Moving Toward 100% Funding

Nashville Tennessee
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PAUL ANGELO, FSA – SEGAL CONSULTING
Actuarial Issues that Affect Funding

Ø Not funding the ADEC (Actuarially Determined Employer Contribution)
  · Either due to employer discretion or insufficient fixed contributions

Ø Funding an actuarially inadequate ADEC
  · Long and/or “rolling” amortization periods

Ø Adopting more conservative actuarial assumptions
  · Lower expected returns, longer life expectancies
  · Conflicting policy goals?
    – Everyone wants to lower UAAL, increase funded ratio
    – But more conservative earnings assumptions will increase:
      “No good deed goes unpunished!”
Renewed Focus on Funding Policy

Ø Recent GASB Statements 67 and 68 make a clear separation between accounting cost (expense) and funding cost:
  · Contrast with Statements 25 and 27, where expense was the Required Contribution

Ø No longer look to GASB for funding policy guidelines:
  · Not that we ever should have
  · 30 year amortization “out-of-bounds” marker interpreted as an ongoing funding policy

Ø Resulting regulatory void inviting discussion
Renewed Focus on Funding Policy

Ø Starts with the governance issues
  · Independent determination of an “actuarially determined employment costs”
    – Including actuarial assumptions and funding policy
  · Legally enforceable contribution demand on employer
    – If you are not going to fund it, it matters less how you measure it

Ø California provides a good model for both
  · Proposition 162 (1992)
  · “Retirement board … shall have the sole and exclusive power to determine actuarial services …”
  · Almost all CA systems require actuarially determined contributions
New GASB Rules and Funding Policy

Ø Under new GASB statements, funding policy has two new rules:

Ø “Actuarially Determined (Employer) Contribution”
  • If determined, disclose method and amount
  • Compare amount to actual contributions
  • No basis given except “actuarial standards of practice”
  • “ADEC” is the new ARC, but not the new expense

Ø For “blended” discount rate, projected assets include future contributions
  • Consider any “formal, written policy related to employer contributions”

Ø Message: Review (or develop!) your funding policy; prepare a comprehensive written funding policy statement.
# Case Study – Commonwealth of Kentucky

<table>
<thead>
<tr>
<th>Big Six Retirement Plans Amounts in $Millions</th>
<th>6/30/2005</th>
<th>6/30/2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liabilities</td>
<td>$34,793</td>
<td>$61,747</td>
</tr>
<tr>
<td>Assets</td>
<td>$27,448</td>
<td>$29,078</td>
</tr>
<tr>
<td>Unfunded</td>
<td>$7,345</td>
<td>$32,669</td>
</tr>
<tr>
<td>Funded Percentage</td>
<td>79%</td>
<td>47%</td>
</tr>
</tbody>
</table>

Case study prepared by Adam J. Reese, FSA – PRM Consultant
# Changes in Public Pension UAAL: Case Study

## Changes in Liability

<table>
<thead>
<tr>
<th></th>
<th>Examples</th>
</tr>
</thead>
</table>
| Ø A. | Unfunded benefit increases | Ø Ad-hoc COFAF
| Ø B. | Actuarial assumption changes | Ø Revised discount rate
| Ø E. | Employer funding less than the ARC | Ø Legislature reduces contributions
| Ø F. | Actuarial funding method | Ø Negative asset return
| Ø G. | Plan experience | Ø Lower turnover

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Case study prepared by Adam J. Reese, FSA – PRM Consultants
Changes in Public Pension UAAL: Case Study

Changes in Assets
Ø C. Market (benchmark) performance below valuation assumption
Ø D. Plan investment performance below benchmark

Examples
Ø Short-term market returns faster than long-term rates
Ø Not all plans can achieve average performance
Changes in Public Pension UAAL: Case Study

Which of these causes (A thru G) do you think were the primary causes – contributing to 25% & 22% of the $25 Bn increase?

A. Unfunded benefits
B. Actuarial assumptions
C. Market performance
D. Investment performance
E. Employer funding
F. Actuarial funding
G. Plan experience

Case study prepared by Adam J. Reese, FSA – PRM Consulting
Changes in Public Pension UAAL: Case Study

Ø How many chose F and B? (actuarial funding method) and actuarial assumptions?

Causes of Growth in Unfunded Actuarial Liability

1. Actuarial funding
2. Actuarial assumptions
3. Market performance
4. Employer funding
5. Unfunded benefit liability
6. Investment performance
7. Plan experience

Case study prepared by Adam J. Reese, FSA – PRM Consulting
Who will replace GASB’s role on funding?

Ø Actuarial organizations

- Actuarial Standards Board - Actuarial Standards of Practice
  - 2013 revision to ASOP 4 addresses some aspects of funding
  - ASOP 4 Exposure Draft would preclude some more extreme
- Academy of Actuaries Public Plans Subcommittee
  - Issue Brief on Objectives and Principles issued February
- Society of Actuaries “Blue Ribbon Panel Report”, February
- Conference of Consulting Actuaries Public Plans Committee
  - Actuarial Funding Policies and Practices for Public Plans
    - “White Paper” issued October 2014
  - https://www.ccactuaries.org/Portals/0/Library/Papers/CCA-Funding-Policies-and-Practices-for-Public-Pension-Plans
  - Or just search: “CCA funding policies”
Who will replace GASB’s role on funding?

Ø Actuarial organizations may develop model and/or actuarial procedures and practices, but not enforcement mechanism
  · May need more specificity than a typical ASOP
  · CCA PPC Guidelines are very detailed, but not binding

Ø Government Finance Officers Association (GFOA) Benefits Committee
  · Issued by GFOA’s CORBA Committee on Retirement and Benefits Administration
  · September 2016 (rev.): Core Elements of a Funding Policy

Ø State regulatory agencies (Texas Pension Review Board)

Ø State or Federal legislatures
  · Could refer to actuarial or GFOA guidance
Comparison of Actuarial and GFOA Guidance

Ø Remarkable consistency on Funding Policy Objectives:

- Fund the expected cost of all promised benefits (i.e., fund normal cost plus 100% of any unfunded actuarial liability).
- Match funding cost of benefits to years of service (i.e., target demographic matching or generational equity).
- Have costs emerge stably and predictably (i.e., manage contribution volatility).
- Balance competing funding-policy objectives.
- Actually fund the “actuarially determined contribution” as defined by the plan’s funding policy.
Summary of CCA PPC Model Funding Policies

Ø Actuarial cost method
  · Entry age normal

Ø Asset smoothing method
  · 5 year smoothing period with wide or no “Market Value of Asset” corridor
  · Up to 10 year smoothing period with MVA corridor

Ø Amortization period
  · Layered amortization with fixed periods
  · Level percentage of payroll
  · Limited or no negative amortization
## CCA PPC Model UAAL Amortization Period

<table>
<thead>
<tr>
<th>Source of UAAL</th>
<th>Model Amortization Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience Gain/Loss</td>
<td>15 to 20</td>
</tr>
<tr>
<td>Assumption Changes</td>
<td>15 to 25</td>
</tr>
<tr>
<td>Active Plan Changes</td>
<td>Demographic, ≤ 15</td>
</tr>
<tr>
<td>Inactive Plan Changes</td>
<td>Demographic, ≤ 10</td>
</tr>
<tr>
<td>Early Retirement Incentives</td>
<td>5 or less</td>
</tr>
<tr>
<td>Surplus</td>
<td>30</td>
</tr>
</tbody>
</table>
Layered UAAL Amortization Example

Ø This California County retirement system adopted 15 year UAAL amortization in 2004

- 2004 UAAL ($323 million) amortized over fixed 15 year periods
- Each year any new UAAL amortized over a new, separate fixed period
  - Actuarial losses (or gains) – 15 year periods
  - Assumption changes – 20 year periods (15 years prior to the new assumption)
- For each dollar of UAAL, the Amortization schedule shows:
  - Where it came from and the original amount
  - Current outstanding balance
  - Remaining amortization period
  - Current year payment (or credit for experience gains)
- Graphs show rollout of UAAL balances and net amortization
# June 30, 2017 Amortization Schedule

<table>
<thead>
<tr>
<th>Date Established</th>
<th>Source</th>
<th>Initial Amount</th>
<th>Outstanding Balance</th>
<th>Years Remaining</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total VCERA</td>
<td></td>
<td>$323,444,000</td>
<td>$90,417,000</td>
<td>2</td>
</tr>
<tr>
<td>June 30, 2004</td>
<td>Restart of Amortization</td>
<td>48,849,000</td>
<td>19,322,000</td>
<td>3</td>
</tr>
<tr>
<td>June 30, 2006</td>
<td>Actuarial (Gain)/Loss</td>
<td>1,358,000</td>
<td>673,000</td>
<td>4</td>
</tr>
<tr>
<td>June 30, 2006</td>
<td>Assumption Change</td>
<td>102,790,000</td>
<td>51,061,000</td>
<td>4</td>
</tr>
<tr>
<td>June 30, 2006</td>
<td>Plan Provision Change</td>
<td>14,731,000</td>
<td>7,314,000</td>
<td>4</td>
</tr>
<tr>
<td>June 30, 2007</td>
<td>Actuarial (Gain)/Loss</td>
<td>(96,898,000)</td>
<td>(56,734,000)</td>
<td>5</td>
</tr>
<tr>
<td>June 30, 2008</td>
<td>Actuarial (Gain)/Loss</td>
<td>(75,365,000)</td>
<td>(49,924,000)</td>
<td>6</td>
</tr>
<tr>
<td>June 30, 2009</td>
<td>Actuarial (Gain)/Loss</td>
<td>204,600,000</td>
<td>149,143,000</td>
<td>7</td>
</tr>
<tr>
<td>June 30, 2009</td>
<td>Assumption Change</td>
<td>91,252,000</td>
<td>66,505,000</td>
<td>7</td>
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<tr>
<td>June 30, 2010</td>
<td>Actuarial (Gain)/Loss</td>
<td>206,081,000</td>
<td>161,917,000</td>
<td>8</td>
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<tr>
<td>June 30, 2011</td>
<td>Actuarial (Gain)/Loss</td>
<td>38,155,000</td>
<td>31,802,000</td>
<td>9</td>
</tr>
<tr>
<td>June 30, 2012</td>
<td>Actuarial (Gain)/Loss</td>
<td>4,258,000</td>
<td>3,732,000</td>
<td>10</td>
</tr>
<tr>
<td>June 30, 2012</td>
<td>Demographic Assumption Change</td>
<td>123,037,000</td>
<td>120,640,000</td>
<td>15</td>
</tr>
<tr>
<td>June 30, 2012</td>
<td>Economic Assumption Change</td>
<td>104,278,000</td>
<td>102,248,000</td>
<td>15</td>
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<tr>
<td>June 30, 2013</td>
<td>Actuarial (Gain)/Loss</td>
<td>15,435,000</td>
<td>14,022,000</td>
<td>11</td>
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<tr>
<td>June 30, 2014</td>
<td>Actuarial (Gain)/Loss</td>
<td>(87,484,000)</td>
<td>(82,051,000)</td>
<td>12</td>
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<tr>
<td>June 30, 2015</td>
<td>Actuarial (Gain)/Loss</td>
<td>(109,606,000)</td>
<td>(105,359,000)</td>
<td>13</td>
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<tr>
<td>June 30, 2015</td>
<td>Assumption Change</td>
<td>218,002,000</td>
<td>217,319,000</td>
<td>18</td>
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<tr>
<td>June 30, 2016</td>
<td>Actuarial (Gain)/Loss</td>
<td>(453,000)</td>
<td>(451,000)</td>
<td>14</td>
</tr>
<tr>
<td>June 30, 2017</td>
<td>Actuarial (Gain)/Loss</td>
<td>2,730,000</td>
<td>2,730,000</td>
<td>15</td>
</tr>
</tbody>
</table>

(1) As of middle of year.
Layered UAAL Amortization Payments - June 30, 2017

Annual Payments Required to Amortize $744 Million in Net UAAL as of June 30, 2017

- GAINS & LOSSES
- ASSUMPTION / PLAN CHANGES
- RESTART AMORTIZATION
- NET UAAL PAYMENT

2017: $150 Million
2019: $100 Million
2021: $50 Million
2023: $50 Million
2025: $50 Million
2027: $50 Million
2029: $50 Million
2031: $50 Million
2033: $50 Million

Net UAAL Payments
DISCUSSION