



Montana Public Employees' Retirement Board

Valuation Results

June 30, 2016

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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 MPERA

State, local governments, and certain employees of the Montana University system, & school districts are covered by MPERA.

- 42,153 Active Employees Including DC Members
- 25,462 Retirees & Beneficiaries
- 20,062 Inactive

- 569 Employers (DB, DC & 457)
- 220 Volunteer Fire Departments



Actuarial Assumptions

MPERA's experience study is conducted every 4-7 years. The most recent experience study was conducted in 2010 for the six-year period July 1, 2003 to June 30, 2009 to compare the system's actual experience from the previous years.

Economic Assumptions:

- | | |
|-------------------------------|-------|
| • General Wage Increase | 4.00% |
| • Investment Return | 7.75% |
| • Price Inflation | 3.00% |
| • Growth in Membership | 0.00% |
| • Interest on Member Accounts | 3.50% |
| • Administrative Expense | 0.27% |

Demographic Assumptions:

- Individual Salary Increases
- Retirement Rates
- Disablement Rates
- Mortality Rates for Healthy and Disabled
- Other Terminations of Employment
- Probability of Retaining Membership in System

Next Experience Study is scheduled for the period 7/1/2009-6/30/2016



Comments on Valuation

Asset Returns

- Market asset returns averaged 2.05% vs. 7.75% expected (5.70% less than expected).
- Actuarial asset returns averaged 8.60% vs. 7.75% expected (0.85% greater than expected).

Funded Ratio

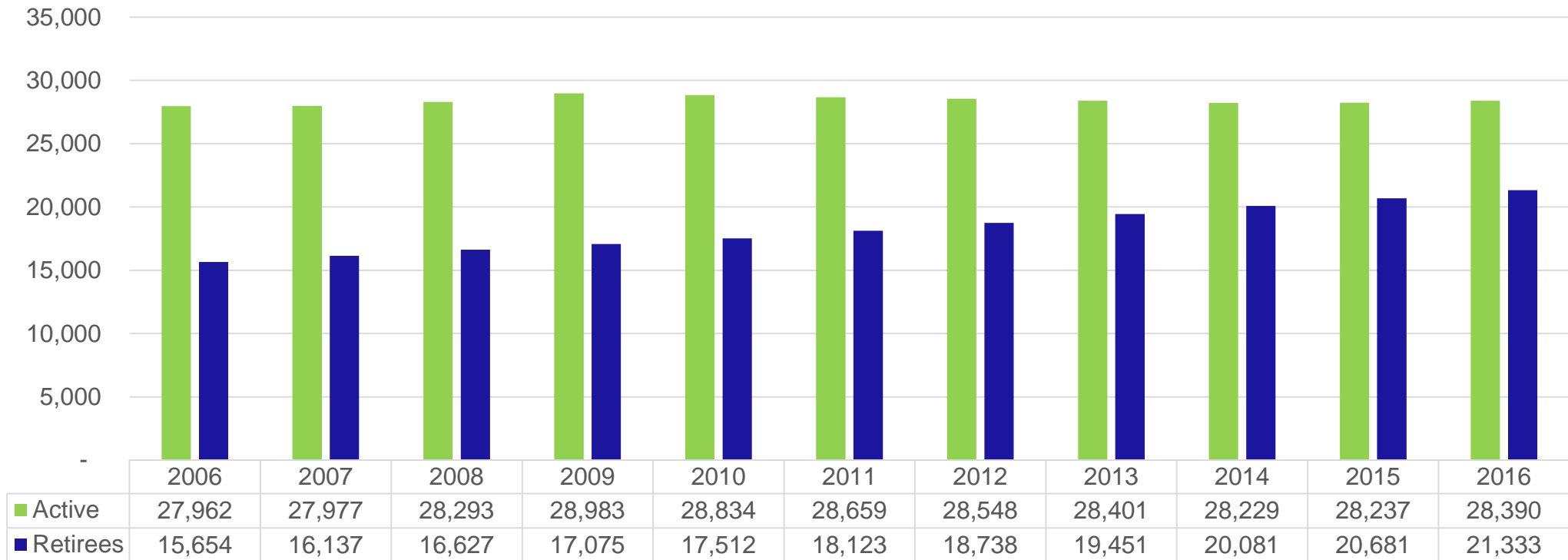
- Funding increased from 76.14% to 77.31%

Amortization Period

- Amortization period decreased from 28 years to 26 years.



PERS Active and Retired Membership



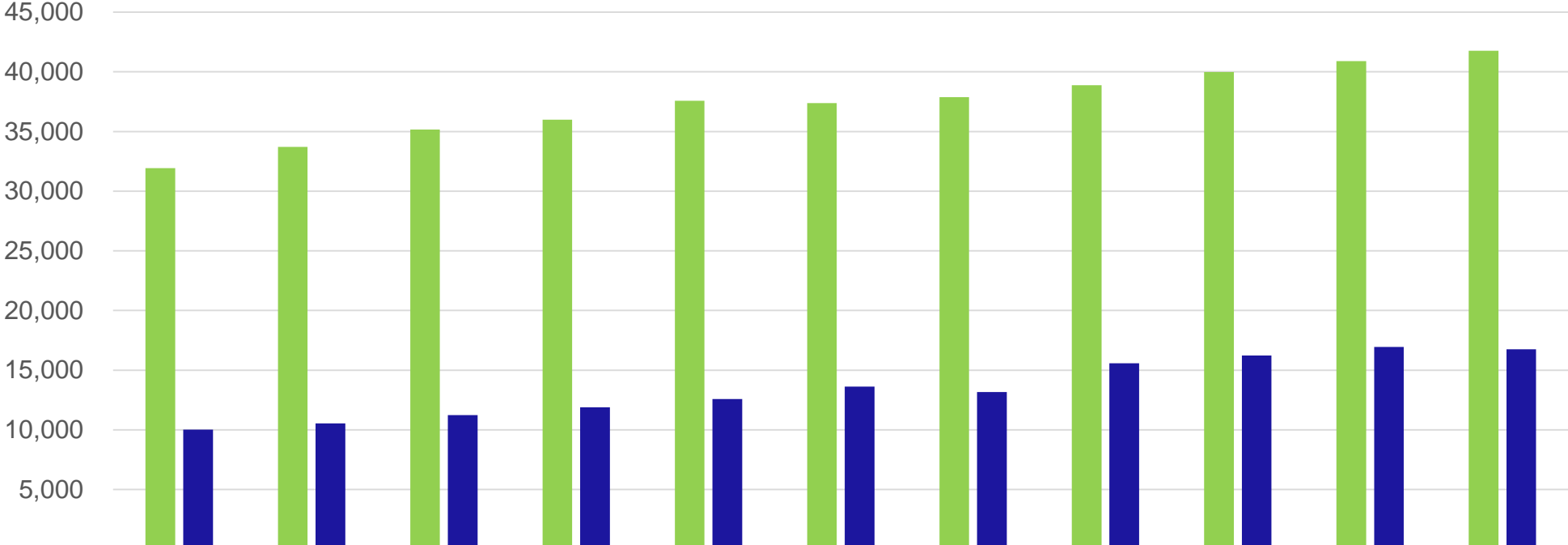
0.04% annual increase for active members since 2008; 0.54% increase for 2016.

3.16% annual increase for retired members since 2008; 3.15% increase for 2016.

0.59 retirees per active 8 years ago; 0.75 retirees per active now.



PERS Average Salary and Benefits



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
■ Actives	31,930	33,716	35,172	35,994	37,587	37,384	37,876	38,872	39,998	40,899	41,763
■ Retirees Benefits	10,029	10,547	11,231	11,884	12,575	13,625	13,177	15,574	16,230	16,945	16,748

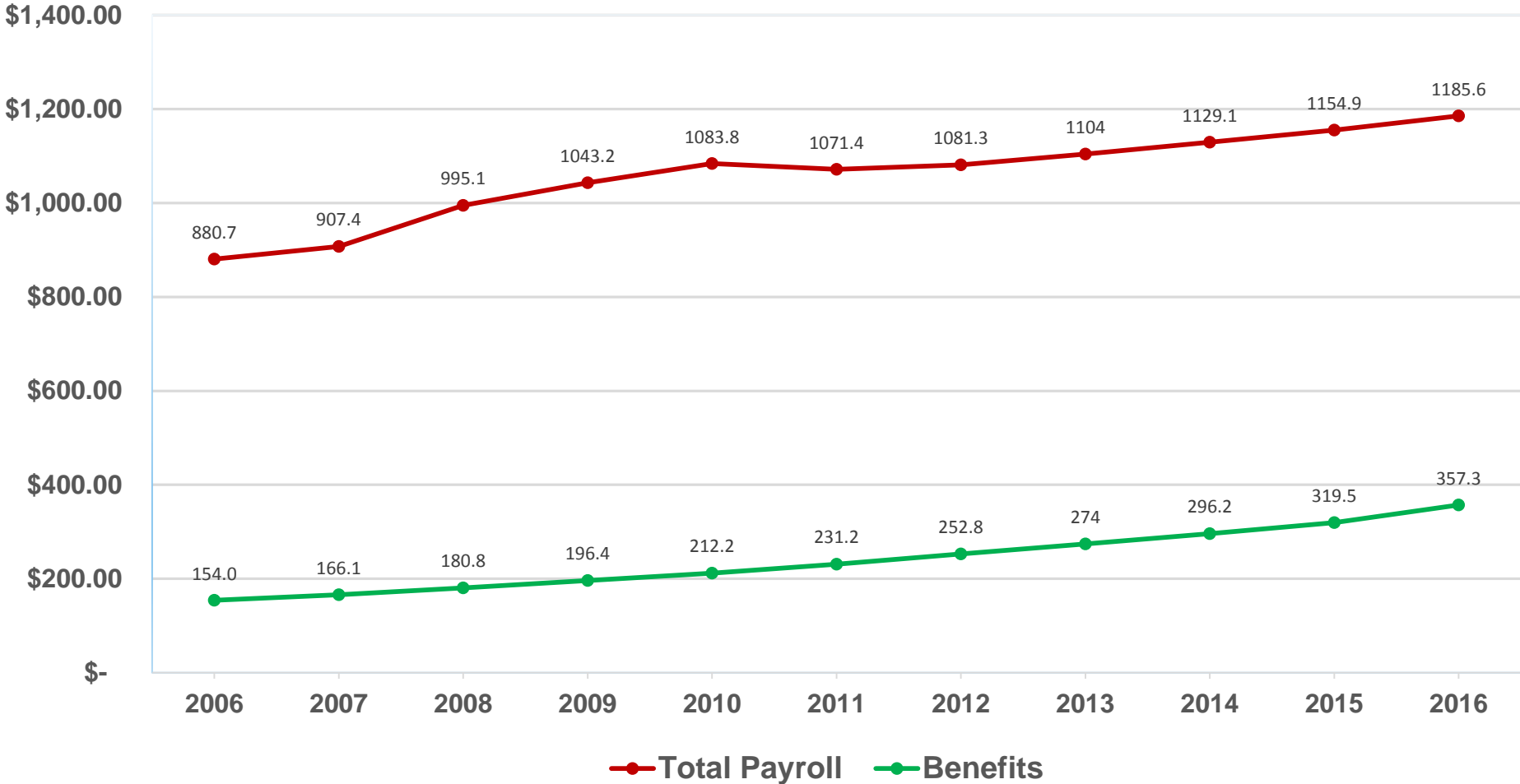
2.2% annual increase for average salary since 2008; 2.1% increase for 2016.

5.1% annual increase for average benefits since 2008; 1.1% increase for 2016.



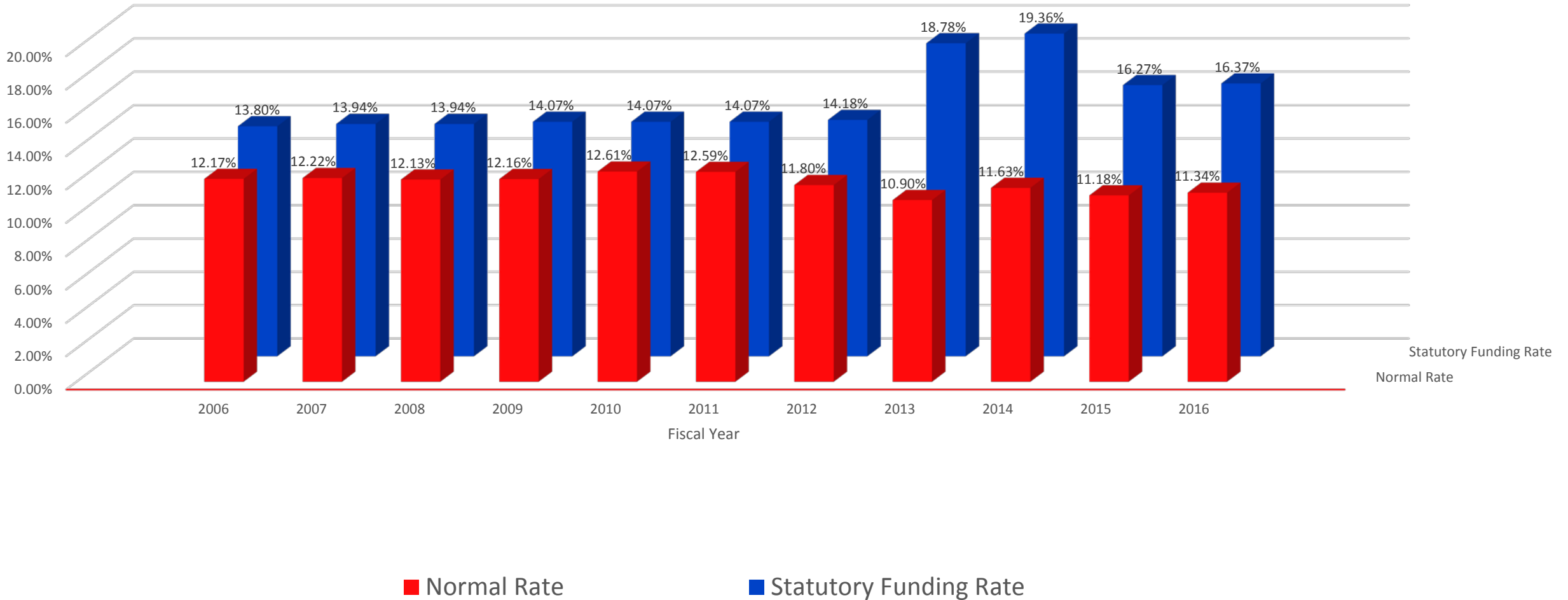
PERS Payroll & Benefits

(\$ Millions)





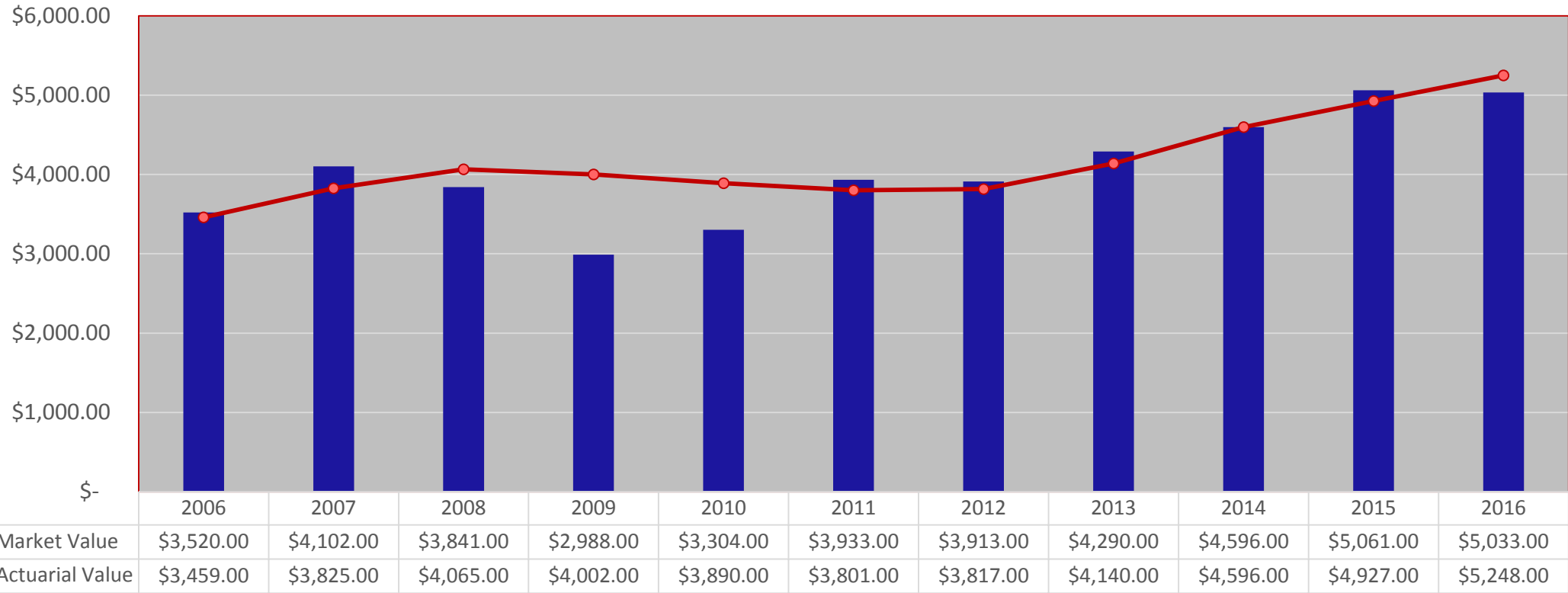
MPERA Contribution vs. Normal Rate





PERS Assets

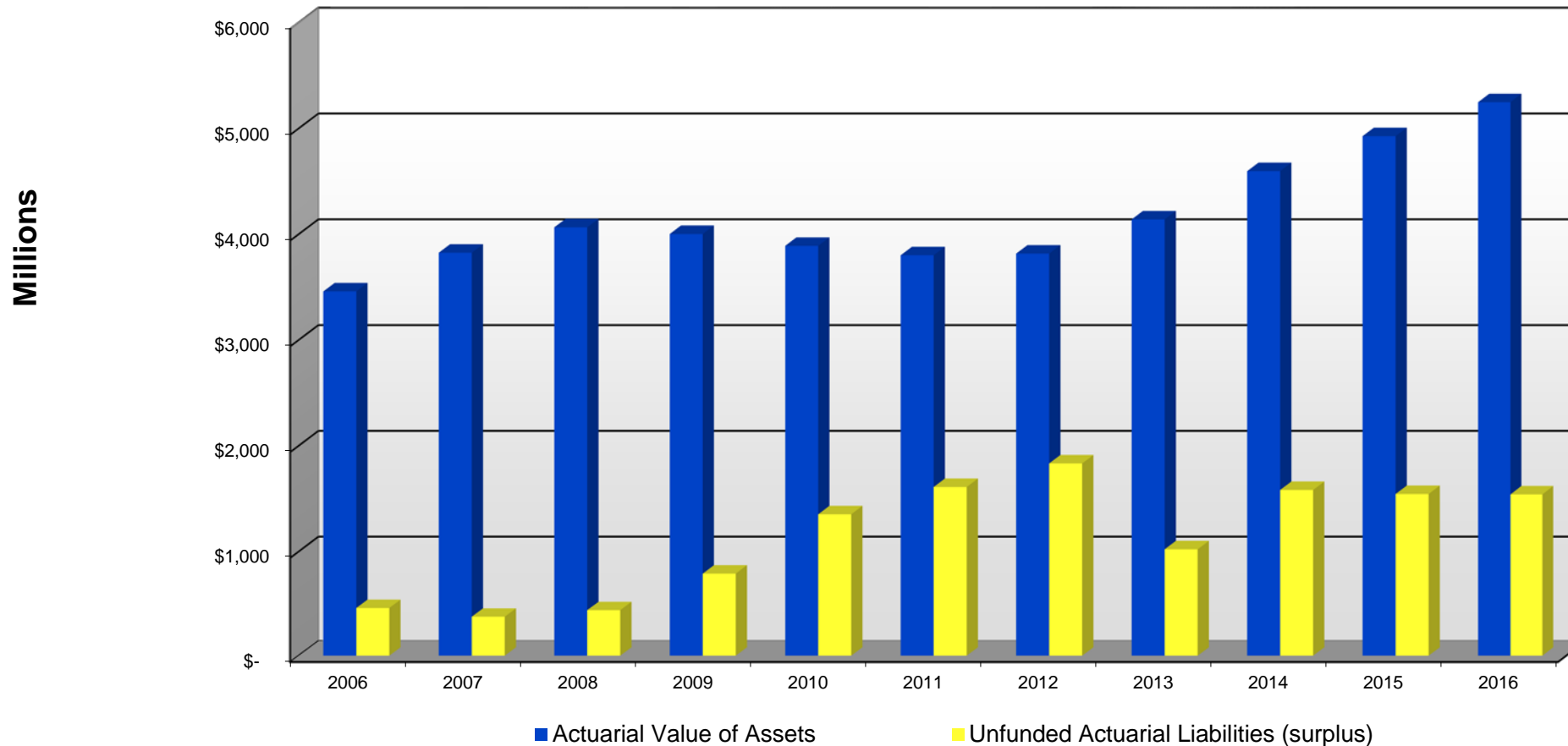
(\$ Millions)



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Market Return	9.00%	17.90%	(4.90%)	(20.90%)	12.90%	21.70%	2.30%	13.00%	17.10%	4.60%	2.00%
Actuarial Return	9.30%	11.90%	7.60%	(0.20%)	(1.20%)	(0.10%)	3.30%	11.90%	13.20%	9.60%	9.30%

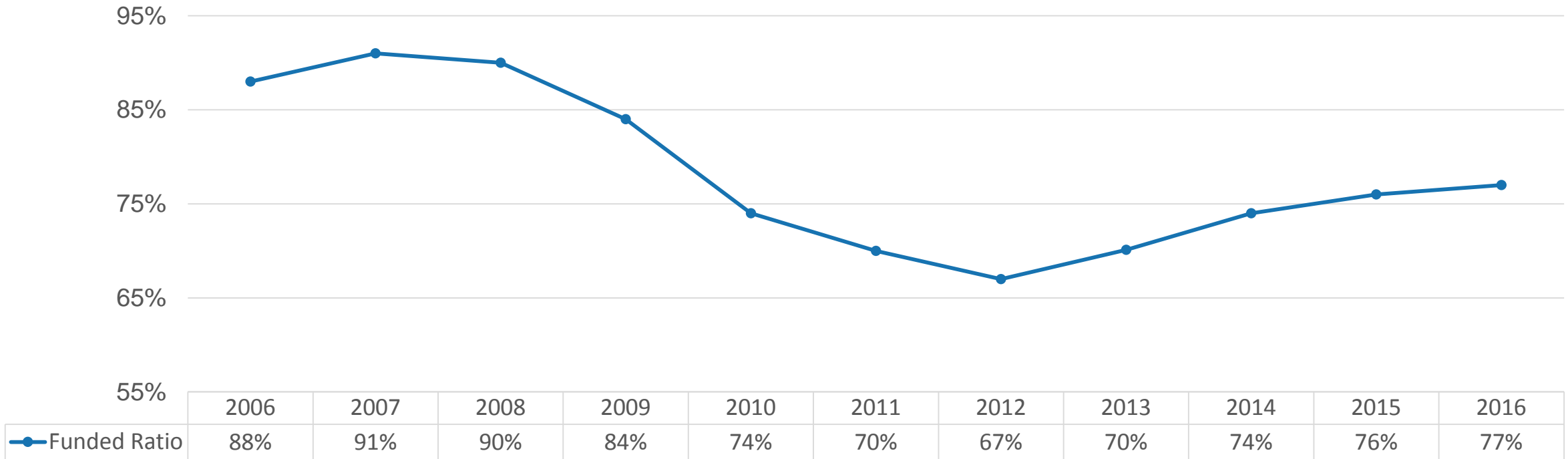


Actuarial Assets vs UAAL



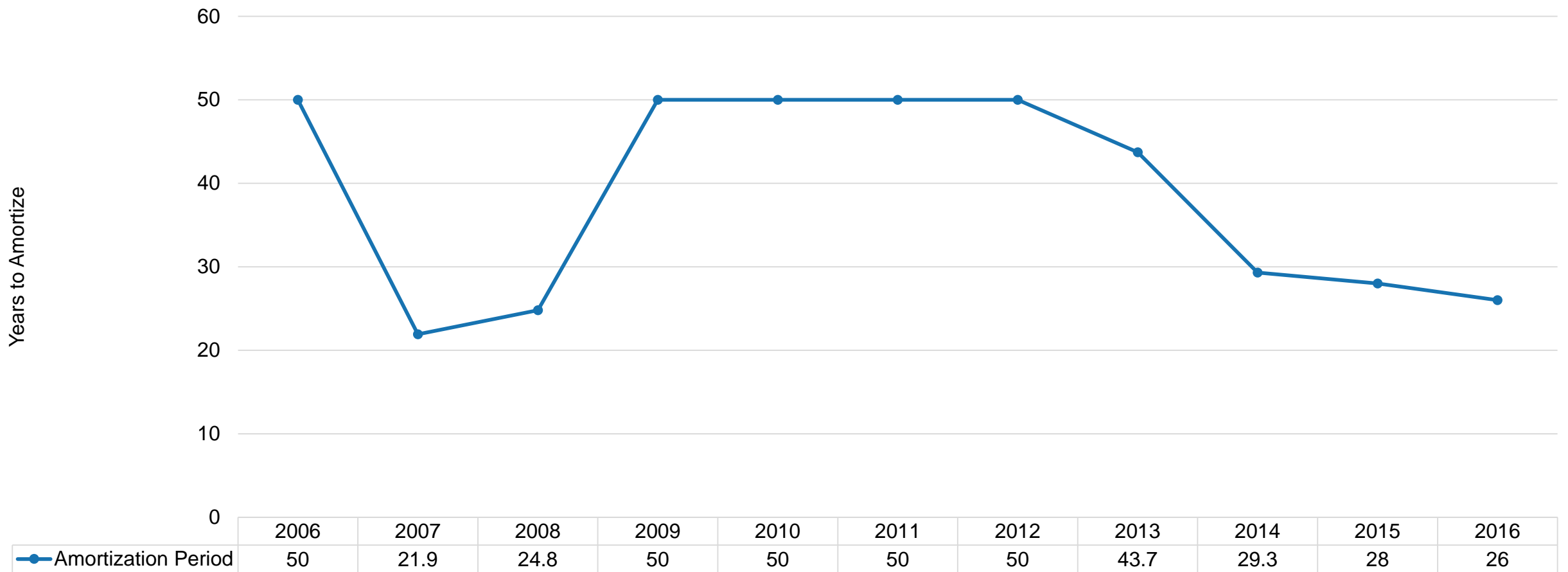


Funded Ratio of PERS





Amortization Period for PERS

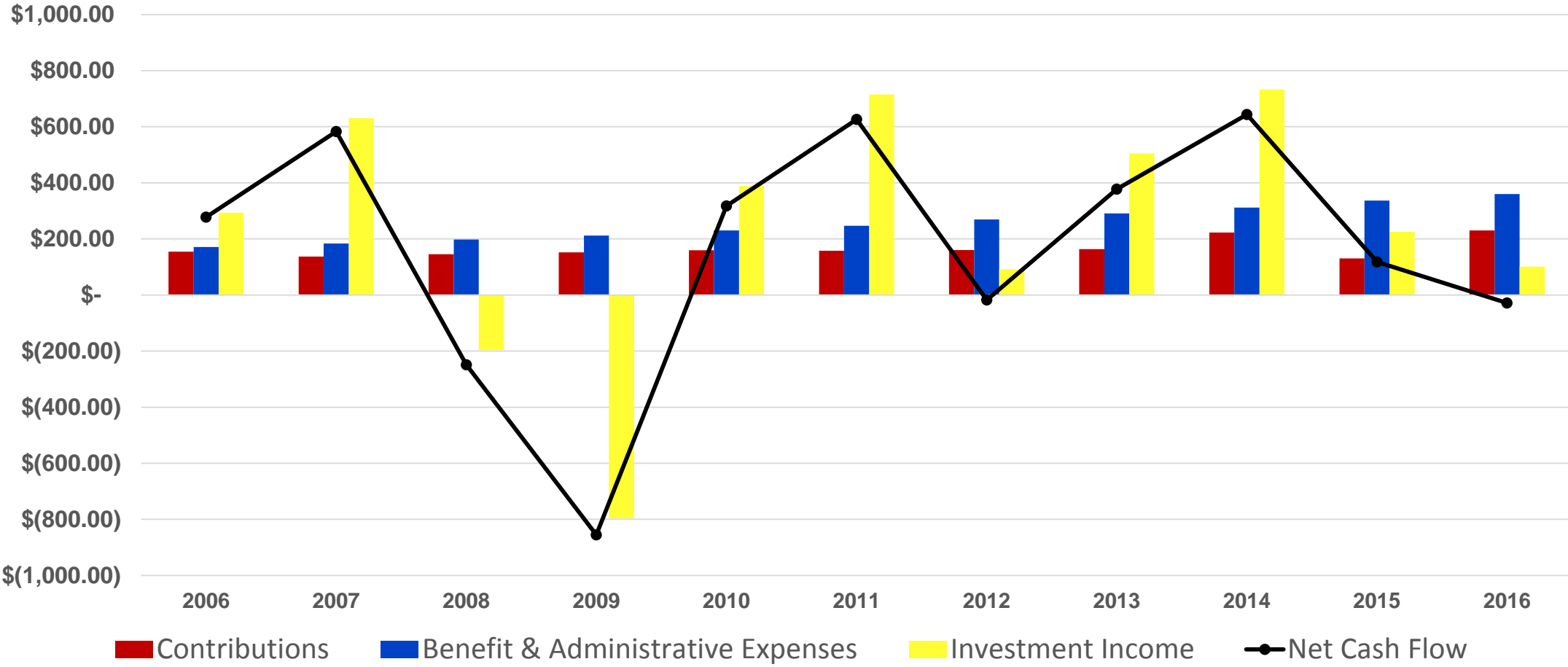


50 years = Does not Amortize



Historical Cash Flow

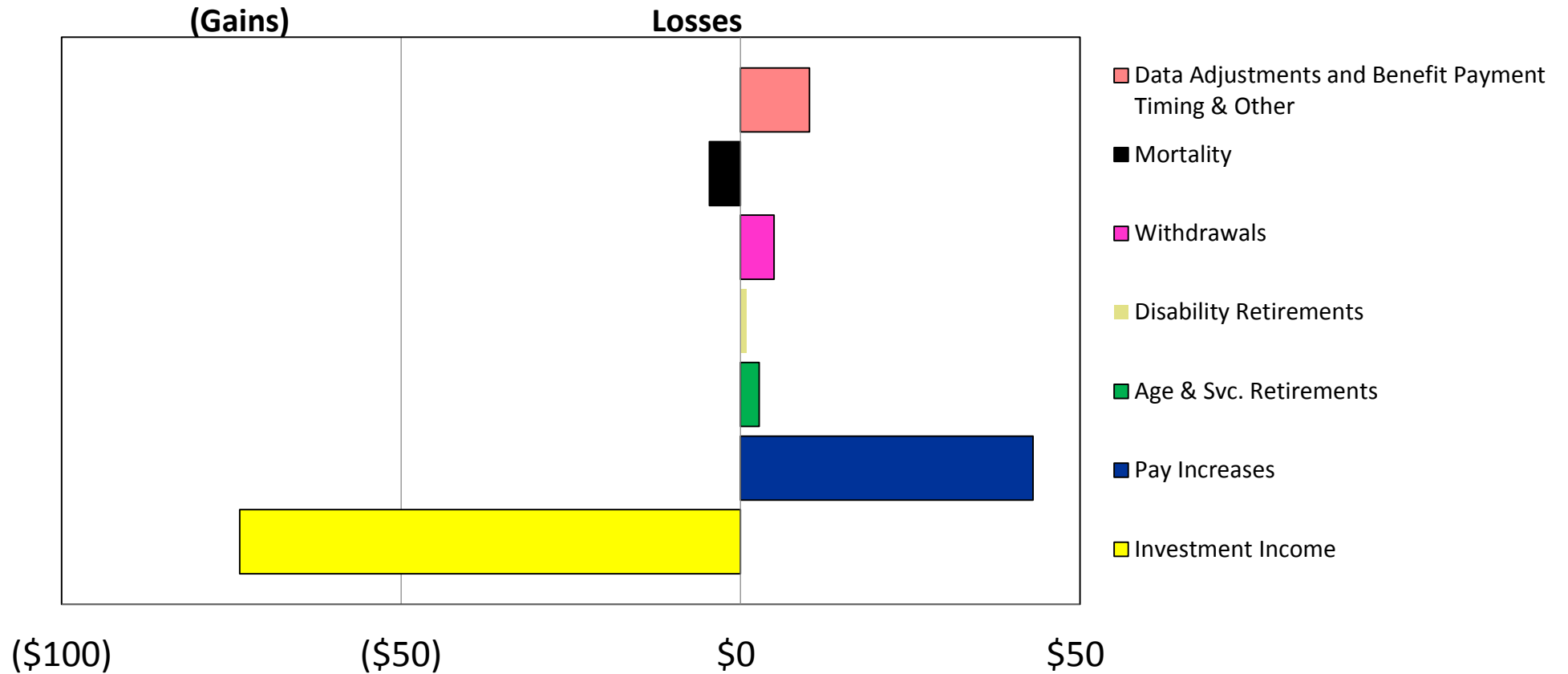
(\$ Millions)





PERS 2016 (Gain)/Loss Analysis

(\$ Millions)





PERS Funding Results

	July 1, 2016 Valuation	July 1, 2015 Valuation
Total Normal Cost Rate	11.34%	11.18%
Administrative Expense Load	0.27%	0.27%
Rate to Amortize UAL	4.72%	4.78%
Transfer to DB Education Fund	<u>0.04%</u>	<u>0.04%</u>
Statutory Funding Rate	16.37%	16.27%
Actuarial Accrued Liability	\$6,788.0 million	\$6,470.3 million
Actuarial Value of Assets	\$5,247.7 million	\$4,926.5 million
Unfunded Accrued Liability	\$1,540.3 million	\$1,543.8 million
Funded Ratio	77.31%	76.14%
Amortization Period	26 Years	28 Years



Valuation Results-Other Plans

System	Funded Ratio		Amortization Period		Statutory Rate		30-Year Funding Rate	
	2016	2015	2016	2015	2016	2015	2016	2015
JRS	166%	164%	0	0	32.81%	32.81%	(3.43%)	(2.13%)
HPORS	66%	65%	28	29	51.38%	50.38%	50.20%	49.66%
SRS	83%	83%	Does not amortize	Does not amortize	19.36%	19.36%	22.75%	22.84%
GWPORS	84%	84%	Does not amortize	Does not amortize	19.56%	19.56%	21.64%	21.52%
MPORS	69%	66%	18	19	52.78%	52.78%	45.79%	45.55%
FURS	78%	76%	9	10	57.66%	57.66%	39.01%	40.48%
VFCA	80%	75%	7	10	5% of premium taxes		\$1,110,005	\$1,331,372



Progress Toward 100% Funding

