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ETOB Testing Update

Oregon Public Employees Retirement System

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Introduction

- On behalf of the PERS Board, Mercer is currently conducting ETOB testing to help assess compliance with the new (2007) ETOB statutory requirements
  - Employers with exemptions from PERS participation for their public safety personnel must have their plans compared to PERS to verify satisfaction of the new ETOB requirements
    - Exemptions from PERS participation can be granted by the PERS Board based on analysis done by the PERS actuary
  - More details on testing can be found in previous 2010 Board presentations and our February and November 2009 presentations
- At the March Board meeting, we:
  - Refined the basis for calculating the “risk-free rate” used in testing
  - Indicated that two employers satisfy ETOB via a “preliminary determination” testing approach
    - Morrow County
    - City of Portland

Overview

- Since March, preliminary test results have been developed for employers that sponsor the following two types of program designs
  - Defined benefit (DB) – provides a guaranteed life annuity
  - Defined contribution (DC) – accumulates an employee account balance
- The preliminary test results comparing the defined contribution programs to the defined benefit PERS program are challenging to interpret and merit discussion with the Board and other interested stakeholders
- Today we will summarize preliminary testing results for the defined contribution programs
  - Results were developed using a “risk-free rate” testing methodology, as described in our prior presentations on ETOB testing from 2009 and 2010

Overview

- We will also discuss the possible effects on defined contribution program test results if testing were conducted using an alternative methodology
  - The alternative methodology assumes investments accumulate at the PERS actuarial investment return assumption of 8%
  - The alternative methodology is presented to help stakeholders understand the effect of the risk-free rate assumption on testing results
- At the end of our presentation, we will solicit feedback from the Board and interested stakeholders on the preliminary results presented, and seek guidance on appropriate next steps in the testing process
- Preliminary test results for "ETOB employers" that sponsor a defined benefit program are <u>not</u> presented today
  - Those preliminary results are directly comparable and easily interpreted
  - However, final testing for all programs will be done on a consistent basis
    - Feedback and direction is needed on the preliminary defined contribution program test results before we can finalize any full tests

Overview
Guiding Principles and Oregon Administrative Rule (OAR)

- A stakeholder input and rulemaking process established three guiding principles to shape the OAR governing the ETOB test
- The principles and their implications for the test are shown below
  - ***Comparability –*** *make an "apples-to-apples" comparison*
    - *A single, consistent basis is needed to compare the defined benefit PERS program to the defined contribution programs sponsored by some "ETOB employers"*
  - ***Durability –*** *results should be consistent unless provisions change*
    - *The test analyzes benefit structures, not individual outcomes*
    - *Uses stable hypothetical data rather than employer-specific data that may change significantly from one testing period to the next*
  - ***Cost Effectiveness –*** *an appropriate low cost method that does not compromise the validity of results should be used*
    - *Supported by use of hypothetical data*

Risk-Free Rate Methodology

- The current OAR states:

"benefits that depend on earnings shall be valued using a risk-free earnings rate"

- For a defined benefit (DB) program such as PERS, the valuation liabilities developed using a risk-free earnings rate are dramatically higher than those developed in our annual valuation reports to employers
- The risk-free valuation methodology assumes a 4.7% annual asset return
  - This is a proxy for the program's value to the employee, assuming the life annuity is risk-free and value is assessed based on risk-free rates
- The annual valuation methodology assumes an 8.0% annual asset return
  - Provides expected program cost; is used for employer rate-setting

Risk-Free Rate Methodology
Defined Benefit (DB) Programs

- Under either methodology, projected DB program benefit levels are similar
- The risk-free methodology assumes investments earn a risk-free rate
  - As such, under a risk-free rate liabilities are higher as the projected DB benefits are discounted back to the testing date at a lower interest rate
    - Generally, more money would be needed to fund promised benefits
- This concept becomes more clear when illustrated for a sample employee in a defined benefit program:
  - Currently age 45
    - ETOB testing occurs at current age
  - Projected to:
    - Retire at age 60
    - Receive $30,000 per year at retirement with a 2% annual COLA
      - Receive benefits for 25 years; from age 60 to age 85

Risk-Free Rate Methodology

Defined Benefit (DB) Programs

Present Value of Payments - Risk-Free Methodology:

$288,000

Risk-Free Methodology: Discount payments to test date at 4.7% per year interest

Age 45

Testing

Date

Age 60-85 Payment Period

$30,000 at age 60; 2% COLA

Present Value of Payments - Annual Valuation Methodology:

$132,000

Annual Valuation Methodology: Discount payments to test date at 8% per year

With no change in projected payments from the DB program, the move from the annual valuation methodology to the risk-free methodology “re-prices” the estimated present value of the payments upward by **<u>118%</u>** in this example

Risk-Free Rate Methodology

Defined Benefit (DB) Programs

- At an employer level, this concept can be illustrated through a DB program with an expected employer cost of 15% of payroll

Program Type	Expected Cost to the Employer (8.0% interest rate)	Value to the Member on a Risk-Free Rate Basis (4.7% interest rate)
Defined Benefit	15% of payroll	33% of payroll

- The difference between the values shown above for the program is a measure of the difference between employer costs calculated on the basis of the expected (but not guaranteed) long-term rate of return and the cost of providing benefits if assets were invested on a risk-free basis
  - Looking at this another way, the difference between the two results represents a value of the guarantee that a DB program sponsor makes to its participants by investing its assets on a riskier basis and bearing the risk for any long-term shortfall between actual and expected returns

Risk-Free Rate Methodology

Defined Benefit (DB) Programs

- The associated investment risk is held by the employer in a DB program, and is of considerable value to the employees, as the numbers on the prior slide illustrate

- The effect of the risk-free methodology on testing is summarized below

> - **The risk-free rate methodology substantially increases the assessed present value of the PERS program compared to the annual valuation methodology**
> - **The "re-priced" PERS liability is the target benefit level that an employer must meet to satisfy the ETOB requirement under the OAR**
> - **All DB programs tend to re-price by similar percentages using the risk-free methodology, so the methodology does not significantly affect test results for "ETOB employers" that sponsor DB programs**
>   - **That statement does not hold true for DC programs, which do not substantially re-price due to a change in methodology**

Risk-Free Rate Methodology
Defined Contribution (DC) Programs

- In a DC program contributions are made on behalf of the employee each year during the course of his or her working career
- Given the simplicity of a DC program's benefit delivery, for a given year the value of the employer-provided benefit is straightforward:
  - ➢ It is the employer's contribution level as a percentage of payroll
- The full-career value of the program will depend on investment returns
  - – The employee bears the investment risk in a DC program
- A risk-free methodology does not attempt to place an expected value to the employee on the "risk premium" of returns the employee hopes to achieve in excess of the risk-free rate
  - – The rationale for that exclusion is that since the employee bears the investment risk, the "risk premium" is not viewed an employer-provided benefit in the risk-free methodology

Risk-Free Rate Methodology

Defined Contribution (DC) Programs

- Per the OAR, both historical and projected future employer contributions were assumed to accumulate at the risk-free rate for testing purposes
- A possible alternative methodology could use the PERS actuarial investment return assumption of 8% to both:
  - Project the account balance accumulation over an employee's career
  - Discount that projected account balance back to the testing date
- Due to the simplicity of a DC program's structure, either methodology produces essentially the same benefit value level on a percentage of payroll basis
  - While the projected balance is much higher under the 8% assumption, the higher balance is discounted back to the testing date at 8%

Risk-Free Rate Methodology

DC Programs

- For a sample employer with a 15% annual employer contribution the estimated value of the program under the two alternative methodologies is essentially identical:

Program Type	PERS Investment Return Assumption (8.0% interest rate)	Risk-Free Rate Return Assumption (4.7% interest rate)
Defined Contribution	15% of payroll	15% of payroll

Under the two methodologies shown, for testing purposes the value of a 15% of payroll employer contribution is 15% of payroll

Risk-Free Rate Methodology
Comparing Defined Benefit & Defined Contribution Programs

- In the ETOB test, defined contribution programs must be compared to the defined benefit PERS program to assess the value to the employee

- Using our two sample employers and two alternative methodologies, test results differ dramatically depending on the testing basis used

	8.0% interest rate and expected asset accumulation rate	4.7% interest rate and risk-free asset accumulation rate
Defined Contribution (A)	15% of payroll	15% of payroll
Defined Benefit (B)	15% of payroll	33% of payroll
ETOB Test Ratio (A) / (B)	100%	45%

- Preliminary ETOB test results were developed on the risk-free rate basis, consistent with the OAR

Defined Contribution Employers

Range of Preliminary ETOB Test Results – DC Employers

- ETOB employers that provide defined contribution programs have historically provided annual employer contributions in the range of 15% to 23% of payroll
- For those employers, the risk-free methodology had a similar effect on preliminary test results to those illustrated on the previous slides
- The range of preliminary testing results using the risk-free methodology in the OAR are shown by tier below:

	% of Benefits Provided Compared to PERS		
	Tier 1	**Tier 2**	**OPSRP**
Risk-Free OAR Methodology	**46% - 66%**	**40% - 59%**	**53% - 78%**

- While formal test results were not developed using an alternative methodology, the previous slides should give the Board and stakeholders a sense of the potential sensitivity of ETOB test results to an alternative methodology

Next Steps

- Input and discussion from the Board and other stakeholders
- If the Board finds that the methodology in the current OAR does not appropriately reflect the comparative values of DB and DC programs for ETOB testing, appropriate next steps are:
  – Modification of the OAR based on additional stakeholder input
  – Completion of the testing based on any changes to the methodology specified by modifications to the OAR

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