

Discussion of Pension and OPEB Cost Components

Vermont State Treasurer's Office
DRAFT
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Funding Valuation Considerations

- **The following slides refer to State's current funding valuations and not GASB's prescribed method for accounting for pensions (GASB 67/68)**
- GASB clearly states that new standards are not intended as a funding strategy
- In prior standard, the Annual Required Contribution (ARC) was the basis of a funding strategy and continues to be for funding purposes.
- On the accounting side, there will likely be increased volatility in the net pension liability computed under GASB 67/68 from year to year
 - Uses fair market values that fluctuate from year to year
 - Changes in liabilities will be recognized over a shorter period of time

Let's Talk About Funding!

- The “Funding Policy” of a Pension Plan is a systematic set of procedures used to determine the contributions which will be made in a specific year and series of years...It must address how the contributions will be made for ongoing benefits as well as how to finance gains or losses as experience occurs
 - GRS
- Elements to Consider:
 - Funding Required Contributions
 - Realistic and Well defined Actuarial Assumptions
 - Actuarial Cost Methods
 - Amortization Method and Period

Pension Funding: How are We Doing?

- Measured by an Independent Actuary

- Three Important Factors:
 1. What is your funded status?
 - Pension Liabilities
 - Assets Available to meet these liabilities

 2. Are you Contributing to Plan at the Recommended Rate
 - ARC
 - ADC/ADEC

 3. Do you have a plan in place to retire the unfunded liability?

Some Actuarial Terms*

- **Actuarial Accrued Liability (AAL)**: The present value of future benefits earned for accrued service as of the valuation date.
 - Computed differently under different funding methods
- **Actuarial Value of Assets** The value of pension plan investments and other property used by the actuary for the purpose of an actuarial valuation
 - MVA or the market value
 - AVA generally smoothed value of assets.
- **Unfunded Actuarial Accrued Liability**
- **(UAAL)**: The difference between the actuarial accrued liability and valuation assets.
- The present value of benefits earned to date that are not covered by current plan assets.
- **Funded ratio**:
- The ratio of a plan's current assets to the actuarial accrued liability (AAL).
- The funded ratio equals the actuarial value of assets divided by the actuarial accrued liability calculated under the plan's actuarial cost method.

*Funding basis

Funding History

	Year ending June 30	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)
VSTRS	2016	\$ 1,716,296	\$ 2,942,024	\$ 1,225,728	58.3%
	2015	1,662,346	2,837,375	1,175,029	58.6%
	2014	1,610,286	2,687,049	1,076,764	59.9%
	2013	1,552,924	2,566,834	1,013,910	60.5%
	2012	1,517,410	2,462,913	945,503	61.6%
	2011	1,486,698	2,331,806	845,108	63.8%
	2010	1,410,368	2,122,191	711,823	66.5%
	2009	1,374,079	2,101,838	727,759	65.4%
	2008	1,605,462	1,984,967	379,505	80.9%
	2007	1,541,860	1,816,650	274,790	84.9%
	2006	1,427,393	1,686,502	259,109	84.6%
	2005	1,354,006	1,492,150	138,144	90.7%
	2004	1,284,833	1,424,661	139,828	90.2%
	2003	1,218,001	1,358,822	140,821	89.6%
	2002	1,169,294	1,307,202	137,908	89.5%
	2001	1,116,846	1,254,341	137,495	89.0%
	2000	1,037,466	1,174,087	136,621	88.4%
	1999	931,056	1,065,754	134,698	87.4%
	1998	821,977	955,694	133,717	86.0%
	1997	717,396	849,179	131,783	84.5%



note: amounts in thousands.

note: VSTRS funding method was changed from Entry Age Normal with Frozen Initial Liability to Entry Age Normal effective with the 2006 actuarial valuation.

A History of **Underfunding** the ARC led to the Current Underfunding of Teachers Plan, Further Negatively Impacted by Great Recession

Year	Total VSTRS Payroll	Recommended Contribution For Budget Based on Actuarial Projection	Actual Contribution	\$ Difference: Act vs. Rec. (Uses Budget Beginning 1996)	Percentage of Request
1979	96,725,620	7,806,825	4,825,155	2,981,670	61.8%
1980	104,521,888	8,944,090	8,471,960	472,130	94.7%
1981	112,811,389	9,862,861	8,830,900	1,031,961	89.5%
1982	126,748,398	10,200,209	7,822,760	2,377,449	76.7%
1983	139,085,342	10,721,814	10,929,355	(207,541)	101.9%
1984	153,329,729	12,341,069	11,592,100	748,969	93.9%
1985	169,219,652	13,475,181	12,567,866	907,315	93.3%
1986	187,834,677	14,668,095	14,461,148	206,947	98.6%
1987	206,728,650	15,925,452	16,239,416	(313,964)	102.0%
1988	230,430,153	16,294,346	17,186,259	(891,913)	105.5%
1989	261,596,990	18,072,172	19,000,000	(927,828)	105.1%
1990	273,951,188	21,320,155	19,561,000	1,759,155	91.7%
1991	298,104,184	25,013,437	15,000,000	10,013,437	60.0%
1992	312,346,750	28,595,220	14,618,992	13,976,228	51.1%
1993	324,536,824	28,819,875	19,890,048	8,929,827	69.0%
1994	335,155,405	25,805,408	20,580,000	5,225,408	79.8%
1995	346,975,007	27,451,926	18,080,000	9,371,926	65.9%
1996	355,894,809	29,884,559	11,480,000	18,404,559	38.4%
1997	364,695,370	30,954,237	18,080,000	12,874,237	58.4%
1998	357,899,112	33,519,949	18,106,581	15,413,368	54.0%
1999	372,298,852	27,232,542	18,080,000	9,152,542	66.4%
2000	387,998,959	23,573,184	18,586,240	4,986,944	78.8%
2001	403,258,305	20,882,521	19,143,827	1,738,694	91.7%
2002	418,904,021	21,965,322	20,446,282	1,519,040	93.1%
2003	437,238,543	23,197,088	20,446,282	2,750,806	88.1%
2004	453,517,153	29,608,892	24,446,282	5,162,610	82.6%
2005	486,857,658	43,592,332	24,446,282	19,146,050	56.1%
2006	499,044,327	49,923,599	24,985,506	24,938,093	50.0%
2007	515,572,694	38,200,000	38,496,410	(296,410)	100.8%
2008	535,807,012	40,749,097	40,955,566	(206,469)	100.5%
2009	561,588,013	37,077,050	37,349,818	(272,768)	100.7%
2010	562,149,916	41,503,002	41,920,603	(417,601)	101.0%
2011	547,748,405	48,233,006	50,268,131	(2,035,125)	104.2%
2012	561,179,272	51,241,932	56,152,011	(4,910,079)	109.6%
2013	563,623,421	60,182,755	65,086,320	(4,903,565)	108.1%
2014	567,073,601	68,352,825	72,668,412	(4,315,587)	106.3%
2015	576,393,699	72,857,863	72,908,805	(50,942)	100.1%

Annual Required Contribution

- Method by which UAL is eventually paid off (assuming it is funded)
- Annual Required Contribution (ARC):
 - A measure of needed plan funding
 - The actuarially determined pension fund contribution in a single year
- The ARC has two parts:
 1. The Normal Cost
 - The normal cost generally represents the portion of the cost of projected benefits allocated to the current plan year
 - The employer normal cost equals the total normal cost of the plan reduced by employee contributions
 2. Amortization, which is the annual amount needed to eliminate the unfunded liability over the plan's amortization period

Upward Budget Pressures on Funding of the Teacher System ARC

- Historical
 - Great Recession Impact
 - Lack of Funding of the ARC in past years, especially the teachers' system
- Demographic/Experience and Economic Assumptions vs. Actual
- Experience Study
 - Interest Rate Assumption
 - Mortality
 - Other
- Teacher Retirements
- Education Workforce Changes

FY 2016 VSTRS Valuation Results

- Incorporates an FY 2018 ARC recommendation of **\$88,409,437**
 - Normal \$ 8,346,261
 - Accrued Liability Amortization \$80,063,176
- Increase from prior year of **\$5.7 million**
- Normal Cost: 1.33% of projected payroll
- Recent experience study incorporated upward pressures due to the changes in interest rate and new mortality assumptions
- Increasing amortization payments have greater impact on VSTRS
- Increase in retirements, local workforce changes
- Overall, the number of active teachers continues to decline

Normal Cost as it Impacts Appropriations

- Computed differently under different funding methods.
- The normal cost generally represents the portion of the cost of projected benefits allocated to the current plan year.
- The employer normal cost equals the total normal cost of the plan reduced by employee contributions.

Actuarial Cost Methods

- An actuarial method that defines the allocation of pension costs (and contributions) over a member's working career
- All standard actuarial cost methods are comprised of two components: normal cost and the actuarial accrued liability
- Each method results in a different balance between current year and future year costs
- GASB 25/27: The six actuarial methods used in determining postretirement benefits liability are – entry age, frozen entry age, attained age, frozen attained age, projected unit credit, and aggregate
- Under GASB67 and 68 entry age normal will be required for reporting/accounting purposes
- Various methods previously used or to be continued as a funding policy may result in considerable variance to GASB 67/68

Classification of Funding Methods

Cost Allocation Cost Method

Prospective benefit at retirement is estimated, the actuarial value at the entry age or attained age is estimated and the cost allocated to a particular year.

Example: **Entry Age Normal Cost or Aggregate Cost**

Benefit Allocation Cost Method

Benefits are allocated to a particular year and the actuarial value of the allocated portion is assigned to each year.

Example: **Unit Credit or Projected Unit Credit**

Determination of Normal Cost

Cost Allocation Cost Method

1. Estimate prospective benefit
2. Determine actuarial value of prospective benefit.
3. Divide this value by the value of \$1 per year from point A to point B
4. Normal Cost is the resulting quotient

Benefit Allocation Cost Method

1. Must ascertain the “accumulated benefit” (amount allocated to a particular year)
2. Determine the actuarial value of the accumulated benefit
3. Normal Cost is the increase in accumulated benefit each year

Why is this Important to Appropriation Decisions?

- Pension for VSTRS and VSERS: Both funding and accounting method use EAN. Normal cost will be relatively stable as a percentage of payroll.
 - Workforce changes will impact this
- OPEB (health Care) for VSTRS and VSERS: Both use the PUC method for funding purposes and current accounting. Accounting requirements under GASB for OPEB will change this year.
 - Normal under PUC will rapidly increase over time
 - Other Issues:
 - No prefunding, pay as you go for VSERS premiums
 - Full appropriation of pay go requirements for VSTRS are still building

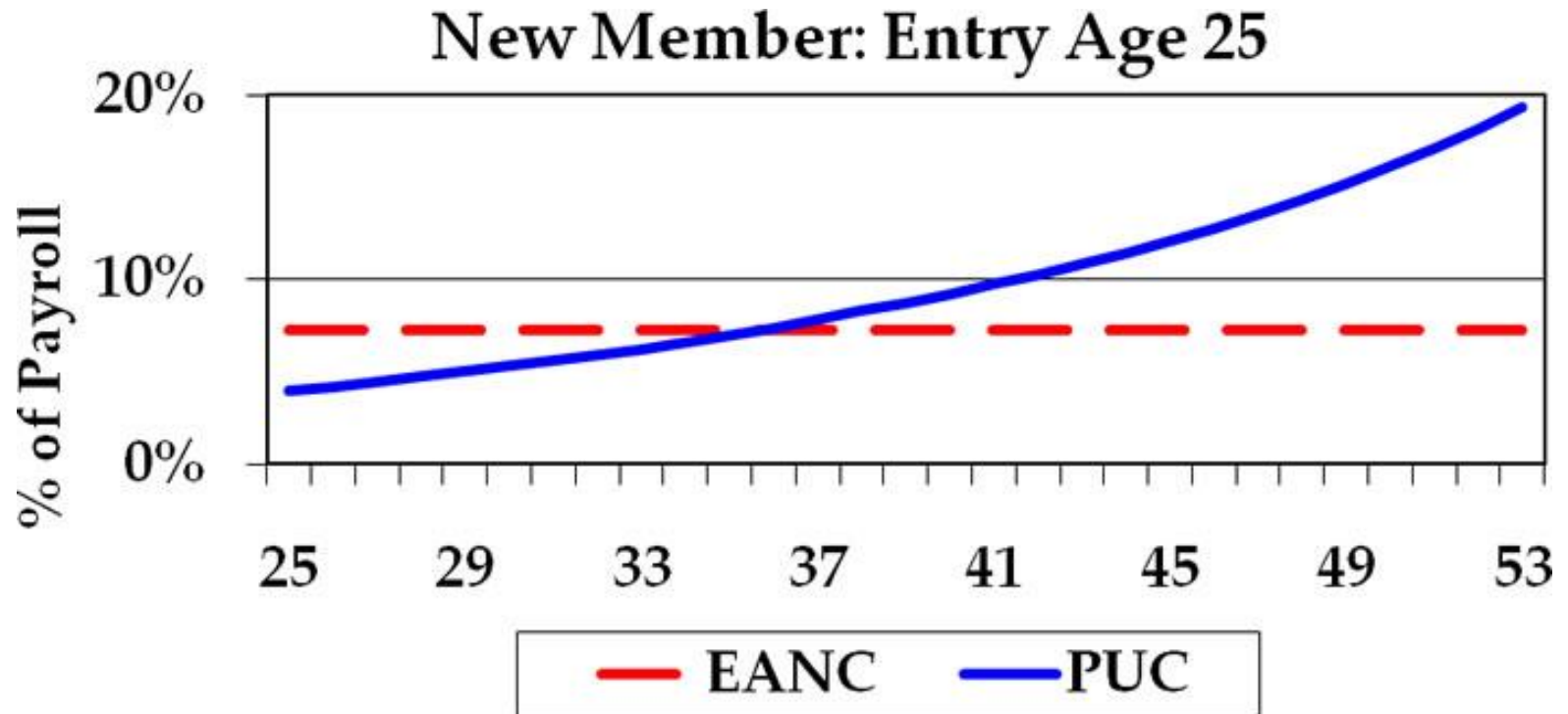
Two Most Common Methods

- Entry Age Normal (EAN) Cost Method: EAN, is a method of splitting the present value of benefits (PVB) into the actuarial accrued liability (AAL) and the present value of future normal costs (PVFNC). The AAL is based on projected pay and current service.
 - The method defines the normal cost as a level percent of pay from entry age until retirement.
 - EAN generally puts more of the liability into the AAL and less into PVFNC than other methods.
- Projected Unit Credit (PUC) Funding Method: A method of splitting the PVB into the AAL and the PVFNC is based on projected pay and current service.
 - The normal cost for each member increases as the member approaches retirement age.
 - PUC generally puts less of the liability into the AAL and more into the PVFNC than EAN.

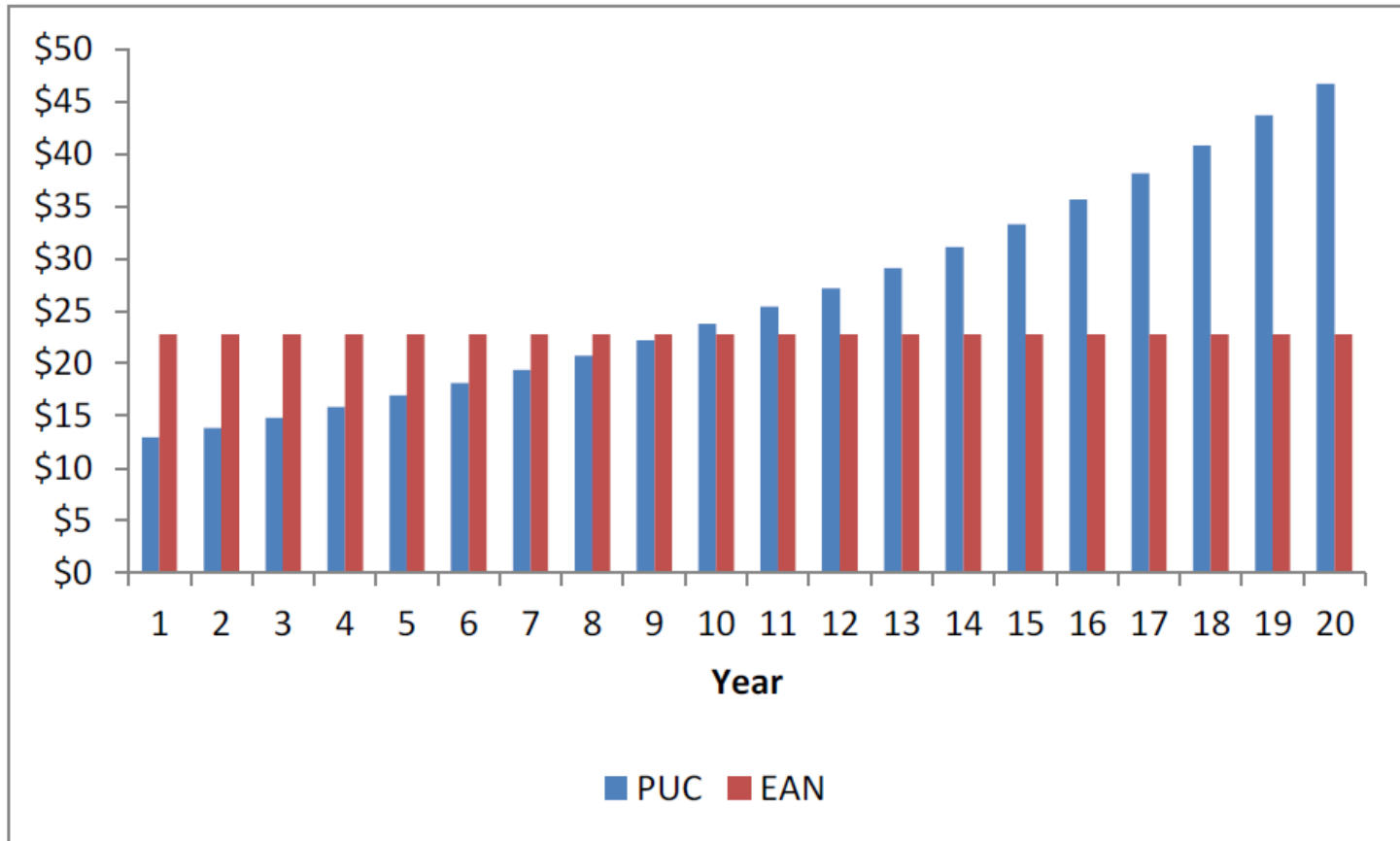
EAN and PUC Methods

- The PUC method recognizes years of service when earned, but projects salary to retirement age. As a result, normal costs increase under this method as an employee approaches retirement.
- The EAN cost method immediately recognizes both projected salary and service. As a result, it allows normal costs to be calculated as a level-dollar amount or as a level-percent-of-pay over the member's career.
- The difference is in the pace at which the pension liability accrues. Normal cost under PUC is lower than EAN in early years so the liability accrues at a slower pace.
- Compared to an EAN approach, the PUC method accumulates assets more slowly, produces more volatile measures of contribution rates, and results in rising rather than level contribution rates.
- GASB 67/68 requires use of EAN

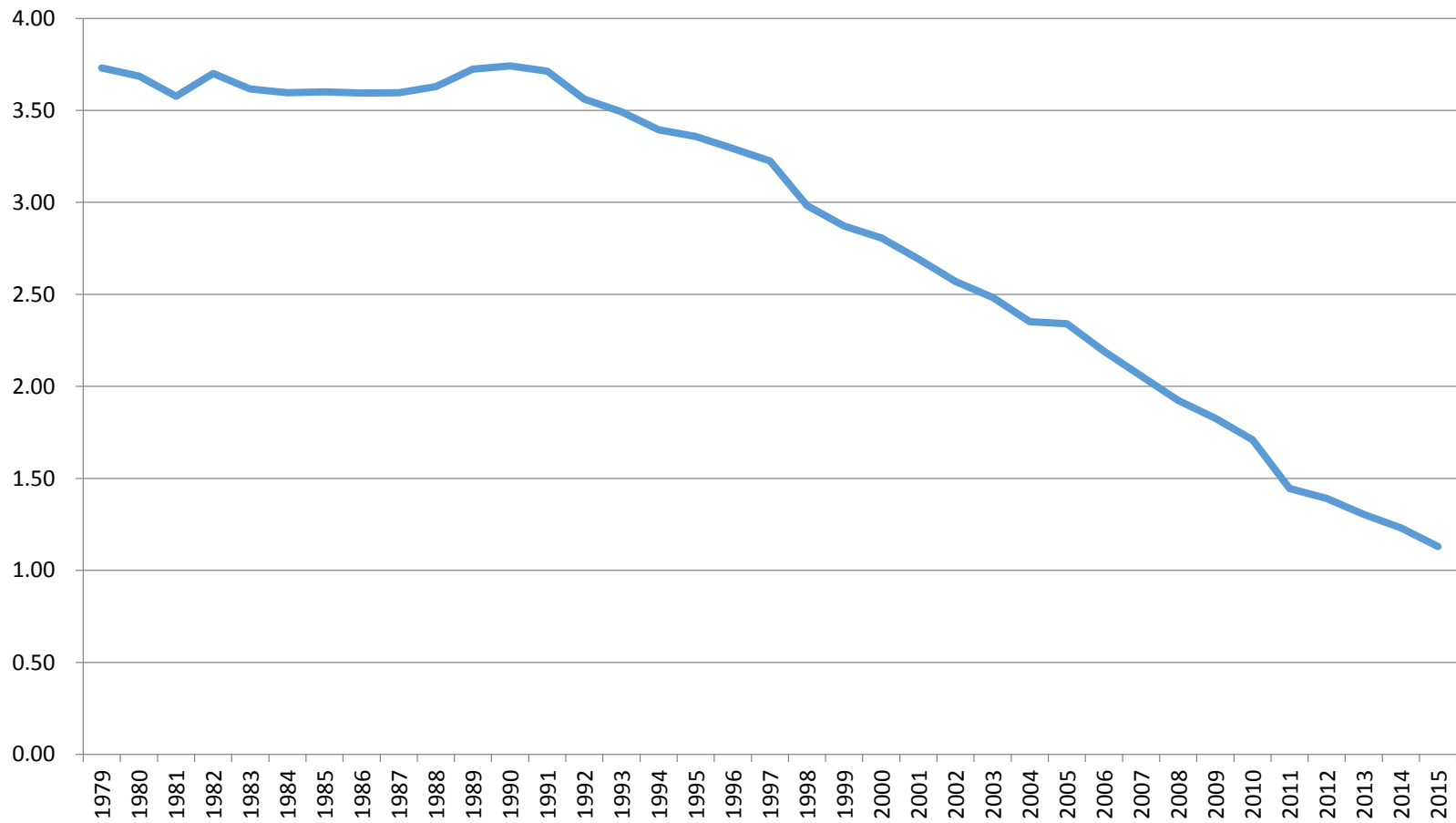
Entry Age Normal vs. PUC



Comparison of Normal Costs over time



VSTRS Active to Retiree Ratio



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