



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



TENNESSEE CONSOLIDATED RETIREMENT SYSTEM

Actuarial Valuation
July 1, 2011

November 18, 2011

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Valuation Purpose

- Determine contribution rates
(TCA Section 8-37 Part 3)
- Examine financial health of plan



Valuation Background

- Experience Study
 - Mandated by statute
 - Most recent study reviewed 2004 - 2008 period
 - New assumptions adopted in 2009
 - Next study will review 2008 - 2012 period
- Actuarial Audit
 - Commonly done for public plans
 - Last audit performed in 2010
 - Endorsed methodology and results
 - Audit recommendations have been reflected in 2011



Active Membership Comparison by Number

<u>Group</u>	<u>2009</u>	<u>2011</u>	<u>Pct Change</u>
Teachers	73,590	75,139	2.1%
State	61,425	59,402	(3.3)
Political Sub	78,757	79,469	0.9
Others	1,178	1,066	(9.5)
Total	<u>214,950</u>	<u>215,076</u>	<u>0.1%</u>

Active Membership Comparison by Compensation

Group	2009	2011	Pct Change
Teachers	\$3,523,942,726	\$3,626,582,283	2.9%
Average	47,886	48,265	0.8
State	2,420,917,023	2,329,453,493	(3.8)
Average	39,413	39,215	(0.5)
Political Sub	2,279,879,194	2,353,751,984	3.2
Average	28,948	29,618	2.3
Others	111,870,338	103,496,188	(7.5)
Average	94,966	97,088	2.2
Total	\$8,336,609,281	\$8,413,283,948	0.9%
Average	38,784	39,118	0.9



Retired Member Comparison by Number

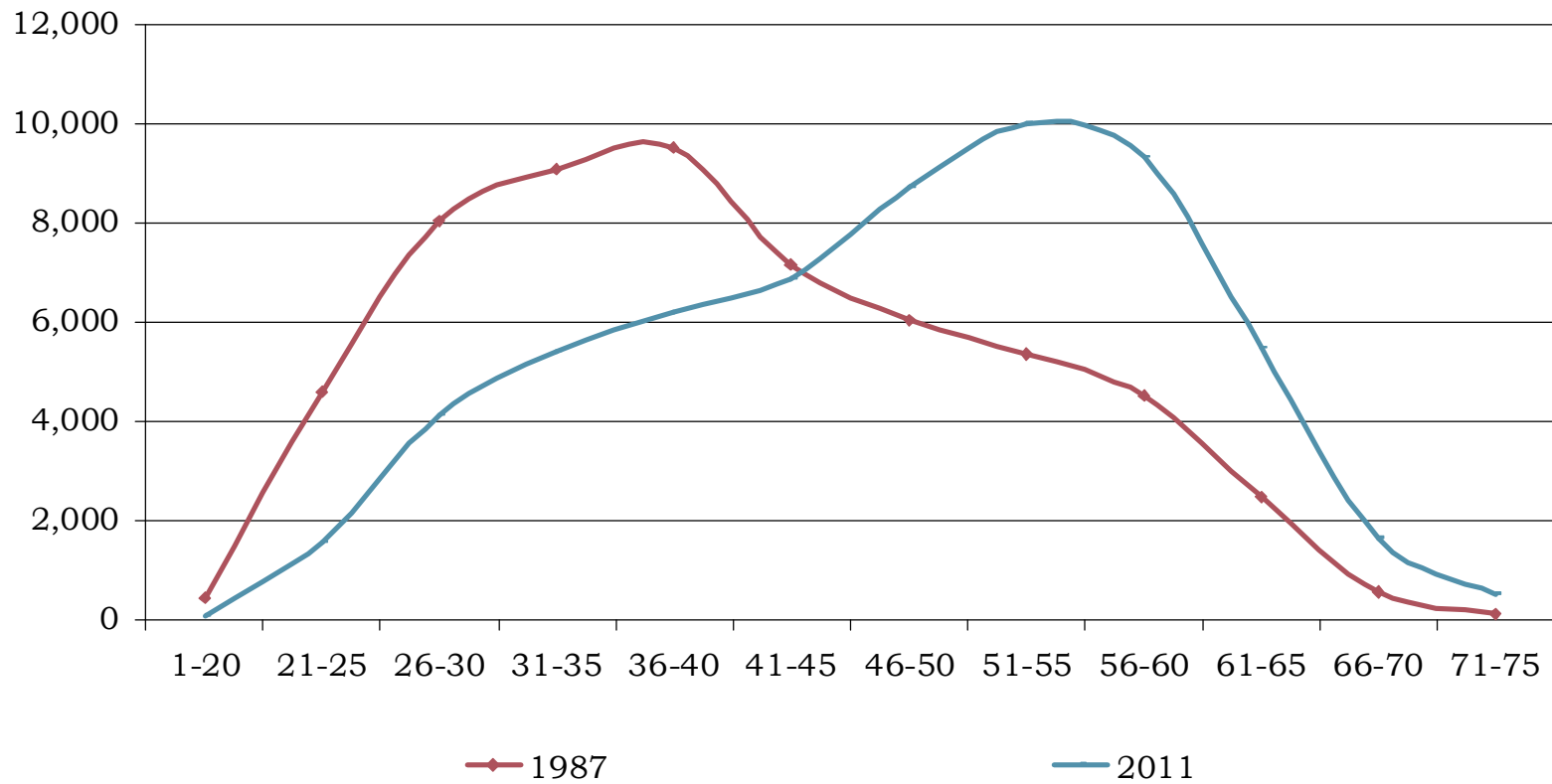
<u>Group</u>	<u>2009</u>	<u>2011</u>	<u>Pct Change</u>
Teachers	37,337	40,130	7.5%
State	36,525	39,544	8.3
Political Sub	29,975	32,959	10.0
Others	4,038	3,952	(2.1)
Total	<u>107,875</u>	<u>116,585</u>	<u>8.1%</u>

Retired Member Comparison

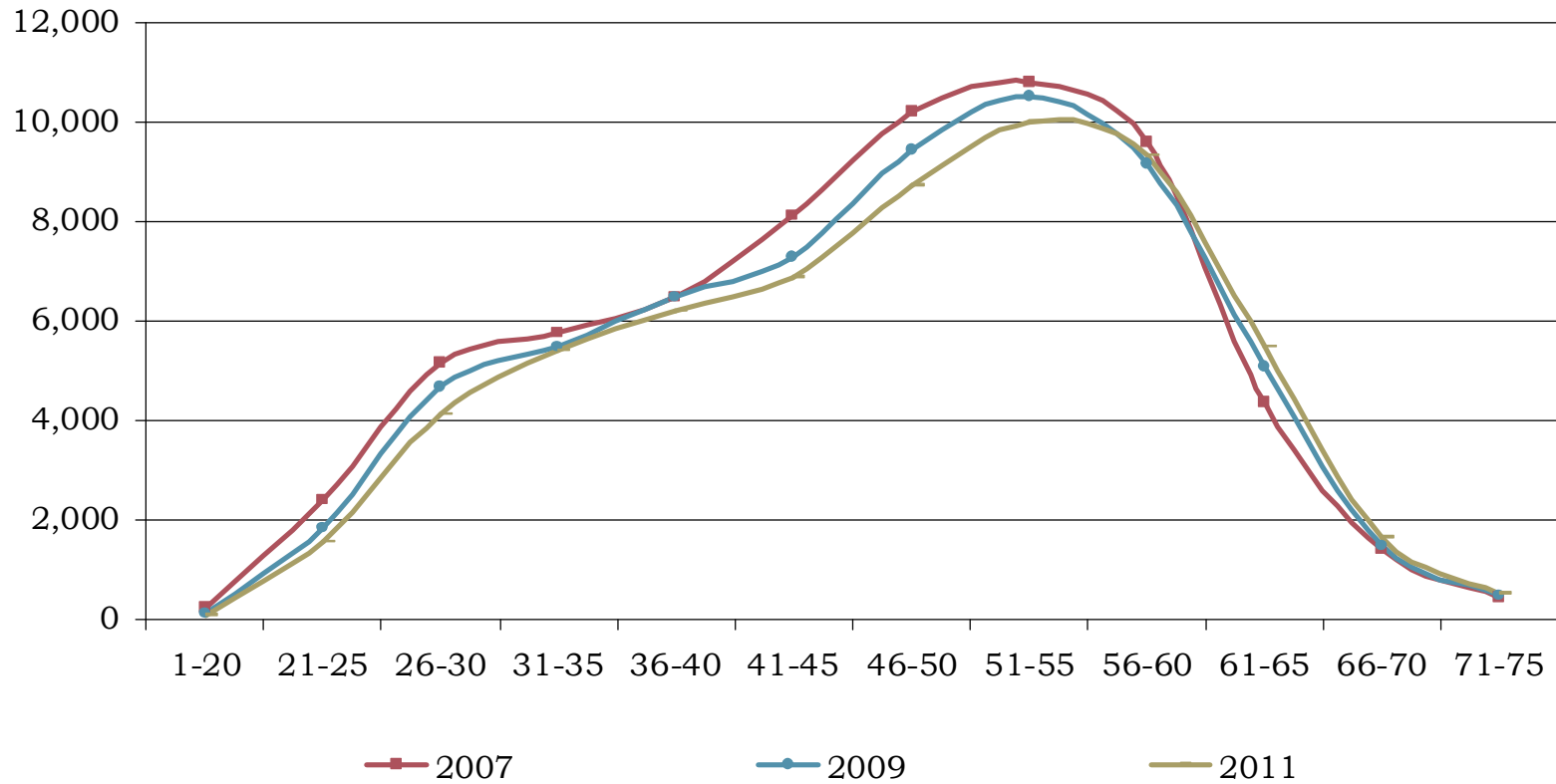
by Benefit Amount

Group	2009	2011	Pct Change
Teachers	\$746,710,077	\$850,065,796	13.8%
Average	19,999	21,183	5.9
State	462,608,995	534,127,889	15.5
Average	12,666	13,507	6.6
Political Sub	190,792,209	226,715,758	18.8
Average	6,365	6,879	8.1
Others	86,728,175	88,975,365	2.6
Average	21,478	22,514	4.8
Total	\$1,486,839,456	\$1,699,884,808	14.3
Average	13,783	14,581	5.8

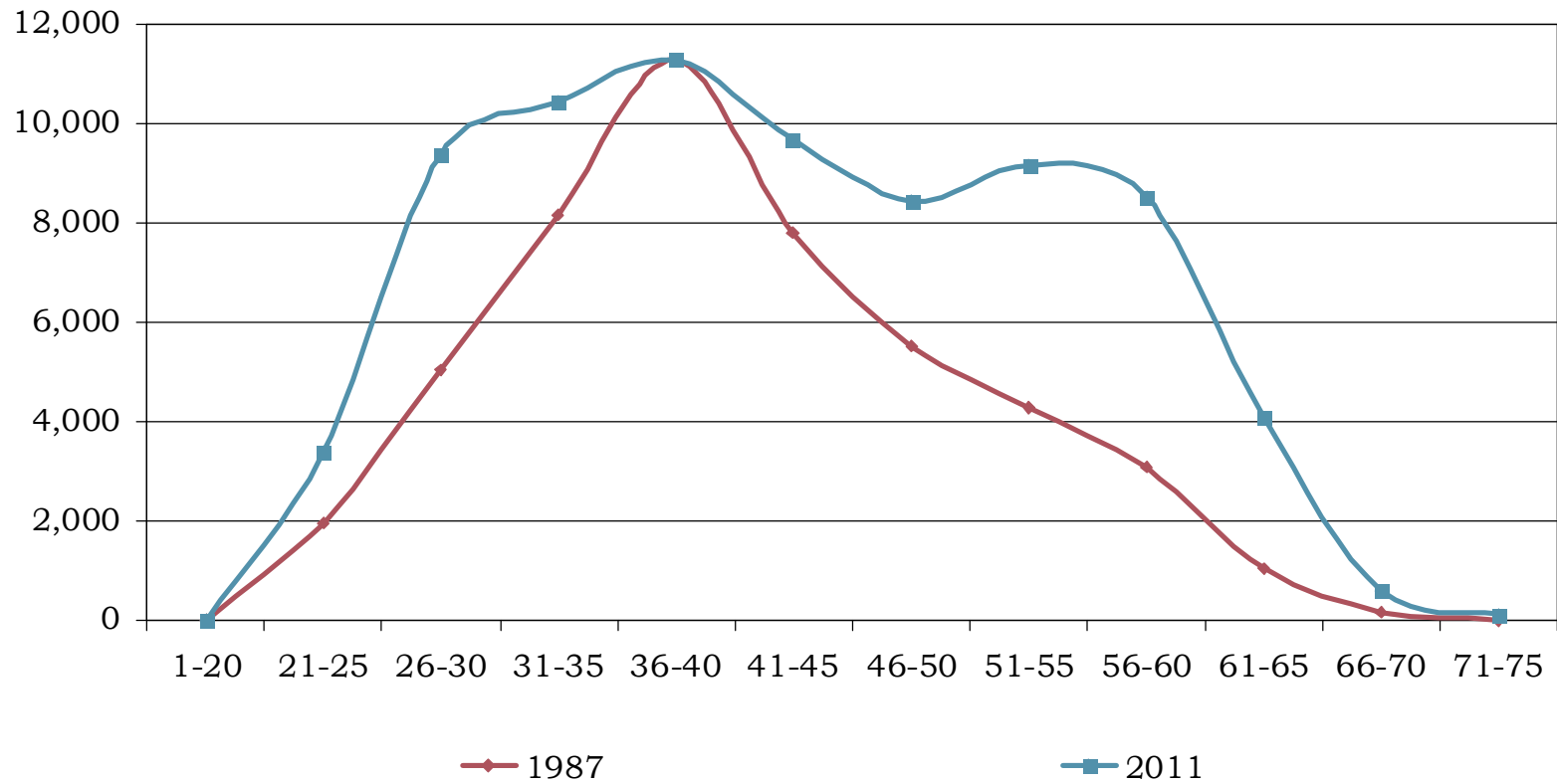
State Participants by Age



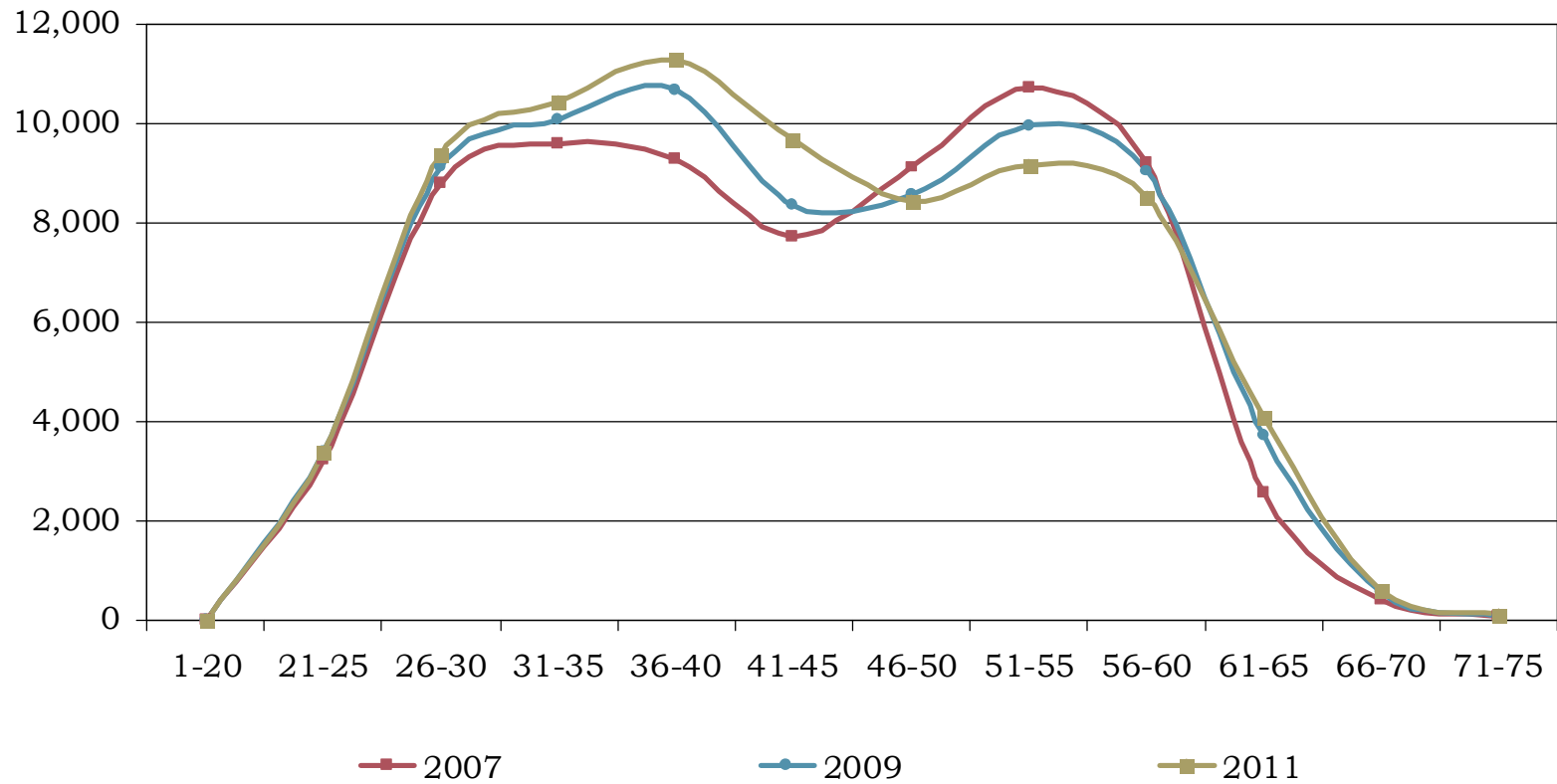
State Participants by Age



Teacher Participants by Age



Teacher Participants by Age

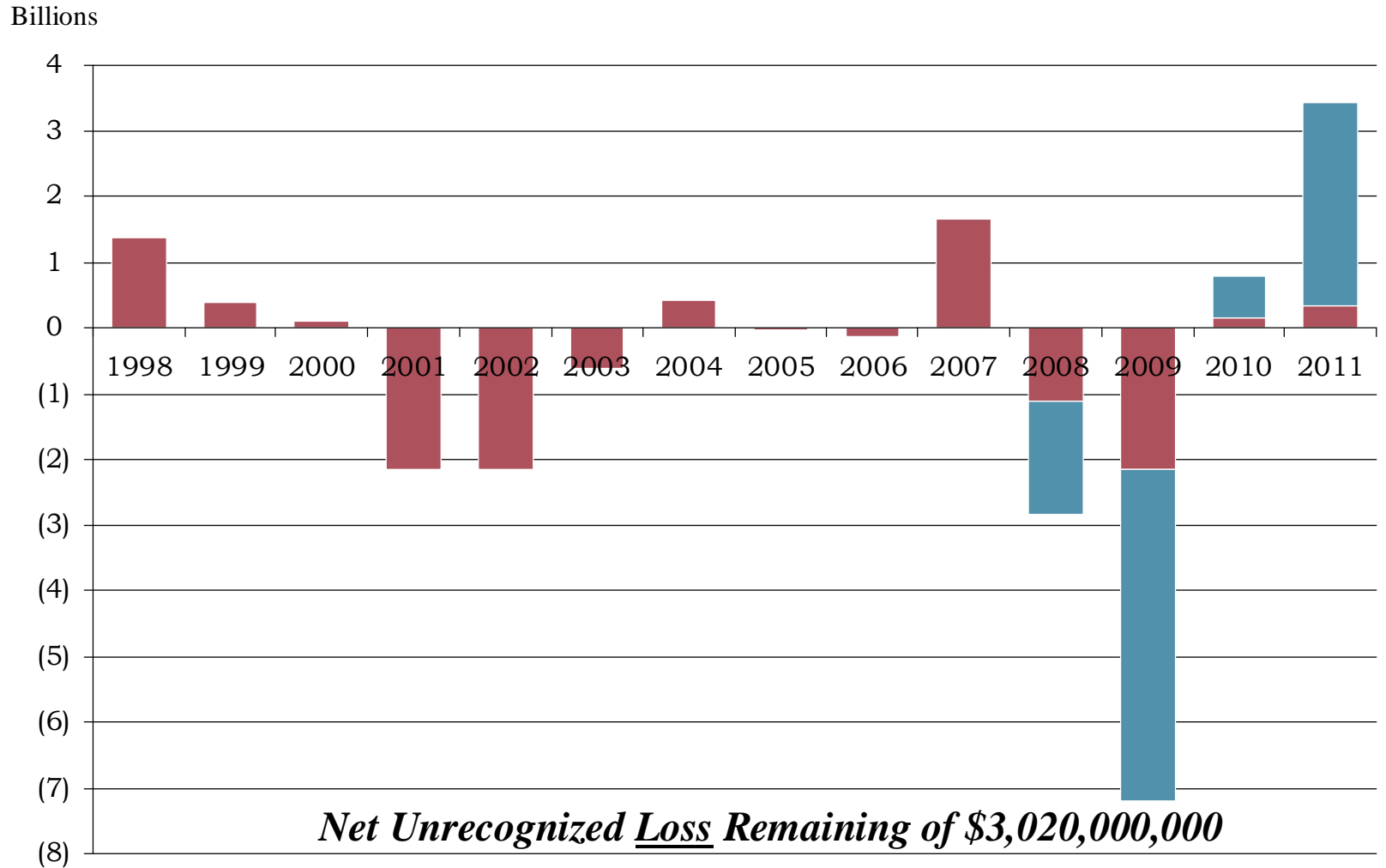




Valuation Asset Method

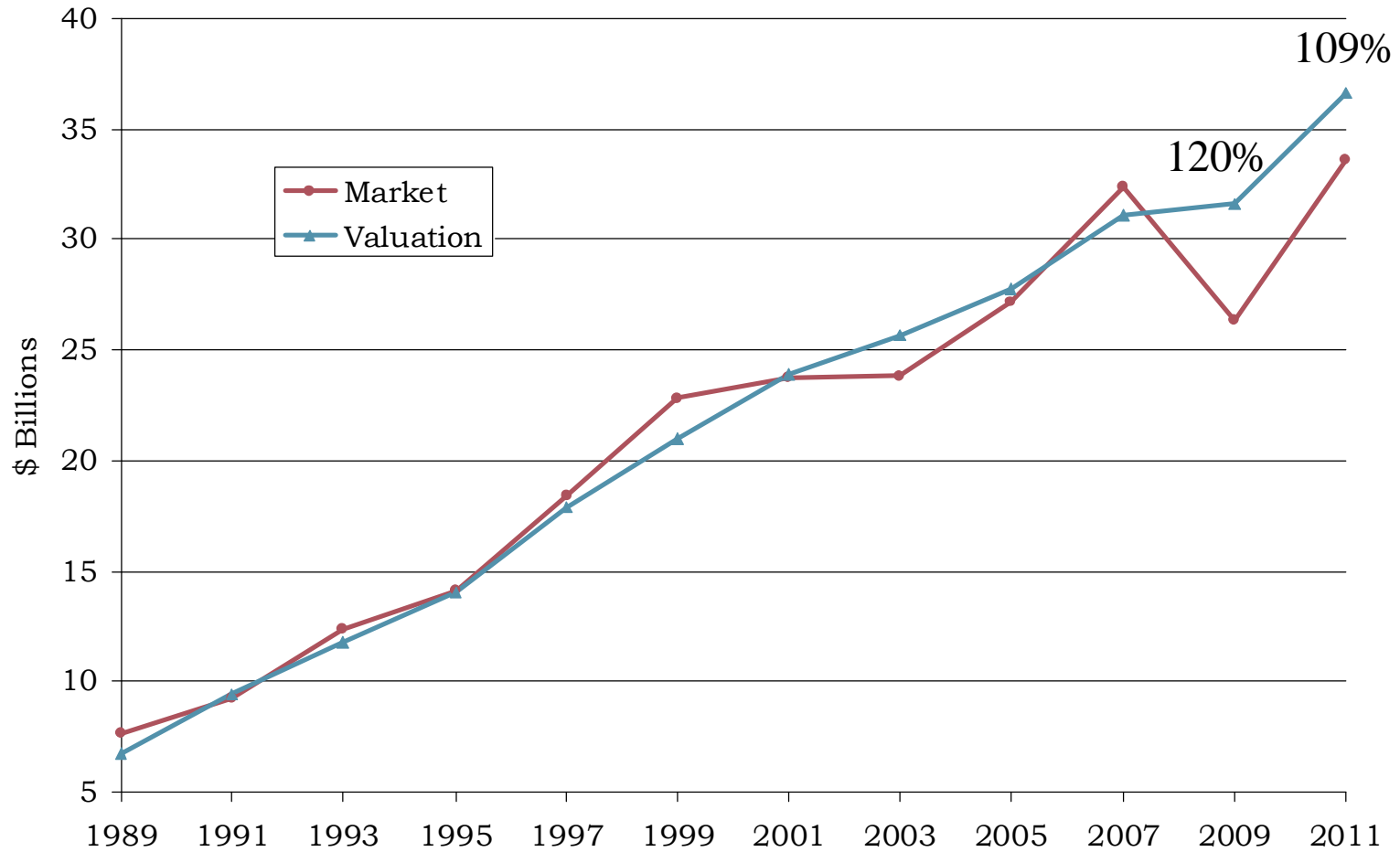
- Use “smoothing” device to limit contribution volatility
- Phase in “excess” earnings ratably over ten year period
- Utilize 80%/120% corridor
- Resulting value is “Actuarial Value of Assets”
- Actuarial Value of Assets is used to determine contribution rates and funded status

Valuation Asset Gains and Losses



■ Recognized ■ Excluded

Valuation Asset Comparison to Market

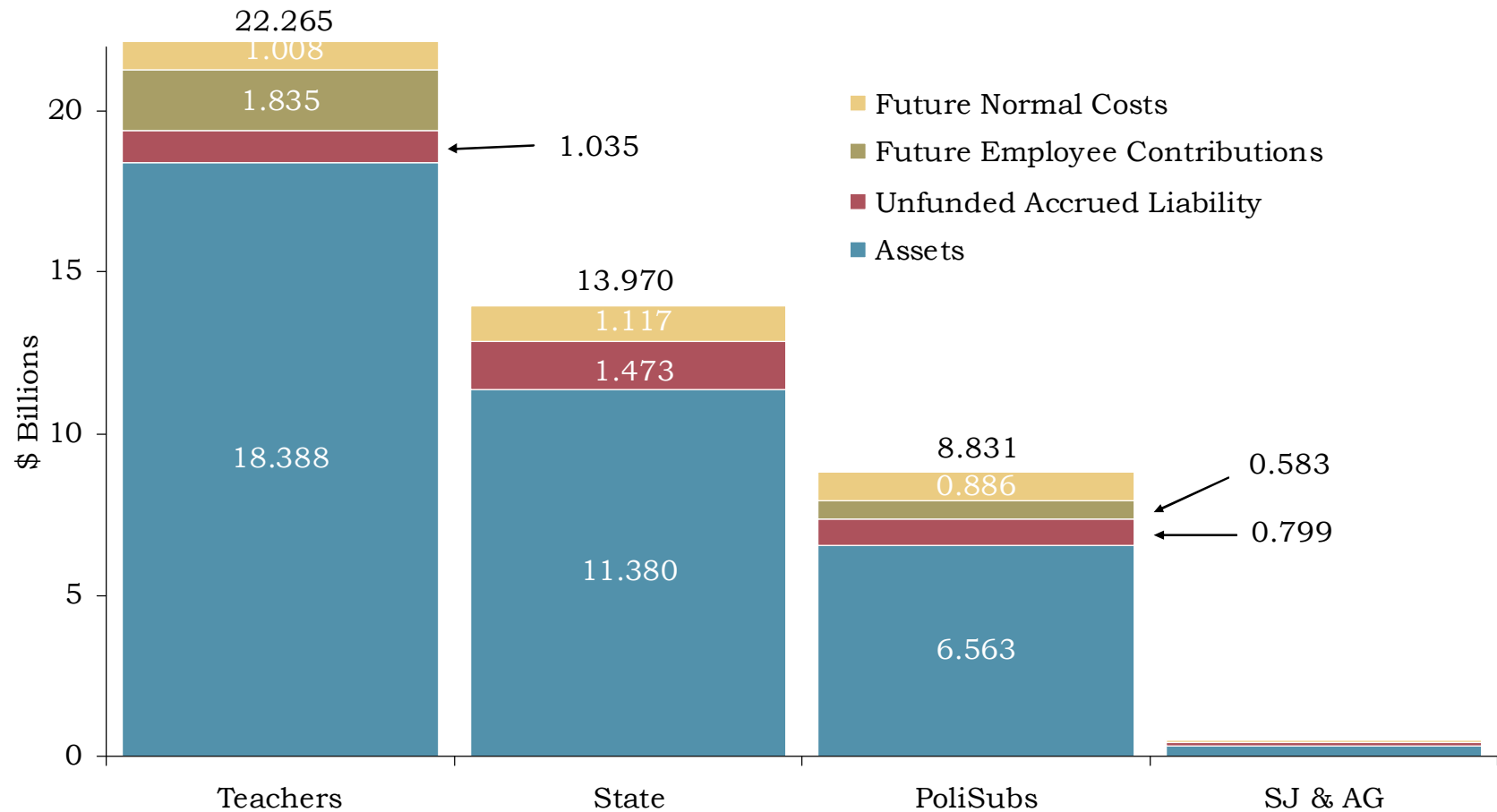




Contribution Rate Determination

- Frozen Initial Liability funding method
- Normal Cost + Amortization of Unfunded Accrued Liability
- Unfunded Accrued Liability was reestablished in 2009
- 2011 amortization period for Unfunded Accrued Liability (Teachers – 6 years; State – 9 years)
- Local governments will be allowed to reestablish the UAL and amortize up to 30 years and/or phase-in contribution rate increases

Present Value of Benefits (July 1, 2011)





Unfunded Accrued Liability Recognition

	2009	2011
Contributory Teachers	1,086,890,000	1,034,810,000
Consolidated State	1,546,980,000	1,472,860,000
State Judges and Attorneys General	85,890,000	81,770,000
Political Subdivisions	839,320,000	799,100,000
Total UAL	3,559,080,000	3,388,540,000
Total Funded Ratio	89.9%	91.5%



Contribution Rate Summary

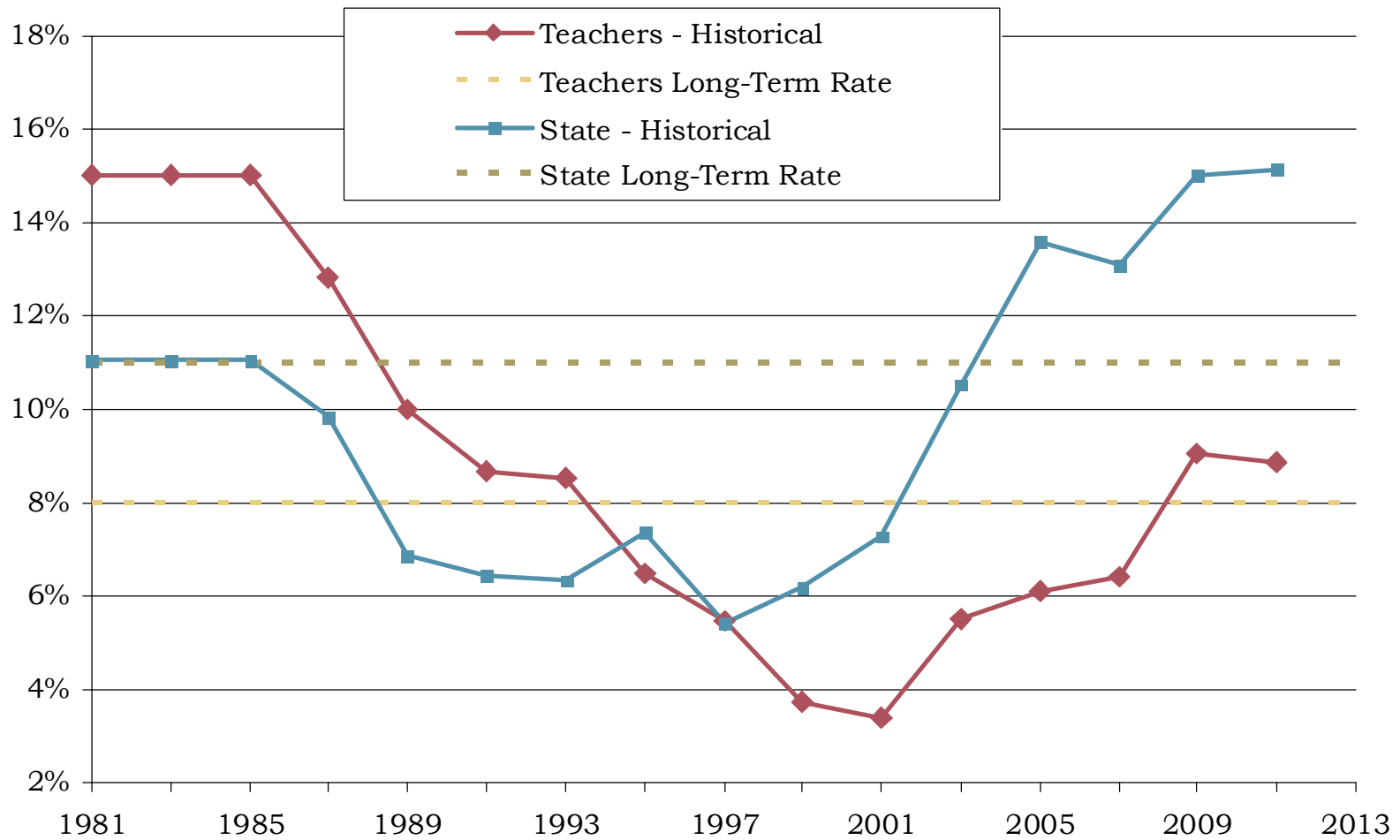
	<u>2009</u>	<u>2011</u>
Contributory Teachers	9.05%	8.88%
Consolidated State	15.01%	15.14%
State Judges and Attorneys General	20.91%	20.57%



Contribution Reconciliation

	<u>Teachers</u>	<u>State</u>
2009 Contribution rate	9.05%	15.01%
Investment Results	(1.61)	(1.86)
Salary Experience	(1.23)	(1.52)
New Entrants	(0.07)	(0.30)
Cost of Living Escalation	(0.23)	(0.25)
Prior Service Purchases	0.10	0.10
Contribution Rate Change Delay	0.31	0.26
Other	(0.47)	0.46
Re-amortization of UAL	3.03	3.24
2011 Contribution rate	8.88%	15.14%

Contribution Rate History





Future Considerations

- Recognition of remaining net investment losses
- Investment returns after June 30, 2011 (market volatility)
- Short-term salary growth
- Mortality improvements
- Size of state government
- Estimated new entrant contribution rate
 - Teachers 8%
 - State 11%
- New GASB disclosure requirements