City of Houston’s Pension Dilemma

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Pension and Other Problems

- Houston public employee pensions are underfunded by $2.3 billion as of July 1, 2010
  - HMEPS unfunded accrued liabilities = $1.4 billion
  - HPOPS unfunded accrued liabilities = $0.7 billion
  - HFRRF unfunded accrued liabilities = $0.2 billion
- More than $600 million in pension contributions since 2003 have been funded by pension obligation bonds (POBs)
  - Reduces funding ratio by roughly 5 percentage points
- Other post employment benefits are underfunded by over $3 billion
Questions to Address

- How serious is the pension problem?
- How will it affect the city of Houston?
- What are the risks moving forward?
- What are the potential solutions?
To understand the seriousness of the problem we can examine:

- projected funded ratio of the pension systems, and
- cash flow requirements to meet actuarial required pension contributions

For example, HPOPS reports that actuarial projections indicate that with an 8.5% (12.5%) return on assets from 2010-2020 the funded ratio will fall to 50% (70%) assuming no changes to contributions or benefits.

Source: page 39 of HPOPS Comprehensive Annual Financial Report (CAFR)
HPOPS Employer Contributions 2005-2020

Assumes 8.5 percent rate of return is realized and that the city makes the actuarially required contributions.

Source: HEMPS CAFR for year ended June 30, 2010 near-term outlook table.
HMEPS Employer Contributions 2000-2020

ARC as a Percentage of Payroll
Actual Contribution as a Percentage of Payroll
Actual Contribution Adjusted for POBs as a Percentage of Payroll

Source: HEMPS CAFR for year ended June 30, 2010.
HFRRF

- HFRRF is adequately funded
  - No Meet and Confer agreements
  - No City approval needed to increase benefits, but instead weak legal language regarding not creating a “material risk”
- However, HFRRF still poses a significant financial risk
HFRRF Employer Contributions 1999-2020

Source: Houston Firefighters' Relief and Retirement Fund, Actuarial Valuation Report As of July 1, 2010
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As shown previously, contributions may be less than the ARC in some years.
Total Pension Obligation Bond Debt Service 2011-2040 (in thousands $)
Total City Contributions and Debt and Principal Payments on POBs
Total Contributions as a Percentage of Total Revenues

Assumes: 3.25% growth in total revenue per year, 4% in sales and property taxes and 1% in other revenues, and standard pension assumptions
Growth Rates of Various Taxes: Problems Occurred in a Period of Booming Revenue

- Property tax
- Sales Tax
- Total GF Revenues
The Potential Double “Whammy”

- A sustained period of slow economic growth could lead to below average returns and revenue growth
  - Below average returns on assets would lead to larger unfunded liabilities and increase ARC
  - Slower growth in revenues would reduce cash flows and require govt. spending cuts, which would be exacerbated by increased ARC
  - Increasing tax rates would hit taxpayers when they are least able to afford higher taxes (and would likely have other negative effects)

- In this respect, risk-taking in pension funds is the opposite of hedging (correlation of risk)
25% change in mortality, affects costs and liabilities by roughly 10-15% (relatively small)

25% change in termination or disability rates hardly affects normal costs or accrued liability

25% change in disability rates hardly affects normal costs or accrued liability (AB)

Retirement rates have small affects under AB but larger effects under cost prorate methods

Salary Rates (AB) 10% for 2 percentage points

Costs are most sensitive to interest rates
Rule-of-thumb: each ¼ of a percent change in the interest rate alters pension costs by 6-7%

A rough estimate using 6.5% implies a 1 (2,4) percentage point reduction in the interest rate increase costs by 29% (160%, 274%)

Note the interest rate serves two purposes:
- as a return on assets, and
- as a discount rate for future benefits

HMEPS, HPOPS, and HFRRF assume an 8.5%, which is moderately high (Rauh and Novy-Marx (2010) report an average of 8.03, median of 8.0)
The Discount Rate – The Economists View

- The average return on assets should not be used as a discount rate for benefits:
  - Brown and Wilcox (2009): “finance theory is unambiguous that the discount rate used to value future pension obligations should reflect the riskiness of the liabilities”
  - Modigliani and Miller (1958) - future payment streams should be discounted to reflect their risks
  - Elliot (2010) “Virtually all economists, many actuaries, and the author, take issue with this approach to choosing a discount rate, an approach inconsistent with standard practice in finance, economics, and accounting for private sector firms”
Numerous Counter Examples to Using Expected Return as Discount Rate

- Government borrows $1 billion of 10-year bonds
- It spends $558 million immediately
- It invests the remaining $442 million in stocks and bonds with expected return of 8.5%
- We should be able to agree that the government has new debt of $1 billion and unfunded liabilities of $558 million
- Under GASB rules government has no unfunded liability because discounted PV of $1 billion at 8.5% is $442 million
Using the expected return on assets ignores the risk of asset returns (i.e., the variance)

A common argument in favor (or against) of DB pensions is that employers faces the risk instead of workers

However, under GASB rules those risks are effectively ignored because we discount almost certain benefit payments at the risky return (which makes higher benefit payments more affordable)

Burden of risk is shifted to future taxpayers
Some Argue in Favor Expected Return as Discount Rate

- For example, Picur and Weiss (2011; Government Finance Review)

- They argue that using a risk free rate could have negative consequences for public pensions:
  - Contribution rate volatility
  - Funding levels that are misleading or confusing
  - Contribution rates greater than what is needed
  - Lower investment returns as a result of shifting from equities to fixed income (J.P. Morgan study finds U.S. public pension plans tend to have higher equity exposure than corporate plans)
  - Abandonment of DB for DC plans
The Burden on Future Taxpayers

- Risk vs. reward trade-off is central to microeconomics

- Current assumption increase incentives for pension funds to invest in higher risk assets
  - Increases potential returns
  - Lowers the estimated actuarial cost of benefits making larger benefits seem affordable
  - Exposes future taxpayers to large risks
  - Risks that are correlated with other economic risks

- Is the City capable of contributing the ARC, if so at what cost (reduce services, higher taxes)?
Potential Solutions

- Near-term solutions (not many options)
  - Increased city contributions, which would also require a reduction in other services or increased revenues (where do these come from?)
  - Reduction in benefits of retirees or those nearing retirement

- Longer-term actions to increase stability
  - Increased contributions by city and employers
  - Reduction in benefits
  - Changing plan structure

- Questions?


