What is going on with public pensions? What are the options?

Tracy Gordon
Navigating Pension Reform in Illinois: What Lies Ahead?
April 17, 2018
Federal Reserve Bank of Chicago
Although states have undertaken reforms, unfunded pension liabilities remain high.

State and Local Employee Defined Benefit Pension Funds

Net liability as a percent of total receipts

Illinois has some of the lowest funded ratios

Figure 1
Funded Ratios for State Pension Plans, 2016
Only 4 states had at least 90% of the assets needed to pay promised benefits

Note: Percentages reflect 2016 Governmental Accounting Standards Board reporting standards.
Sources: Comprehensive annual financial reports, actuarial reports and valuations, other public documents, or as provided by plan officials
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Source: Pew Charitable Trusts, 2018
Many proposed solutions

- **State**
  - Move new hires to 401(k)-style, hybrid, or cash balance plans
  - Change benefit formula for new hires
  - Reduce COLAs for existing retirees
  - Increase employer, employee contributions
  - Lump sum buy outs
  - Bankruptcy-style restructuring
  - Pension obligation bonds (convert implicit to explicit liability, usually with reforms, NOT arbitrage)
Many proposed solutions

- Federal
  - Direct aid, loans, guarantees
  - Require enhanced disclosure as condition of tax-exempt bond authority
  - Allow tax exempt POBs under certain conditions
  - Introduce deferred annuities, new insurance product
  - Create PBGC for public sector, mandatory funding
  - Expand access to bankruptcy
All solutions have challenges, but a common theme is where to find the money

Mutually exclusive means of raising incremental revenues required to meet full accrual payments to retirees

IPOD = % of state revenues req. to pay interest on bonds, state share of unfunded pension and OPEB liabilities, and defined contribution pmts

<table>
<thead>
<tr>
<th>State</th>
<th>Current IPOD ratio</th>
<th>Full accrual IPOD ratio</th>
<th>Increase in revenues (taxes)</th>
<th>Cuts in direct spending</th>
<th>Increase in worker contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>IL</td>
<td>22%</td>
<td>39%</td>
<td>17%</td>
<td>or 16%</td>
<td>or 400%</td>
</tr>
<tr>
<td>NJ</td>
<td>12%</td>
<td>38%</td>
<td>26%</td>
<td>or 24%</td>
<td>or 471%</td>
</tr>
<tr>
<td>CT</td>
<td>21%</td>
<td>35%</td>
<td>14%</td>
<td>or 14%</td>
<td>or 699%</td>
</tr>
<tr>
<td>KY</td>
<td>11%</td>
<td>32%</td>
<td>20%</td>
<td>or 13%</td>
<td>or 435%</td>
</tr>
<tr>
<td>HI</td>
<td>15%</td>
<td>24%</td>
<td>8%</td>
<td>or 6%</td>
<td>or 327%</td>
</tr>
<tr>
<td>MA</td>
<td>14%</td>
<td>22%</td>
<td>7%</td>
<td>or 6%</td>
<td>or 164%</td>
</tr>
</tbody>
</table>

Source: JP Morgan, 2016
How to think about state revenue capacity

- Commonly used metrics like per capita taxes and spending or business climate indexes not helpful
- They fail to distinguish between policy choices and background conditions
Representative Revenue/Expenditure System aims to solve this problem

- For each major revenue source, it multiplies US average tax or fee assessment rate by state base = **revenue capacity**

- Then multiplies US average per capita spending by state population, adjusts for demographics and costs = **expenditure need**

- Difference = **fiscal gap at capacity**

Source: Urban Institute calculations

**Note:** Gap at capacity after transfers equals a state's revenue capacity plus federal transfers minus expenditure need.
An example from Illinois in 2012*

- Actual own-source revenues $6,753
- Calculated revenue capacity $6,685 $6,685
- Revenue effort $68
  (i.e., they are collecting more than averages predict)

- Actual direct general expenditures $8,272
- Calculated expenditure need $8,472 $8,472

- Fiscal gap at capacity $1,787
- Federal grants $1,482

- Fiscal gap at capacity after transfers -$305

* = results from Assessing Fiscal Capacities of States, more in Appendix
Approach may also be applied locally, e.g., Connecticut Tax Commission

Source: Zhao and Weiner, 2015
Results for Illinois and other states

Total Revenue and Total Revenue Capacity
For Illinois and comparison states in 2012

2012 Dollars Per Capita ($)

Results vary by revenue source

General Sales Tax Revenue and Revenue Capacity
For Illinois and comparison states in 2012

2012 Dollars Per Capita ($)


Property Tax Revenue and Revenue Capacity
For Illinois and comparison states in 2012

2012 Dollars Per Capita ($)


Individual Income Tax Revenue and Revenue Capacity
For Illinois and comparison states in 2012

2012 Dollars Per Capita ($)


Corporate Income Tax Revenue and Revenue Capacity
For Illinois and comparison states in 2012

2012 Dollars Per Capita ($)

And fees are different

General Charges Revenue and Revenue Capacity
For Illinois and comparison states in 2012

2012 Dollars Per Capita ($)

There are many alternative benchmarking methods

<table>
<thead>
<tr>
<th>Category</th>
<th>Concept</th>
<th>Source</th>
<th>Method</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td>Index of Center City Hardship</td>
<td>Nathan and Adams (1976)</td>
<td>Urban to suburban ratios, weighted</td>
<td>Unemployment, dependency of population, education, income, crowded housing, poverty</td>
</tr>
<tr>
<td></td>
<td>Indices of Social, Economic and Fiscal Need</td>
<td>CBO (1978)</td>
<td>Composite scores from point-in-time indicators and outside indices</td>
<td>Social Need: Nathan and Adams index, plus unemployment and per capita income Economic: 6 indicators Fiscal effort: tax effort, property tax base, and two comprehensive measures developed by HUD</td>
</tr>
<tr>
<td></td>
<td>Fiscal Capacity</td>
<td>ACIR (1971)</td>
<td>Representative Revenue System</td>
<td>Revenues collected divided by revenue capacity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACIR (1977)</td>
<td>Fiscal Pressure</td>
</tr>
<tr>
<td></td>
<td>Need-capacity Gap</td>
<td>Ladd and Yinger (1989), Ratcliffe, Riddle &amp; Yinger (1990), Reschovsky (1993)</td>
<td>Revenue-raising capacity minus standardized expenditure need, expressed as a % of capacity</td>
<td>Standardized expenditure need from costing functions, regressions, and environmental cost factors Revenue capacity is revenue that can be raised by applying a uniform tax burden, as a % of resident income</td>
</tr>
</tbody>
</table>
Alternatives, cont’d

<table>
<thead>
<tr>
<th>Fiscal &amp; Financial</th>
<th>Source</th>
<th>Description</th>
<th>Example Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Fiscal Strain</td>
<td>Treasury (1978)</td>
<td>Average change in weighted variables; combined with other indices</td>
<td>Population, per capita income, own-source revenue burden, long-term debt per capita, property value (full market)</td>
</tr>
<tr>
<td>Fiscal stress warning</td>
<td>ACIR (1973)</td>
<td>Based on qualitative evaluation of cities’ financial status</td>
<td>One-year operations, continuous operations, working capital, short-term operating loan balance, property tax delinquency, property valuation</td>
</tr>
<tr>
<td>Fiscal strain</td>
<td>Clarke and Ferguson (1983)</td>
<td>Measure based on fiscal outputs divided by population indicators. Produces twenty separate indicators.</td>
<td>Fiscal outputs include general expenditures, own revenues, common functions, and debt. Population factors include median family income, population change, and city wealth index</td>
</tr>
<tr>
<td>Financial Condition</td>
<td>Aronson &amp; King (1978)</td>
<td>Focus on debt-serve combined a rising ratio of debt service to income</td>
<td>Seven ratios, focused on debt, debt service and income</td>
</tr>
<tr>
<td>Ratios</td>
<td>Brown (1993)</td>
<td>10-Point Scale</td>
<td>Total revenues/population, own-source General Fund (GF) Revenues /GF revenue, GF sources from other funds/Total GF sources, OpEx/Total expenditures Total revenue/total expenditures, Unreserved GF Balance/GF revenues GF cash and investments/GF liabilities, GF liabilities/GF</td>
</tr>
</tbody>
</table>
### Comprehensive Fiscal Trend Monitoring System (FTMS)

<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>International City/County Managers (ICAMA, 1980)</td>
<td>36 individual indicators across 7 categories, measure them each individually over time.</td>
<td>Groves and Valente (1994)</td>
</tr>
<tr>
<td>Nolleberger (2003)</td>
<td>7 categories: Revenue, expenditure, operating position, debt, unfunded liability, capital plant, and community needs and resources</td>
<td>Groves, Godsey, and Shulman (1981)</td>
</tr>
<tr>
<td>Hendrick (2004)</td>
<td>Three-dimensional fiscal health measurement.</td>
<td>ICMA FTMS</td>
</tr>
<tr>
<td></td>
<td>Spending needs and revenue wealth, balance with the environment, and fiscal slack</td>
<td>Ask city representatives in 50 cities to use and give feedback on ICMA FTMS.</td>
</tr>
</tbody>
</table>

Revenue wealth and spending need indicators obtained through regression analysis, similar to Ladd and Yinger. Fiscal balance is revenue/wealth and spending/need. Fiscal slack is % unreserved fund balance, % capital expenditures, % enterprise income, and % debt service.
The point is that tools are available

- However, analytical tools do not supplant the need to make difficult choices, value judgments
- Making case for additional revenues is difficult when services were rendered years decades earlier
- Beneficiaries of services may no longer live in community where they were provided
- Argues for generalizing cost to a larger population, e.g., state or national level although politically fraught
Appendix
How often do actual revenues line up with capacity?
Results vary by revenue source
For expenditures...

- The method allocates national spending to states based on:
  - Input Cost Index, or relative price of workers based on education level
  - Workload Factors, or need by expenditure area

\[
\frac{\text{National Spending} \times \text{Input Cost Index} \times \text{Workload Factor}}{\text{Population}} = \text{Representative Expenditure Per Capita}
\]
Input Cost Index

National ratio of payroll to expenditures times 1.25 equals Compensation Share for each expenditure group.

Median state earnings over median national earnings per education level equals Labor Cost Index.

For each expenditure group, choose a education level. For each state, multiply the compensation share by the relevant labor cost index. That adjusted compensation share plus the non-compensation share is the Input Cost Index.
Payroll spending on K-12 Education is 46% of total spending. The Compensation Share is 46% * 1.25 = 62%.

Calculate state median income divided by national median income for each education group. CA is 1.14 for college graduates, for example, giving it higher labor costs.

We match K-12 education with college-educated workers. So for CA, we would multiply 62% * 1.14, then add in (1-62%) to get an Input Cost Index of 108.85%.
RES Workload Factors

What drives state spending need?
- Using academic lit, select a way to identify state-specific need. The state's share of the national total is its workload factor.

How much is the nation spending in an expenditure area?
- We look at census of governments expenditure data to get a total of state-level spending on some area.

What is a state's workload factor adjusted expenditure?
- For each state, multiply its workload factor for that expenditure group by total spending nationwide.

K-12 Spending Need.
- K-12 Spending is based on the number of students and low-income students.
  - We measure need as a weighted average of the two.
  - CA has 12.8% of weighted children.

National spending on K-12 Education.
- In 2012, states spent a total of $566 billion on K-12 Education

State K-12 workload factor adjusted spending.
- Multiply the state workload factor by total spending (and by the Input Cost Index).
  - $566 Billion * 12.8% = $72 Billion
  - $72 Billion * 108.85% = $78 Billion (or $2,074 per capita)
How often do actual expenditures line up with need?

FIGURE 20
Total Expenditures
Per capita expenditures plotted against per capita need, 2012

Source: Gordon, Auxier and Iselin 2016, figure 20
Notes: DC ($8,907, $20,548) and Alaska ($8,213, $17,359) are outliers and are excluded from this figure.
As with revenues, results will vary by spending type.
Vary by spending type, cont’d

FIGURE 24
Police and Corrections
Per capita expenditures

FIGURE 26
Public Welfare
Per capita expenditures