Alternatives for Managing Unfunded Liability

2017 Public Safety Conference

October 3, 2017
8:00am – 8:45am
Pension Contributions

Change in state & local government pension contributions per capita

Source: Rockefeller Institute

1 2007 – 2015; Inflation-adjusted
Public Plan Funding

Source: NASRA Public Fund Survey, March 2017
Public Pension Asset vs Liability Growth

Source: NASRA Public Fund Survey, November 2016
Equity exposure

State & local government pensions have increased exposure to equities steadily

Source: Rockefeller Institute
Key Areas to Address

- Actuarial Modeling
- Plan Design (or Benefits)
- Funding
- Investments
Actuarial Modeling
What To Look For?

- Economic Assumptions
- Demographic Assumptions
- Liability
- Methods
Best Practices

- Government Finance Officer’s Association (GFOA) recommends:
  - Thorough review of plan experience every 3 to 5 years
  - Actuarial audit at least every 5 years
- Avoid political pressure in selecting assumptions
Plan Design
DB Plan features

- COLAs
- Salary
- Service
- DROPs
State COLA Reductions

Source: NASRA “Significant Reforms to State Retirement Systems” 2016
States with Hybrid Plans

Source: NASRA “Significant Reforms to State Retirement Systems” 2016
# Hybrid vs. Traditional

## Hybrid Plan
- Shared Investment risk
- Benefit accrues more level over employees’ career
- Retains some purchasing power even if DB portion doesn’t have COLA

## Traditional DB
- Sponsor assumes investment risk
- Benefit tends to be back-loaded
- Benefits career/long-term employees
- May lose purchasing power if doesn’t include COLA
Lump Sum “Buy-outs”

What is It?
A temporary offering of lump sum payments to vested participants who have not retired.

Does it Save?
The only way to save is to offer participants less than the actuarial present value of their benefit.

Pros? (primary)
Opportunity to reduce Unfunded liability voluntarily and participant access to funds earlier.

Cons? (primary)
Participant mismanagement of funds and appearance of taking advantage of participants.
“Buy-out” Example

- **Background:**
  - Terminated Vested liability of $75m at 7.5% discount rate
  - Plan has set aside $40m to fund “buy-out”

- The amount of savings depends on the number of participants electing the window (i.e., “take rate”) and the discount rate used to determine the lump sum
  - The higher the discount rate used to calculate lump sums, the smaller the lump sum payment; thus, the higher the savings.

<table>
<thead>
<tr>
<th>Discount Rate</th>
<th>25% Take Rate</th>
<th>50% Take Rate</th>
<th>75% Take Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.0%</td>
<td>$1.9 - $3.7</td>
<td>$3.7 - $4.0</td>
<td>$4.0 - $4.0</td>
</tr>
<tr>
<td>10.0%</td>
<td>$4.6 - $9.3</td>
<td>$9.3 - $10.0</td>
<td>$10.0 - $10.0</td>
</tr>
<tr>
<td>12.0%</td>
<td>$9.3 - $18.6</td>
<td>$18.5 - $20.0</td>
<td>$20.0 - $20.0</td>
</tr>
</tbody>
</table>
Variable/Adjustable Pension Plan

What is It?
- DB plan with multiplier adjust annually based on pre-determined set of factors

Pros
- May be designed with little, or no, Unfunded
- Allows risk-pooling

Cons
- Complexity
- May be difficult for participants to understand
- Financial planning
Funding
Amortization Method

- Open vs Closed
  - Open amortization like re-financing mortgage—unlikely to pay down Unfunded

- Amortization Period
  - Does period extend beyond date of last current employee?

- Amortization Method
  - Level percent rate, combined with longer amortization period, may result in “negative amortization”
Funding Policy Best Practices

ADC to fully fund long-term cost
Commitment to fund full ADC
Equitable allocate cost
Contributions relatively stable
Assess and Communicate funding progress

ADC = Actuarially Determined Contribution
Borrow to Fund?

Pros

- May lower ultimate pension cost
- Secures pension
- Enforces funding discipline

Cons

- Risky – leveraged; could increase ultimate pension cost
- Converts “soft” debt to “hard” debt
- Impacts debt capacity
Borrow to Fund Considerations

- Transfer of Risk
- Phased issuance
- Combine with other plan design options like lump sums
Investments
The Challenge

Investment Objectives

Low expected returns in the current market environment
Future Return Expectations Lowered

<table>
<thead>
<tr>
<th></th>
<th>Jan 1976-June 2017 Historical</th>
<th>10-Year Expectations*</th>
<th>30-Year Expectations*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Equity</td>
<td>10.3%</td>
<td>7.3%</td>
<td>7.4%</td>
</tr>
<tr>
<td>Core Bonds</td>
<td>7.5</td>
<td>2.7</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>70/30 Portfolio</strong></td>
<td><strong>9.8</strong></td>
<td><strong>6.2</strong></td>
<td><strong>6.6%</strong></td>
</tr>
<tr>
<td>Inflation</td>
<td>3.6</td>
<td>2.3</td>
<td>2.3</td>
</tr>
<tr>
<td><strong>70/30 After Inflation</strong></td>
<td><strong>5.9</strong></td>
<td><strong>3.8</strong></td>
<td><strong>4.2</strong></td>
</tr>
<tr>
<td>Risk Premium Over Core Bonds</td>
<td>2.3%</td>
<td>3.5%</td>
<td>3.1%</td>
</tr>
</tbody>
</table>

Source: Aon Hewitt Capital Markets Assumptions Methodology
*Data as of August 31, 2017

Past Performance is no guarantee of future results. Please refer to Appendix for the Capital Markets Assumptions Methodology. Please note that these returns should not be viewed as expected actual returns, and cannot be invested in using the methodology described in the Appendix.
Building a Diversified Portfolio

Plain Vanilla 70/30

- Global Equity: 30%
- Core Fixed Income: 70%

Well-Diversified 70/30

- Global Equity: 30%
- Core Fixed Income: 10%
- High Yield: 10%
- EMD: 10%
- Real Estate: 10%
- Private Equity: 3%
- Real Estate: 3%
- Bank Loans: 3%
- Hedge Funds: 3%

Source: Aon Hewitt
### Risk Reduction From Diversification

<table>
<thead>
<tr>
<th>10-Year Expectations</th>
<th>Plain Vanilla 70/30</th>
<th>Well-Diversified 70/30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected Return</td>
<td>6.2%</td>
<td>6.2%</td>
</tr>
<tr>
<td>Volatility</td>
<td>13.1</td>
<td>10.2</td>
</tr>
<tr>
<td>Sharpe Ratio</td>
<td>0.324</td>
<td>0.412</td>
</tr>
</tbody>
</table>

Source: Aon Hewitt Capital Markets
Assumptions Methodology
Data as of August 31, 2017

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Best Practices

- Take the long-term view
- Exploit opportunities across asset classes
- Be dynamic

Risk
- Diversification
- Align asset allocation and risk tolerance
- Asset-Liability studies

Governance
- Align philosophy with resources
- Pro-actively manage non-financial risk
Retirement System Health
Funded Status (Ratio)

Current Assets \( \text{Divided By} \) Accrued Liabilities \( \text{Equals} \) Funded Ratio
Beyond Funded Status

- Plan Sponsor
- Demographics
- Governance
- Investments
What makes a “healthy” plan?

Demographics
Governance
Investments
Plan Sponsor
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