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Oregon Public Employees' Retirement System Experience Study for December 31, 2010 Actuarial Valuation, Actuarial Methods and Economic Assumptions

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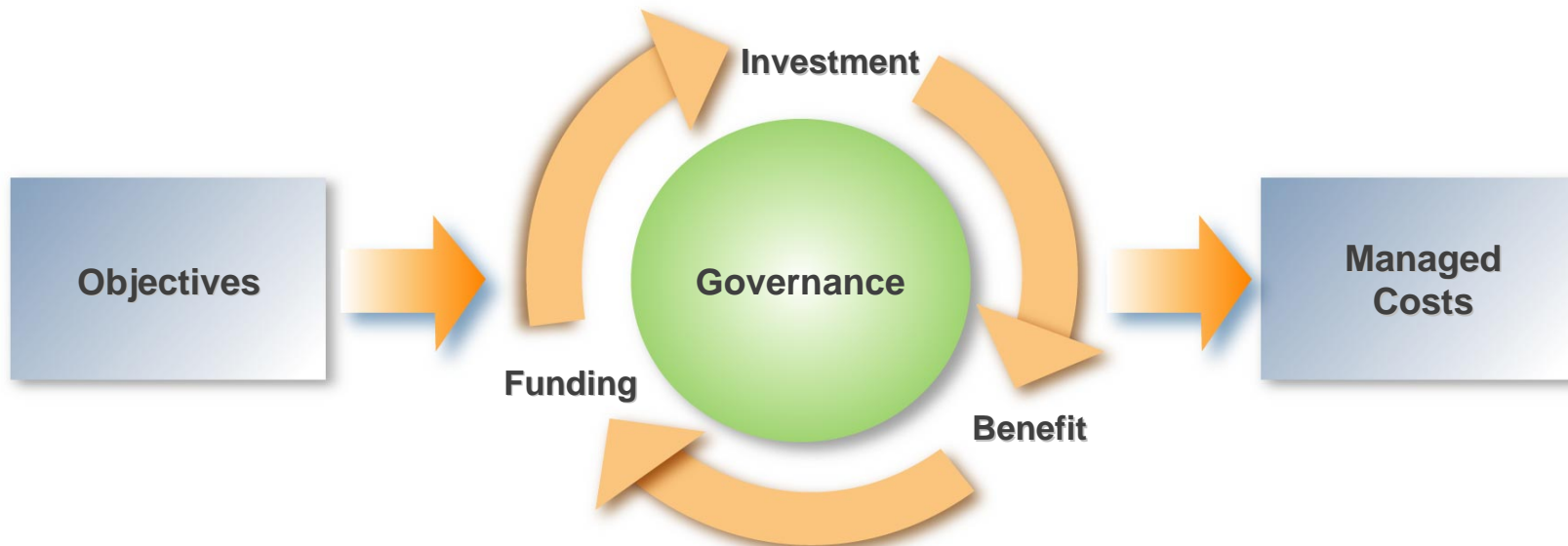
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- Actuarial Methods and Allocation Procedures
- Economic Assumptions
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- Decisions (Selection of Actuarial Methods and Assumptions)
- Next Steps

Introduction

Retirement Plan Financial Management Framework

Total Contributions = Benefits Paid - Investment Earnings



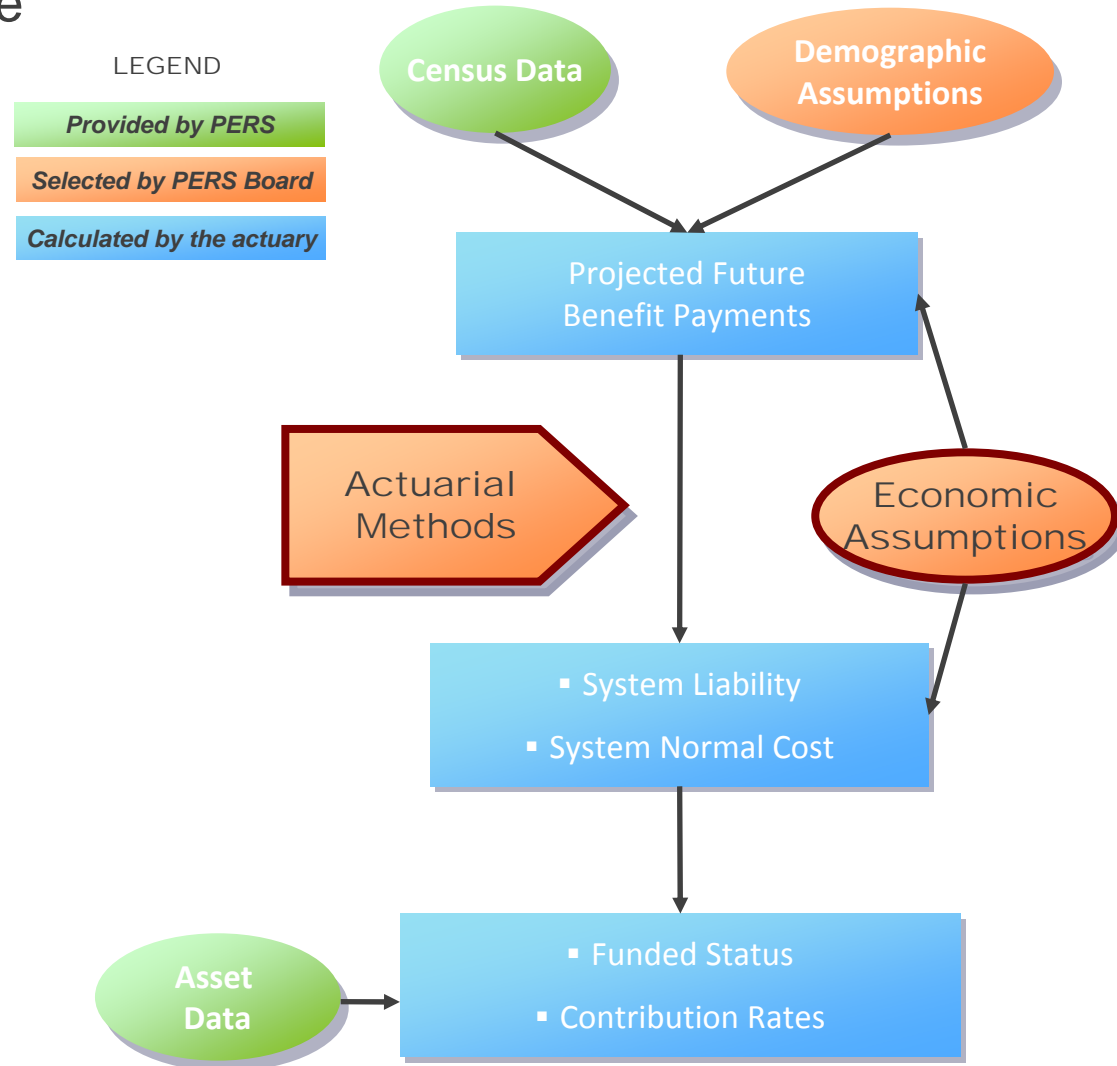
Actuarial methods/assumptions primarily affect the timing of contributions

Introduction

Valuation Process and Timeline

PERS Board Actuarial Schedule

- **May: Actuarial methods and economic assumptions**
- July: Demographic assumptions and investment return
- Sept.: System-wide 12/31/2010 funding results and advisory contribution rates and 2012-2013 actuarial equivalence factors
- Nov.: Distribution of employer-specific advisory 2013-2015 contribution rates



Introduction

Objectives for Actuarial Methods and Assumptions

- Transparent
- Predictable and stable rates
- Protect funded status
- Equitable across generations
- Actuarially sound
- GASB compliant

Introduction

Summary of Recommendations

- Actuarial Methods and Allocation Procedures
 - Change amortization period for new side accounts and new transition liabilities/surpluses
 - Update allocation of liability for service segments
 - Consider treatment of Rate Guarantee (Deficit) Reserve
- Economic Assumptions
 - OPSRP administrative expense assumption
 - Health care inflation assumption
 - Board input on further analysis of investment return/discount rate assumption



Actuarial Methods and Allocation Procedures

Actuarial Methods

Summary of Recommendations

	Current Methods	Recommended Changes
Actuarial Cost Method	Projected Unit Credit	None
Amortization Method	Level Percent of Combined Payroll	None
Amortization Period	<ul style="list-style-type: none"> ▪ UAL – Closed amortization from first rate-setting valuation in which experience is recognized <ul style="list-style-type: none"> – T1/T2 – 20 years – OPSRP – 16 years – RHIA/RHIPA – 10 years ▪ New side accounts – Period ending 12/31/2027 ▪ New transition liabilities – Period ending 12/31/2027 	<p>New side accounts – align with new T1/T2 base from most recent rate-setting valuation</p> <p>New transition liabilities – 18 years from date joining the SLGRP</p>
Allocation Procedures	Allocate liability for service segments based on blend of Money Match and Full Formula methodologies	No change to approach; update assumed money match percentage
Asset Valuation Method	Market Value	None
Treatment of Reserves	Contingency, Capital Preservation, and Rate Guarantee are excluded from assets. When negative, excluded Rate Guarantee Reserve is effectively treated as an asset.	Board to review negative Rate Guarantee Reserve treatment
T1/T2 and OPSRP Rate Collar	Greater of 20% of current rate or 3 percentage points. Rate collar doubles if funded status drops below 70% or increases above 130%, and increases on a graded scale if between 70% and 80% or between 120% and 130%.	None

Actuarial Methods

Side Account and Transition Liability Amortization Period

- All current side accounts and transition liabilities are being amortized over the period ending December 31, 2027.
 - Historically, this amortization exactly matched the amortization of the Tier 1/ Tier 2 UAL.
 - This is no longer true as the Tier 1/ Tier 2 UAL is now amortized in multiple pieces over a period of 20 years from the time the gain or loss is first recognized
- If new side accounts or transition liabilities established in the future amortize to the same fixed date, this will lead to a progressively shorter amortization period
 - All else equal, a shorter amortization period will mean:
 - The investment horizon for employers who create a side account backed by a POB is reduced
 - The rate adjustment for a given level of transition liability or surplus will be more significant, which will lead to a larger change in the net employer rates when the amortization period expires

Actuarial Methods

Side Account and Transition Liability Amortization Period (continued)

- We propose establishing amortization procedures not tied to a fixed date
- New side accounts would be amortized over the same period as the new Tier 1/Tier 2 UAL base from the most recent rate-setting valuation
 - For example, a side account created in July 2011 would be amortized to 12/31/2029
 - Aligns with Tier 1/Tier 2 UAL base created in 12/31/2009 valuation
 - Means side accounts will be amortized over 18 to 20 years from the date of deposit
- New transition liabilities (or surpluses) could be amortized over the 18 year period from the date the employer joins the SLGRP
 - This period aligns with the last Tier 1/Tier 2 amortization base established as an independent employer
- This change would not affect side accounts or transition liabilities already established

Actuarial Methods

Allocation of Liability for Service Segments

- When a member works for more than one employer over their career, the liability for that member is allocated to the employers for which the member worked.
- Current method
 - Blend money match and full formula methodologies based on percentage of liability attributable to each formula as of the next rate setting valuation.
 - Results in allocation of liability among employers consistent with the formulas prevailing at the time of valuation
- We recommend no changes to this allocation approach, but recommend updating the percentage attributable to money match based on our most recent projections
- This change has no impact on total system liabilities, but will affect the allocation of liabilities between employers

Percentage of Liability Projected to be Attributable to Money Match		
	General Service	Police & Fire
Current Assumption	50%	15%
Projected to 12/31/2011	40%	9%
Recommendation	40%	10%

Actuarial Methods

Treatment of Negative Rate Guarantee Reserve

- The value of assets used to determine employer contribution rates has historically excluded any assets in the Contingency, Capital Preservation, or Rate Guarantee Reserves

Valuation Assets = Market Assets - Reserves

- The Rate Guarantee Reserve (RGR) is currently negative (a deficit reserve), as it was for the 12/31/2008 and 12/31/2009 valuations
 - As confirmed by the Board in May 2009, the reserve was excluded in these valuations while it has been in deficit
 - In essence, the negative reserve was treated as an asset
 - All else equal, treating a negative reserve as an asset increases valuation assets used for contribution rate calculations
 - If the negative reserve is larger than the sum of the positive reserves, then valuation assets would exceed the fair value of assets using this approach
- We think it is prudent for the Board to periodically evaluate this issue and either reconfirm the current approach or specify any desired changes

Actuarial Methods

Treatment of Negative Rate Guarantee Reserve (continued)

- Rationale for treating a negative reserve as an asset:
 - We understand that if a deficit persists for five years, action is required to restore the reserve
 - If a separate mechanism is established to restore the reserve, then treating the negative reserve as an asset would avoid double-charging for the associated deficit
- Rationale for not adjusting valuation assets for a negative reserve (i.e., not treating it as an asset):
 - It avoids the potential for valuation assets to exceed fair value of assets
 - The reserve restoration mechanism is not currently well-defined
 - Not adjusting for a negative reserve would increase calculated contribution rates. The higher rate so calculated could be a good budgeting proxy for the reserve restoration cost once a restoration mechanism is defined.
- As a policy choice, the Board could distinguish between treatment when the RGR is negative in isolation versus when sum of RGR, Contingency, and Capital Preservation is negative

Actuarial Methods

Treatment of Negative Rate Guarantee Reserve (continued)

- When reserves are positive, their treatment is straightforward
 - Reserves are excluded from valuation assets for rate-setting calculations as they are earmarked for a specific purpose different than general benefit payments
- When a reserve (such as the Rate Guarantee Reserve) is negative, there are various possible ways to treat the negative reserve
 - Alternative #1 (current method): Always treat the negative reserve as an asset
 - If the negative reserve is large, the net sum of all reserves could be negative, leading to valuation assets exceeding fair market value
 - Alternative #2: Never treat the negative reserve as an asset
 - The entire negative Rate Guarantee Reserve is essentially treated as part of the Unfunded Actuarial Liability (UAL) with this approach
 - Alternative #3: Never allow the sum of the excluded reserves to be negative
 - With this approach, valuation assets will never exceed reported market value. A negative Rate Guarantee Reserve would be treated as an asset only to the extent it does not exceed, for example, the amount of the Contingency Reserve.



Economic Assumptions

Economic Assumptions

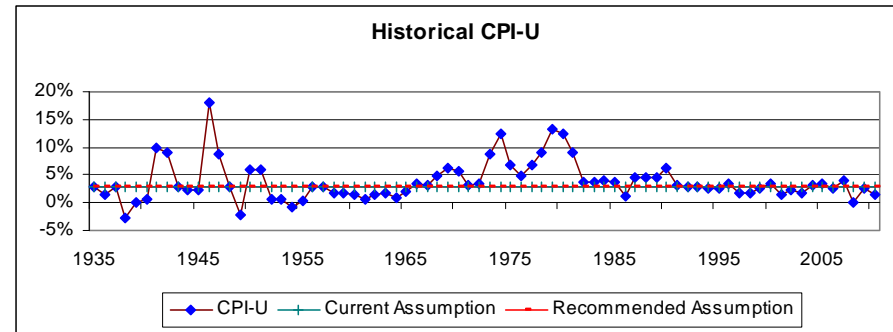
Summary of Recommendations

	Current Assumption	Recommended Assumption
Inflation	2.75%	No change
Real Wage Growth	1.00%	No change
Payroll Growth	3.75%	No change
Regular Investment Return	8.00%	TBD
Variable Investment Return	8.50%	TBD
Health Cost Trend Rate		
▪ 2011 Trend Rate	7.00%	7.00%
▪ Ultimate Trend Rate	4.50%	4.50%
▪ Year Reaching Ultimate Trend	2029	2029
OPSRP Administrative Expenses	\$6.6 million	\$6.6 million

Economic Assumptions

Inflation

- The inflation assumption affects other assumptions, including payroll growth, investment return, and health care inflation.
- Historical rates have varied significantly as shown in the chart on the top. The median rate over this period is 2.99%.
- Market estimates of future inflation rates can be estimated from the difference in yield between nominal Treasury securities and Treasury inflation protection securities (TIPS).
- Social Security's current intermediate inflation assumption is 2.8%.
- We recommend no change to the current assumption of 2.75%.

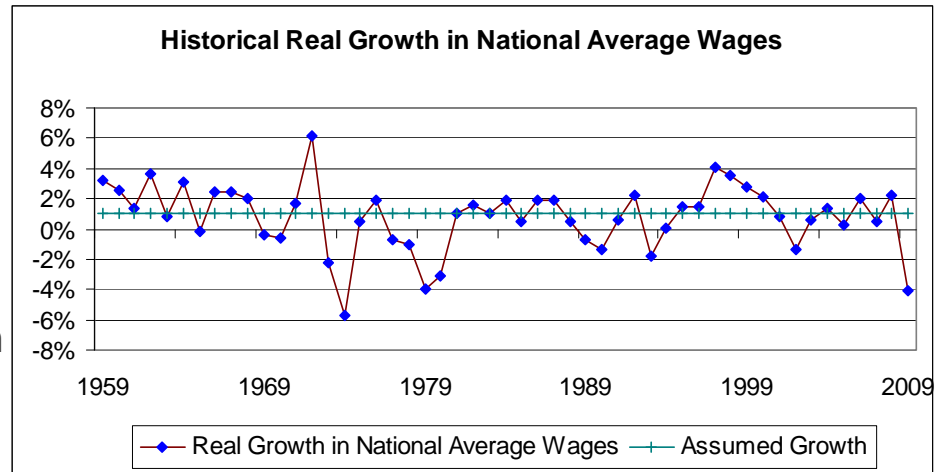


As of 12/31/2010	10-Year	30-Year
Treasury Yield	3.30%	4.34%
TIPS Yield	1.00%	1.86%
Breakeven Inflation	2.30%	2.48%

Economic Assumptions

Real Wage Growth

- An individual member's expected salary increase is composed of three components:
 - Inflation
 - Real wage growth
 - Merit and longevity wage growth
- Real wage growth represents the increase in wages above inflation for the entire group due to improvements in productivity and competitive pressures.
- The historical real wage growth averages shown at right all incorporate the significant drop in real wages occurring in 2009
- Social Security's long-term intermediate assumption for real wage growth is 1.2%.
- We recommend maintaining this assumption at 1.0%.
- Combined with our recommended inflation assumption, the payroll growth assumption would remain at 3.75%.



Average Real Growth Rate	
Period Ending December 31, 2009	National Average Wages
10 Years	0.41%
20 Years	0.84%
30 Years	0.77%
40 Years	0.47%
50 Years	0.73%

Economic Assumptions

Health Cost Inflation for RHIPA Subsidy

- The Maximum Subsidy increased an average of 6.2% over the last 5 years.
- The Maximum Subsidy increased 10.3% in each of 2010 and 2011.
- Our healthcare actuaries' inflation model grades down slowly to the ultimate assumption.
 - Assumes healthcare inflation will converge to the change in national healthcare expenditures, and that such expenditures ultimately settle at 22 percent of GDP
 - At that point, inflation assumed to increase at 4.5%, a long-term estimate of GDP growth
- We recommend maintaining the prior assumption

	Health Cost Inflation	
	Prior Assumption	Recommended Assumption
2009	7.0%	
2010	7.0%	
2011	7.0%	7.0%
2012	6.9%	6.9%
2013	6.9%	6.9%
2014	6.9%	6.9%
2015	6.9%	6.9%
2016	6.8%	6.8%
2017	6.8%	6.8%
2018	6.6%	6.6%
2019	6.4%	6.4%
2020	6.2%	6.2%
2021	6.0%	6.0%
2022	5.8%	5.8%
2023	5.6%	5.6%
2024	5.4%	5.4%
2025	5.2%	5.2%
2026	5.0%	5.0%
2027	4.9%	4.9%
2028	4.7%	4.7%
2029+	4.5%	4.5%

Economic Assumptions

OPSRP Administrative Expenses

- OPSRP administrative expenses are significant relative to OPSRP assets.
 - As OPSRP assets grow, the administrative expense level relative to OPSRP assets will decline and ultimately stabilize. Until then, it is appropriate to include a specific expense assumption which is added to the OPSRP normal cost.
- Our previous assumption was \$6.6 million per year.
- Data provided by PERS indicates that \$6.6 million is still an appropriate level for assumed regular OPSRP administrative expenses.

Valuation Year	Current		Recommended	
	\$ Amount	% of Projected Payroll	\$ Amount	% of Projected Payroll
2008	\$6.6	0.35%	N/A	N/A
2009	\$6.6	0.28%	N/A	N/A
2010	\$6.6	0.23%	\$6.6	0.23%
2011	\$6.6	0.20%	\$6.6	0.20%



Economic Assumptions

Investment Return / Discount Rate

Economic Assumptions

Investment Return / Discount Rate

- Economic assumptions are combined with demographic assumptions and census data to develop a stream of projected future system benefit payments
 - The benefit payment stream has a very long tail, extending out to the life expectancy of the youngest OPSRP member
- Present-day system liabilities are calculated by discounting the future payments back to the valuation date with interest using a discount rate
 - Discounting future payments is appropriate since a dollar due to a member twenty years from now is less valuable than a dollar due today
 - Given the long-tailed nature of the projected payment stream, present-day liabilities vary significantly based on the discount rate used
- There is significant debate among policy makers and experts about how the discount rate should be calculated
 - This debate is being carried out in the media by experts on each side
 - We will discuss two alternative approaches to the calculation methodology

Economic Assumptions

Investment Return / Discount Rate

Approach #1: Market-based / settlement

- Theoretical basis:
 - Payments are guaranteed and thus effectively risk-free
 - Guaranteed payments should be priced using current market yields on risk-free (or low risk) investments
 - Yields on US Treasury instruments or municipal bonds are often cited as a proxy for risk-free rates
- This approach approximates what an insurance provider might charge to assume all responsibility for the benefits
 - Bear in mind insurers charge premiums to bear risks
- In the current market environment, these rates tend to be around 4% discount per year
- Several prominent studies have calculated liabilities for state pension systems using this approach
- A proposed piece of federal legislation (Public Pension Transparency Act) would effectively require state systems to report liabilities on this basis

Economic Assumptions

Investment Return / Discount Rate

Approach #2: Budgeting / GASB

- Theoretical basis:
 - Total Contributions = Benefit Payments – Investment Earnings
 - Liability calculations are used to budget long-term contribution levels
 - A best estimate of future investment earnings is appropriate to budget future contributions
 - Long-term, rather than current market, investment return estimates are appropriate since the plan is long-term in nature
- Of course, actual investment earnings can and will deviate significantly from the long-term estimate
 - This deviation presents a two-sided risk to the program sponsor
 - If earnings are below assumption then contributions will be higher than the budgeted forecast
 - If earnings exceed assumption and benefit levels are not changed, then contributions will be lower than budgeted forecast
 - All else being equal, the lower the assumption selected the greater the chance of a positive budgeting deviation

Economic Assumptions

Investment Return / Discount Rate

- Both the market-based/settlement approach and the budgeting/GASB approach have valid uses
 - A May 2011 Congressional Budget Office (CBO) white paper on state pension systems reiterated the validity of both approaches
 - The Pew Center for the States study used both approaches
- The budgeting/GASB approach gives a best guess of long-term contribution costs --- but it is only a guess
- The market-based/settlement approach gives a sense of the risk borne by employers and taxpayers if the assumed investment results are not realized

Economic Assumptions

Investment Return / Discount Rate

- The OPERS valuation uses the budgeting/GASB approach, as do the valuations of other state systems
 - This is the approach GASB specifies should be used in presenting financial statements for public pension plans
 - GASB is currently evaluating the discount rate issue
 - GASB has tentatively decided that in the future some systems will be required to use a blend of the two approaches for financial reporting
 - Those systems would be ones forecast to **not** recover to 100% funded status over time if all assumptions are met
- It is more difficult to state a market-based/settlement liability for OPERS than it would be for most state systems
 - The difficulty is related to the complexity of the “money match” formula, in particular the linkage between money match benefit levels and the investment return/discount rate assumption

Economic Assumptions

Investment Return / Discount Rate

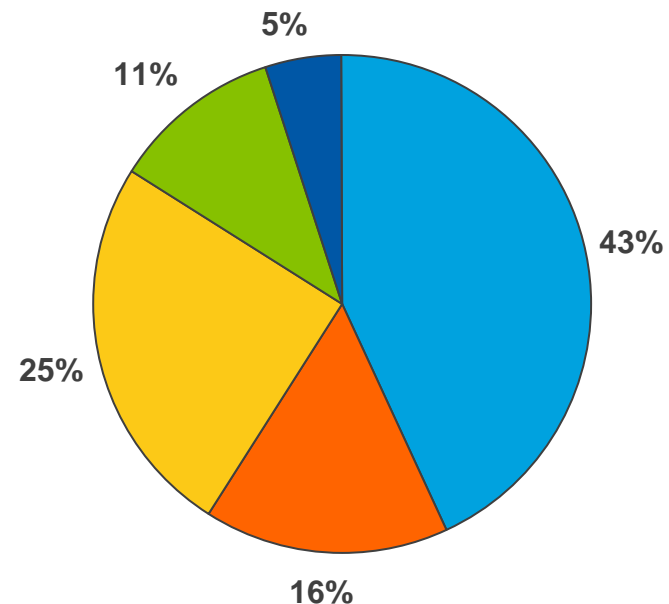
- The most recent NASRA survey gives us a sense of investment return assumption selection for the 120 largest US public systems
 - Survey published November 2010 and includes valuation dates ranging from 6/30/2007 to 1/1/2010
 - Survey covers approximately 20 million participants and \$2.1 trillion in invested assets
- The survey indicates that the median rate is 8.0%
- The mean (weighted average) rate is approximately 7.9%
- To the extent that sponsors have made changes, the general trend is toward lower investment return assumptions

Economic Assumptions

Investment Return/Discount Rate

- The target asset allocation is established by the Oregon Investment Council (OIC).
 - The most recent published OIC allocation policy added Alternatives as a new asset class
 - In addition, since the last experience study, the blended benchmark for the fixed income strategy has been revised
- OIC's investment consultant, Strategic Investment Solutions, Inc., (SIS) has updated its capital market forecasts and expected return for the Oregon PERS portfolio.
 - The high-level analysis we have seen from SIS indicates they are lowering their long-term return expectations compared to prior studies

Target Asset Allocation



Economic Assumptions

Investment Return/Discount Rate

Asset Class	Regular Account			Variable Account		
	Target	Compound Annual Return	Standard Deviation	Target	Compound Annual Return	Standard Deviation
Global Equity	43%	8.33%	19.4%	100%	8.33%	19.4%
Private Equity	16%	9.17%	31.9%			
Fixed Income*	25%	5.06%	5.8%			
Real Estate	11%	7.11%	15.5%			
Alternatives**	5%	7.42%	11.2%			
Portfolio -- Gross	100%	8.13%	14.4%	100%	8.33%	19.4%
Portfolio – Net of Expenses		7.88%	14.4%		8.07%	19.4%

* Reflects diversified fixed income portfolio allocated according to OIC fixed income benchmark: 60% US bonds, 20% Leveraged Loans, 10% Emerging Market bonds, and 10% High Yield bonds.

** Reflects portfolio allocated according to OIC alternatives benchmark for infrastructure, natural resources, and hedge funds.

Based on capital market expectations developed by Mercer Investment Consulting

Economic Assumptions

Investment Return/Discount Rate

Percentile	Regular Account	Variable Account
35th	6.66%	6.40%
40th	7.08%	6.98%
45th	7.48%	7.53%
50th	7.88%	8.07%
55th	8.28%	8.62%
60th	8.69%	9.17%
65th	9.11%	9.75%

20 Year Time Horizon

- Using Mercer Investment Consulting assumptions the median expected return is 7.88% for the Regular account and 8.07% for the Variable account both net of expenses and before reflecting any margin for active management.
- We assumed 5 basis points in administrative expenses and 20 basis points in passive investment expenses.
- Details on the OIC's investment advisor's capital market forecast were not available to us at the time this report was published.

Economic Assumptions

Investment Return / Discount Rate

- OPERS is rare in that the investment return assumption affects benefit levels for some members
 - Under the “money match” formula, the accumulated member contributions with credited earnings is matched by the employer, and the matched amount is converted to an annuity
 - Tier 1 member accounts are credited at the assumed investment return
 - The investment return assumption is then used as the basis to develop actuarial factors to convert account balances to life annuities
- The investment return assumption selected for the next two valuations will determine actuarial equivalence factors for retirements that occur in 2012-2013
 - The current factors will remain in effect until the end of 2011

Economic Assumptions

Investment Return / Discount Rate

- How would a possible assumption change from 8.0% to 7.5% affect a sample future retiree under the money match formula? How long would it take to “earn back” any such change?
- Sample future retiree data
 - Tier 1 General Service
 - Age 60; 26 years of PERS projected service at end of 2011
 - \$70,700 projected 2011 pay
 - \$197,000 accumulated Tier 1 member contribution account balance by end of 2011
 - Projected to retire under the “money match formula”

Benefit Commencement	7/1/2011	12/31/2011	1/1/2012	7/1/2012
Discount Rate	8%	8%	7.5%	7.5%
Starting Benefit	\$2,880	\$3,010	\$2,880	\$3,010

- It would take six additional months without retirement (until July 2012) for the December 2011 initial benefit level to be reached
- The annualized growth rate in the starting benefit amount is approximately 9% under either discount rate

Economic Assumptions

Investment Return / Discount Rate

Observations on/Consequences of Selecting 8%

- Within the best estimate range based on current asset allocation
- Rate most commonly used by large governmental systems historically
- All else equal, produces lower near-term contribution rates, starting in 2013 compared to a sub-8% assumption
- Choosing a return assumption above the 50th percentile makes negative budgeting surprises a “more likely than not” event

Economic Assumptions

Investment Return / Discount Rate

Observations on/Consequences of Selecting 7.5%

- Within the best estimate range based on current asset allocation
- Choosing a return assumption below the 50th percentile makes negative budgeting surprises a “less likely than not” event
- Some forecasters contend that macro changes to global economy have lowered future long-term return expectations
- Moderately lowers growth rate for system liabilities via downward adjustment to projected benefits for members that retire after 2011 under the money match formula
- Increases the likelihood of the Rate Guarantee Reserve emerging from deficit status without triggering a restoration mechanism
- All else equal, produces higher near-term contribution rates, starting in 2013 compared to an 8% assumption (rough estimate is 2-3% of payroll increase on the uncollared base rate)
- Decreases reported funded status
- Current trend among state systems is toward lower return assumptions

Economic Assumptions

Investment Return / Discount Rate

- Since we normally consider expected returns using both Mercer Investment Consulting assumptions and assumptions from the OIC's investment advisor, we recommend postponing an adoption of an investment return assumption until the July Board meeting
- Discussion? Questions? Comments?
- Possible next steps include:
 - More detailed study of contribution rate / funded status projections
 - More detailed study of benefit impact for affected members
 - Incorporation of detailed investment return outlook information from the OIC's investment advisor (SIS) to provide an additional benchmark



Decisions

Decisions

Estimated Impact of Changes on Uncollared 2013-2015 Base Rates

Based on December 31, 2010 Asset Levels

	Tier 1/Tier 2		OPSRP		RHIA/RHIPA	
	Normal Cost Rate	UAL Rate	Normal Cost Rate	UAL Rate	Normal Cost Rate	UAL Rate
Never treat negative Rate Guarantee Reserve as an asset*	N/A	0.2%	N/A	N/A	N/A	N/A

* Based on 12/31/2010 Rate Guarantee Reserve level of negative \$208 million. Impact of alternative approaches can vary significantly in future years based on the magnitude of any potential negative Rate Guarantee Reserve.

Final 2013-2015 impact will be based on 12/31/2011 valuation results, including 12/31/2011 Rate Guarantee Reserve level

Decisions

Selection of Actuarial Methods and Assumptions

- Actuarial Methods and Allocation Procedures
 - Update method amortization of new side accounts or transition liabilities
 - Update allocation of liability for service segments
 - Confirm treatment of negative reserves
- Economic Assumptions
 - Confirm current assumption for:
 - Inflation
 - Real wage growth
 - RHIPA health care trend
 - OPSRP administrative expenses
 - Provide direction on next steps for investment return analysis

Next Steps

- May Board Meeting
 - Experience Study – Methods and economic assumptions
 - Board adoption of methods and economic assumptions for 12/31/2010 and 12/31/2011 actuarial valuations

- July Board Meeting
 - Experience Study – Investment return and demographic assumptions
 - Board adoption of investment return and demographic assumptions for 12/31/2010 and 12/31/2011 actuarial valuations

- September Board Meeting
 - 12/31/2010 system-wide actuarial valuation results
 - Actuarial equivalence factors for 2012-2013

- October
 - 12/31/2010 individual employer reports

Important Notices

Mercer has prepared this report exclusively for the Oregon Public Employees Retirement System (PERS) and the Public Employees Retirement Board (PERB); Mercer is not responsible for reliance upon this report by any other party. Subject to this limitation, PERS may direct that this report be provided to its auditors.

The only purposes of this report is to assist the PERB in selection of actuarial methods and economic assumptions for the upcoming December 31, 2010 and December 31, 2011 actuarial valuations of PERS. This report may not be used for any other purpose; Mercer is not responsible for the consequences of any unauthorized use.

Decisions about benefit changes, granting new benefits, investment policy, funding policy, benefit security and/or benefit-related issues should not be made on the basis of any single valuation, but only after careful consideration of alternative economic, financial, demographic and societal factors, including financial scenarios that assume future sustained investment losses.

The Oregon Investment Council (OIC) is solely responsible for selecting the plan's investment policies, asset allocations and individual investments. Mercer's actuaries have not provided any investment advice to the OIC.

A valuation report is only a snapshot of a Plan's estimated financial condition at a particular point in time; it does not predict the Plan's future financial condition or its ability to pay benefits in the future and does not provide any guarantee of future financial soundness of the Plan. Over time, a plan's total cost will depend on a number of factors, including the amount of benefits the plan pays, the number of people paid benefits, the period of time over which benefits are paid, plan expenses and the amount earned on any assets invested to pay benefits. These amounts and other variables are uncertain and unknowable at the valuation date.

Because modeling all aspects of a situation is not possible or practical, we may use summary information, estimates, or simplifications of calculations to facilitate the modeling of future events in an efficient and cost-effective manner. We may also exclude factors or data that are immaterial in our judgment. Use of such simplifying techniques does not, in our judgment, affect the reasonableness of valuation results for the plan.

To prepare a valuation report, actuarial assumptions, as described in the actuarial valuation report, are used in a forward looking financial and demographic model to present a single scenario from a wide range of possibilities; the results based on that single scenario are included in the valuation. The future is uncertain and the plan's actual experience will differ from those assumptions; these differences may be significant or material because these results are very sensitive to the assumptions made and, in some cases, to the interaction between the assumptions.

Important Notices

Different assumptions or scenarios within the range of possibilities may also be reasonable and results based on those assumptions would be different. As a result of the uncertainty inherent in a forward looking projection over a very long period of time, no one projection is uniquely “correct” and many alternative projections of the future could also be regarded as reasonable. Two different actuaries could, quite reasonably, arrive at different results based on the same data and different views of the future. A "sensitivity analysis" shows the degree to which results would be different if you substitute alternative assumptions within the range of possibilities for those utilized in this report. We have not been engaged to perform such a sensitivity analysis and thus the results of such an analysis are not included in this report. At the request of PERS or the PERB, Mercer is available to perform such a sensitivity analysis.

Actuarial assumptions may also be changed from one valuation to the next because of changes in mandated requirements, plan experience, changes in expectations about the future and other factors. A change in assumptions is not an indication that prior assumptions were unreasonable when made.

The calculation of actuarial liabilities for valuation purposes is based on a current estimate of future benefit payments. The calculation includes a computation of the "present value" of those estimated future benefit payments using an assumed discount rate; the higher the discount rate assumption, the lower the estimated liability will be. For purposes of estimating the liabilities (future and accrued), PERB selects an assumption based on the expected long term rate of return on plan investments. Using a lower discount rate assumption, such as a rate based on long-term bond yields, could substantially increase the estimated present value of future and accrued liabilities.

Because valuations are a snapshot in time and are based on estimates and assumptions that are not precise and will differ from actual experience, contribution calculations are inherently imprecise. There is no uniquely “correct” level of contributions for the coming plan year.

Valuations do not affect the ultimate cost of the Plan, only the timing of contributions into the Plan. Plan funding occurs over time. Contributions not made this year, for whatever reason, including errors, remain the responsibility of the Plan sponsor and can be made in later years. If the contribution levels over a period of years are lower or higher than necessary, it is normal and expected practice for adjustments to be made to future contribution levels to take account of this with a view to funding the plan over time.

Data, computer coding and mathematical errors are possible in the preparation of a valuation involving complex computer programming and thousands of calculations and data inputs. Errors in a valuation discovered after its preparation may be corrected by amendment to the valuation or in a subsequent year’s valuation.

Important Notices

Certain actuarial assumptions, including discount rates and others identified in this report, are adopted by the PERB. The PERB is responsible for selecting the plan's funding policy, actuarial valuation methods, asset valuation methods, and assumptions. The policies, methods and assumptions to be used in the upcoming valuations are those that have been so prescribed and will be described in the corresponding actuarial valuation reports. PERS or the PERB is solely responsible for communicating to Mercer any changes required thereto.

To prepare this report Mercer has used and relied on financial data and participant data supplied by PERS and asset allocation information provided by OIC that will be summarized in the forthcoming experience study report. PERS is responsible for ensuring that such participant data provides an accurate description of all persons who are participants under the terms of the plan or otherwise entitled to benefits as of December 31, 2010 that is sufficiently comprehensive and accurate for the purposes of this report. Although Mercer has reviewed the data in accordance with Actuarial Standards of Practice No. 23, Mercer has not verified or audited any of the data or information provided.

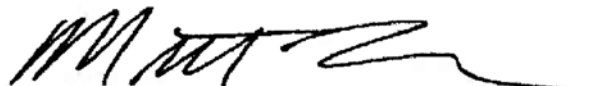
Mercer has also used and relied on the plan documents and plan provisions stipulated by statute, including amendments, and interpretations of plan provisions, supplied by PERS as summarized in the most recently published PERS valuation report. We have assumed for purposes of all valuations that copies of any official plan document including all amendments and collective bargaining agreements as well as any interpretations of any such document have been provided to Mercer along with a written summary of any other substantive commitments. PERS is solely responsible for the validity, accuracy and comprehensiveness of this information. If any data or plan provisions supplied are not accurate and complete, valuation results may differ significantly from the results that would be obtained with accurate and complete information; this may require a later revision of this report. Moreover, plan documents may be susceptible to different interpretations, each of which could be reasonable, and that the different interpretations could lead to different valuation results.

PERS or PERB should notify Mercer promptly after receipt of any valuation report if it disagrees with anything contained in the valuation report or is aware of any information that would affect the results of the valuation report that has not been communicated to Mercer or incorporated therein. The valuation report will be deemed final and acceptable to PERS and PERB unless it promptly provides such notice to Mercer.

Important Notices

Professional Qualifications

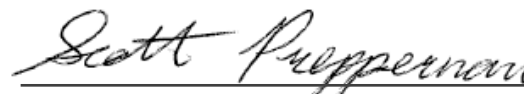
We are available to answer any questions on the material in this report or to provide explanations or further details as appropriate. The undersigned credentialed actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report. We are not aware of any direct or material indirect financial interest or relationship, including investments or other services that could create a conflict of interest, that would impair the objectivity of our work.



Matthew R. Larrabee, FSA, EA, MAAA

May 23, 2011

Date

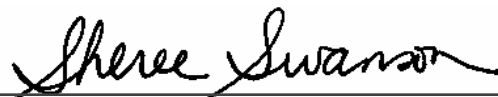


Scott D. Preppernau, FSA, EA, MAAA

May 23, 2011

Date

The undersigned actuary is responsible solely for all assumptions related to the health care cost trend rates for the RHIPA program, and hereby affirms her qualification to render opinions in such matters, in accordance with the qualification standards of the American Academy of Actuaries.



Sheree L. Swanson, ASA, MAAA

May 23, 2011

Date

The information contained in this document is not intended by Mercer to be used, and it cannot be used, for the purpose of avoiding penalties under the Internal Revenue Code that may be imposed on the taxpayer.

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