



Bryan, Pendleton, Swats & McAllister, LLC
A Wells Fargo Company



TENNESSEE CONSOLIDATED RETIREMENT SYSTEM

Actuarial Funding Valuation – Legacy Pension Plans
Valuation Date: July 1, 2015

February 26, 2016

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Valuation Purpose

- Determine contribution rates
(TCA Section 8-37 Part 3)
- Examine financial health of plan
- Separate process and reporting for GASB 67/68

Valuation Background

- Experience Study
 - Mandated by statute
 - Most recent study reviewed 2008 - 2012 period
 - New assumptions adopted (first applied 7/1/2013)
 - Performed every 4 years
 - Next study will review 2012 - 2016 period
- Actuarial Audit
 - Commonly done for public plans
 - Last audit performed in 2010
 - Endorsed methodology and results
 - Performed every 10 years

System Overview – Legacy Plans

(as of July 1, 2015)

- Defined Benefit System
 - State employees, higher education and K-12 teachers hired prior to July 1, 2014
 - 540+ local governments (participation is optional and costs are valued individually)
- Demographic Data
 - 198,000 Active Participants
 - 143,000 Retired Participants (\$2.2 Billion in annual payments)
- Market Value of Assets -- \$43.2 Billion
- Funding Basis is Traditionally Conservative

System Overview – Plan Design

	Legacy Plan	Hybrid Plan*
Benefit Multiplier	1.575%	1.0%
Full Retirement	Age 60/30 YOS	Age 65/Rule of 90
Early Retirement	Age 55/25 YOS	Age 60/Rule of 80
Employee Contributions	State-0%;TCH-5%	State-5%;TCH-5%
Cost of Living Adjustment	CPI (Max 3%)	CPI (Max 3%)
Defined Contribution Component	None	5% From Employer
Stabilization Reserve	None	Yes
Cost Controls	None	9% Employer Target
Unfunded Liability Controls	None	Limit: 12.5% of State Indebtedness

*New Hybrid Plan effective only for new hires after 7/1/2014

System Overview – Plan Design

- Hybrid plan began 7/1/2014 with new employees only
- All employees hired prior to 7/1/2014 continue in legacy plan
- Cost savings of new hybrid plan will be gradual over time
- Legacy plan must still be managed and funded adequately
- Remainder of presentation related to legacy plans

Active Membership Comparison by Number (Legacy Plans)

<u>Group</u>	<u>2013</u>	<u>2015</u>	<u>Pct Change</u>
Teachers	74,366	69,125	(7.0)%
State	57,520	51,723	(10.1)
Political Sub	77,050	76,436	(0.8)
Others	1,028	865	(15.9)
Total	<u>209,964</u>	<u>198,149</u>	<u>(5.6)%</u>

Active Membership Comparison by Compensation (Legacy Plans)

Group	2013	2015	Pct Change
Teachers	\$3,747,220,849	\$3,542,059,375	(5.5)%
Average	50,389	51,241	1.7
State	2,386,905,135	2,302,564,966	(3.5)
Average	41,497	44,517	7.3
Political Sub	2,374,004,970	2,433,640,239	2.5
Average	30,811	31,839	3.3
Others	103,746,172	87,478,675	(15.7)
Average	100,920	101,131	0.2
Total	\$8,611,877,126	\$8,365,743,255	(2.9)%
Average	\$41,016	\$42,219	2.9%

Retired Member Comparison by Number (Legacy Plans)

<u>Group</u>	<u>2013</u>	<u>2015</u>	<u>Pct Change</u>
Teachers	43,773	47,979	9.6%
State	43,516	48,779	12.1
Political Sub	36,601	42,305	15.6
Others	3,681	3,620	(1.7)
Total	<u>127,571</u>	<u>142,683</u>	<u>11.8%</u>

Retired Member Comparison by Benefit Amount (Legacy Plans)

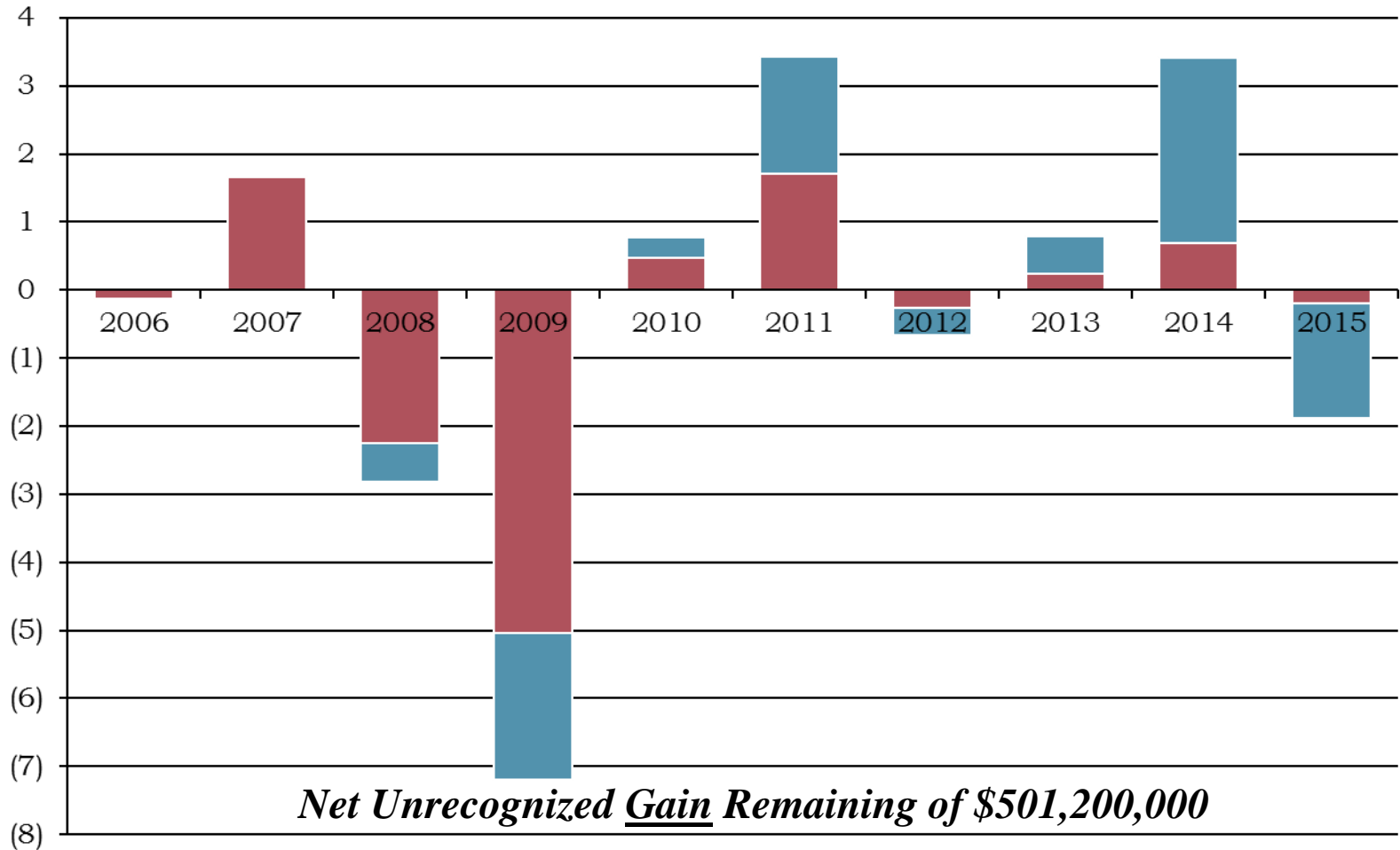
Group	2013	2015	Pct Change
Teachers	\$980,741,672	\$1,103,163,065	12.5%
Average	22,405	22,993	2.6
State	624,803,691	719,441,574	15.1
Average	14,358	14,749	2.7
Political Sub	271,032,694	327,696,250	20.9
Average	7,405	7,746	4.6
Others	92,552,380	96,745,059	4.5
Average	25,143	26,725	6.3
Total	\$1,969,130,437	\$2,247,045,948	14.1%
Average	\$15,436	\$15,749	2.0%

Valuation Asset Method

- Use “smoothing” device to limit contribution volatility
- Phase-in excess or deficit earnings compared to the earnings assumption ratably over ten-year period
- Utilize 80%/120% corridor
- Resulting value is “Actuarial Value of Assets”
- Actuarial Value of Assets is only used to determine contribution rates pursuant to the TCRS funding policy (Market Value of Assets used for GASB reporting)

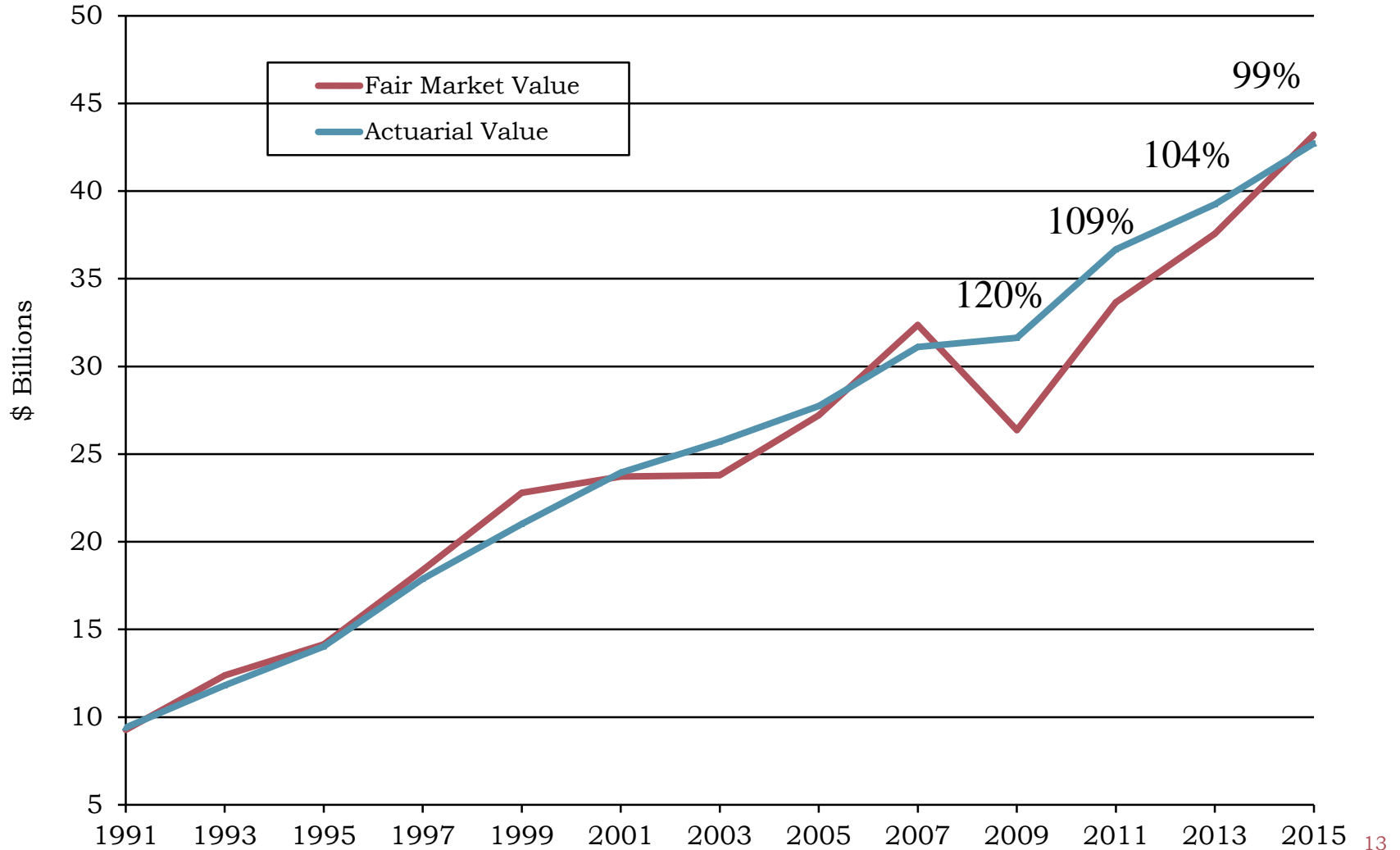
Valuation Asset Gains and Losses (Legacy Plans)

\$ Billions



■ Recognized ■ Excluded

Valuation Asset Comparison to Market (Legacy Plans)



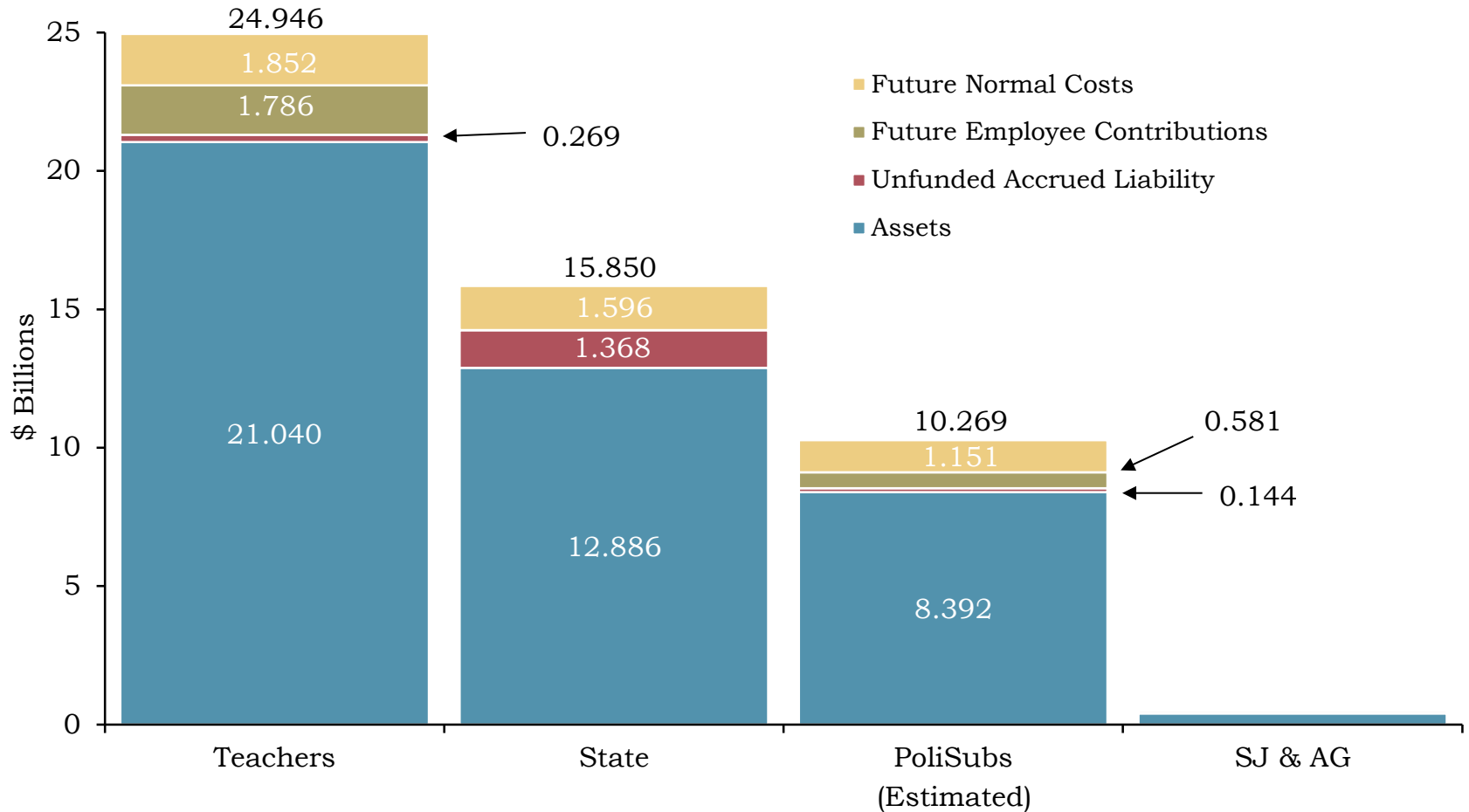
Contribution Rate Determination

- Entry Age Normal funding method
- Normal Cost + Amortization of Unfunded Accrued Liability + Administrative Fee
- Level dollar amortization of Unfunded Accrued Liability
- Amortization periods adjusted each year to manage rate changes and are within requirements of state law and pursuant to TCRS funding policy
- Local governments will be allowed to amortize the UAL pursuant to the TCRS funding policy

Contribution Rate Determination (Legacy Plans)

- 2013 amortization periods for Unfunded Accrued Liability
 - UAL Layer 1
(Teachers – 8.00 years; State – 13.00 years; Judges & AG – 16.00 years)
- 2015 amortization periods for Unfunded Accrued Liability
 - UAL Layer 1 - Remaining UAL from 2013 valuation
(Teachers – 4.72 years; State – 13.93 years; Judges & AG – 14.00 years)
 - UAL Layer 2 - New UAL from 2015 valuation
(Teachers – 20.00 years; State – 20.00 years; Judges & AG – 20.00 years)
- New amortization periods are lower than most other states

Present Value of Benefits (Legacy Plans) (July 1, 2015)



Unfunded Accrued Liability Recognition Actuarial Value of Assets (Legacy Plans)

	2013	2015	2015 Funded Ratio
Contributory Teachers	\$806,790,000	\$268,858,000	98.7%
Consolidated State	1,360,290,000	1,367,770,000	90.4%
State Judges and Attorneys General	105,450,000	96,315,000	80.5%
Political Subdivisions (Estimated)	391,590,000	144,088,000	98.3%
Total UAL	\$2,664,120,000	\$1,877,031,000	95.8%
Total Funded Ratio (Actuarial Value of Assets)	93.6%	95.8%	

Contribution Rate Summary (Legacy Plans)

	<u>2013</u>	<u>2015</u>
Contributory Teachers	9.04%	9.04%
Consolidated State	15.14%	15.14%
State Judges and Attorneys General	22.87%	23.65%

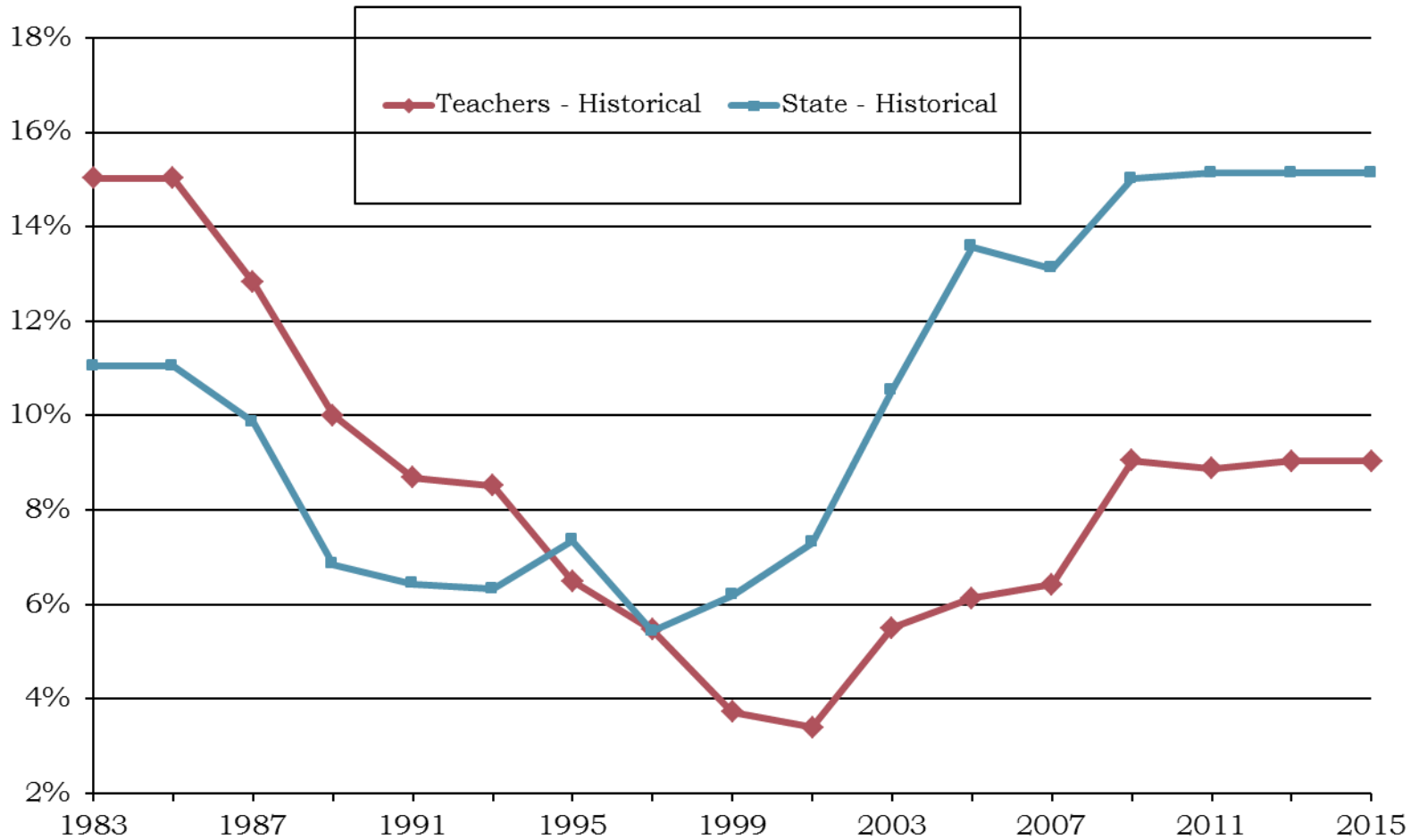
Contribution Rate Summary (Legacy Plans)

	<u>2013</u>	<u>2015</u>
Consolidated State Total Rate	15.14%	15.14%
- General Employee Rate	15.03%	15.02%
- Public Safety Officer Rate (PSO)		
General Employee Rate	15.03%	15.02%
Bridge Supplement	<u>3.37%</u>	<u>3.51%</u>
Total PSO Rate	18.40%	18.53%

Contribution Reconciliation (Legacy Plans)

	<u>Teachers</u>	<u>State</u>
2013 Contribution rate	9.04%	15.14%
Asset Experience	0.92	1.00
Salary Experience	(0.94)	(0.26)
New Entrants	0.07	(0.29)
Cost of Living Escalation	(0.93)	(1.16)
Prior Service Purchases (estimate)	0.10	0.10
Turnover Impact on Total Payroll	0.34	1.05
Other Experience and Census Changes	(0.43)	0.59
Re-amortization of UAL	0.87	(1.03)
2015 Contribution rate	9.04%	15.14%

Contribution Rate History (Legacy Plans)



Future Considerations and Potential Challenges

- Closed Plan (no new hires enter the plan)
 - Total payroll base used to determine contribution % will decrease
 - Level \$ UAL amortization payments will grow as a % of payroll
- Recognition of prior investment gains and losses
- Contribution rate and funded status volatility risk
 - Investment returns after June 30, 2015
 - Mortality improvements/salary growth/COLA