State of Connecticut

Status Of Pension Plan Funding

July 2018

State Administered Pension Plans

Retirement System	Funded Ratio (latest valuation)	Active Members (6/30/2016)	Retired + Deferred Vested Members (6/30/2016)	FY 2018 Employer Contribution
State Employees' Retirement System	36.9%	50,019	49,603	$1,443,110,000
Teachers' Retirement System	56.0%	50,877	38,150	$1,271,033,000 + $140,219,021 (POB)
Judges' Family Support Magistrates and Compensation Commissioners' Retirement System	48.4%	204	253	$25,457,910
Probate Judges and Employees Retirement System*	107.2%	371	364	$2,270,524
Municipal Employees' Retirement System	86.1%	9,373	7,102	$81,150,096**

*Probate Judges System membership as of 12/31/2015

** Employer Contributions for MERS Based on Actual FY 2016 Contributions

State Employees’ Retirement System History

- Began Offering Benefits before 1939
- Pay as You Go Funding until 1972
- Began Phase-in of Actuarial Funding in 1973
- Tier 2 established - Full Funding only for Normal Costs for Tier 2 in 1984
- First Full ARC Payment in 1987
- Retirement Incentive Plan in 1989
- Contribution Reduced by $215 Million in 1992
- Retirement Incentive Plan in 1992
- ARC Reduced for Unfunded Accrued Liabilities in FY 1993 - 2000
- Actuarial Method Changed from EAN to PUC in 1993
- SEBAC IV Agreement, Unfunded Liabilities Re-amortized Over 40-year Period in 1995
- Actuarial Value of Assets Reset to Market Value, New Smoothing Methodology in 1996 and Again in 1997

State Employees’ Retirement System History
(Continued)

- Retirement Incentive Plan in 1997
- Retirement Incentive Plan in 2003
- Retirement Incentive Plan in 2009
- Deferral of $314.5 million over the course of FY 2009 – FY 2011
- Return Assumption Reduced from 8.5% to 8.25% in 2009
- Benefit Reductions for Tier 2 and 2A employees, Tier 3 Established in 2011
- Return Assumption Reduced from 8.25% to 8.00%, Elimination of SEBAC IV and V Adjustments in 2013
- Return Assumption Reduced to 6.9%, Amortization Methodology Changed to EAN, Post-1984 UAL Amortized over New 30-Year Period, Layered Amortization of Future Gains and Losses, Phase-in to Level Dollar Amortization in 2017
- Benefit Reduction for Existing Employees, Tier 4 Established in 2017

Teachers’ Retirement System History

- System Established in 1917
- Pay as You Go Funding until 1980
- Employee Contribution Increased from 5% to 6% in 1992
- Benefit Expansion in 1998
- First Year of Full ARC Payment (Using Surplus Funds) in FY 2006
- Reduction to COLA Formula in 2007
- Pension Obligation Bonds Issued in 2008
- ARC Fully Appropriated in FY 2010
- Return Assumption Reduced from 8.5% to 8.0% in 2017
- Employee Contribution Increased from 6% to 7% in 2018

Key Factors in SERS Underfunding

- Late start in Prefunding on an Actuarial Basis – Benefits granted since at least 1939 while actuarially-based prefunding did not begin until 1972 and full ARC payments were not made before 1987.
- Underfunding of ARC – Contributions were set below the ARC during much of the 1990s and again from 2009 to 2011.
- Actuarial Method and SEBAC IV & V adjustments delayed payment of unfunded liabilities.
- Market return assumption exceeded 21^{st} century market performance.
- Periodic early retirement plans.

Key factors in TRS Underfunding

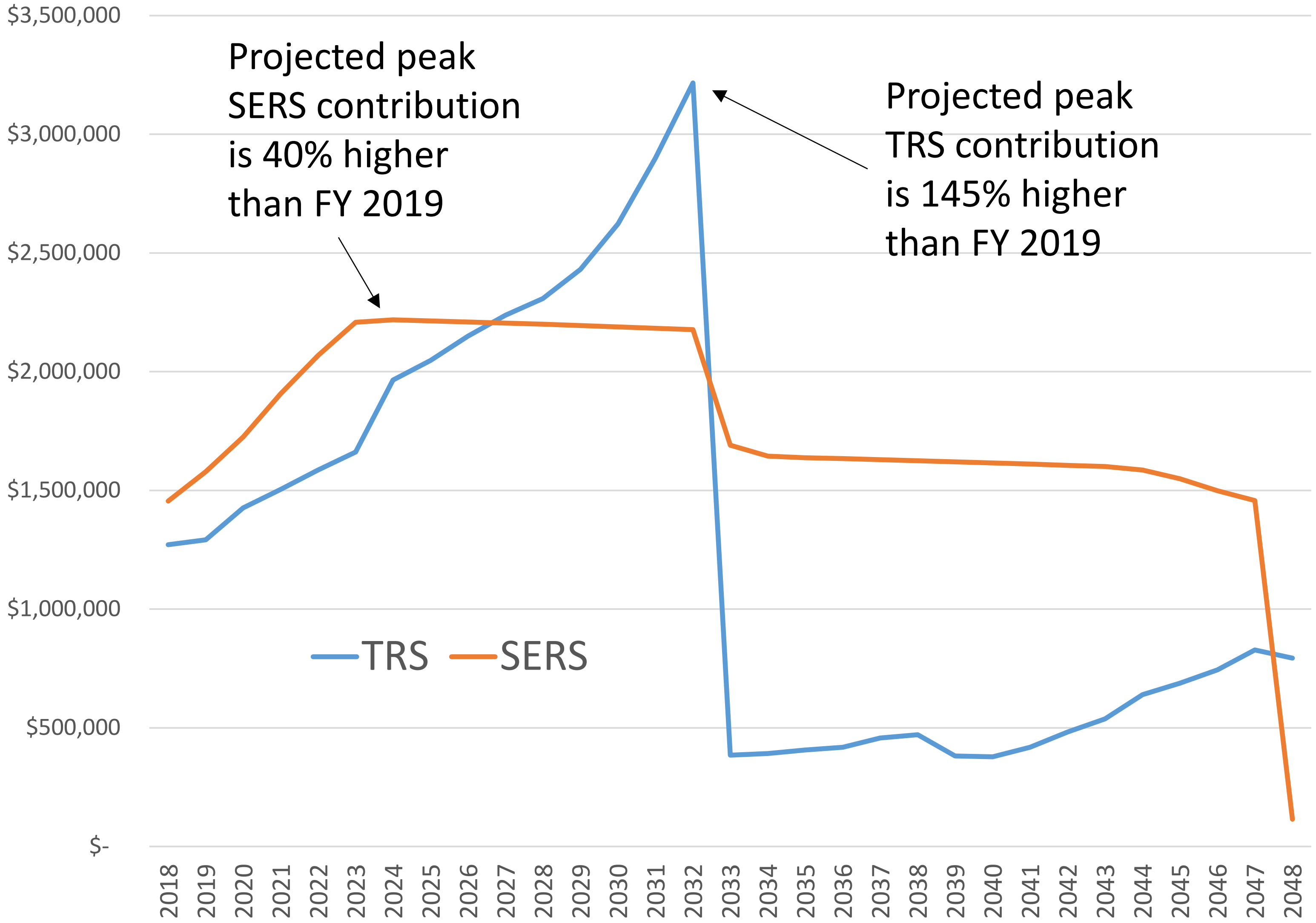
- Late Start in Prefunding on an Actuarial Basis – System was established in 1917, but actuarially-based prefunding did not begin until 1980 and full ARC payments were not made before 2006.
- Unfortunate Timing of POB – Approximately $2 billion POB was issued just before 2008/2009 downturn of financial markets.
- Market return assumption continues to exceed 21st century market performance.

Actuarial Assumptions and Results as of 6/30/2016 Valuation

	SERS	TRS
Investment Rate Of Return	6.90% (Including 2.50% Inflation)	8.00% (Including 2.75% Inflation)
Actuarial Cost Method	Entry Age Normal	Entry Age Normal
Amortization Method	5-year Phase-in from Level % of Payroll to Level Dollar	Level % of Payroll
Remaining Amortization Period	25.1 Years	17.6 Years (Equivalent Single Period)
Asset Valuation Method	5-year Smoothed Actuarial Value	4-year Smoothed Market Value
Accrued Actuarial Liability	$32.31 Billion	$29.86 Billion
Actuarial Value of Assets	$11.92 Billion	$16.71 Billion
Funded Ratio	36.90%	55.97%

Current Employer Contribution Projections

(in Thousands)



- SERS projection based on future actual market returns matching the currently adopted 6.9% return assumption.
- TRS projection based on ADEC being calculated based on current 8.0% assumed rate of return, with actual future market returns of 7.0%.

Exposure to Market Risk is Especially High for TRS