ACTUARIES AND PENSIONS SUPERVISION: VALUATION OF PENSION PLANS

TWIN PEAKS - INTRODUCTORY TRAINING COURSE
BANK OF JAMAICA
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AGENDA

- PURPOSE(S) OF VALUATIONS
- WHY ACTUARIES ARE NECESSARY
- VALUATION METHODS
- FUNDING METHODS
- ACTUAL VS EXPECTED
- RESPONSIBILITIES OF THE VALUATION ACTUARY

PRE-ASSESSMENT QUESTION

6. An actuarial valuation of a pension plan will report on both the plan's assets and liabilities. Which of the following is true?
    A. Pension liabilities are typically very long-term, making it difficult to find suitable investment assets.
    B. To ensure effective asset-liability management the appointed actuary must have responsibility for the plan's investment management.
    C. The plan's investments should be sufficient to cover projected benefits.
    D. To protect the members' benefits the fund should not invest in risky assets.

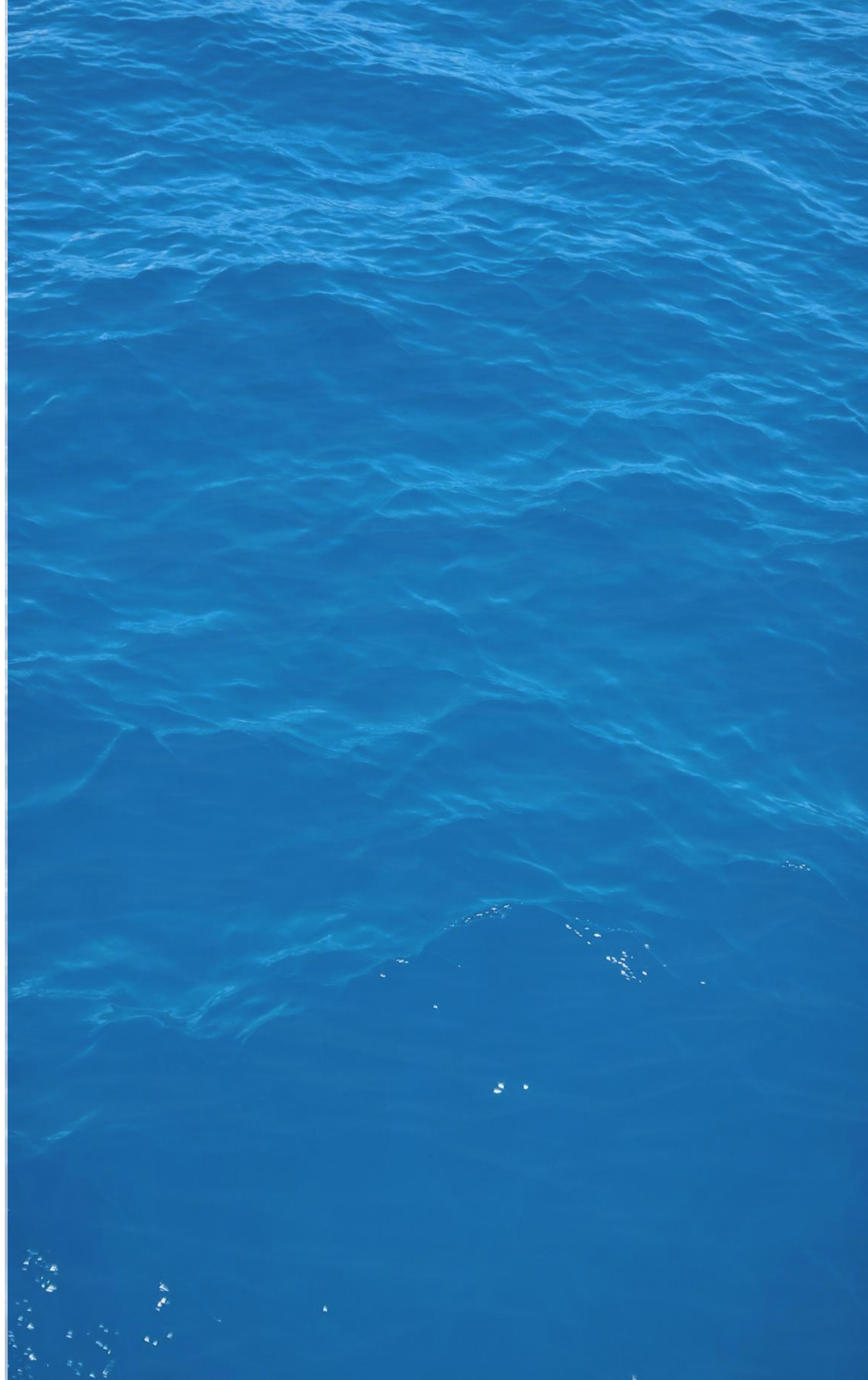
PURPOSE(S) OF VALUATIONS

- Funding and Solvency
- Accounting
- Windup (termination)
- Other regulatory requirements (e.g. PBGC in the United States)

WHY ACTUARIES ARE NEEDED

A pension plan valuation calculates estimates and projections of cash flows in and out of the fund, based on the probabilities that those cash flows will occur.

Actuarial methods that were originally developed for life insurance (dependent upon probabilities of death) are extended to include other probabilities such as disability and withdrawal from the plan.

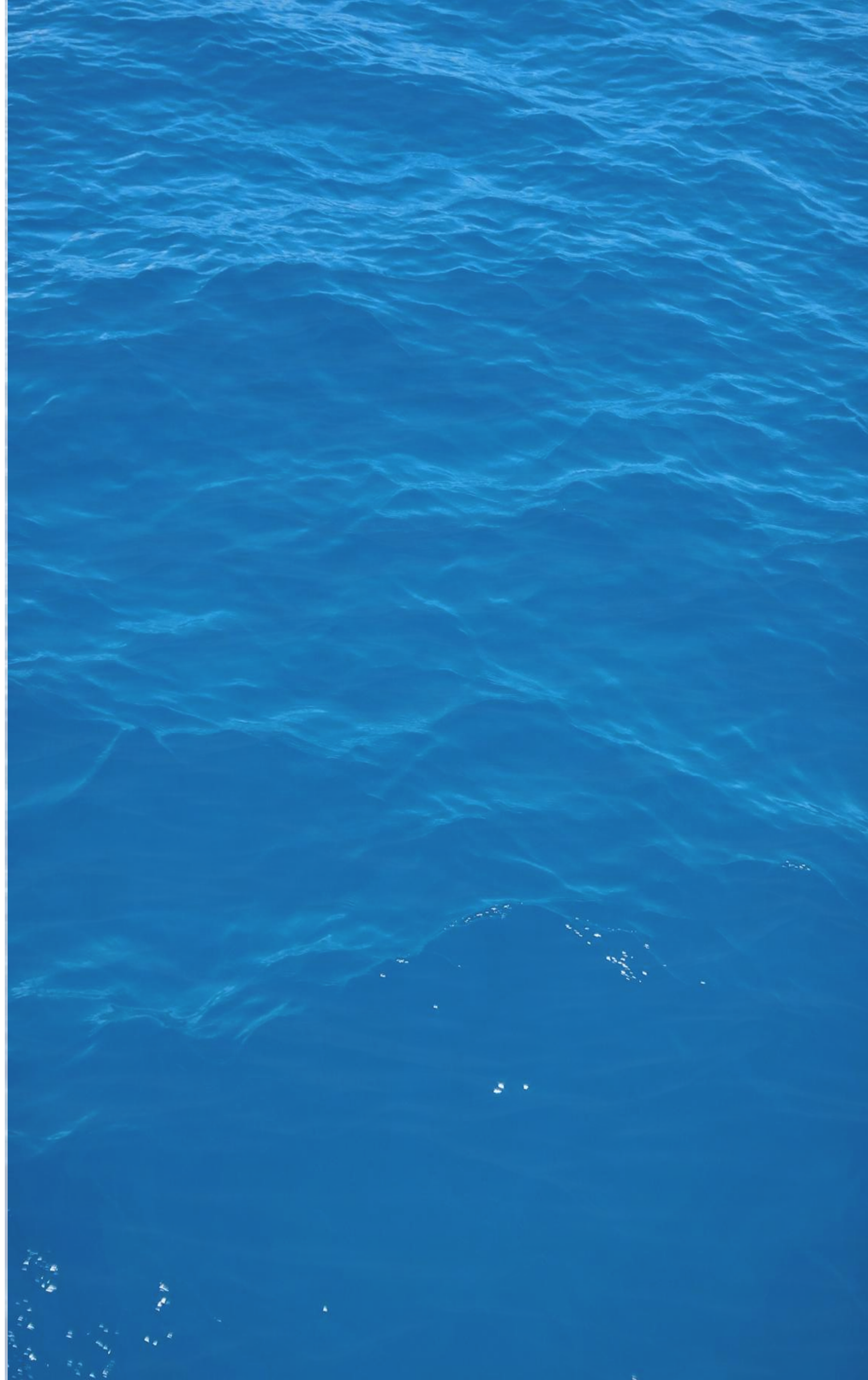


WHY ACTUARIES ARE NEEDED

Actuaries are trained to value

- uncertain
- cash flows
- (especially) over long time periods.

This is why the traditional areas of actuarial practice are life insurance and pensions, but actuarial methods can be applied to any type of risky cash flows.



WHY ACTUARIES ARE NEEDED

- No other profession has the skillset required to competently carry out pension plan valuations, which depend upon calculations of actuarial present values
- Actuaries will understand the impact of changes in demographics and investment markets, and will be able to select appropriate valuation assumptions

REQUEST FROM AN ACTUARY

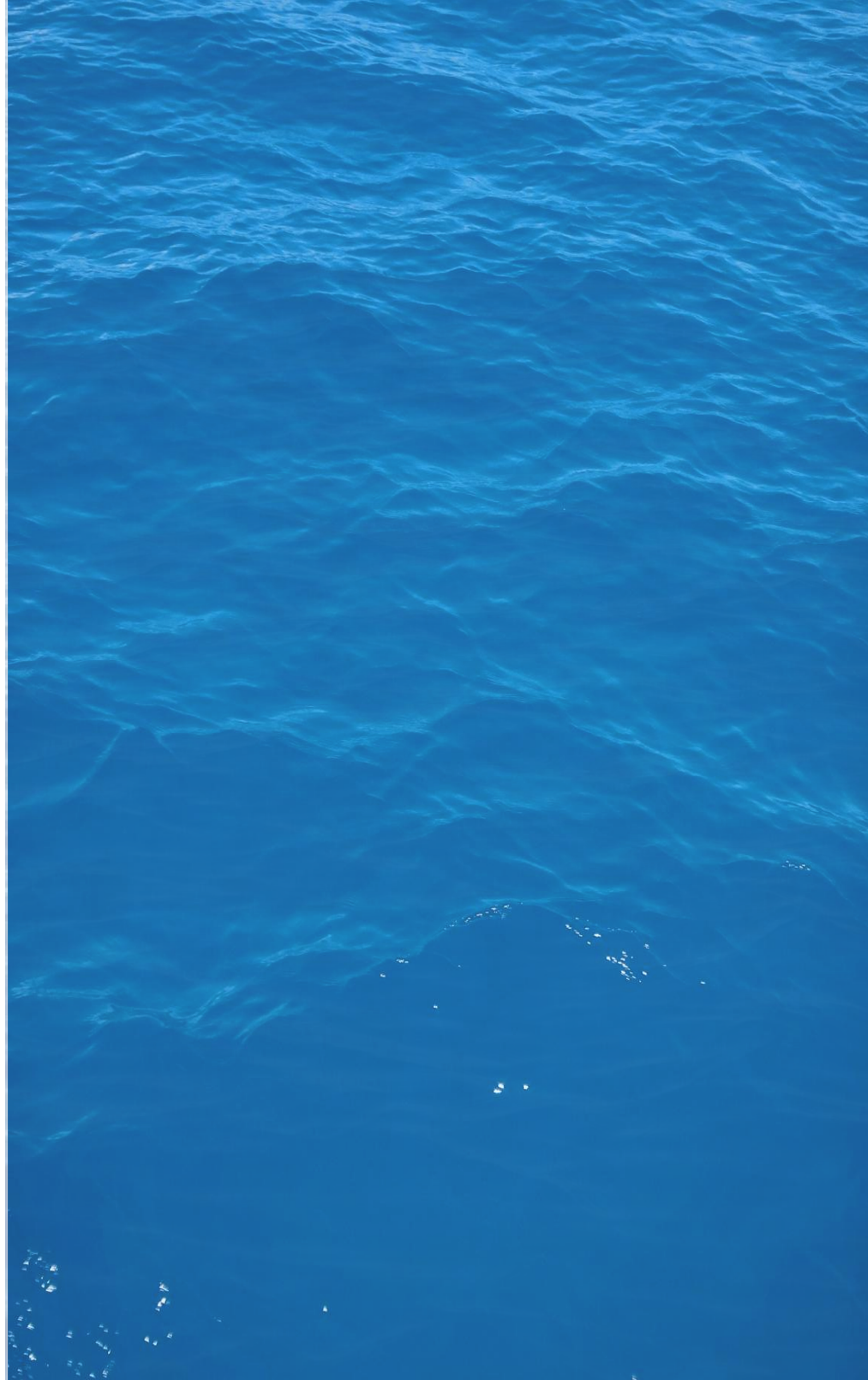
- Trust us!
- The actuarial profession is a true profession, like law or medicine
- Actuarial knowledge is highly specialized, and an actuary must apply their judgment to many of the calculations that they do

VALUATION METHODS

The purpose of the valuation will guide which method is employed.

The assumptions used for accounting valuations follow different rules than those used for solvency valuations.

The actuary will typically have more freedom to apply actuarial judgment in the selection of assumptions for a solvency valuation.



SOCIETY OF ACTUARIES

Pension Valuation Methods and Assumptions

Second Edition

	Accounting	PBGC PREMIUMS & TERMINATION	Funding
Primary Objective	COMPARABILITY.	SOLVENCY.	SOLVENCY.
Discount Rate	HIGH-QUALITY corporate bonds The rate of return on a hypothetical portfolio of HIGH-QUALITY fixed income securities that generate cash flows matching the expected amount and timing of payments from the pension plan.	Lump sum payments at plan termination are based on IRS published rates (based on INVESTMENT GRADE corporate bonds). PBGC PREMIUM liability calculations are based on Pension Benefit Guaranty Corporation (PBGC) published rates (based on corporate bond yields).	The IRS publishes rates for valuations based on INVESTMENT GRADE corporate bonds. Legislation passed in 2012 and extended in 2014 calls for a corridor to be applied to current yields to consider historical 25-year averages of these rates.
Key Characteristics	▪ Liabilities include the cost of future salaries on past service. ▪ Liabilities are measured assuming the company remains in existence as a "going concern."	Liabilities and assets consider current market conditions and liabilities related to termination (for example unpredictable contingent event benefits and plant shutdown benefits). The effects of future salary increases are not considered.	Funding valuation requires consideration of current market conditions but permits additional tax-favored prefunding opportunities for future liabilities. Only benefits earned on or before the last day of the plan year are considered for funding requirements.

https://www.soa.org/49381a/globalassets/assets/files/research/projects/2015-pension-val-methods-2nd-edition.pdf

SOCIETY OF ACTUARIES

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Investment Considerations	▪ Balance sheet requirements do not reward equity investment risk taking. ▪ Income statement accounting provides reward for equity investment risk taking. ▪ Sponsors are considering, and in some cases implementing, asset/liability matching, cash flow matching and bond investment; however, most pension plans still include equities in plan assets.	PBGC PREMIUM payment is based on termination liability and does not consider possible future returns from investment management. If a plan is terminated, benefits are paid (by annuity purchase or lump sum settlement) based on interest rates that do not consider possible future investment returns.	Regulation reduces the short-term benefit of equity investment. The increased volatility of funding resulting from equity investment is only minimally offset by the benefit of increased returns (and there is delay in that recognition).
Trends	Recognition of market prices on the valuation date based on current market conditions. Possible convergence with International Financial Accounting Standards (IFRS)/IAS19.	Recognition of market prices on the valuation date based on current market conditions. There have been significant premium increases in recent years.	Recognition of market prices on the valuation date based on current market conditions.

https://www.soa.org/49381a/globalassets/assets/files/research/projects/2015-pension-val-methods-2nd-edition.pdf

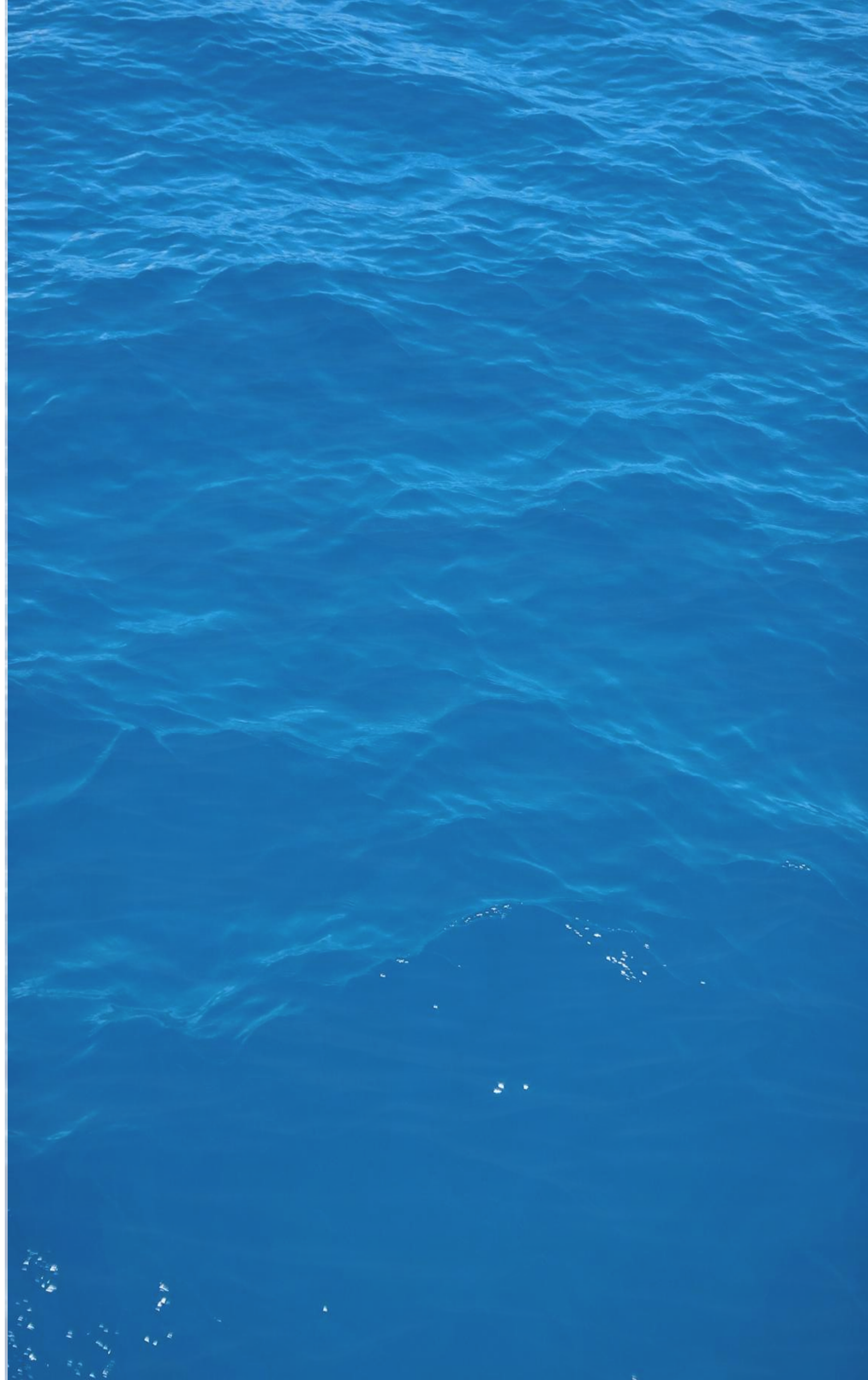
FUNDING METHODS

- Defined benefit or defined contribution?
- Pay-as-you-go
- Individuals fund their own benefits?
- Future contributions cover past service benefits?

QUESTIONS?

ACTUAL VS EXPECTED

- Compare valuation results with projected results from the prior valuation
- Identify the reasons for the differences
- Recognize that changes may be offsetting – total results close to expectations may obscure material changes
- This may be reported in the valuation as an “analysis of surplus”



PRE-ASSESSMENT QUESTION

8. Actuarial work often employs actual/expected analysis to examine changes over a given timeframe, and to identify the reasons for those changes. Which of the following is true?
    A. Actual/expected analysis should examine all changes in valuation results.
    B. Large differences between actual and expected results indicate that there were problems in the prior valuation.
    C. A small discrepancy in overall results does not require further analysis.
    D. Actual/expected analysis can only be applied if the assumptions are unchanged since the last valuation.

PRE-ASSESSMENT QUESTION

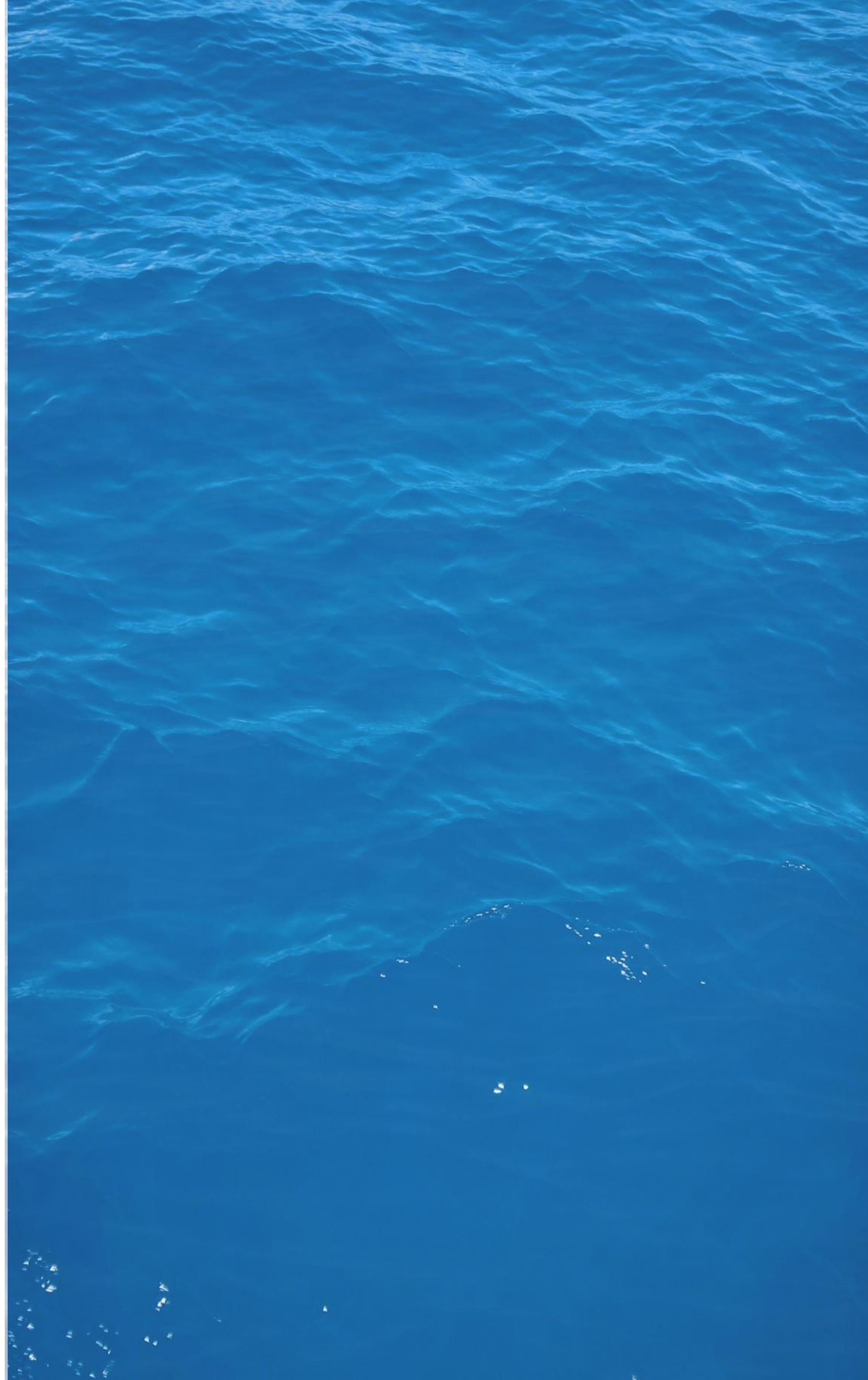
1. If the investments supporting an employer-sponsored pension plan have performed far better than expected for many years, how may the excess returns be applied?
    A. The employer may retain any amount above average market returns for the year.
    B. The employer may retain any amount in excess of the expected return reported in the most recent actuarial valuation.
    C. It will depend upon whether any pensioners are currently receiving benefits.
    D. It will depend upon whether the plan is defined benefit or defined contribution.

RESPONSIBILITIES OF THE VALUATION ACTUARY

- Ensure that they have the experience needed to do the valuation!
- Follow all applicable practice standards for the jurisdiction(s) in which the valuation will be used
- Communicate with the plan sponsor and administrators – the valuation should not be done in a vacuum

RESPONSIBILITIES OF THE VALUATION ACTUARY

- Explain the valuation results to the plan sponsor
- Advise the sponsor on possible future developments
- Check the plan data for anomalies and advise the sponsor and administrator of them



QUESTIONS?