



Texas Municipal Retirement System Actuarial Valuation Report as of December 31, 2010

June 16, 2011

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Agenda

- ◆ Summary of System-wide Results
- ◆ Asset Performance
- ◆ Overall Experience
- ◆ Individual City Experience
- ◆ Aggregate Reconciliations
- ◆ Summary



Summary of System-wide Results

	December 31, 2010		December 31, 2009
	New Structure	Old Structure	
Actuarial Accrued Liability	\$20,481	\$22,990	\$21,525
Actuarial Value of Assets	<u>\$16,986</u>	<u>\$17,992</u>	<u>\$16,306</u>
Unfunded Actuarial Accrued Liability	\$3,495	\$4,998	\$5,219
Funded Ratio	82.9%	78.3%	75.8%
Minimum Contribution Rates:			
Straight Average	8.04%	9.39%	9.20%
Payroll Weighted Average	12.92%	14.69%	14.25%
Payroll Weighted Average - Full Rate	13.31%	16.07%	16.41%



Actuarial Results – Aggregate

MAF plus ESF Compared to BAF Funds with New Assumptions

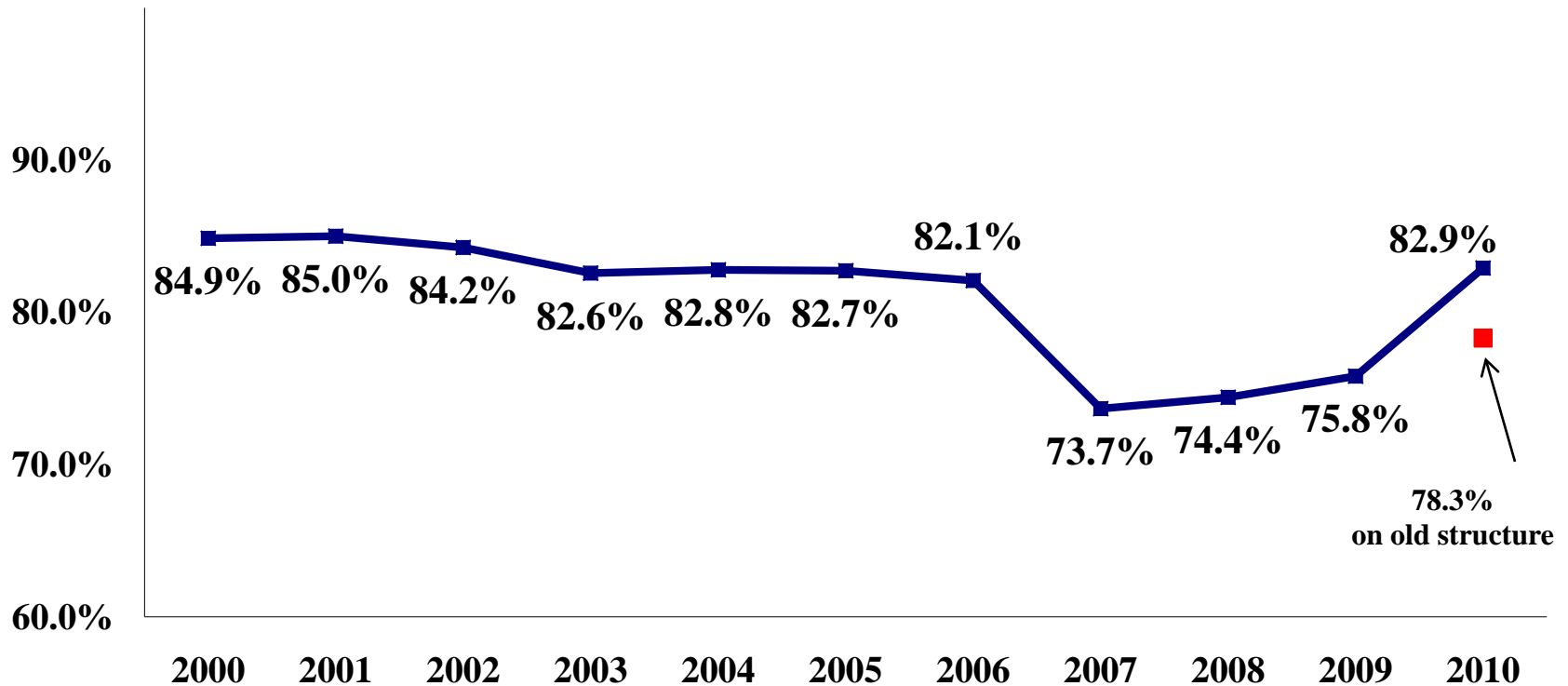
	<u>Current</u> (1)	<u>Restructure</u> (2)	<u>Difference</u> (2) - (1)
1. Actuarial accrued liability			
a. Actives & Inactives	\$ 14,571,213,185	\$ 12,882,044,078	\$ (1,689,169,107)
b. Annuitants	<u>2,319,444,343</u>	<u>7,598,609,761</u>	<u>5,279,165,418</u>
2. Total actuarial accrued liability (1a +1b)	\$ 16,890,657,528	\$ 20,480,653,839	\$ 3,589,996,311
3. Actuarial value of assets	<u>12,002,633,331</u>	<u>16,985,156,696</u>	<u>4,982,523,366</u>
4. UAAL (2 - 3)	\$ 4,888,024,197	\$ 3,495,497,143	\$ (1,392,527,054)
5. Funded ratio (3 / 2)	71.1% *	82.9%	11.8%
6. UAAL/Payroll	101.9%	72.9%	-29.0%
<u>Weighted Average Contribution Rate for TMRS Plan Year:</u>			
7. Full retirement rate			
a. Normal cost	9.81%	9.06%	-0.75%
b. Prior service	<u>6.26%</u>	<u>4.25%</u>	<u>-2.01%</u>
c. Full retirement rate	16.07%	13.31%	-2.76%
8. Estimated Contributions	\$ 822,576,472	\$ 681,300,114	\$ (141,276,357)

*71.1% is based on combined MAF and ESF and excludes CSARF. The system-wide funded ratio is 78.3%.



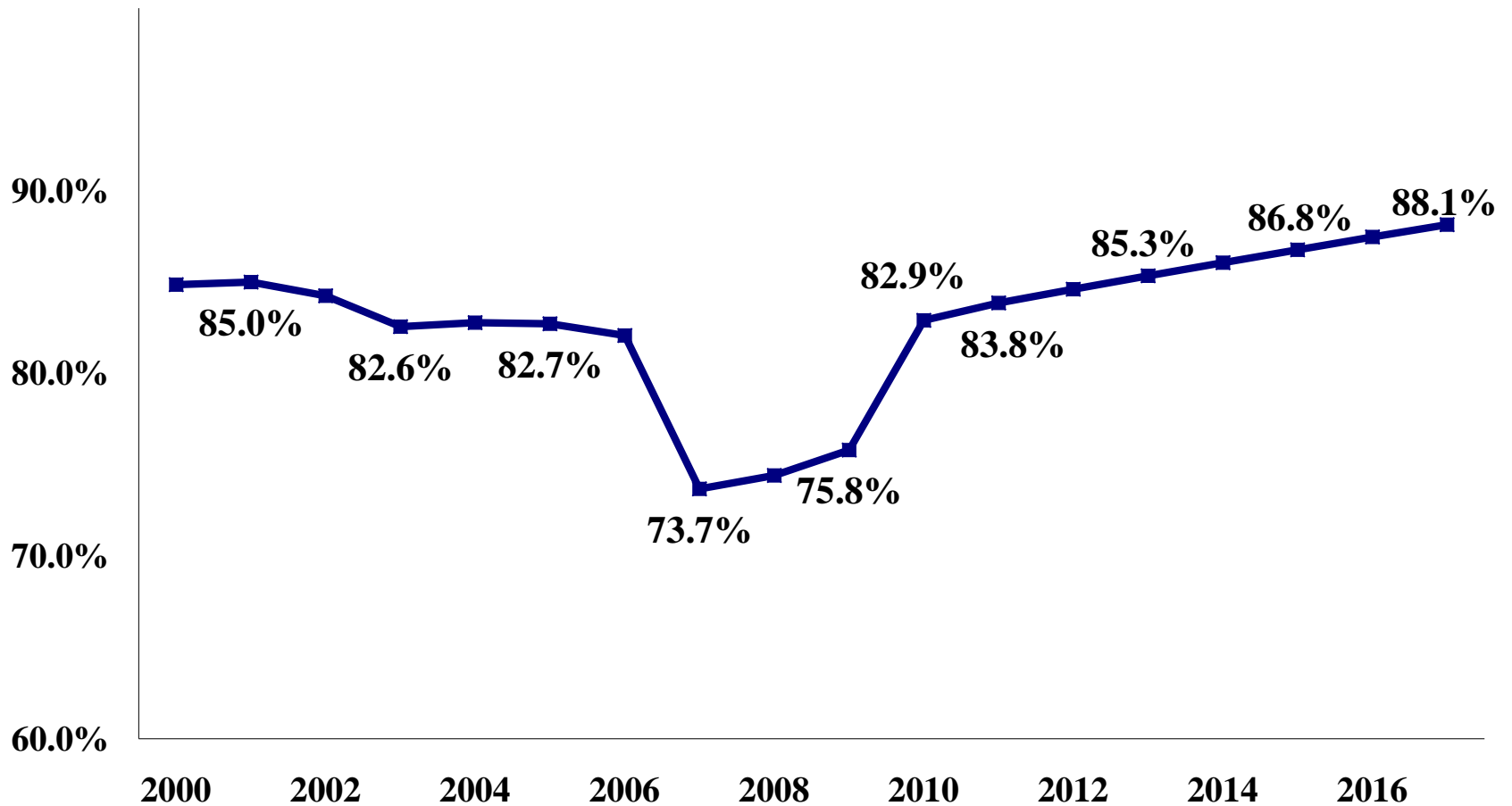
Funded Ratio Percentages

**The System-wide Funded Ratio has increased
3 years in a row!**



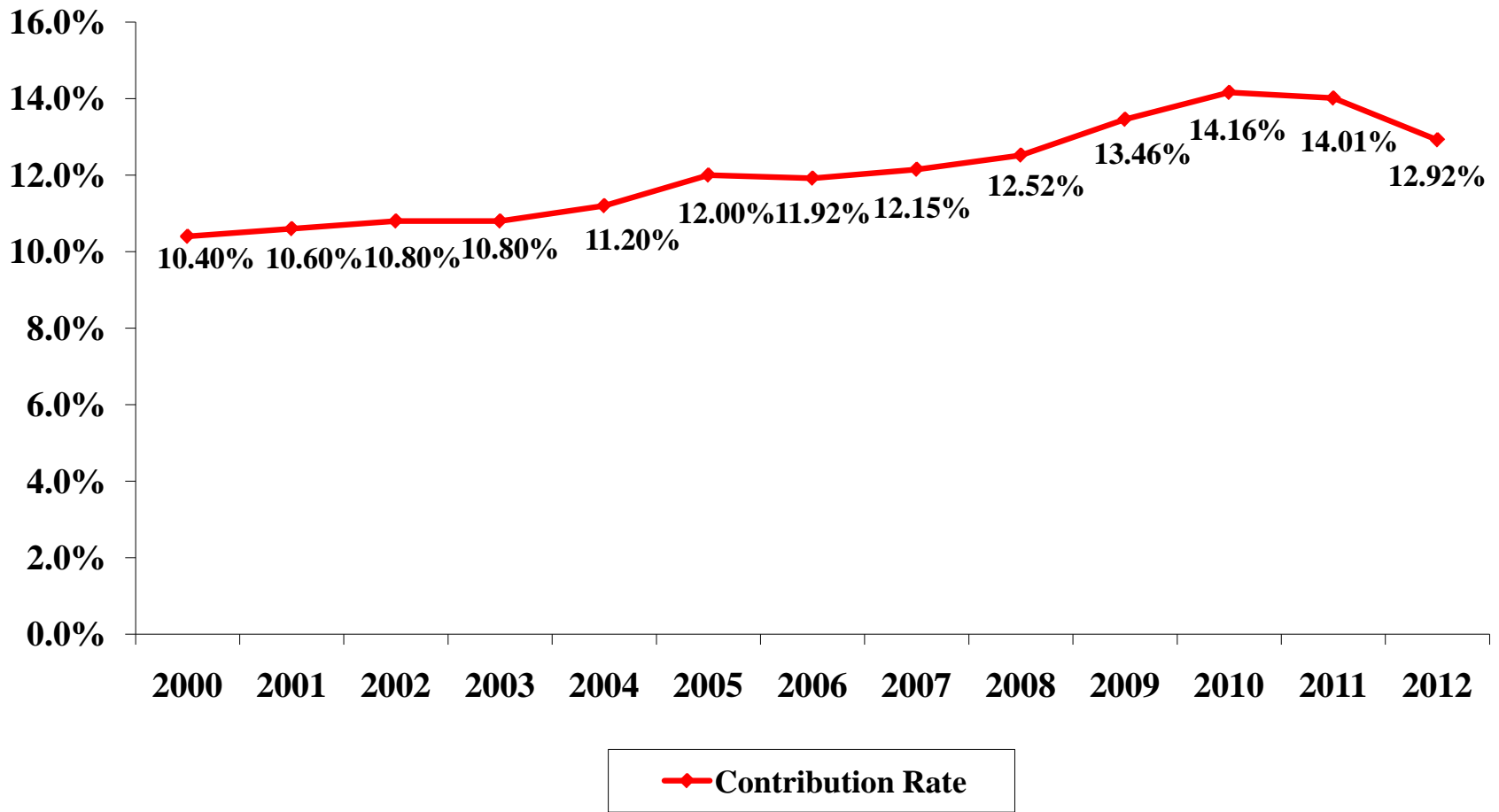


Projected Funded Ratio



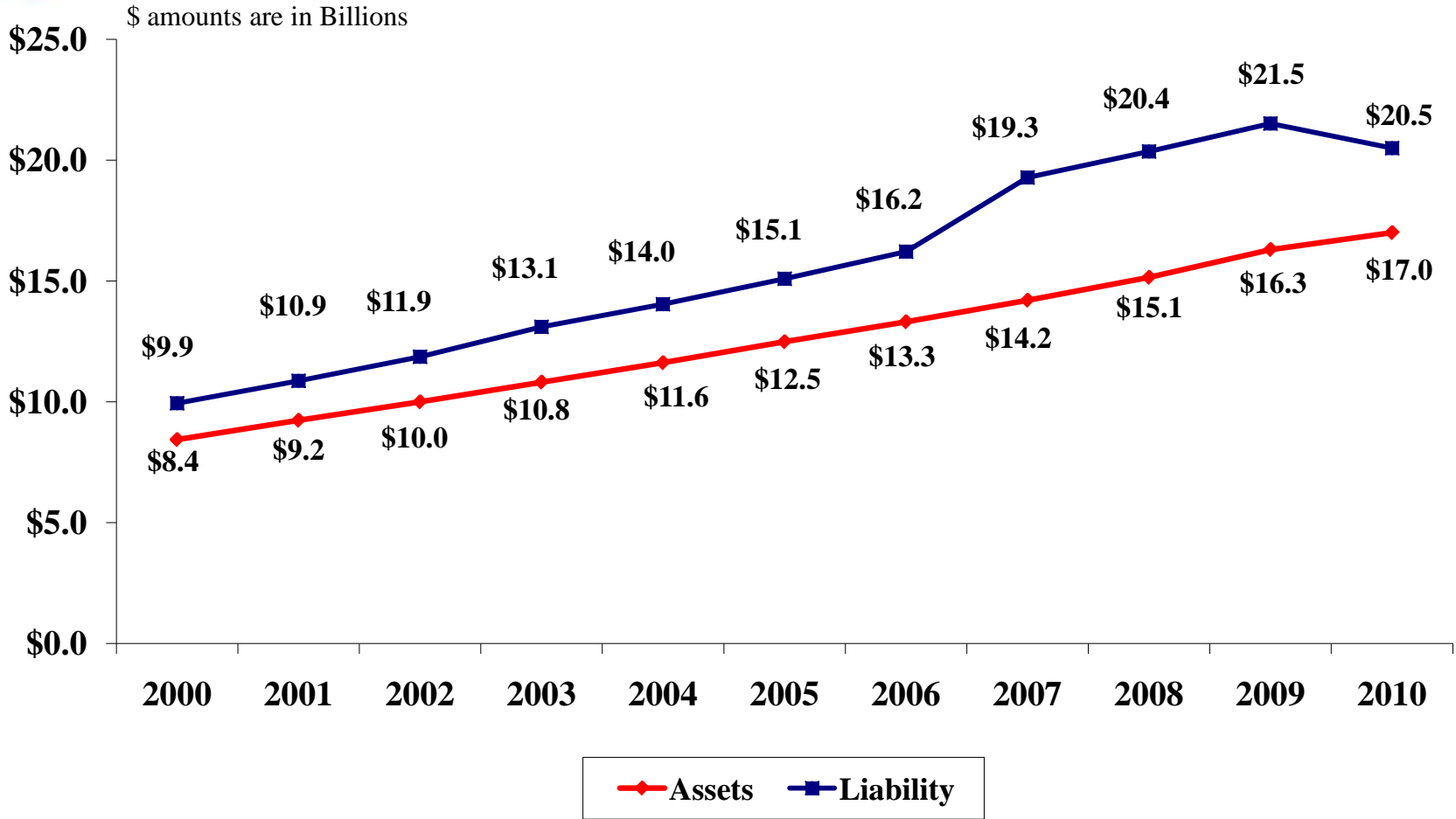
(Assumes all assumptions exactly met and Phase-In minimum contributions and no changes to benefits)

Historical Dollar Weighted Contribution Rates for TMRS

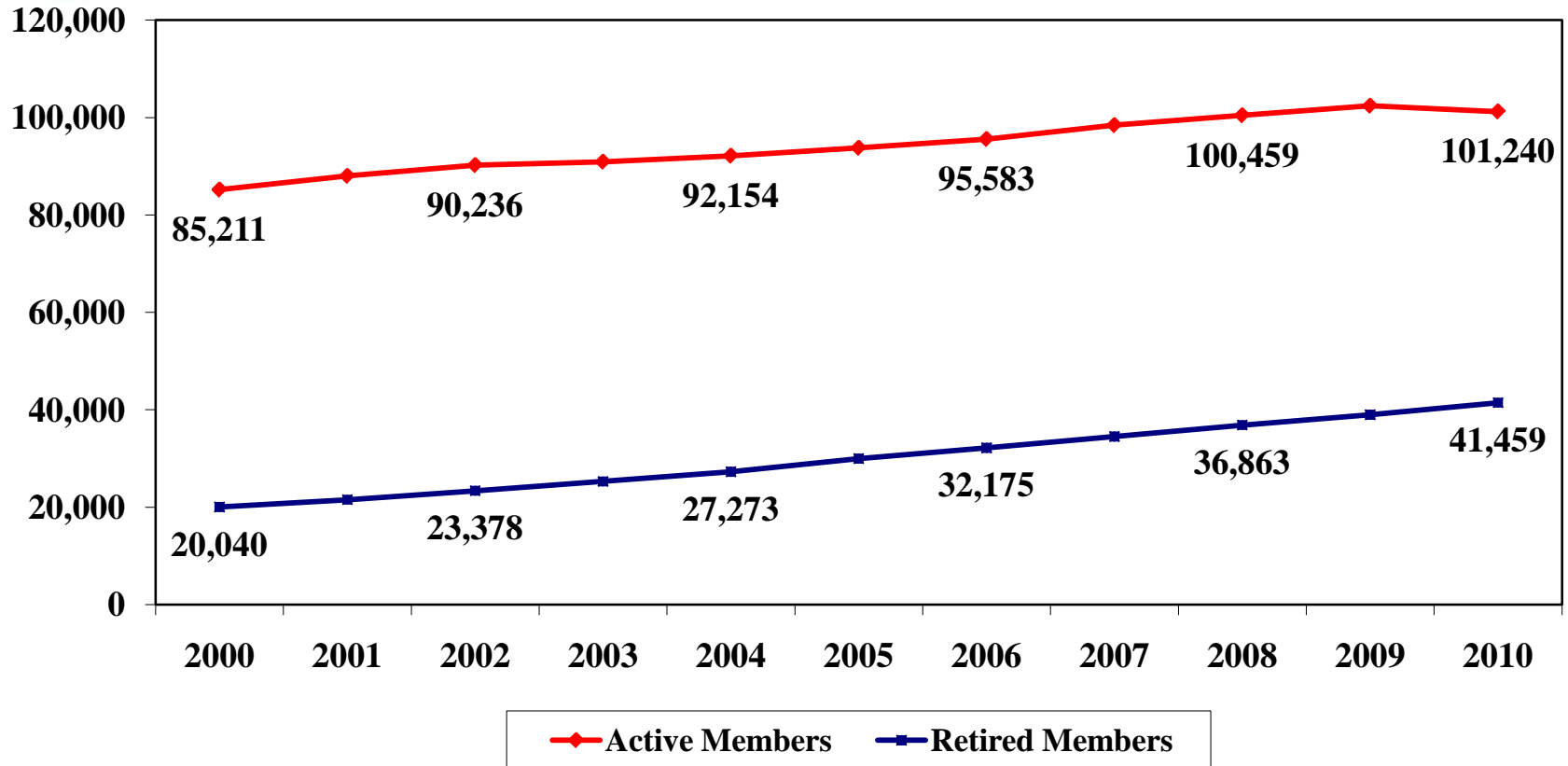


2011 and 2012 are projected rates based on phase in minimum

Actuarial Value of Assets (Smoothed) vs. Actuarial Accrued Liability



Active Members & Retired Members

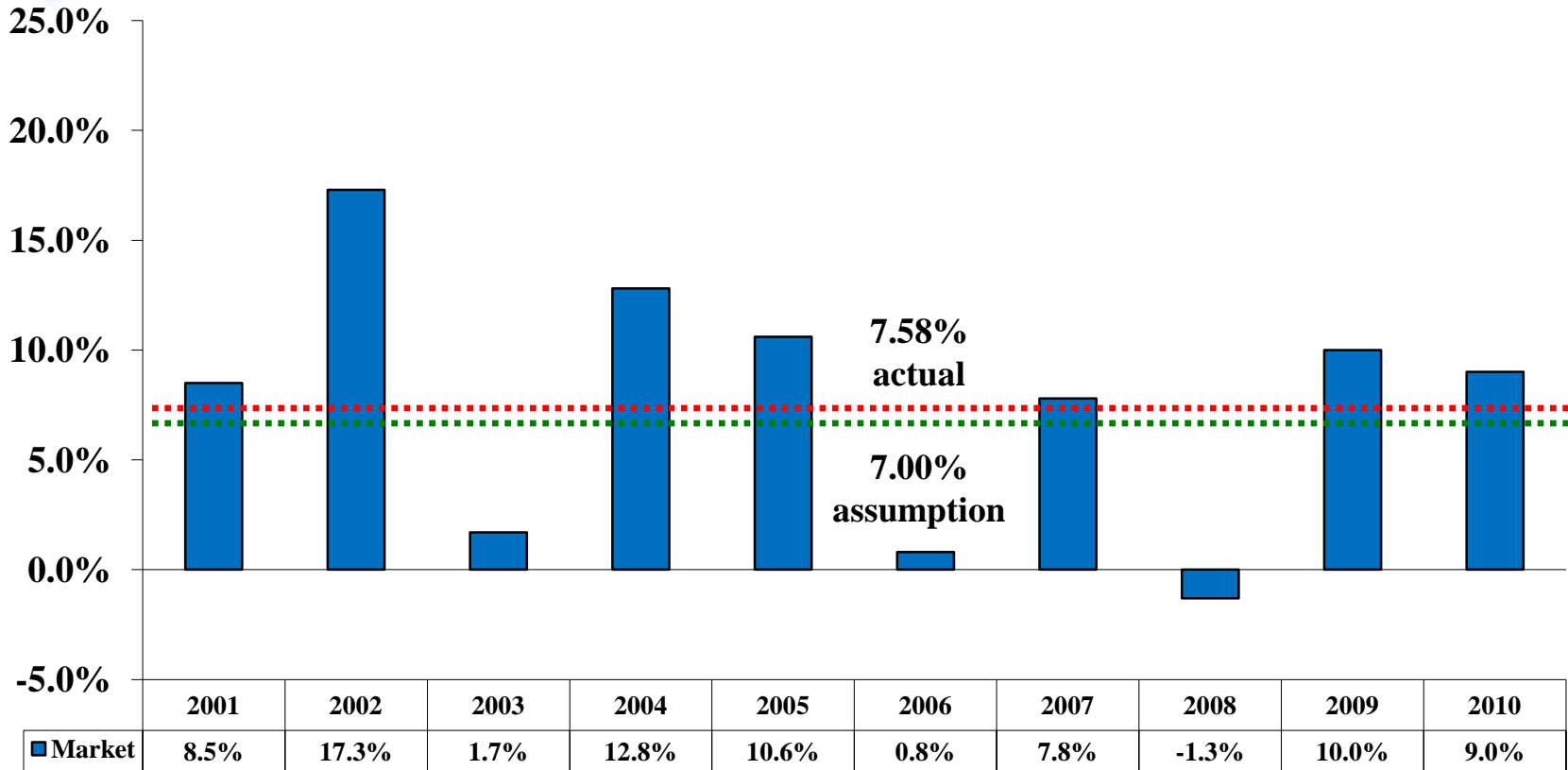


1.7% average increase in active members since 2000; 1.2% decrease in 2010

7.5% average increase in retired members since 2000; 6.4% increase in 2010

There are currently 2.4 actives for every retiree, down from 4.3 in 2000

Estimated Yields based on Market Value of Assets

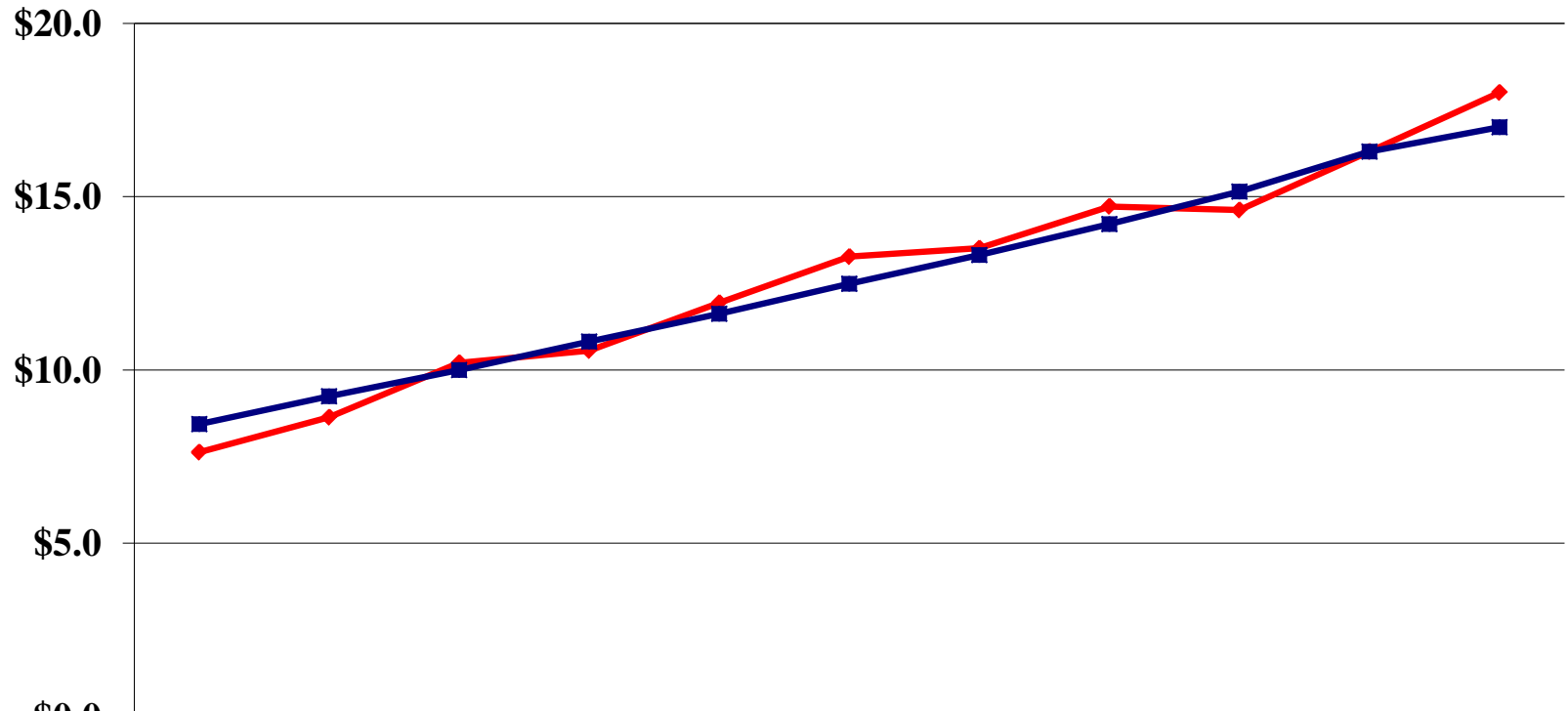


7.58% average compound return (on market value) over last 10 years



Market and Actuarial Values of Assets

\$ amounts are in Billions

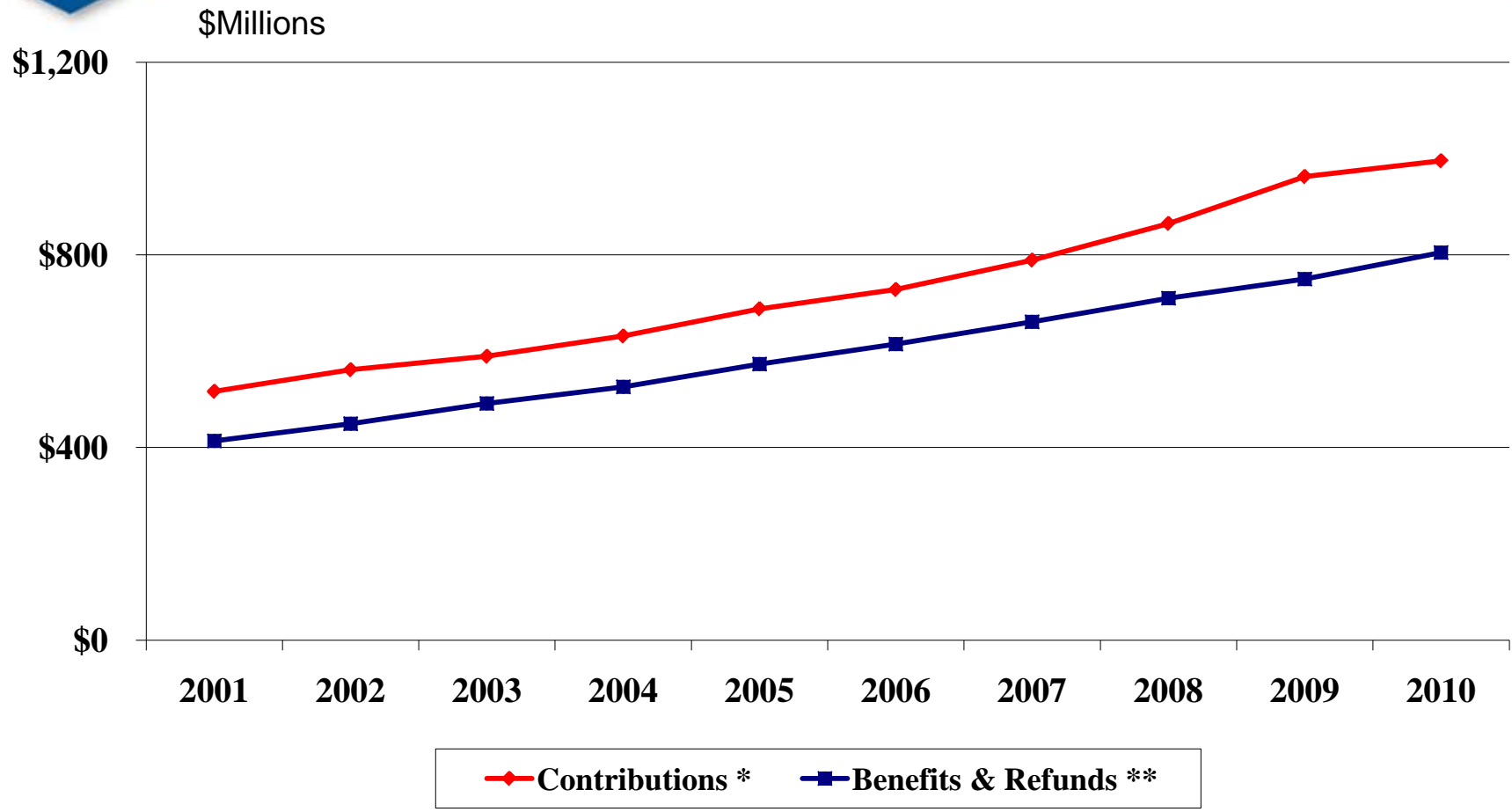


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Market	\$7.6	\$8.6	\$10.2	\$10.6	\$11.9	\$13.3	\$13.5	\$14.7	\$14.6	\$16.3	\$18.0
Actuarial	\$8.4	\$9.2	\$10.0	\$10.8	\$11.6	\$12.5	\$13.3	\$14.2	\$15.1	\$16.3	\$17.0

AVA is currently 94.4% of MVA
 AVA was Book Value prior to 2009



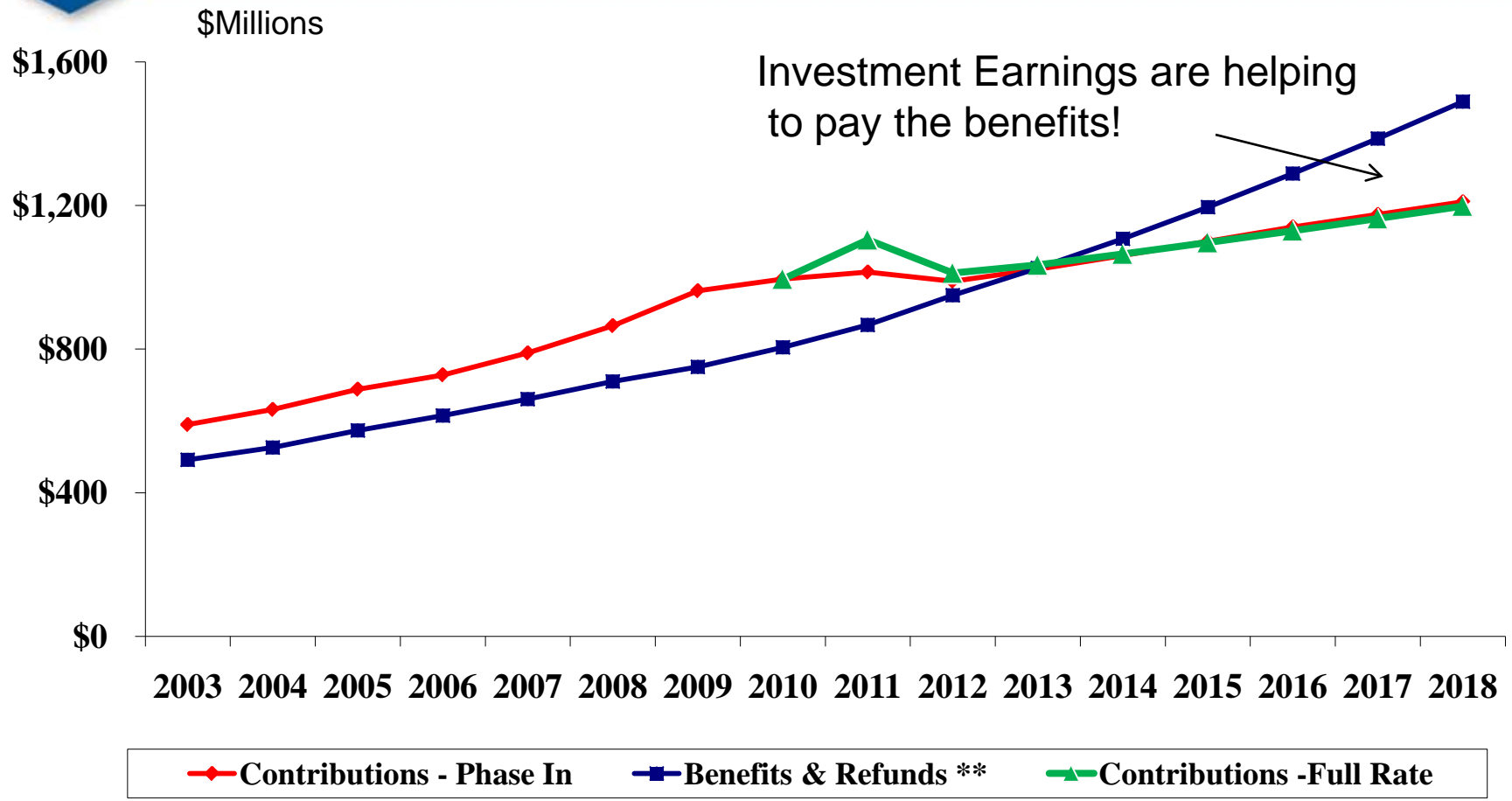
Contributions vs. Benefits and Refunds



* Includes member and employer contributions
** Includes administrative and investment expenses



Projected Contributions vs. Benefits and Refunds



* Includes member and employer contributions

** Includes administrative and investment expenses

13 Assumes no recognition of current deferred investment gains/losses



Aggregate MAF/BAF Valuation (\$ in millions)

Reconciliation of Unfunded Actuarial Accrued Liability (“UAAL”)

	Change in UAAL	Impact on Funded Ratio
UAAL BOY	\$5,219	75.8%
Interest (7.5%)*	362	
Amortization Payments*	(301)	1.5%
Asset Performance	(112)	0.6%
Benefit Changes	(293)	1.3%
Assumption/Legislative Changes	(1,391)	3.6%
Contributions different than Actuarially Determined	89	-0.4%
Liability (Gains)/Losses	<u>(78)</u>	<u>0.5%</u>
UAAL EOY	\$3,495	82.9%

*Will have negative amortization until funding period reaches approximately 21 years

*7.50% interest for 2010 and before, going forward will have 7% interest

Projected Aggregate 2011 BAF Reconciliation

(\$ in millions)

Reconciliation of Unfunded Actuarial Accrued Liability (“UAAL”)

	2010 Change in UAAL	2011 Change in UAAL **	Impact on Funded Ratio
UAAL BOY	\$5,219	\$3,495	82.9%
Interest (7.0%)	362	245	
Amortization Payments	(301)	(219)	0.9%
Asset Performance	(112)	0	0.0%
Benefit Changes	(293)	0	0.0%
Assumption/Legislative Changes	(1,391)	0	0.0%
Contributions different than Actuarially Determined *	89	(32)	0.1%
Liability (Gains)/Losses	<u>(78)</u>	<u>0</u>	<u>0.0%</u>
UAAL EOY	\$3,495	\$3,488	83.9%

*Assumes Phase-In Minimum and continuance of rate from 2009 valuation through 2011

** Assumes all assumptions exactly met, including 7% return on AVA

If 7% return is realized on MVA, there will be an asset gain of approximately \$108 M



Demographic Experience

- ◆ Continue to have low turnover
 - ▶ A trend we are seeing across the country
 - ▶ Importantly, for most TMRS cities, terminating members are not being replaced
- ◆ For active employees:
 - ▶ Average age increased from 42.58 to 42.89 (+0.31)
 - ▶ Average service increased from 10.16 to 10.51 (+0.35)
 - ▶ Typical increase would be closer to 0.10 years
- ◆ This means that many cities had 2 to 3 years worth of aging in their current service cost recognized in 1 year
 - ▶ Average increase in Current Service Cost: 0.12%

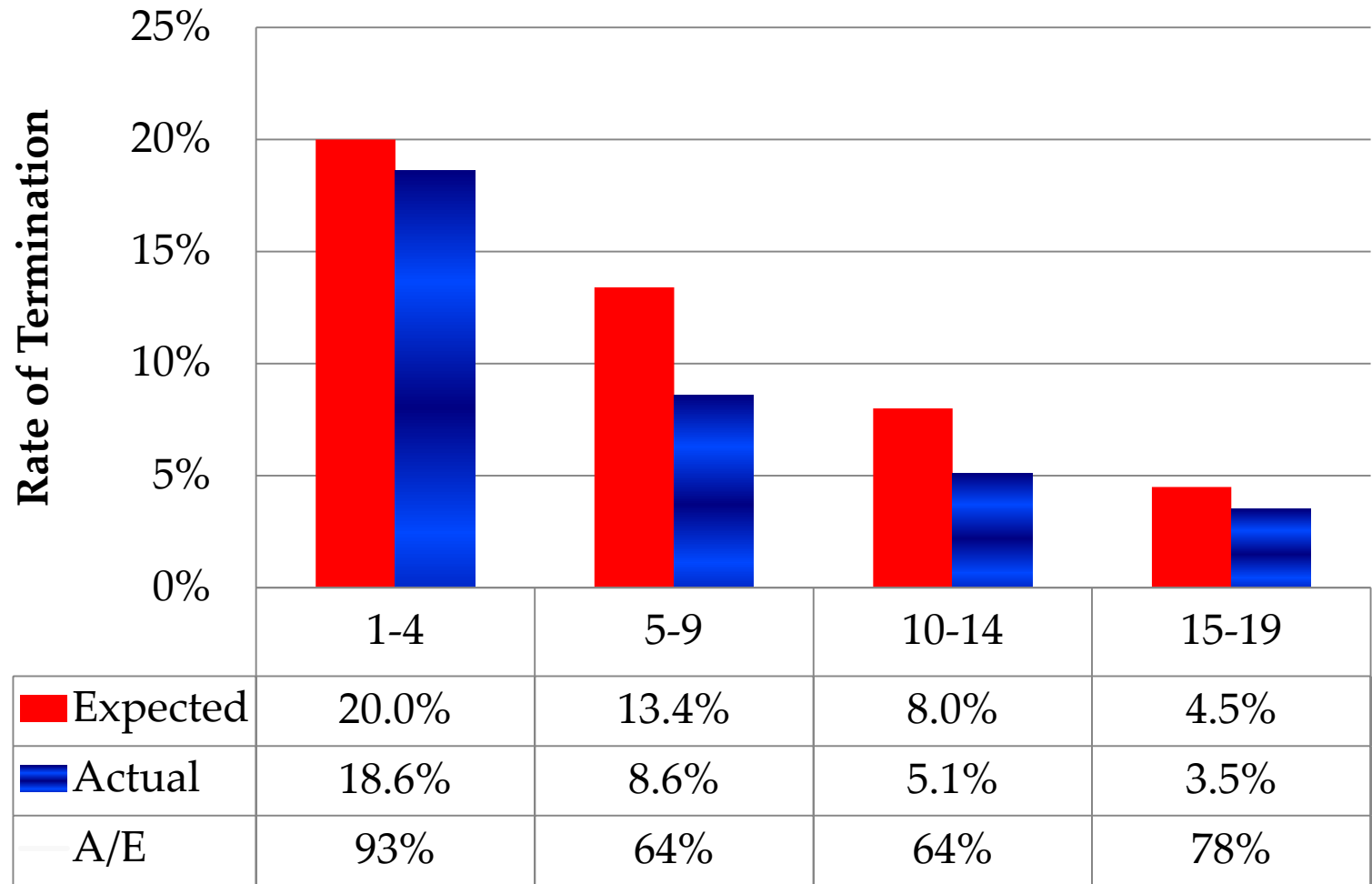


Demographic Experience

- ◆ Lower turnover means more members are expected to reach retirement in the future than originally anticipated, this creates an actuarial loss
 - ▶ Total System-wide loss due to termination experience: \$89 M
- ◆ Loss would have been lower under new assumption which assumes less turnover
- ◆ However, this was more than offset by lower salary increases than expected by the assumption set
 - ▶ Average increase 2.07% vs. expected 5.47%
 - ▶ Created a Liability Gain of over \$150 million



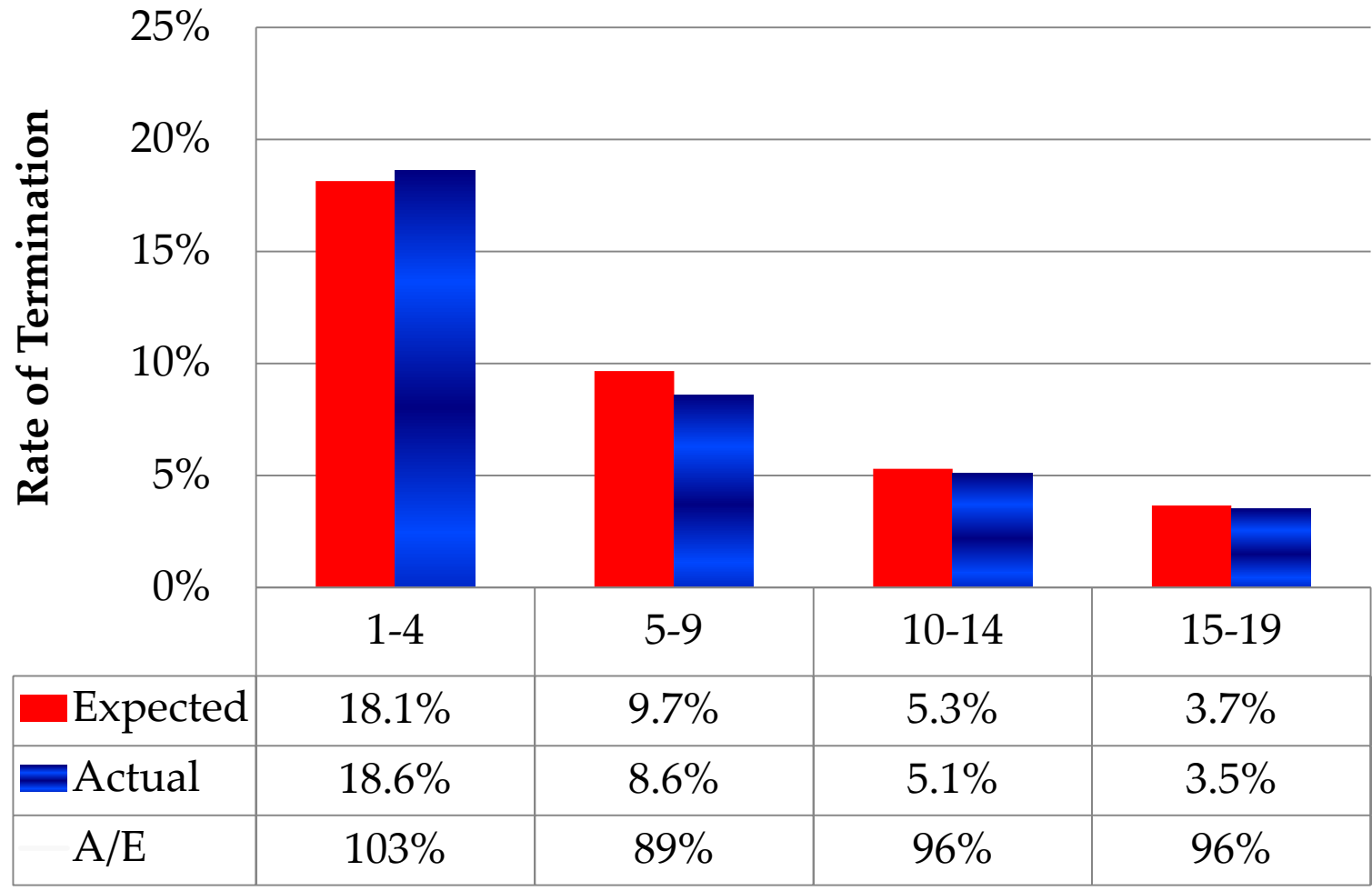
Termination Experience for Active Members (old assumption) Distributed by Years of Service



The A/E ratio is used to measure the deviation from the assumptions.
A 100% A/E ratio would be a perfect match.



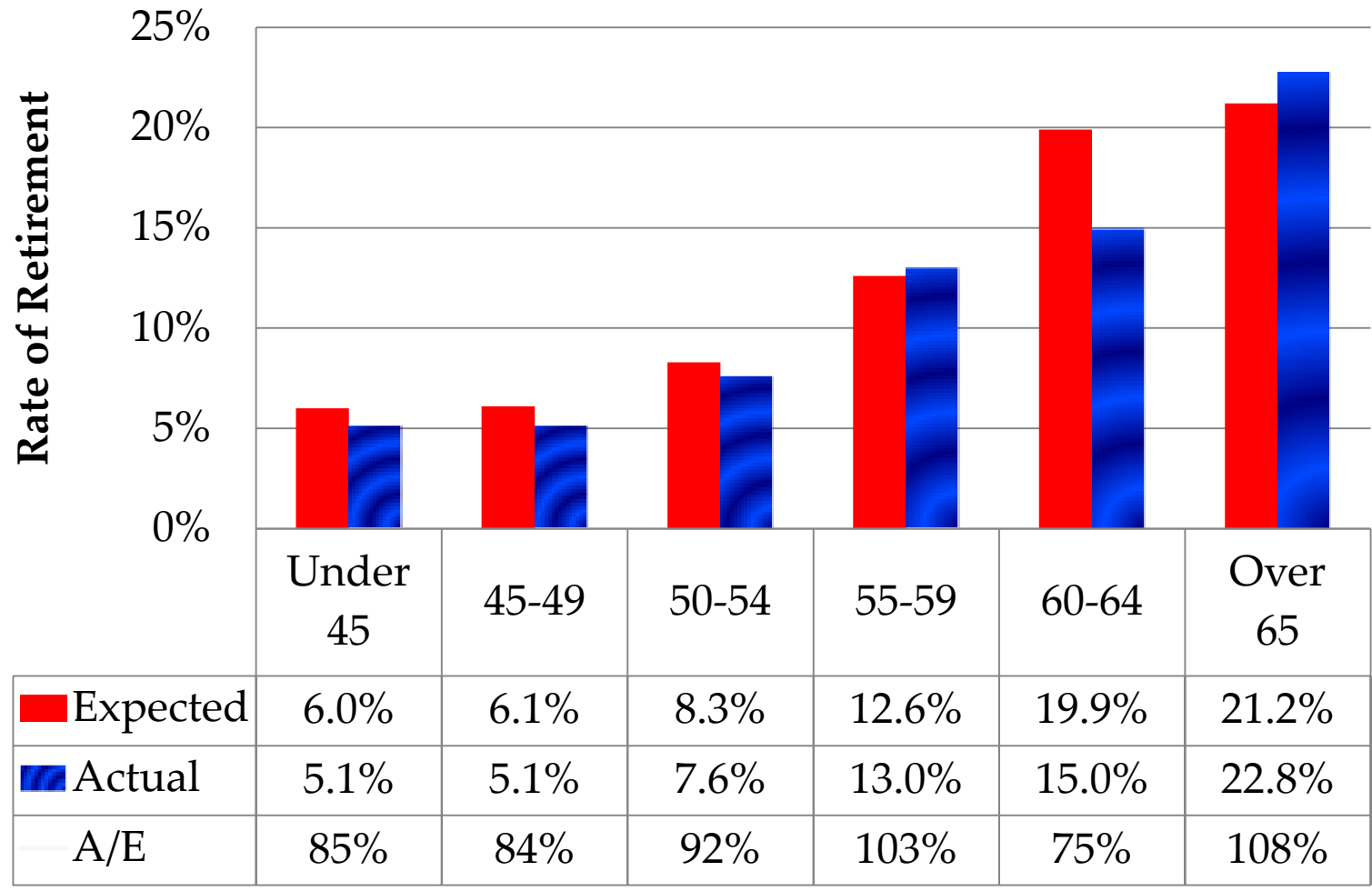
Termination Experience for Active Members Distributed by Years of Service Based on New Termination Assumptions



The A/E ratio is used to measure the deviation from the assumptions.
A 100% A/E ratio would be a perfect match.



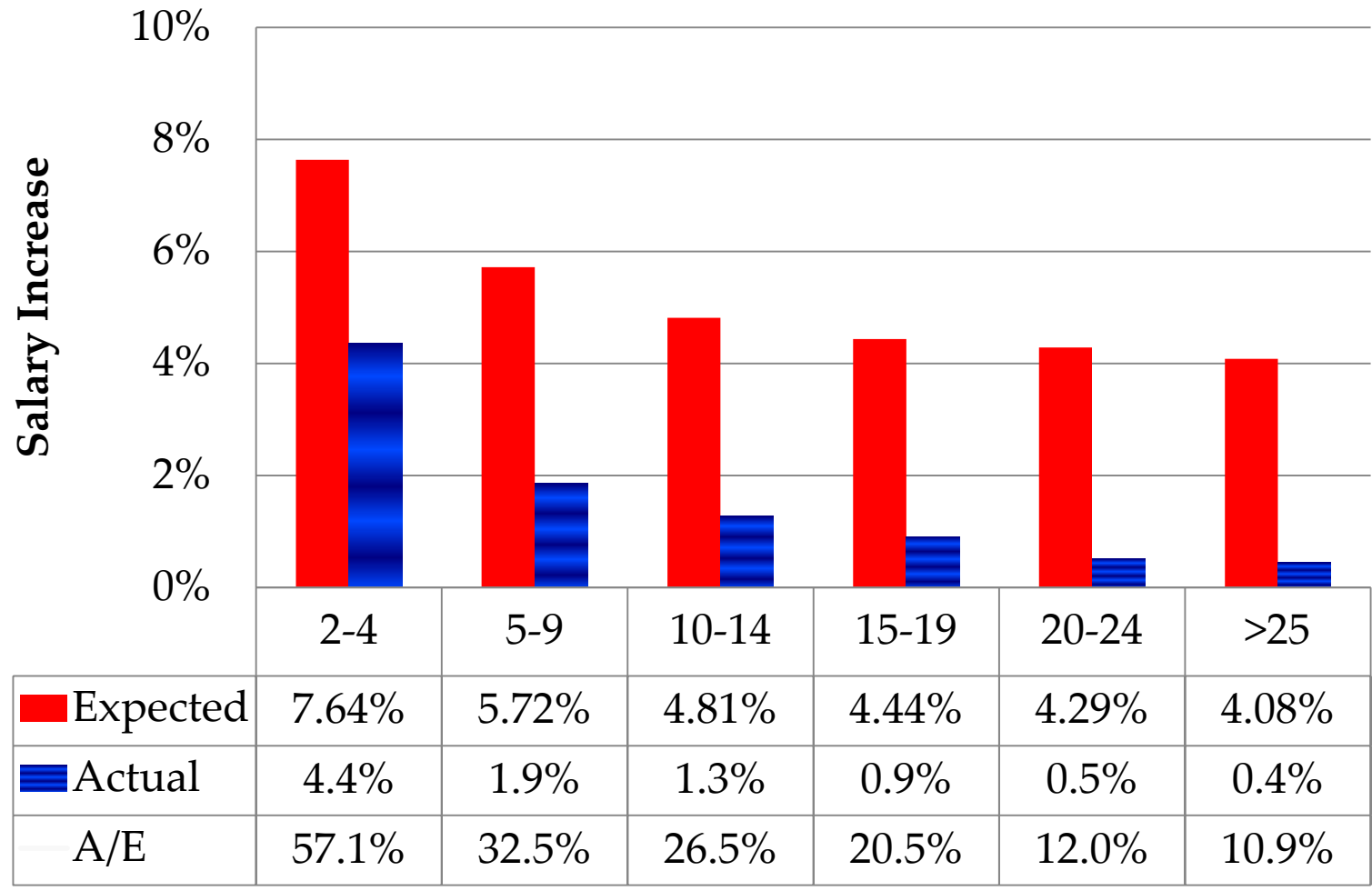
Retirement Experience for Active Members Distributed by Age



Retirement experience less than expected



Salary Increases for Members Active in 2009 & 2010 Distributed by Service



Salary increases significantly less than expected.



Summary of Benefit Changes

◆ Total Changes

45 (47 w/ supp. death ben.) cities made changes that impacted the total retirement rate since the last valuation

▶ Increases 28

▶ Decreases 17 (19 w/ supp. death ben.)

◆ Number of cities changing matching ratio, deposit rate, and eligibilities 17



Summary of Benefit Changes (con't)

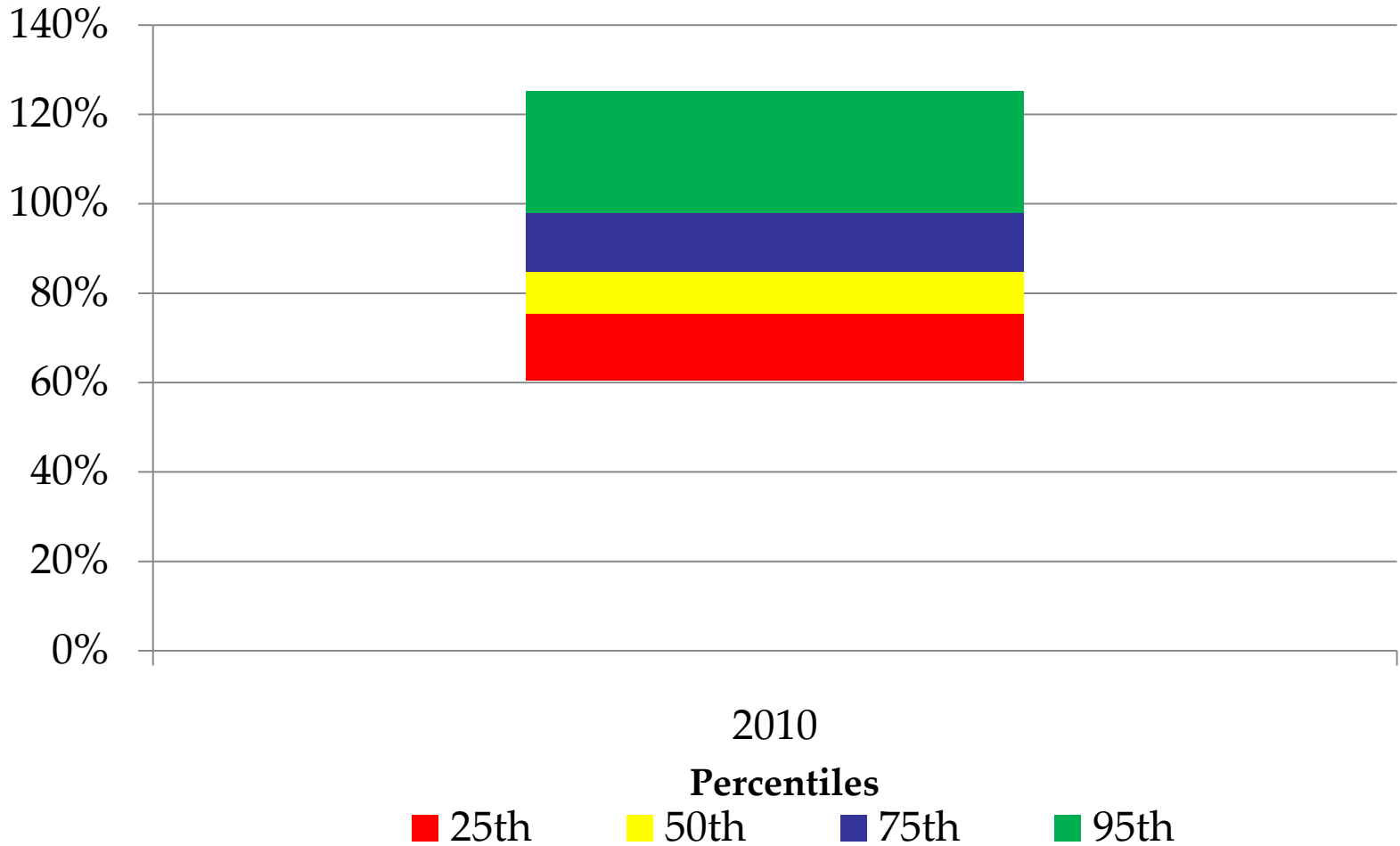
◆ USC Changes

▶ Ad Hoc USC	12
▶ New/Reauthorize Repeating USC	0 (1 xfer)
▶ Rescind/Decrease Repeating USC	7 (8 xfer)

◆ COLA Changes

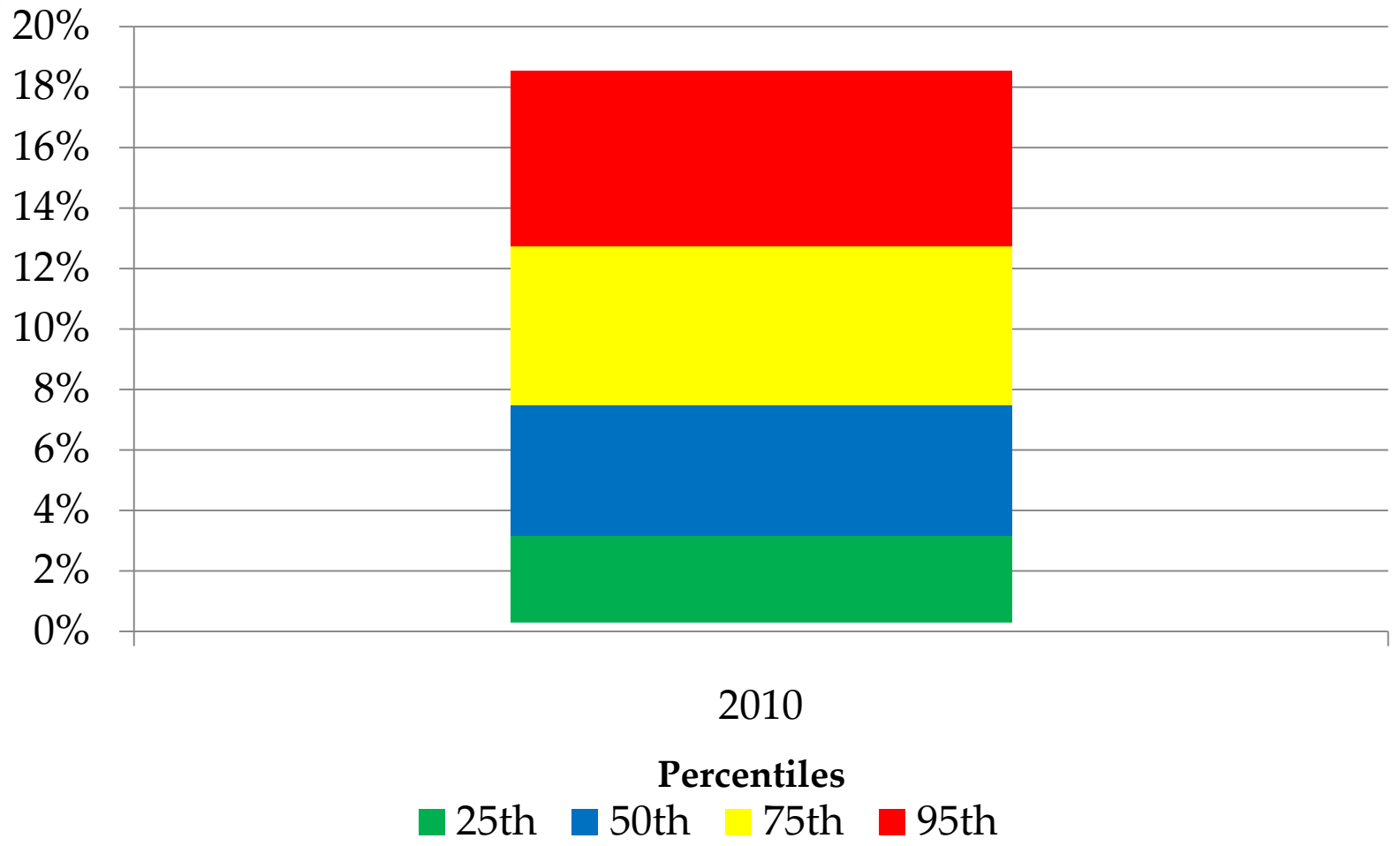
▶ Ad Hoc COLA	16
▶ New/Reauthorize Repeating COLA	0
▶ Rescind/Decrease Repeating COLA	17

Distribution of Funded Ratio Percentages





Distribution of Full Contribution Rates





Aggregate Reconciliations (No Repeating COLAs)

	<u>Group 1</u>	<u>Group 2</u>	<u>Group 3</u>
Employer Match	1 to 1	1.5 to 1	2 to 1
1. Full Rate from December 31, 2009 Valuation	4.74%	5.57%	12.97%
2. a. Phase In/Additional contributions	(0.06%)	0.00%	0.00%
b. MAF/BAF Crediting Rate	(0.04%)	(0.08%)	(0.15%)
c. SB350 / Assumption Changes	<u>(2.24%)</u>	<u>(2.25%)</u>	<u>(3.95%)</u>
d. Anticipated Changes (2a + 2b + 2c)	(2.34%)	(2.33%)	(4.10%)
3. a. Overall Payroll Growth	(0.01%)	(0.01%)	0.07%
b. Liability Growth	0.00%	(0.05%)	(0.04%)
c. Change in Current Service	<u>0.01%</u>	<u>0.01%</u>	<u>0.16%</u>
d. Unanticipated Changes (3a + 3b + 3c)	0.00%	(0.05%)	0.19%
4. Full Rate from December 31, 2010 Valuation (1 + 2d+ 3d)	2.40%	3.19%	9.06%
5. Funded Ratio	94.3%	104.1%	93.4%



Aggregate Reconciliations (Repeating COLAs)

	<u>Group 4</u>	<u>Group 5</u>	<u>Group 6</u>
Employer Match	1 to 1	1.5 to 1	2 to 1
1. Full Rate from December 31, 2009 Valuation	6.30%	12.48%	18.09%
2. a. Phase In/Additional contributions	0.09%	(0.03%)	0.18%
b. MAF/BAF Crediting Rate	(0.06%)	(0.12%)	(0.14%)
c. SB350 / Assumption Changes	<u>(1.63%)</u>	<u>(2.10%)</u>	<u>(2.17%)</u>
d. Anticipated Changes (2a + 2b + 2c)	(1.60%)	(2.25%)	(2.13%)
3. a. Overall Payroll Growth	(0.04%)	(0.03%)	0.03%
b. Liability Growth	(0.18%)	(0.06%)	(0.11%)
c. Change in Current Service	<u>0.07%</u>	<u>0.10%</u>	<u>0.23%</u>
d. Unanticipated Changes (3a + 3b + 3c)	(0.15%)	0.01%	0.15%
4. Full Rate from December 31, 2010 Valuation (1 + 2d + 3d)	4.55%	10.24%	16.11%
5. Funded Ratio	84.3%	83.3%	78.4%



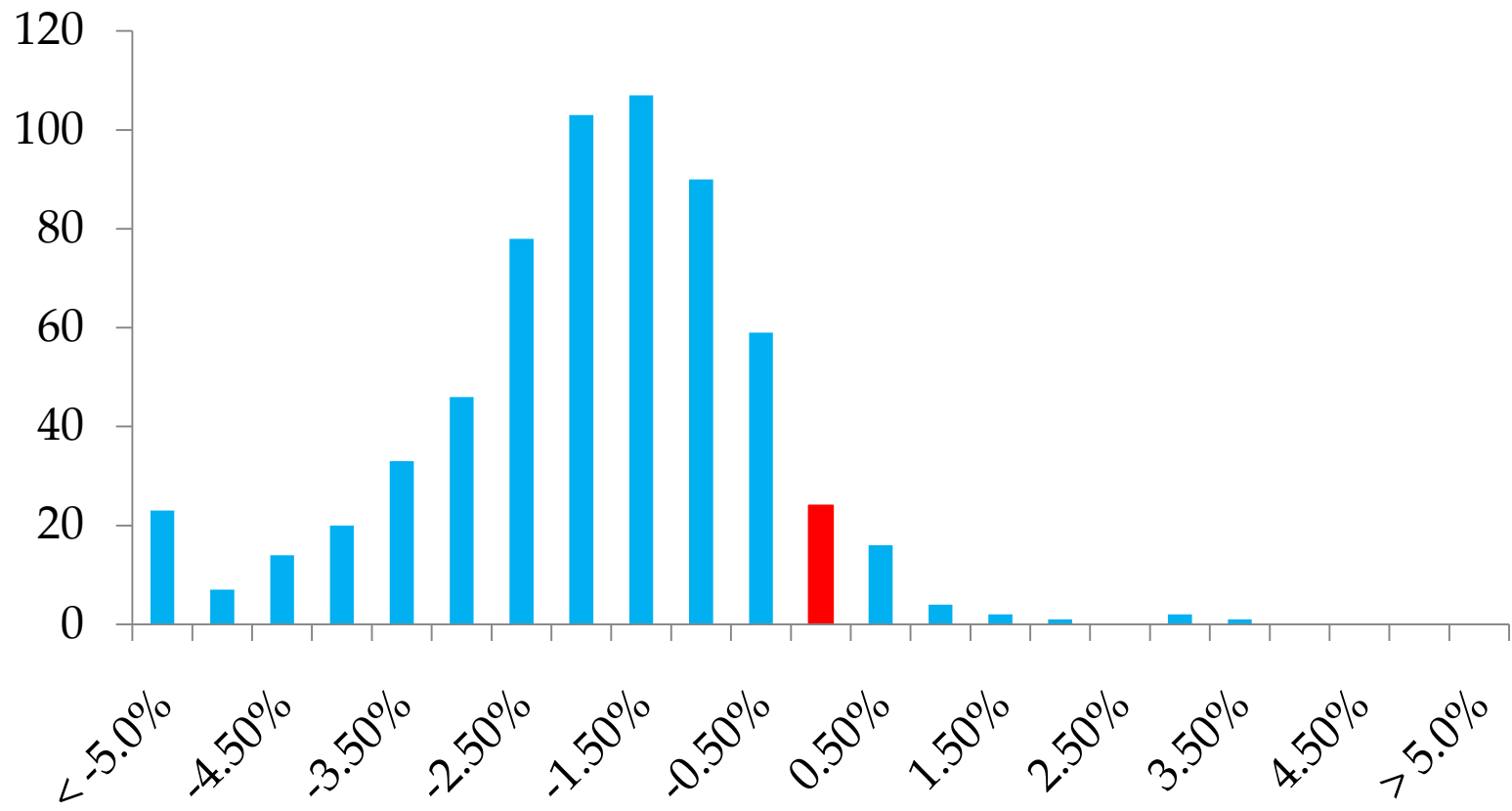
Phase In Minimums

	<u>Group 4</u>	<u>Group 5</u>	<u>Group 6</u>
1. a. Full Rate from December 31, 2009 Valuation	6.41%	12.50%	17.71%
b. Phase-In	<u>(1.31%)</u>	<u>(1.91%)</u>	<u>(2.48%)</u>
c. Minimum Required for 2011	5.10%	10.59%	15.23%
2. a. Full Rate from December 31, 2010 Valuation	4.55%	10.24%	16.11%
b. Phase-In	<u>(0.02%)</u>	<u>(0.23%)</u>	<u>(0.69%)</u>
c. Minimum Required for 2012	4.53%	10.01%	15.42%
3. Increase in Minimum Required	(0.57%)	(0.58%)	0.19%



Distribution of Rate Change (TMRS cities with more than 10 members)

Total Change

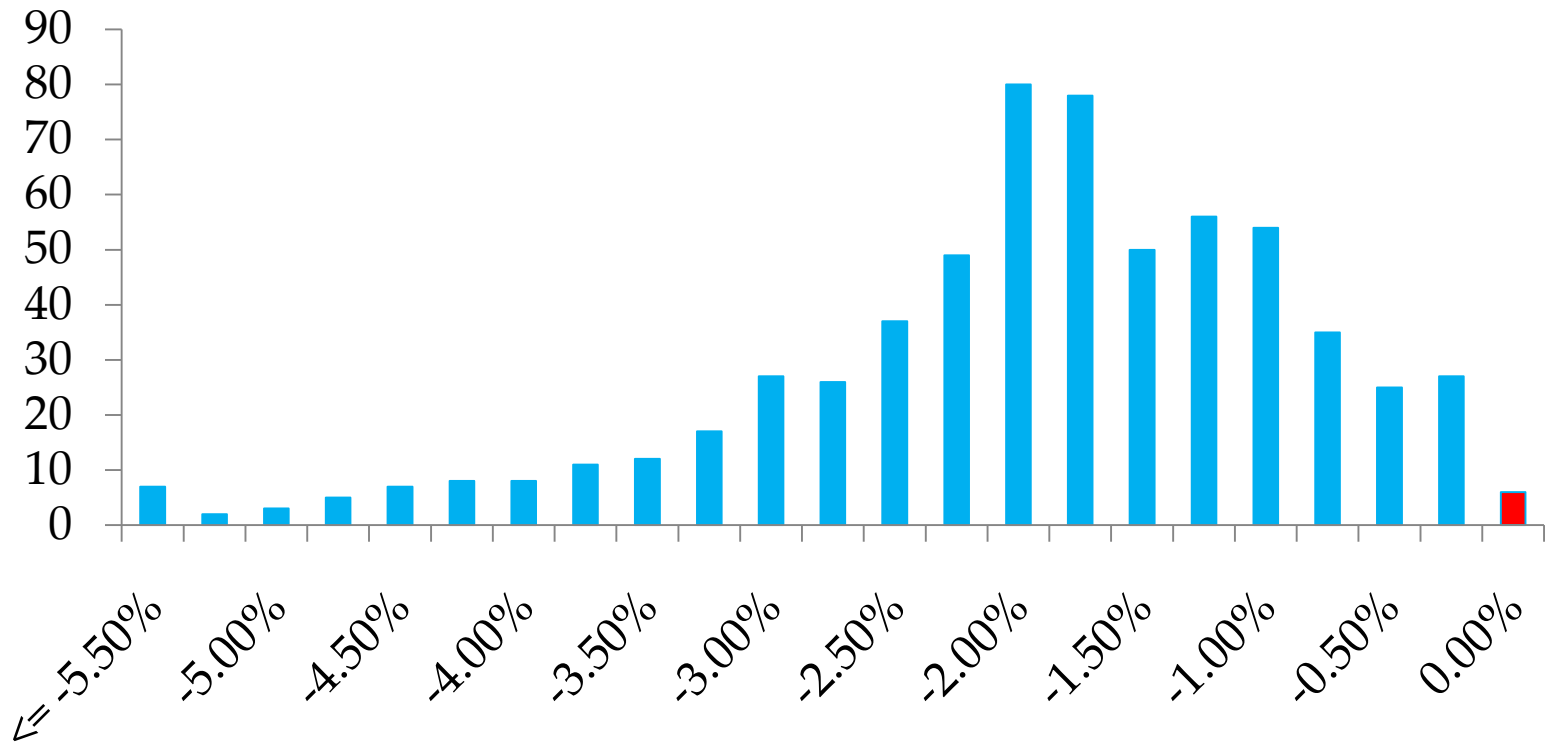


The red highlight represents +/- 0.0%



Distribution of Rate Change (TMRS cities with more than 10 members)

Change Due to Assumption Changes and Fund Restructuring

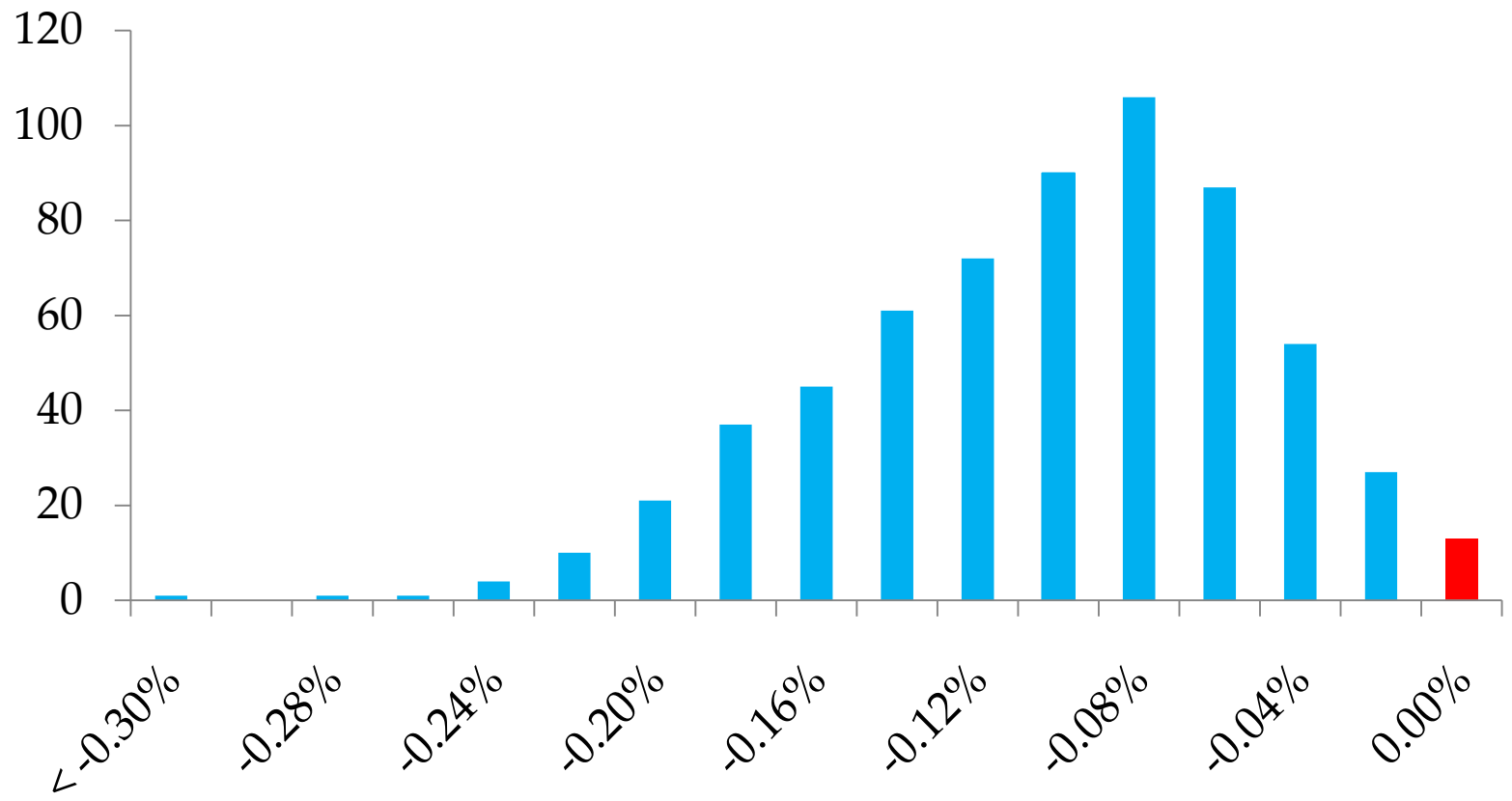


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Distribution of Rate Change (TMRS cities with more than 10 members)

Change Due to Additional BAF Interest Credit

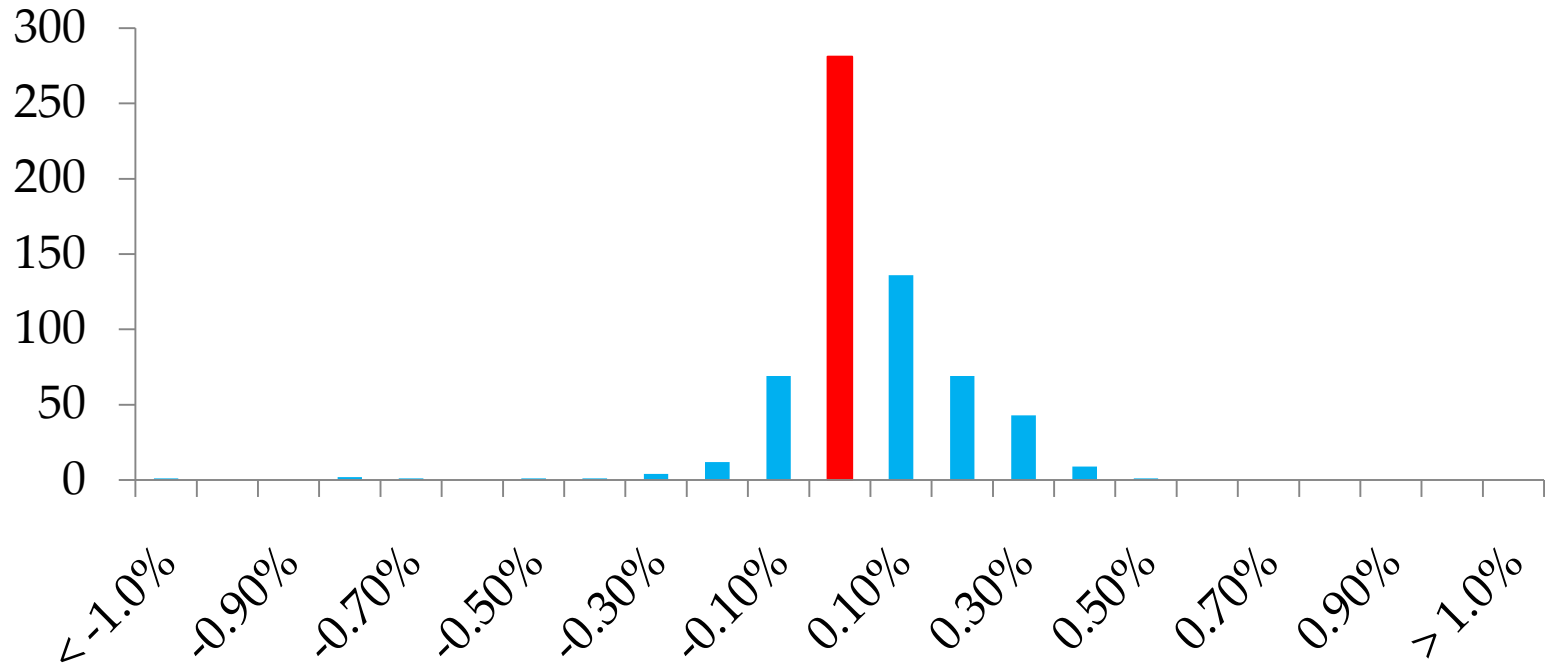


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Distribution of Rate Change (TMRS cities with more than 10 members)

Change Due to Contribution Different than Actuarial Rate (Phase-In, Lag, & Excess Contributions)

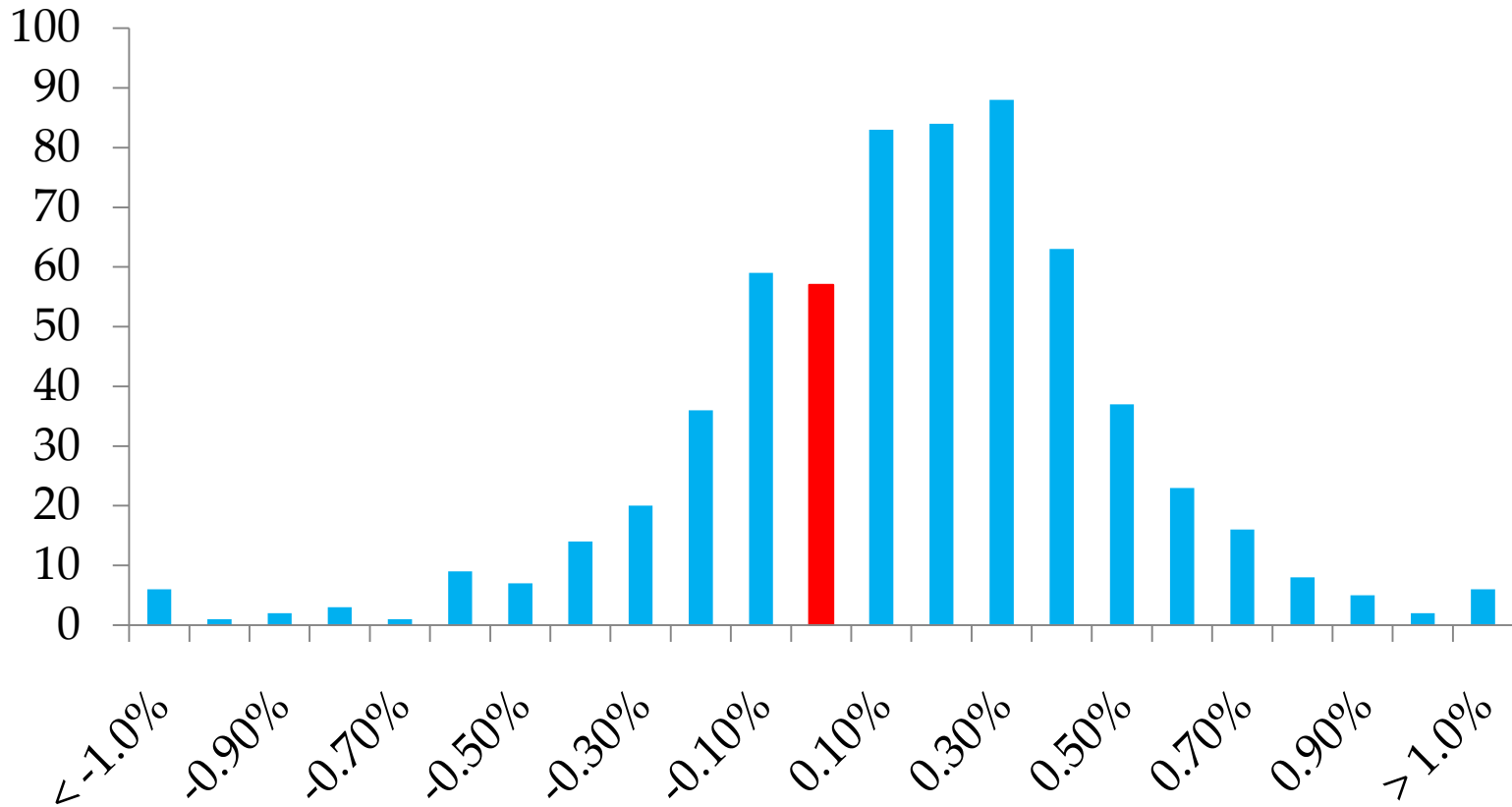


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Distribution of Rate Change (TMRS cities with more than 10 members)

Change Due to Variation in Current Service

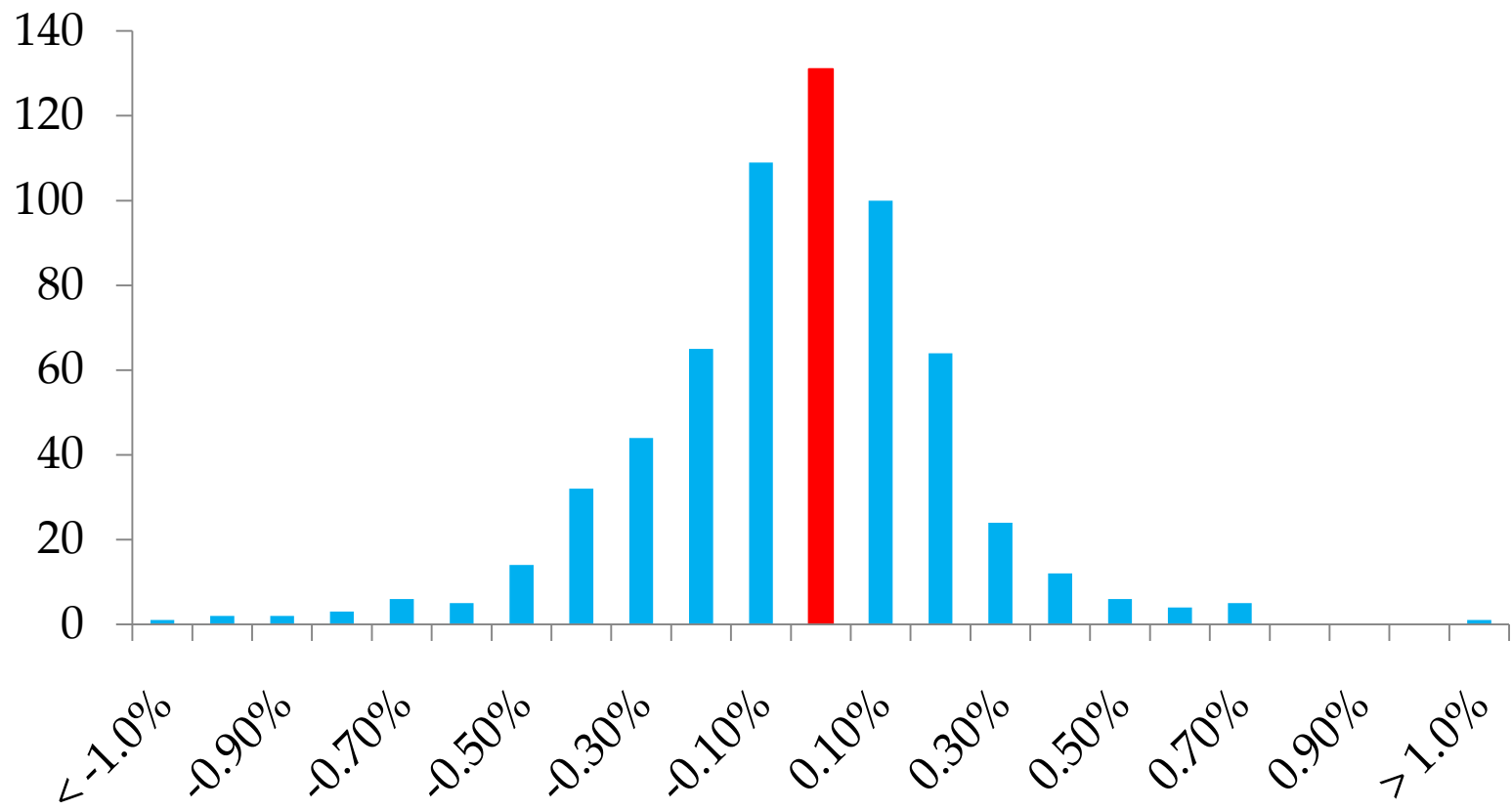


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Distribution of Rate Change (TMRS cities with more than 10 members)

Change Due to Liability Growth

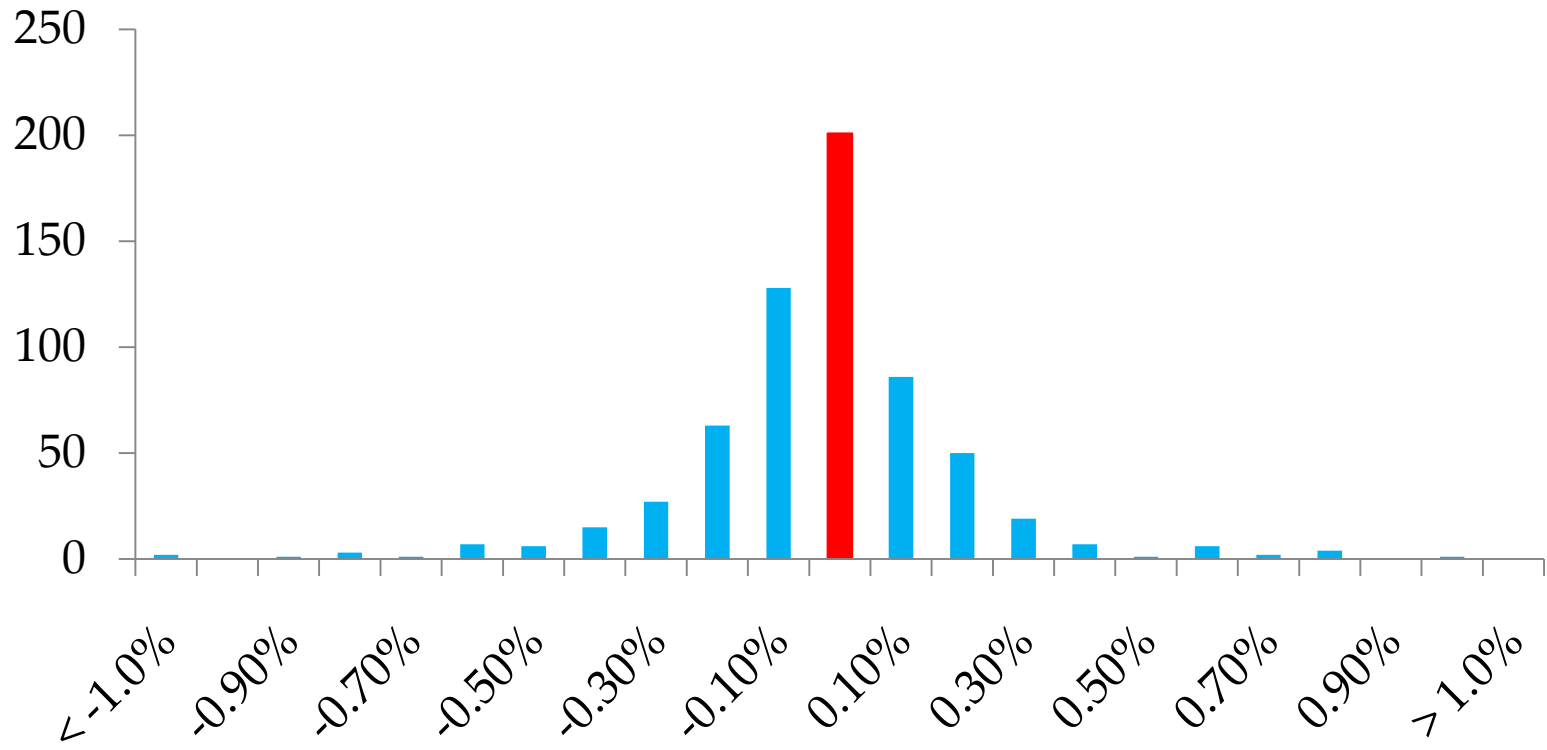


The red highlight represents +/- 0.0%



Distribution of Rate Change (TMRS cities with more than 10 members)

Change Due to Payroll Growth (Includes Population Growth)



The red highlight represents +/- 0.0%



In Summary

- ◆ System-wide Funded Ratio increased substantially
 - ▶ SB 350
 - ▶ New assumptions
 - ▶ Overall asset gain
 - ▶ Overall liability gain
- ◆ Most cities will be paying their Full Rate beginning in 2012, and remaining phase-in bases are much smaller
- ◆ Expectation is for an increasing funded ratio over the next few valuations and continued stability in the contribution rates