



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



# TENNESSEE CONSOLIDATED RETIREMENT SYSTEM

**Actuarial Valuation**  
**July 1, 2013**

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**December 16, 2013**

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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 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

(as of July 1, 2013)

- Defined Benefit System
  - State employees, higher education and K-12 teachers
  - 520+ local governments (participation is optional and costs are valued individually)
- Demographic Data
  - 210,000 Active Participants
  - 128,000 Retired Participants  
(\$2.0 Billion in annual payments)
- Market Value of Assets -- \$37.6 Billion
- Funding Basis is Traditionally Conservative

# System Overview – Plan Design

	<u>Legacy Plan</u>	<u>Hybrid Plan*</u>
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

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



## System Overview – Plan Design

- Hybrid plan begins 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 management of legacy plan



# Active Membership Comparison by Number

<u>Group</u>	<u>2011</u>	<u>2013</u>	<u>Pct Change</u>
Teachers	75,139	74,366	(1.0)%
State	59,402	57,520	(3.2)
Political Sub	79,469	77,050	(3.0)
Others	1,066	1,028	(3.6)
Total	<u>215,076</u>	<u>209,964</u>	<u>(2.4)%</u>



## Active Membership Comparison by Compensation

Group	2011	2013	Pct Change
Teachers	\$3,626,582,283	\$3,747,220,849	3.3%
Average	48,265	50,389	4.4
State	2,329,453,493	2,386,905,135	2.5
Average	39,215	41,497	5.8
Political Sub	2,353,751,984	2,374,004,970	0.9
Average	29,618	30,811	4.0
Others	103,496,188	103,746,172	0.2
Average	97,088	100,920	3.9
Total	\$8,413,283,948	\$8,611,877,126	2.4%
<b>Average</b>	<b>\$39,118</b>	<b>\$41,016</b>	<b>4.9%</b>



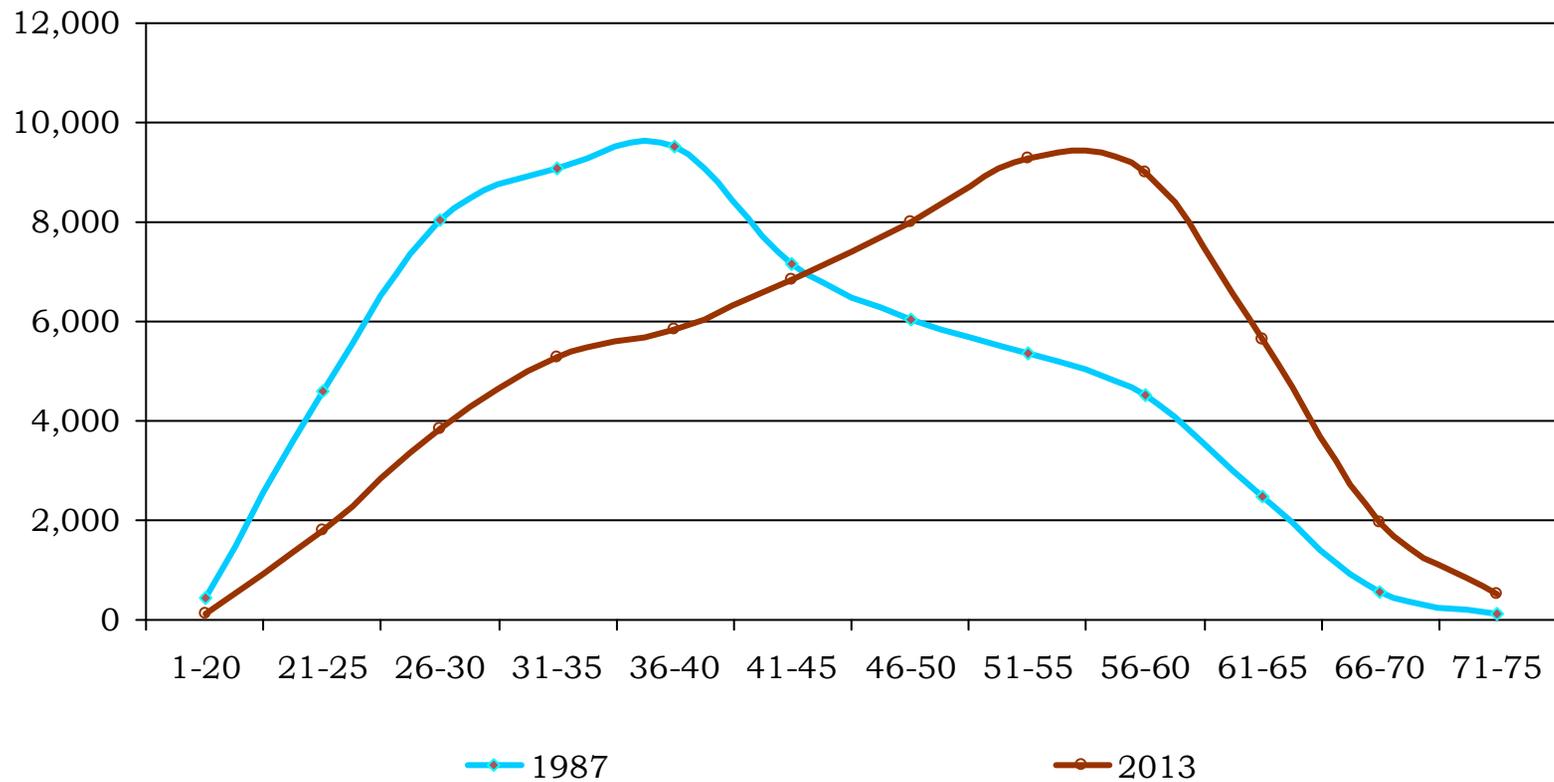
## Retired Member Comparison by Number

<u>Group</u>	<u>2011</u>	<u>2013</u>	<u>Pct Change</u>
Teachers	40,130	43,773	9.1%
State	39,544	43,516	10.0
Political Sub	32,959	36,601	11.1
Others	3,952	3,681	(6.9)
Total	<u>116,585</u>	<u>127,571</u>	<u>9.4%</u>

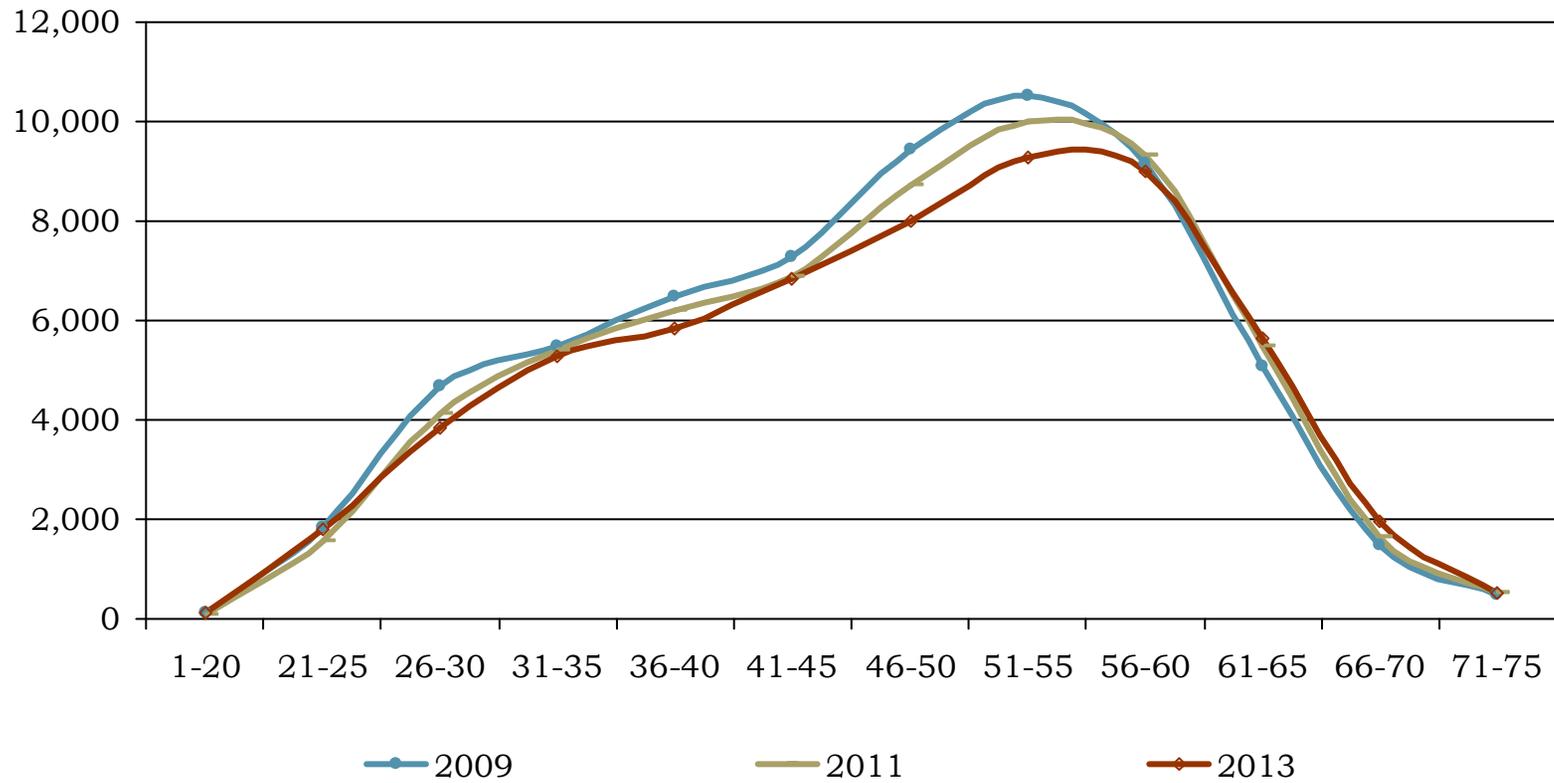
# Retired Member Comparison by Benefit Amount

Group	2011	2013	Pct Change
Teachers	\$850,065,796	\$980,741,672	15.4%
Average	21,183	22,405	5.8
State	534,127,889	624,803,691	17.0
Average	13,507	14,358	6.3
Political Sub	226,715,758	271,032,694	19.5
Average	6,879	7,405	7.6
Others	88,975,365	92,552,380	4.0
Average	22,514	25,143	11.7
Total	\$1,699,884,808	\$1,969,130,437	15.8%
<b>Average</b>	<b>\$14,581</b>	<b>\$15,436</b>	<b>5.9%</b>

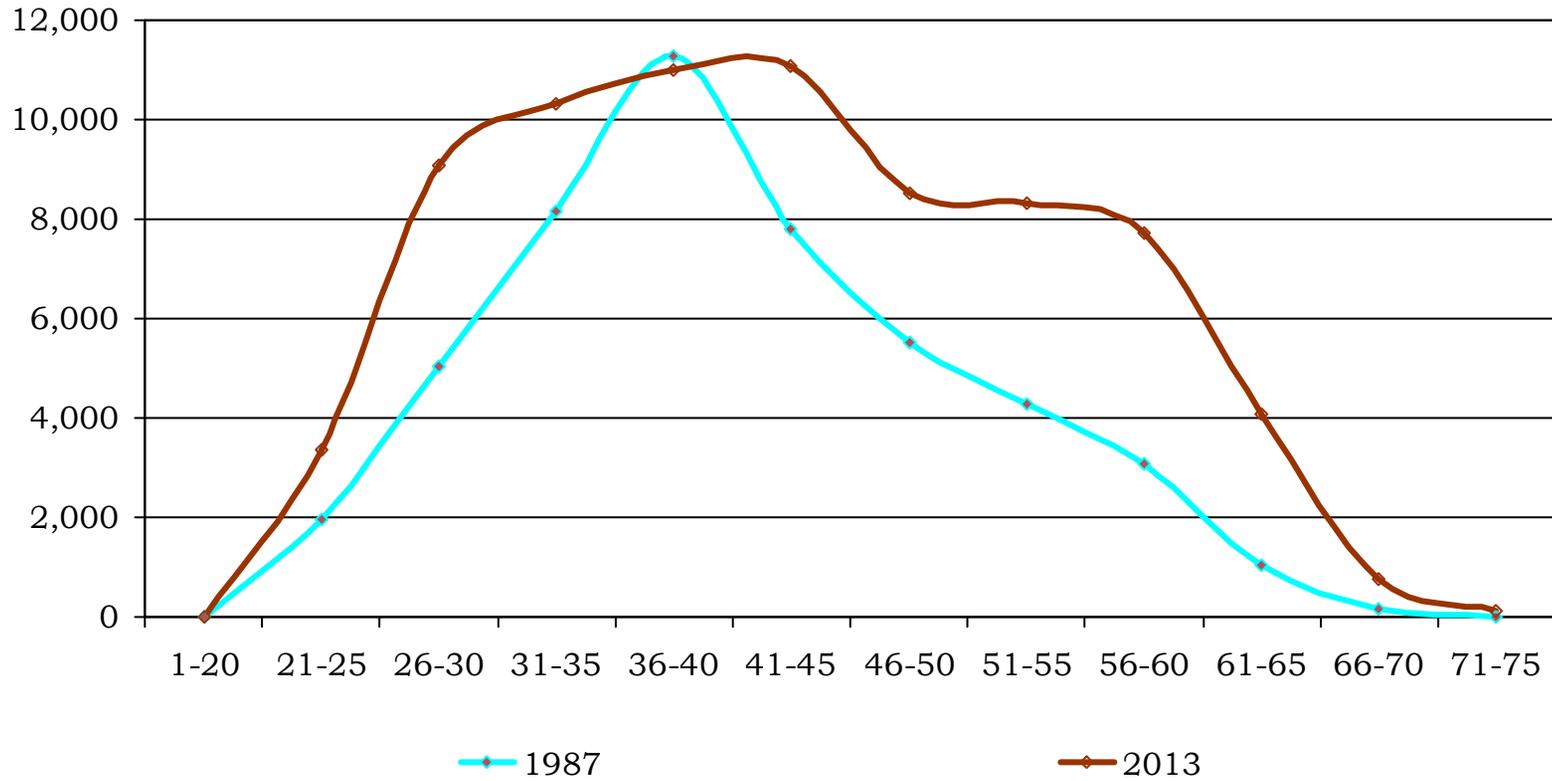
# State Participants by Age



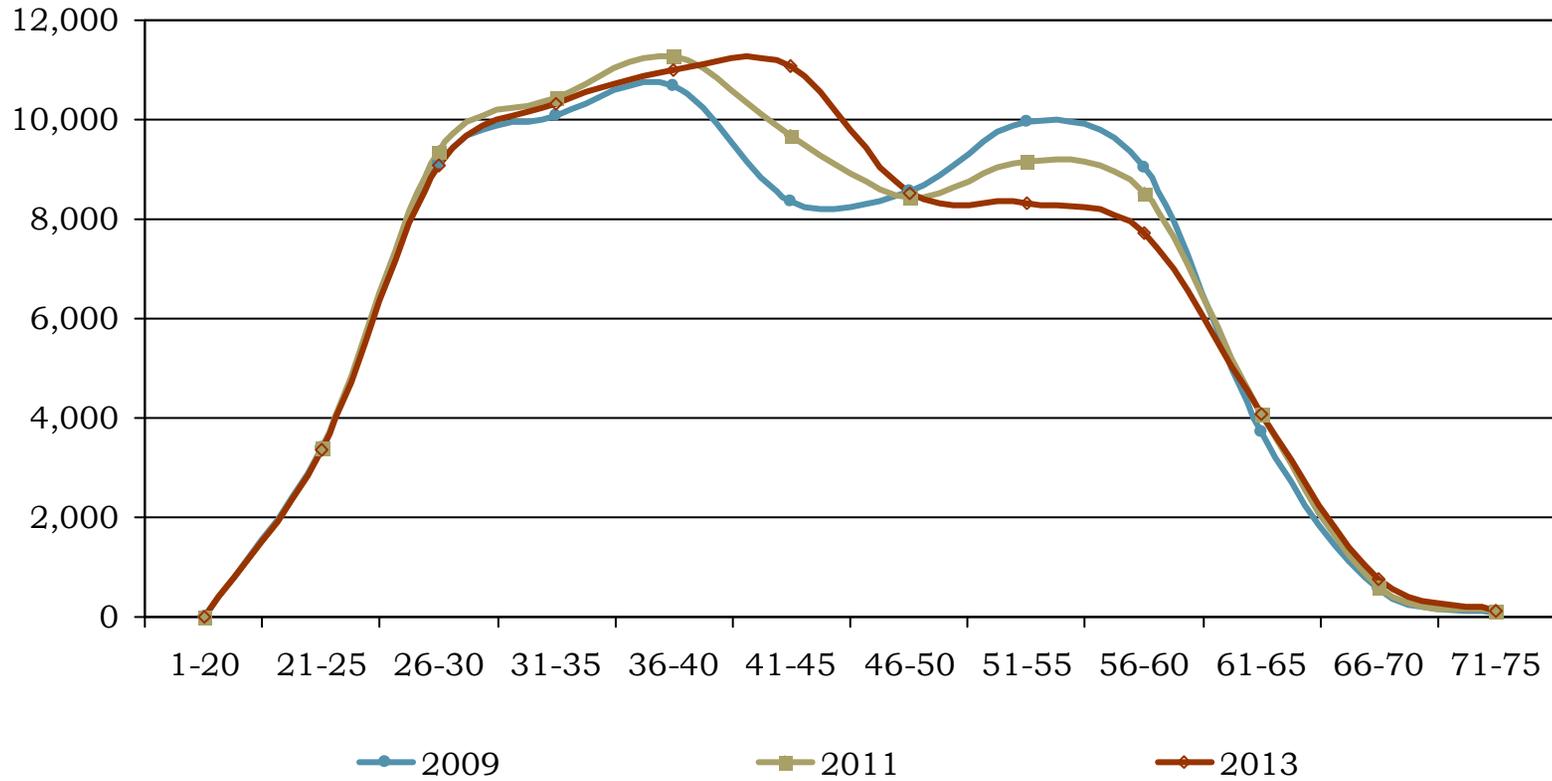
# State Participants by Age



# Teacher Participants by Age



# Teacher Participants by Age

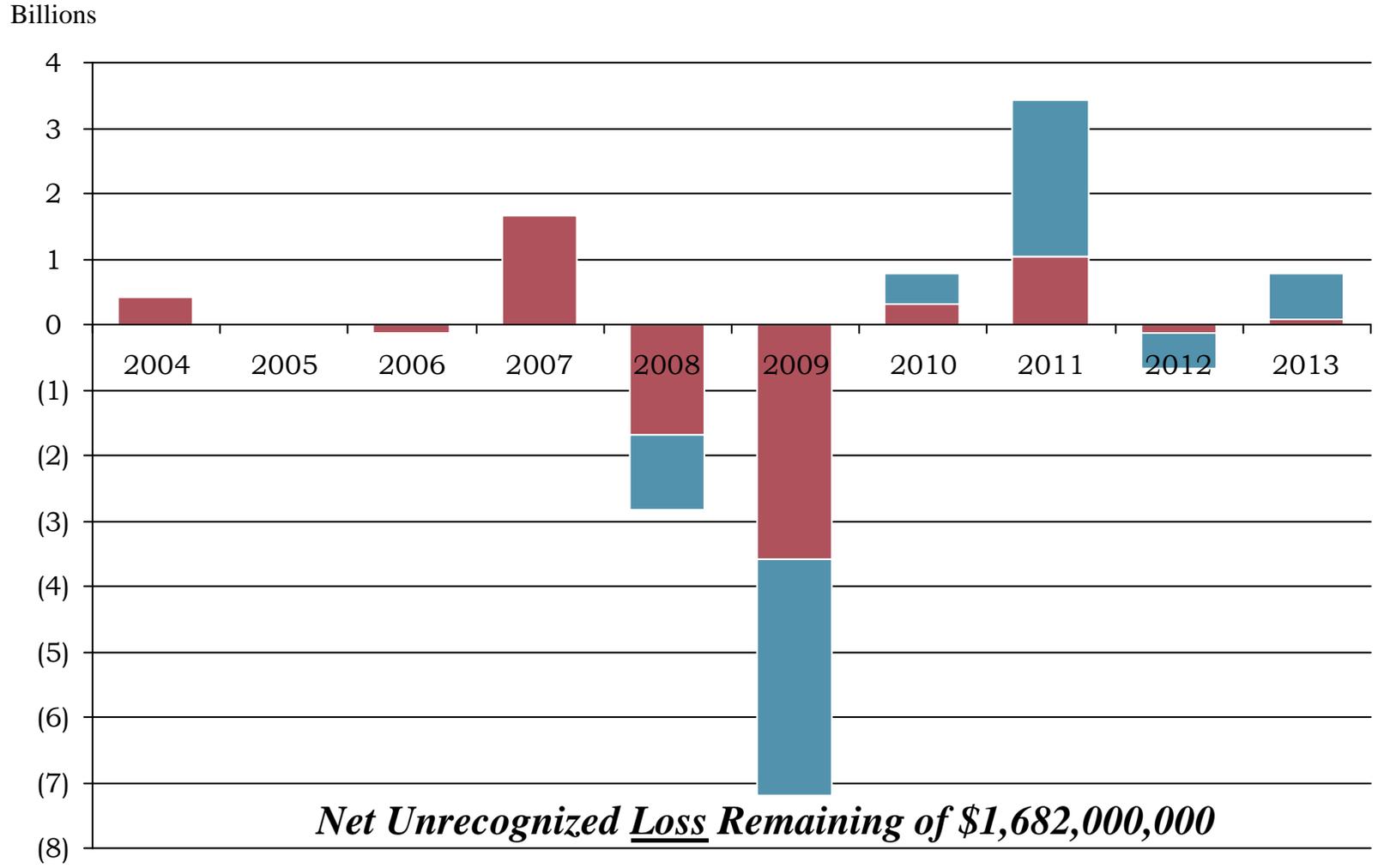




## Valuation Asset Method

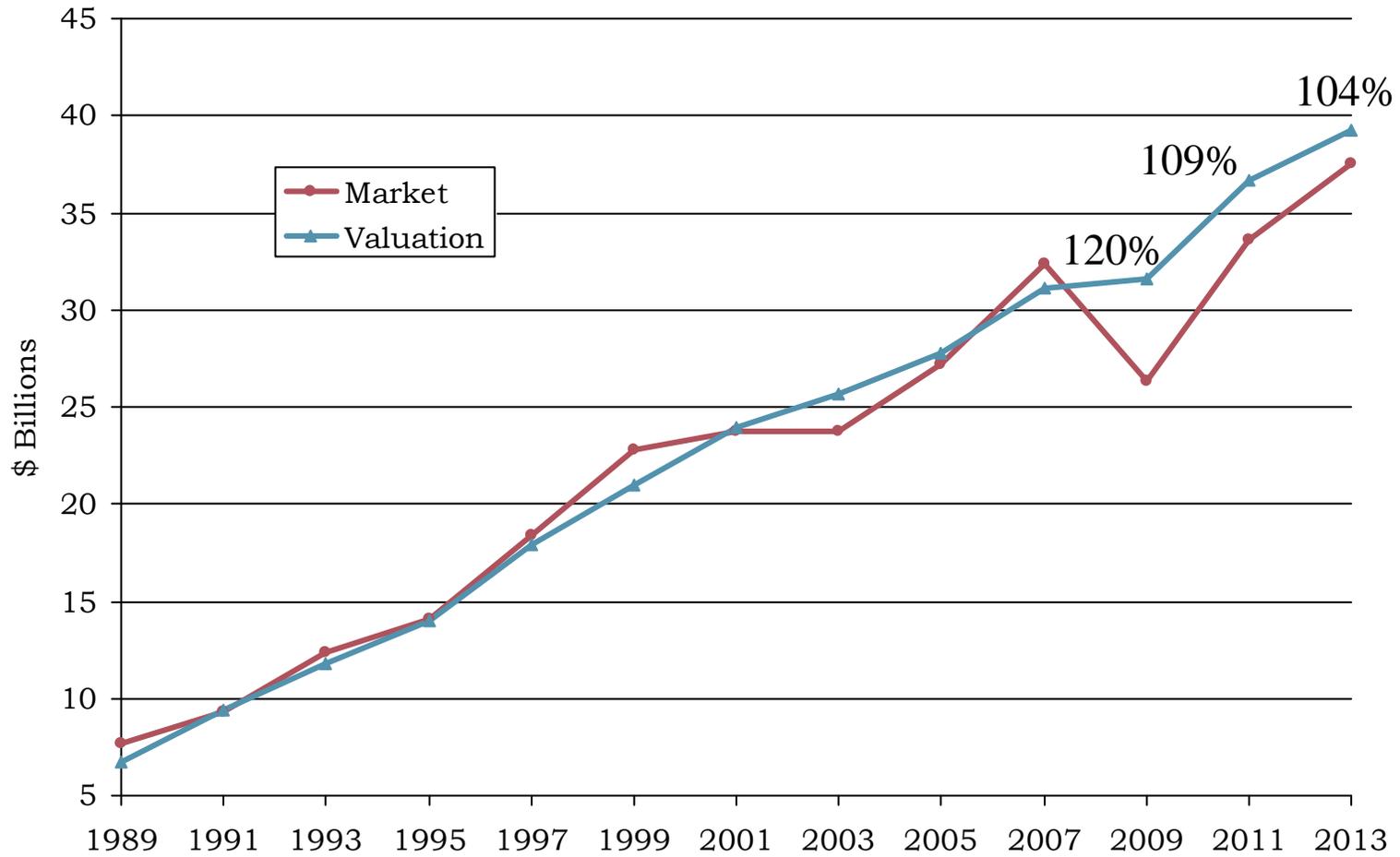
- Use “smoothing” device to limit contribution volatility
- Phase in “excess” earnings ratably over ten year period
- Utilize 80%/120% corridor
- Resulting value is “Actuarial Value of Assets”
- Actuarial Value of Assets is used to determine contribution rates and funded status

# Valuation Asset Gains and Losses



■ Recognized ■ Excluded

# Valuation Asset Comparison to Market

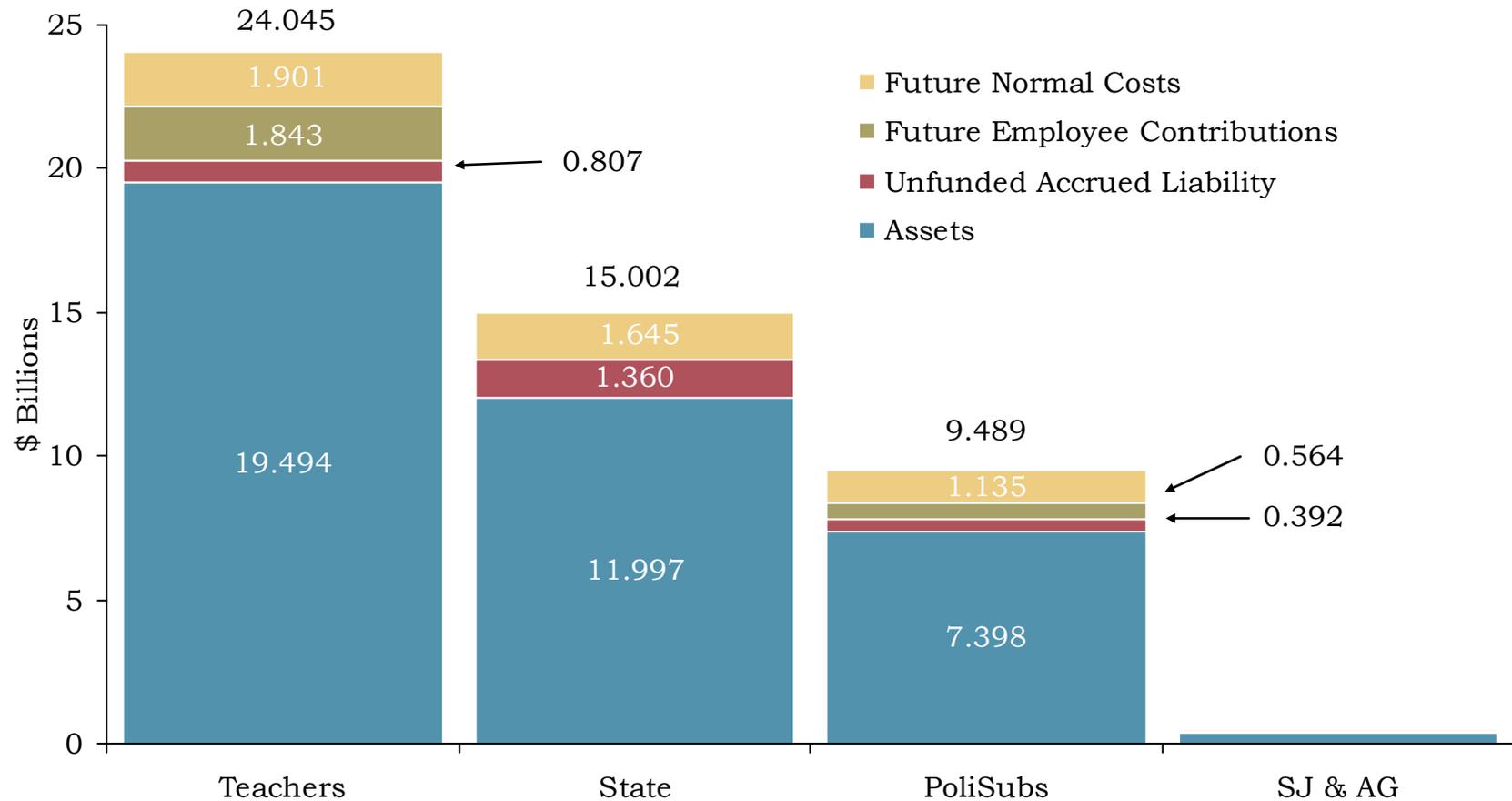




# Contribution Rate Determination

- Frozen Initial Liability funding method
- Normal Cost + Amortization of Unfunded Accrued Liability
- Unfunded Accrued Liability was reestablished in 2013
- 2013 amortization period for Unfunded Accrued Liability (Teachers – 8 years; State – 13 years)
  - 2011 amortization periods (Teachers – 6 years; State – 9 years)
  - Amortization period lowered in 2011 and raised in 2013; necessary (and expected) due to 2009 asset smoothing corridor of 120%
  - New amortization periods are still lower than most other states
- 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, 2013)





# Unfunded Accrued Liability Recognition

	2011	2013
Contributory Teachers	\$1,034,810,000	\$806,790,000
Consolidated State	1,472,860,000	1,360,290,000
State Judges and Attorneys General	81,770,000	105,450,000
Political Subdivisions	799,100,000	391,590,000
Total UAL	\$3,388,540,000	\$2,664,120,000
<b>Total Funded Ratio (Actuarial Value of Assets)</b>	<b>91.5%</b>	<b>93.6%</b>
<i>Total Funded Ratio (Market Value of Assets)</i>	<i>84.0%</i>	<i>89.6%</i>



## Contribution Rate Summary

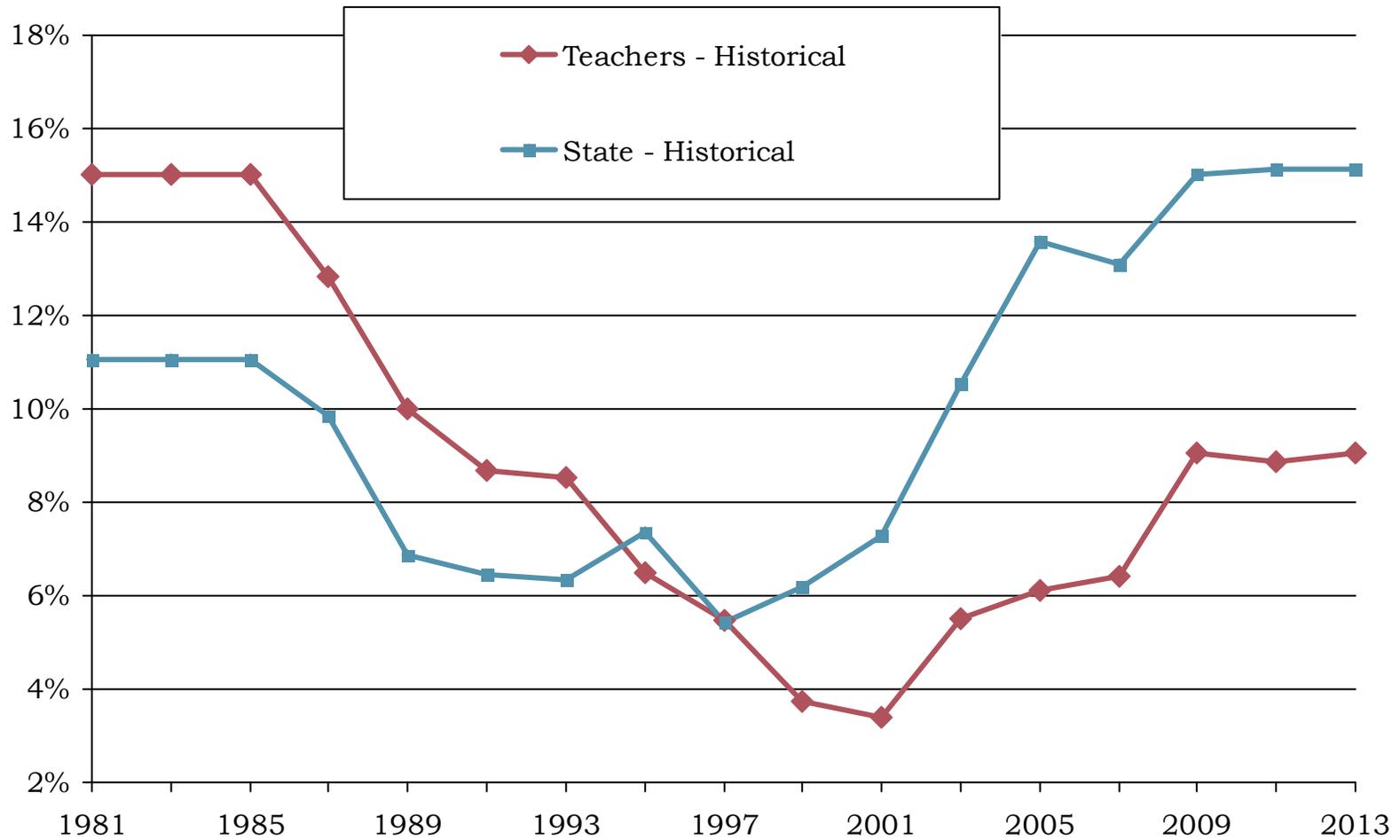
	<u>2011</u>	<u>2013</u>
Contributory Teachers	8.88%	9.04%
Consolidated State	15.14%	15.14%
State Judges and Attorneys General	20.57%	22.87%



# Contribution Reconciliation

	Teachers	State
<b>2011 Contribution rate</b>	<b>8.88%</b>	<b>15.14%</b>
Investment Results	2.37	2.56
Salary Experience	(0.59)	(0.40)
New Entrants	(0.01)	(0.59)
Cost of Living Escalation	(0.11)	(0.13)
Prior Service Purchases	0.10	0.10
Turnover Impact on Total Payroll	0.74	1.38
Other Experience	(0.32)	0.14
Assumption Change (Salary Scale)	(1.41)	(1.14)
Assumption Change (Mortality)	1.73	1.34
Assumption Change (Expense Load)	(0.02)	(0.02)
Re-amortization of UAL	(2.32)	(3.24)
<b>2013 Contribution rate</b>	<b>9.04%</b>	<b>15.14%</b>

# Contribution Rate History





## Future Considerations

- Recognition of remaining net investment losses
- Investment returns after June 30, 2013 (market volatility)
- Mortality improvements/salary growth/COLA
- New GASB disclosure requirements
- New Hybrid Plan effective 7/1/2014 (new hires only)
  - Still significant risk associated with Legacy Plan
  - Investment market volatility will continue to impact funded status in Legacy Plan