Employee's Retirement Fund of the City of Fort Worth – Actuarial Audit

Mike Ribble | February 6, 2024

Gallagher

Insurance | Risk Management | Consulting

Agenda

February 6, 2024

I. Executive Summary

II. Results Matching

III. Actuarial Standards of Practice (ASOPs) Review

IV. Recommendations

Executive Summary

Executive Summary

- Valuation results and actuarially determined contributions were matched to within a reasonable threshold
- We reviewed the December 31, 2022 Actuarial Report for reasonableness and to ensure it complies with the Actuarial Standards of Practice (ASOPs)
    - Includes the 2019 Experience Study Report by reference
- Actuarial Report complies with Actuarial Standards of Practice
    - Recommend adding some additional disclosures which are missing or only included in the Experience Study Report

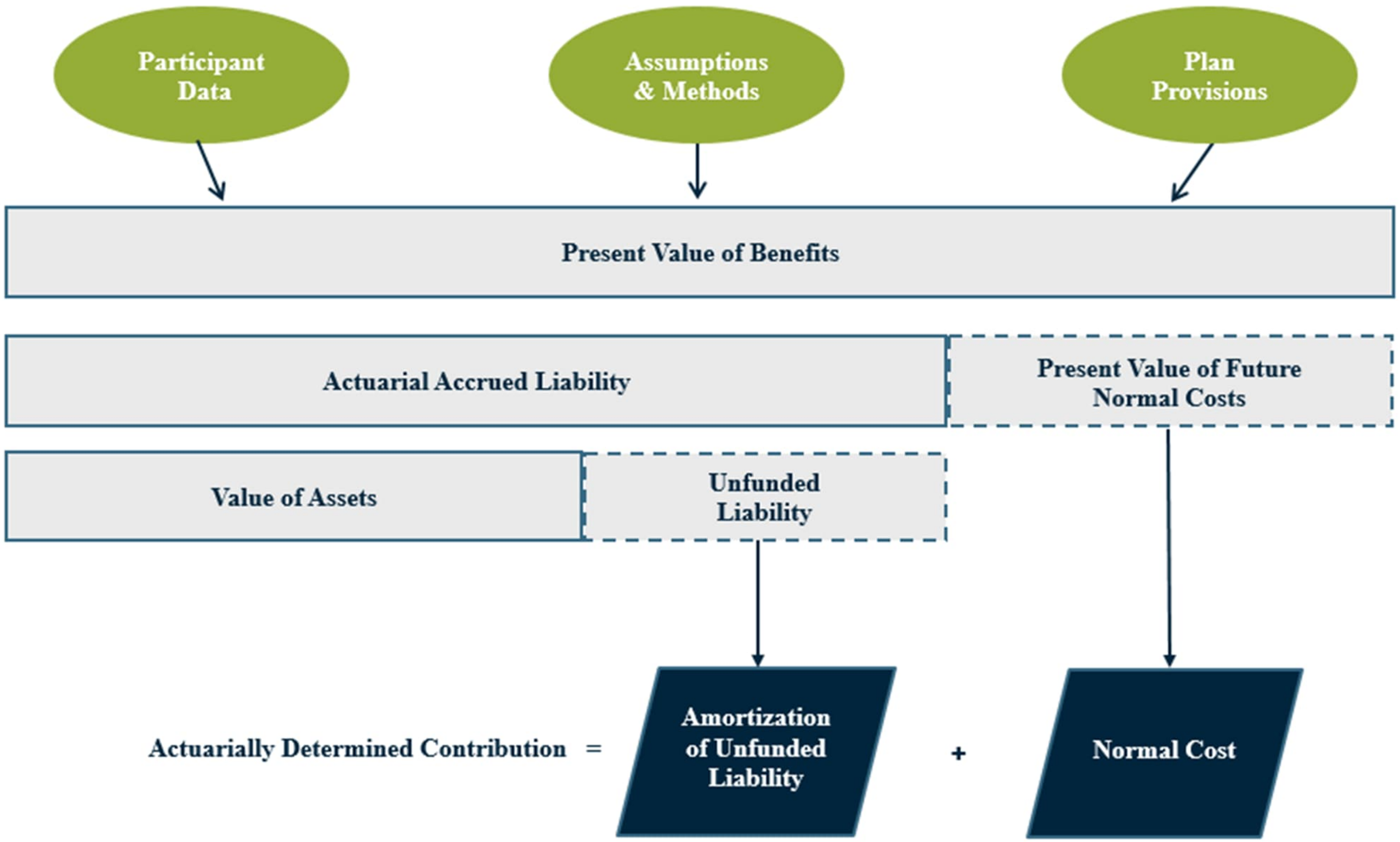
Results Matching

Census Data Comparison

	GRS	GBS	Difference
Number of Participants			
▪ Actives	6,656	6,656	0.0%
• Age	44.1	44.2	0.2%
• Service	10.8	10.8	0.0%
▪ Service retirees	4,044	4,044	0.0%
▪ Disability retirees	169	169	0.0%
▪ Vested inactives	491	491	0.0%
▪ Nonvested inactives	1,247	1,247	0.0%
▪ Beneficiaries and spouses	824	824	0.0%
Total Participants	**13,431**	**13,431**	**0.0%**
Annual Benefit Payments			
▪ Service retirees	208,137,179	208,161,378	0.0%
▪ Disability retirees	5,039,795	5,040,344	0.0%
▪ Vested inactives	9,202,817	9,202,817	0.0%
▪ Beneficiaries and spouses	22,911,740	22,885,119	-0.1%
Total Annual Benefit Payments	**245,291,531**	**245,289,657**	**0.0%**
Return of Contributions			
▪ Nonvested inactives	4,173,870	4,173,870	0.0%
▪ Beneficiaries and spouses	1,145,057	1,145,054	0.0%
Total Return of Contributions	**5,318,927**	**5,318,924**	**0.0%**

- There were no issues with the census data we received
- Average age for each inactive group was not provided in report
- Annual benefit payments reflect 1/1/2023 COLA
  - Census data provided benefits as of 12/31/2022 and we were required to calculate the 1/1/2023 benefit amounts

Components of Actuarially Determined Contribution



Liability Matching

	GRS	GBS	Difference
Present Value of Benefits			
▪ Active members	$2,801,481,732	$2,815,271,037	0.49%
▪ Service retirees	2,647,065,573	2,648,646,719	0.06%
▪ Disability retirees	60,344,486	59,912,847	-0.72%
▪ Inactive members	80,290,234	80,953,702	0.83%
▪ Beneficiaries and spouses	223,731,187	225,657,222	0.86%
Total Present Value of Benefits	$5,812,913,212	$5,830,441,527	0.30%
Normal Cost for Active Members			
▪ Service retirements	$73,933,314	$80,628,928	9.06%
▪ Death in active service	1,029,234	1,288,143	25.16%
▪ Disability	400,258	271,700	-32.12%
▪ Termination	15,324,152	10,770,058	-29.72%
Total Normal Cost	$90,686,958	$92,958,829	2.51%
Actuarial Accrued Liability			
▪ Active members	$1,986,683,561	$1,944,988,713	-2.10%
▪ Service retirees	2,647,065,573	2,648,646,719	0.06%
▪ Disability retirees	60,344,486	59,912,847	-0.72%
▪ Inactive members	80,290,234	80,953,702	0.83%
▪ Beneficiaries and spouses	223,731,187	225,657,222	0.86%
Total Actuarial Accrued Liability	$4,998,115,041	$4,960,159,203	-0.76%

- Overall liability match is reasonably close
- We were able to closely match the PVB
  - Differences less than 2% are considered reasonable
- Our results allocated more liability to the future
  - Higher normal cost
  - Slightly lower actuarial liability
  - Note allocation of actuarial liability and normal cost follow projected payrolls
  - Unable to determine the cause for variances within the active decrements

Results Matching

	GRS	GBS	Difference
Actuarial Accrued Liability (AAL)	$4,998,115,041	$4,960,159,203	-0.76%
Actuarial Value of Assets	$2,740,773,791	$2,740,773,791	0.00%
Unfunded Actuarial Accrued Liability (UAAL)	$2,257,341,250	$2,219,385,412	-1.68%
Member Contributory Payroll	$571,796,707	$570,582,909	-0.21%
City Contributory Payroll	$556,072,446	$555,956,138	-0.02%
Effective Contribution Rates			
▪ Members	11.14%	11.13%	-0.09%
▪ City	24.48%	24.48%	0.00%
Actuarially Determined City Contribution (ADEC)	$175,663,286	$175,644,114	-0.01%
▪ Percent of city contributory payroll	31.59%	31.59%	0.00%
▪ Amortization period (years)	26	26	0.00%

- Difference in AAL results in lower UAAL and a decrease in the amortization piece of the ADEC
- However, the higher normal cost results in a total ADEC that matches within 0.00%
- City contributory payroll matches within 0.02%

Funding Period Projections

	GRS Report	Match GRS Calculations	Difference vs. GRS Report	GBS	Difference vs. GBS Matching Calculations
Funding Period based on Actuarial Value of Assets					
Incorporating Only Statutory Contribution Rates	55 years	56 years	1 year	53 years	-3 years
Period Dictated by Funding Policy	26 years	26 years	0 years	26 years	0 years
Employer Contribution Rate Necessary to Meet Funding Policy	31.59%	31.57%	-0.06%	31.59%	0.06%
Funding Period based on Market Value of Assets					
Incorporating Only Statutory Contribution Rates	74 years	77 years	3 years	71 years	-6 years
Period Dictated by Funding Policy	26 years	26 years	0 years	26 years	0 years
Employer Contribution Rate Necessary to Meet Funding Policy	33.44%	33.43%	-0.03%	33.45%	0.06%
Funding Period Incorporating Projected Risk Sharing Contributions and Ad Hoc COLAS					
Based on Actuarial Value of Assets	36 years	34 years	-2 years	32 years	-2 years
Based on Market Value of Assets	41 years	39 years	-2 years	38 years	-1 year

- Shorter projected periods are predominantly a result of the lower unfunded actuarial liability
- 2.8% payroll growth assumption was applied to the City payroll for the first 30 years and 3.0% thereafter since we were not provided with information to better project the City payroll
- Report does not disclose the growth in projected administrative expenses
  - 2.5% inflation assumption was applied

Actuarial Standards of Practice Review

Actuarial Standards of Practice Review

Overview

- All assumptions and methods were reviewed for reasonableness
- Determination based on
  - Support provided in the report
  - Most recent assumption study – 2019 Experience Study
  - Guidance provided in Actuarial Standards of Practice (ASOPs)
- ASOPs are the guiding principles used by actuaries to perform actuarial work
- We reviewed the December 31, 2022 Actuarial Report for reasonableness and to ensure it complies with the ASOPs
  - Includes the 2019 Experience Study since it is referenced in the Actuarial Report

ASOP 4

Measuring Pension Obligations

- ASOP 4 requires a Statement of whether any use of approximations or estimates could result in a significant margin for error relative to the results if a detailed calculation had been done
- Difficult to measure provisions
  - Application of DROP provisions is difficult to understand with the disclosures in the current report. We recommend making these disclosures clearer.
- Adverse deviation
  - Experience Study discloses the assumptions are conservative
  - Although the experience study is reference in the report, we recommend this disclosure be included in the Actuarial Report

ASOP 23

Data Quality

- No issues identified
- Data adjustments needed
  - Census data provided by GRS included the benefits in pay as of 12/31/2022 but the census data in the report disclosed the benefits after application of the COLA effective 1/1/2023
    - We were able to closely match after being provided information on how to adjust the 12/31/2022 benefit amounts.
    - Not enough information to determine why we cannot match exactly
    - We recommend the report include a description that the annual benefits in pay include a future COLA amount

ASOPs 27 and 35

Economic and demographic assumptions

- Actuarial Report should disclose any adjustment made for adverse deviations
  - For example, the Experience Study mentions the termination assumption was set to 110% to build in some conservatism
  - Recommend adding similar commentary to the report
- Report should disclose "…whether the assumptions represent an estimate of future experience, an observation of estimates inherent in market data, or a combination thereof…"
  - While the Experience Study covers this, we recommend adding this disclosure to the Actuarial Report

ASOPs 27 and 35

Economic and demographic assumptions

- Investment return / discount rate
  - The report does not disclose the discount rate used to calculate the present value of liabilities. We recommend adding a liability discount rate or disclosure that the investment return assumption is used as the liability discount rate.
  - Support for the 7.00% investment return assumption is not provided in the report or most recent experience study
  - Assumption appears reasonable based on target allocation provided in funding policy revised on August 24, 2023

ASOPs 27 and 35

Economic and demographic assumptions

- Mortality
  - Base mortality assumption is the most recent publicly available mortality tables for the plan population
  - Mortality improvement projection scale uses the ultimate improvement rates from the MP-2019 tables
    - MP-2020 & MP-2021 scales provide updated ultimate improvement rates
    - GRS said they will consider updating their assumption in the next experience study
  - Mortality improvement assumption for surviving beneficiaries is not clear from description in report
    - Recommend updating to clarify the improvement scale is applied to surviving beneficiary mortality

ASOP 41

Actuarial communications

- "…Unless the actuary judges it inappropriate, the actuary issuing an actuarial communication should also indicate the extent to which the actuary is available to provide supplementary information and explanation."
    - GRS does not appear to mention that they are available to provide supplementary information and explanation
    - Recommend GRS include a statement that the actuaries who have performed the valuations are available to answer questions about the information contained in the report.
- Report does not disclose it complies with TX State Code (Section 802.101)

ASOP 44

Asset Valuation Methods

- Method that offsets prior gains or losses is unique and on the surface it appears to meet ASOP 44
- Shortest remaining bases are offset first but since applied equally to gain or loss situations, it does not seem possible to create any bias

ASOPs 51 and 56

Risk assessment and use of models

- Report appears to meet the disclosure requirements under these ASOPs

Recommendations

Recommendations

Report updates

- Clarify description of application of DROP assumptions, spouse mortality and reported annual benefit payments
- Add the following disclosures to the actuarial report
  - Actuarial communications under ASOP 41 (see slide 18)
  - Support for the 7.00% expected rate of return assumption
  - Discount rate
  - Rationales for the selection of actuarial assumptions (e.g., historical data, capital market assumptions, expert opinions, future expectations)
  - Any “simplification” methods employed for the valuation and whether these methods could result in a significant margin for error relative to the results if a detailed calculation had been done

Recommendations

Report updates

- Add adverse deviation disclosures to Actuarial Report for using conservative assumptions
  - The Fund should consider using the most appropriate assumptions both individually and in the aggregate.
  - In addition, it should be noted that the selection of assumptions could potentially have a direct impact on employee benefits due to the Ad Hoc COLA.
  - To the extent aggressive assumptions are used, Ad Hoc COLA’s may be granted where unbiased assumptions would not.
  - Alternatively, to the extent conservative assumptions are used, Ad Hoc COLA’s may not be triggered in times where unbiased assumptions would trigger an increased benefit.

Next Steps

- City of Fort Worth
  - File report with Texas Pension Review Board

Appendix

Actuarial Standards of Practice No. 56 (ASOP No. 56)

- Actuarial Standard of Practice No. 56 (ASOP 56) provides guidance to actuaries when performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating models.
- Gallagher uses third-party software in the performance of annual actuarial valuations and projections. The model is intended to calculate the liabilities associated with the provisions of each plan using data and assumptions as of the measurement date under the funding methods specified in this report. The output from the third-party vendor software is used as input to internally developed models that apply applicable funding methods and policies to the derived liabilities and other inputs, such as plan assets and contributions, to generate many of the exhibits found in this report.
- Gallagher has an extensive review process in which the results of the liability calculations are checked using detailed sample life output, changes from year to year are summarized by source, and significant deviations from expectations are investigated. Other funding outputs and the internal models are similarly reviewed in detail and at a higher level for accuracy, reasonability, and consistency with prior results.
- Gallagher also reviews the third-party model when significant changes are made to the software. This review is performed by experts within Gallagher who are familiar with applicable funding methods, as well as the manner in which the model generates its output. If significant changes are made to the internal models, extra checking and review are completed. Significant changes to the internal models that are applicable to multiple clients are generally developed, checked, and reviewed by multiple experts within Gallagher who are familiar with the details of the required changes.

Disclosures (ASOP No. 41)

- Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, changes expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions, applicable law or regulations. An analysis of the potential range of such future differences is beyond the scope of this study.
- This report was prepared for the Board and professional staff of the City of Fort Worth for their use in evaluating the preparation of actuarial valuations used by the City. Use of this report for any other purpose or by other parties may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for other purposes. Because of the risk of misinterpretation of actuarial results, Gallagher recommends requesting its advance review of any statement, document, or filing to be based on information contained in this report. Gallagher will accept no liability for any such statement, document or filing made without its prior review.
- Stephen D. Toepke, FSA, EA, FCA; Kenneth Lining, EA, MAAA, FCA; and Michael Ribble, FSA, EA, MAAA, FCA are the responsible actuaries and are qualified to provide this information. We are available to answer any questions regarding this information. We are not aware of any conflicts of interest which would impair the objectivity of our work other than those (if any) specifically identified here, nor any limitations or constraints which impeded our work.

Thank You!

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