Public Sector Pensions in Illinois:

A Way Forward

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Public Sector Pensions in Illinois

"Let it not be said, however great disasters may befall us, however much we may be impoverished, how heavy the burden imposed upon us may be, we will, for relief, destroy the constitution, or disregard its requirements. Our safety, in the midst of perils, is in a strict observance of the constitution – this is the bulwark to shield us from aggressions. Trifling with it, treating it lightly, dispensing with this or that provision of it, is the sure precursor of the direst calamity which can befall the people, the end of which cannot fail to be, anarchy and ruin."[3]

Introduction

Scholars, reporters, government commissions, activists, and laypeople alike have studied and written on the issue of Illinois' public pension systems for decades but confusion abounds in the public discourse. Those that have not studied this issue may not understand its history, causes, consequences, nor see a path forward toward sustainable fiscal health, while those that have may not see a way forward politically.

It is commonly understood that the state of Illinois runs a year-over-year budget deficit and that the unfunded pension liability contributes largely to that debt. For example, Moody's, a bond rating agency, recently assigned a rating of "Baa3" to the State of Illinois marking it "near-junk" status.[4] Year-over-year the unfunded pension liability grows, the state falls deeper into debt, and its bond rating continues to fall. This trend provokes a sense of crisis among lawmakers, annuitants, and residents, and causes General Assembly members to make rash decisions and institute short term "fixes" to a problem that requires a long-term solution.[5]

Over time two lines of argumentation have emerged to describe the problem and offer a solution to the pension crisis: One argument holds that Illinois offers too lavish of pension benefits to its retirees and that these overly-expensive benefits have caused the pension crisis. These authors suggest that the way out of the crisis is to reduce pension benefits and to do this through the passage of a constitutional amendment.[6]

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[3] The Illinois Supreme Court, *People ex rel. Merchants' Saving, Loan & Trust Co.,* 30 Ill at 437, as cited in Madiar, Eric M., *Illinois Public Pension Reform: What's Past is Prologue*, The Illinois Public Employee Relations Report, Illinois Institute of Technology Chicago-Kent College of Law and the University of Illinois School of Labor and Employment, Vol. 31, Iss. 3, Summer, 2014.

[4] Moody's Investors Service, *Moody's assigns Baa3 to Illinois' Series of November 2019 GOs; outlook stable.* October 18, 2019. (Available at: https://www.moodys.com/research/Moodys-assigns-Baa3-to-Illinois-Series-of-November-2019-GOs--PR_906100242)

[5] Bruno Robert, Amanda Kass, and David Merriman, *A "Pension Crisis" Mentality Won't Help: Thinking Differently About Illinois' Retirement Systems*, a joint report of the University of Illinois-Chicago's Government Finance Research Center, the University of Illinois' Institute of Government & Public Affairs, and the University of Illinois' Project for Middle Class Renewal, February 19, 2019.

[6] Dabrowski, Ted and John Klingner, *A dramatic rise in pension benefits – not funding shortfalls – caused Illlinois' state pension crisis*, a WIREPOINTS Special Report, February, 2018; Dabrowski, Tad, and John Klingner, *Illinois Auditor General pension report: Everything's fine (but not really)*, WIREPOINTS, December 31, 2018; Dabrowski, Ted and John Klingner, *Moody's vs. Illinois politicians: $100 billion difference in pension debts*,

Other authors argue that Illinois' pension benefits are not overly generous; that the current fiscal health of the pension systems came about due to years of underfunding the systems, making less than the actuarially required employer contributions, and borrowing against the pension systems to pay for regular operating budgets so as to avoid modernizing Illinois' tax system.[7] Recently, the latter argument has gained traction even among influential business groups such as the Civic Committee of the Commercial Club of Chicago.[8]

Pension Overview

Illinois has five major statewide public pension plans. These include The State Employees' Retirement System (SERS), the Teachers' Retirement System (TRS), the State Universities Retirement System (SURS), the Judges' Retirement System (JRS), and the General Assembly Retirement System (GARS). These employees work for the state and the state, as their employer, has a financial obligation to contribute to these pension plans.[9] A pension system must delicately balance its fiduciary duty to pensioners, taxpayers, and the sponsors of the system, and this balancing act lies at the heart of the pension problem.

One way to measure the fiscal health of these pension plans is by looking at their funded ratio, or the ratio of assets to current and future payments. This measure shows how close the plans are from insolvency. Figure 1 shows that the aggregated public pension systems were over 70% funded in the year 2000, and by the year 2009 the funded ratio fell by 40%; the highest increases occurred during the good economic times of the "tech boom" of the 1990's, while the greatest decreases occurred during the economic recessions of 2001-2003 and 2007-2009.

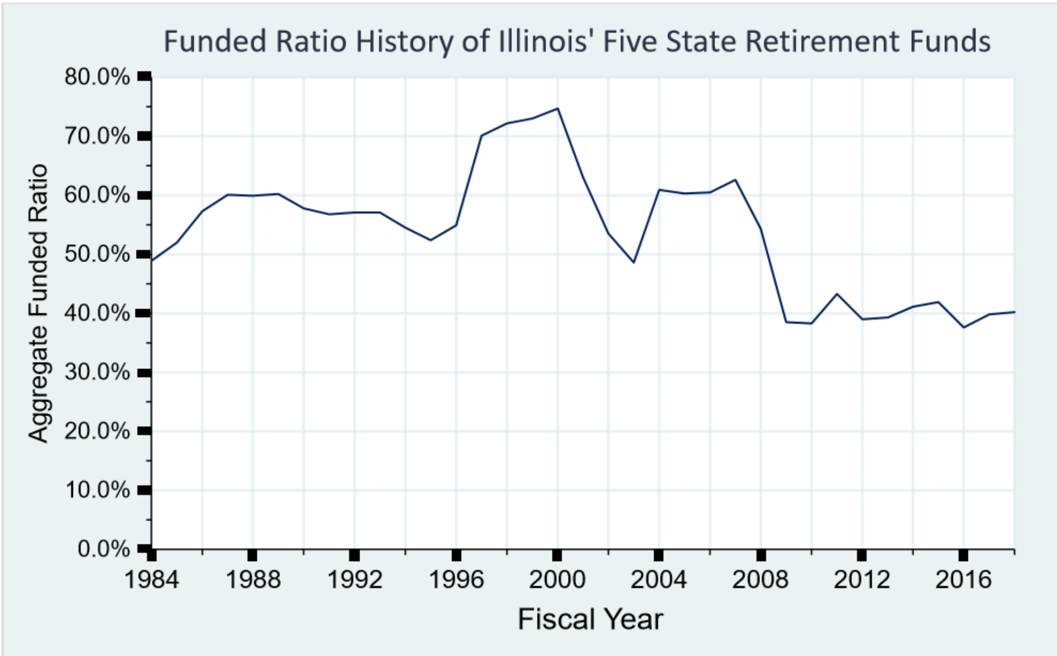
WIREPOINTS, January 3, 2019; Jones, Tim, *Latest Pension Play is No Guaranteed Fix*, The Better Government Association, June 26, 2019.

[7] Martire, Ralph and Drazzel Feliu, *The Impact of Flawed Tax Policy & Pension Debt Repayment Plans on Illinois' Structural Deficit*, The Center for Tax and Budget Accountability, October 21, 2019; The Civic Federation, *State of Illinois FY2020 Recommended Operating and Capital Budgets: Analysis and Recommendations*, The Institute for Illinois' Fiscal Sustainability, May 16, 2019; Merriman, David, Chuanyi Guo, and Di Qiao, *No Magic Bullet: Constructing a Roadmap for Illinois Fiscal Sustainability*, University of Illinois Institute for Government & Public Affairs, March 1, 2018; Brown, Jeffrey R. and Richard F. Dye, *Illinois Pensions in a Fiscal Context: A (Basket) Case Study*, Working Paper 21293, NBER Working Paper Series, National Bureau of Economic Research, June 2015.

[8] For example, Tim Jones writes, "Embracing that line of reasoning is the Civic Committee of the Commercial Club of Chicago, one of the state's most influential business groups. The Civic Committee had been a driving force behind the 2013 law, but last February reversed course in advocating a bitter-medicine fix to pay for the state's pension woes: raising income tax rates, broadening the sales tax to apply to more consumer services and ending a blanket exemption from taxation for retirement income." Jones, Tim, *Latest Pension Play is No Guaranteed Fix,* The Better Government Association, June 26, 2019, page 6.

[9] Brown, Jeffrey R. and Richard F. Dye, *Illinois Pensions in a Fiscal Context: A (Basket) Case Study*, Working Paper 21293, The National Bureau of Economic Research, June 2015.

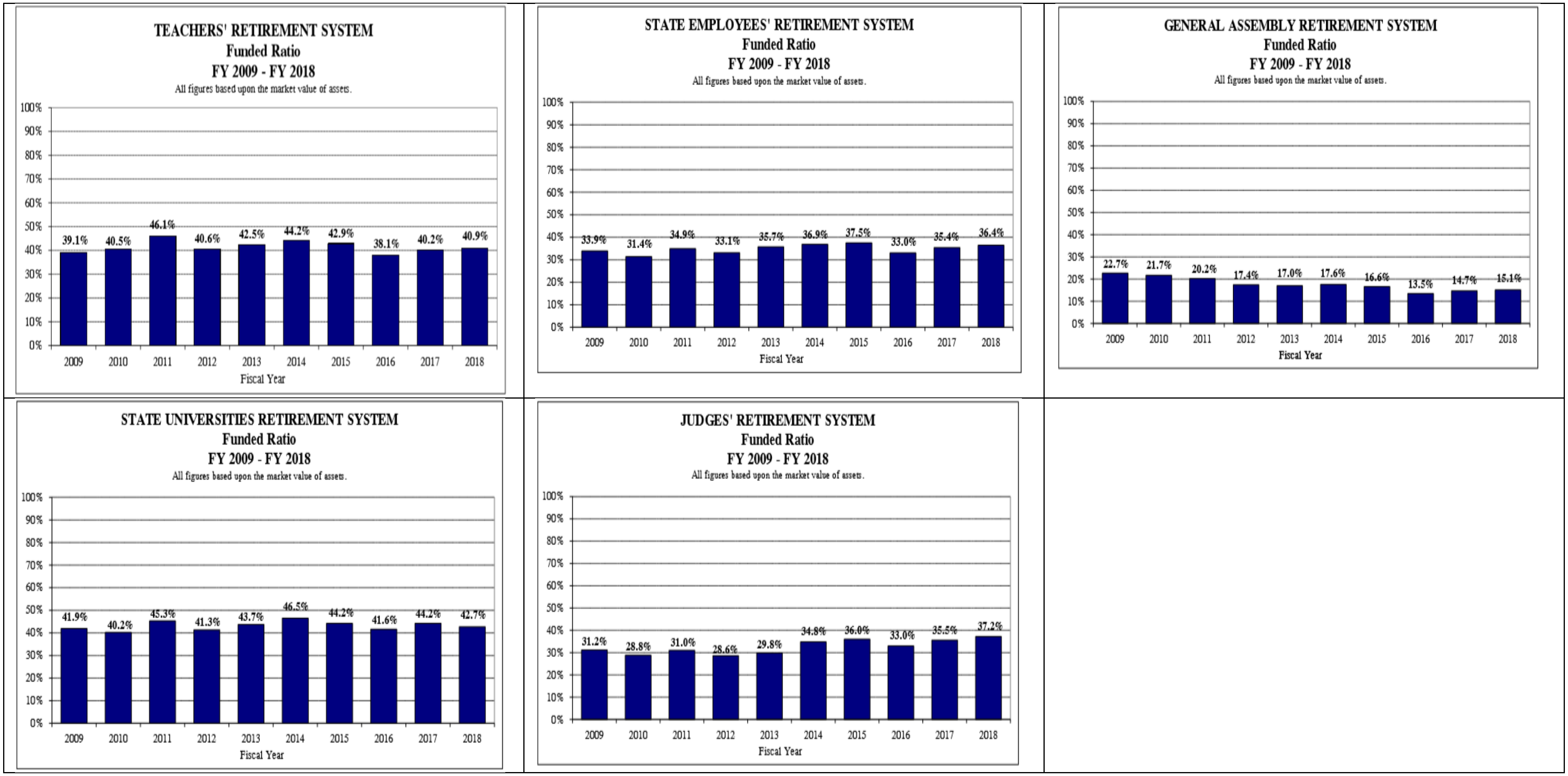
Figure 1: History of Funded Ratio of Illinois' Five State Retirement Funds



Source: Bruno, Robert, Amanda Kass, and David Merriman, " A 'Pension Crisis' Mentality Won't Help: Thinking Differently About Illinois' Retirement Systems." February 19,2019.

Figure 2 shows that the Teachers Retirement System and the State University Retirement System have hovered around 40% funded since 2009; the State Employees Retirement System and Judges Retirement System have hovered around 35% funded since 2009; and the General Assembly Retirement System has gone from 22% funded in 2009 to 15% funded in 2018.

Figure 2 History of Funded Ratio of Various State Pension Systems



Source: Bae, Julie and Luke Versweyveld, "Illinois State Retirement Systems: Financial Condition as of June 30, 2018." The Commission on Government Forecasting & Accountability, April, 2019.

One explanation for this funding shortfall is that Illinois' pension benefits are overly generous, but the data show otherwise.

Brown and Dye find that Illinois' various pension benefits are actually average with respect to generosity. For example, in terms of initial annual benefits Illinois SERS ranks 25 out of 50 states.[10] The annual pension benefits of TRS employees, too, are not overly generous; TRS employees' benefit ranks 27th out of 46 states.[11] Brown and Dye conclude that "[w]hen one considers the combined generosity and expense of public pensions and Social Security, there is little evidence that Illinois is more generous than other states with higher funding ratios."[12]

So, then, what explains the history of low funded ratios of the various statewide pension plans?

<u>Unfunded Pension Liability in a Fiscal Context</u>

Illinois' has a history of chronically underfunding its pension systems. This history was described by the State Budget Crisis Task Force of 2012 in writing that:

> *"[D]uring the good economic times of the late 1990s to mid-2000s, Illinois expanded government services, but did not raise taxes and did not put away cash reserves. The state paid for its excess spending by making even smaller payments to the pension systems, borrowing heavily, sweeping special funds, and putting off paying Medicaid and employee healthcare bills until the following budget year. This chronic shortsightedness and avoidance of tough choices has accumulated to a significant structural deficit for Illinois. When the revenue recession hit in 2009, Illinois had no cushion. Time-shifting budgeting tricks used persistently in the good years were of much less value for temporary use in a downturn."*[13]

In other words, Illinois did not make the contributions necessary to bring down the unfunded liability and, therefore, the unfunded liability ballooned over time.[14] Figure 3 shows that insufficient employer contributions made up the largest factor in the unfunded liability while increasing benefits did not play a significant role (see appendix).

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[10] *Ibid.*

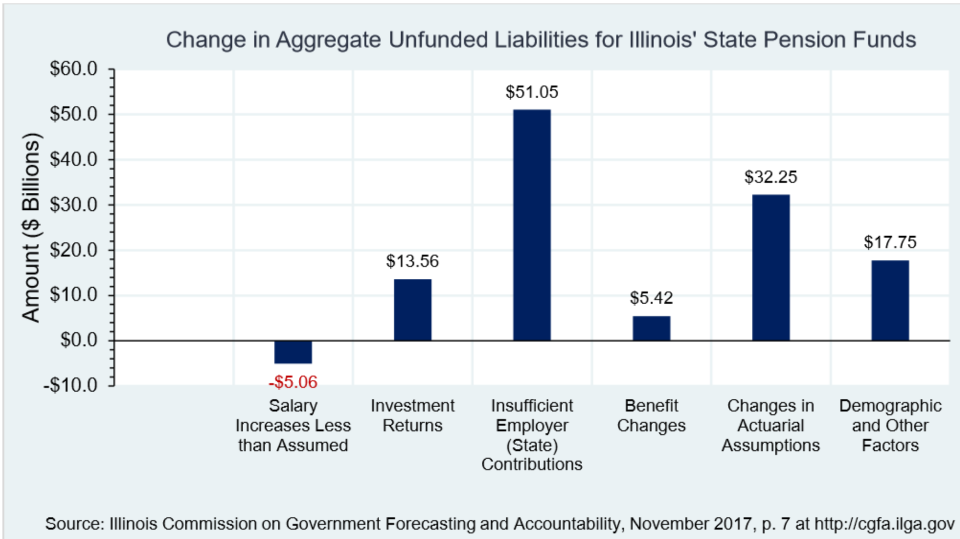
[11] *Ibid.*

[12] *Ibid*. page 6.

[13] The State Budget Crisis Task Force as cited in Brown, Jeffrey R. and Richard F. Dye, *Illinois Pensions in a Fiscal Context: A (Basket) Case Study*, Working paper 21293, The National Bureau of Economic Research, June 2015, page 7.

[14] Bae, Julie and Luke Versweyveld, "Illinois State Retirement Systems: Financial Condition as of June 30, 2018." The Commission on Government Forecasting & Accountability, April, 2019; "Analysis of Change in State Pension Unfunded Liability – 1985 through 2012." The Commission on Government Forecasting and Accountability, 2013.

Figure 3: Aggregate Unfunded Liabilities from 1996-2018



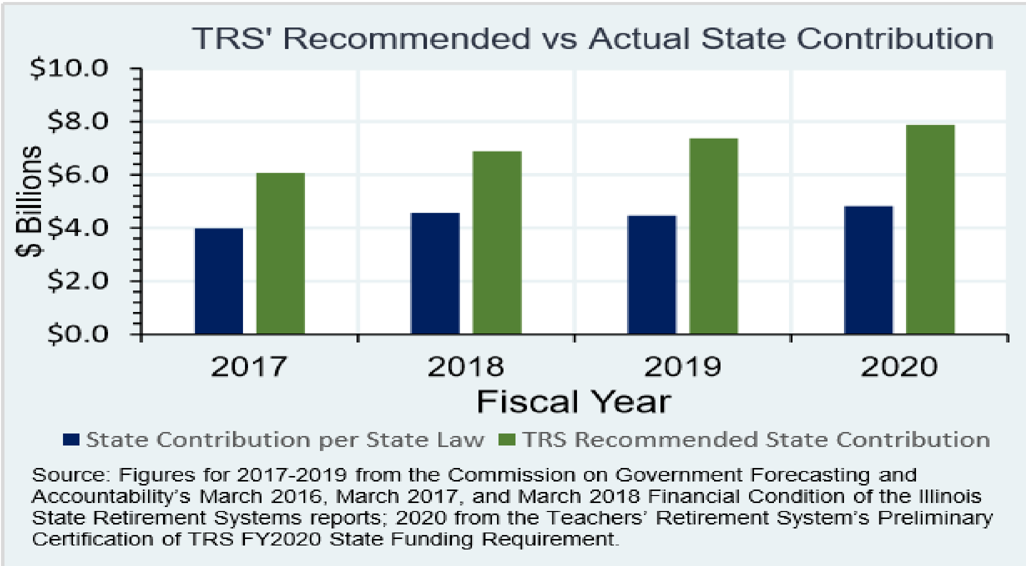
Source: Bruno, Robert, Amanda Kass, and David Merriman, "A 'Pension Crisis' Mentality Won't Help: Thinking Differently About Illinois' State Retirement Systems," February 19, 2019.

This can be illustrated further by looking at the actual employer contribution relative to the recommended contribution (ADC) in figure 4, which shows that year-over-year Illinois has contributed less than the recommended contribution and uses TRS as an example.[15] The recommended contribution (ADC) is "a target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted." The term 'actuarially determined contribution' (ADC) replaced the term 'annual required contribution' (ARC) and uses an amortization method based on a *level percentage of payroll* assumption.[16]

[15] In 2012, the TRS Board of Trustees passed a resolution to calculate its recommended contribution using actuarial principals and standards.

[16] Mackenzie, George (Sandy), "Addendum to Report on Communicating the Financial Health of Public Pension Plans," The Society of Actuaries, 2015.

Figure 4: Arc Contributions vs. Actual Contributions



Source: Bruno, Robert, Amanda Kass, and David Merriman, "A 'Pension Crisis' Mentality Won't Help: Thinking Differently About Illinois' State Retirement Systems," February 19, 2019.

However, even if Illinois had made the recommended contribution, these contributions still would have fallen short of the amount necessary to pay benefits to retirees *and* pay off the unfunded liability over time, as illustrated by figure 5; Kriz finds, for example, that in fiscal year 2018 "no state plan contributes more than 70% of what would be required to fully pay off the UAAL [the unfunded liability] by the date established under their own funding policy."[17]

Kriz shows that this is because the actuarily determined contribution is calculated using a *level percentage of payroll* amortization method which calculates annual contributions using a level percentage of payroll expenses. This method is based on the assumption that payrolls will increase over time. The calculation of contributions using this assumption has resulted in a payment plan that starts out low and balloons dramatically over time.

Kriz argues that a *net amortization* calculation – one that takes into account the amount necessary to pay retiree benefits *and* pay off the unfunded liability over time at a level dollar amount – represents a more suitable way of calculating the contribution to pay retiree benefits, reduce the unfunded liability, and return to a reasonable funded ratio.[18]

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[17] Kriz, Kenneth, "*Are Illinois State and Local Governments contributing Enough to their Pension Plans to pay down their Debt?"* Institute for Illinois Public Finance, University of Illinois Springfield, January 2020.

[18] *Ibid.*

Figure 5: Contribution Comparisons in FY 2018

MEASURE	SERS	SURS	TRS	JRS	GARS
EXISTING POLICY	$1,658,445,104	$1,404,789,000	$3,646,363,942	$106,149,175	$23,247,077
ACTUARIALLY DETERMINED	$2,201,556,560	$1,940,253,000	$6,711,456,955	$135,693,550	$31,903,887
NET AMORTIZATION	$2,874,032,686	$2,173,582,445	$8,240,062,810	$158,205,326	$34,382,737
EXISTING POLICY/ NET AMORTIZATION	57.70%	64.63%	44.25%	67.10%	67.61%
ACTUARIALLY DETERMINED/ NET AMORTIZATION	76.60%	89.27%	81.45%	85.77%	92.79%

Source: Kriz, Kenneth, "Are Illinois State and Local Governments contributing Enough to their Pension Plans to pay down their Debt?" Institute for Illinois Public Finance, University of Illinois Springfield, January 2020.

History of Underfunding the Pension System

In 1917 the General Assembly commissioned the Illinois Pension Laws Commission to study the pension crisis. That commission described the pension system as nearing insolvency and heading towards crisis because the state contributions were inadequate for paying the pensions benefits. The Commission authored another report to the same effect in 1919.[19]

The Commission's reports of 1945, 1965, and 1969 documented the same issues, adding that the pension obligations rested "exclusively upon government as the employer" and "must be met by public funds derived from future taxation." These commission reports found over and over again that the unfunded liability was due to a lack of employer contributions.

Against this historic backdrop came the 1970s constitutional convention and the adoption of the Pensions Clause into the new constitution. Madiar shows that the delegates to the convention explicitly adopted the pension clause to protect retirees from the then well documented inaction of members of the General Assembly to make adequate employer contributions.

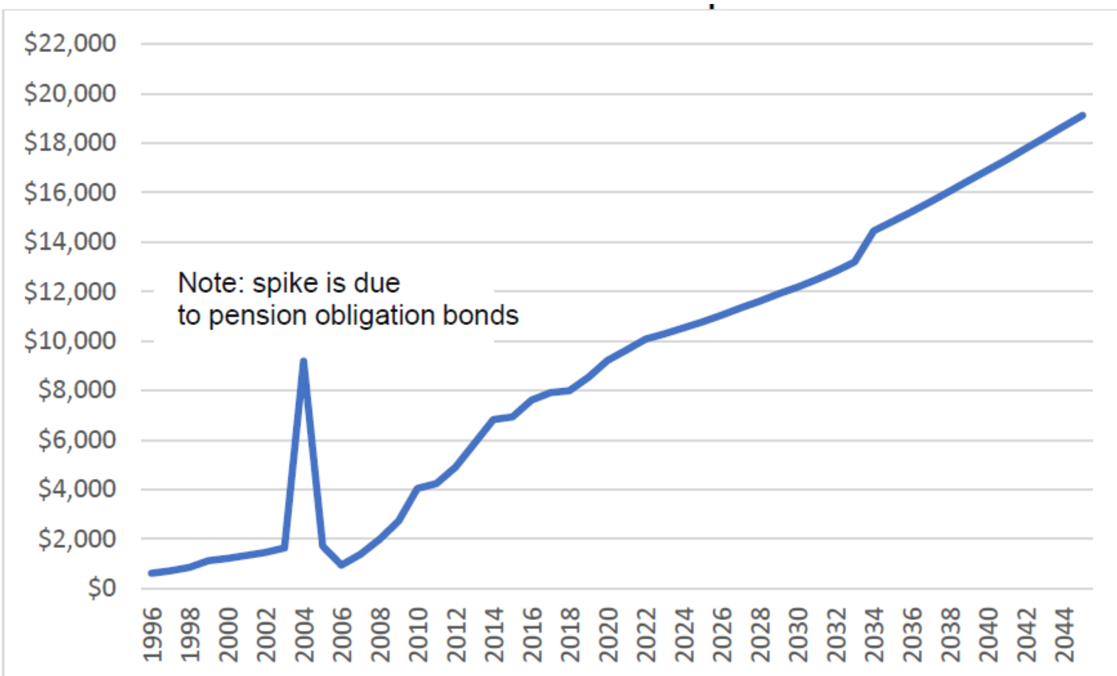
In 1984, the Commission released yet another report detailing the same problem and adding that for over 30 years it had advocated for the General Assembly to make its recommended contributions to pay down the accrued unfunded liability of the public pension systems but lawmakers had lacked the fiscal discipline to do so.

In 1995 Illinois enacted into law a new pension funding plan modeled after Governor Edgar's proposal. This legislation created a plan to achieve 90% funding of the state pension

[19] This section draws extensively from Madiar, Eric M., *Illinois Public Pension Reform: What's Past is Prologue*, ITT Chicago-Kent College of Law and The University of Illinois School of Labor and Employment, Vol 31, Iss 3, Summer 2014.

systems over the course of 50 years. The plan included year-by-year increases in the state contribution to the fund. Figure 6 shows the pension ramp.

Figure 6: The "Edgar Pension Ramp" ($ Millions)



Source: Martire, Ralph and Drazzel Feliu, "The Impact of Flawed Tax Policy & Pension Debt Repayment Plans on Illinois' Structural Deficit." The Center for Tax and Budget Accountability, October 21, 2019.

This pension ramp increased the unfunded liability and deferred the payment of normal costs and the interest on the liability until 2034, Madiar found.[20] Today, this funding schedule has been found to be nearly impossible to follow and has necessitated a renegotiation of the debt repayment plan through re-amortization.

In March of 2013, the Securities and Exchange Commission found the pension ramp to be the primary driver of the unfunded pension liability because it allowed lawmakers to push their contributions further and further into the future.[21]

In 2003 the Governor took out $10 billion in pension-obligation bonds for pension contributions in order to allocate general revenue funds to that year's operating budget. This added significantly to the unfunded pension liability.

In an effort to reverse the unfunded liability, lawmakers passed legislation in 2010 to create a lower tier of public pension benefits. Tier II employees – those hired on or after January 1, 2011 – have significantly lower benefits than Tier I employees do, while their costs are actually larger than Tier I employees'; Tier II employees subsidize the cost of Tier I benefits

[20] *Ibid* page 14.
[21] Bruno *et. al.*

while only receiving seven percent of an active Tier I employee's benefit.[22] Tier II legislation passed through both houses of the General Assembly *without* discussion of detailed projections from pension system actuaries on the impact of the legislation.

"There is also a potentially serious and costly flaw in the Tier II plan." Bruno et. al. write, "If the rate of inflation is high enough, Tier II benefits will be so low that they will violate federal law, which requires that they be at least equivalent to social security benefits." On-going lawsuits will determine whether Tier II violates the safe harbor provision of federal law. This legislation also had no meaningful impact on the unfunded pension liability because the legislature continued to making inadequate contributions based on poor assumptions.

In 2013 and 2015 the legislature passed pension reform bills to diminish the benefits of annuitants in an attempt to bring down the unfunded liability. These laws sought to diminish the 3% cost of living adjustment (COLA), among other provisions, granted to Tier I members. Such laws were struck down as unconstitutional by the Illinois Supreme Court for violating the pension protection clause of the Illinois constitution.[23]

Later, lawmakers tried other strategies to lower the unfunded liability. For example, in 2019 lawmakers offered a pension buyout plan where members could opt-out of their future benefits for a lump sum. However, this plan failed because many members did not trade their future benefits package for a lesser offer. This is another example of legislation that passed where sound actuarial studies were not consulted beforehand.[24]

So, today lawmakers find themselves faced with the same problem that the Illinois General Assembly has faced for 100 years. All the while the answer has been at their fingertips, but it represents a politically difficult solution because it requires fiscal discipline over the course of many years.

A Way Forward

Martire and Kriz argue for the re-amortization of the pension debt to bring the pension systems to a reasonable funded ratio.[25] They argue for smoothing the payment obligation plan into level annual payments. This makes the state's payment obligation the same year-to-year in nominal terms and the obligation actually decreases over time in real dollars. Figure 7 shows what such a re-amortization of pension debt would look like as contrasted to the pension ramp.

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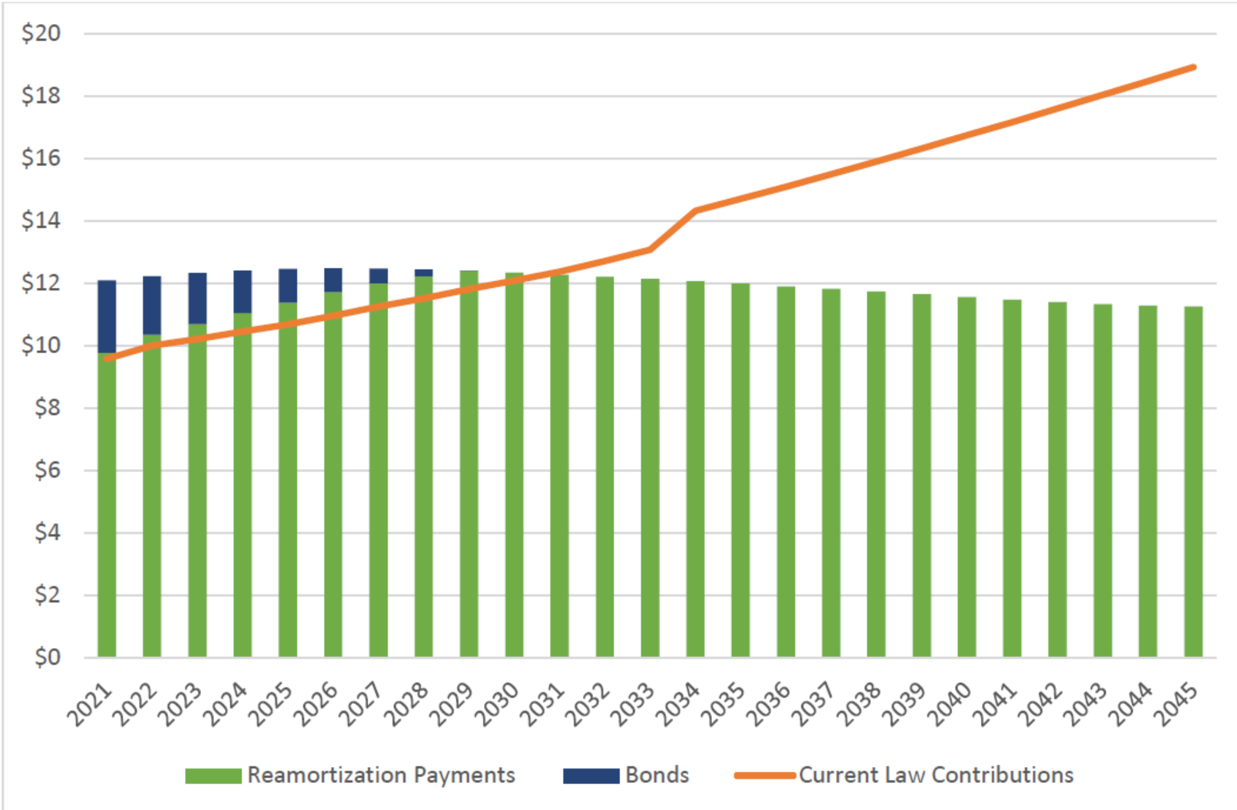
[22] *Ibid.*

[23] Brown et. al. 2015; Madiar, Eric, "Illinois Public Pensions: Where To From Here?" 33 Ill. Pub. Employee Labor Report (Winter/Spring), 2016.

[24] The Civic Federation, "Illinois' Pension Buyout Savings Far Less than Expected," The Institute for Illinois' Fiscal Sustainability at The Civic Federation, July 18, 2019.

[25] Martire *et. al.* 2019; Kriz, 2020.

Figure 7: Pension Fund Contributions under Current Law, Compared to CTBA's Pension Re-Amortization Proposal ($ Billions)



Source: Martire et. al.," The Impact of Flawed Tax Policy & Pension Debt Repayment Plans on Illinois' Structural Deficit." The Center for Tax & Budget Accountability, October 21, 2019.

It is important to note that for the first few years Illinois may issue relatively small pension obligation bonds to make up the difference between the repayment obligation called for under the proposed plan the obligation called for under current law.

If Illinois were to require more revenue in order to fund core services and make the re-amortization payments for state pension systems, this could be accomplished in a variety of ways. For example, Martire calls for the adoption of a graduated income tax and the expansion of the tax base to include services, but another option exists: Illinois could simply raise the flat tax rates and keep the tax base as it stands today. Many of these solutions are heralded in common by groups such as the Center for Tax and Budget Accountability, the Civic Federation, and other independent authors.[26]

[26] Martire et. al. 2019; Brown et. al. 2015; Eric Madiar 2014; Bruno et. al. 2019; Merriman et. al. 2018; Moody's 2019; and The Civic Federation, "State of Illinois FY 2020 Recommended Operating and Capital Budgets: Analysis and Recommendations," The Institute for Illinois' Fiscal Sustainability at The Civic Federation, May 16, 2019.

Conclusion

Illinois' public pension systems have been underfunded for decades and government commissions and independent scholars alike agree that this has come about due to inadequate state contributions to the systems and an inadequate pension debt repayment plan.

Illinois finds itself in a position to take a proactive approach to solving the pension crisis by renegotiating the pension debt repayment schedule and re-amortizing the debt into level payment obligations over the next 50 years. Many independent scholars agree that re-amortizing the pension debt is a fiscally responsible way forward.

Such a plan would put the state in a more reasonable position to make its pension contributions and it would help safeguard the long-term viability of the state's pension systems. This would in turn help ensure that future generations of public servants receive retirement benefits like their predecessors did.

The only question that remains is whether Illinois' lawmakers have the political wherewithal to take these steps in order to reverse this crisis or, instead, continue down the unwise road of seeking quick fixes.

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Appendix

STATE RETIREMENT SYSTEMS - GARS

CHANGES IN UNFUNDED LIABILITY

FY 1980 - FY 2012

	SALARY INCREASES	INVESTMENT RETURNS (HIGHER)/LOWER THAN ASSUMED	EMPLOYER CONTRIBUTIONS N. C. + INTEREST (HIGHER)/LOWER	BENEFIT INCREASES	CHANGES IN ASSUMPTIONS ACTUARIAL	OTHER FACTORS MISC.	TOTAL CHANGE IN UNFUNDED LIABILITY FROM PREVIOUS YR
GARS							
6/30/1985	0	0	500,000	0	0	3,711,672	4,211,672
6/30/1986	0	0	700,000	0	0	3,599,821	4,299,821
6/30/1987	0	0	1,100,000	0	(9,680,419)	363,183	(8,217,236)
6/30/1988	(206,000)	(18,000)	1,303,090	0	0	1,480,556	2,559,646
6/30/1989	1,192,000	(301,000)	1,517,123	0	(3,360,420)	(1,944,347)	(2,896,644)
6/30/1990	(385,078)	(167,711)	1,289,495	9,107,450	0	4,179,353	14,023,509
6/30/1991	(1,720,691)	485,821	3,021,588	0	0	2,358,658	4,145,376
6/30/1992	(994,375)	(1,225,063)	3,378,293	0	(1,984,777)	2,418,697	1,592,775
6/30/1993	197,758	(526,657)	3,292,443	719,000	0	7,225,388	10,907,932
6/30/1994	(1,163,218)	(351,985)	4,132,978	0	0	5,364,573	7,982,348
6/30/1995	938,958	0	4,616,743	0	0	3,299,419	8,855,120
6/30/1996	1,926,843	(2,564,790)	5,271,809	0	0	1,441,644	6,075,506
6/30/1997	1,298,457	(5,057,646)	5,529,869	0	(136,881)	753,138	2,386,937
6/30/1998	(233,098)	(5,394,158)	5,710,203	0	0	460,957	543,904
6/30/1999	846,137	(2,808,175)	5,298,511	0	0	3,030,916	6,367,389
6/30/2000	(431,214)	(2,371,993)	5,576,440	0	0	2,079,991	4,853,224
6/30/2001	(555,323)	10,135,725	5,803,227	0	0	1,273,197	16,656,826
6/30/2002	(1,520,756)	8,713,370	6,741,725	0	1,211,951	(162,610)	14,983,680
6/30/2003	(1,793,094)	4,391,493	7,217,512	0	0	6,485,877	16,301,788
6/30/2004	(2,633,642)	(5,927,446)	(19,174,182)	0	0	5,286,195	(22,449,075)
6/30/2005	(645,631)	(1,288,918)	7,445,358	0	0	(262,887)	5,247,922
6/30/2006	(3,113,674)	(1,566,794)	8,528,558	0	4,786,991	1,190,775	9,825,856
6/30/2007	3,962,835	(6,733,144)	7,670,304	0	0	373,350	5,273,345
6/30/2008	(2,217,940)	11,400,154	7,073,235	0	0	(613,134)	15,642,315
6/30/2009	1,737,809	3,991,729	6,172,942	0	0	1,380,596	13,283,076
6/30/2010	(2,450,015)	5,710,003	5,669,975	2,140,009	0	830,022	11,899,994
6/30/2011	(1,718,437)	3,577,042	5,621,165	6,514,624	35,809,167	(108,827)	49,694,734
6/30/2012	(1,912,815)	3,662,246	8,818,897	0	0	1,563,530	12,131,858
Total	(11,594,204)	15,764,103	109,827,301	18,481,083	26,645,612	57,059,703	216,183,598

Source: "Analysis of Change in State Pension Unfunded Liability – 1985 through 2012." The Commission on Government Forecasting and Accountability, 2013.

STATE RETIREMENT SYSTEMS - JRS

CHANGES IN UNFUNDED LIABILITY

FY 1980 - FY 2012

	SALARY INCREASES	INVESTMENT RETURNS (HIGHER)/LOWER THAN ASSUMED	EMPLOYER CONTRIBUTIONS N. C. + INTEREST (HIGHER)/LOWER	BENEFIT INCREASES	CHANGES IN ASSUMPTIONS ACTUARIAL	OTHER FACTORS MISC.	TOTAL CHANGE IN UNFUNDED LIABILITY FROM PREVIOUS YR
JRS							
6/30/1985	0	0	18,400,000	0	0	66,498,084	84,898,084
6/30/1986	0	0	23,000,000	0	0	103,394,972	126,394,972
6/30/1987	0	0	31,200,000	0	(44,282,324)	(309,463,597)	(322,545,921)
6/30/1988	(1,616,000)	(69,000)	11,045,837	0	0	11,275,651	20,636,488
6/30/1989	(8,688,000)	(1,054,000)	12,072,238	0	(17,527,568)	(10,411,862)	(25,609,192)
6/30/1990	(7,810,598)	(1,623,709)	8,861,563	30,071,594	0	6,469,279	35,968,129
6/30/1991	(9,381,039)	2,422,667	13,780,747	0	0	5,584,651	12,407,026
6/30/1992	(2,570,158)	(6,046,123)	15,501,232	0	6,039,968	11,667,416	24,592,335
6/30/1993	(4,665,518)	(2,737,243)	17,127,157	7,014,000	0	6,276,954	23,015,350
6/30/1994	(7,818,990)	(1,821,209)	20,062,924	0	0	1,723,091	12,145,816
6/30/1995	8,198,328	237,092	20,853,307	0	0	9,000,391	38,289,118
6/30/1996	9,999,484	(13,671,404)	24,518,236	0	0	14,931,343	35,777,659
6/30/1997	(7,658,092)	(28,145,182)	27,156,529	0	37,922,093	15,264,216	44,539,564
6/30/1998	(10,160,914)	(30,497,137)	34,123,085	0	0	7,218,733	683,767
6/30/1999	456,439	(16,539,663)	32,504,330	0	0	8,821,168	25,242,274
6/30/2000	2,215,672	(14,134,561)	33,196,266	2,848,501	0	8,268,502	32,394,380
6/30/2001	(7,464,258)	61,790,163	35,767,996	0	0	17,044,333	107,138,234
6/30/2002	(11,821,953)	54,489,350	42,170,792	0	28,381,924	8,609,434	121,829,547
6/30/2003	(26,392,926)	27,183,676	49,293,246	0	0	18,906,930	68,990,926
6/30/2004	6,291,883	(36,709,772)	(92,295,242)	0	0	(1,952,146)	(124,665,277)
6/30/2005	(15,087,614)	(8,899,756)	46,427,305	0	0	27,509,646	49,949,581
6/30/2006	(18,612,759)	(17,213,516)	55,344,402	0	(11,189,825)	12,319,701	20,648,003
6/30/2007	(3,952,822)	(51,310,984)	50,305,409	0	0	28,046,308	23,087,911
6/30/2008	(8,834,671)	90,806,378	42,511,153	0	0	4,924,005	129,406,865
6/30/2009	(6,661,210)	33,322,668	40,870,123	0	0	19,481,669	87,013,250
6/30/2010	(14,290,007)	48,210,010	30,640,985	0	188,890,107	14,350,002	267,801,097
6/30/2011	(17,743,557)	31,451,544	66,647,892	0	15,622,518	42,442,760	138,421,157
6/30/2012	(19,671,785)	27,522,701	75,313,560	0	0	(611,876)	82,552,600
Total	(183,741,065)	146,962,990	786,401,072	39,934,095	203,856,893	147,589,758	1,141,003,743

Source: "Analysis of Change in State Pension Unfunded Liability – 1985 through 2012." The Commission on Government Forecasting and Accountability, 2013.

STATE RETIREMENT SYSTEMS - SERS

CHANGES IN UNFUNDED LIABILITY

FY 1980 - FY 2012

	SALARY INCREASES	INVESTMENT RETURNS (HIGHER)/LOWER THAN ASSUMED	EMPLOYER CONTRIBUTIONS N. C. + INTEREST (HIGHER)/LOWER	BENEFIT INCREASES	CHANGES IN ASSUMPTIONS ACTUARIAL	OTHER FACTORS MISC.	TOTAL CHANGE IN UNFUNDED LIABILITY FROM PREVIOUS YR
SERS							
6/30/1985	(3,925,773)	16,840,742	112,108,700	65,609,601	(636,903,125)	61,666,499	(384,603,356)
6/30/1986	20,899,880	(103,591,020)	57,346,634	0	0	52,080,412	26,735,906
6/30/1987	21,918,010	(68,026,803)	54,142,748	28,033,700	0	(32,157,933)	3,909,722
6/30/1988	11,318,379	29,544,739	55,477,149	831,756	0	(29,424,857)	67,747,166
6/30/1989	25,390,148	(8,949,482)	58,028,072	0	0	(162,306,265)	(87,837,527)
6/30/1990	5,058,229	(6,636,389)	60,475,981	251,523,053	185,673,427	74,477,346	570,571,647
6/30/1991	15,879,462	43,333,979	93,869,035	17,743,150	0	55,132,949	225,958,575
6/30/1992	(725,809)	(107,584,401)	132,967,051	248,533,507	0	80,843,177	354,033,525
6/30/1993	(306,597)	(51,828,983)	142,950,483	48,242,386	0	86,402,498	225,459,787
6/30/1994	7,686,676	(35,777,163)	156,643,087	0	0	103,698,696	232,251,296
6/30/1995	(17,444,870)	3,457,191	176,618,619	0	0	122,511,893	285,142,833
6/30/1996	(63,804,332)	(251,369,719)	196,620,212	0	(781,711,306)	47,104,123	(853,161,022)
6/30/1997	(65,121,542)	(541,583,072)	121,668,957	0	(379,894,379)	152,898,511	(712,031,525)
6/30/1998	(62,013,427)	(568,807,725)	9,431,057	1,249,883,128	0	148,729,225	777,222,258
6/30/1999	(12,536,220)	(307,064,512)	21,020,544	0	0	32,949,396	(265,630,792)
6/30/2000	14,642,937	(252,699,421)	(21,811,201)	0	0	250,182,926	(9,684,759)
6/30/2001	(8,000,000)	1,368,815,911	(29,398,605)	652,110,224	0	309,964,003	2,293,491,533
6/30/2002	52,000,000	1,247,268,792	186,860,538	171,100,000	168,144,000	496,199,643	2,321,572,973
6/30/2003	(28,282,435)	629,483,966	404,526,925	2,371,173,094	0	97,815,307	3,474,716,857
6/30/2004	(22,316,647)	(679,743,495)	(944,135,304)	0	0	6,804,793	(1,639,390,653)
6/30/2005	(166,479,933)	(123,132,472)	503,532,346	0	0	144,142,000	358,061,941
6/30/2006	33,070,000	(250,686,000)	772,374,000	0	710,976,000	(101,544,000)	1,164,190,000
6/30/2007	98,239,312	(878,435,107)	816,648,269	0	0	190,866,392	227,318,866
6/30/2008	207,247,739	1,690,697,791	615,695,516	0	0	130,264,860	2,643,905,906
6/30/2009	(70,364,604)	608,553,603	662,751,770	0	0	251,538,179	1,452,478,948
6/30/2010	(84,030,002)	894,330,007	470,040,010	0	2,606,329,995	162,930,002	4,049,600,012
6/30/2011	(116,457,671)	483,803,315	749,926,844	0	554,815,304	215,159,241	1,887,247,033
6/30/2012	(57,658,148)	530,809,433	715,357,450	0	0	190,241,965	1,378,750,700
Total	(266,117,238)	3,311,023,705	6,351,736,887	5,104,783,599	2,427,429,916	3,139,170,981	20,068,027,850

Source: "Analysis of Change in State Pension Unfunded Liability – 1985 through 2012." The Commission on Government Forecasting and Accountability, 2013.

STATE RETIREMENT SYSTEMS - SURS

CHANGES IN UNFUNDED LIABILITY

FY 1980 - FY 2012

	SALARY INCREASES	INVESTMENT RETURNS (HIGHER)/LOWER THAN ASSUMED	EMPLOYER CONTRIBUTIONS N. C. + INTEREST (HIGHER)/LOWER	BENEFIT INCREASES	CHANGES IN ASSUMPTIONS ACTUARIAL	OTHER FACTORS MISC.	TOTAL CHANGE IN UNFUNDED LIABILITY FROM PREVIOUS YR
SURS							
6/30/1985	59,952,243	(46,519,610)	136,961,449	0	0	9,493,987	159,888,069
6/30/1986	69,083,701	(291,534,349)	149,412,875	0	(44,113,029)	31,790,301	(85,360,501)
6/30/1987	6,598,861	(14,340,609)	121,037,179	46,387,407	0	6,666,740	166,349,578
6/30/1988	(74,548,438)	13,848,351	179,960,548	2,390,958	0	67,617,871	189,269,290
6/30/1989	77,385,567	(43,306,806)	188,404,121	0	0	104,890,105	327,372,987
6/30/1990	86,542,123	(32,570,171)	259,785,389	373,452,795	0	(356,016,724)	331,193,412
6/30/1991	(132,967,943)	67,544,356	303,743,319	8,322,655	0	(67,290,533)	179,351,854
6/30/1992	(26,402,198)	(79,562,844)	355,312,863	0	(82,835,320)	173,822,665	340,335,166
6/30/1993	(44,068,000)	44,123,182	369,447,694	0	0	(177,927,814)	191,575,062
6/30/1994	(14,718,077)	57,409,831	390,275,544	0	0	55,952,036	488,919,334
6/30/1995	(14,624,948)	59,372,362	426,971,739	0	0	94,909,214	566,628,367
6/30/1996	(70,535,000)	(105,383,000)	456,044,000	0	0	86,823,000	366,949,000
6/30/1997	(44,026,000)	(312,322,000)	424,816,000	179,117,000	(3,342,395,000)	198,529,000	(2,896,281,000)
6/30/1998	5,238,000	(765,736,000)	158,840,000	0	0	48,075,000	(553,583,000)
6/30/1999	44,300,000	(273,300,000)	147,200,000	0	0	314,900,000	233,100,000
6/30/2000	171,500,000	(587,500,000)	306,700,000	0	0	(130,949,000)	(240,249,000)
6/30/2001	70,300,000	2,068,500,000	301,000,000	0	0	107,131,000	2,546,931,000
6/30/2002	90,800,000	1,568,700,000	430,800,000	63,000,000	485,300,000	38,744,000	2,677,344,000
6/30/2003	10,300,000	583,000,000	558,500,000	0	0	319,300,000	1,471,100,000
6/30/2004	(62,900,000)	(950,500,000)	(822,700,000)	0	0	17,893,000	(1,818,207,000)
6/30/2005	(19,400,000)	(218,000,000)	574,300,000	0	0	170,520,000	507,420,000
6/30/2006	28,600,000	(414,100,000)	734,900,000	0	0	164,900,000	514,300,000
6/30/2007	67,000,000	(1,342,000,000)	624,100,000	0	324,400,000	189,000,000	(137,500,000)
6/30/2008	30,600,000	2,004,400,000	590,900,000	0	0	329,100,000	2,955,000,000
6/30/2009	(1,300,000)	812,300,000	738,700,000	0	0	153,200,000	1,702,900,000
6/30/2010	(113,100,000)	940,500,000	667,500,000	0	2,413,900,000	210,800,000	4,119,600,000
6/30/2011	(172,300,000)	430,000,000	930,200,000	0	(24,900,000)	251,800,000	1,414,800,000
6/30/2012	(4,000,000)	476,700,000	797,800,000	0	0	381,200,000	1,651,700,000
Total	23,309,891	3,649,722,693	10,500,912,720	672,670,815	(270,643,349)	2,794,873,848	17,370,846,618

Source: "Analysis of Change in State Pension Unfunded Liability – 1985 through 2012." The Commission on Government Forecasting and Accountability, 2013.

STATE RETIREMENT SYSTEMS - TRS

CHANGES IN UNFUNDED LIABILITY

FY 1980 - FY 2012

	SALARY INCREASES	INVESTMENT RETURNS (HIGHER)/LOWER THAN ASSUMED	EMPLOYER CONTRIBUTIONS N. C. + INTEREST (HIGHER)/LOWER	BENEFIT INCREASES	CHANGES IN ASSUMPTIONS ACTUARIAL	OTHER FACTORS MISC.	TOTAL CHANGE IN UNFUNDED LIABILITY FROM PREVIOUS YR
TRS							
6/30/1985	7,000,000	(181,000,000)	209,000,000	0	0	60,000,000	95,000,000
6/30/1986	50,000,000	(507,000,000)	188,000,000	0	0	72,000,000	(197,000,000)
6/30/1987	85,000,000	(470,000,000)	168,000,000	55,000,000	393,000,000	108,000,000	339,000,000
6/30/1988	31,000,000	(37,000,000)	272,000,000	46,000,000	118,000,000	(49,000,000)	381,000,000
6/30/1989	16,271,000	1,569,000	305,547,000	0	0	80,403,000	403,790,000
6/30/1990	11,143,000	(202,975,000)	330,532,000	642,310,000	0	159,713,000	940,723,000
6/30/1991	73,722,000	(9,123,000)	397,823,000	0	214,173,000	135,006,000	811,601,000
6/30/1992	110,583,000	(407,712,000)	523,518,000	7,500,000	0	219,290,000	453,179,000
6/30/1993	237,332,000	(351,089,000)	551,158,000	38,589,000	12,544,000	270,375,000	758,909,000
6/30/1994	196,373,000	(249,575,000)	639,746,000	193,098,000	772,125,000	596,584,000	2,148,351,000
6/30/1995	89,801,000	174,564,000	877,237,000	152,891,000	0	289,557,000	1,584,050,000
6/30/1996	400,399,000	(577,281,000)	965,961,000	17,772,000	0	166,531,000	973,382,000
6/30/1997	(59,062,000)	(830,936,000)	992,390,000	0	(2,944,771,000)	88,773,000	(2,753,606,000)
6/30/1998	(46,017,000)	(1,417,747,000)	776,189,000	1,000,300,000	0	71,152,000	383,877,000
6/30/1999	44,030,000	(389,014,000)	677,408,000	33,870,000	125,223,000	533,933,000	1,025,450,000
6/30/2000	(33,403,000)	(450,361,000)	723,606,000	0	0	197,345,000	437,187,000
6/30/2001	(10,310,000)	3,089,765,000	733,877,000	0	0	632,729,000	4,446,061,000
6/30/2002	4,934,000	2,696,199,000	1,074,422,000	0	694,736,000	360,047,000	4,830,338,000
6/30/2003	171,802,000	827,434,000	1,415,610,000	53,850,000	0	658,524,000	3,127,220,000
6/30/2004	217,255,000	(2,168,876,000)	(2,811,516,000)	0	0	357,250,000	(4,405,887,000)
6/30/2005	236,687,000	(682,294,000)	1,299,840,000	0	26,425,000	1,706,431,000	2,587,089,000
6/30/2006	68,398,000	(1,159,525,000)	1,913,368,000	0	0	(400,028,000)	422,213,000
6/30/2007	149,682,000	(3,785,653,000)	1,739,187,000	0	2,410,756,000	813,081,000	1,327,053,000
6/30/2008	(153,987,000)	5,514,988,000	1,529,701,000	0	0	(428,135,000)	6,462,567,000
6/30/2009	(29,162,000)	2,373,683,000	1,782,855,000	0	0	672,134,000	4,799,510,000
6/30/2010	(210,220,000)	2,929,300,000	1,572,250,000	0	0	561,570,000	4,852,900,000
6/30/2011	(545,612,000)	1,718,405,000	1,913,647,000	0	0	589,446,000	3,675,886,000
6/30/2012	(1,211,160,000)	1,806,150,000	2,710,710,000	0	4,624,970,000	618,880,000	8,549,550,000
Total	(97,521,000)	7,254,896,000	23,472,066,000	2,241,180,000	6,447,181,000	9,141,591,000	48,459,393,000

Source: "Analysis of Change in State Pension Unfunded Liability – 1985 through 2012." The Commission on Government Forecasting and Accountability, 2013.