The Actuarial/Investment Partnership I

Actuarial Changes and the Investment Assumption

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The Importance of the Actuarial Funding Policy
The primary financial objective of TMRS is to pre-fund the long-term costs of promised benefits to plan members and beneficiaries at an approximate level percent of payroll from year to year.

The Actuarial Funding Policy is the “road map” for this objective.
The City’s employer contribution determined annually under this funding policy is called the actuarially determined employer contribution (ADEC) and serves as the basis for determining the Full Retirement Rate contribution under TMRS.
The TMRS Act requires each City to contribute a monthly amount equal to the normal cost contribution and prior service contribution.

This is the ADEC.
Normal cost contribution rate and prior service cost contribution rate are determined by the following three key components:

1. Actuarial Cost Method
2. Asset Smoothing Method
3. Amortization Policy
Actuarial Cost Method

- The technique used to allocate the total present value of future benefits over an employee’s working career
- TMRS uses the Entry Age Normal (EAN) actuarial cost method
  - By far, the most commonly utilized method in the public sector
  - Now required for GASB (pension accounting) disclosures
Asset Smoothing Method

- The technique used to recognize gains or losses in pension assets over some period of time so as to reduce the effects of market volatility and stabilize contributions.

- Actuarial Value of Assets (AVA) is based upon the Market Value of Assets (MVA) with ten-year smoothing applied.
Asset Smoothing Method

- Ten (10) Year Smoothing with a 15% “soft” corridor
  - Asset Gains and Losses
    - 10% (1/10th) will be recognized in the Actuarial Value of Assets each year
    - The remaining 90% (9/10ths) will be a deferred asset gain (or loss) to be used to offset future adverse investment returns
  - 15% Corridor
    - Actuarial Value of Assets must be no greater than 115% of Market Value and no less than 85% of Market Value
  - “Soft” Corridor
    - Once outside the corridor, the three (3) year average of gains/losses are recognized
Amortization Policy

- The length of time and the structure selected for increasing or decreasing contributions to systematically eliminate any Unfunded Actuarial Accrued Liability or surplus.
- The TMRS Act allows for open or closed amortization periods up to a maximum of 25 years.
  - It also allows the TMRS Board of Trustees to extend amortization periods up to 30 years for cities who experience an increase in contribution rates greater than 0.5% as a result of actuarial changes.
The Actuarial Experience
Investigation Study
An Experience Study is a review of the assumptions and methods used by the actuary.

- TMRS has one prepared every four years.
- Five-year interval considered reasonable.
  - GFOA recommends at least once every five years.

This report tries to answer these questions for each assumption:

- What was the TMRS’ actual experience?
- How does that compare with current assumptions?
- Is a change warranted?
Purpose of Experience Study

- Assumptions are not static; they should be updated to reflect
  - Current economic conditions and member behavior in the forward-looking estimates
  - Changing patterns of retirements, terminations, salary increases, etc.
  - Changes in benefits that might impact assumptions
  - Mortality improvement over time
Purpose of Experience Study

- Recent experience provides strong guidance for some assumptions (for example, mortality) and weak guidance for others (for example, the investment return rate)
- Some experience changes are permanent, while others are cyclical
- Based on results of study:
  - Actuary recommends revised assumptions to the TMRS Board of Trustees
    - Best estimate standard for each assumption
  - Board considers actuary’s recommendation and makes the final decision for the System
Purpose of Experience Study

- The assumption set selected should be reasonable overall
  - No single “correct” answer
  - Small differences in assumptions can make large differences in results
- Keeping assumptions up-to-date will minimize gains and losses and stabilize the funding periods and contribution rates for TMRS cities
The Connection Between Actuarial Science and Investment Planning in Public Pension Plans
The actual asset allocation of the trust fund will significantly impact the overall performance

- So returns under a different allocation are not meaningful

The way this selection process is supposed to work:

- How you are invested drives the long-term expected rate of return
The Investment Return Assumption
Governed by Actuarial Standards of Practice (ASOP) No. 27, Selection of Economic Assumptions for Measuring Pension Obligations, provides guidance to actuaries regarding the selection of economic assumptions for measuring obligations for pension plans.

- Was revised and adopted by the Actuarial Standards Board in September 2013
Reasonable Assumption, per ASOP 27

- An assumption is reasonable if
  - It is appropriate for the purpose of the measurement
  - It reflects the actuary’s professional judgement
  - It takes into account historical and current economic data that is relevant as of the measurement date
  - It reflects the actuary’s estimate of future experience
  - It has no significant bias (i.e., it is not significantly optimistic or pessimistic)
    - Although some allowance for adverse experience may be appropriate
The Investment Return Assumption

- We use a “building block” approach
  - Long Term annual Investment Return Rate
    = Inflation Rate + Annual Real Rate of Return
- TMRS’ long-term rate of return assumption was 7.00%
  - 3.00% Inflation + 4.00% Real Return
Recent Market Value Returns for TMRS

6.36% average compound return (on market value) over the last 10 years
By “inflation,” we mean price inflation, as measured by annual increases in the Consumer Price Index (CPI).

- TMRS’ most recent inflation assumption was 3.00% per year.

- Actual inflation (measured by the CPI) during:
  - Last 5 years: 1.69%
  - Last 20 years: 2.28%
  - Last 30 years: 2.71%
  - Since 1913: 3.17%
For our analysis, we look at several indicators for inflation:

- Investment firms: 2.11% - 2.50%
  - RVK: 2.50%
- Social Security Trustee’s Report: 2.70% (intermediate, unchanged for over 10 years)
- Professional Forecasters: 2.10%
- NASRA/NCTR Public Funds Survey: 3.14%

We recommended lowering this assumption to 2.50%

- Closer to recent levels (2.31% over last 10 years)
- Closer to levels expected in the bond market
- Closer to investment consultants and professional forecaster estimates

Inflation has been lower than expected; therefore, future overall return expectations have been coming down as well
Because GRS is a benefits consulting firm and does not develop or maintain its capital market assumptions, we utilized the forward-looking return expectations developed by the following investment consulting firms:

- RVK
- Hewitt EnnisKnupp
- JP Morgan
- New England Pension Consultants (NEPC)
- Mercer Consulting
- Pension Consulting Alliance (PCA)
- BNY Mellon
- Towers Watson
To analyze the expected real return, we combine:
- The plan’s target asset allocation with
- Economic capital market expectations

We examine the most recent capital market return assumptions developed by eight investment consulting firms
- Placing emphasis on information from RVK
- Mostly 5-10 year time horizons

Then, we will adjust the results for a difference in time horizon
- Duration of the Plan liabilities is over 20 years
## Putting it Together

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Recommendation

- Based upon our analysis, GRS recommended lowering the annual investment return assumption to 6.75%
  - 2.50% Annual Inflation Rate
  - +
  - 4.25% Annual Real Rate of Return

- In July, the TMRS Board of Trustees approved an annual assumption of 6.75%
Questions?