An Analysis of Connecticut State Teachers' Retirement System (TRS): Final Report

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Connecticut Pension Analysis
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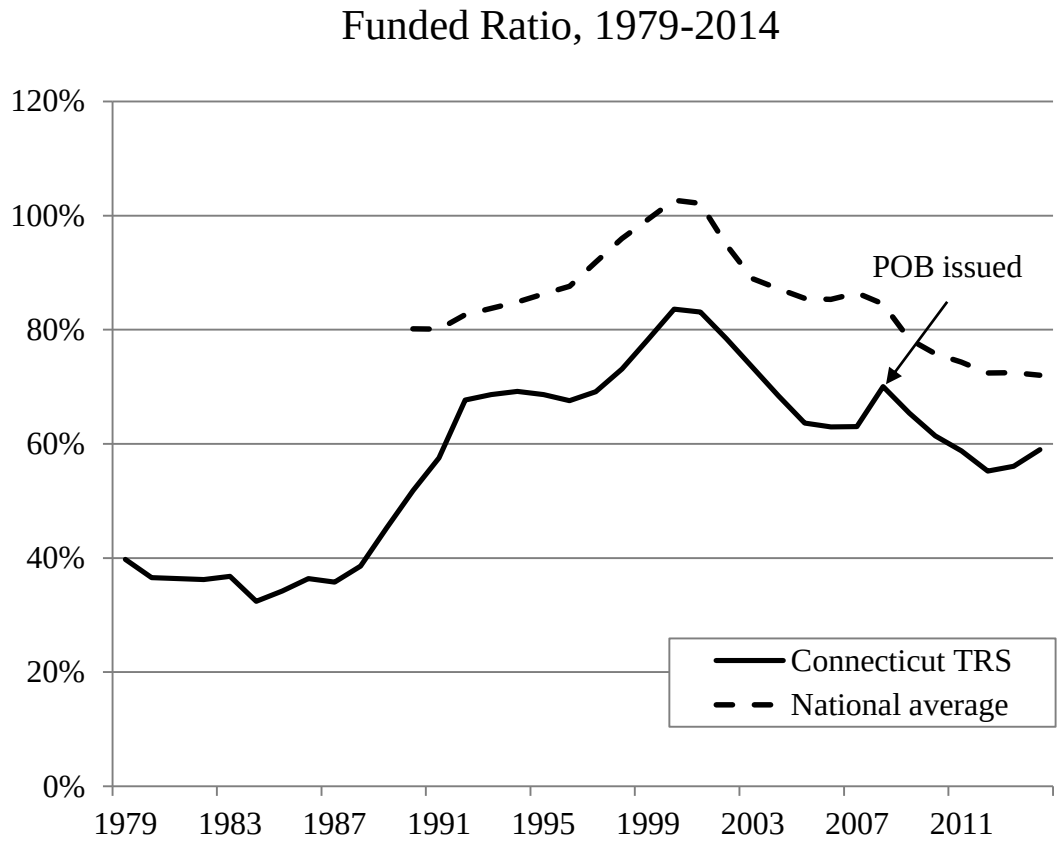
Overview

- Looking back
  - TRS' historical funded status
  - Source of TRS' unfunded liability (UAAL)
  - Today's funded status if TRS had been adequately funded

- Looking forward
  - Funded levels and costs under current law and alternative funding methods
  - The impact of the TRS' POB

Looking back….

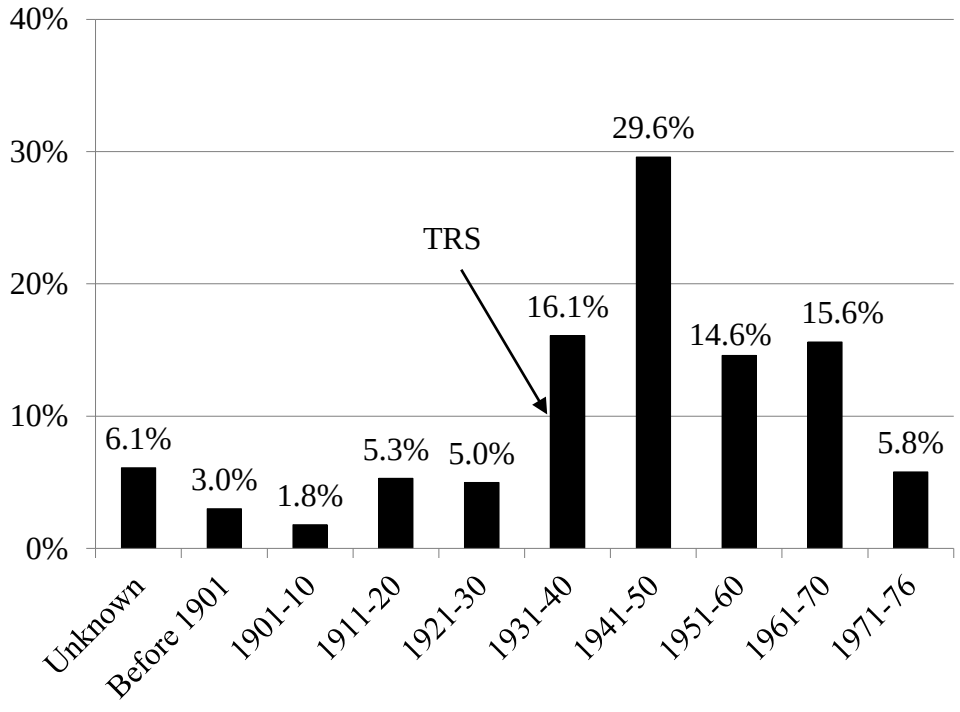
Over the past two decades, TRS' funding has been below the national average.



Sources: Various actuarial valuations for Connecticut TRS; *PENDAT* (1990-2000); and *Public Plans Database* (2001-2014).

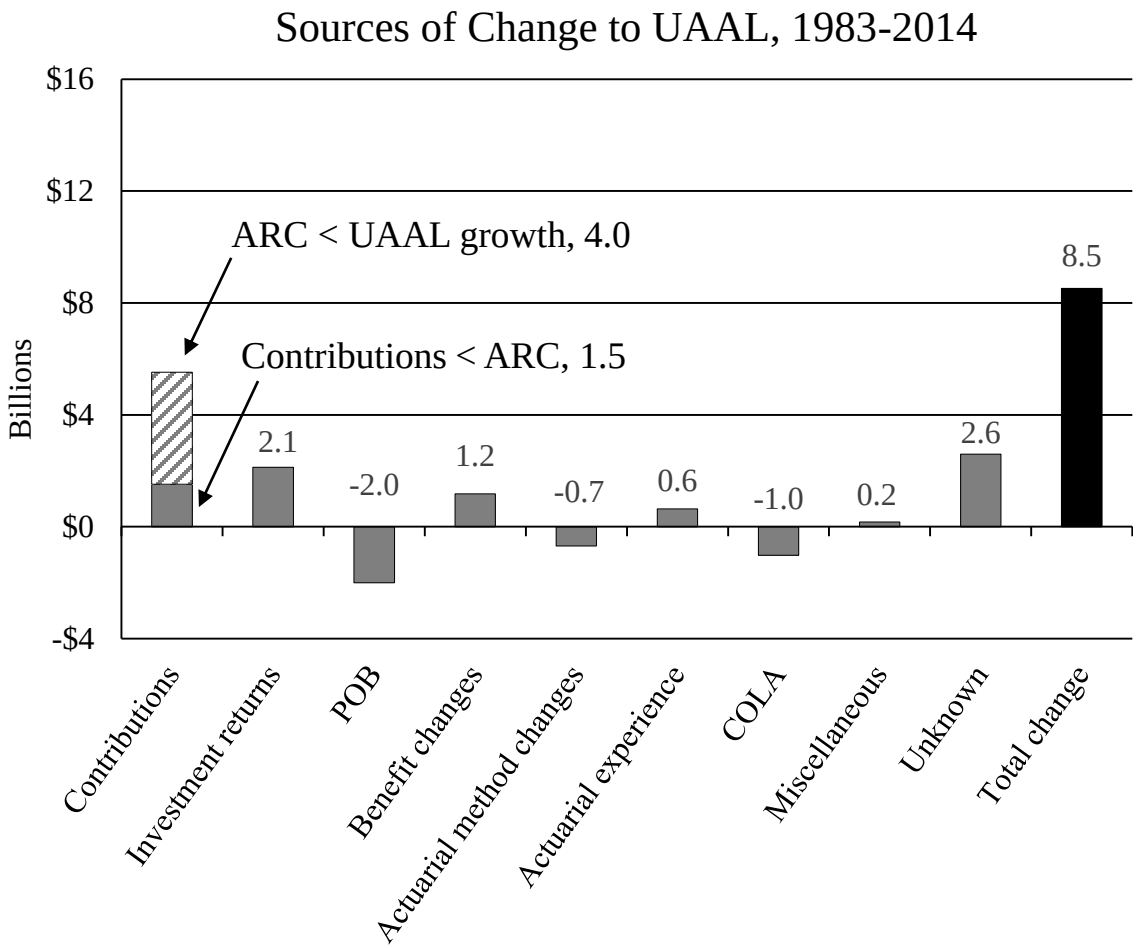
TRS provided benefits as far back as 1939, but did not pre-fund until 1981.

Percentage of State and Local Plans Established or Significantly Restructured, by Date



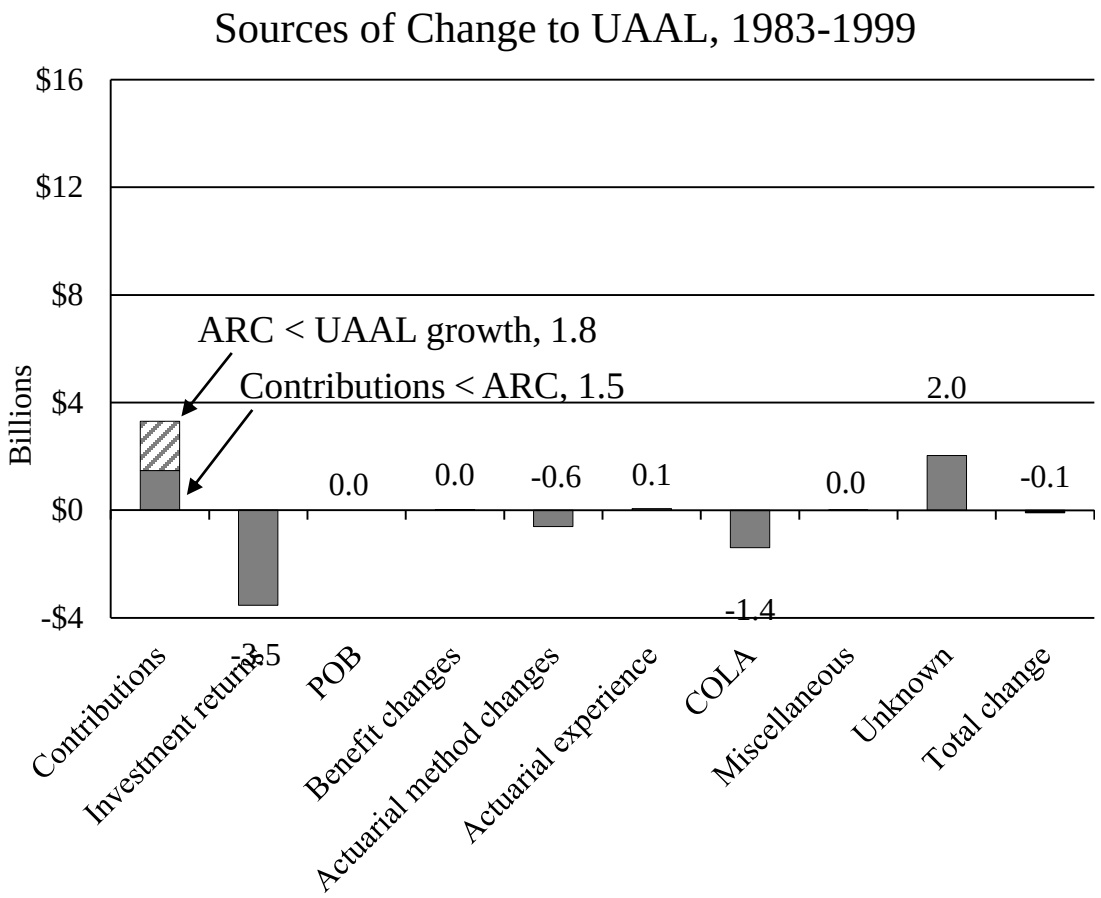
Sources: Various actuarial valuations for Connecticut TRS; *PENDAT* (1990-2000); and *Public Plans Database* (2001-2014).

But TRS' poor funded ratio also reflects inadequate contributions and poor returns



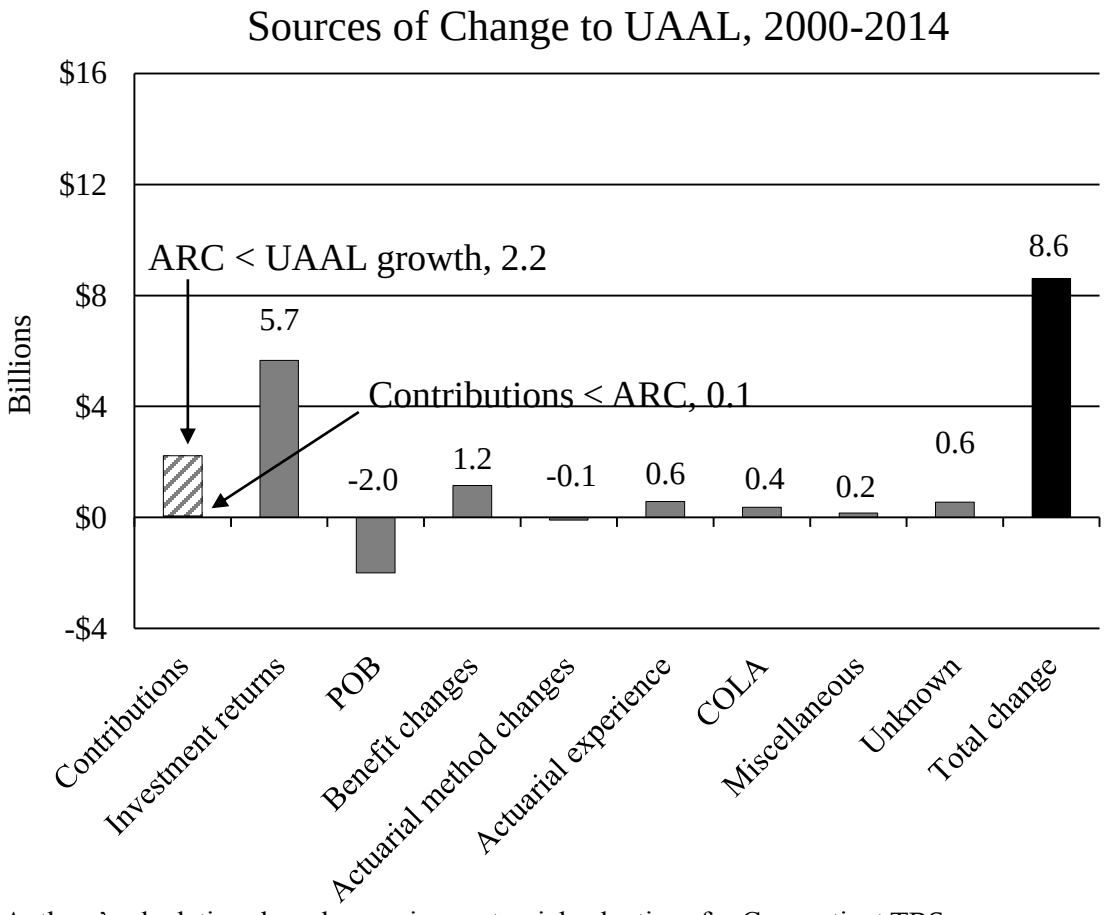
Source: Authors' calculations based on various actuarial valuations for Connecticut TRS.

Before 2000, the impact of inadequate contributions was offset by high returns.



Source: Authors' calculations based on various actuarial valuations for Connecticut TRS.

But after 2000, poor returns added to the impact of inadequate contributions.

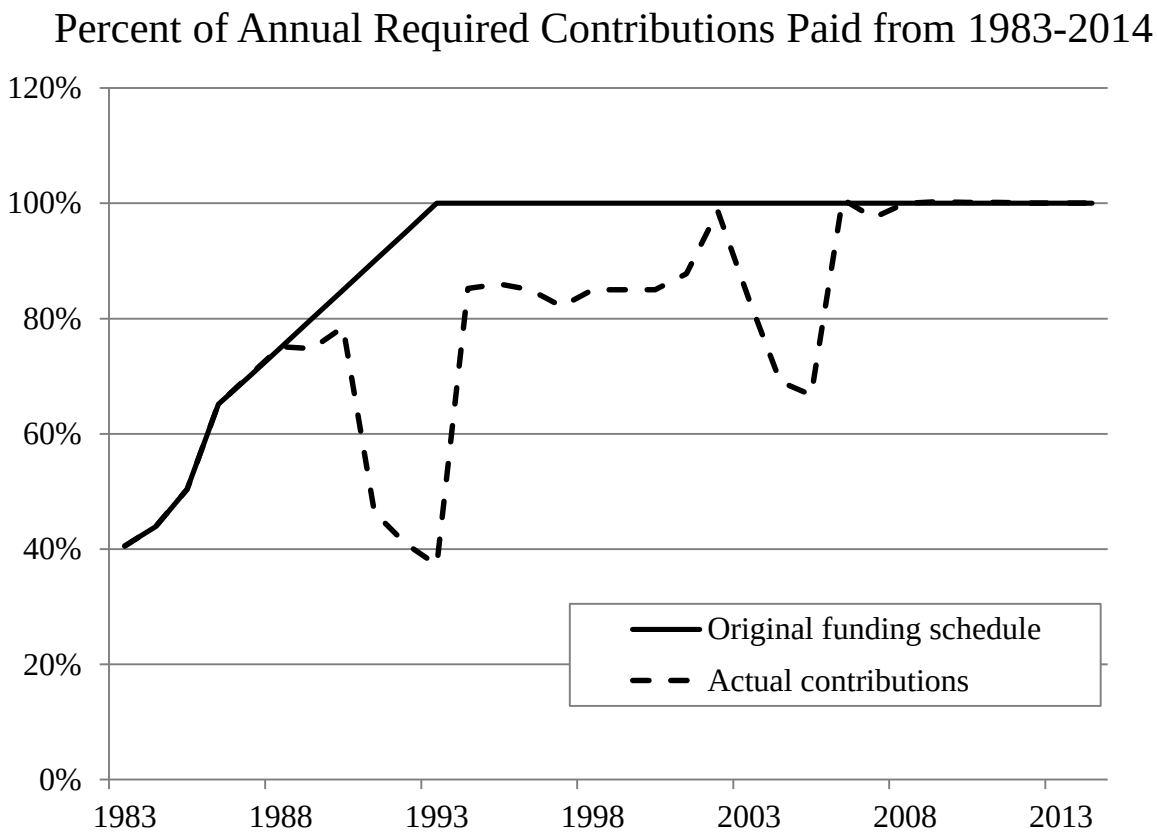


Source: Authors' calculations based on various actuarial valuations for Connecticut TRS.

Two factors contributing to the UAAL growth were controllable.

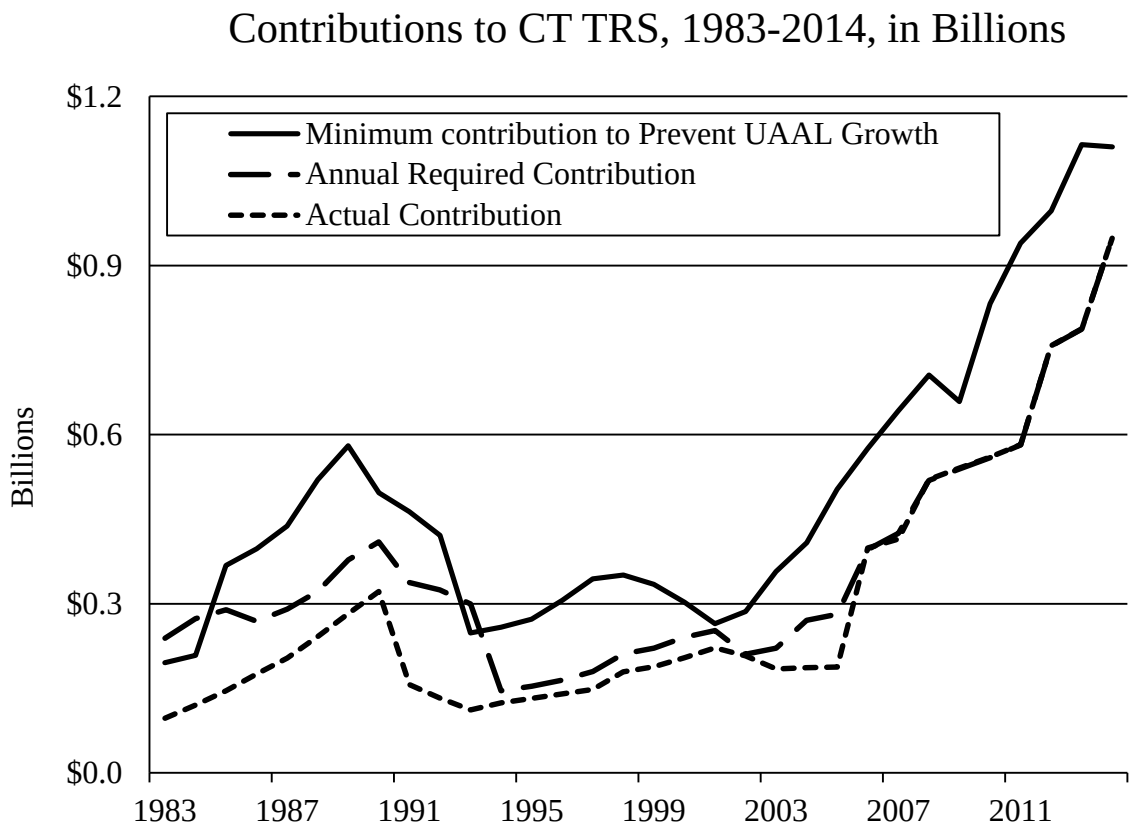
- Contributions
- The investment return assumption

Actual contributions fell short of TRS' reduced funding schedule.



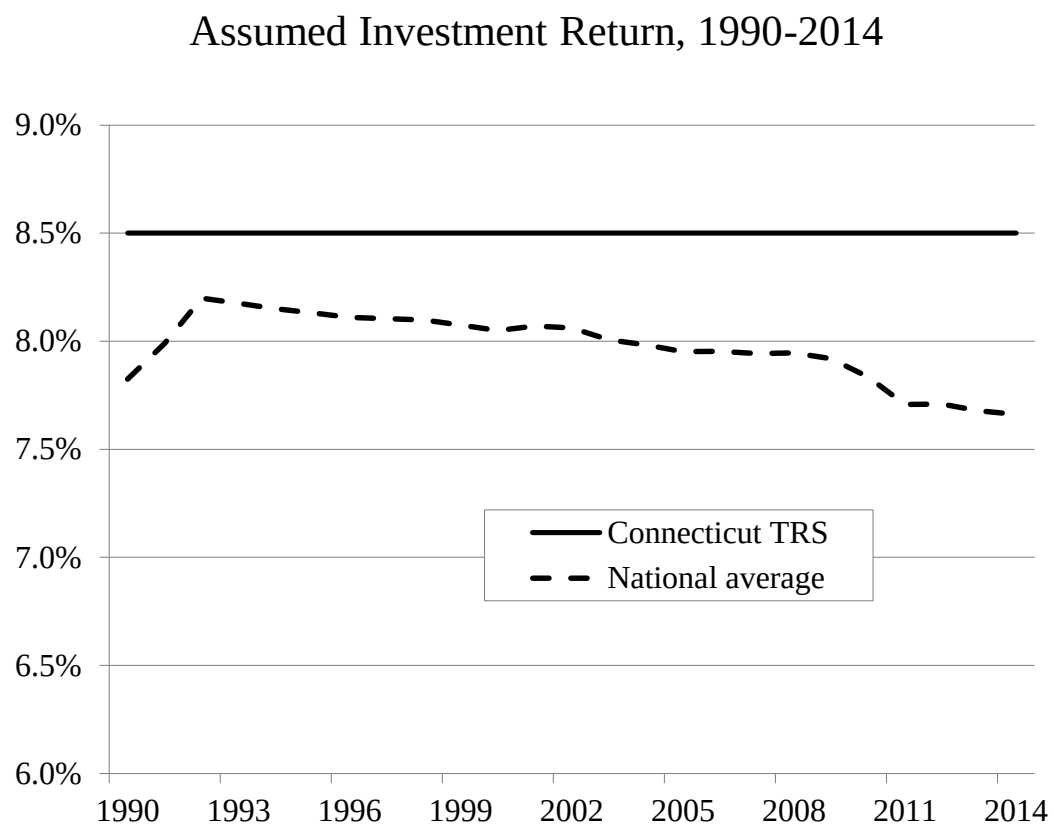
Source: Authors' calculations based on various actuarial valuations for Connecticut TRS.

TRS' method for calculating the ARC did not keep up with UAAL growth.



Source: Authors' calculations based on various actuarial valuations for Connecticut TRS.

Also, the assumed rate of return was, and continues to be, unusually high.



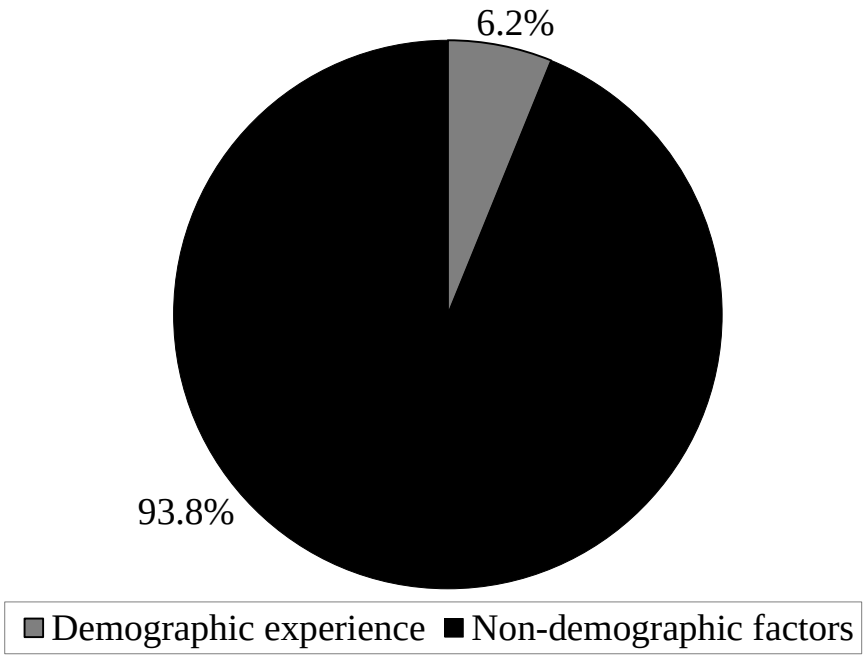
Sources: Actuarial valuations for Connecticut TRS; *PENDAT* (1990-2000); and *Public Plans Database* (2001-2014).

Two of the factors contributing to the UAAL growth were less controllable.

- Actual demographic experience
- Actual investment returns

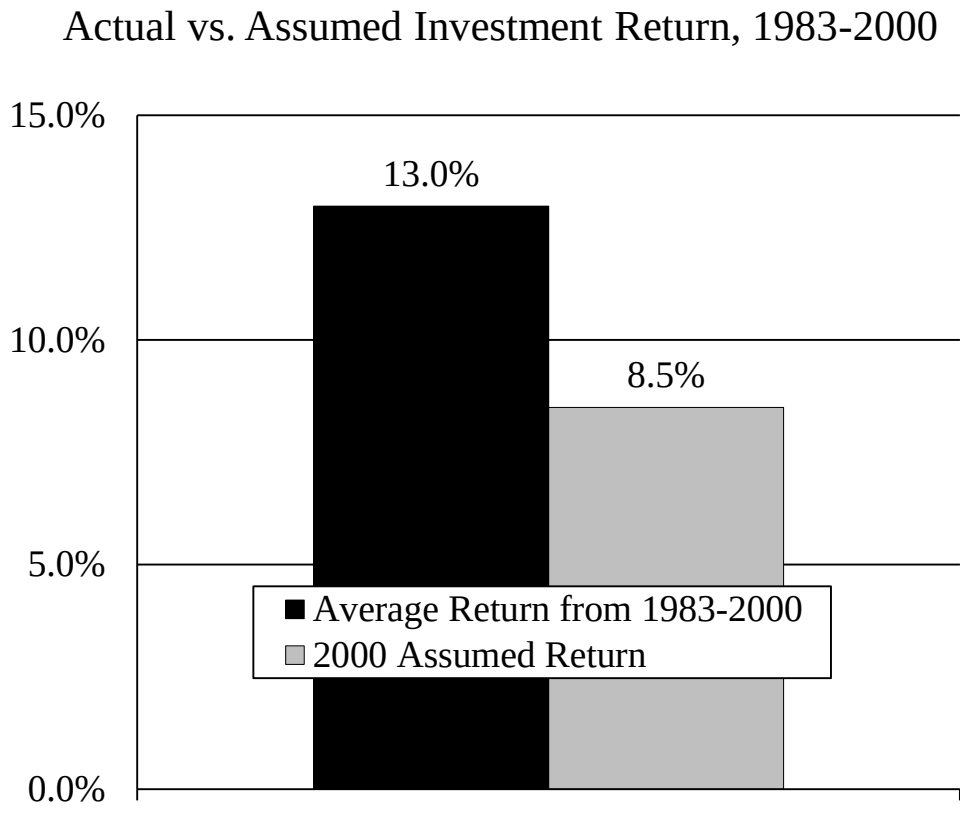
Demographic experience seems to have had only a minor role in UAAL growth.

Impact of Actuarial Experience as a Percent of the Overall Change in the UAAL since 2009



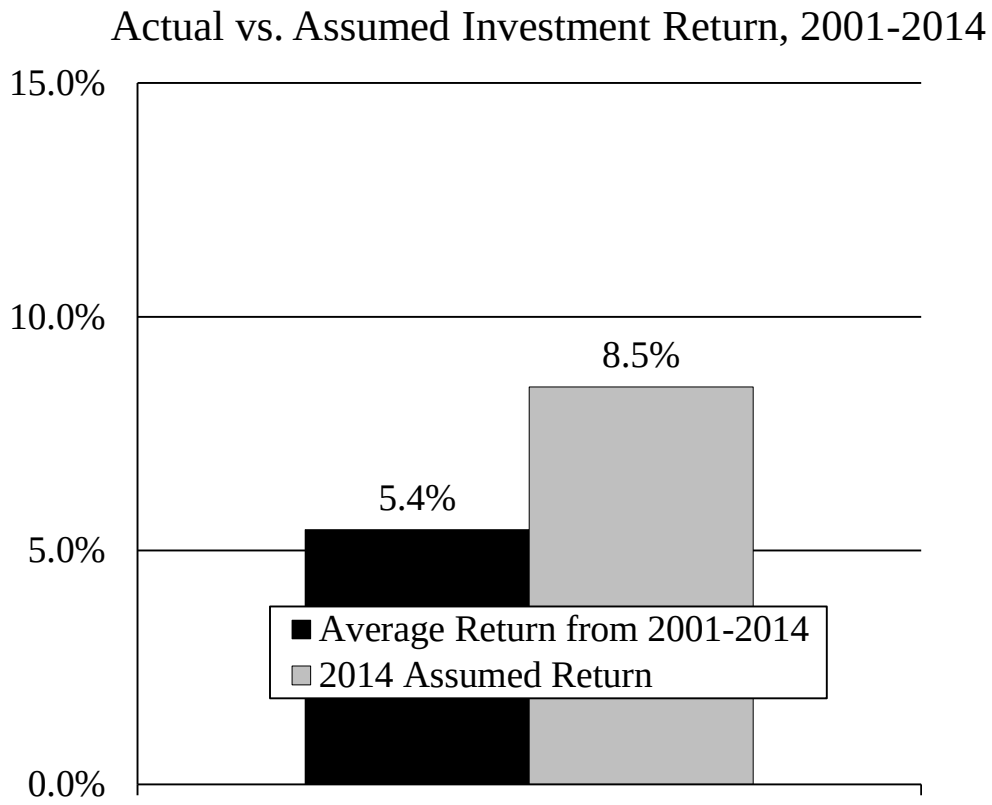
Sources: Authors' calculations based on Connecticut TRS actuarial valuations (2009-2014).

Up to 2000, TRS' investment performance was better than the assumed.



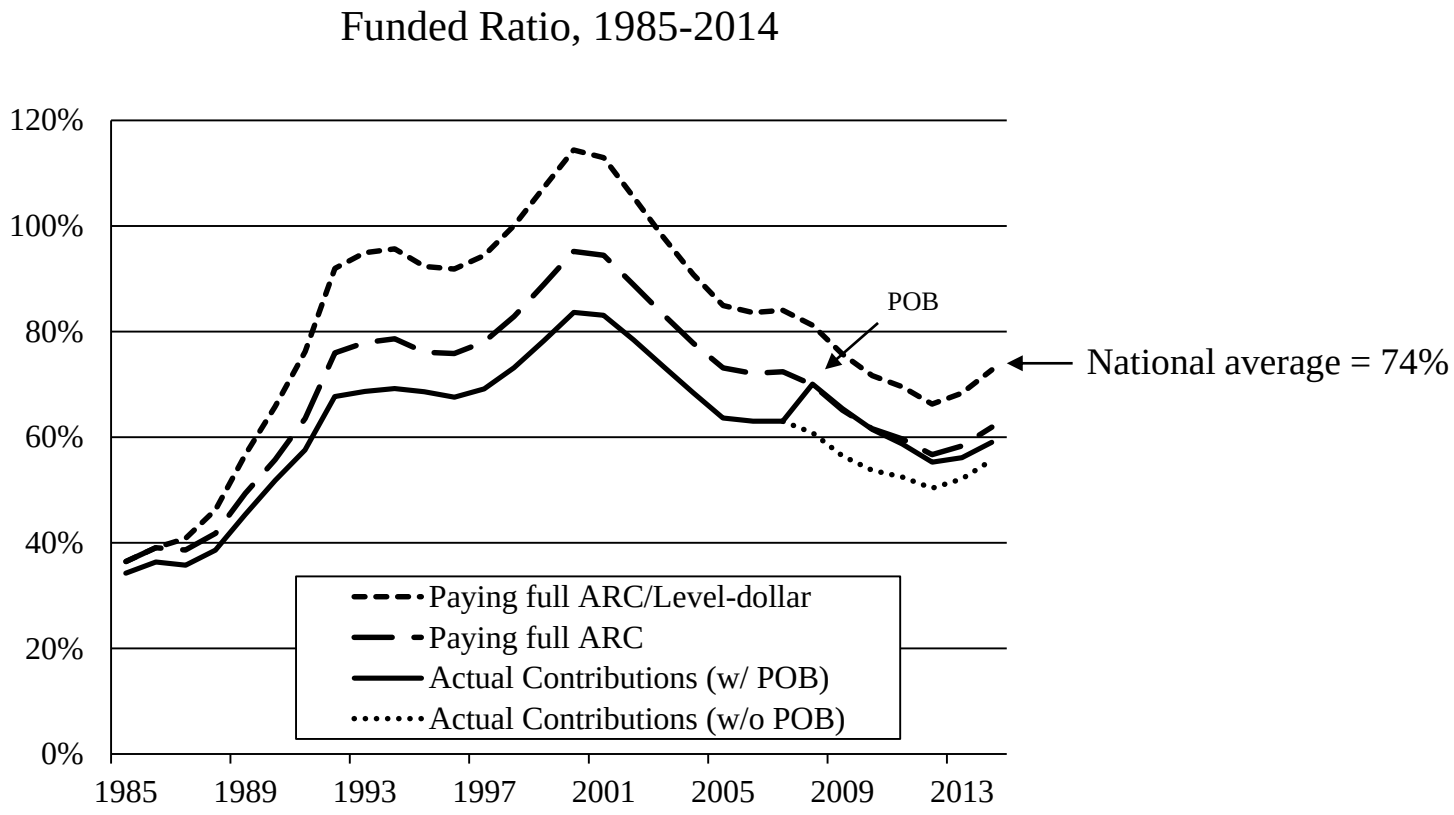
Sources: Actuarial valuations for Connecticut TRS; Census of Governments (1983-2000); and *PENDAT* (1990-2000).

But since 2000, performance has fallen considerably short of the assumed return.



Sources: Actuarial valuations for Connecticut TRS; Census of Governments (2001-2014); and *Public Plans Database* (2001-2014).

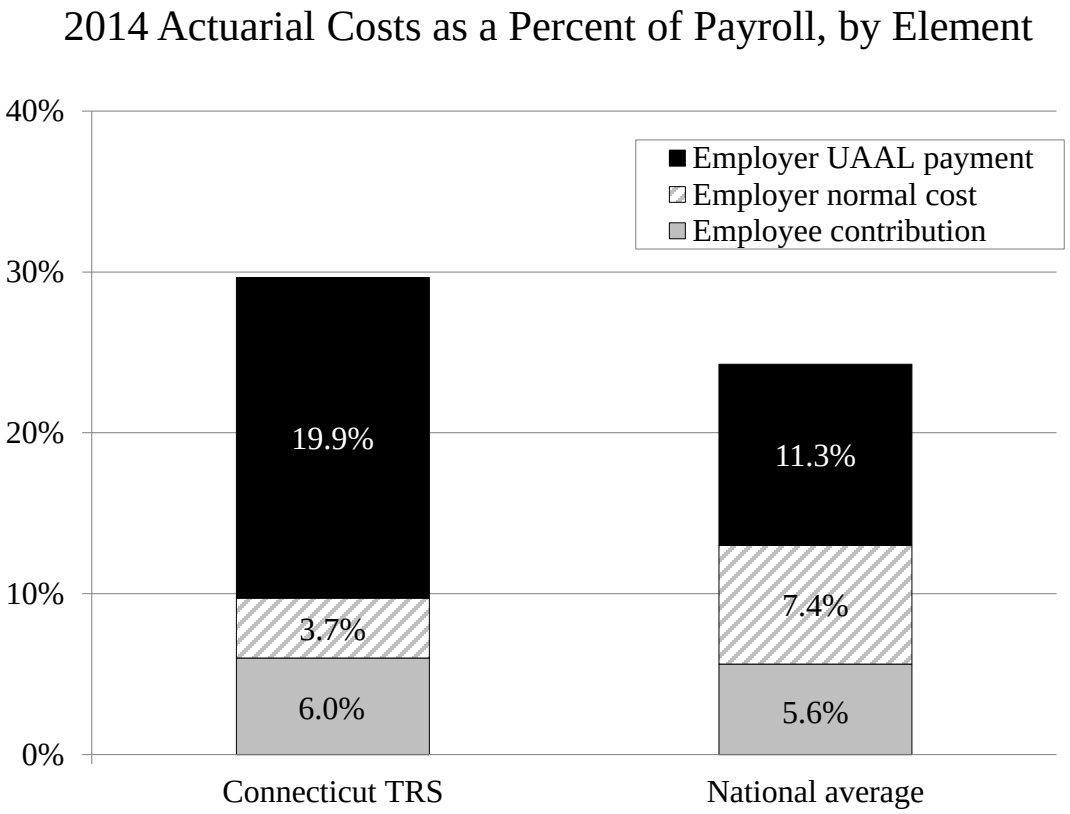
Where would TRS be today if Connecticut had contributed 100 percent of the ARC?



Source: Authors' calculations based on various actuarial valuations for Connecticut TRS.

Looking forward….

The key question for TRS is how to deal with the existing UAAL.



Sources: Actuarial valuation for Connecticut TRS; and *Public Plans Database (*2014).

Three factors determine the trajectory of UAAL amortization payments.

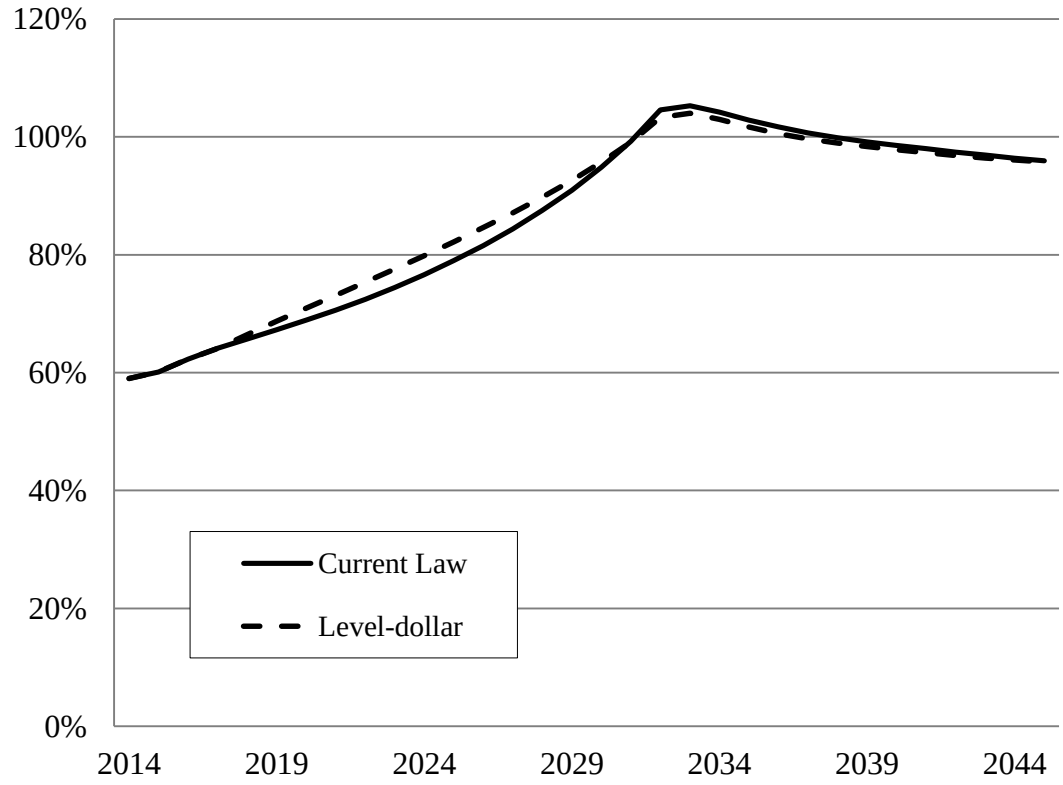
1. Payment schedule:
    - Level dollar: front-loaded payments
    - Level percent of pay: back-loaded payments

2. Funding period
    - Closed amortization period: fixed date for full funding
    - Open amortization period: no fixed date

3. Length of amortization period

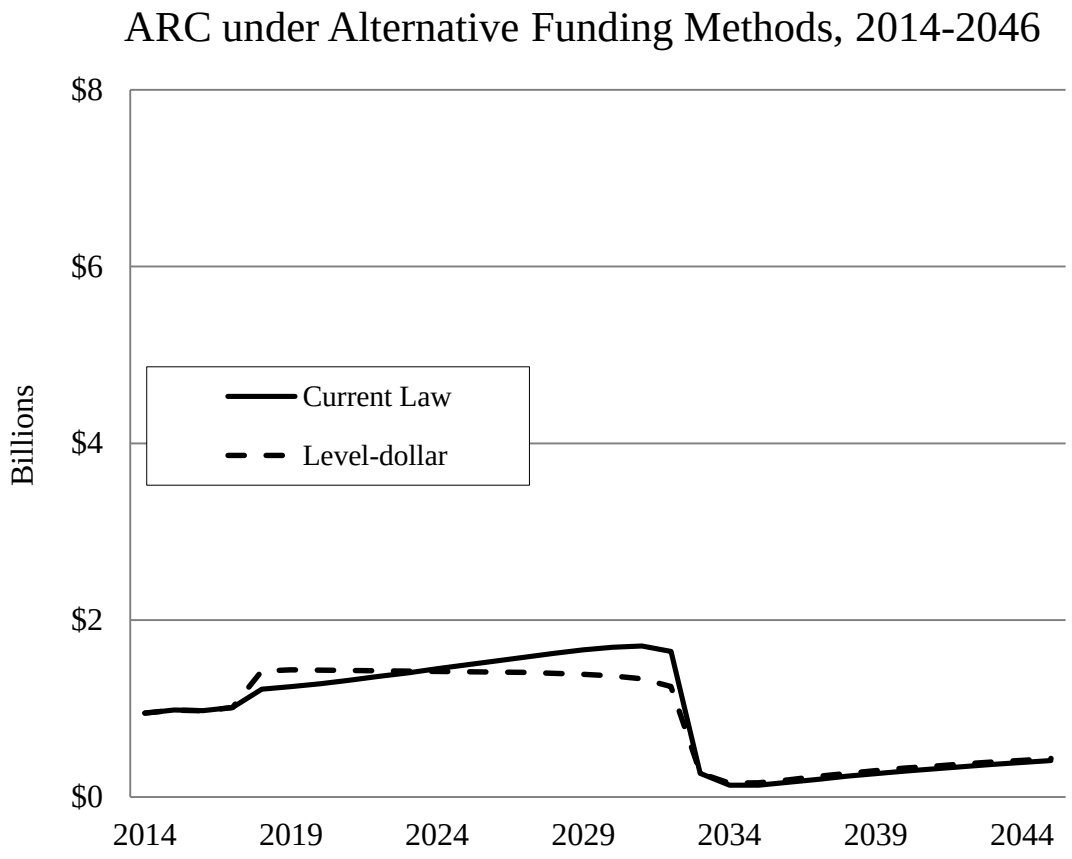
One way forward is to pay off the UAAL by 2032 (current law)...

TRS Funded Ratio under Alternative Funding Methods, 2014-2046



Source: Authors' calculations based on various actuarial valuations for Connecticut. TRS

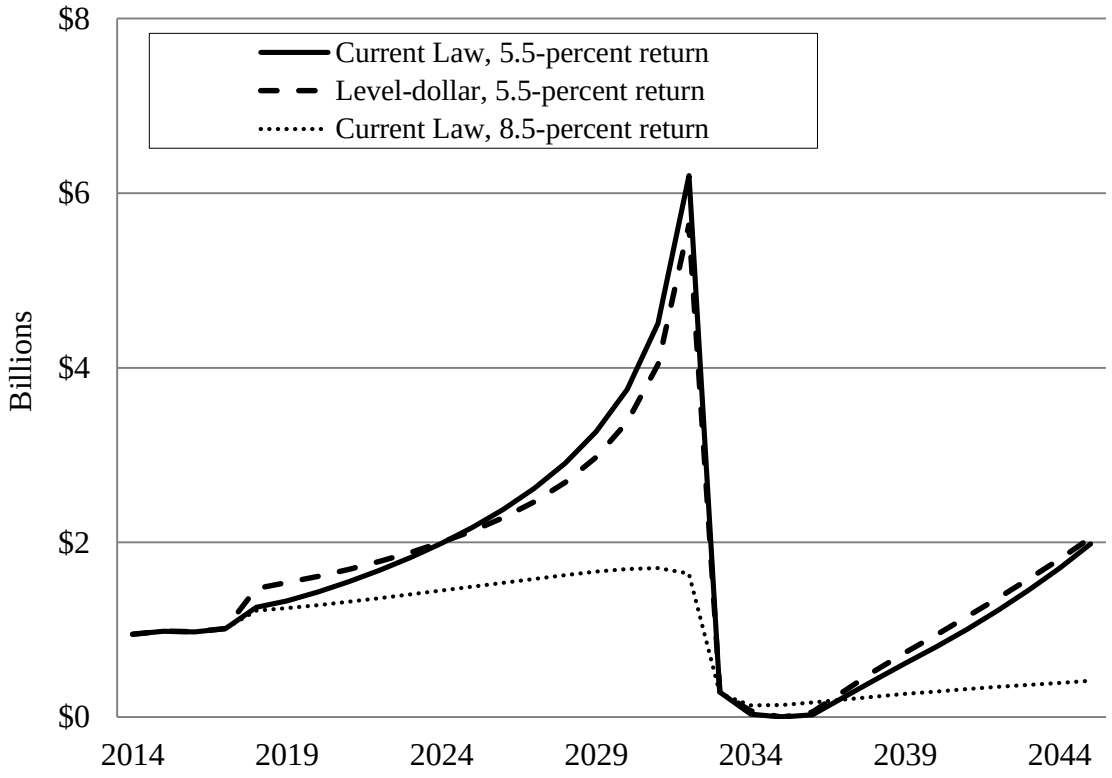
…but costs will remain high for next two decades.



Source: Authors' calculations based on various actuarial valuations for Connecticut TRS.

Poor investment experience relative to the assumed could make matters much worse.

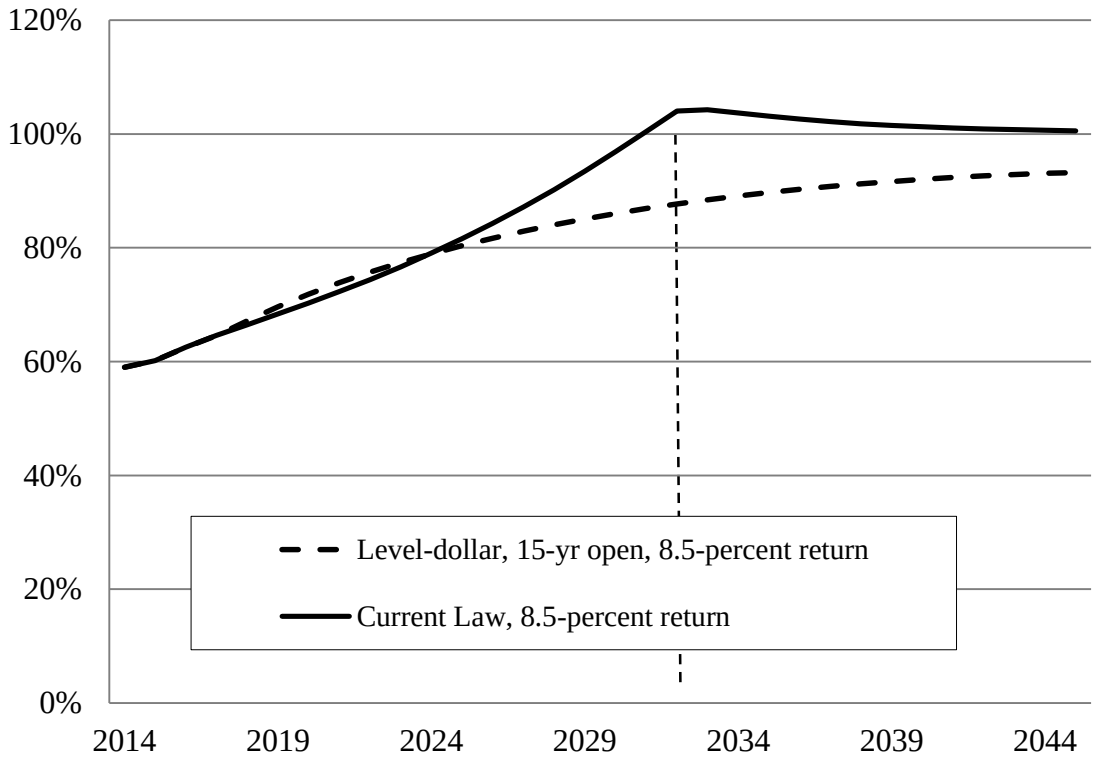
ARC under Alternative Funding Methods and Investment Returns, 2014-2046



Source: Authors' calculations based on various actuarial valuations for Connecticut .

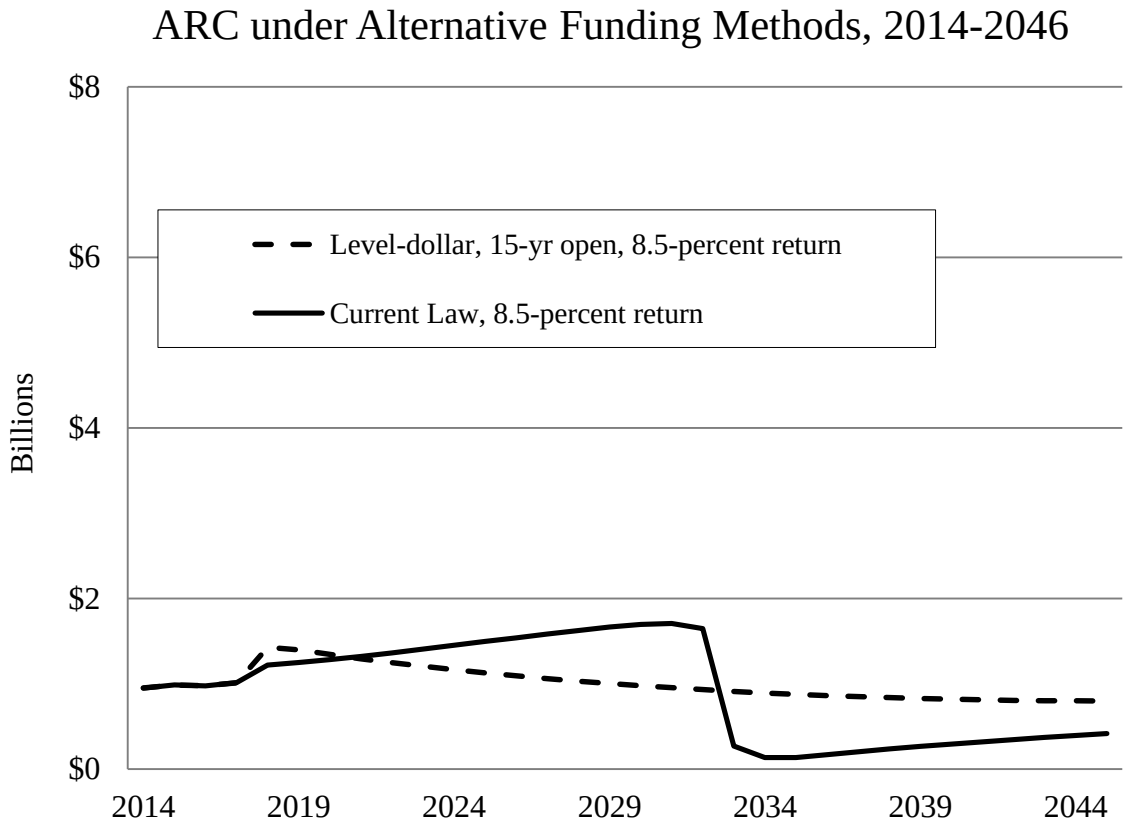
Relaxing the requirement to pay off the UAAL by 2032 will delay full funding...

CT TRS Funded Ratio under Alternative Funding Methods, 2014-2046



Source: Authors' calculations based on various actuarial valuations for Connecticut TRS.

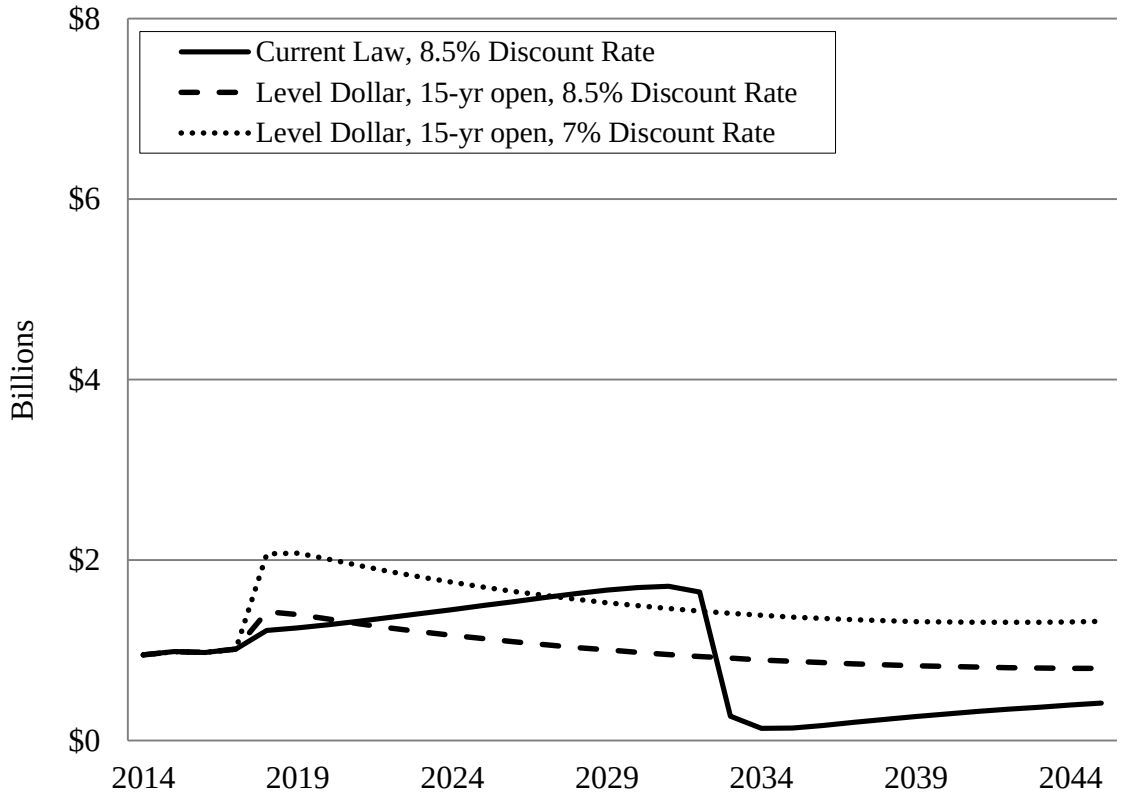
…but reduces costs significantly over the next 20 years.



Source: Authors' calculations based on various actuarial valuations for Connecticut TRS.

If TRS also used a more conservative return assumption, costs would stay about the same.

ARC under Alternative Funding Methods and Assumed Returns, 2014-2046



Source: Authors' calculations based on various actuarial valuations for Connecticut TRS.

What about the less controllable factors?

- Investment risk can be shared among the plan stakeholders through a predetermined pattern of contribution increases and benefit cuts.

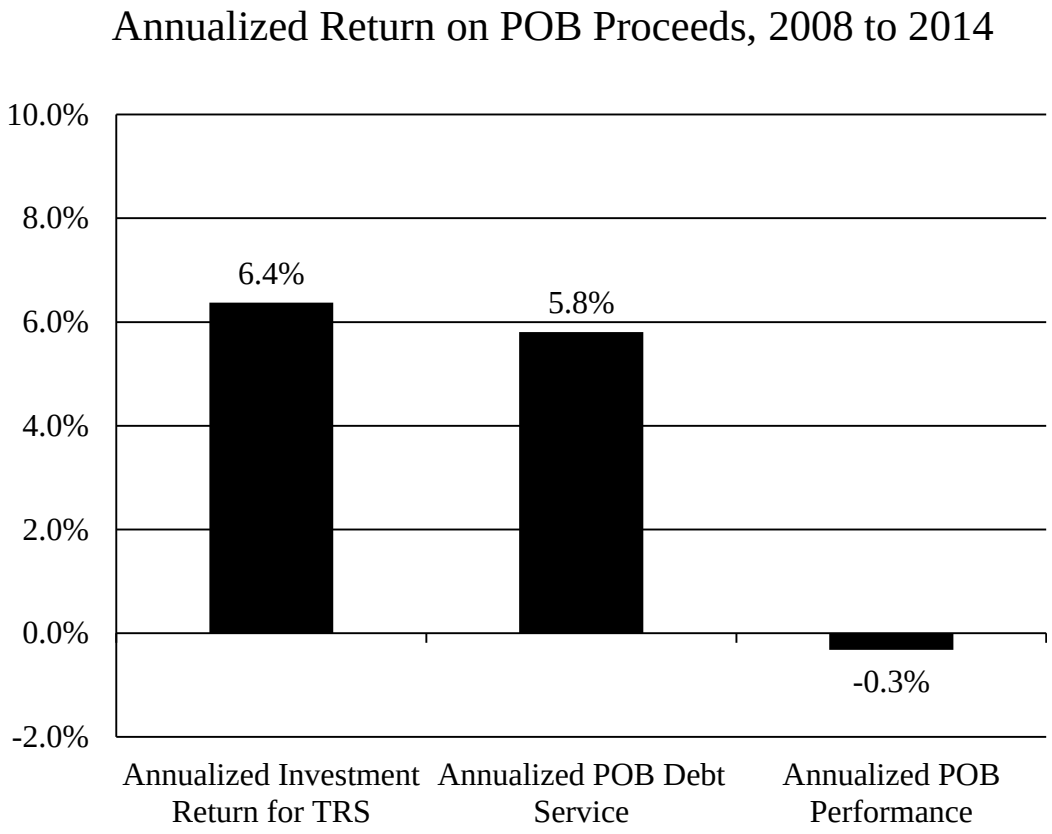
- Incremental increases to the normal cost due to revised actuarial assumptions can be shared equally between employees and employers.

And what about TRS' POB?

Connecticut TRS issued a POB for $2 billion in 2008.

- Investment returns aside, the POB is simply a restructuring of pension debt for the plan sponsor.
- Borrowed funds immediately improve the plan's funded ratio and lower annual pension costs. This is offset by the POB's annual interest payments and the repayment of principal.
- If the returns earned on the borrowed money are higher than the interest paid, then the bond can also be a net gain to the government's finances. Otherwise, it can be loss.

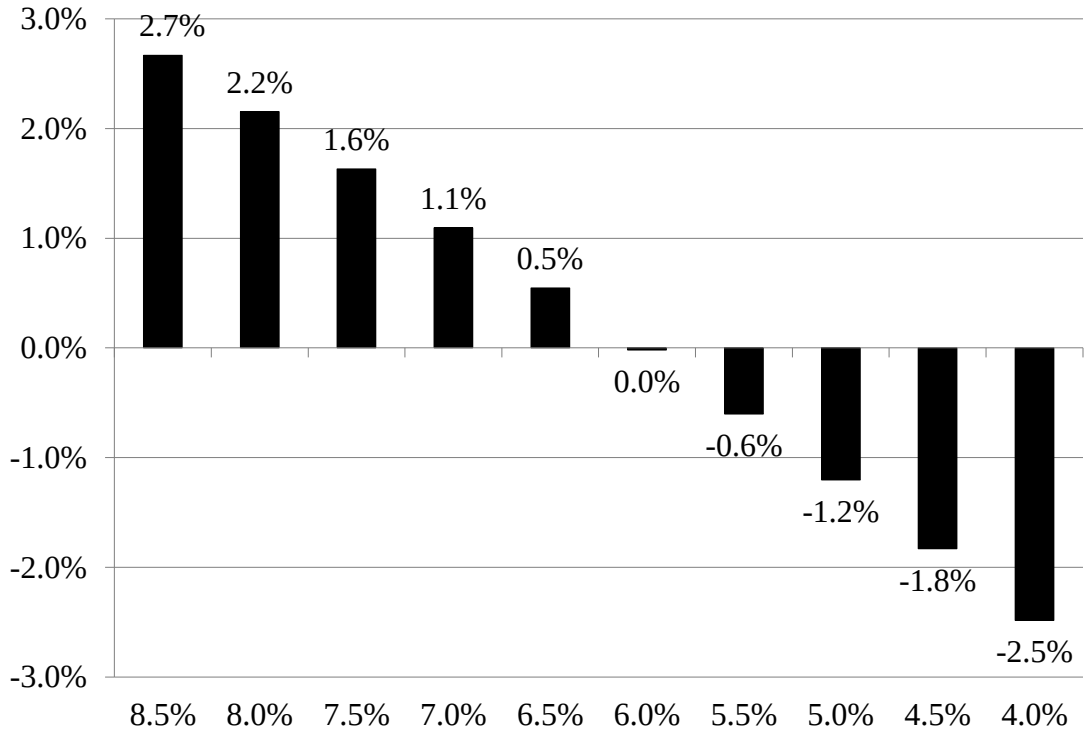
How has the POB fared to-date?



Source: Authors' calculations based on various actuarial valuations for Connecticut TRS.

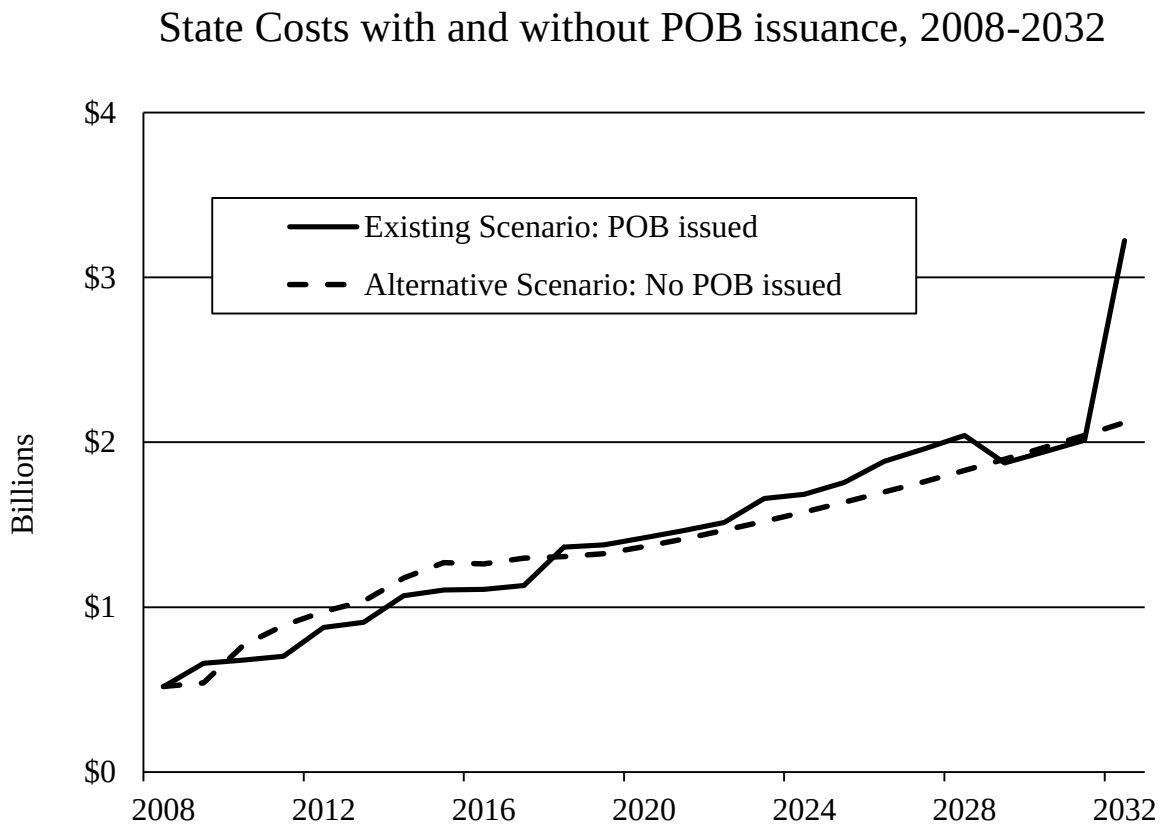
What does the investment risk for TRS' POB look like going forward?

Annualized Return on POB Proceeds at Various Assumptions of Investment Returns



Source: Authors' calculations based on various actuarial valuations for Connecticut TRS.

How would contributions look if the POB had not been issued?



Source: Authors' calculations based on various actuarial valuations for Connecticut TRS.

Conclusions

TRS' current troubles are mainly the result of:

- Inadequate contributions
- Poor investment performance relative to the assumed return.

- The key to the future is making full required contributions.
- But paying off the UAAL by 2032 comes at a significant cost
- Extending the payment horizon could spread out the pain over a longer period.
- Lowering the assumed return and instituting procedures that automatically respond to bad outcomes would mitigate risk.

- The Center for Retirement Research at Boston College
  http://crr.bc.edu

- *Public Plans Database* (PPD)
  http://publicplansdata.org

- State and Local Pension Research
  http://crr.bc.edu/special-projects/state-local-pension-plans/

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