in a 2014 report on ways to strengthening public pension plan funding commissioned by the Society of Actuaries.

At the same time, officials are eager to strengthen the long-term financial health of their public-sector pension systems and, in several states, have embraced a nonpartisan, data-driven approach to more precisely assess whether they can fulfill benefit promises made to workers.

Called ***stress testing***, this new practice can show policymakers how adverse economic conditions could affect their state or municipal retirement system's investments and, in turn, impact state budgets. Moreover, ***comprehensive*** *stress testing* builds upon existing reporting practices, aligns with emerging actuarial standards, and produces results that are designed to be accessible to a broader audience of officials and budget specialists, fit for the purposes of informing policy decisions and long-term financial planning.

1. WHAT EXACTLY IS STRESS TESTING?

Stress testing is a simulation technique used to determine the impact of downside economic scenarios on financial balance sheets. One of the most notable examples of stress testing comes from The Dodd-Frank Wall Street Reforms and Consumer Protection Act of 2010, passed in response to the 2008 financial crisis.

For public pensions, stress testing incorporates existing actuarial projections and investment sensitivity analyses as inputs, and evaluates plan solvency and employer costs using multiple financial scenarios at varying levels of market volatility.

2. WHY IS STRESS TESTING IMPORTANT FOR PUBLIC RETIREMENT PLANS AND WHAT DOES IT TELL US?

Public pension plans are more vulnerable than ever to an economic downturn, based on reported levels of pension debt, measures of investment risk, and rising costs associated with an aging population. State and local officials need tools to ensure that policies are in place to weather the economic uncertainty ahead and ensure that pension costs are affordable for taxpayers while benefit promises to workers are safeguarded. Stress testing can:

- Aid administrators and policymakers in planning for the next recession by demonstrating the potential impacts on pension costs and liabilities, including the likelihood of retirement system insolvency.
- Promote good funding policies and practices by illustrating the importance of maintaining fiscal discipline.

- Serve as a valuable tool for assessing a range of possible economic outcomes when scoring proposed reforms.

Ultimately, what gets measured gets managed; Stress testing can help policymakers responsibly manage retirement funds through all cycles of the economy.

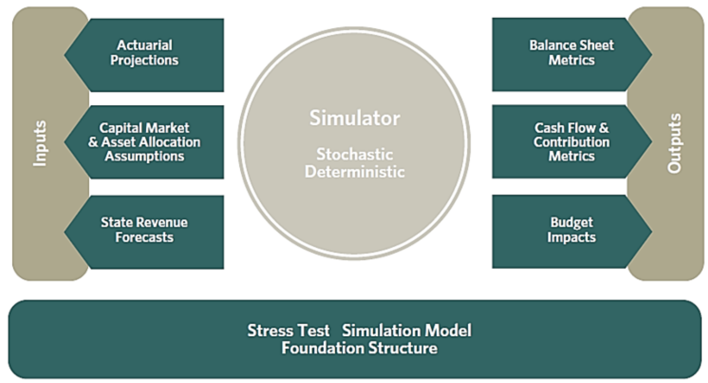
3. What should *comprehensive* stress testing include?

Comprehensive stress testing should:

- Build on existing actuarial projections, investment analysis, and reporting requirements for pension plans to ensure efficiency in costs.
- Include well-constructed economic scenarios that account for (1) periods of lower than expected investment returns; (2) the impact of a recession, including an initial loss in value for plan assets followed by a period of lower economic growth; and, (3) the impact of financial market variability from year to year, even in a growing economy.
- Incorporate a state or municipality's economic outlook as well as it's track record in making annual required contributions as inputs, and present results in manner that informs broader policy and budget discussions.

Stress Testing Simulation Model Foundation Structure

Pew's simulation tool incorporates a state or municipality's financials as inputs, simulates economic condition, and produces key projections and metrics.



Pew's model provides an example of a comprehensive approach to stress testing for public pension funds. To request additional information on the methodology and framework applied in our model please send a request to the contact listed below.

4. Is this just an academic exercise? Which states have adopted legislation requiring stress testing?

Stress testing is **not** just an academic exercise. In the past year, California, Colorado, Connecticut, Hawaii, Virginia, New Jersey, and Washington have performed stress test analyses or adopted reporting requirements to include this information in standard reporting going forward.

In fact, reforms adopted in Colorado in 2018 were influenced, in part, by the results of a stress testing exercise conducted in 2015, as part of a mandatory requirement to assess the effectiveness of prior reforms. The results indicated that without additional policy intervention, there was approximately a one-in-four chance of pension system insolvency.

Pennsylvania's 2017 reforms were also informed by a similar analysis produced by the state's independent fiscal office. The state is now conducting a formal study to evaluate how stress testing could be included as part of regular reporting going forward.

5. Aren't retirement plans already producing this type of analysis?

Pension plan actuaries and investment consultants regularly produce studies that include long-term projections based on state-specific assumptions, as well as asset/liability studies that examine outcomes based on a range of investment return scenarios. These analyses provide essential inputs, but comprehensive stress testing goes a step further by applying these analyses in a way that accounts for a state's overall economic conditions, tax collections, as well as the state officials record in making required contributions, to inform broader policy discussions and long-term financial planning.

Adopting comprehensive stress test reporting by statute is not only a reflection of the importance of this type of analysis, it is the best way for policymakers to provide clear guidance to plans on what the analysis should include and how frequently it should be produced.

6. How are other states establishing this as a critical reporting requirement?

The last five states to adopt stress testing – Colorado, Connecticut, Hawaii, New Jersey, and Virginia – have all done so through legislation. In general, the language is included in either the statutory provisions establishing the public employees' retirement system records and reports requirements, or in the provisions establishing actuarial economic assumptions sections of state law. The level of specificity varies by state with Hawaii including the most prescriptive detail.

For more information about Pew's simulation tool and analytic framework for stress testing contact:
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or visit
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