



Montana Teachers' Retirement System Valuation Results July 1, 2017

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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)



Participation in TRS



- Teachers, administrators, specialists and others employed in a teaching or educational services capacity by a public school district, state agency, county, community college, Montana University System or educational cooperative are covered by TRS.

– Active members	18,917
– Inactive members	15,491
– Retirees and Beneficiaries	15,566
– Employers	372



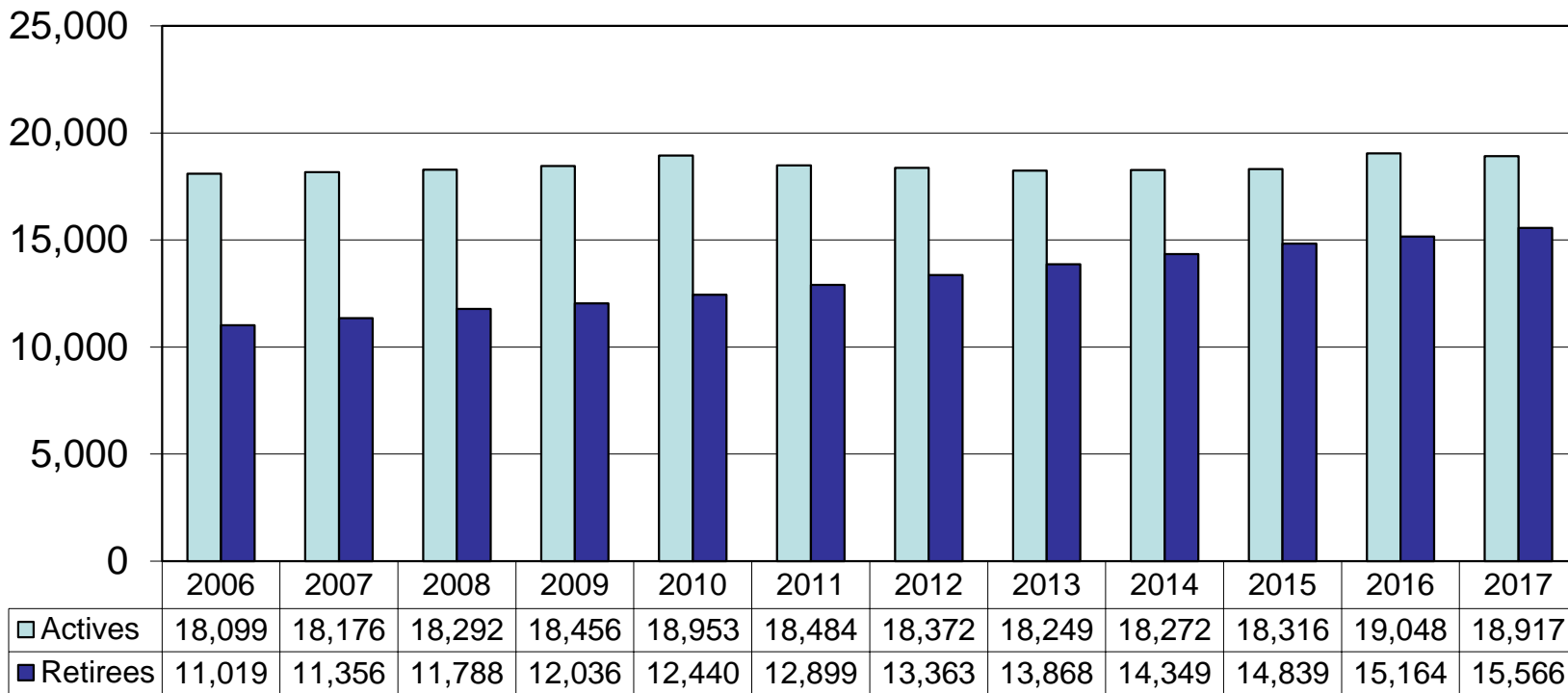
Comments on Valuation



- Asset returns
 - Market asset return 11.92% vs. 7.75% expected (4.17% greater than expected).
 - Actuarial asset return 8.24% vs. 7.75% expected (0.49% greater than expected).
- Funded Ratio
 - Funding increased from 69.28% to 70.49%
- Amortization Period
 - Amortization period decreased from 24 to 22 years



Active and Retired Membership



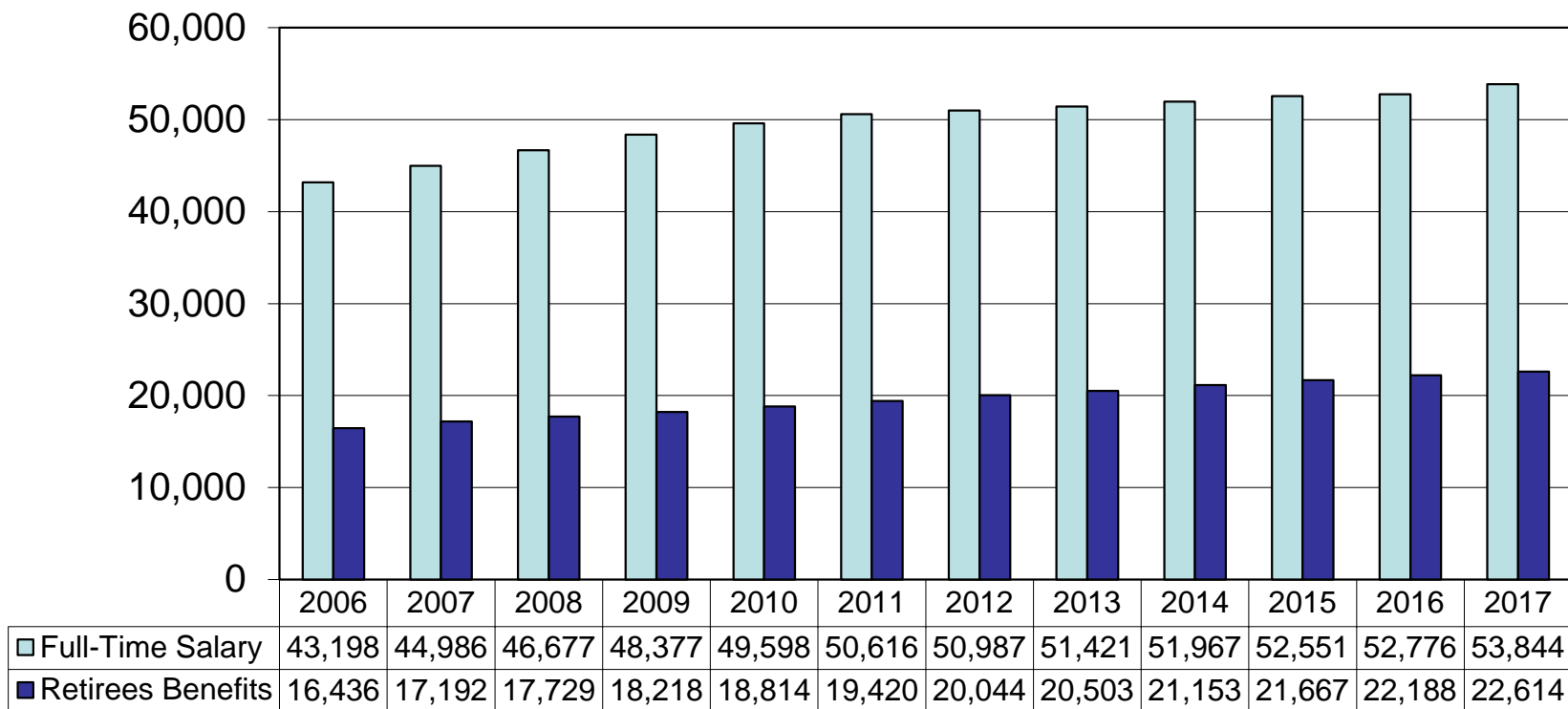
0.4% annual increase for active members since 2006; 0.7% decrease for 2017.

3.2% annual increase for retired members since 2006; 2.7% increase for 2017.

0.6 retirees per active 11 years ago; 0.8 retirees per active now.



Average Salary and Benefits

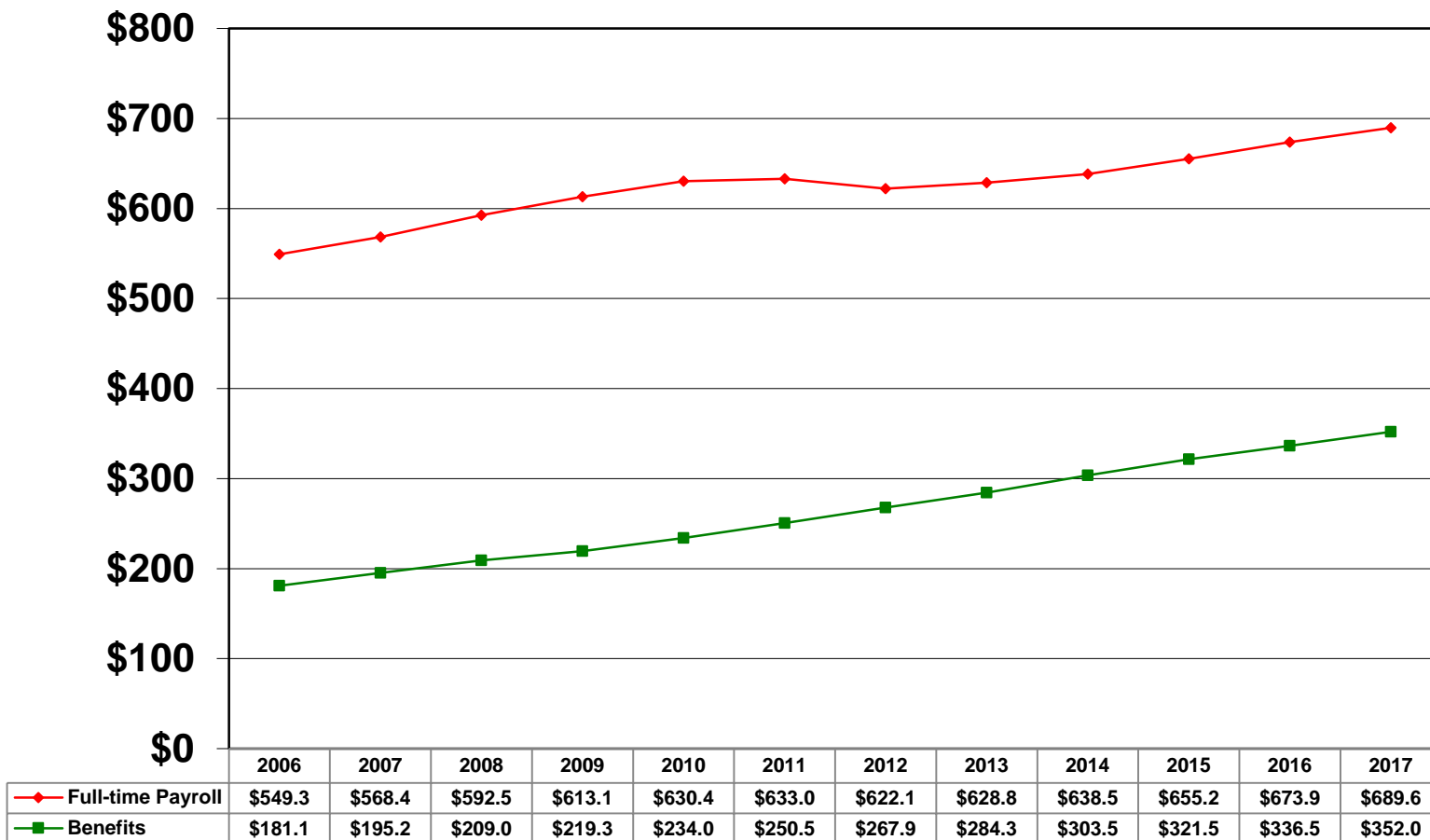


2.0% annual increase for average salary since 2006; 2.0% increase for 2017.

2.9% annual increase for average benefits since 2006; 1.9% increase for 2017.

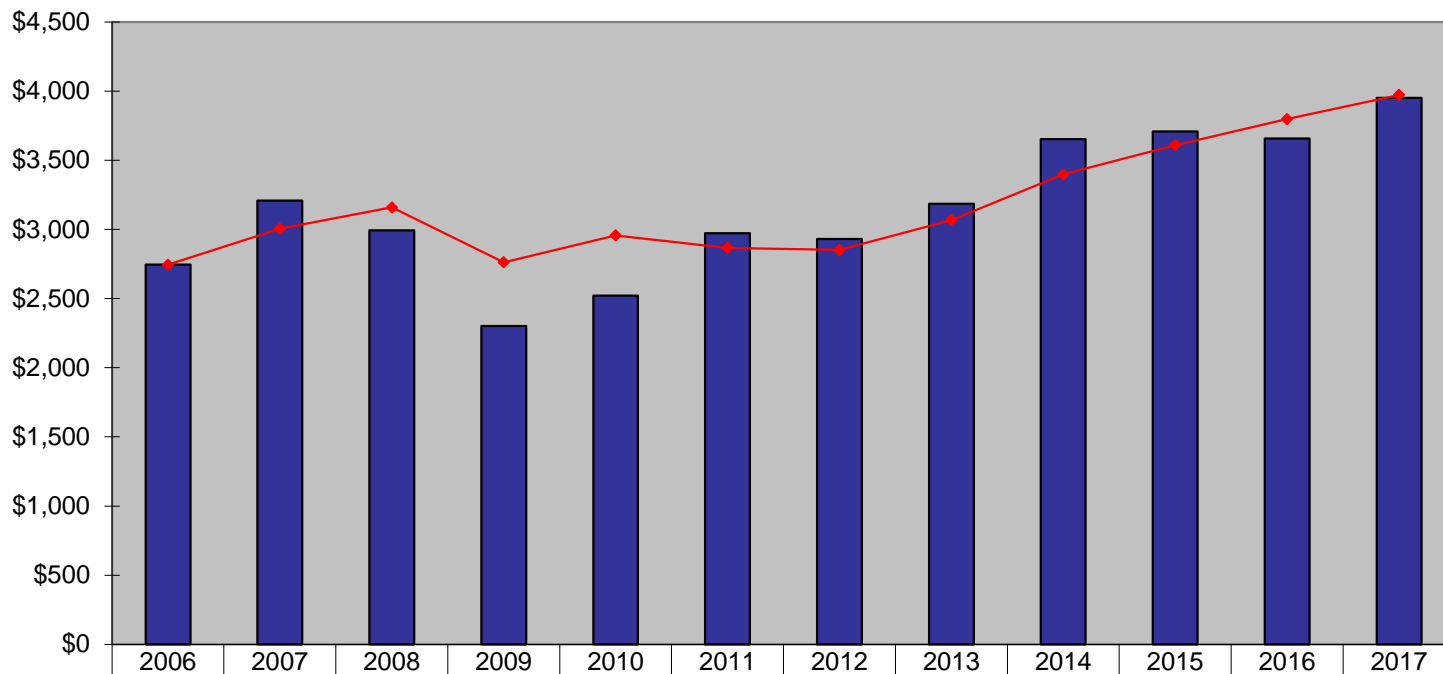


Payroll & Benefits (Millions)





Assets (\$ Millions)

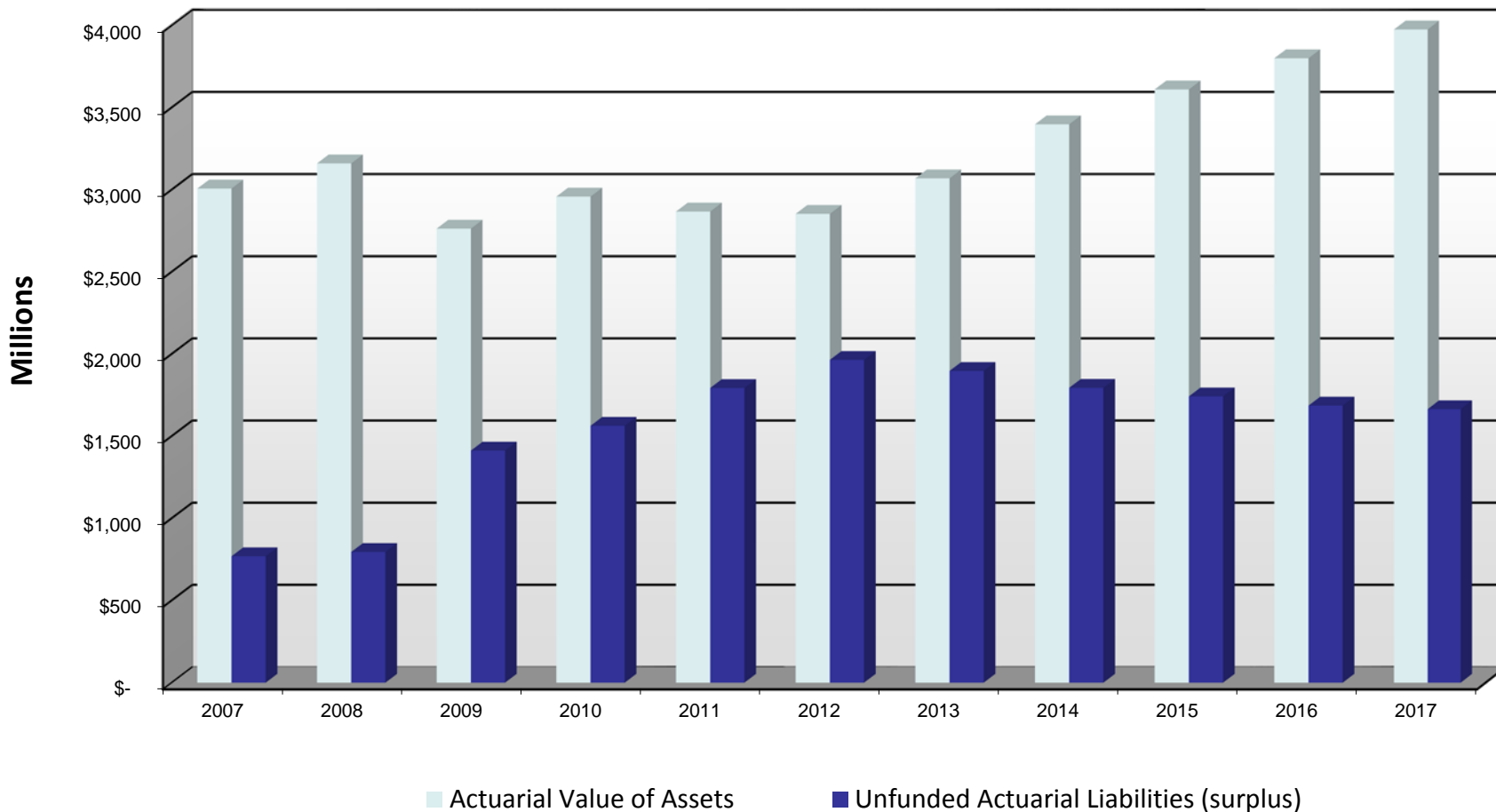


Market Value	\$2,746	\$3,209	\$2,993	\$2,302	\$2,521	\$2,972	\$2,932	\$3,185	\$3,652	\$3,708	\$3,657	\$3,951
Actuarial Value	\$2,746	\$3,006	\$3,159	\$2,762	\$2,957	\$2,867	\$2,852	\$3,068	\$3,397	\$3,610	\$3,799	\$3,974

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Market Return	8.9%	17.6%	(4.9)%	(20.8)%	12.9%	21.7%	2.2%	12.9%	17.1%	4.6%	2.1%	11.9%
Actuarial Return	8.5%	10.2%	7.2%	(10.3)%	9.8%	(0.1)%	3.2%	12.0%	13.2%	9.6%	8.8%	8.2%

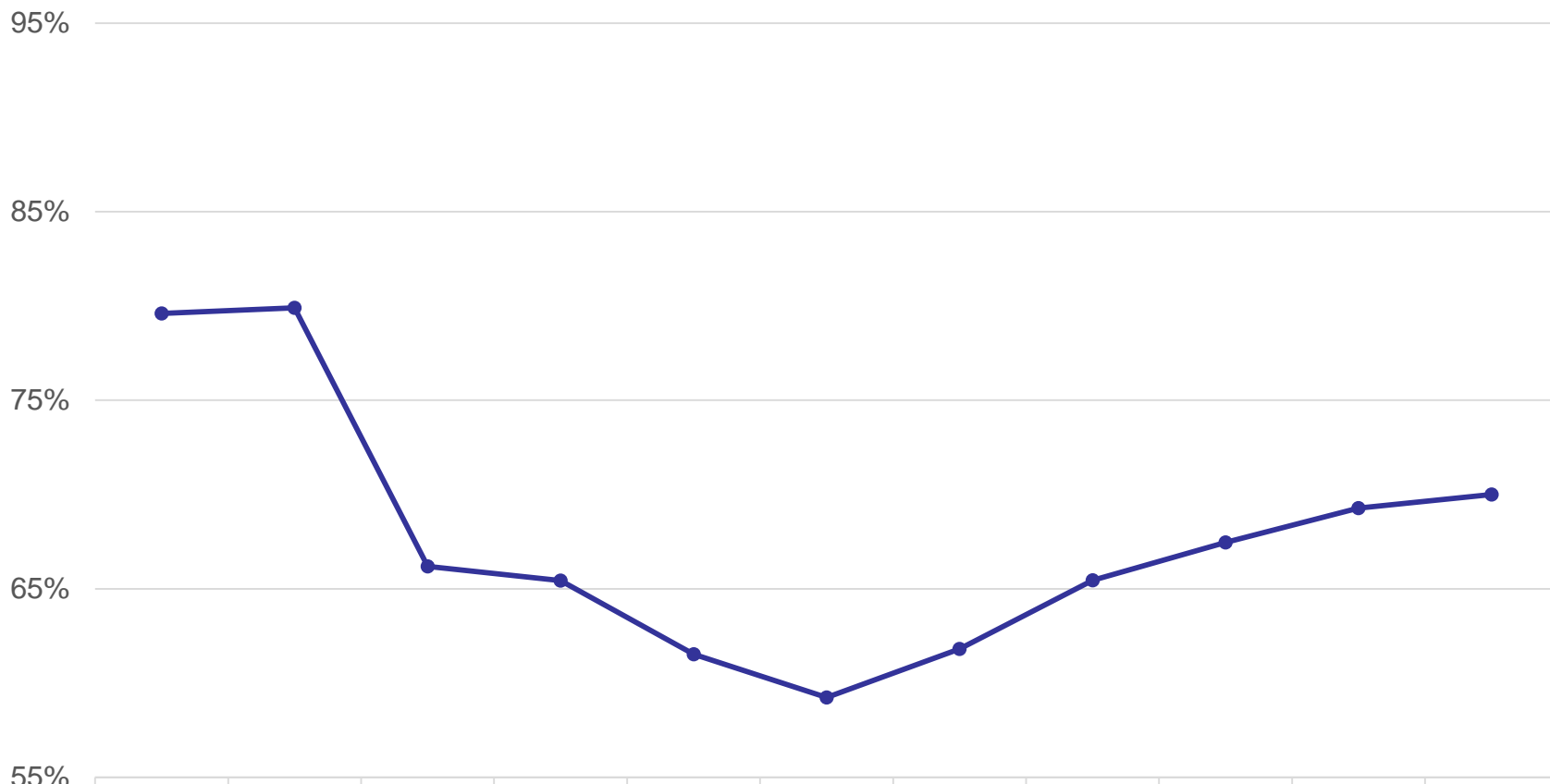


Actuarial Assets vs. UAAL





TRS Funded Ratio



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
● Funded Ratio	80%	80%	66%	65%	62%	59%	62%	65%	67%	69%	70%



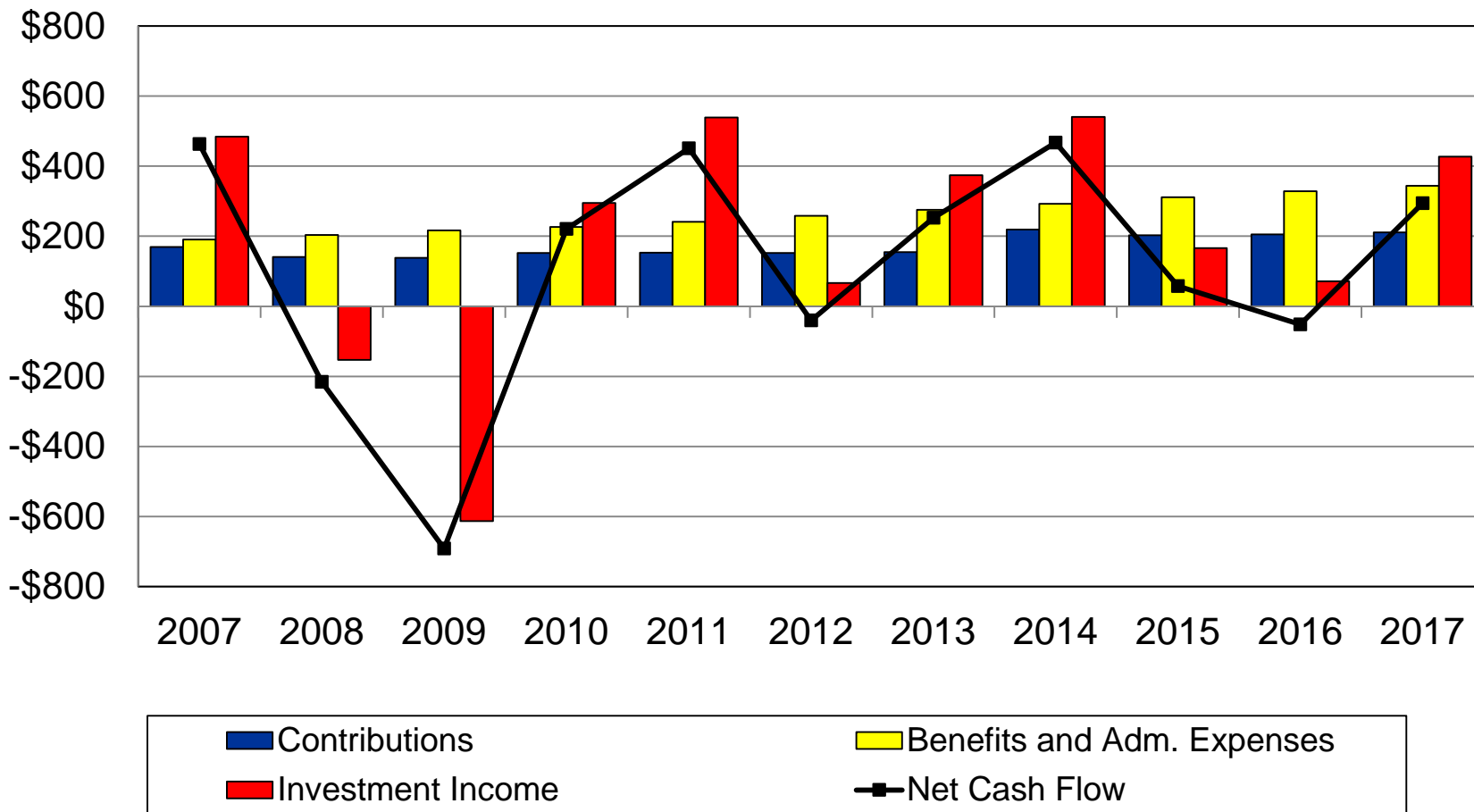
Amortization Period



50 years = Does Not Amortize



Historical Cash Flow (in Millions)





Funding Results

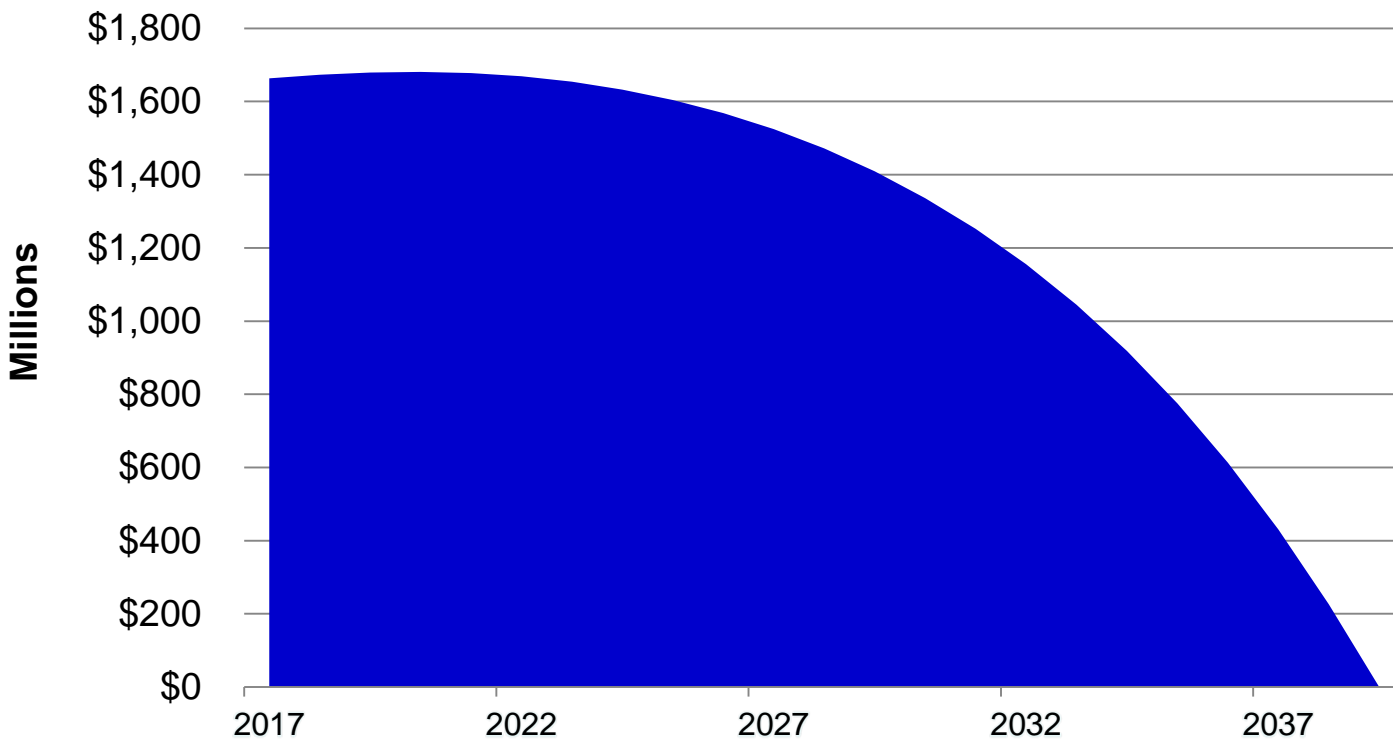


	July 1, 2016 Valuation	July 1, 2017 Valuation
Total Normal Cost Rate	9.87%	9.82%
Less Member Rate	<u>8.15%</u>	<u>8.15%</u>
Employer Normal Cost Rate	1.72%	1.67%
Administrative Expense Load	0.31%	0.33%
Rate to Amortize UAL	<u>9.23%</u>	<u>9.36%</u>
Total Employer Statutory Rate	11.26%	11.36%
Actuarial Accrued Liability	\$5,483.7 million	\$5,636.8 million
Actuarial Value of Assets	\$3,798.9 million	\$3,973.5 million
Unfunded Accrued Liability	\$1,684.8 million	\$1,663.3 million
Funded Ratio	69.28%	70.49%
Amortization Period*	24 Years	22 Years

* Reflects anticipated increase in employer supplemental contribution rate



Progress toward 100% Funding



■ Projected UAAL - Level % of Pay