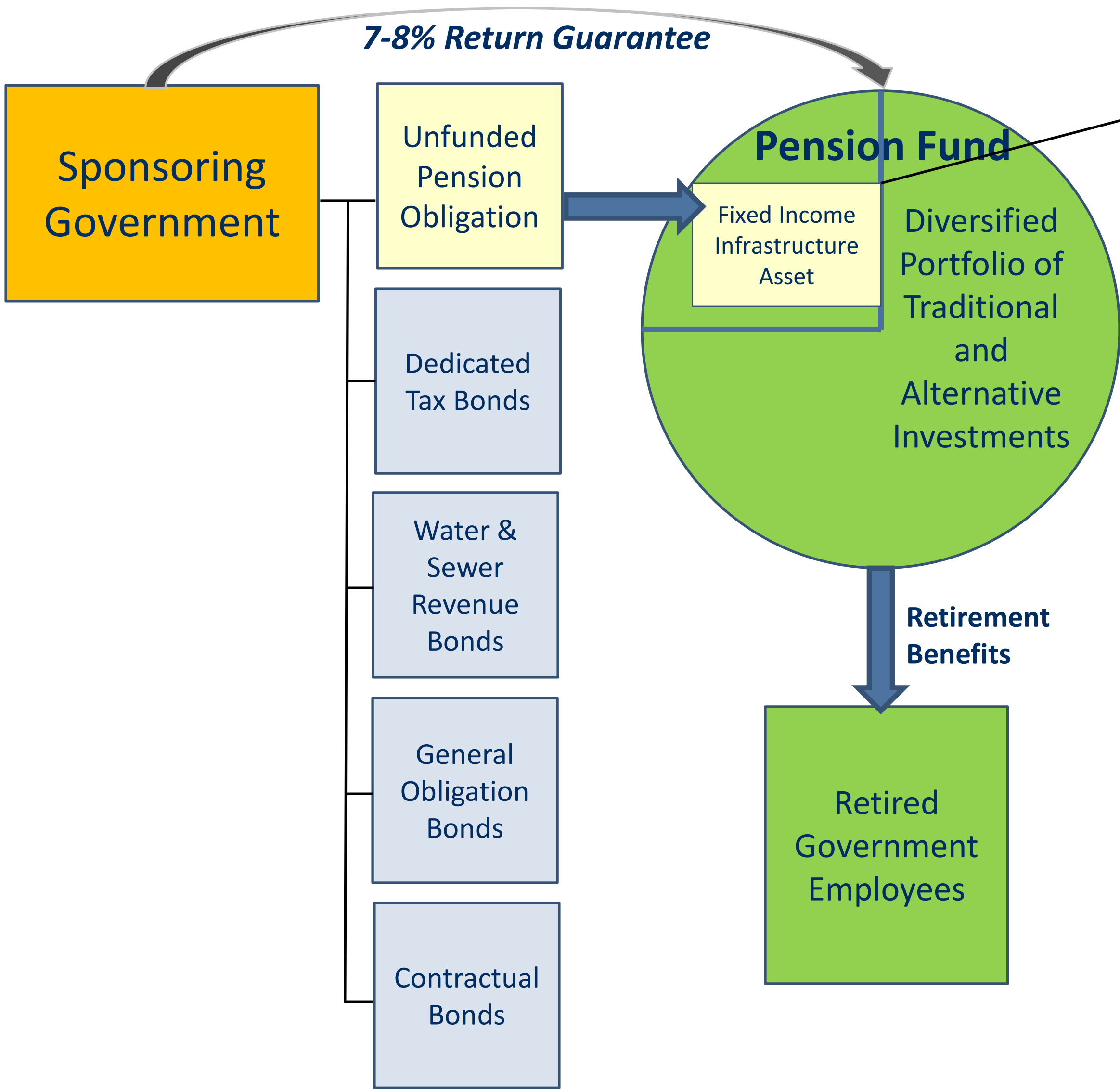
RAYMOND JAMES

MAGNY

IN DEFENSE OF PENSION OBLIGATION BONDS

April 17, 2015

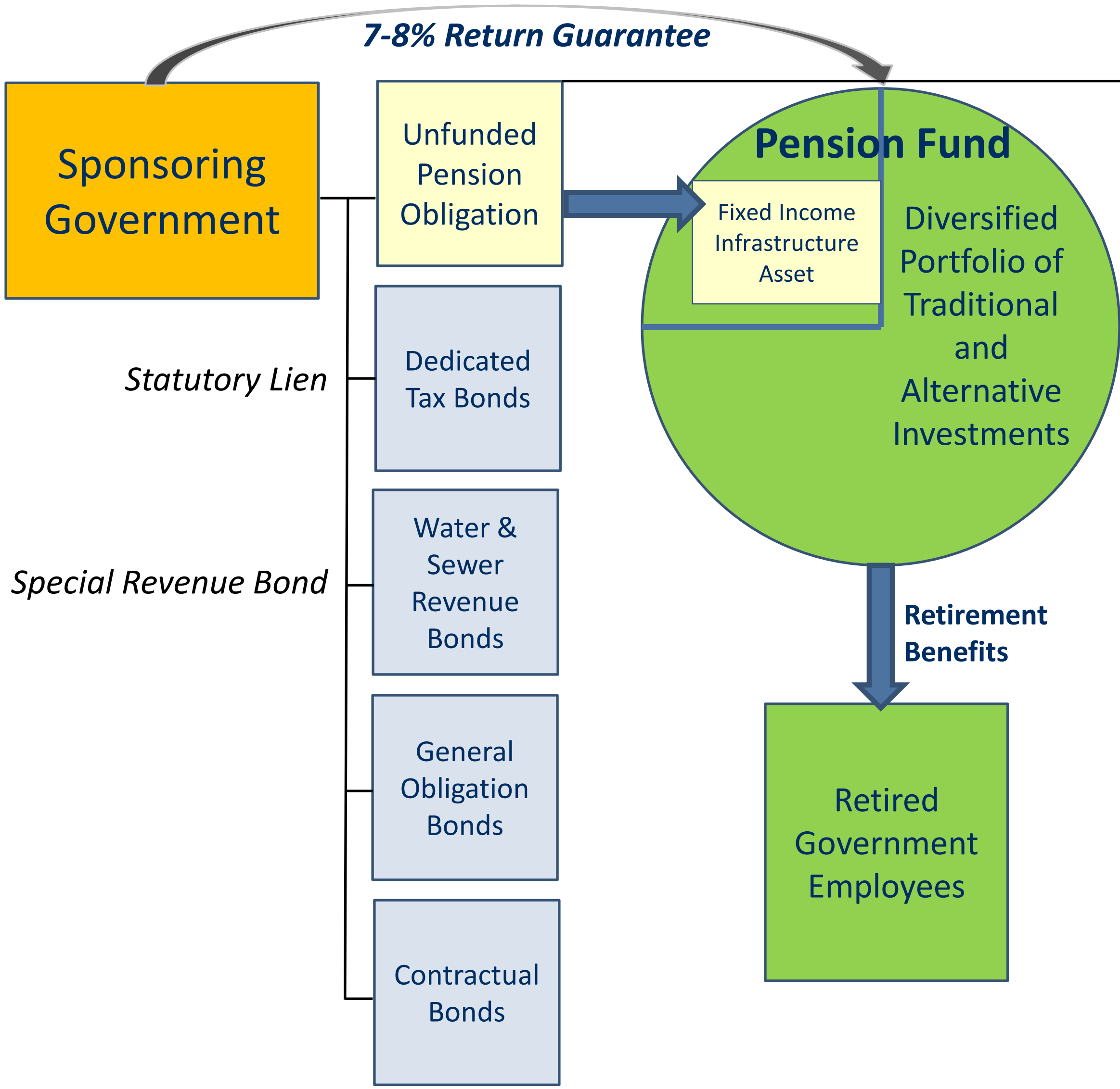
UNFUNDED PENSION OBLIGATIONS ARE DEBT OF THE SPONSORING GOVERNMENT AND A FIXED INCOME ASSET OF THE PENSION FUND



Unfunded Pension Debt Structure

Security	General Obligation, with practical priority
Interest	Usually 7-8% fixed, but resettable by actuary
Structure	Payment-In-Kind (PIK), unpaid interest accretes and compounds
Maturity	Nominal amortization, but really perpetual
Option	Prepayable at par at any time

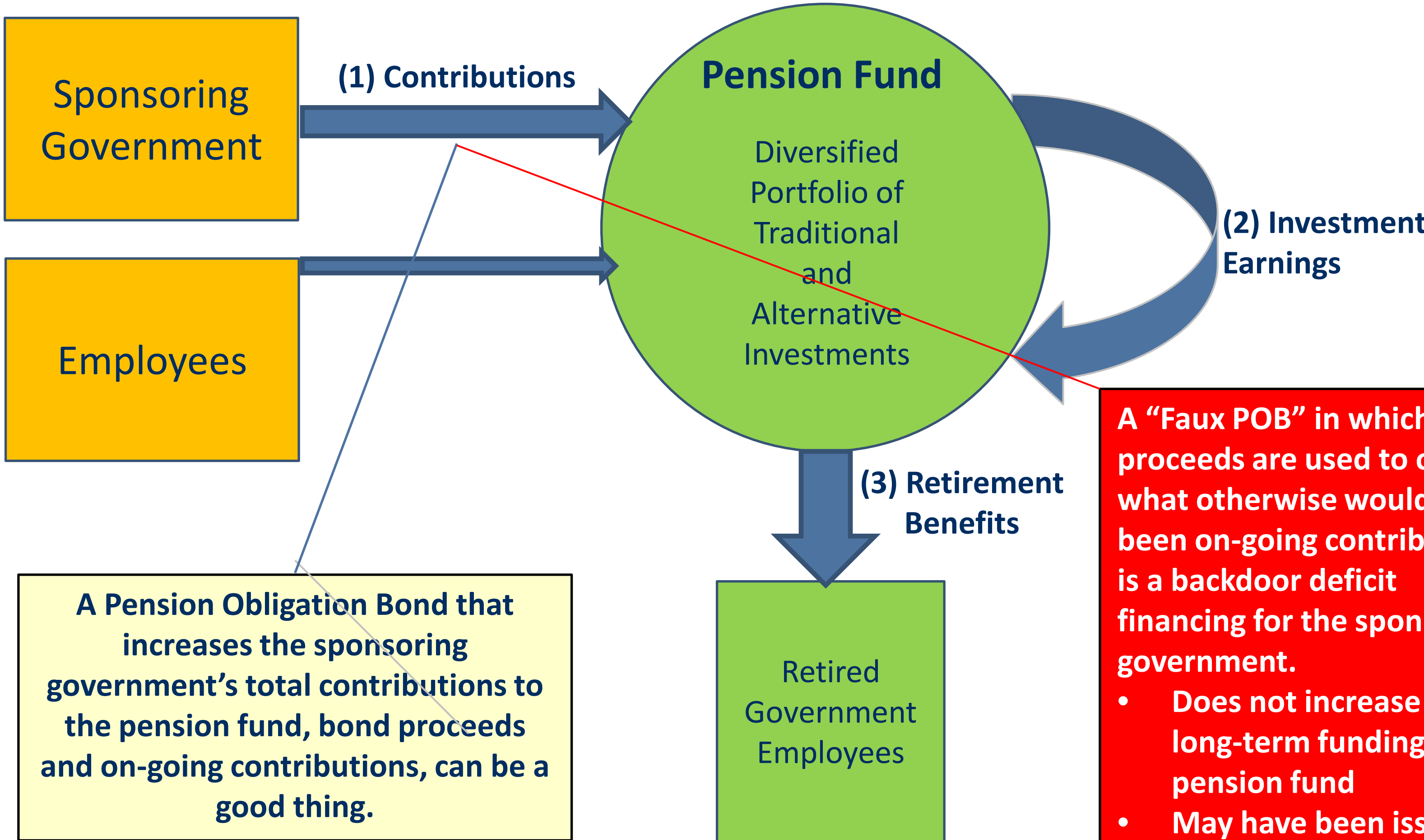
BANKRUPTCY DECISIONS ARE TEACHING US THAT UNFUNDED PENSION OBLIGATIONS ARE VERY HARD LIABILITIES THAT APPEAR TO ENJOY A PRACTICAL PRIORITY IN EXIT PLANS



"The City has a strong interest in preserving its relationships with employees. It has no similar "mission-related investment" in its relationships with its other unsecured creditors, including bondholders."

Judge Steven Rhodes in his Detroit decision

CHANGES IN THE FUNDING STATUS OF A PENSION FUND ARE A FUNCTION OF THREE PARAMETERS

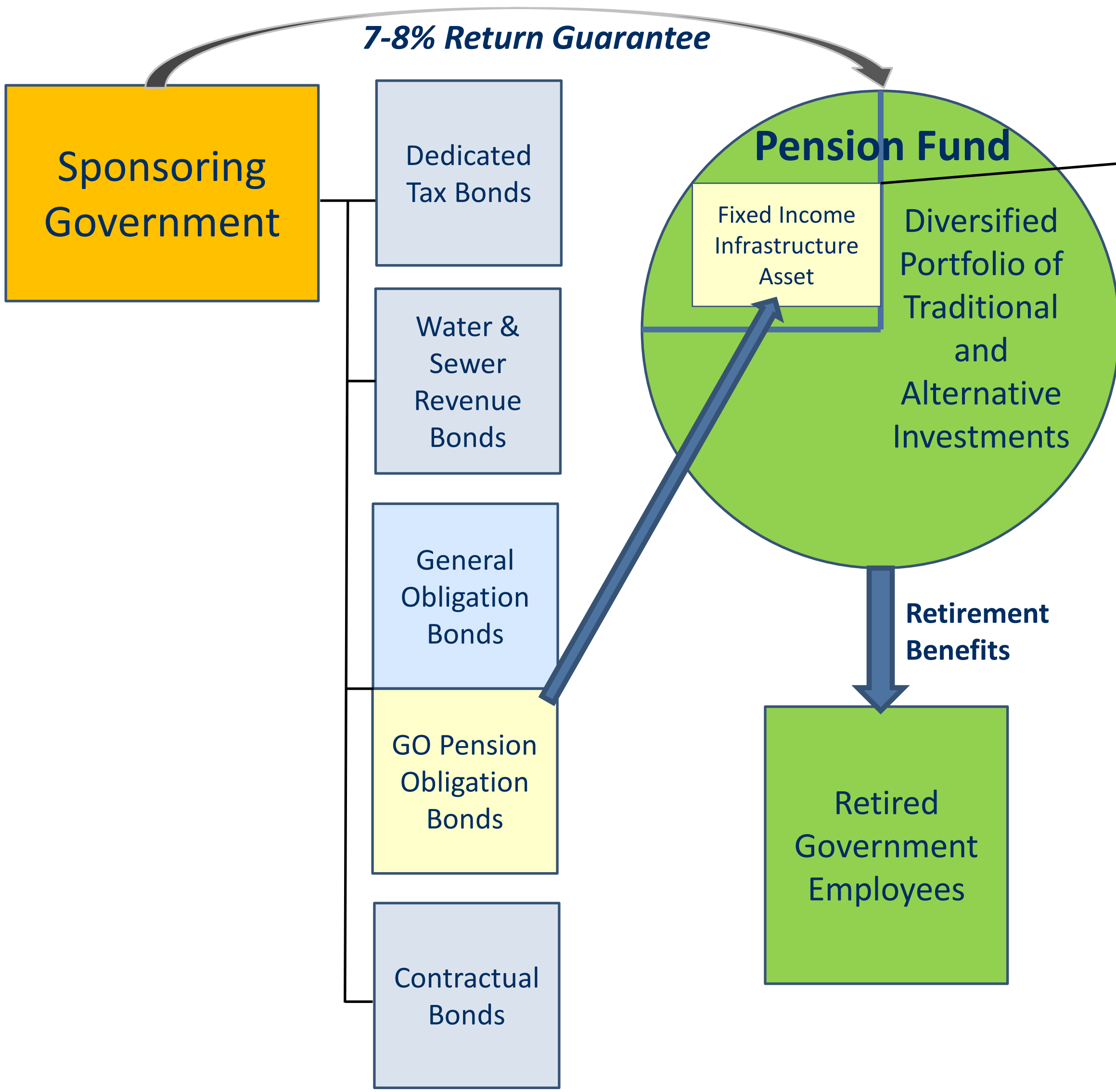


A Pension Obligation Bond that increases the sponsoring government's total contributions to the pension fund, bond proceeds and on-going contributions, can be a good thing.

A "Faux POB" in which bond proceeds are used to offset what otherwise would have been on-going contributions is a backdoor deficit financing for the sponsoring government.

- **Does not increase the long-term funding of the pension fund**
- **May have been issued as tax-exempt working capital**
- **Symptom of fiscal stress**

PENSION OBLIGATION BONDS – WHETHER SOLD PUBLICLY OR PLACED DIRECTLY TO THE PENSION FUND - FIX THE TERMS OF THE DEBT AND MAY LOWER RECOVERY PRIORITY



Pension Obligation Bond Terms

Security	General Obligation
Interest	Around 5% if sold publicly, 7-8% fixed if placed in fund
Structure	Fixed amortization with level or increasing debt service
Maturity	20 to 30 years
Option	Prepayable at par after 10 years

7.5% bonds structured for 30 years of level debt service are worth 130% of par valued at 5.0%.

NEGATIVE AMORTIZATION OF PENSION PLANS' UNFUNDED LIABILITIES RESULTS FROM BOTH UNDERPAYMENT AND BACK-LOADED AMORTIZATION SCHEDULES

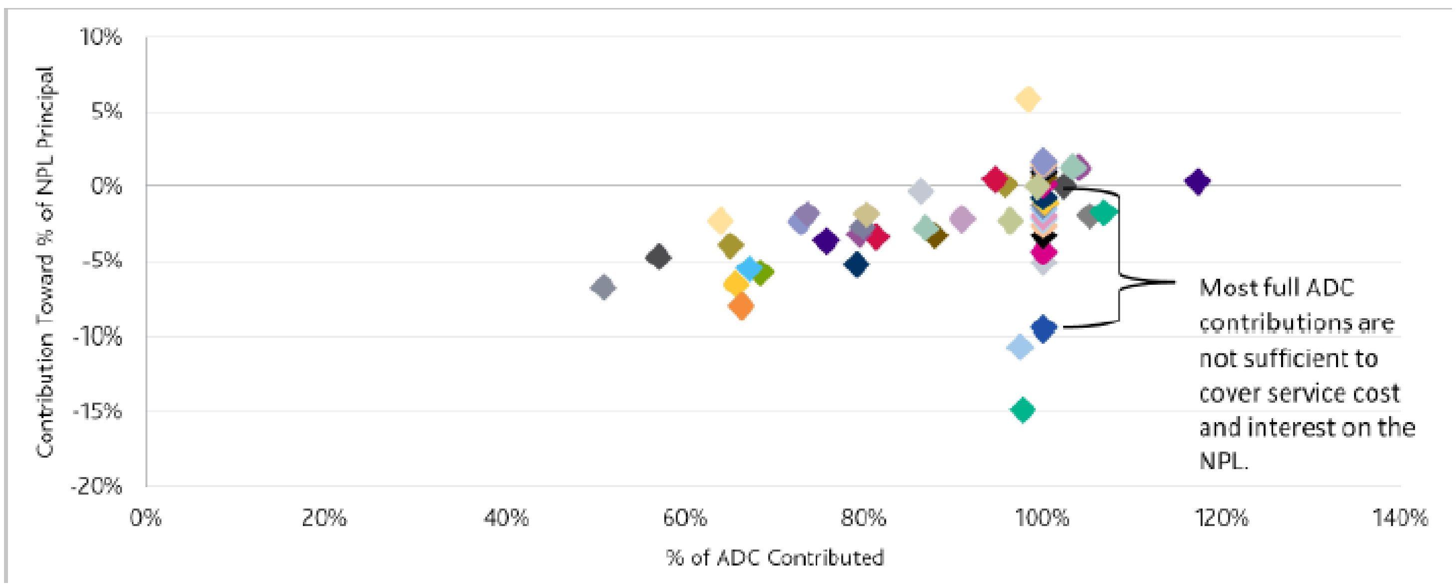
- Moody's recently reviewed 54 public pension plans each having liabilities of more than $10 billion
- 75% were making contributions at levels that were not sufficient to cover Service Costs and interest on the unfunded liability – Negative Amortization
- Employers in 19 plans made contributions equal to the Actuarially Determined Contribution. 13 of those 19 plans still had negative amortization created by actuaries using back-loaded repayment schedules.

MOODY'S INVESTORS SERVICE

New Pension Accounting Increases Clarity of Plan Funding Trajectories - March 2015

Employer Contributions At and Below ADCs Often Drive Public Pension Funding Gaps

Tread water benchmark at 0% on y-axis



Source: Plan CAFRs, Moody's Investors Service

WHILE YOU WILL NOT FIND A REPAYMENT SCHEDULE IN ACTUARIAL REPORTS, THE PARAMETERS USED TO CALCULATE THE REPAYMENT OBLIGATION FOR UNFUNDED LIABILITIES ARE REQUIRED TO BE DISCLOSED

ACTUARIAL SECTION -- GASB 67

Section 3: Required Supplementary Information

There are several tables of Required Supplementary Information (RSI) that need to be included in the System's financial statements:

Paragraphs 32(a)-(c): The required tables are provided in Schedule A.

Paragraph 32(d): The money-weighted rates of return required are to be supplied by the System.

Paragraph 34: In addition the following should be noted regarding the RSI:

Changes of benefit terms. None

Changes of assumptions. In the 2011 valuation and later, the expectation of retired life mortality was changed to the RP-2000 Mortality Tables rather than the 1994 Group Annuity Mortality Table, which was used prior to 2011. In the 2011 valuation, rates of withdrawal, retirement, disability and mortality were adjusted to more closely reflect actual experience. In the 2011 valuation, the Board adopted an interest smoothing methodology to calculate liabilities for purposes of determining the actuarially determined contributions.

Methods and assumptions used in calculations of actuarially determined contributions. The actuarially determined contribution rates in the schedule of employer contributions are calculated as of June 30, three years prior to the end of the fiscal year in which contributions are reported. The following actuarial methods and assumptions were used to determine contribution rates reported in the most recent year of that schedule:

Actuarial Cost Method	Amortization Method	Remaining Amortization Period	Asset Valuation Method	Inflation	Salary Increase	Ultimate Investment Rate of Return*
Entry Age	Level percent of pay, open	30 years	5-year smoothed market	3.50%	4.00 to 8.20 percent, including inflation	7.50 percent, net of pension plan investment expense, including inflation

The actuarially determined contribution rates are determined using the interest smoothing methodology adopted by the Board

Interest Rate
7.50%

Payment Slope
Level percent of pay, 4% annual growth

Initial Term
30 Years

Reamortization
"Open" means a new 30-year schedule is created every year

ACTUARIES STEALTHILY CREATE PERPETUALLY INCREASING NEGATIVE AMORTIZATION BY COMBINING "LEVEL PERCENTAGE OF PAY" WITH "OPEN" AMORTIZATION

"Closed" Amortization Schedule

	Unfunded Liability	Principal	Interest	Total
1	$10,000,000	($194,035)	$750,000	$555,965
2	10,194,035	(186,349)	764,553	578,204
3	10,380,384	(177,197)	778,529	601,332
4	10,557,580	(166,433)	791,819	625,385
5	10,724,014	(153,900)	804,301	650,401
6	10,877,914	(139,427)	815,844	676,417
7	11,017,341	(122,827)	826,301	703,473
8	11,140,168	(103,900)	835,513	731,612
9	11,244,068	(82,428)	843,305	760,877
10	11,326,497	(58,175)	849,487	791,312
11	11,384,672	(30,886)	853,850	822,964
12	11,415,558	(284)	856,167	855,883
13	11,415,842	33,930	856,188	890,118
14	11,381,912	72,080	853,643	925,723
15	11,309,833	114,514	848,237	962,752
16	11,195,318	161,613	839,649	1,001,262
17	11,033,705	213,785	827,528	1,041,312
18	10,819,921	271,471	811,494	1,082,965
19	10,548,450	335,150	791,134	1,126,284
20	10,213,300	405,337	765,998	1,171,335
21	9,807,963	482,591	735,597	1,218,188
22	9,325,372	567,513	699,403	1,266,916
23	8,757,859	660,753	656,839	1,317,592
24	8,097,106	763,013	607,283	1,370,296
25	7,334,093	875,051	550,057	1,425,108
26	6,459,042	997,684	484,428	1,482,112
27	5,461,358	1,131,795	409,602	1,541,397
28	4,329,563	1,278,335	324,717	1,603,053
29	3,051,227	1,438,333	228,842	1,667,175
30	1,612,895	1,612,895	120,967	1,733,862
		$10,000,000	$21,181,274	$31,181,274

"Open" Amortization Schedule

	Unfunded Liability	Principal	Interest	Total
1	$10,000,000	($194,035)	$750,000	$555,965
2	10,194,035	(197,800)	764,553	566,753
3	10,391,835	(201,638)	779,388	577,750
4	10,593,472	(205,550)	794,510	588,960
5	10,799,022	(209,539)	809,927	600,388
6	11,008,561	(213,604)	825,642	612,038
7	11,222,165	(217,749)	841,662	623,913
8	11,439,915	(221,974)	857,994	636,019
9	11,661,889	(226,281)	874,642	648,360
10	11,888,170	(230,672)	891,613	660,941
11	12,118,842	(235,148)	908,913	673,765
12	12,353,989	(239,710)	926,549	686,839
13	12,593,700	(244,362)	944,527	700,166
14	12,838,061	(249,103)	962,855	713,752
15	13,087,164	(253,937)	981,537	727,601
16	13,341,101	(258,864)	1,000,583	741,719
17	13,599,965	(263,887)	1,019,997	756,111
18	13,863,851	(269,007)	1,039,789	770,782
19	14,132,858	(274,227)	1,059,964	785,738
20	14,407,085	(279,548)	1,080,531	800,984
21	14,686,633	(284,972)	1,101,497	816,526
22	14,971,604	(290,501)	1,122,870	832,369
23	15,262,106	(296,138)	1,144,658	848,520
24	15,558,243	(301,884)	1,166,868	864,984
25	15,860,128	(307,742)	1,189,510	881,768
26	16,167,869	(313,713)	1,212,590	898,877
27	16,481,582	(319,800)	1,236,119	916,319
28	16,801,382	(326,005)	1,260,104	934,098
29	17,127,387	(332,331)	1,284,554	952,223
30	17,459,718	(338,779)	1,309,479	970,700
		($7,798,498)	$30,143,425	$22,344,927

Interest Rate
7.50%

Payment Slope
Level percent of pay, 4% annual growth

Initial Term
30 Years

Reamortization
"Open" means a new 30-year schedule is created every year

SOME POTENTIAL BENEFITS OF ISSUING PENSION OBLIGATION BONDS

- Publicly recognize the unfunded pension liability as real debt that is going to be repaid allowing it to be managed in conjunction with all the government's debt obligations.
- Consciously, and conscientiously, create a fixed repayment plan for paying off the pension's unfunded liability.
- Reduce the risk that future budget negotiations will reduce payments on the unfunded liability by either underfunding the ADC/ARC or through actuarial reamortization.
- Eliminate the continuing discussion among all stakeholders – retirees, employees, elected officials, finance and budget staffs, rating agencies, investors and the press – about plan underfunding and how it is going to be addressed.
- Reduce projected payments on the unfunded liability by borrowing at interest rates that are lower than the assumed earnings rate used to calculate the unfunded liability.
- Reduce the real payments on the unfunded liability if the actual fund earnings rate exceeds the interest rates on POBs.   Earnings below the POB borrowing rate create an economic loss.

PENSION OBLIGATION BONDS BY THEMSELVES ARE NOT “THE” ANSWER TO UNDERFUNDING

- A pension fund deficit is created through a combination of underfunding (scheduled and not), benefit increases, earnings that were below assumptions and other actuarial assumptions that were not realized or have been projected to change from original estimates.

- Simply issuing POBs will probably not change the fundamental dynamics that created an unfunded liability.

- If POBs are issued and nothing else is done to modify the pension fund parameters, the unfunded liability may grow again over time.

- POBs are most successful when they are part of decision among all stakeholders to change plan parameters to significantly reduce the probability that a material new unfunded liability will be recreated.

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