The Sustainability of State and Local Government Pensions: A Public Finance Approach

Jamie Lenney, Bank of England
Byron Lutz, Federal Reserve Board of Governors
Finn Schüle, Brown University
Louise Sheiner, Brookings Institution

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Disclaimers

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Introduction

• Topic: Fiscal sustainability of state and local gov. pensions

• Questions:
  • Are state and local pensions fiscally sustainable under current benefit and funding levels?
  • If not, what is required to make them sustainable?
Preview of Conclusions

• In aggregate, S&L pensions are not currently sustainable under low or moderate asset returns

• But can be stabilized with moderate fiscal adjustments

• Only modest returns to stabilizing immediately versus in the future (e.g. 10 years in future)

• Lots of heterogeneity and some plans are far from stable
Background: Concern over Sustainability

- Significant concern over unfunded S&L pension liabilities
  - Unfunded liabilities ≈ $4 trillion (Rauh 2017 & FA)
  - 50% funding ratio
- Lack of full prefunding → widespread sustainability concerns
  - Academics, press, rating agencies, policymakers
Fiscal Sustainability

• Prefunding not required for fiscal sustainability

• Fully unfunded pay-as-you-go (paygo) pension systems can be sustainable
  • e.g. Samuleson (1958)

• PAYGO sustainable if internal rate of return does not exceed the growth rate of the wage base (labor force growth + productivity growth)
Pension Debt Sustainability

• Unfunded pension liabilities = form of (implicit) public debt
• Public debt may have no fiscal costs in low interest rate environment (e.g. Blanchard 2019)
  • Corollary: Failure to fully prefund pensions does not necessarily imply future fiscal costs
Caution Required!

- Pension debt can be sustainable in principle, but may not be in practice

- Our findings suggest pension debt not currently sustainable under low or moderate asset returns
Sustainability Approach Consistent with History

- Most analysis of S&L pensions focused on full prefunding benchmark
- Our focus on pension sustainability of partially prefunded plans is consistent with the historical record
  - S&L pensions have never been fully funded
Methodology

• Analyzing sustainability requires benefit cash flows, but these are typically not available

• Reverse engineer cash flows
  • Method pioneered by Novy-Marx and Rauh (2011, 2014)
  • Collect data from actuarial reports: plan membership, actuarial assumptions (e.g. mortality), and plan parameters (e.g. benefit levels and COLAS)
  • Construct statistical machinery to “age” workers and retirees and calculate benefits
  • Add in new workers based on demographic assumptions

• Sample of 40 plans
  • Small sample reflects extremely labor intensive nature of methodology
  • Sample observationally similar to universe of S&L pensions
US Ratio of Benefit Payments to GDP

- Benefits rise only about 5% over next two decades and then decline
- Plans get eventual fiscal relief
- Surprising because we project ratio of beneficiaries to workers rise sharply over next two decades due to population aging
Why Don’t Benefits Rise More?

- **COLAs:** 17 out of 40 plans have lowered COLAs since 2007

- **New Worker Benefit Reforms:** Plans now less generous for new hires (adjusting retirement ages, benefit factors, vesting, etc.)

- Low COLAs and new hire reforms cause benefits:
  - ~ 15 percent lower than counterfactual (blue line) in two decades
  - ~ 30 percent lower in long run
Sustainability Analysis

• Assume plans maintain current contributions and benefits
• Discount the stream of future benefit payments at a risk-free rate
• Consider 4 deterministic real rates of return on pension assets

1. 0% real return = risk-free rate based on Treasury TIPS yields
   • We view as conservative:
   • Market-based risk free return may overstate cost of risk to government (e.g. Falkenheim 2021)
2. 5% real return = expected rate & roughly what they have received since 2000
3. 2.5% real return = middle ground
4. CBO (current law) risk free real rate projection
Exhaustion Dates: One way of assessing sustainability

In aggregate

- plans exhaust (hit zero assets) in 30 years under a 0% rate of return
- Around 45 years under 2.5%
- Not currently sustainable under 0%, CBO risk-free, and 2.5% returns
- More than sustainable at expected 5% return
Making Pensions Sustainable

2 Stabilization Exercises

Choose one-time permanent change in contributions to:

1. **Long-run**: Debt as share of GDP is constant in long run (without regard to the level)

2. **30-year Medium-run**: Return to today’s debt-to-GDP ratio by the end of 30 years

All stabilization exercises involve stabilizing unfunded liabilities while making benefit payments
### Contribution to Stabilize Implicit Debt in Long-Run

<table>
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<tr>
<th>Real rate of return</th>
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<th>Start In 20 years</th>
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- At 2.5% return, required contribution increase = 8% of payroll if act now
- Pension contributions increased by 10 percent of payroll between 2009 and 2019
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- Pension contributions increased by 10 percent of payroll between 2009 and 2019
- If wait 30 years, contribution increase goes up to 10% of payroll

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<td>9.16%</td>
<td>9.88%</td>
<td><strong>10.38%</strong></td>
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At 0% rate of return, required contribution = 15% of payroll if start today
But required contribution decreases as you delay
  • Assets are costly when asset returns are below GDP growth
  • Waiting draws down assets, which are then less costly

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Implicit Debt to GDP Returns to Today’s Level in Year 30

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- At 2.5% return, contribution increase about 7% of payroll today. Rises to 17% if delay 30 years.
- Delay causes contribution to increase, because have to not just stabilize but pay down debt.
## Full Funding Requires Much Larger Adjustments

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Plan Specific Results

• Lot of heterogeneity in contribution increase required to stabilize
• Poorly funded plans don’t need largest increases to stabilize pension debt
Conclusions

• Limitations:
  • Deterministic framework ignores risk, particularly around asset returns
  • Isolation from broader state and local gov. budgets and objectives

• In aggregate, plans can become sustainable under low and moderate asset returns with moderate changes in funding

• Limited return to stabilizing now versus 10 years in future

• Significant heterogeneity
Thank you!

Comments welcome:

Jamiewlenney@gmail.com
Byron.f.lutz@frb.gov
Finn.Schule28@gmail.com
Lsheiner@brookings.edu