Dallas Police and Fire Pension System

Discussion of Actuarial Assumptions and Projections Based on Alternative Discount Rates

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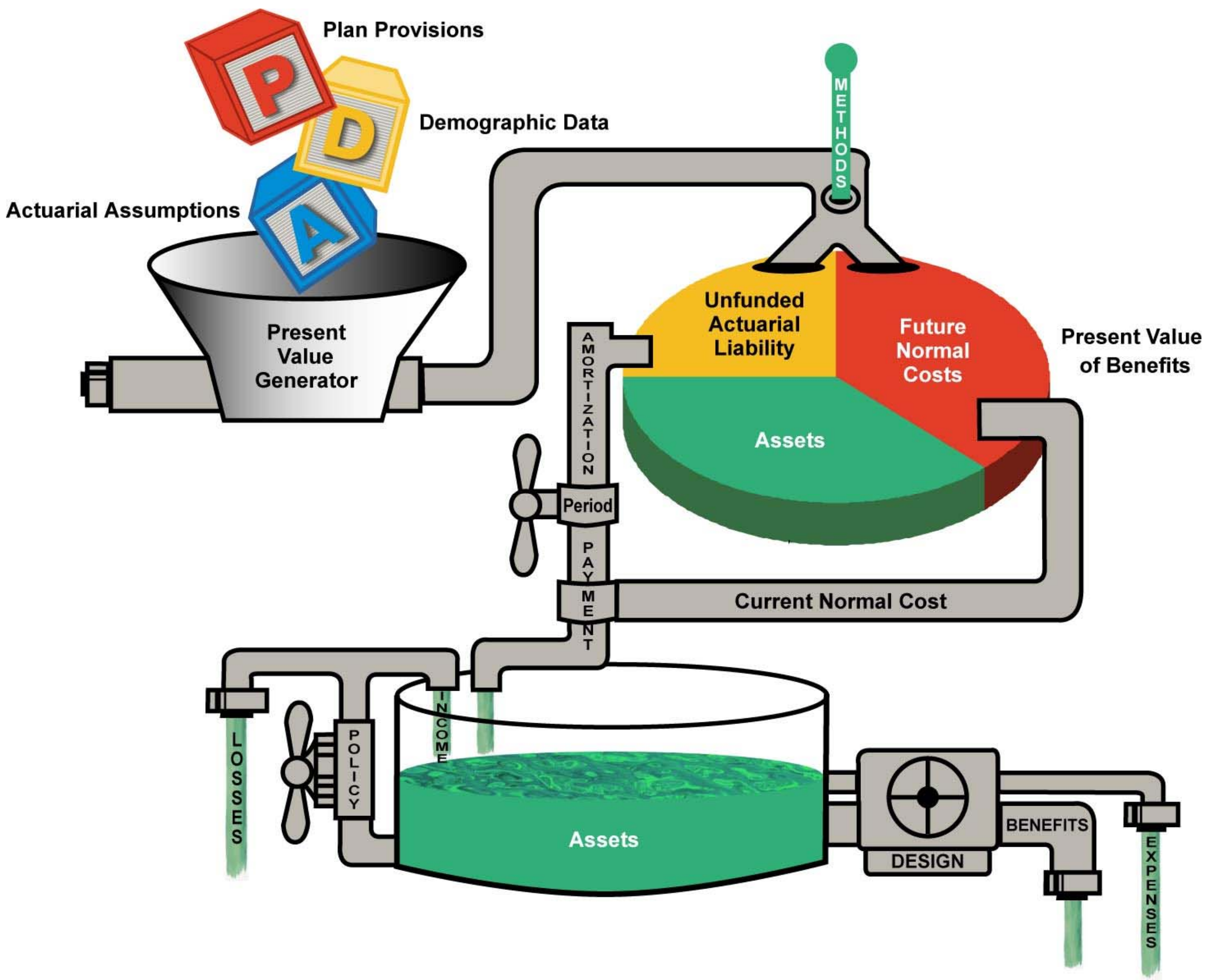
Background
Why Conduct an Actuarial Valuation?

Purpose of Actuarial Valuation

- Calculate actuarial determined contributions
- Determine funded status
- Review recent annual experience; compare against current actuarial assumptions and methods
- Disclosure requirements
- Basis for pricing plan changes
- Meet current industry standards
- Legislative requirements
- Fiduciary responsibilities

Portrait of a Pension Valuation



Multi-Year Experience Studies

- The purpose of an experience study is to perform an in-depth study of the actuarial assumptions and methodologies in use by the System and determine how actual experience compared to what was expected.
- The Government Finance Officers Association (GFOA) considers the completion of regular experience studies a best practice.
- The actuary then recommends new assumptions and/or methods that take into account actual experience over the recent past as well as expectations for the future.
- An experience study was performed by Segal for the System based on the January 1, 2010 – December 31, 2014 timeframe.
- Recommended assumptions and methods were adopted by the Board and implemented in the January 1, 2016 valuation.
- The next study will be based on the period January 1, 2015 – December 31, 2019.
- In the 2017 valuation assumptions were changed that were related to the plan changes effective in the fall of 2017. Assumptions changed included retirement, DROP utilization, DROP interest, and COLA.
- The salary scale for years 2017 – 2019 was also modified in accordance with the Meet and Confer Agreement.
- It is not currently expected that new assumptions will be recommended prior to completion of the next experience study.

Two Types of Actuarial Assumptions

Economic	Demographic

• Inflation
• Discount rate (Investment rate of return)
• Payroll growth rate
• Salary increases
• Administrative expenses
• DROP annuitization interest
	• Death in active service
	• Death after retirement
	  – Non-disabled
	  – Disabled
	• Withdrawal
	• Disability
	• Retirement
	  – DROP Utilization
	• Percent Married/Spouse Age
	• Other Assumptions

Assumptions with the Greatest Impact

- The assumptions that usually have the largest impact on plan costs are:
  - Discount rate/investment return assumption (includes inflation and payroll growth)
  - Mortality
  - Retirement

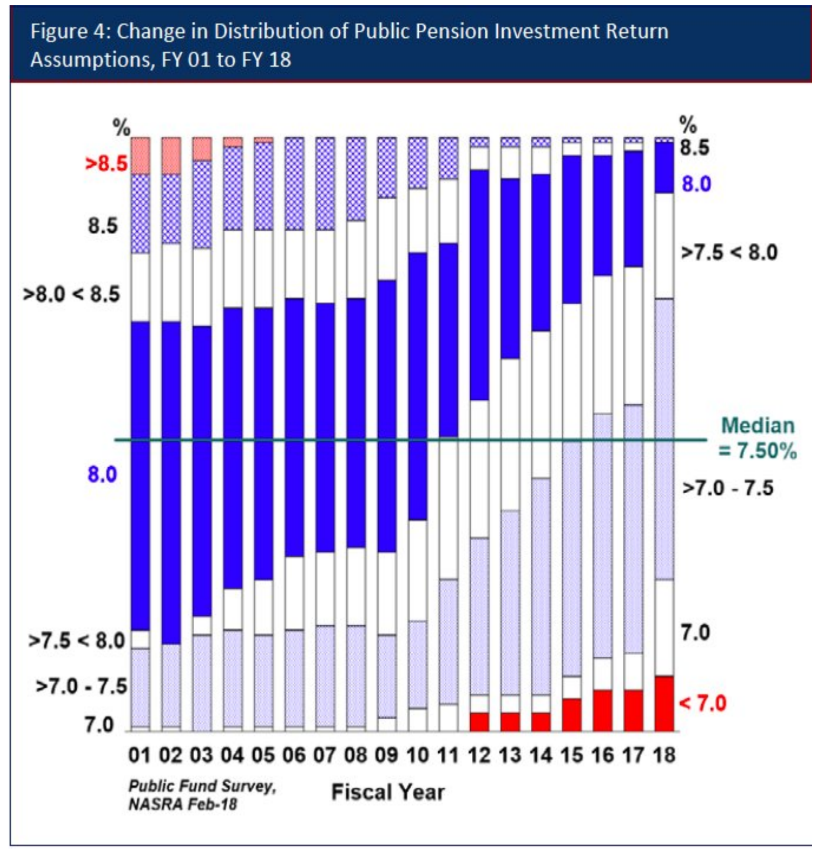
Investment Rate of Return

- **January 1, 2017 Valuation Assumption: 7.25%**
- **NASRA Survey, February 2018**
  - Among 129 plans measured, nearly 75% have reduced investment return assumption since fiscal 2010.
  - These reductions have caused a decline in the average return assumption from 7.91% to 7.36%; the median assumption is 7.50%.
- We understand that the Board is addressing asset allocation and that this may take a couple years to accomplish, likely resulting in some short-term losses.

NASRA Issue Brief: Public Pension Plan Investment Return Assumptions

Updated February 2018

FIGURE 4: CHANGE IN DISTRIBUTION OF PUBLIC PENSION INVESTMENT RETURN ASSUMPTIONS, FY01 TO FY18



Source: Compiled by NASRA based on Public Fund Survey, February 2018

Mortality and Retirement Rates

Mortality

- The System is using the most current mortality tables as published by the Society of Actuaries.
- The Society of Actuaries is currently working on public sector mortality tables.
- It is anticipated that the System's mortality rates will be updated either in the next experience study or upon the SOA's publication of the new tables.

Retirement

- New retirement rates were implemented in the 2017 valuation that are first effective in the 2018 valuation.
- The new rates are divided into current active DROP members and non-DROP active members.
- Rates for active DROP members differ based on years in DROP as of January 1, 2017.
- Rates for non-DROP active members differ based on date of hire and years of service as of September 1, 2017.

Impact of Potential Change in Discount Rate

Impact of Potential Change in Discount Rate

- The top row of the table below is from the January 1, 2017 valuation.
- All assumptions are based on the 2017 valuation unless stated otherwise.
- Projected asset returns and payroll are the same as those used in the full funding projection from the January 1, 2017 valuation.
- Each 25 basis point drop in the discount rate causes approximately a 2.6% increase in actuarial accrued liability and a 6.6% increase in total normal cost, with a corresponding decline in the funded percentage and increase in the number of years to full funding.

Discount Rate	January 1, 2017 Actuarial Accrued Liability (billions)	January 1, 2017 Total Normal Cost (millions)	Funded Percentage (Actuarial Value)	Projected Year of Full Funding
7.25%	$4.37	$58.77	49.41%	2061
7.00%	4.48	62.63	48.17%	2066
6.75%	4.60	66.79	46.94%	2072

Caveats and Disclaimers

- The closer the plan gets to insolvency, asset illiquidity may become an issue and earning the assumed return may become more difficult.
- Actual results may differ significantly from the measurements shown in the attached projections due to such factors as: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the smoothing of investment gains or losses); changes in plan provisions or applicable laws; and the City contributing amounts other than those anticipated.
- The information contained in this presentation was prepared for use by the System and Board of Trustees. Segal is not responsible for representations made regarding the information herein to any third parties. Please note that care should be taken in using the information in this presentation independent of the whole presentation to avoid possible misinterpretation of the results.
- The assumptions used in these projections are the same as those in the January 1, 2017 actuarial valuation, unless stated otherwise. The valuation presumes ongoing plan viability.
- The projections included were prepared under the guidance of Jeffrey S. Williams. Mr. Williams is a Member of the American Academy of Actuaries and qualified to render the actuarial opinions herein.
- ***The results of these projections are not a guarantee of future performance and should be used as a guideline, not an absolute, while making decisions regarding the future of the System. Projections, by their very nature, cannot be guaranteed.***

Questions and Discussion

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