Elevate the Conversation with your Actuary

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The Actuarial Valuation

- Participant Data
- Plan Provisions
- Actuarial Cost Method
- Financial Data
- Actuarial Assumptions
- Funding and Accounting Metrics
Actuarial Assumptions
Assumptions that closely match plan experience produce more level costs
Inflation

• Recent inflation environment has changed significantly but what is the long-term outlook?

• Component of other economic assumptions and often related to COLA if plan has one

• NASRA Study from March 2023 noted the average inflation assumption for the 2021 fiscal year was 2.52%, decreasing from almost 4.0% in 2002

• Social Security Trustees 2023 report used a long-term assumption at 2.4%, unchanged from the prior year
Recent investment experience has been volatile for pension plans.

Average return over a 15-year period was 7.0%.

Pension plans are long-term vehicles, so methods used to dampen volatility.
Investment Return Assumption

• Long term assumption!
• Used to set the discount rate for measuring costs
• Inflation + Expected return for each asset class
• Plan Specific: Target Allocation is Key
• Impact? Lowering assumption will increase liability, decrease funded ratio and increases contribution rates
Investment Return Assumption Trends

- Plan investment return assumptions have been consistently lowered since 2010
- Low inflation and lower fixed income expected returns were the driver
- What is the expectation for the future?

Figure 4: Change to average and median investment return assumption, FY 01 to FY 23
Demographic Assumptions

• Rates of Decrement: Mortality, Retirement, Termination, Disability,

• Factors:
  • Plan Experience
  • Plan Design
  • Industry Conditions
  • Global Demographics
  • Availability of Other Benefits
Elevate the Conversation: Actuarial Assumptions

How will changing market expectations impact my plan's investment return assumption?

How will current and long-term inflation conditions impact my plan?

How has COVID impacted my plan's mortality experience and how is the factored into the mortality assumption?

How will changing my plan's target allocation policy impact the investment return assumption?

How does my plan's benefit design impact plan demographics and actuarial assumptions?

How do the geographic region and industry of my plan factor into plan experience and assumptions?
Pension Plan Risk
Overview of Key Funding Risks

- **Investment Risk**
  - Volatility of market returns
  - Anticipated lower short-term returns
  - Continued downward pressure on long-term expected return

- **Demographic Risk**
  - Changes in active population or industry changes can decrease contribution income
  - Changes in global demographics
  - Changes in retirement and turnover patterns

- **Other Risk**
  - Political Risk: Local and National
  - Unforeseen events

It is impossible to eliminate risk but plans can understand and minimize when possible
How do plans manage risk: Asset Smoothing

- Pension plans are long-term and often minimize annual market volatility
- Actuarial Value of Assets aka “Smoothed Assets” used for funding purposes
- Produces more level asset returns and therefore more level costs
How do plans manage risk?: Mortality Improvement

- Over time people have lived longer and continue to do so
- Base table assumption accounts for past experience
- Mortality improvement scale mitigates the risk of future improvement in life expectancy
How do plans manage risk?: Plan Design

Variable Plan Designs
Variable Annuity
Variable Accrual
DB/DC Combo Plans

Some plans vary employee contribution rates based on plan metrics and/or experience

Variable COLAs that vary based on plan experience and/or investment return

Creation of new benefit Tiers to reduce plan cost
How do stakeholders understand the impact of risk? Actuarial Projections

- Valuation evaluates a plan at one point in time
- Where is the plan headed?
- What is experience different than expected?
  - How will that impact the plan’s funded percentage
  - How will that impact the future contribution requirements for the plan?
Elevate the Conversation: Pension Plan Risk

What is the impact of short term market volatility on the future contribution requirement? Funded Percentage?

What have some other plans across the country done from a plan design perspective to manage or share risk with participants?

How do fluctuations in plan participation affect funding levels?
Actuarial Funding Policies
Three Components of a Funding Policy

- **Actuarial Cost (or Funding) Method** – allocates present value of member’s projected benefits to years of service: past, current and future
  - Defines Normal Cost and Actuarial Accrued Liability (AAL)

- **Asset Smoothing Method** – assigns a value to assets that manages short term volatility while tracking market value
  - Defines the Unfunded Actuarial Accrued Liability (UAAL)

- **UAAL Amortization Policy** – sets contributions to systematically pay off any UAAL
  - Includes structure, periods and pattern of payments
Elevate the Conversation: Actuarial Funding Policy

Will contributions be sufficient to fund 100% of the plan’s benefit payments?

What are some different ways to amortize the plan’s unfunded liability?

Is the current funding policy managing contribution volatility effectively?
Actuarial Cost Method

• The **Normal Cost** is the portion of the value of projected benefits for active members that is allocated to each plan year.

• The **Actuarial Accrued Liability (AAL)** measures the Normal Cost from past years.

![Diagram showing Present Value of Future Benefits, Current Year's Normal Cost, Actuarial Accrued Liability (AAL), Present Value of Future Normal Costs, Entry Age, Current Age, Retirement Age]
Accrued Liability and Future Normal Costs

Actuarial Accrued Liability (AAL)

Present Value of Future Normal Costs

Present Value of Future Benefits

Actuarial Accrued Liability + Present Value of Future Normal Costs = Present Value of Future Benefits
The “Actuarially Determined Contribution”

- Present Value of Future Benefits
- Actuarial Value of Assets (AVA)
- Normal Cost
- Unfunded Actuarial Accrued Liability (UAAL)
- Present Value of Future Normal Costs

Amortization of Unfunded Actuarial Accrued Liability
The Funded Ratio
A funded ratio of 80% or more is within the range that many public sector experts, union officials, and advocates view as a healthy pension system.
Funded Ratio – Choose a Plan

<table>
<thead>
<tr>
<th>Valuation Date</th>
<th>Plan A</th>
<th>Plan B</th>
</tr>
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<tbody>
<tr>
<td>2022</td>
<td>73%</td>
<td>82%</td>
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# Funded Ratio – Choose a Plan

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<tr>
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<td>57%</td>
<td>93%</td>
</tr>
<tr>
<td>2019</td>
<td>46%</td>
<td>102%</td>
</tr>
<tr>
<td>2018</td>
<td>38%</td>
<td>118%</td>
</tr>
<tr>
<td>2017</td>
<td>24%</td>
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Funding Discipline is Essential

<table>
<thead>
<tr>
<th>Best Funded Plans</th>
<th>Worst Funded Plans</th>
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<tbody>
<tr>
<td>• Early movers to lower discount rate</td>
<td>• Political resistance to update assumptions</td>
</tr>
<tr>
<td>• Early movers to adopt generational mortality</td>
<td>• Invented ways to defer funding commitment</td>
</tr>
<tr>
<td>• Commitment to strong funding policies</td>
<td>• Ineffective funding policies</td>
</tr>
<tr>
<td>• Consistent contributions in full</td>
<td>• Inconsistent contributions</td>
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Questions