

HB 2497 And The Pension Rate Spike

Prepared by PSERS & SERS for the House Democratic Caucus - June 7, 2010

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Historically, investment earnings have been the primary source of funding for both systems.

For more than a decade, employer contribution rates for both systems have been lower than the Employer Normal Cost; however, rates are to begin climbing in 2010-11, jump sharply in 2012-13, peak in 2013-14 for SERS, 2015/16 for PSERS and remain high for the foreseeable future. This increase is often referred to as the "Rate Spike and Plateau."

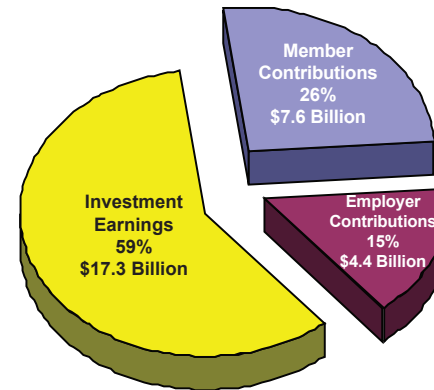
The cause of the spike: unfunded liabilities.

A number of items have contributed to the growth of each System's unfunded liability over the years, including:

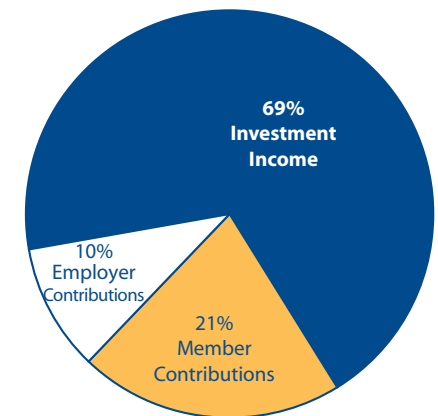
- 2000-2002 down investment markets
- Global economic downturn in 2008
- Benefit enhancements in 2001 for active members (Act 9)
- 2002 COLA for retired members (Act 2002-38)
- Demographic and salary experience
- Reduced investment return assumption to 8%
- Cost of deferral techniques which changed the amortization schedule of gains and losses, temporarily and artificially suppressing employer contribution rates (Act 2003-40)

In general, as the unfunded liabilities have grown through recent investment losses and benefit enhancements, Act 40 has postponed paying for those costs, further adding to the overall cost.

PSERS Funding 10-Year History 2000-2009



SERS Funding 10-Year History 2000-2009

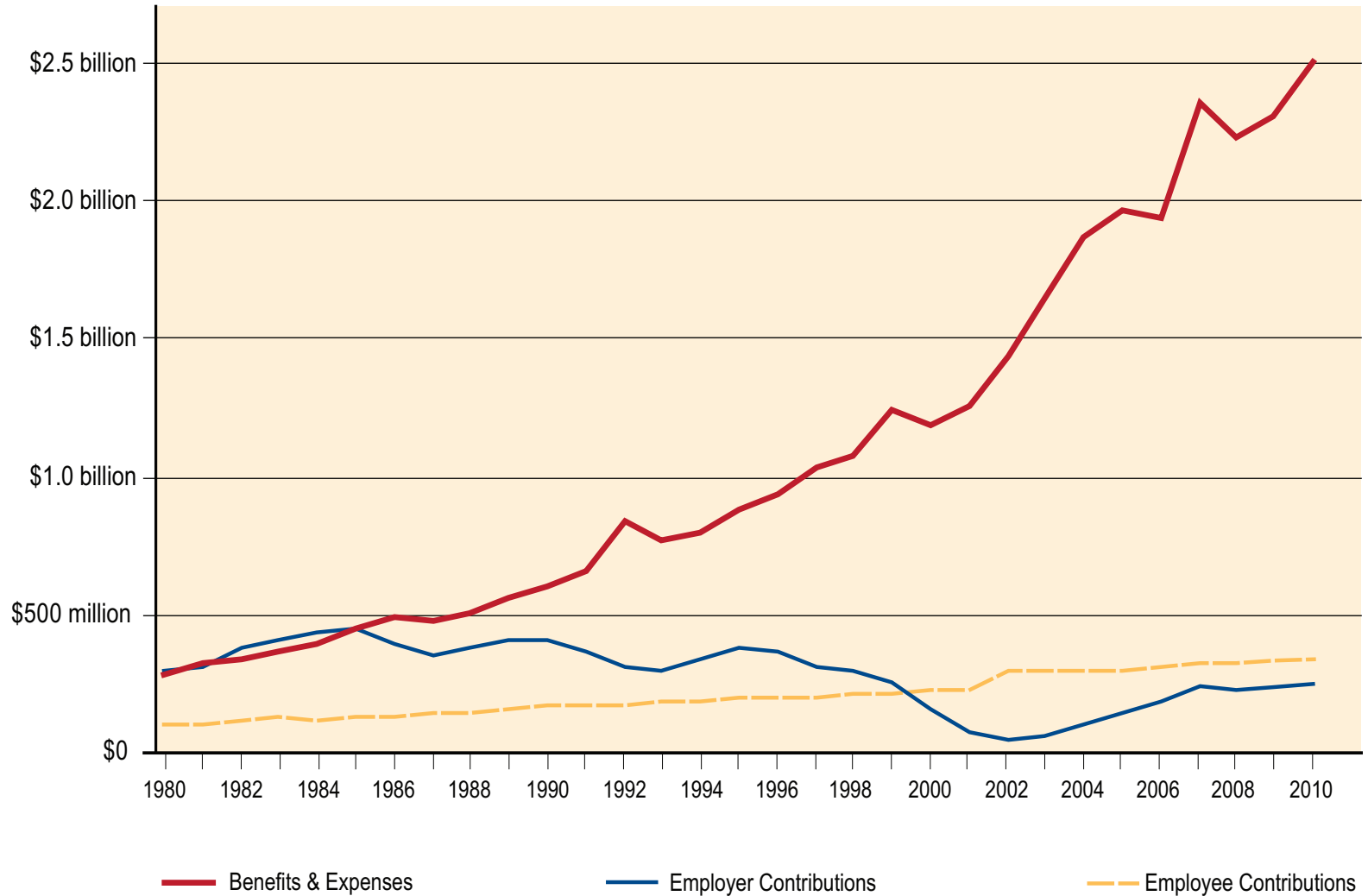


Employer Normal Cost

The amount needed from employers to fund the benefits earned by the Active Member for that year. It can be thought of as the minimum payment that would be made by employers if the System's actual experience perfectly matched its economic and demographic operating assumptions and there was no unfunded liability.

SERS Benefit Payments Vs. Contributions

SERS' annual benefit payments have increased seven-fold over the last 30 years, and the amount employees contribute has tripled. But employers are paying almost \$26 million per year **less** today than they did in 1980: an expected \$280 million in 2010 versus \$305.5 million in 1980.



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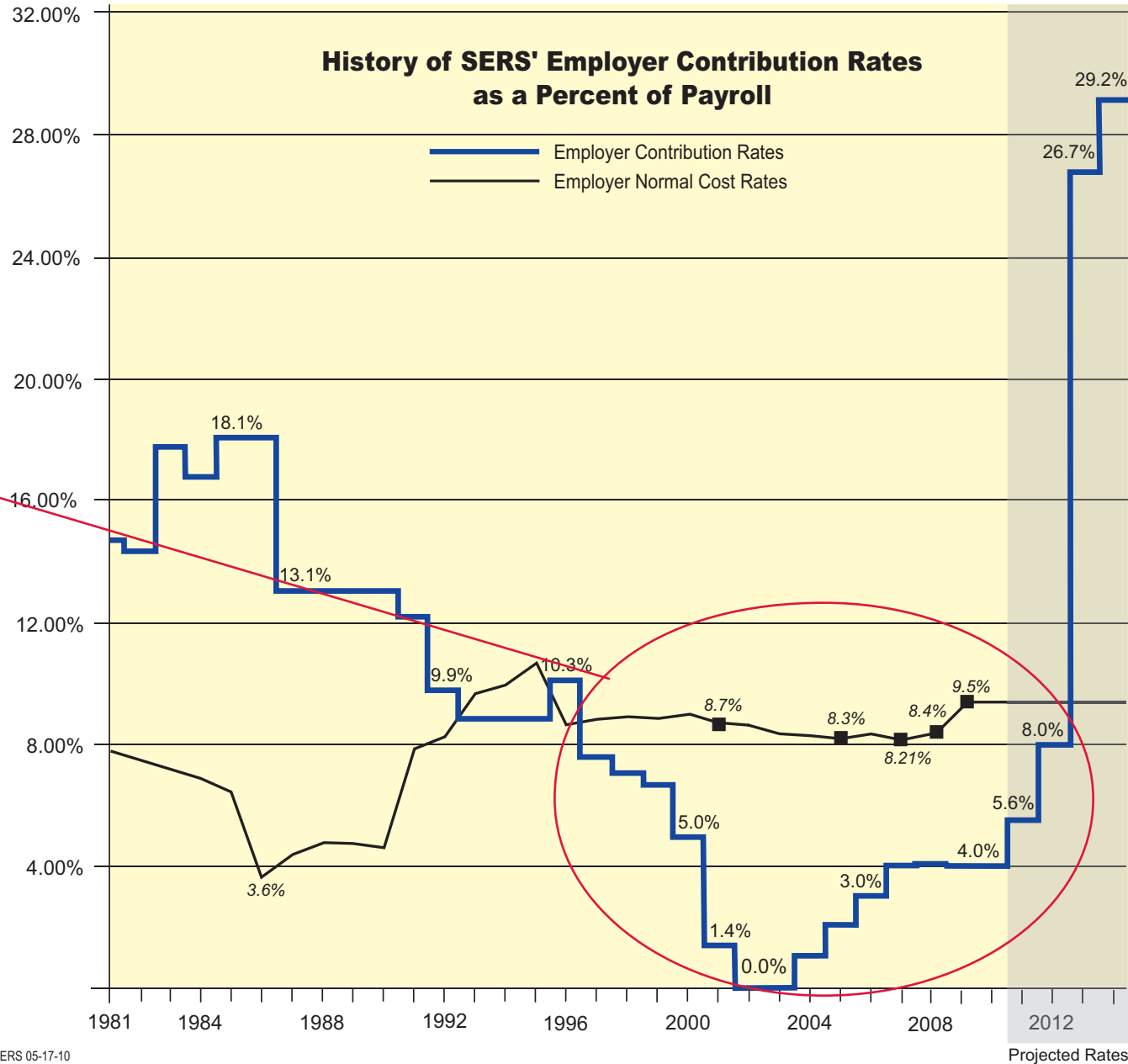
The Pension Funding Issue

The SERS composite employer rate, which had exceeded 12% as recently as 1990 and was as high as 18% in the early 1980s, dropped to zero for two years.

Since 2003, rates have been artificially suppressed by Act 40.

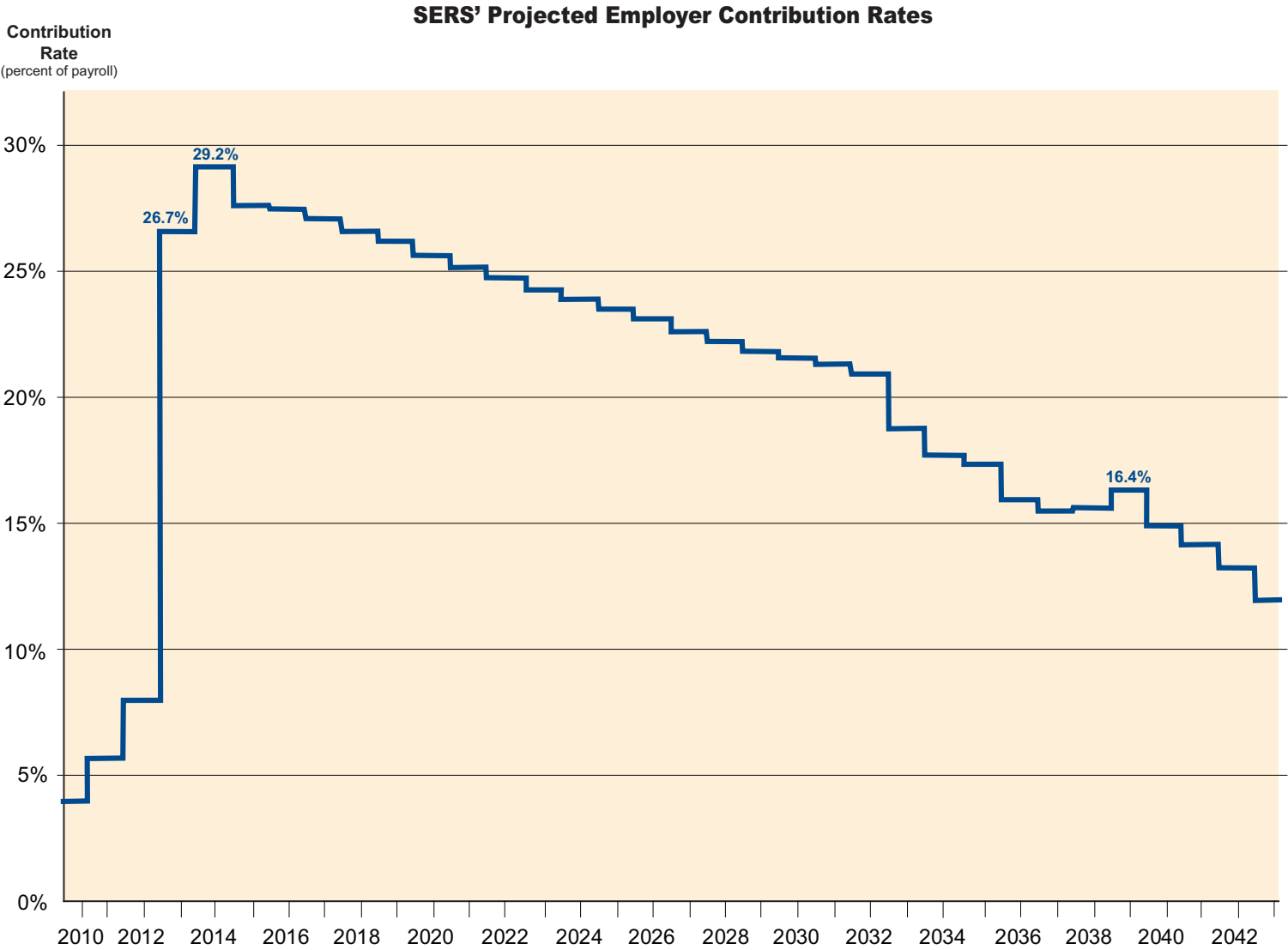
For 15 years, employers have contributed well below the Employer Normal Cost rate.

Now, if nothing is done, rates are about to spike.



Fiscal Year	Employer Rate
81/82	14.4%
82/83	17.9%
83/84	16.8%
84/85	18.1%
85/86	18.0%
86/87	13.1%
87/88	13.1%
88/89	13.1%
89/90	13.0%
90/91	12.3%
91/92	9.9%
92/93	8.9%
93/94	8.9%
94/95	8.9%
95/96	10.3%
96/97	7.7%
97/98	7.3%
98/99	6.7%
99/00	5.0%
00/01	1.4%
01/02	0.0%
02/03	0.0%
03/04	1.1%
04/05	2.0%
05/06	3.0%
06/07	4.0%
07/08	4.0%
08/09	4.0%
09/10	4.0%

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Fiscal Year	Projected Employer Rate
09/10	4.0
10/11	5.6
11/12	8.0
12/13	26.7
13/14	29.2
14/15	27.7
15/16	27.5
16/17	27.1
17/18	26.6
18/19	26.2
19/20	25.7
20/21	25.2
21/22	24.8
22/23	24.3
23/24	23.9
24/25	23.5
25/26	23.1
26/27	22.7
27/28	22.3
28/29	21.9
29/30	21.6
30/31	21.3
31/32	21.0
32/33	18.8
33/34	17.8
34/35	17.4
35/36	15.9
36/37	15.4
37/38	15.5
38/39	16.4
39/40	14.9
40/41	14.1
41/42	13.2
42/43	12.0

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The Size of the Pension Funding Issue

Liabilities now greatly exceed assets for both systems.

The shortfall for SERS is projected to exceed \$13 billion by 2012.

This Unfunded Actuarial Liability (UAL) is a debt the Commonwealth owes to SERS. It must be paid at some point.

As such, while changing the benefit structure may reduce future costs, it would have NO impact on the current unfunded liability. The unfunded liability is money the Commonwealth has already committed to spend for retirement benefits but has not yet paid to the systems. The systems must be funded.

From a budgetary standpoint, the size of the projected rate spike is difficult to handle in any one year. The alternative is to increase funding gradually over several years through funding "collars."

While collars allow the Commonwealth time to increase funding gradually, they also add to the total cost.

Collars are the only way to prevent a steep rate spike.

Collars require legislation.

SERS Projected Funded Status & Employer Contributions

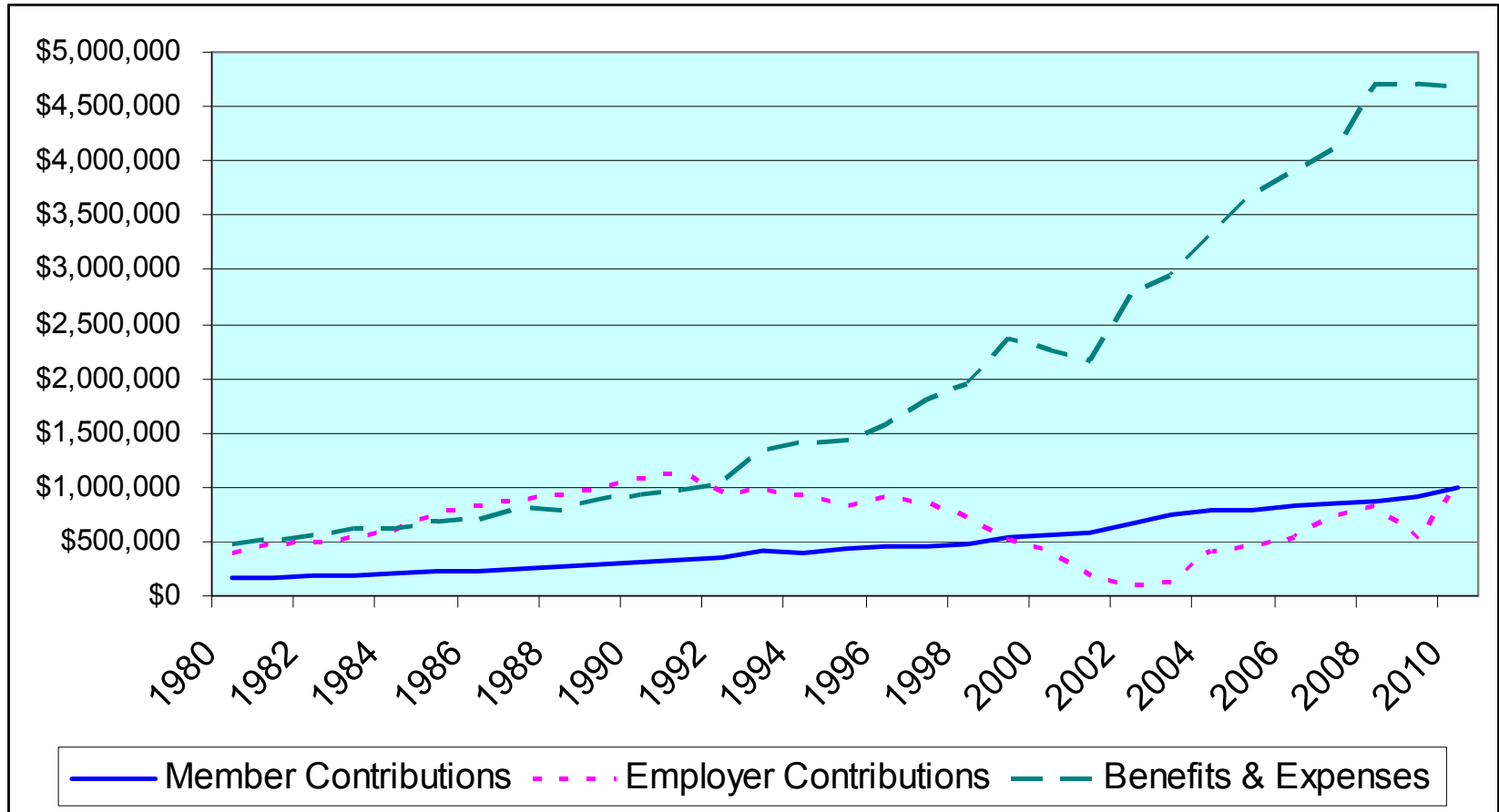
Assuming 8% investment return

Calendar Year	Payout Projection	Funding Status Projection		Employer Contributions Projection			
	Benefits & Expenses (\$ in billions)	Funded Ratio	UAL (\$ in billions)	Fiscal Year	Employer Contribution Rate	Expected FY Payroll (\$ in millions)	Expected FY Contribution (\$ in millions)
2008	2.2	89.0	3.8	09/10	4.0	5,660.3	226.4
2009	2.3	84.4	5.6	10/11	5.6	5,936.0	335.0
2010	2.4	79.0	7.8	11/12	8.0	6,131.9	489.0
2011	2.6	72.3	10.6	12/13	26.7	6,334.2	1,688.4
2012	2.7	66.4	13.1	13/14	29.2	6,543.3	1,911.7
2013	2.9	68.0	12.9	14/15	27.7	6,759.2	1,873.5
2014	3.1	68.8	12.9	15/16	27.5	6,982.2	1,917.0
2015	3.2	69.8	12.9	16/17	27.1	7,212.7	1,953.9
2016	3.4	70.9	12.7	17/18	26.6	7,450.7	1,985.2
2017	3.5	72.0	12.5	18/19	26.2	7,696.5	2,013.4
2018	3.7	73.2	12.3	19/20	25.7	7,950.5	2,042.1
2019	3.9	74.3	12.0	20/21	25.2	8,212.9	2,071.2
2020	4.0	75.5	11.7	21/22	24.8	8,483.9	2,100.9
2021	4.1	76.6	11.4	22/23	24.3	8,763.9	2,131.5
2022	4.2	77.8	11.1	23/24	23.9	9,053.1	2,163.0
2023	4.3	79.0	10.7	24/25	23.5	9,351.8	2,195.5
2024	4.4	80.2	10.3	25/26	23.1	9,660.5	2,229.1
2025	4.5	81.4	9.9	26/27	22.7	9,979.3	2,263.9
2026	4.6	82.7	9.4	27/28	22.3	10,308.6	2,299.7
2027	4.7	84.0	8.9	28/29	21.9	10,648.8	2,336.7
2028	4.9	85.3	8.4	29/30	21.6	11,000.2	2,375.0
2029	5.0	86.6	7.7	30/31	21.3	11,363.2	2,414.5
2030	5.1	88.0	7.1	31/32	20.9	11,738.2	2,455.3
2031	5.2	89.5	6.4	32/33	18.8	12,125.5	2,283.7
2032	5.4	90.6	5.8	33/34	17.8	12,525.7	2,233.3
2033	5.5	91.6	5.3	34/35	17.4	12,939.0	2,247.8

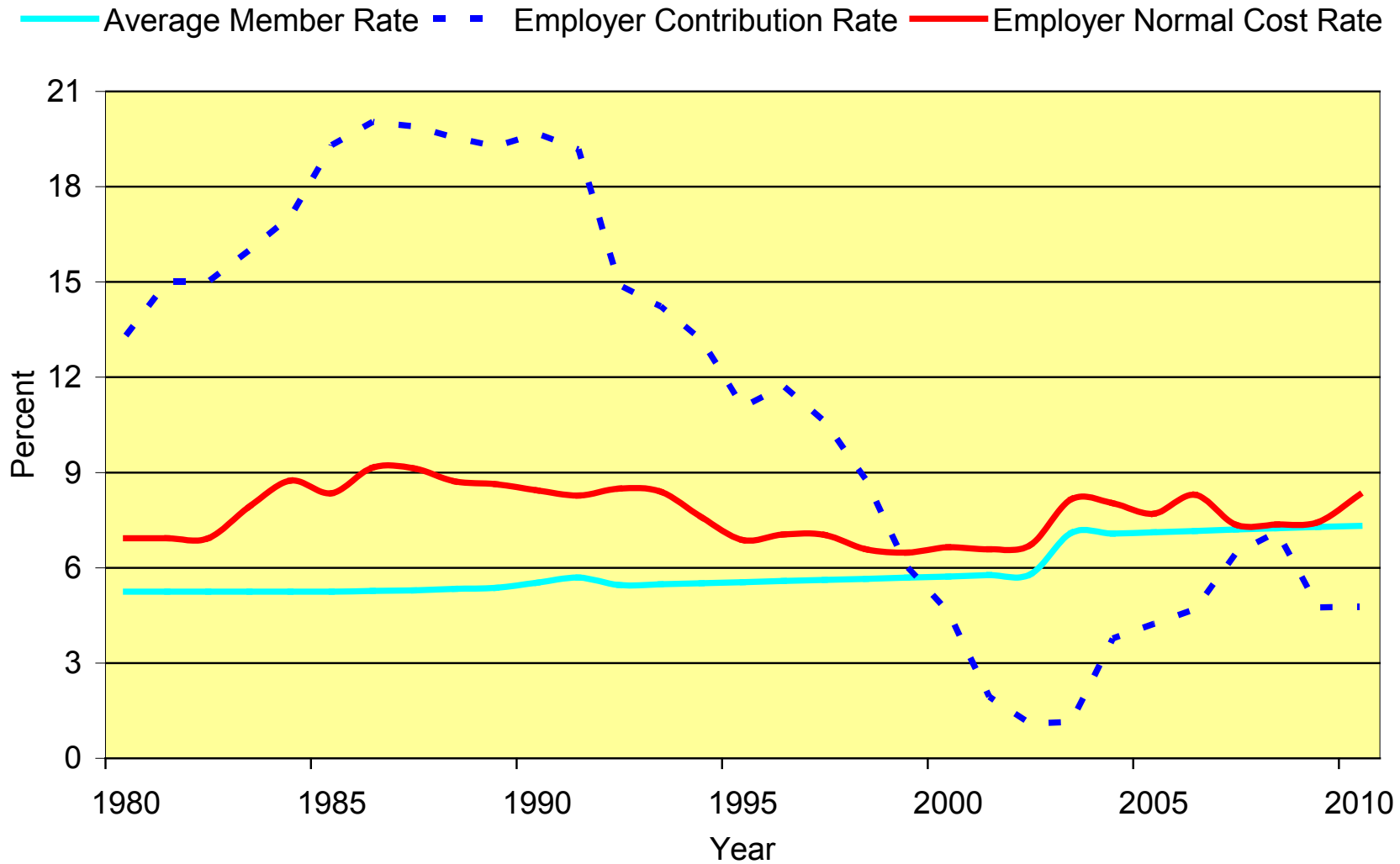
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PSERS' annual benefit payments have increased nine-fold over the last 30 years, and the amount employees contribute has increased 600%. But employer contributions have only increased by 30%: an expected \$510 million in 2010 versus \$396 million in 1980.

PSERS
Benefit Payments Vs. Contributions
(Dollar Amounts in Thousands)



History of PSERS' Contribution Rates as a Percent of Payroll



History of PSERS Employer and Average Employee Contribution Rates from 1986 to 2011

SCHOOL YEAR ENDED	TOTAL EMPLOYER CONTRIBUTION RATE	AVG. EMPLOYEE CONTRIBUTION RATE
1986	20.040%	5.27%
1987	19.900%	5.29%
1988	19.540%	5.34%
1989	19.270%	5.37%
1990	19.680%	5.53%
1991	19.180%	5.69%
1992	14.900%	5.46%
1993	14.240%	5.48%
1994	13.170%	5.51%
1995	11.060%	5.55%
1996	11.720%	5.59%
1997	10.600%	5.62%
1998	8.760%	5.65%
1999	6.040%	5.69%
2000	4.610%	5.72%
2001	1.940%	5.77%
2002	1.090%	6.43%
2003	1.150%	7.10%
2004	3.770%	7.08%
2005	4.230%	7.12%
2006	4.690%	7.16%
2007	6.460%	7.21%
2008	7.130%	7.25%
2009	4.760%	7.29%
2010	4.780%	7.32%
2011	8.22%	7.34%

Employer Contribution Rate Spike Estimates PSERS

Public School Employees' Retirement System of Pennsylvania Projection of Contribution Rates and Funded Ratios As of June 30, 2009

(The Board at its January 2009 meeting adopted to reduce the interest rate from 8.50% to 8.25% for the June 30, 2008 valuation and to 8.00% thereafter.)

Fiscal Year Ending June	Appropriation Payroll (thousands)	Fiscal Year Market Rate of Return	Pension Rate Floor	Employee Contribution Rate	Employer Normal Cost	Unfunded Liability Rate	Preliminary Employer Pension Rate	Health Care Contribution	Total Employer Contribution Rate	Projected Total Employer Contribution (thousands)	Funded Ratio	Unfunded Accrued Liability (\$ Millions)
2008	\$ 12,881,244	(2.82) %	4.00 %	7.25 %	6.68 %	(0.24) %	6.44 %	0.69 %	7.13 %		86.0 %	\$ 9,923.0
2009	12,500,000	(26.54)	4.00	7.29	6.68	(3.37)	3.31	0.76	4.76		79.2	15,739.2
2010	12,899,000	8.00	4.00	7.32	7.35	(3.72)	3.63	0.78	4.78	\$ 616,572	73.4	20,898.6
2011	13,510,000	8.00	4.00	7.34	8.08	(0.50)	7.58	0.64	8.22	1,110,522	66.8	27,049.9
2012	13,920,859	8.00	4.00	7.37	8.02	1.85	9.87	0.72	10.59	1,474,219	58.3	35,213.4
2013	14,345,321	8.00	4.00	7.38	8.00	20.50	28.50	0.72	29.22	4,191,703	54.2	40,138.3
2014	14,797,664	8.00	4.00	7.40	7.96	23.42	31.38	0.71	32.09	4,748,570	55.1	40,732.8
2015	15,280,148	8.00	4.00	7.42	7.93	24.97	32.90	0.70	33.60	5,134,130	56.7	40,743.0
2016	15,794,512	8.00	4.00	7.43	7.91	24.68	32.59	0.68	33.27	5,254,834	58.5	40,443.9
2017	16,341,270	8.00	4.00	7.44	7.89	24.18	32.07	0.67	32.74	5,350,132	60.5	39,884.5
2018	16,926,735	8.00	4.00	7.45	7.87	23.54	31.41	0.65	32.06	5,426,711	62.6	39,149.0
2019	17,557,664	8.00	4.00	7.46	7.85	22.78	30.63	0.64	31.27	5,490,282	64.7	38,312.8
2020	18,232,076	8.00	4.00	7.46	7.84	21.97	29.81	0.61	30.42	5,546,198	66.8	37,388.2
2021	18,948,040	8.00	4.00	7.47	7.82	21.15	28.97	0.59	29.56	5,601,041	68.9	36,378.2
2022	19,703,172	8.00	4.00	7.47	7.81	20.35	28.16	0.59	28.75	5,664,662	71.0	35,282.2
2023	20,493,701	8.00	4.00	7.48	7.79	19.57	27.36	0.59	27.95	5,727,989	73.0	34,096.3
2024	21,321,539	8.00	4.00	7.48	7.78	18.81	26.59	0.59	27.18	5,795,194	75.0	32,814.5
2025	22,185,011	8.00	4.00	7.48	7.77	18.08	25.85	0.59	26.44	5,865,717	77.0	31,429.6
2026	23,081,835	8.00	4.00	7.48	7.77	17.38	25.15	0.59	25.74	5,941,264	79.0	29,933.6
2027	24,006,797	8.00	4.00	7.49	7.75	16.71	24.46	0.59	25.05	6,013,703	80.9	28,317.8
2028	24,958,599	8.00	4.00	7.49	7.74	16.07	23.81	0.59	24.40	6,089,898	82.8	26,572.8
2029	25,937,456	8.00	4.00	7.49	7.73	15.46	23.19	0.59	23.78	6,167,927	84.6	24,688.1
2030	26,943,962	8.00	4.00	7.49	7.72	14.88	22.60	0.59	23.19	6,248,305	86.5	22,652.6
2031	27,978,093	8.00	4.00	7.49	7.71	14.33	22.04	0.59	22.63	6,331,442	88.2	20,454.2
2032	29,041,527	8.00	4.00	7.49	7.70	13.81	21.51	0.59	22.10	6,418,177	90.0	18,080.0
2033	30,136,493	8.00	4.00	7.49	7.69	11.18	18.87	0.59	19.46	5,864,562	91.4	16,158.1
2034	31,268,441	8.00	4.00	7.49	7.68	9.89	17.57	0.59	18.16	5,678,349	92.7	14,357.1
2035	32,446,271	8.00	4.00	7.50	7.66	8.57	16.23	0.59	16.82	5,457,463	93.8	12,724.7
2036	33,675,824	8.00	4.00	7.50	7.64	7.42	15.06	0.59	15.65	5,270,266	94.7	11,242.6
2037	34,956,565	8.00	4.00	7.50	7.63	6.11	13.74	0.59	14.33	5,009,276	95.5	10,006.0
2038	36,292,078	8.00	4.00	7.50	7.62	5.67	13.29	0.59	13.88	5,037,340	96.2	8,748.9
2039	37,690,635	8.00	4.00	7.50	7.60	6.45	14.05	0.59	14.64	5,517,909	97.1	7,017.7

HB 2497 (D.Evans) is the only bill currently introduced that is aimed directly at addressing the rate spike.

Rate Collars

HB 2497 gradually increases funding through the use of collars, by capping rate increases at:

- 1% of payroll in FY 2010/11
- 3% in FY 11/12
- 3.5% in FY 12/13
- 4.5% each year thereafter until no longer needed
- Collars expire when no longer needed

Actuarial “Fresh Start”

Reamortizes the Systems’ liabilities over 30 years

Change in Amortization Method

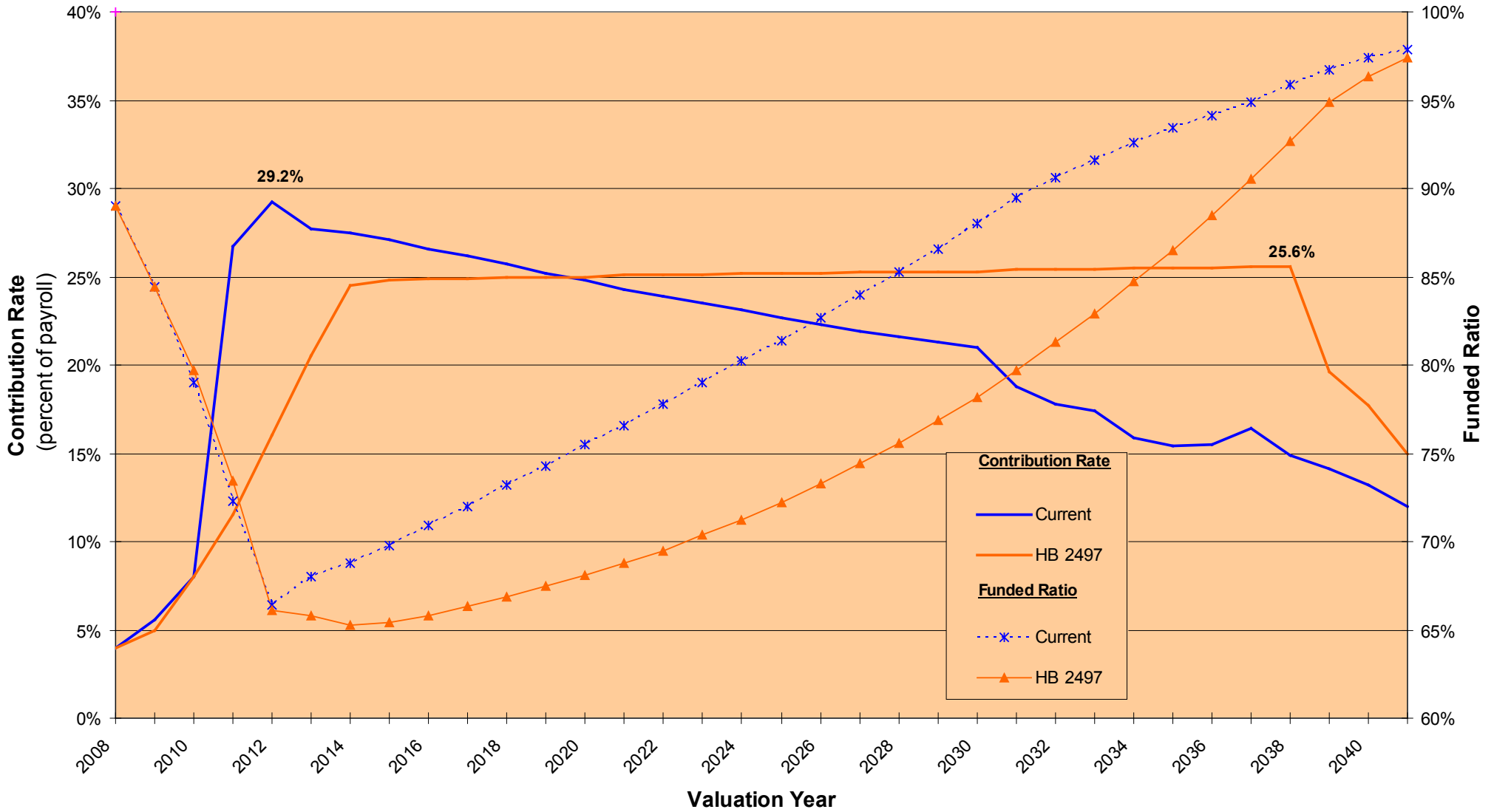
Switches the amortization method to level percent of pay, rather than the current level dollar method

PSERS only - Change in Asset Smoothing

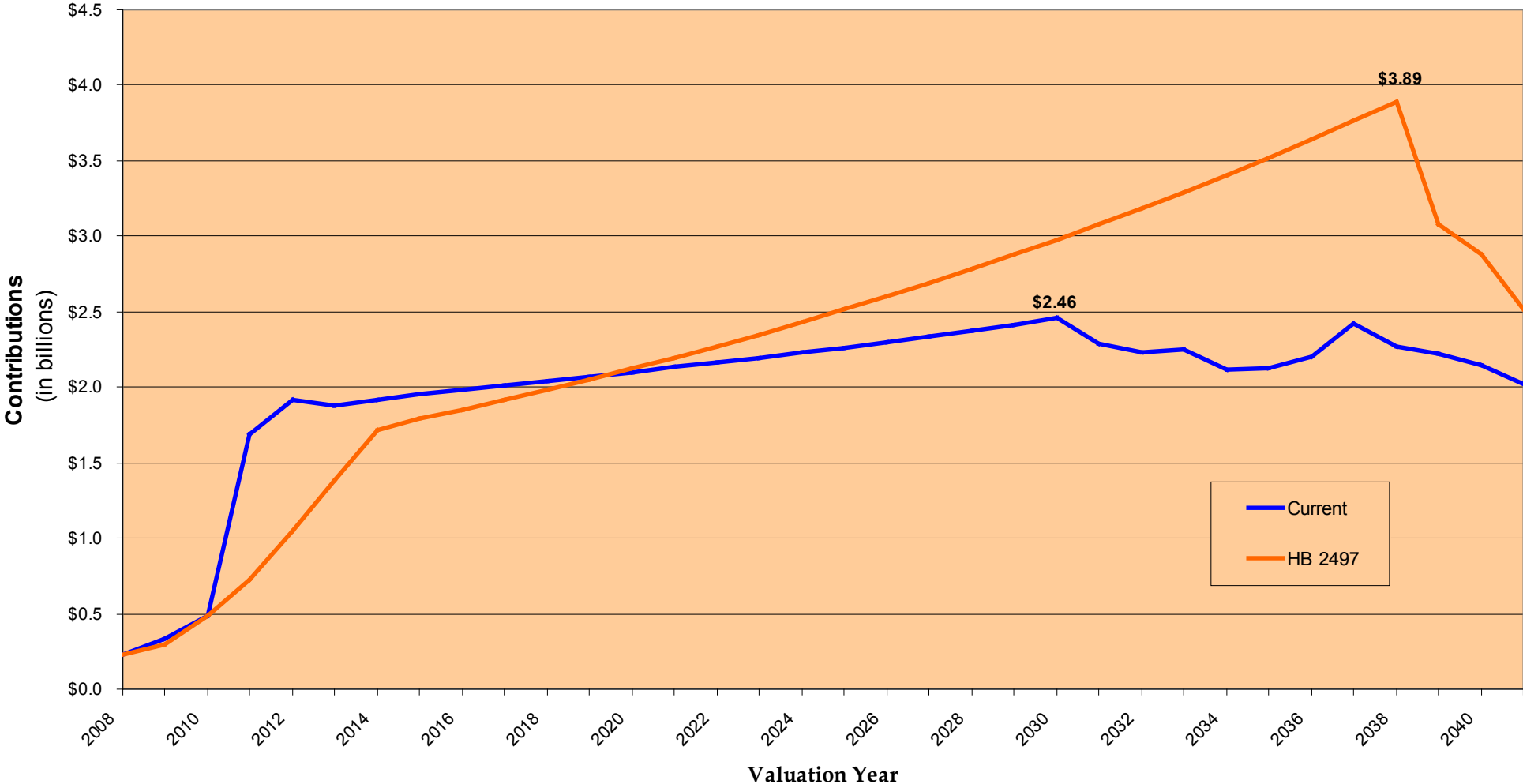
Extends from five years to ten years the asset smoothing period over which the Fund’s investment gains and losses are recognized

The following pages provide a comparison of funding projections under current law and under HB 2497.

Comparison of SERS Funding Scenarios Projected Employer Contribution Rates and Funded Ratio



Comparison of SERS Funding Scenarios Projected Employer Contributions in Dollars (in billions)



HB 2497 Comparison To Current Law - SERS

Actuarial Assumptions and Methods	Current	HB 2497
Fresh Start 30 Year Amortization	No	12/31/09
Funding Method	Entry Age	Entry Age
Amortization	Level \$	Level %
Smoothing	5 year	5 Year
Collars:		
FY 10/11	None	1.00%
FY 11/12	None	3.00%
FY 12/13	None	3.50%
FY 13/14 and thereafter	None	4.50%

SERS Alternative Actuarial Funding Scenarios

SERS Curren vs House Bill 2497									
Year	Fiscal Year	Projected Percent		Projected Contribution Dollars (in millions)		Contribution Dollar Differences		Funded Ratio	
		Current	HB 2497	Current	HB 2497	FY Difference	Cumulative Difference	Current	HB 2497
						Current vs HB 2497	Current vs HB 2497		
2008	2009/2010	4.0 %	4.0 %	\$ 226.4	\$ 226.4	\$ -	\$ -	89.0 %	89.0 %
2009	2010/2011	5.6	5.0	335.0	296.8	(38.2)	(38.2)	84.4	84.4
2010	2011/2012	8.0	8.0	489.0	490.6	1.6	(36.6)	79.0	79.7
2011	2012/2013	26.7	11.5	1,688.4	728.4	(960.0)	(996.6)	72.3	73.4
2012	2013/2014	29.2	16.0	1,911.7	1,046.9	(864.8)	(1,861.4)	66.4	66.1
2013	2014/2015	27.7	20.5	1,873.5	1,385.6	(487.9)	(2,349.3)	68.0	65.8
2014	2015/2016	27.5	24.5	1,917.0	1,712.9	(204.1)	(2,553.4)	68.8	65.3
2015	2016/2017	27.1	24.8	1,953.9	1,788.1	(165.8)	(2,719.2)	69.8	65.4
2016	2017/2018	26.6	24.9	1,985.2	1,853.3	(131.9)	(2,851.1)	70.9	65.8
2017	2018/2019	26.2	24.9	2,013.4	1,917.9	(95.5)	(2,946.6)	72.0	66.3
2018	2019/2020	25.7	25.0	2,042.1	1,984.4	(57.7)	(3,004.3)	73.2	66.9
2019	2020/2021	25.2	25.0	2,071.2	2,052.8	(18.4)	(3,022.7)	74.3	67.5
2020	2021/2022	24.8	25.0	2,100.9	2,123.3	22.4	(3,000.3)	75.5	68.1
2021	2022/2023	24.3	25.1	2,131.5	2,196.2	64.7	(2,935.6)	76.6	68.8
2022	2023/2024	23.9	25.1	2,163.0	2,271.5	108.5	(2,827.1)	77.8	69.5
2023	2024/2025	23.5	25.1	2,195.5	2,349.4	153.9	(2,673.2)	79.0	70.4
2024	2025/2026	23.1	25.2	2,229.1	2,430.0	200.9	(2,472.3)	80.2	71.2
2025	2026/2027	22.7	25.2	2,263.9	2,513.3	249.4	(2,222.9)	81.4	72.2
2026	2027/2028	22.3	25.2	2,299.7	2,599.4	299.7	(1,923.2)	82.7	73.3
2027	2028/2029	21.9	25.3	2,336.7	2,688.5	351.8	(1,571.4)	84.0	74.4
2028	2029/2030	21.6	25.3	2,375.0	2,780.6	405.6	(1,165.8)	85.3	75.6
2029	2030/2031	21.3	25.3	2,414.5	2,875.9	461.4	(704.4)	86.6	76.9
2030	2031/2032	21.0	25.3	2,455.3	2,974.5	519.2	(185.2)	88.0	78.2
2031	2032/2033	18.8	25.4	2,283.7	3,076.4	792.7	607.5	89.5	79.7
2032	2033/2034	17.8	25.4	2,233.3	3,181.8	948.5	1,556.0	90.6	81.3
2033	2034/2035	17.4	25.4	2,247.8	3,290.8	1,043.0	2,599.0	91.6	82.9
2034	2035/2036	15.9	25.5	2,121.2	3,403.6	1,282.4	3,881.4	92.6	84.7
2035	2036/2037	15.4	25.5	2,125.1	3,520.2	1,395.1	5,276.5	93.4	86.5
2036	2037/2038	15.5	25.5	2,205.1	3,640.8	1,435.7	6,712.2	94.1	88.5
2037	2038/2039	16.4	25.6	2,420.5	3,765.5	1,345.0	8,057.2	94.9	90.5
2038	2039/2040	14.9	25.6	2,270.8	3,894.5	1,623.7	9,680.9	95.9	92.7
2039	2040/2041	14.1	19.6	2,223.0	3,083.1	860.1	10,541.0	96.7	94.9
2040	2041/2042	13.2	17.7	2,144.7	2,879.0	734.3	11,275.3	97.4	96.3
2041	2042/2043	12.0	15.0	2,017.2	2,518.8	501.6	11,776.9	97.9	97.4

HB 2497 Comparison To Current Law - PSERS

Public School Employees' Retirement System of Pennsylvania
Projection of Contribution Rates and Funded Ratios As of June 30, 2009
 Market Returns and Pension Rate Floors Set by User and are the same for both Current and Alternative Funding

Market Returns Scenario 1

*Alternative Funding assumptions effective 6/30/10 valuation:

- Fresh-start accrued liability payments over 30 years with level percent of pay amortization.
- Entry Age Normal funding method.
- 10-year asset smoothing method.
- 5-year vesting with a 4% Option 4 conversion of member contributions.
- Valued under the current benefit provisions.
- Pension Collar limits contribution to prior fiscal year + the collar: 1.00% for FY2011, 3.00% for FY2012, 3.50% for FY2013, 4.50% for FY2014 and later.

Fiscal Year Ending June	Appropriation Payroll (thousands)	Fiscal Year Market Rate of Return	Current Law			Alternative Funding*			Pension Rate Floor	Health Care Contribution	Total Employer Rate		Funded Ratio	
			Employee Contribution Rate	Employer Normal Cost	Unfunded Liability Rate	Employee Contribution Rate	Employer Normal Cost	Unfunded Liability Rate			Current Law	Alternative Funding*	Current Law	Alternative Funding*
2008	\$ 12,881,244	(2.82) %	7.25 %	6.68 %	(0.24) %	7.25 %	6.68 %	(0.24) %	4.00 %	0.69 %	7.13 %	7.13 %	86.0 %	86.0 %
2009	12,500,000	(26.54)	7.29	6.68	(3.37)	7.29	6.68	(3.37)	4.00	0.76	4.76	4.76	79.2	79.2
2010	12,899,000	8.00	7.32	7.35	(3.72)	7.32	7.35	(3.72)	4.00	0.78	4.78	4.78	73.4	73.9
2011	13,510,000	8.00	7.34	8.08	(0.50)	7.34	8.08	(0.50)	4.00	0.64	8.22	5.64	66.8	69.9
2012	13,920,859	8.00	7.37	8.02	1.85	7.37	8.02	9.40	4.00	0.72	10.59	8.72	58.3	66.2
2013	14,345,321	8.00	7.38	8.00	20.50	7.38	8.00	10.52	4.00	0.72	29.22	12.22	54.2	62.8
2014	14,797,664	8.00	7.40	7.96	23.42	7.40	7.96	12.07	4.00	0.71	32.09	16.71	55.1	60.0
2015	15,280,148	8.00	7.42	7.93	24.97	7.42	7.93	13.48	4.00	0.70	33.60	21.20	56.7	57.8
2016	15,794,512	8.00	7.43	7.91	24.68	7.43	7.91	14.72	4.00	0.68	33.27	23.31	58.5	55.7
2017	16,341,270	8.00	7.44	7.89	24.18	7.44	7.89	15.76	4.00	0.67	32.74	24.32	60.5	53.5
2018	16,926,735	8.00	7.45	7.87	23.54	7.45	7.87	16.77	4.00	0.65	32.06	25.29	62.6	51.8
2019	17,557,664	8.00	7.46	7.85	22.78	7.46	7.85	17.87	4.00	0.64	31.27	26.36	64.7	51.9
2020	18,232,076	8.00	7.46	7.84	21.97	7.46	7.84	18.80	4.00	0.61	30.42	27.25	66.8	52.2
2021	18,948,040	8.00	7.47	7.82	21.15	7.47	7.82	19.12	4.00	0.59	29.56	27.53	68.9	52.8
2022	19,703,172	8.00	7.47	7.81	20.35	7.47	7.81	19.37	4.00	0.59	28.75	27.77	71.0	53.6
2023	20,493,701	8.00	7.48	7.79	19.57	7.48	7.79	19.58	4.00	0.59	27.95	27.96	73.0	54.6
2024	21,321,539	8.00	7.48	7.78	18.81	7.48	7.78	19.75	4.00	0.59	27.18	28.12	75.0	55.8
2025	22,185,011	8.00	7.48	7.77	18.08	7.48	7.77	19.88	4.00	0.59	26.44	28.24	77.0	57.1
2026	23,081,835	8.00	7.48	7.77	17.38	7.48	7.77	19.98	4.00	0.59	25.74	28.34	79.0	58.6
2027	24,006,797	8.00	7.49	7.75	16.71	7.49	7.75	20.06	4.00	0.59	25.05	28.40	80.9	60.2
2028	24,958,599	8.00	7.49	7.74	16.07	7.49	7.74	20.13	4.00	0.59	24.40	28.46	82.8	61.9
2029	25,937,456	8.00	7.49	7.73	15.46	7.49	7.73	20.19	4.00	0.59	23.78	28.51	84.6	63.7
2030	26,943,962	8.00	7.49	7.72	14.88	7.49	7.72	20.24	4.00	0.59	23.19	28.55	86.5	65.6
2031	27,978,093	8.00	7.49	7.71	14.33	7.49	7.71	20.30	4.00	0.59	22.63	28.60	88.2	67.5
2032	29,041,527	8.00	7.49	7.70	13.81	7.49	7.70	20.36	4.00	0.59	22.10	28.65	90.0	69.6
2033	30,136,493	8.00	7.49	7.69	11.18	7.49	7.69	20.42	4.00	0.59	19.46	28.70	91.4	71.7
2034	31,268,441	8.00	7.49	7.68	9.89	7.49	7.68	20.48	4.00	0.59	18.16	28.75	92.7	73.9
2035	32,446,271	8.00	7.50	7.66	8.57	7.50	7.66	20.54	4.00	0.59	16.82	28.79	93.8	76.2
2036	33,675,824	8.00	7.50	7.64	7.42	7.50	7.64	20.58	4.00	0.59	15.65	28.81	94.7	78.6
2037	34,956,565	8.00	7.50	7.63	6.11	7.50	7.63	20.63	4.00	0.59	14.33	28.85	95.5	81.0
2038	36,292,078	8.00	7.50	7.62	5.67	7.50	7.62	20.67	4.00	0.59	13.88	28.88	96.2	83.6
2039	37,690,635	8.00	7.50	7.60	6.45	7.50	7.60	20.70	4.00	0.59	14.64	28.89	97.1	86.3
2040	39,153,043	8.00	7.50	7.59	6.29	7.50	7.59	20.73	4.00	0.59	14.47	28.91	97.9	89.0
2041	40,680,049	8.00	7.50	7.57	4.99	7.50	7.57	20.75	4.00	0.59	13.15	28.91	98.7	91.8
2042	42,266,610	8.00	7.50	7.56	4.03	7.50	7.56	10.72	4.00	0.59	12.18	18.87	99.2	93.2
2043	43,915,048	8.00	7.50	7.55	2.91	7.50	7.55	9.80	4.00	0.59	11.05	17.94	99.7	94.5

The Board at its January 2009 meeting adopted to reduce the interest rate from 8.50% to 8.25% for the June 30, 2008 valuation and to 8.00% thereafter.

Public School Employees' Retirement System of Pennsylvania
Projection of Contribution Rates and Funded Ratios As of June 30, 2009
Market Returns and Pension Rate Floors Set by User
Contributions Determined under Current Law

Market Returns Scenario 1

Fiscal Year Ending June	Appropriation Payroll (thousands)	Fiscal Year Market Rate of Return	Pension Rate Floor	Employee Contribution Rate	Employer Normal Cost	Unfunded Liability Rate	Preliminary Employer Pension Rate	Health Care Contribution	Total Employer Contribution Rate	Projected Total Employer Contribution (thousands)	Funded Ratio	Unfunded Accrued Liability (\$ Millions)	GASB Compliant?
2008	\$ 12,881,244	(2.82) %	4.00 %	7.25 %	6.68 %	(0.24) %	6.44 %	0.69 %	7.13 %		86.0 %	\$ 9,923.0	
2009	12,500,000	(26.54)	4.00	7.29	6.68	(3.37)	3.31	0.76	4.76		79.2	15,739.2	
2010	12,899,000	8.00	4.00	7.32	7.35	(3.72)	3.63	0.78	4.78	\$ 616,572	73.4	20,898.6	
2011	13,510,000	8.00	4.00	7.34	8.08	(0.50)	7.58	0.64	8.22	1,110,522	66.8	27,049.9	
2012	13,920,859	8.00	4.00	7.37	8.02	1.85	9.87	0.72	10.59	1,474,219	58.3	35,213.4	
2013	14,345,321	8.00	4.00	7.38	8.00	20.50	28.50	0.72	29.22	4,191,703	54.2	40,138.3	yes
2014	14,797,664	8.00	4.00	7.40	7.96	23.42	31.38	0.71	32.09	4,748,570	55.1	40,732.8	yes
2015	15,280,148	8.00	4.00	7.42	7.93	24.97	32.90	0.70	33.60	5,134,130	56.7	40,743.0	yes
2016	15,794,512	8.00	4.00	7.43	7.91	24.68	32.59	0.68	33.27	5,254,834	58.5	40,443.9	yes
2017	16,341,270	8.00	4.00	7.44	7.89	24.18	32.07	0.67	32.74	5,350,132	60.5	39,884.5	yes
2018	16,926,735	8.00	4.00	7.45	7.87	23.54	31.41	0.65	32.06	5,426,711	62.6	39,149.0	yes
2019	17,557,664	8.00	4.00	7.46	7.85	22.78	30.63	0.64	31.27	5,490,282	64.7	38,312.8	yes
2020	18,232,076	8.00	4.00	7.46	7.84	21.97	29.81	0.61	30.42	5,546,198	66.8	37,388.2	yes
2021	18,948,040	8.00	4.00	7.47	7.82	21.15	28.97	0.59	29.56	5,601,041	68.9	36,378.2	yes
2022	19,703,172	8.00	4.00	7.47	7.81	20.35	28.16	0.59	28.75	5,664,662	71.0	35,282.2	yes
2023	20,493,701	8.00	4.00	7.48	7.79	19.57	27.36	0.59	27.95	5,727,989	73.0	34,096.3	yes
2024	21,321,539	8.00	4.00	7.48	7.78	18.81	26.59	0.59	27.18	5,795,194	75.0	32,814.5	yes
2025	22,185,011	8.00	4.00	7.48	7.77	18.08	25.85	0.59	26.44	5,865,717	77.0	31,429.6	yes
2026	23,081,835	8.00	4.00	7.48	7.77	17.38	25.15	0.59	25.74	5,941,264	79.0	29,933.6	yes
2027	24,006,797	8.00	4.00	7.49	7.75	16.71	24.46	0.59	25.05	6,013,703	80.9	28,317.8	yes
2028	24,958,599	8.00	4.00	7.49	7.74	16.07	23.81	0.59	24.40	6,089,898	82.8	26,572.8	yes
2029	25,937,456	8.00	4.00	7.49	7.73	15.46	23.19	0.59	23.78	6,167,927	84.6	24,688.1	yes
2030	26,943,962	8.00	4.00	7.49	7.72	14.88	22.60	0.59	23.19	6,248,305	86.5	22,652.6	yes
2031	27,978,093	8.00	4.00	7.49	7.71	14.33	22.04	0.59	22.63	6,331,442	88.2	20,454.2	yes
2032	29,041,527	8.00	4.00	7.49	7.70	13.81	21.51	0.59	22.10	6,418,177	90.0	18,080.0	yes
2033	30,136,493	8.00	4.00	7.49	7.69	11.18	18.87	0.59	19.46	5,864,562	91.4	16,158.1	yes
2034	31,268,441	8.00	4.00	7.49	7.68	9.89	17.57	0.59	18.16	5,678,349	92.7	14,357.1	yes
2035	32,446,271	8.00	4.00	7.50	7.66	8.57	16.23	0.59	16.82	5,457,463	93.8	12,724.7	yes
2036	33,675,824	8.00	4.00	7.50	7.64	7.42	15.06	0.59	15.65	5,270,266	94.7	11,242.6	yes
2037	34,956,565	8.00	4.00	7.50	7.63	6.11	13.74	0.59	14.33	5,009,276	95.5	10,006.0	yes
2038	36,292,078	8.00	4.00	7.50	7.62	5.67	13.29	0.59	13.88	5,037,340	96.2	8,748.9	yes
2039	37,690,635	8.00	4.00	7.50	7.60	6.45	14.05	0.59	14.64	5,517,909	97.1	7,017.7	yes
2040	39,153,043	8.00	4.00	7.50	7.59	6.29	13.88	0.59	14.47	5,665,445	97.9	5,114.6	yes
2041	40,680,049	8.00	4.00	7.50	7.57	4.99	12.56	0.59	13.15	5,349,426	98.7	3,495.8	yes
2042	42,266,610	8.00	4.00	7.50	7.56	4.03	11.59	0.59	12.18	5,148,073	99.2	2,072.9	yes
2043	43,915,048	8.00	4.00	7.50	7.55	2.91	10.46	0.59	11.05	4,852,613	99.7	959.5	yes

The Board at its January 2009 meeting adopted to reduce the interest rate from 8.50% to 8.25% for the June 30, 2008 valuation and to 8.00% thereafter.

Public School Employees' Retirement System of Pennsylvania
Projection of Contribution Rates and Funded Ratios As of June 30, 2009
 Market Returns and Pension Rate Floors Set by User

Market Returns Scenario 1

Alternative Funding assumptions effective 6/30/10 valuation:

- Fresh-start accrued liability payments over 30 years with level percent of pay amortization.
- Entry Age Normal funding method.
- 10-year asset smoothing method.
- 5-year vesting with a 4% Option 4 conversion of member contributions.
- Valued under the current benefit provisions.
- Pension Collar limits contribution to prior fiscal year + the collar: 1.00% for FY2011, 3.00% for FY2012, 3.50% for FY2013, 4.50% for FY2014 and later.

Fiscal Year Ending June	Appropriation Payroll (thousands)	Fiscal Year Market Rate of Return	Pension Rate Floor	Employee Contribution Rate	Employer Normal Cost	Unfunded Liability Rate	Preliminary Employer Pension Rate	Health Care Contribution	Total Employer Contribution Rate	Projected Total Employer Contribution (thousands)	Funded Ratio	Unfunded Accrued Liability (\$ Millions)	GASB Compliant?
2008	\$ 12,881,244	(2.82) %	4.00 %	7.25 %	6.68 %	(0.24) %	6.44 %	0.69 %	7.13 %		86.0 %	\$ 9,923.0	
2009	12,500,000	(26.54)	4.00	7.29	6.68	(3.37)	3.31	0.76	4.76			79.2	15,739.2
2010	12,899,000	8.00	4.00	7.32	7.35	(3.72)	3.63	0.78	4.78	\$ 616,572	73.9	20,471.1	
2011	13,510,000	8.00	4.00	7.34	8.08	(0.50)	7.58	0.64	5.64	761,964	69.9	24,488.6	
2012	13,920,859	8.00	4.00	7.37	8.02	9.40	17.42	0.72	8.72	1,213,899	66.2	28,568.2	
2013	14,345,321	8.00	4.00	7.38	8.00	10.52	18.52	0.72	12.22	1,752,998	62.8	32,567.0	
2014	14,797,664	8.00	4.00	7.40	7.96	12.07	20.03	0.71	16.71	2,472,690	60.0	36,280.9	
2015	15,280,148	8.00	4.00	7.42	7.93	13.48	21.41	0.70	21.20	3,239,391	57.8	39,633.1	
2016	15,794,512	8.00	4.00	7.43	7.91	14.72	22.63	0.68	23.31	3,681,701	55.7	42,996.2	yes
2017	16,341,270	8.00	4.00	7.44	7.89	15.76	23.65	0.67	24.32	3,974,197	53.5	46,773.5	yes
2018	16,926,735	8.00	4.00	7.45	7.87	16.77	24.64	0.65	25.29	4,280,771	51.8	50,243.6	yes
2019	17,557,664	8.00	4.00	7.46	7.85	17.87	25.72	0.64	26.36	4,628,200	51.9	52,030.7	yes
2020	18,232,076	8.00	4.00	7.46	7.84	18.80	26.64	0.61	27.25	4,968,241	52.2	53,547.5	yes
2021	18,948,040	8.00	4.00	7.47	7.82	19.12	26.94	0.59	27.53	5,216,395	52.8	54,889.2	yes
2022	19,703,172	8.00	4.00	7.47	7.81	19.37	27.18	0.59	27.77	5,471,571	53.6	56,043.9	yes
2023	20,493,701	8.00	4.00	7.48	7.79	19.58	27.37	0.59	27.96	5,730,039	54.6	56,999.4	yes
2024	21,321,539	8.00	4.00	7.48	7.78	19.75	27.53	0.59	28.12	5,995,617	55.8	57,744.0	yes
2025	22,185,011	8.00	4.00	7.48	7.77	19.88	27.65	0.59	28.24	6,265,047	57.1	58,266.9	yes
2026	23,081,835	8.00	4.00	7.48	7.77	19.98	27.75	0.59	28.34	6,541,392	58.6	58,558.0	yes
2027	24,006,797	8.00	4.00	7.49	7.75	20.06	27.81	0.59	28.40	6,817,930	60.2	58,608.3	yes
2028	24,958,599	8.00	4.00	7.49	7.74	20.13	27.87	0.59	28.46	7,103,217	61.9	58,412.2	yes
2029	25,937,456	8.00	4.00	7.49	7.73	20.19	27.92	0.59	28.51	7,394,769	63.7	57,961.3	yes
2030	26,943,962	8.00	4.00	7.49	7.72	20.24	27.96	0.59	28.55	7,692,501	65.6	57,233.7	yes
2031	27,978,093	8.00	4.00	7.49	7.71	20.30	28.01	0.59	28.60	8,001,735	67.5	56,204.1	yes
2032	29,041,527	8.00	4.00	7.49	7.70	20.36	28.06	0.59	28.65	8,320,397	69.6	54,843.9	yes
2033	30,136,493	8.00	4.00	7.49	7.69	20.42	28.11	0.59	28.70	8,649,173	71.7	53,121.7	yes
2034	31,268,441	8.00	4.00	7.49	7.68	20.48	28.16	0.59	28.75	8,989,677	73.9	51,002.4	yes
2035	32,446,271	8.00	4.00	7.50	7.66	20.54	28.20	0.59	28.79	9,341,281	76.2	48,446.9	yes
2036	33,675,824	8.00	4.00	7.50	7.64	20.58	28.22	0.59	28.81	9,702,005	78.6	45,412.5	yes
2037	34,956,565	8.00	4.00	7.50	7.63	20.63	28.26	0.59	28.85	10,084,969	81.0	41,851.9	yes
2038	36,292,078	8.00	4.00	7.50	7.62	20.67	28.29	0.59	28.88	10,481,152	83.6	37,713.0	yes
2039	37,690,635	8.00	4.00	7.50	7.60	20.70	28.30	0.59	28.89	10,888,824	86.3	32,939.0	yes
2040	39,153,043	8.00	4.00	7.50	7.59	20.73	28.32	0.59	28.91	11,319,145	89.0	27,468.0	yes
2041	40,680,049	8.00	4.00	7.50	7.57	20.75	28.32	0.59	28.91	11,760,602	91.8	21,232.2	yes
2042	42,266,610	8.00	4.00	7.50	7.56	10.72	18.28	0.59	18.87	7,975,709	93.2	18,403.5	yes
2043	43,915,048	8.00	4.00	7.50	7.55	9.80	17.35	0.59	17.94	7,878,360	94.5	15,576.4	yes

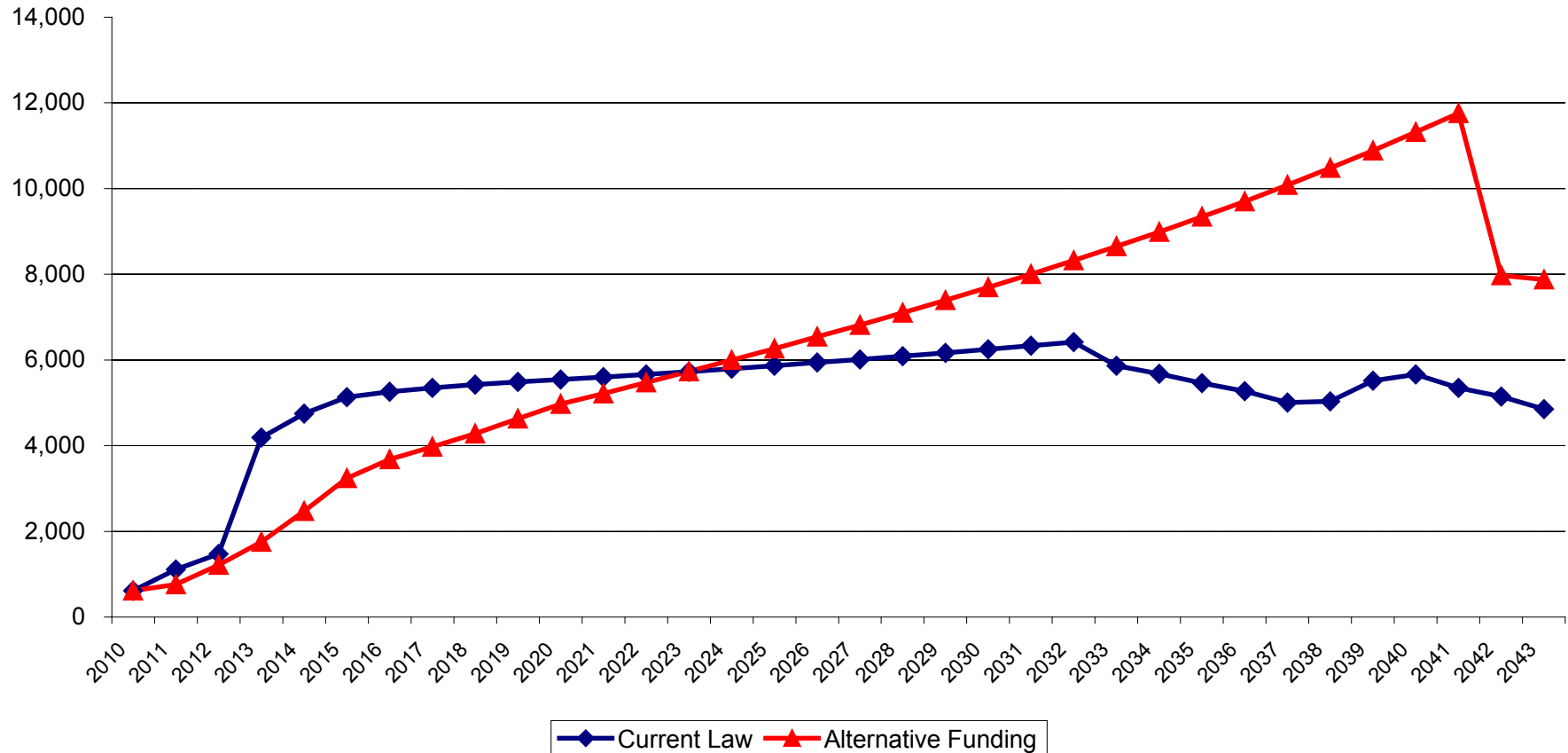
The Board at its January 2009 meeting adopted to reduce the interest rate from 8.50% to 8.25% for the June 30, 2008 valuation and to 8.00% thereafter.

Public School Employees' Retirement System of Pennsylvania
Market Returns and Pension Rate Floors Set by User and are the same for both Current and Alternative Funding
Market Returns Scenario 1

Alternative Funding Assumptions:

- Fresh-start accrued liability payments over 30 years with level percent of pay amortization.
- Entry Age Normal funding method.
- 10-year asset smoothing method.
- 5-year vesting with a 4% Option 4 conversion of member contributions.
- Valued under the current benefit provisions.

Projection of Employer Contribution Dollars (in Millions)

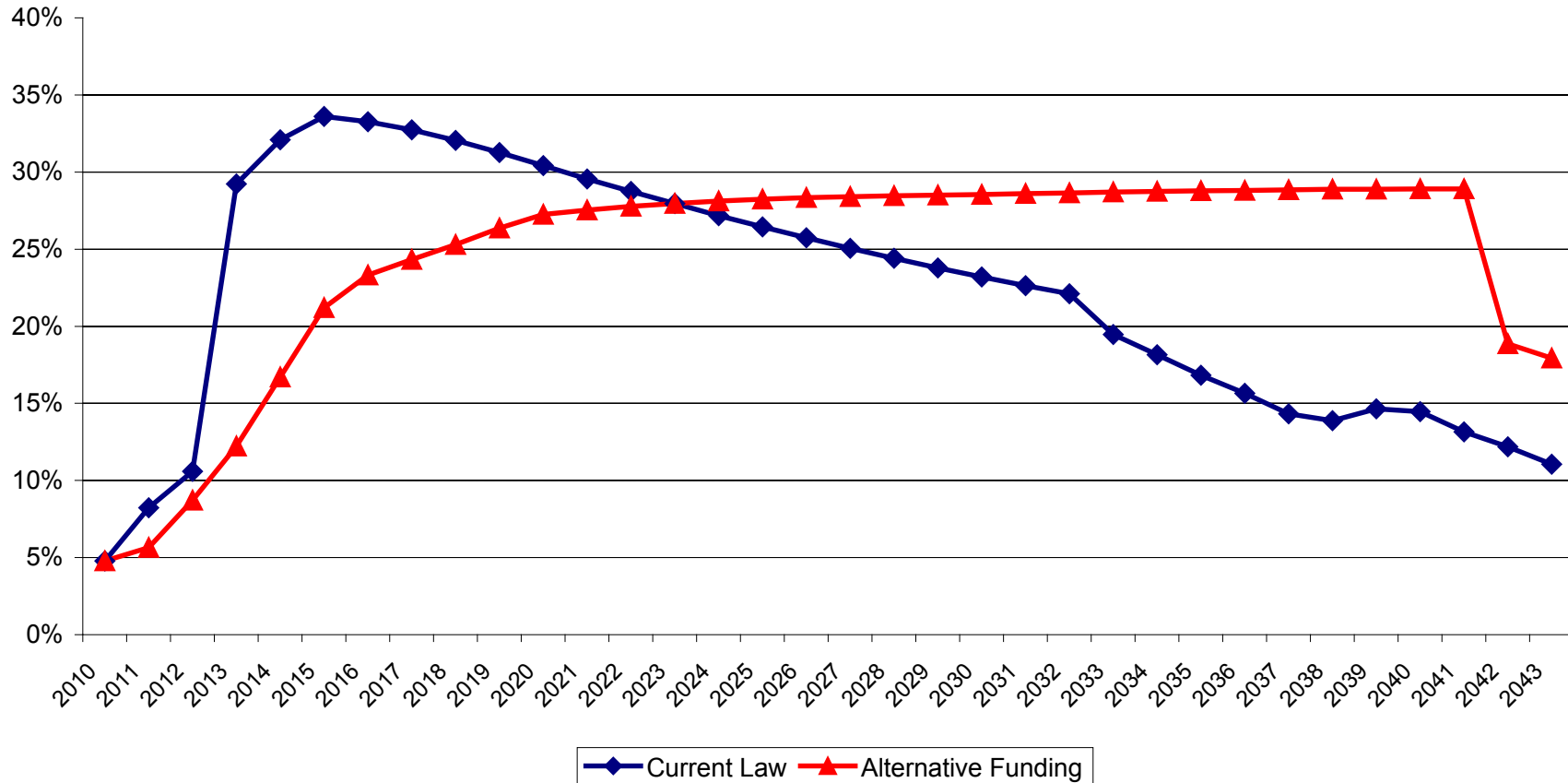


**Public School Employees' Retirement System of Pennsylvania
Market Returns and Pension Rate Floors Set by User and are the same for both Current and Alternative Funding
Market Returns Scenario 1**

Alternative Funding Assumptions:

- Fresh-start accrued liability payments over 30 years with level percent of pay amortization.
- Entry Age Normal funding method.
- 10-year asset smoothing method.
- 5-year vesting with a 4% Option 4 conversion of member contributions.
- Valued under the current benefit provisions.

Projection of Total Employer Contribution Rate

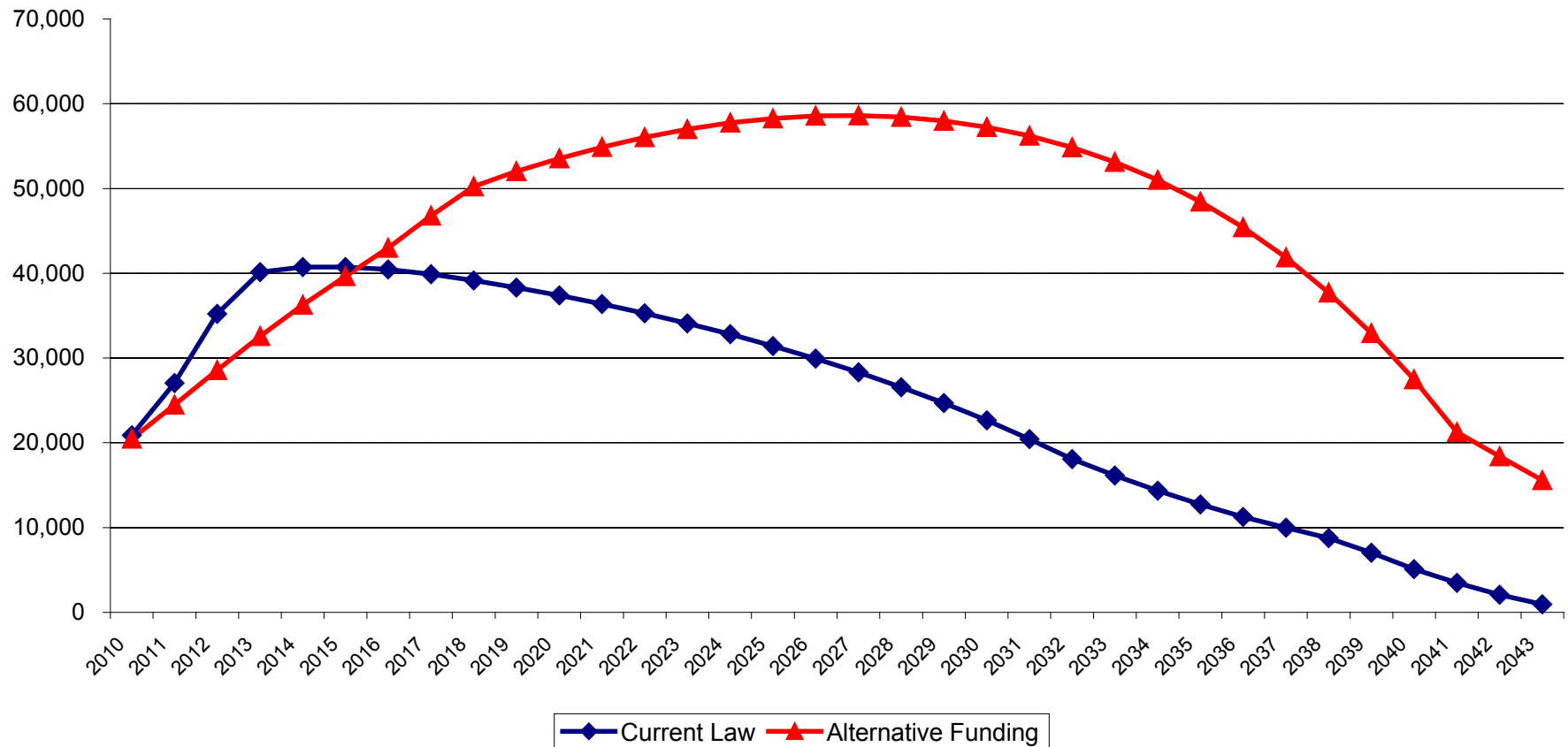


Public School Employees' Retirement System of Pennsylvania
Market Returns and Pension Rate Floors Set by User and are the same for both Current and Alternative Funding
Market Returns Scenario 1

Alternative Funding Assumptions:

- Fresh-start accrued liability payments over 30 years with level percent of pay amortization.
- Entry Age Normal funding method.
- 10-year asset smoothing method.
- 5-year vesting with a 4% Option 4 conversion of member contributions.
- Valued under the current benefit provisions.

Projection of Unfunded Liability (in Millions)

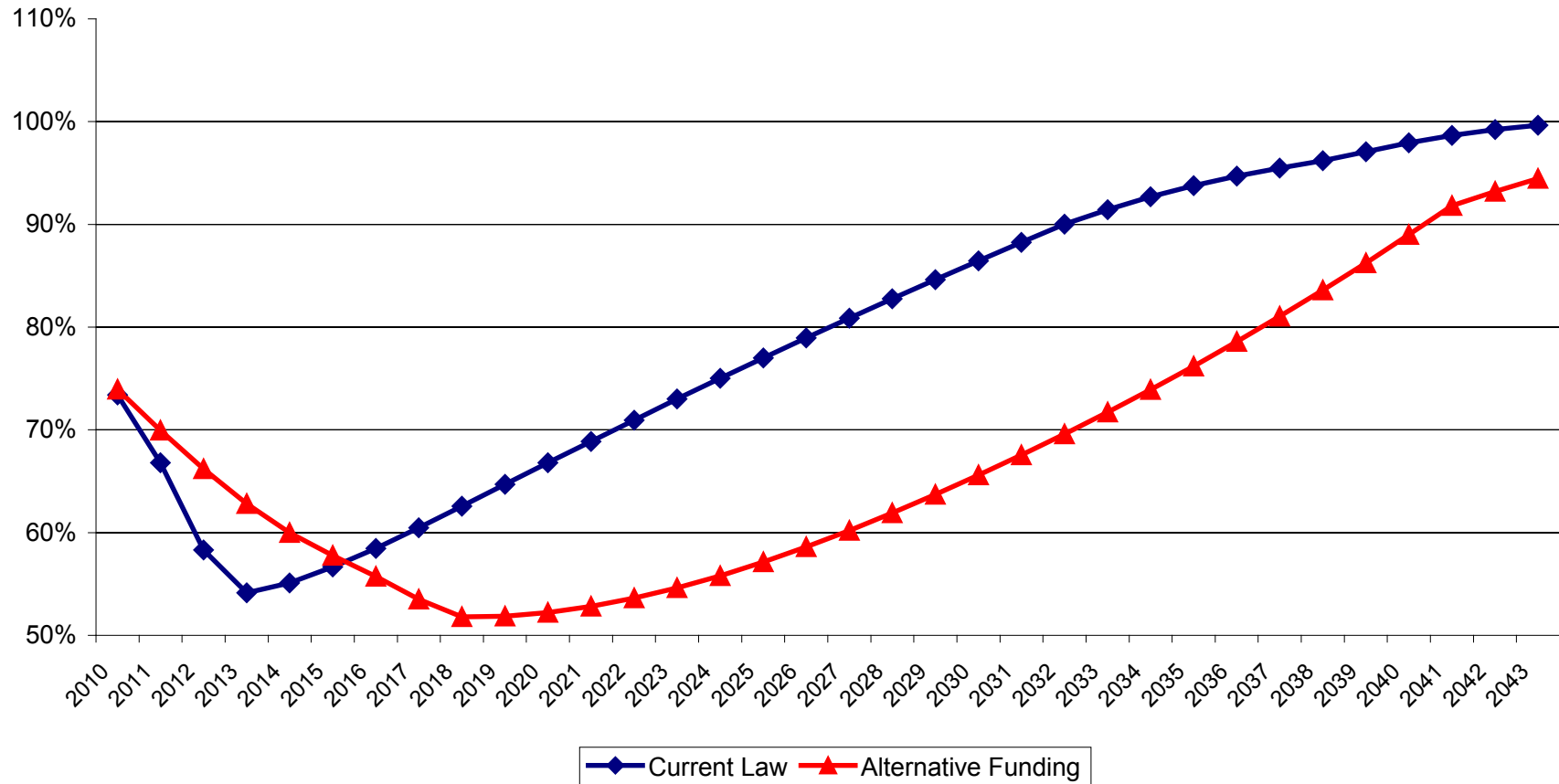


**Public School Employees' Retirement System of Pennsylvania
Market Returns and Pension Rate Floors Set by User and are the same for both Current and Alternative Funding
Market Returns Scenario 1**

Alternative Funding Assumptions:

- Fresh-start accrued liability payments over 30 years with level percent of pay amortization.
- Entry Age Normal funding method.
- 10-year asset smoothing method.
- 5-year vesting with a 4% Option 4 conversion of member contributions.
- Valued under the current benefit provisions.

Projection of Funded Ratio



Actuarial Value of Assets is the value of current plan assets recognized for valuation purposes. It is based on a smoothed market value that recognizes investment gains and losses over a period of time (in HB 2497, five years for SERS and ten years for PSERS).

Fresh Start of the Unfunded Accrued Liability is a method by which the UAL (actuarial accrued liability minus actuarial value of assets) is determined at the fresh start date and the result is amortized over a period of years. In other words, all existing payments toward the remaining unpaid balance of the UAL (as explained in the next paragraph) are re-determined and consolidated into one payment.

Unfunded Accrued Liability (UAL) is an amount determined to be the excess of the actuarial accrued liability over the actuarial value of assets. At inception, the initial UAL is amortized over a period of time. Future changes to the UAL arising from legislation and/or actuarial experience are amortized over a period of time, which may not necessarily be the same as the initial UAL amortization period.

Amortization is a method of paying off a debt (both interest and principal) over a period of time (in HB 2497, 30 years).

Under a **level percent of pay amortization** method, the amortization payment is calculated such that the same percentage of compensation is applied each year during the amortization period. Since compensation is assumed to increase each year, the actual dollar amount of the amortization payment will increase each year.

Under a **level dollar amortization**, the annual dollar amount of the payment remains the same each year.