



Montana Teachers' Retirement System Valuation Results July 1, 2014

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Benefit Financing



- Basic Retirement Funding Equation

$$C + I = B + E$$

C = Contributions

I = Investment Income

B = Benefits Paid

E = Expenses (administration)



Results



Comments on Valuation



- Asset returns
 - Market asset return 17.09% vs. 7.75% expected (9.34% greater than expected).
 - Actuarial asset return 13.21% vs. 7.75% expected (5.46% greater than expected).
- Funded Ratio
 - Funding declined from 66.80% to 65.45%
- Changes Since Previous Valuation
 - Experience Study for five year period ending July 1, 2013
 - GABA assumption changed from 0.5% to 1.5% due to pending litigation/preliminary injunction



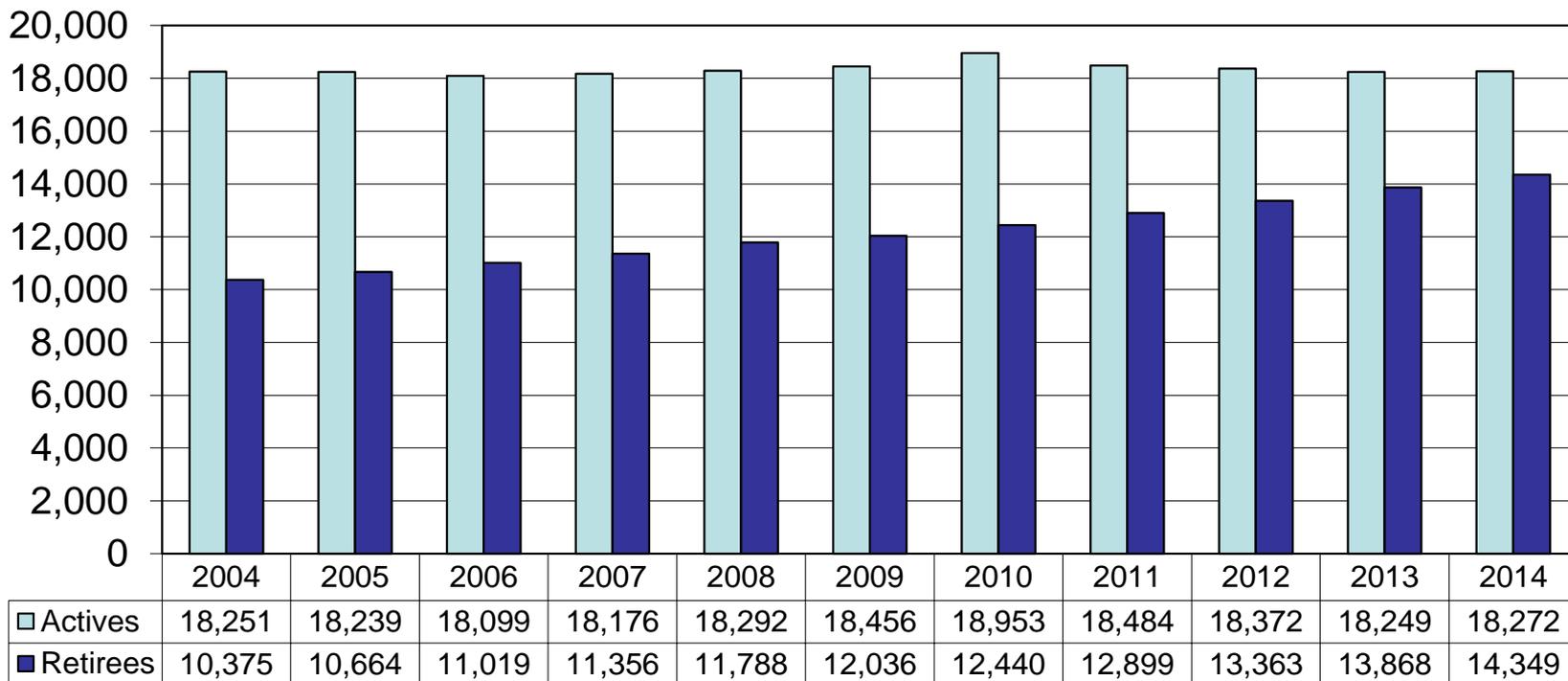
Comments on Valuation



- Based on a recent Experience Study for the five year period ending July 1, 2013, the following assumptions were updated for the July 1, 2014 valuation
 - Decreased price inflation and real wage growth assumptions to 3.25% and 0.75% from 3.50% and 1.00%, respectively
 - Decreased payroll growth assumption from 4.50% to 4.00% to be consistent with wage inflation assumption
 - Investment return assumption is net of investment expenses only, therefore must load contribution rate for administrative expenses (0.31%)
 - Updated pre and post retirement mortality assumption
- Since the previous valuation, the GABA assumption has been changed from 0.5% to 1.5% per year.



Active and Retired Membership



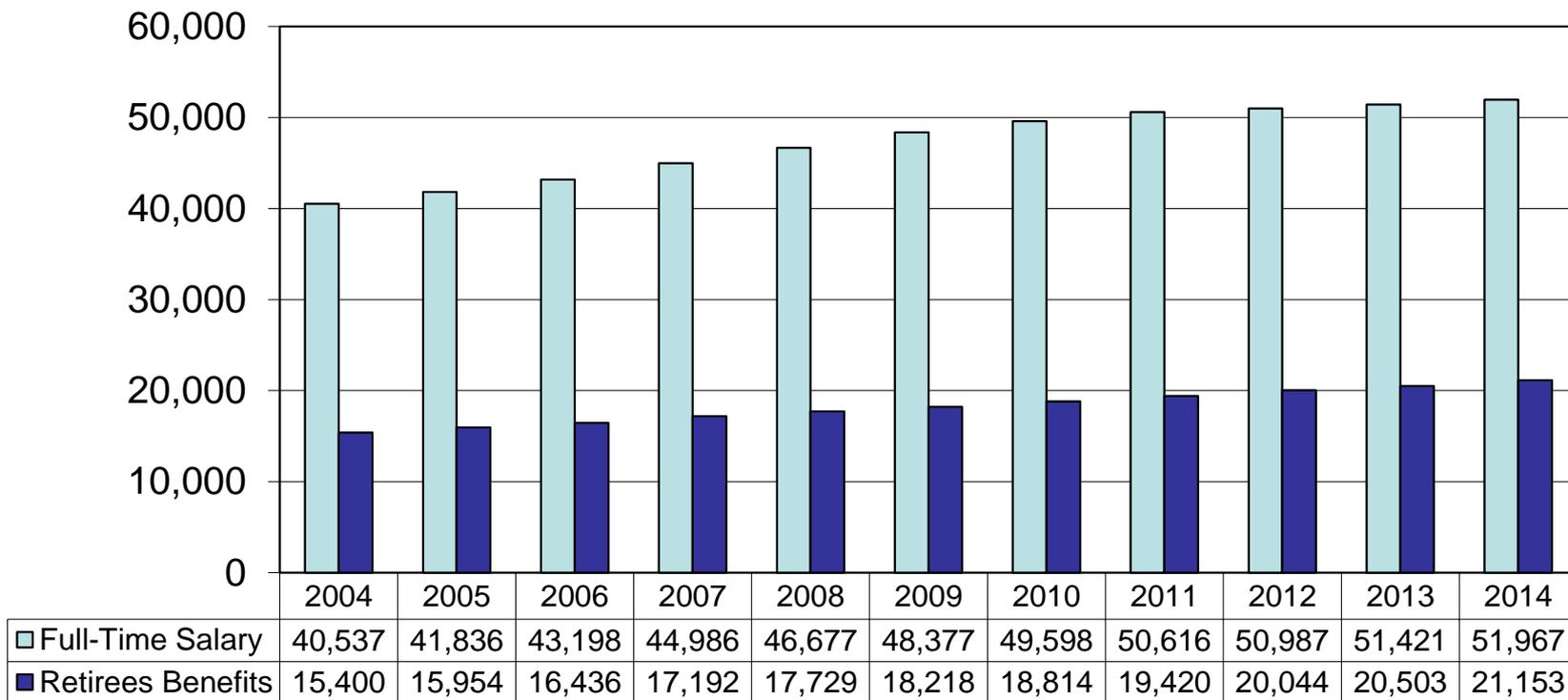
0.0% annual increase for active members since 2004; 0.1% increase for 2014.

3.3% annual increase for retired members since 2004; 3.5% increase for 2014.

0.6 retirees per active 10 years ago; 0.8 retirees per active now.



Average Salary and Benefits

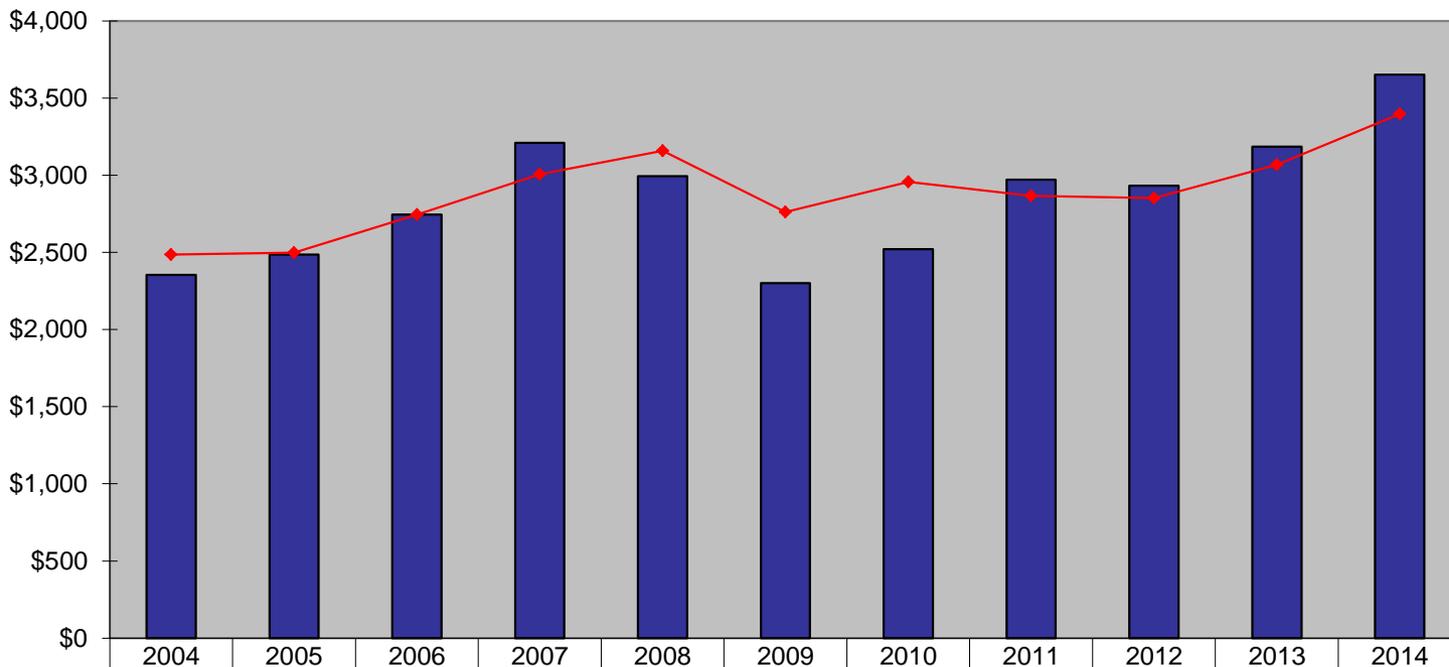


2.5% annual increase for average salary since 2004; 1.1% increase for 2014.

3.2% annual increase for average benefits since 2004; 3.2% increase for 2014.



Assets (\$ Millions)



Market Value	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Actuarial Value	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Market Return	13.3%	8.0%	8.9%	17.6%	(4.9)%	(20.8)%	12.9%	21.7%	2.2%	12.9%	17.1%
Actuarial Return	2.1%	2.7%	8.5%	10.2%	7.2%	(10.3)%	9.8%	(0.1)%	3.2%	12.0%	13.2%



Funding Results

1.50% GABA Provision



	July 1, 2014 Valuation	July 1, 2013 Valuation
Total Normal Cost Rate	9.13%	9.62%
Less Member Rate	<u>8.15%</u>	<u>8.15%</u>
Employer Normal Cost Rate	0.98%	1.47%
Administrative Expense Load	0.31%	N/A
Rate to Amortize UAL	<u>9.77%</u>	<u>9.49%</u>
Total Employer Statutory Rate	11.06%	10.96%
Funded Ratio	65.45%	61.81%
Actuarial Accrued Liability	\$5,191.0 million	\$4,963.9 million
Actuarial Value of Assets	\$3,397.4 million	\$3,067.9 million
Unfunded Accrued Liability	\$1,793.6 million	\$1,896.0 million
Amortization Period*	28 Years	29 Years

* Reflects anticipated increase in employer supplemental contribution rate



Funding Results

0.50% GABA Provision

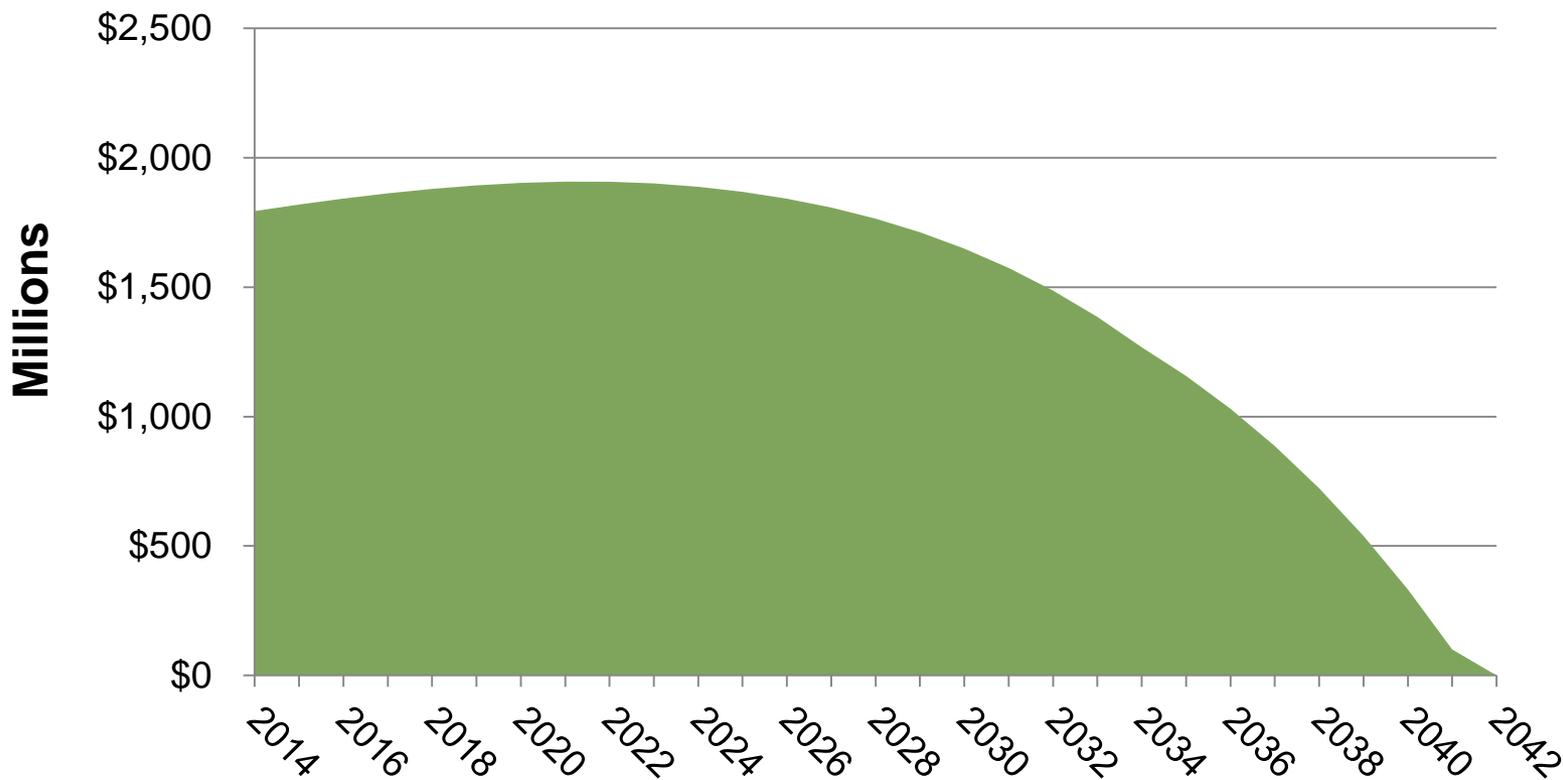


	July 1, 2014 Valuation	July 1, 2013 Valuation
Total Normal Cost Rate	8.38%	9.20%
Less Member Rate	<u>8.15%</u>	<u>8.15%</u>
Employer Normal Cost Rate	0.23%	1.05%
Administrative Expense Load	0.31%	N/A
Rate to Amortize UAL	<u>10.52%</u>	<u>9.91%</u>
Total Employer Statutory Rate	11.06%	10.96%
Funded Ratio	70.99%	66.80%
Actuarial Accrued Liability	\$4,785.8 million	\$4,592.7 million
Actuarial Value of Assets	\$3,397.4 million	\$3,067.9 million
Unfunded Accrued Liability	\$1,388.4 million	\$1,524.8 million
Amortization Period*	17 Years	20 Years

* Reflects anticipated increase in employer supplemental contribution rate



Progress toward 100% Funding





Sensitivity Analysis



	1.50% GABA Provision	0.50% GABA Provision
	July 1, 2014 Valuation	July 1, 2014 Valuation
Total Normal Cost Rate	9.13%	8.38%
Less Member Rate	<u>8.15%</u>	<u>8.15%</u>
Employer Normal Cost Rate	0.98%	0.23%
Administrative Expense Load	0.31%	0.31%
Rate to Amortize UAL	<u>9.77%</u>	<u>10.52%</u>
Total Employer Statutory Rate	11.06%	11.06%
Funded Ratio	65.45%	70.99%
Actuarial Accrued Liability	\$5,191.0 million	\$4,785.8 million
Actuarial Value of Assets	\$3,397.4 million	\$3,397.4 million
Unfunded Accrued Liability	\$1,793.6 million	\$1,388.4 million
Amortization Period*	28 Years	17 Years

* Reflects anticipated increase in employer supplemental contribution rate