

Presentation on the Actuarial Audit of
Ohio Public Employees Retirement System
for Ohio Retirement Study Council

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To OPERS TBD, 2015

Agenda

- Major Findings of Actuarial Review
- Actuarial Assumptions
 - Demographic
 - Economic
 - Healthcare
- Actuarial Methods
- Actuarial Liability
- Healthcare Review
- Audit Conclusions

Major Findings

- We believe the numbers are accurate and appropriate
 - Our calculations match GRS calculations very closely
 - Although the OPERS benefit structure is very complex, the GRS calculations captured key provisions accurately
- Actuarial Assumptions are reasonable, but anticipate that they will be revised at the next experience study
 - Costs and liabilities will likely increase
 - 8.00% return may be reduced
 - Mortality will likely show continued improvement
- Recommendations
 - Expand GRS reporting
 - Revisit certain assumptions
 - Revisit certain minor benefit provisions

Findings of Actuarial Review - Summary

Actuarial Assumptions

- ↳ Reasonable and consistent
- ↳ Some minor concerns

Actuarial Methods

- ↳ Reasonable and consistent
- ↳ Some concerns with disclosure

Actuarial Valuation Replication

- ↳ Close match (0.2% on total liability)
- ↳ Reasonable, consistent and accurate

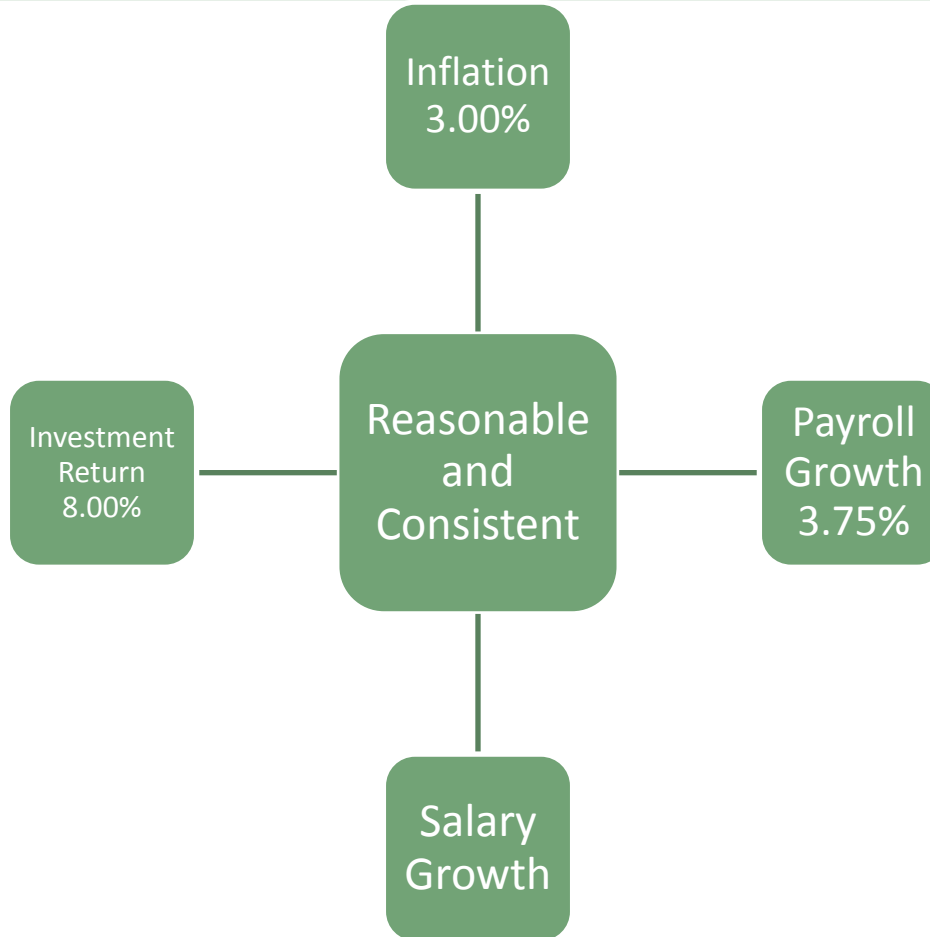
Actuarial Process

- ↳ Although unable to precisely match individual calculations
- ↳ Strong overall replication gives high confidence in numbers

Demographic Assumptions



Economic Assumptions



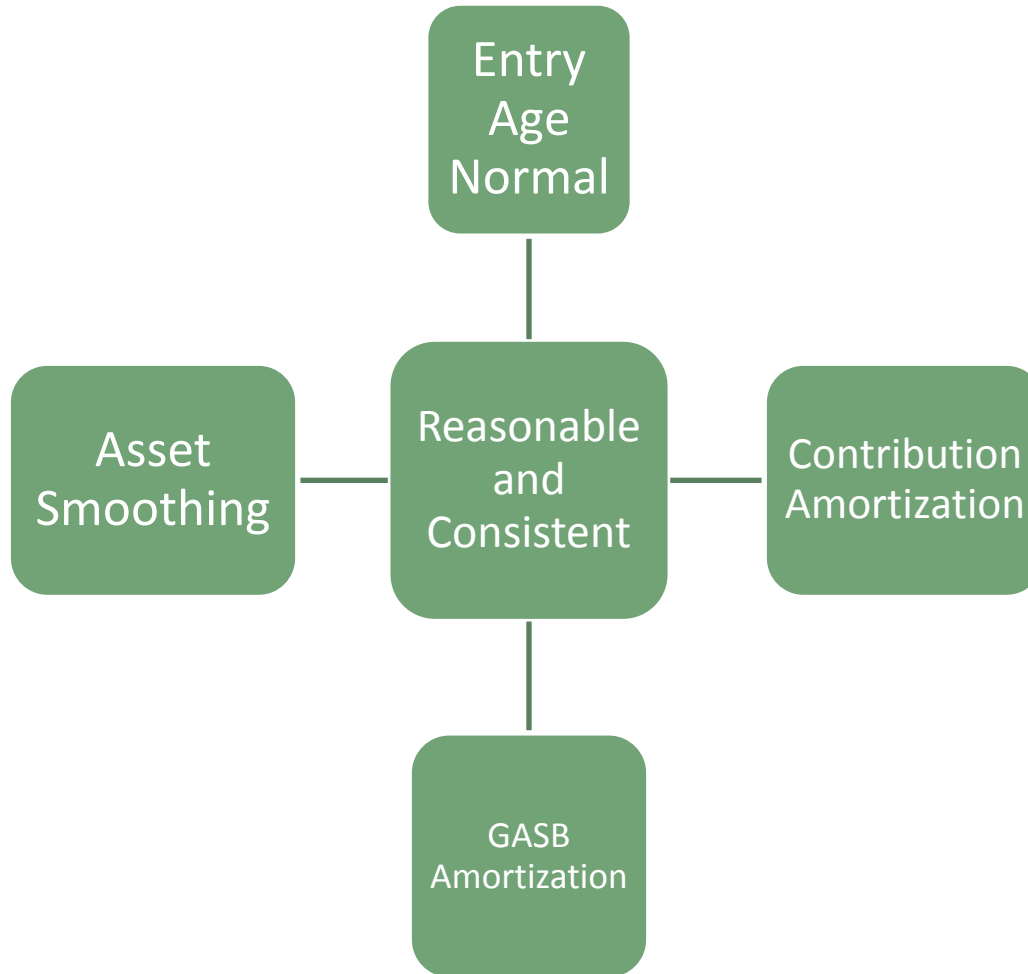
Economic Assumptions

- Investment Return Rate of 8.00%
 - Consistent with other systems (median is 7.90%, average is 7.65%)
 - Reduction next cycle would be consistent with low inflation environment and peers
- Inflation Rate of 3.00%
 - Consistent with peers (median is also 3.00%)
 - Current market rate is much lower
- Payroll Growth of 3.75%
 - Reasonable
- Salary Growth Rate
 - Reasonable

Healthcare Assumptions



Actuarial Methods



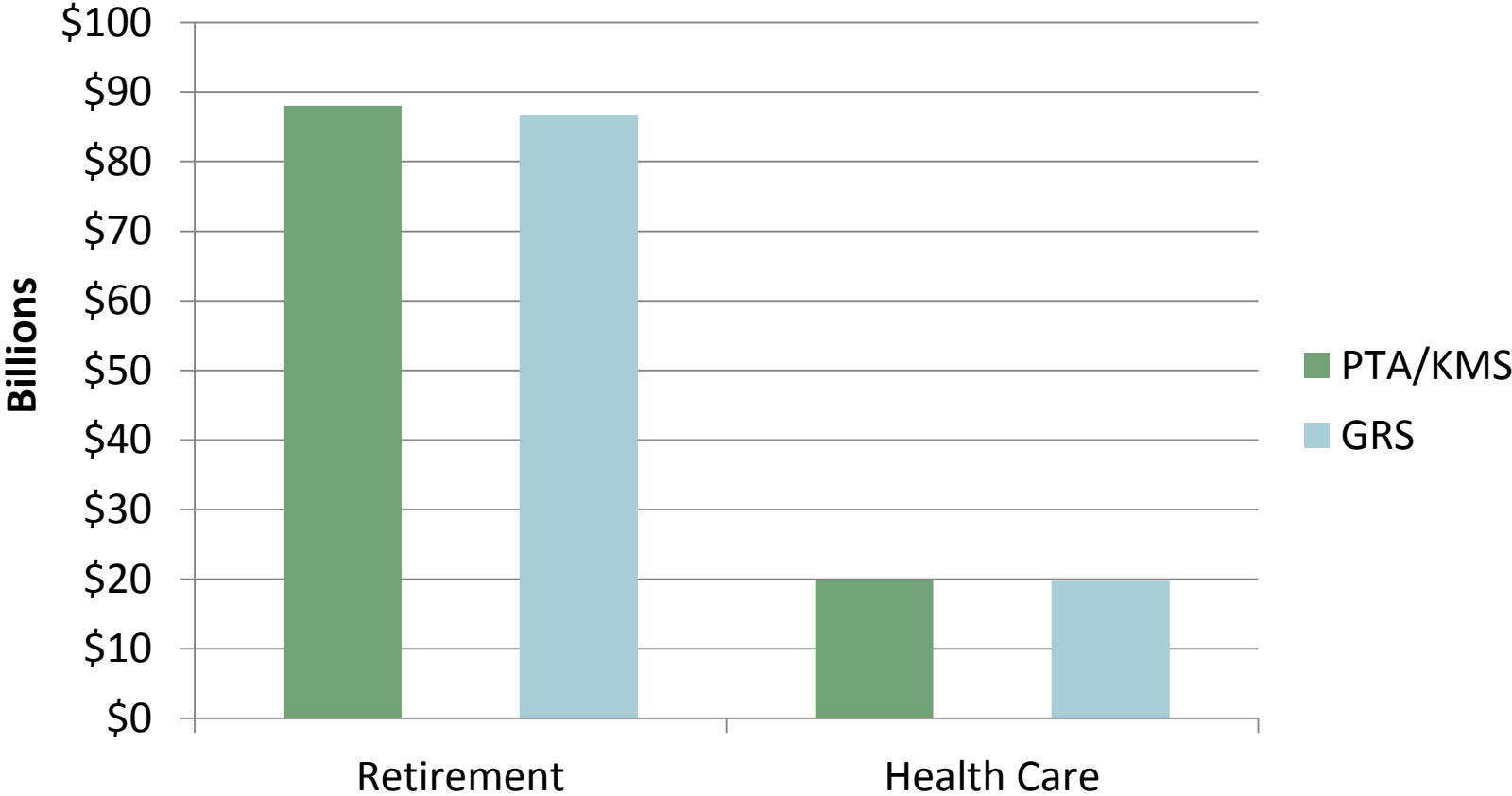
Amortization Methods

- For determination of contribution requirements
 - Based on increasing payroll (3.75% of total payroll)
 - Various periods calculated
 - Period is less than thirty year target
 - 25 years for General
 - 16 years for Law Enforcement
 - Reasonably incorporates lower cost future workers
- For determination of GASB “Annual Required Contribution”
 - GRS tested that amortization policy satisfies GASB
 - 2013 satisfied GASB, but 2014 and future valuations under new rules have not been audited

Actuarial Valuation Replication

- Data used by GRS matches data provided by OPERS
- Reasonable match of most calculations
 - We calculated lower Combined Plan liabilities, but very insignificant (well under 1% of total)
- Actuarial liabilities match within 0.2% in total
- Thorough, accurate work by GRS

Actuarial Liability



Health Care Review

- Assumed 2014 monthly rates are reasonable
 - Based on rates developed in Technical Analysis of 2013 Experience published by GRS May, 2014
- Age-adjusted rates reflect reasonable morbidity by age, are consistent with monthly rates and are reasonable
- Development of transition cost liabilities is reasonable

Audit Conclusions

- Very close match in valuation replication
- Assumptions, Methods and Factors
 - Reasonable
 - Consistent
 - Accurate
- Health care rates are reasonable
- GRS reports are comprehensive and accurate
- Recommendations
 - Provide next auditor with comprehensive specific calculations
 - Correct minor issues mentioned in audit report

Minor Concerns and Areas for Improvement

- Actuarial Assumptions – Discuss likelihood of changes
 - To 8.0% expected rate of return
 - To further mortality updates
- Benefits considered immaterial
 - Early retirement for Public Safety and Law Enforcement Group B (52 & 15)
 - Certain benefits at certain retirement ages

Minor Actuarial Assumption Concern

- Unreduced Retirement for future retirees
 - Those retiring after August 1, 2017 will have new benefit schedule (52 & 31)
 - Will need to develop some assumption for this
 - No data yet, but assumption is necessary

Actuarial Audit Replication – In a Perfect World

- Auditing actuary receives:
 - From pension system:
 - Plan provisions,
 - Member data, and
 - Asset information
 - From system actuary:
 - Actuarial valuation reports, and
 - Experience study reports
- Auditing actuary is able to:
 - Match calculations of system actuary, and
 - Opine that system actuary's assumptions and methods are reasonable and appropriate

Actuarial Audit Replication – In the Real World

- Actuarial valuation report is not 100% complete in its description of plan benefits, actuarial assumptions, and actuarial methods
- Actuaries and retirement system have ongoing conversations clarifying ambiguities
- System actuary provides test cases illustrating precise calculations

Actuarial Audit Replication – In OPERS World

- OPERS was extremely helpful and responsive in clarifying plan provisions
- GRS policies limit the detailed calculations which are provided
 - Complexity of OPERS provisions and nuances in GRS methodologies make matching individual calculations challenging
 - After many questions and clarifications, we were able to match to totals very closely
- We recommend that GRS provide detailed year-by-year sample calculations and enhance minor reporting issues in the next experience study report and/or actuarial valuation report

Findings of Actuarial Review - Recap

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Actuarial Methods

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Actuarial Valuation Replication

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Actuarial Process

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