Retirement on the Brink?
Public Pension Underfunding
and Implications for State Budgets


© Olivia S. Mitchell
The Pension Research Council
mitchelo@wharton.upenn.edu

A (very) Short History of US Public Pensions

• UK had disability pensions for militia during Colonial period.

• During the Revolution, Continental Congress set up Army/Navy disability plans. Fed gov't later converted them to veterans' old-age pensions.

• U.S. cities provided pensions to teachers, firemen, police officers in mid-19th century. Prompted by civil service reforms (public employment converted from patronage to merit).
State Retirement Plans Filled a Void…

- 1935 Social Security Act: for corporations; excluded public sector.
- 1950’s SS amendments allowed public sector coverage: governmental units could enter/withdraw.
- By 1961: most states had own ret. plans (except Idaho, Neb., N.& S. Dakota, Oklahoma).
- 1983: right to withdraw from SS eliminated.
- Today: 7 states not in SS: Alaska, Colorado, Louisiana, Maine, Massachusetts, Nevada, and Ohio; and some Local govt pee groups: California, Connecticut, Illinois, Kentucky, Missouri, and Texas. ~ 1 in 4 public ees.

Clark, Craig, Wilson: History of Public Pensions in the US

Two Main Types of Pensions:

**Defined Benefit (DB):**

- **Benefit formula** promised: 
  \[ B_t = 2\% \times (\text{Final Pay}) \times (\text{Years Service}) \]
- Ex: most US S&L pensions, Social Security, Euro systems

**Defined Contribution (DC):**

- **Contribution amount** specified: 
  \[ C_t = 6\% \times \text{current pay} \]
- Ex: US 401(k) plans, a few states, Australia, Sweden, Chile

→ A few hybrids combine both..
Today:
• Only a few Defined Contribution (DC):  
  ✓ DC only: 2 states (AK & MI)  
  ✓ Some offer choice, some combo DB & DC
• Comparison w/ private sector difficult:  
  • Few DB plans remain in private sector;  
  • Job skills/risks not very comparable (incl. job security);  
  • Govt jobs more secure;  
  • No ERISA, no std regulation/accounting/information.
• Much “pension envy:” RR for 30-yr ee 56% in state DB plans (66% if no SS); only 46% for private DB (Clark) and most have no DB.

Why Fund a pension promise?

Pension Assets = EPV Benefits

**Pros**
• Can reduce uncertainty re future contributions and benefits.  
• Portfolio diversification.  
• Permits portability.  
• May deepen K mkt & spur growth.

**Cons**
• Admin costs may be higher (?).  
• Must handle fund governance.  
• Requires ‘paying twice:’ to cover retirees + save for yourself!
Why are DB plans underfunded?

- Assets = Contributions (Er&Ee) plus investment returns (- losses)

- Liabilities = EPV accrued retirement benefits
  \[ = B_0 + B_1/(1+r) + \ldots + B_{89}/(1+r)^{89} + B_{90}/(1+r)^{90} \]
  \[ \Rightarrow \text{Assumptions needed re turnover, wage growth, mortality, and discount rate} \]

- Plan can be overfunded (A>L) or underfunded (A<L)!
  - If ER bankrupt and A<L, retirees may get no benefits (Pritchard AL)

Explanations?

- Market crash
- Discount rates plummeted!
- Politicians: short time horizons.
- Taxpayers & others (active/retirees) uninformed and not paying attention.
- Bond rating entities mostly ignored public plans.
- Result:
  - States failed to contribute for many years.
  - Plans discounted liabilities too heavily.
  - Assets too heavy in equity.
  \[ \Rightarrow \text{Some won’t be able to pay all promised benefits.} \]
State DB Underfunding *WORSE than reported*

<table>
<thead>
<tr>
<th></th>
<th><strong>UF Liab</strong></th>
<th></th>
<th><strong>% St Tax</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Reported</strong></td>
<td><strong>Adjusted</strong></td>
<td>Revenue</td>
</tr>
<tr>
<td>Oh</td>
<td>$83</td>
<td>$167</td>
<td>632%</td>
</tr>
<tr>
<td>Co</td>
<td>29</td>
<td>57</td>
<td>596</td>
</tr>
<tr>
<td>Ill</td>
<td>85</td>
<td>176</td>
<td>525</td>
</tr>
<tr>
<td>Or</td>
<td>15</td>
<td>38</td>
<td>519</td>
</tr>
<tr>
<td>SC</td>
<td>22</td>
<td>43</td>
<td>511</td>
</tr>
<tr>
<td>RI</td>
<td>7</td>
<td>14</td>
<td>503</td>
</tr>
<tr>
<td>Ala</td>
<td>21</td>
<td>40</td>
<td>445</td>
</tr>
<tr>
<td>Miss</td>
<td>16</td>
<td>29</td>
<td>424</td>
</tr>
<tr>
<td>NM</td>
<td>13</td>
<td>24</td>
<td>424</td>
</tr>
</tbody>
</table>

$\Rightarrow$~$3$ Trillion at Treasury rates as of 2010; now $4\text{-}4.5$ trillion!  

*Rauch 2010*

State pension debt: BIG gaps are a challenge

<table>
<thead>
<tr>
<th>State</th>
<th>Federation Debt</th>
<th>Unfunded Pension Liability</th>
<th>State Debt as Share of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawaii</td>
<td>$5.2$ billion</td>
<td>$10.3$ billion</td>
<td>16.2%</td>
</tr>
<tr>
<td>Mississippi</td>
<td>$5.2$ billion</td>
<td>$10.3$ billion</td>
<td>15.9%</td>
</tr>
<tr>
<td>Connecticut</td>
<td>$5.2$ billion</td>
<td>$10.3$ billion</td>
<td>15.2%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>$7.0$ billion</td>
<td>$15.9$ billion</td>
<td>14.5%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>$21.5$ billion</td>
<td>$41.5$ billion</td>
<td>14.2%</td>
</tr>
</tbody>
</table>

Impacts on state budgets?

- Public pension contributions will need to rise > three-fold -- to 14% of public sector revenue, to achieve full funding over the next 30 years.
  - Average contributions ↑ to 41% of payroll.
  - Per-household average tax ↑ of $1,400 per year.

- Also uneven:
  - >20% of general state transfers/revenues in Illinois currently required to pay for pensions;
  - NJ + NY would need to pay over $2,200/yr more; CA + III $1,900; but Indiana $330.
States haven’t been standing still…

But options are unattractive to many:

- Changing rules for current Ees is difficult:
  - Constitution, statutes, case law, and union contracts.

- Tinker with formulas?
  - Raise contributions;
  - Benefit cuts: formula, vesting, retirement ages, COLA.

- Switch from DB to DC?
  - Doesn’t solve legacy costs;
  - Will cost less later but impact is far off.

And not easy politically...WI public sector workers protest.
For more information:

http://www.pensionresearchcouncil.org/