How Changes to Actuarial Standards Will Impact Pension Reporting

Webinar

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PENSION TRUSTEE ADVISORS

November 16, 2020

NATIONAL INSTITUTE ON
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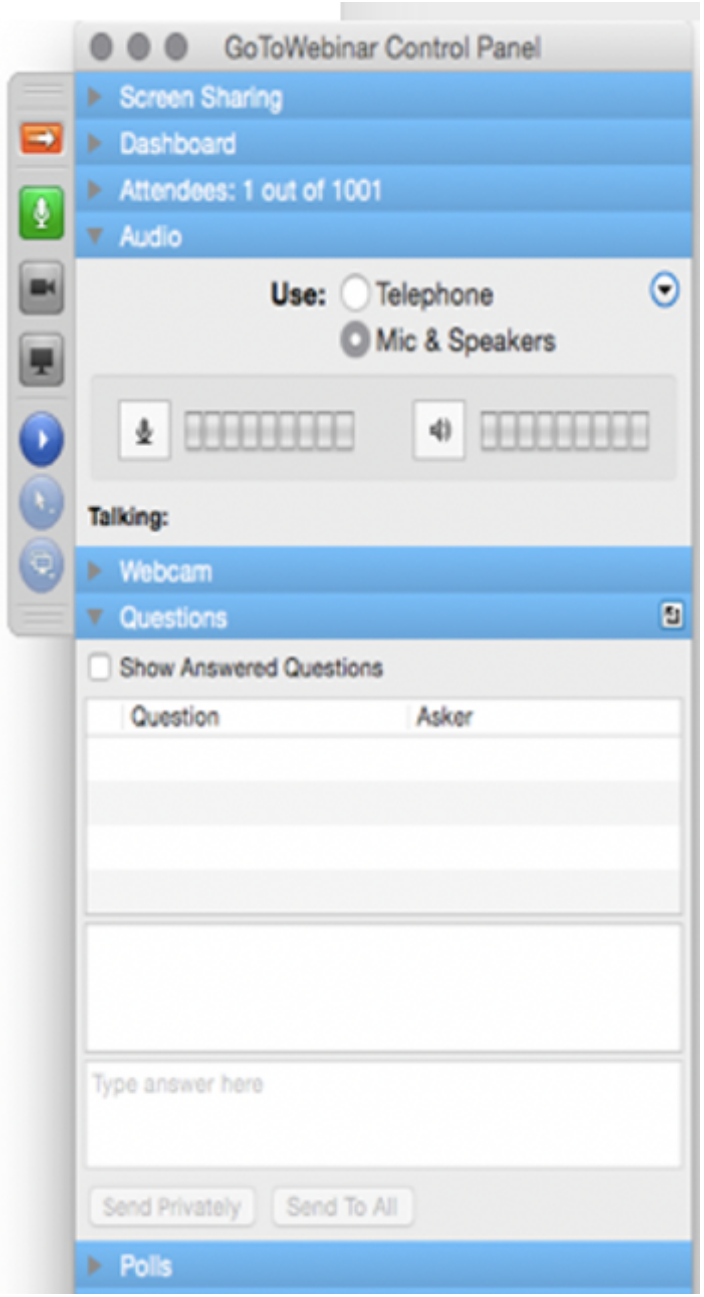


Agenda

01. Introductions
02. History
03. Overview of ASOPS 51 & 4
04. Practical Examples
05. Q&A

Speakers

Dan Doonan

NIRS, Executive Director

Todd Tauzer, FSA

Segal, Vice President and Actuary

Speakers

Flick Fornia, FSA

Pension Trustee Advisors, President

Joe Newton, FSA

Gabriel Roeder Smith & Company, Pension Market Leader

Actuaries Report Pension Costs and Liabilities Based on Expected Return

- **Before ERISA (1970s):** Public Pensions tended to invest mostly in fixed income securities
  - Actuaries used bond yields as the assumed rate of return
  - Created well-matches cost and liability determination
- **1980's**: Most funds continued to shift to more equity investments
  - Assumed rates of return crept up to recognize equity risk premium in costs and liabilities
  - High inflation meant that assumed rates of return were still conservative
- **1990's**: Sustained bull market made 8% return assumptions look overly conservative
  - 401(k)'s looked more attractive than "stodgy" DB plans built around only an 8% return

Implications of using a single assumed rate of return

- Decision makers get incomplete picture of costs and liabilities
- No recognition of risk of not earning assumed rate
- Some anomalies in pricing plan provisions
  - Gainsharing benefits
  - Any other feature dependent on returns
- The single number approach gives undue credence to the costs and liabilities
  - Single figure appears more credible
  - Although it is merely a calculation based on a single set of assumptions

Push-back to a single assumed rate of return

- Financial economists argued that single rate must be market-based
  - This meant risk-free rate
  - This rate is often appropriate for determining settlement values
- Many economists and actuaries support market-value liability (MVL) approach as single rate
  - Consistent with insurance pricing
  - Consistent with financial economics
  - Consistent with pricing assets which trade
  - Elegant approach

Public plans / actuaries have challenged appropriateness & usefulness of MVL

- Unlike private sector pensions which can be bought and sold, public pensions do not trade as a marketable security
- Tremendous opportunity for mis-information
- MVL accrued benefit basis inconsistent with public plan benefit promise
- Distorts comparisons between DB (if based on risk-free rates) and DC (when thought of by participants as opportunity to earn based on balanced portfolio)
- Not a useful risk measure, unlike other approaches

NASRA

July 25, 2018

ASB Comments
American Academy of Actuaries
By email: comments@actuary.org

Re: ASB Actuarial Standards of Practice No. 4 Exposure Draft

Dear Members of the Actuarial Standards Board:

We are writing on behalf of our members, who are the directors, administrators, managers, and trustees of public retirement systems throughout the United States. These systems hold more than $4.0 trillion in trust to provide pension and other benefits on behalf of more than 24 million working and retired employees of state and local government in the United States.

Public pension plans operate in a highly visible environment, overseen by elected governmental bodies at the state and local level and subject to scrutiny by the media and various stakeholder groups. These plans also are subject to constitutional, statutory, and case laws that create a clearly defined legal framework that governs the accrual and protection of pension benefits. We support the appropriate, meaningful, and understandable disclosure of the funded status and contribution requirements of public retirement plans so that stakeholders fully understand the nature, extent, and potential variability of the pension obligations.

For these reasons, the accuracy, clarity, and integrity of actuarial calculations and disclosures are vital to the ability of public pension plans to fulfill their legal responsibilities, and actuarial requirements and standards of practice are a matter of great relevance to us. We appreciate the opportunity to submit comments in response to the Exposure Draft of Actuarial Standards of Practice (ASOP) No. 4.

Following are our specific concerns about the exposure draft.

Comment 1: ASOP 51 already provides a robust framework for the assessment of risk, and the Investment Risk Defeasement Measure (IRDM) is a poor measure of risk

We believe that any guidance on the examination and assessment of investment risk belongs in ASOP 51, *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions*, which already contains principles-based guidance on evaluating pension plans' investment risks. ASOP 51 was specifically written to measure and report on pension plan risk, and already provides a robust framework for assessing investment and other risks inherent in funding plan benefits. ASOP 51 specifies investment risk as the first example of risk an actuary should identify and assess, and provides the framework, methods, and considerations for identifying and assessing investment risks.

By contrast, the prescribed IRDM in the proposed revision of ASOP 4 is not an effective measure of the investment risk in funding a plan. In fact, the prescribed IRDM is actually a measure of the liabilities of the plan for benefits accrued to-date, if the future investment risk is eliminated by investing the fund in assets with an expected yield equal to current bond yields. Because the IRDM is based on different

Actuarial Standards Of Practice

- US Credentialed Actuaries are bound by Actuarial Standards of Practice (ASOPs)
  - Member, American Academy of Actuaries
  - Fellow or Associate, Society of Actuaries
  - Fellow, Conference of Consulting Actuaries
- ASOPs developed by leading actuaries
- We are also subject to Code of Professional Conduct
  - Integrity
  - Only do work if qualified
  - Must follow ASOPs
  - Self-policing
  - Ten other precepts to the code of conduct

Actuarial Standards Of Practice Relative to Public Pensions

ASOP	Name	Latest Revision
4	Measuring Pension Costs and Liabilities	2014/2021
27	Selection of Economic Assumptions for Measuring Pension Obligations	2020
35	Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations	2020
41	Actuarial Communications	2010
44	Selection and Use of Asset Valuation Methods for Pension Valuations	2011
51	Assessment and Disclosure of Risk Associated with Pensions	2017
56	Modelling	2019

ASOP 4 Changes – Overview

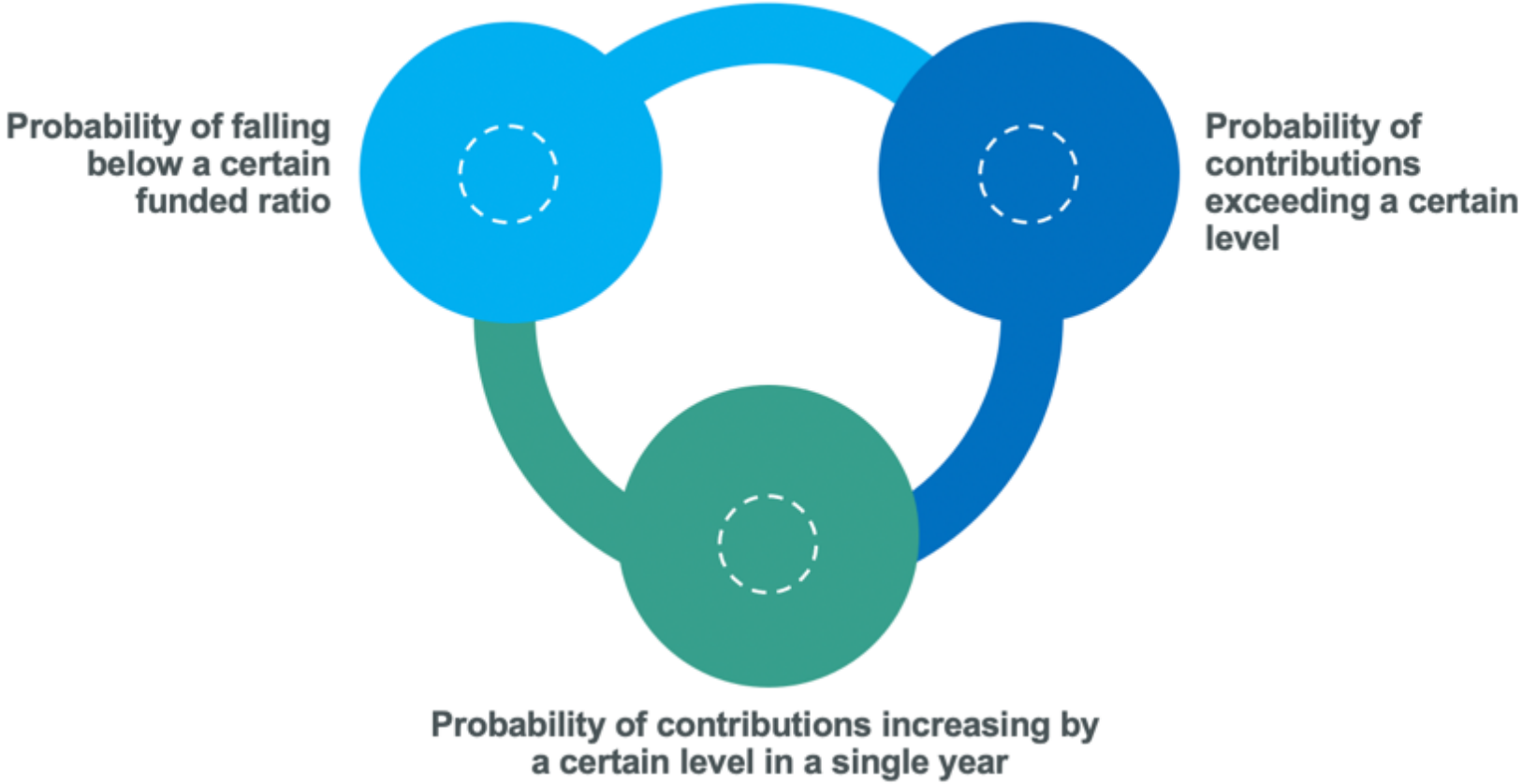
- **Liabilities must additionally be measured based on a "Low-Default-Risk Obligation Measure" (LDROM)**
  - This is consistent with risk-free rate
  - Strong push-back from plans and practicing actuaries
  - Loosened to permit liability measurement to be consistent with ongoing liability measurement – permits meaningful calculation of value of investing in riskier assets
- **Requires "Reasonable Actuarially Determined Contribution"**
  - Generally viewed as positive requirement
  - Some necessary technical changes may lead to delay in final standard

Why measure risk?

"All models are wrong but some are useful."

George E.P. Box

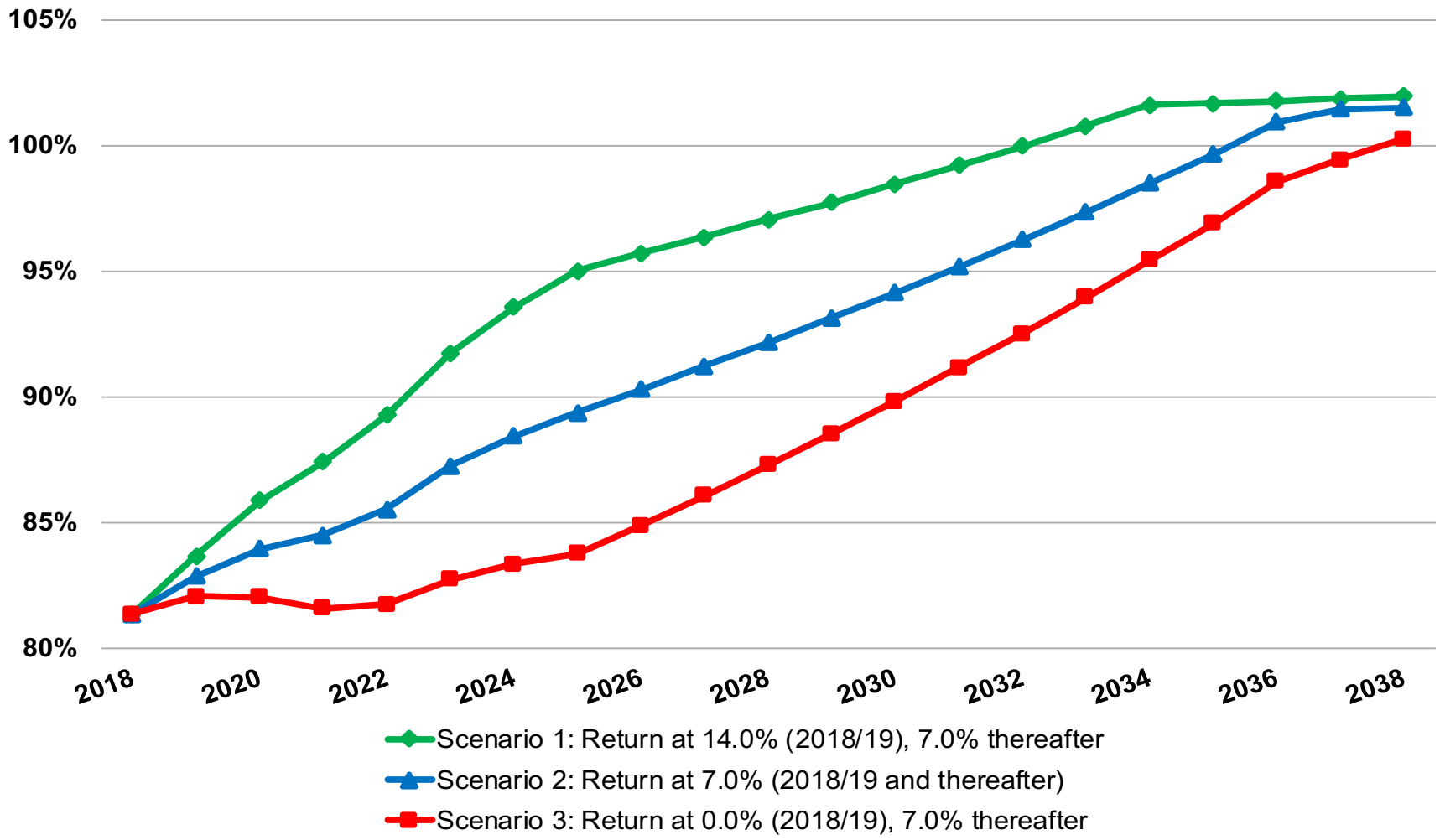
CalPERS Case Study: Early Asset Liability Management Framework



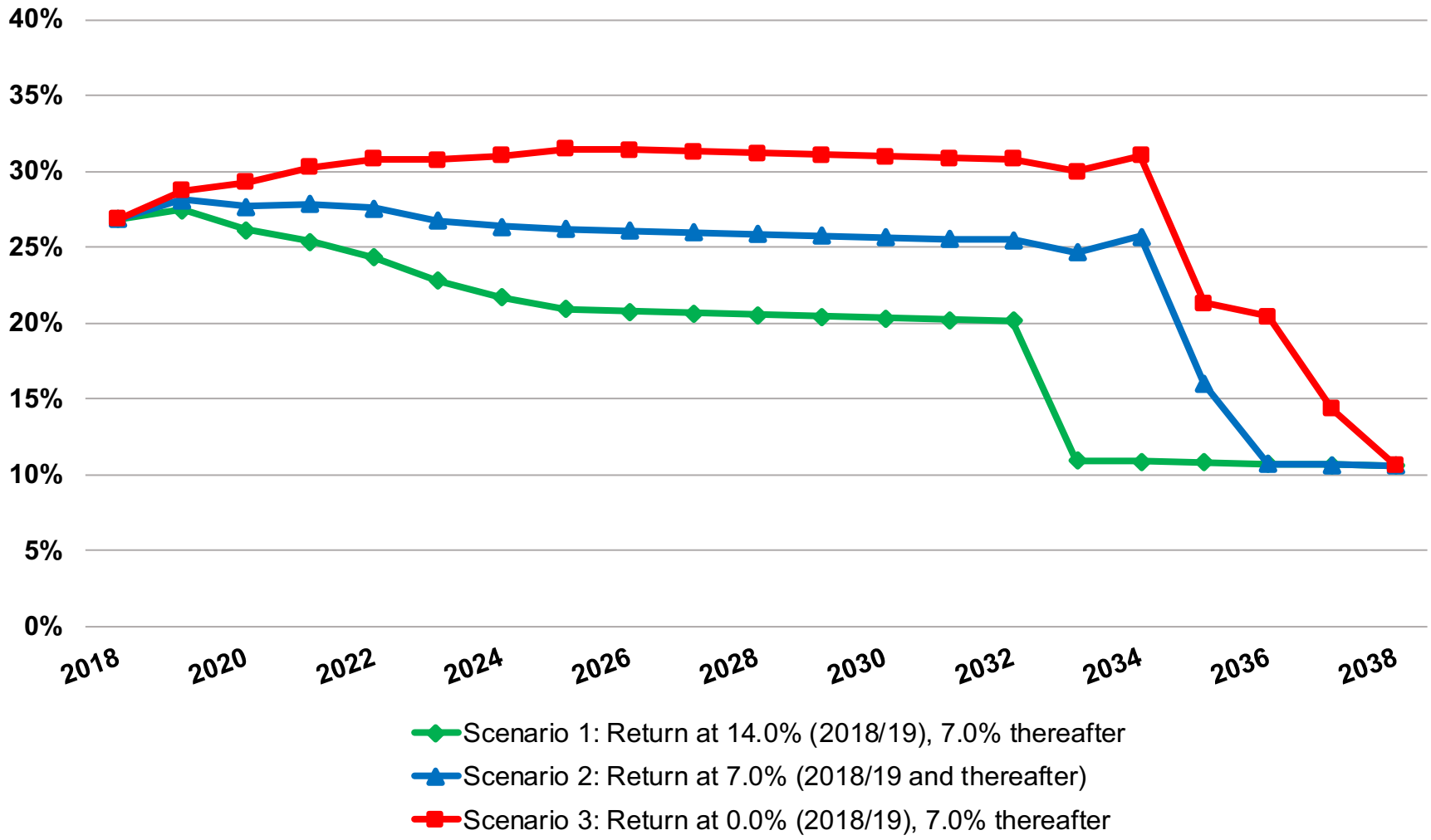
New ASOP 51

- **Must include Risk Disclosure Measures, such as:**
  - Stress tests
  - Scenario tests
  - Sensitivity tests
  - Stochastic modeling
  - Key metrics
- **Provides very useful information to users of actuarial valuations**
  - Many actuaries view as superior to LDROM calculation as a decision-useful measure

Practical Stress Testing: Funding



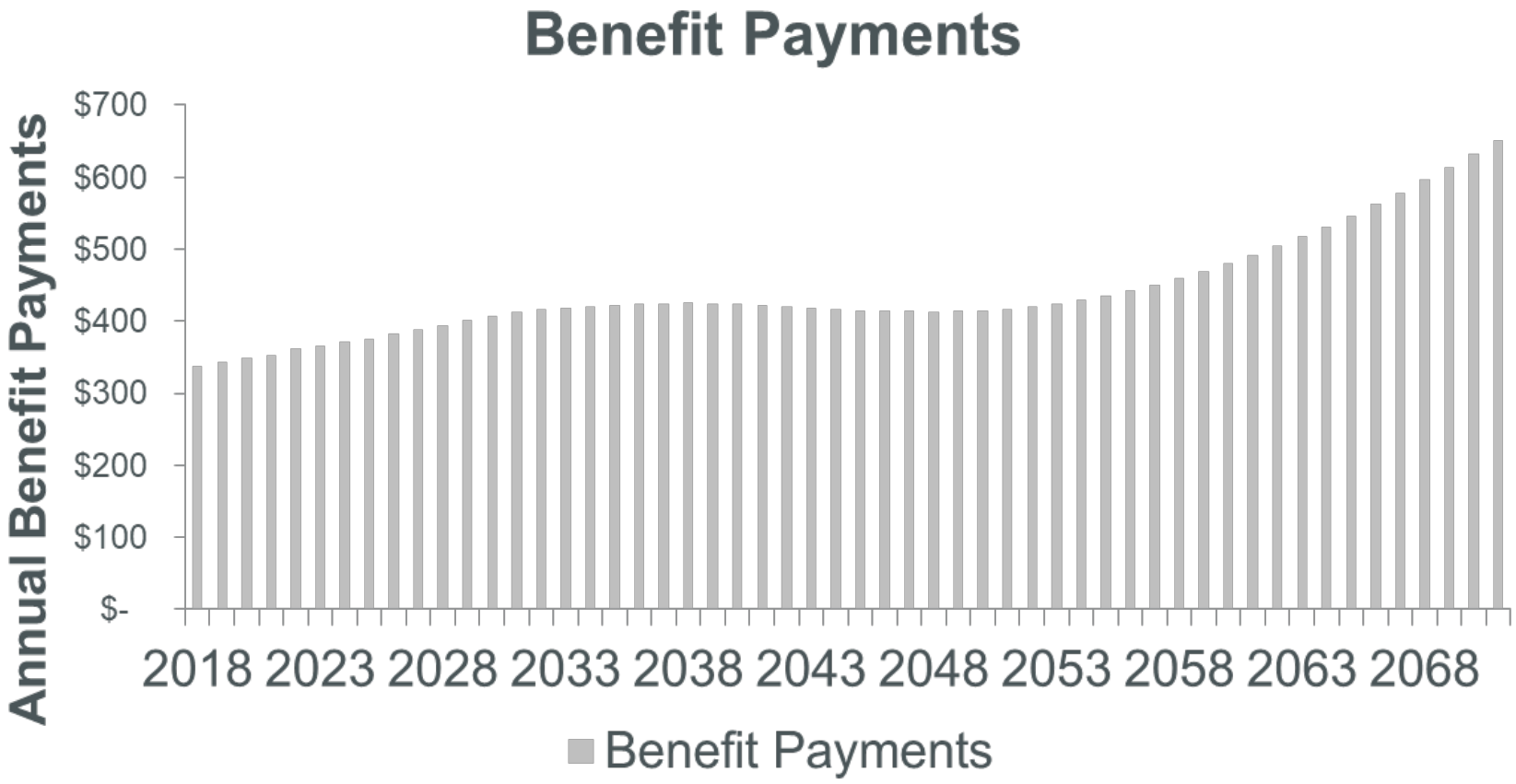
Practical Stress Testing: Payments



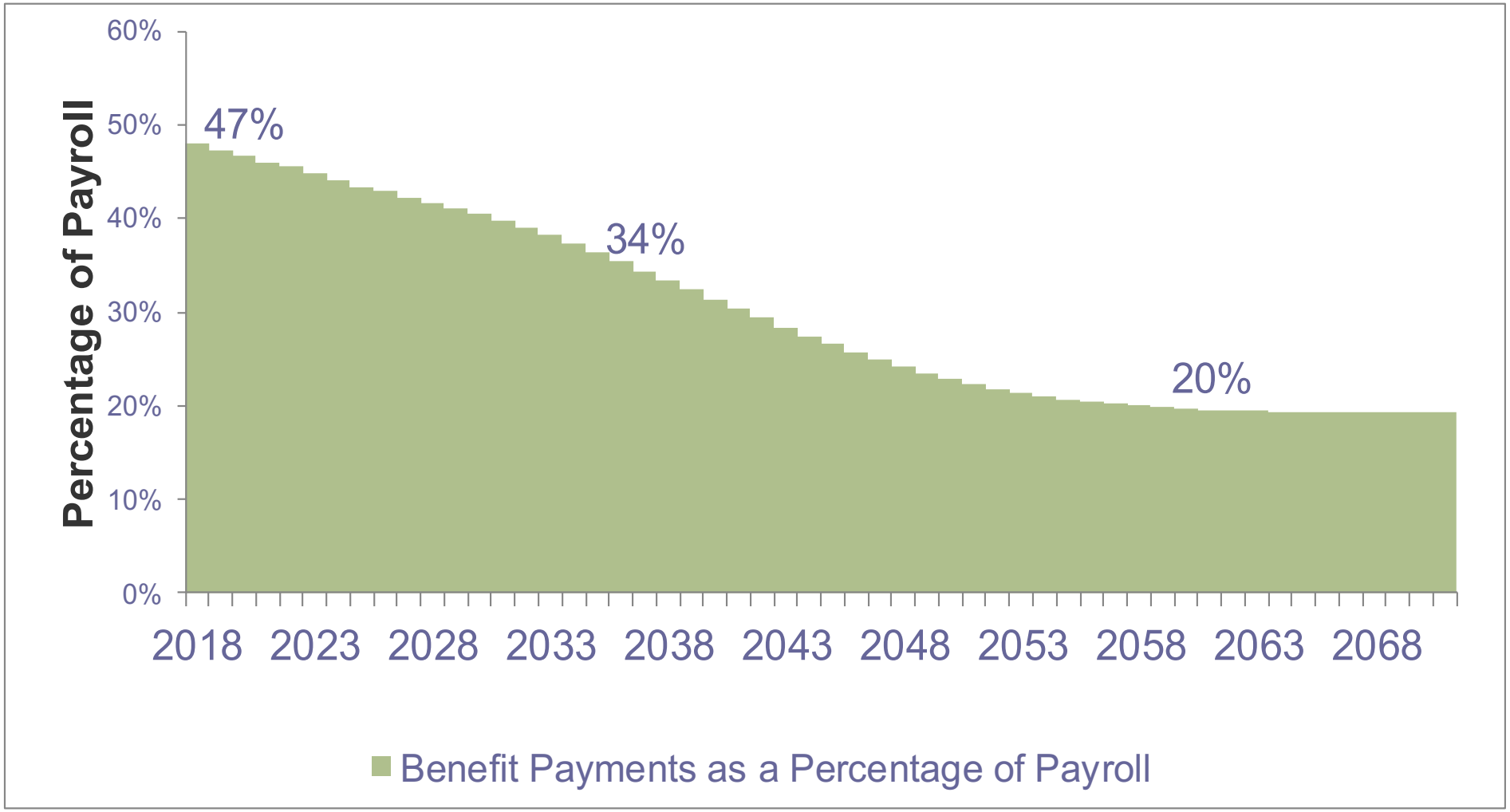
Risk Metrics

- ASOP 51 requires the disclosure of several "risk metrics" that will likely be new for most pension systems
- These metrics compare two other variables in a way to add context
- An example from another industry would be the debt to income ratio when applying for a mortgage:
  - Applicant A wants a $100,000 mortgage and has an income of $80,000
  - Applicant B wants a $100,000 mortgage and has an income of $40,000
- Applicant B is clearly the riskier situation

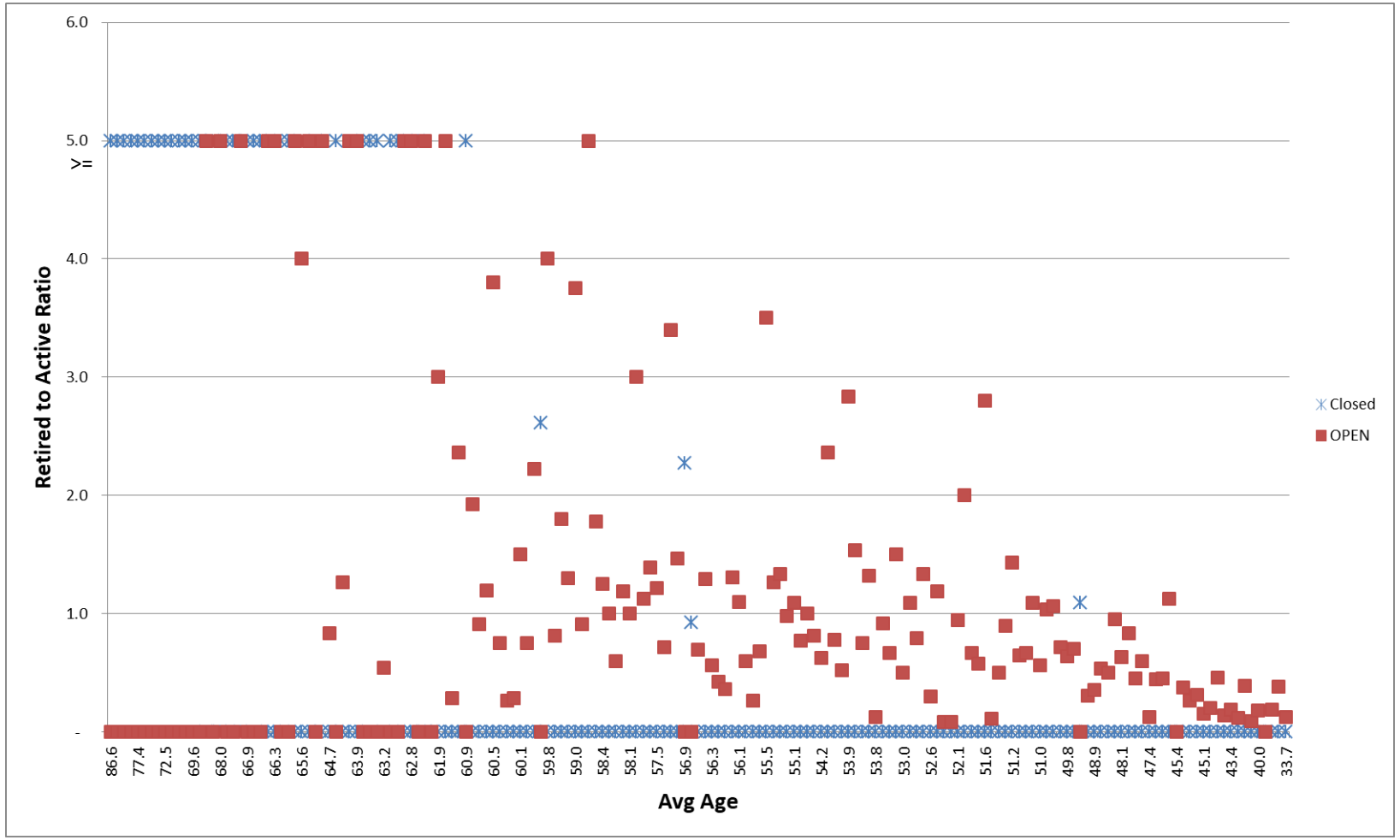
Example Risk Measure: Projected Benefit Payments



Benefit Payments as a Percentage of Payroll



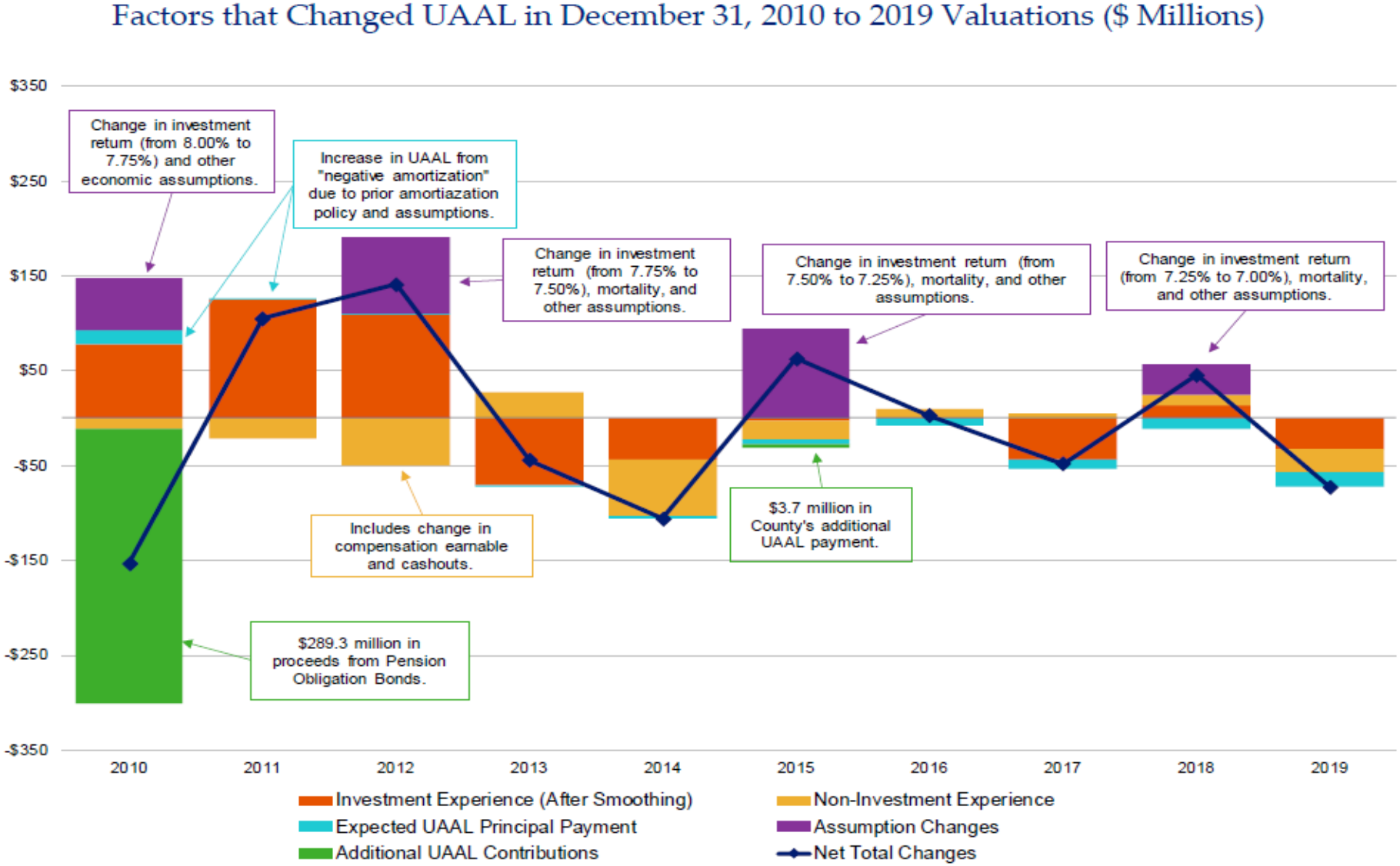
Another Example: Using ratio of Retirees to Actives



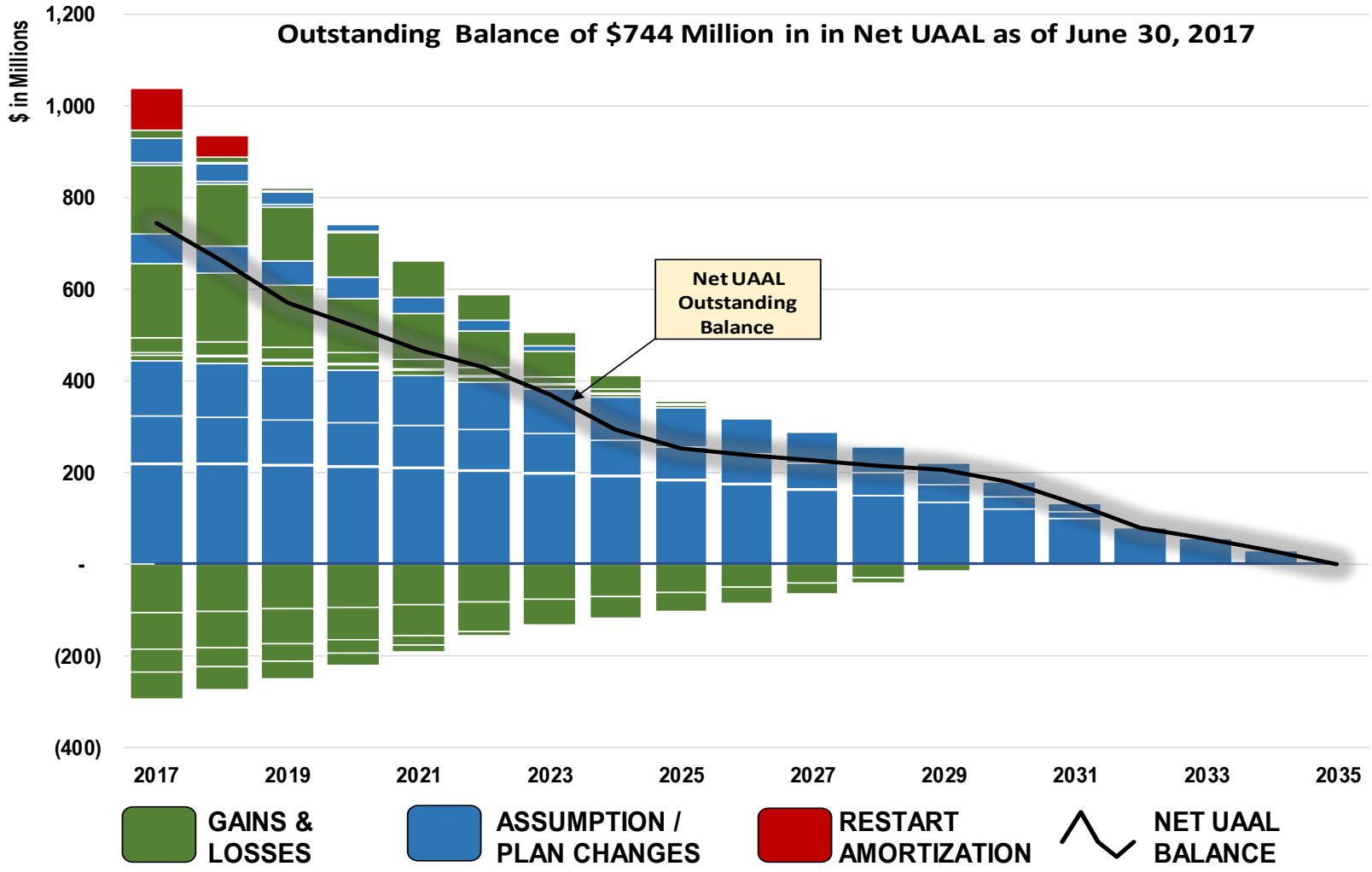
Example Risk Measure (2014) – Based on goal that fixed contribution plan would become 100% funded within 30 years

Status	Definition	Annual long-term investment return to get to this status	Likelihood	
Dark Green	100% funded by 2041 (30 years from 2011)	Average 8.6% or more	33%	51%
Green	100% funded by 2045 (30 years from 2015)	Average 8.2% to 8.6%	5%	
Light Green	100% funded by 2055 (40 years from 2015)	Average 7.4% to 8.2%	14%	
Yellow	100% funded by 2065, and never as low as 20% funded	Average 7.3% to 7.4%	3%	21%
Orange	Solvent, and only gets as low as 20% funded	Average 6.1% to 7.3%	18%	
Red	Insolvent or technically insolvent after 2035	Average 3.1% to 6.1%	22%	28%
Dark Red	Insolvent by 2035 (within 20 years)	Average less than 3.1%	6%	

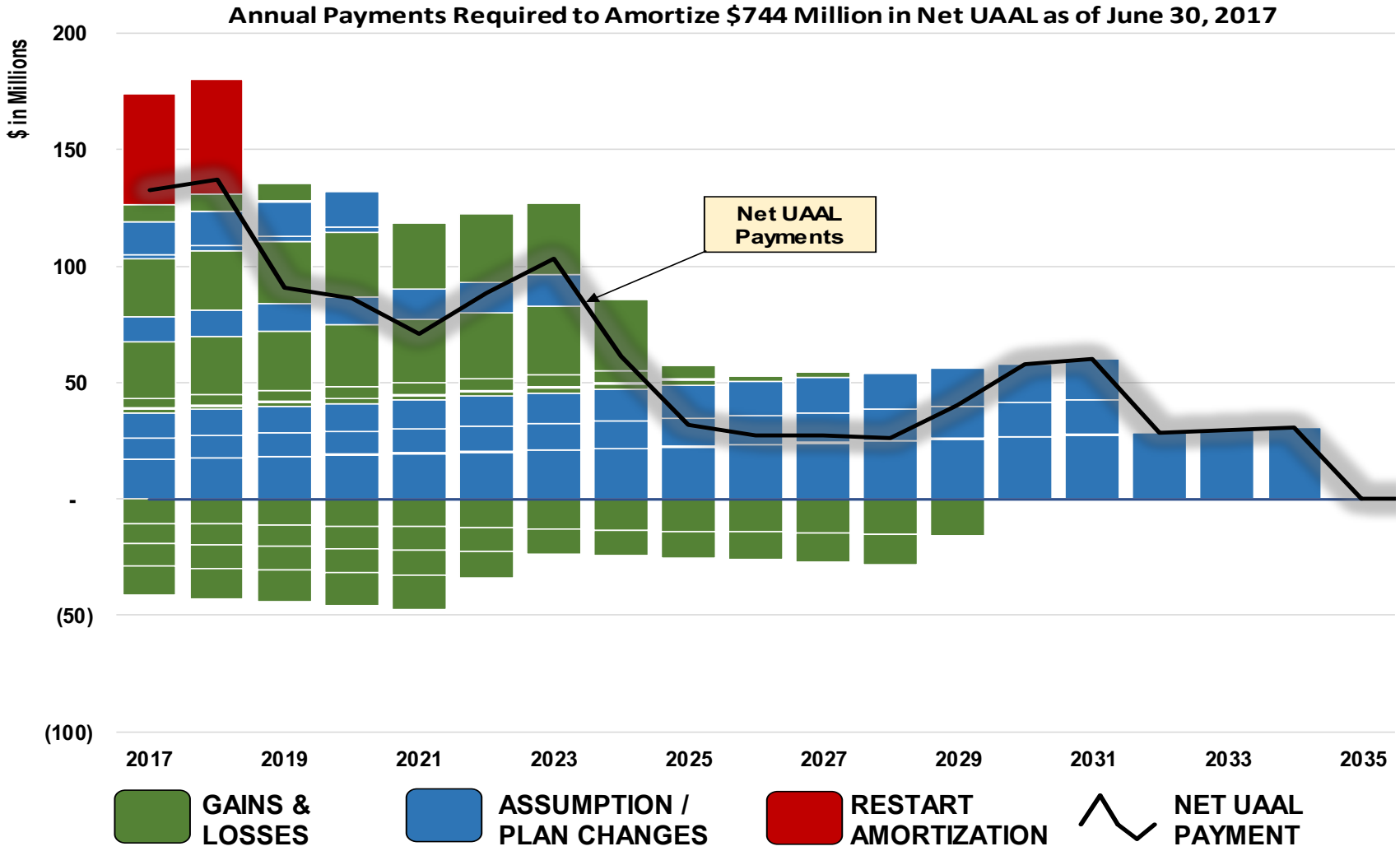
Staying Informed: Historical Perspective



Unfunded Liability Transparency



Contribution Transparency



What is risk?

- From ASOP 51: Risk – potential of actual future measurements deviating from expected results due to actual experience that differs from the actuarial assumptions
- Other definitions:
  - Potential of actual future outcomes not meeting expectations
  - Potential of undesirable future outcomes

Fight the right fight

- Do not fight an abstract concept
  - "We can't do that because it is too risky"
- How *exactly* is it risky?
  - What is the outcome you find undesirable?
  - Keep asking questions until you find the end of the path (the outcome you are most concerned about)
    - Why is this metric important? Because it tells me something about…..

Define risks in objective, explicit outcomes

- Potential of having to contribute more (or much more) than expected
- Potential of having contribution changes in unmanageable ways
- Potential of funded status deteriorating
- Potential of some prescribed or traditional trigger occurring
- Impact on asset accumulation when combined with negative cash flow
- Potential liquidity management concerns

- Of course, there are also other non-financial, or less quantitative risks to be considered

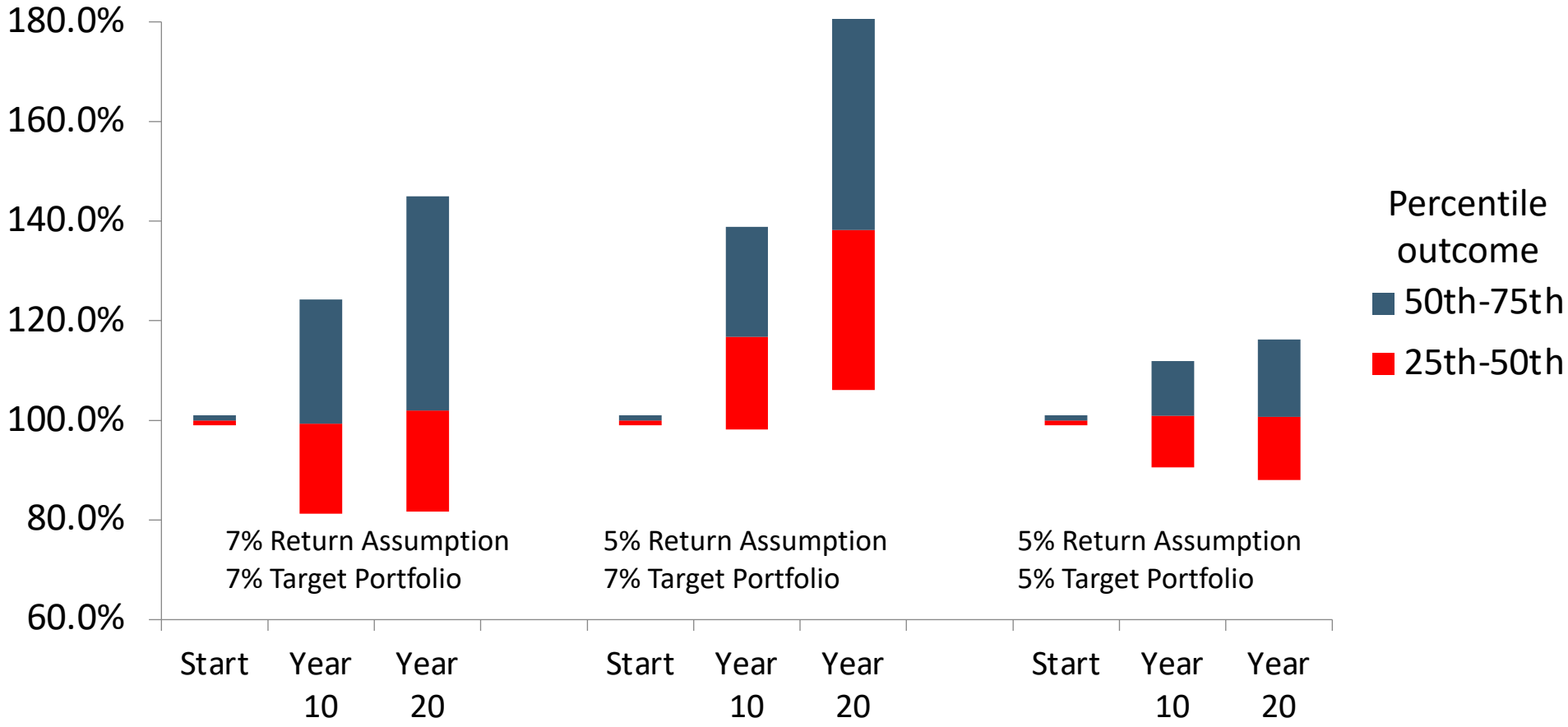
What about using the asset allocation and investment return assumption to lower the risk?

- Using a stochastic model, we looked at three alternative strategies using the asset allocation and/or discount rate
  - **Baseline:** Median investment return assumption (ROA) based on typical portfolio
    - ROA: 7.00%, Median Return 7.00%, Standard deviation 10.7%
  - **Alt A:** Purposefully conservative investment return assumption, but keep a typical portfolio
    - ROA: 5.00%, Median Return 7.00%, Standard deviation 10.7%
  - **Alt B:** Purposefully conservative investment return assumption based on a more conservative portfolio
    - ROA: 5.00%, Median Return 5.00%, Standard deviation 7.0%

Contribution Rate

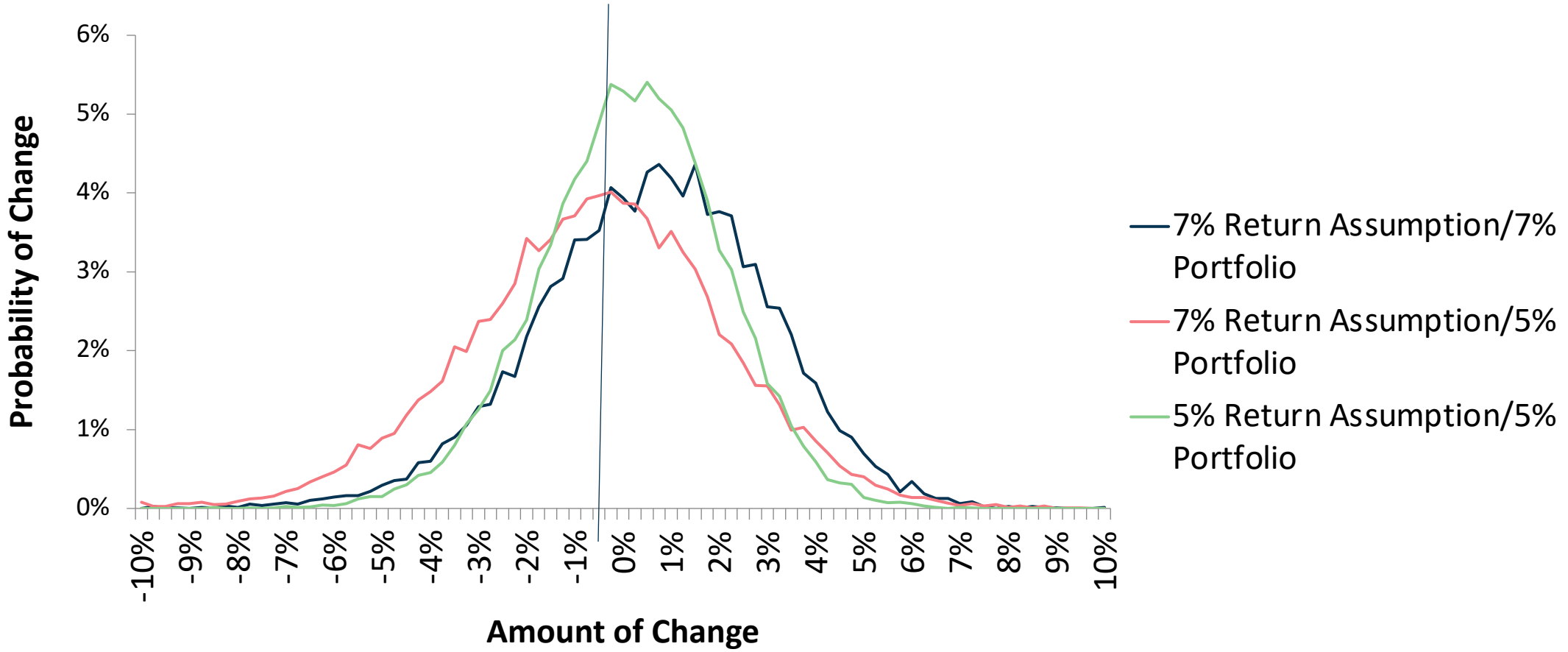
All scenarios start at 100% Funded Ratio and use 20 Year Layered Amortization for gains and losses

Distribution of Funded Ratio



All scenarios start at 100% Funded Ratio and use 20 Year Layered Amortization for gains and losses

Distribution of Change in Contribution Rate from Year to Year



Conclusions

- ASOP 51 is a valuable tool for understanding and measuring risk, particularly with respect to investment volatility

- ASOP 4 revisions have some value, but will likely lead to confusion of Low-Default-Risk Obligation Measure

Questions