



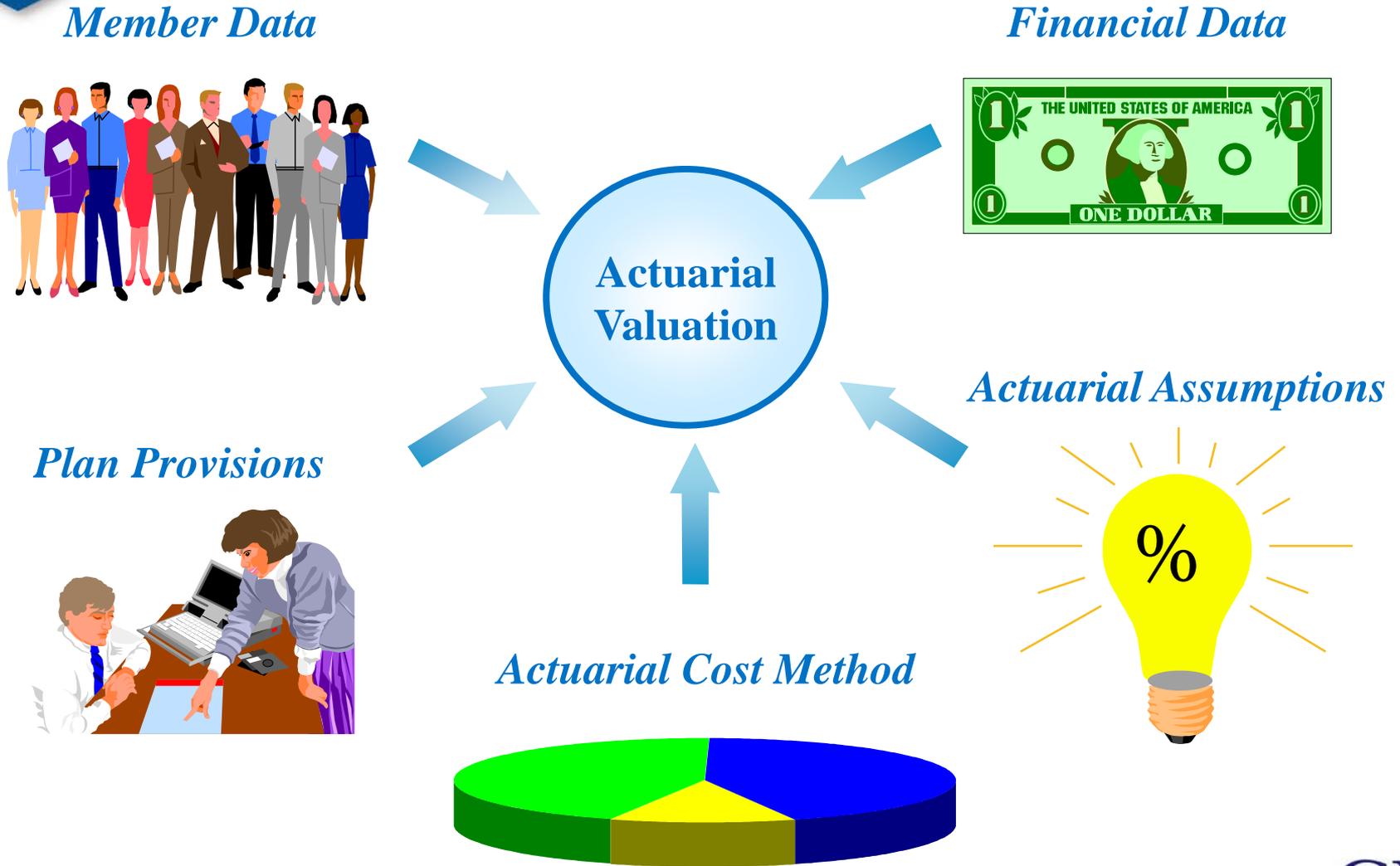
Michigan State Employees Retirement System

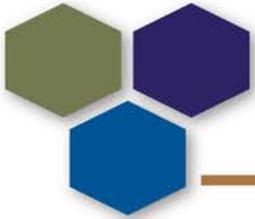
Pension Actuarial Valuation Results
as of September 30, 2014



Gabriel Roeder Smith & Company
Consultants & Actuaries
www.gabrielroeder.com

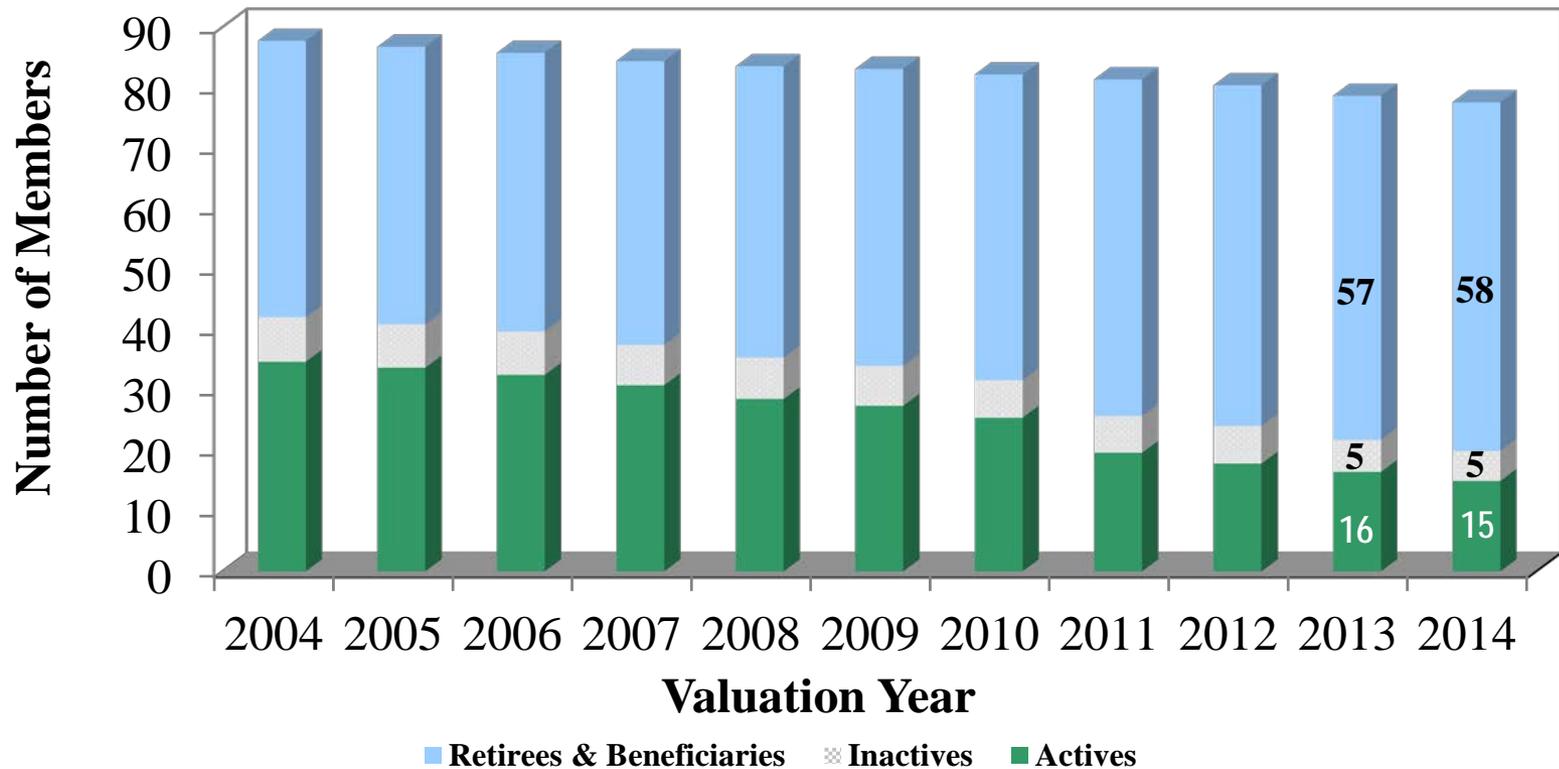
Actuarial Valuation Process

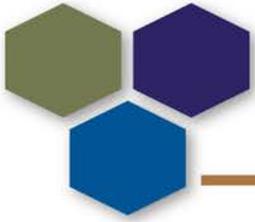




Membership Data

(Counts in Thousands)

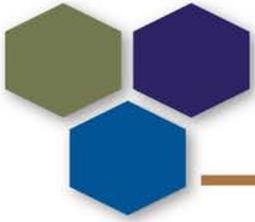




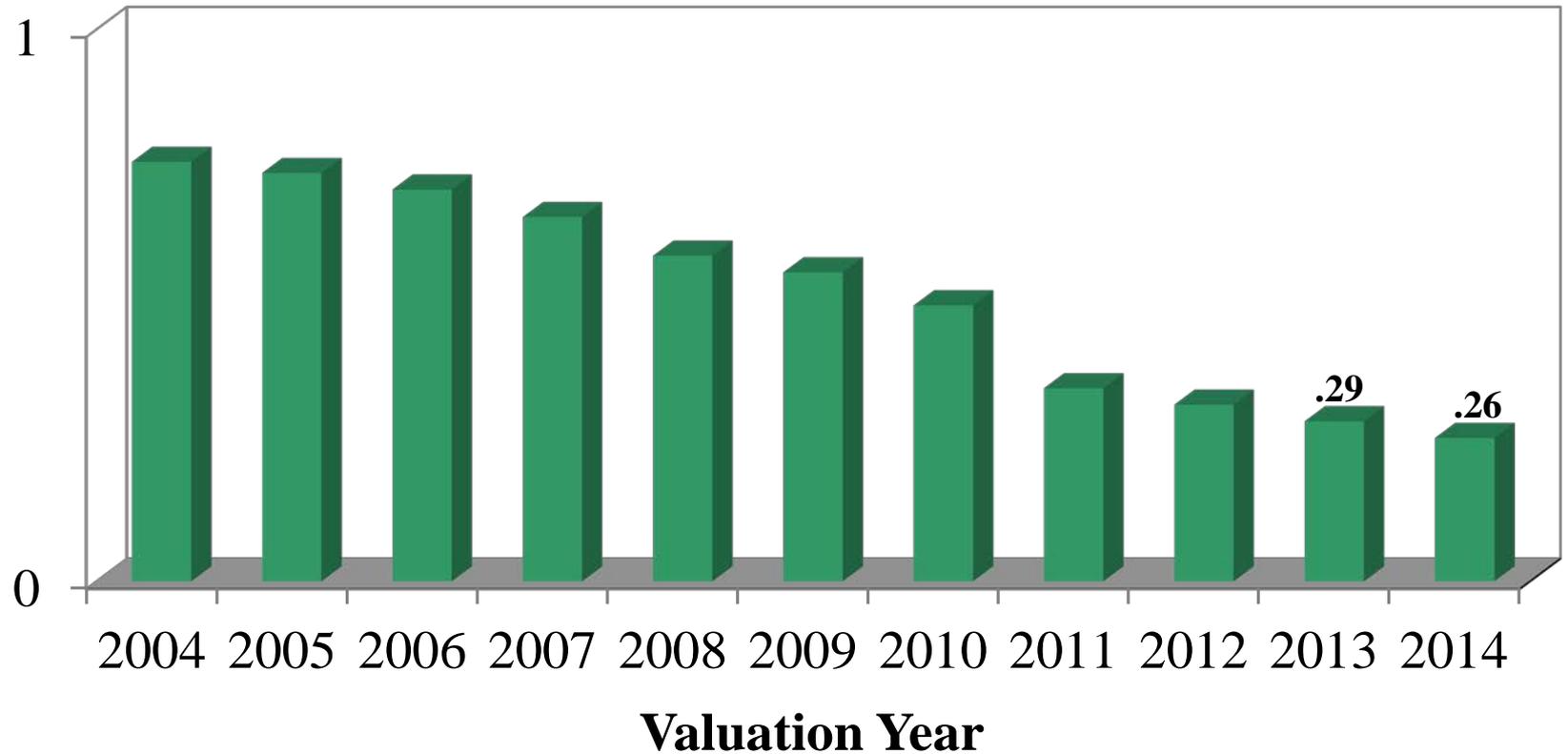
Active Members by Classification

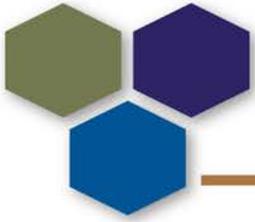
(Counts in Thousands)



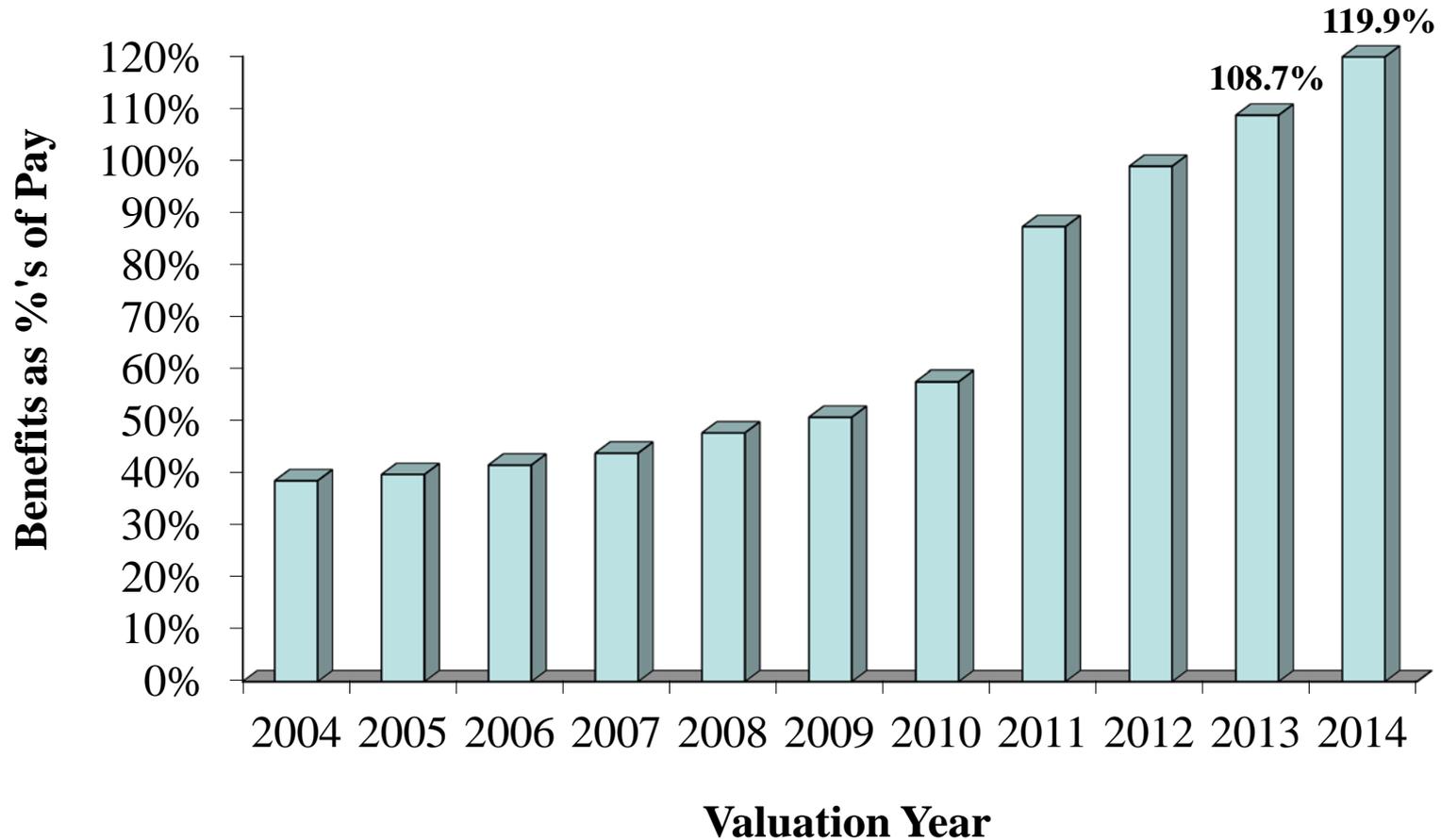


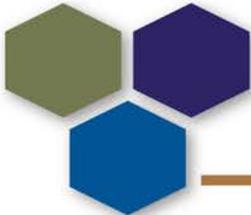
Ratio of Active Members to Pension Benefit Recipients



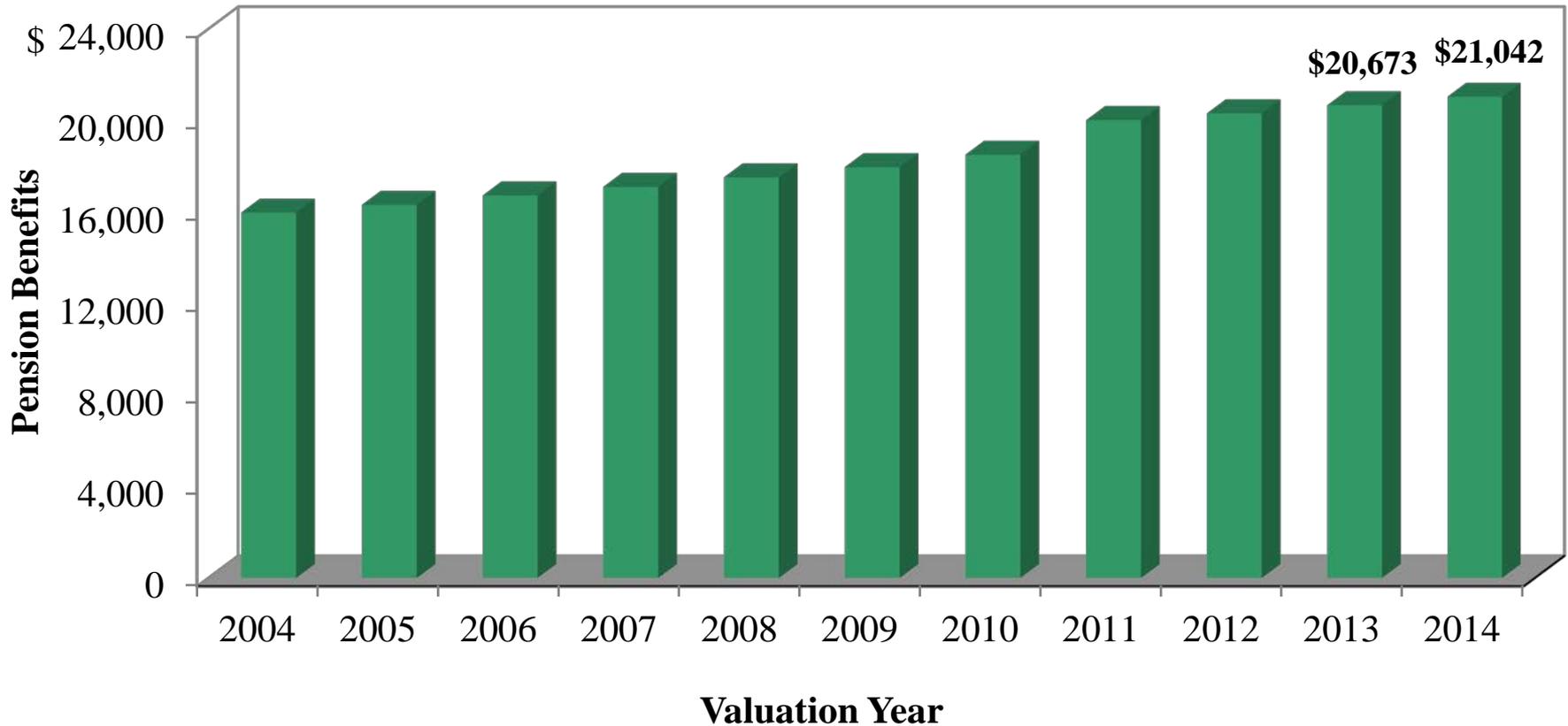


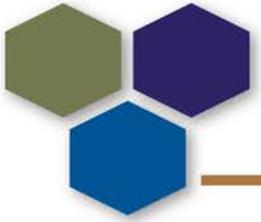
Pension Benefits Expressed as %'s of Active Member Pay





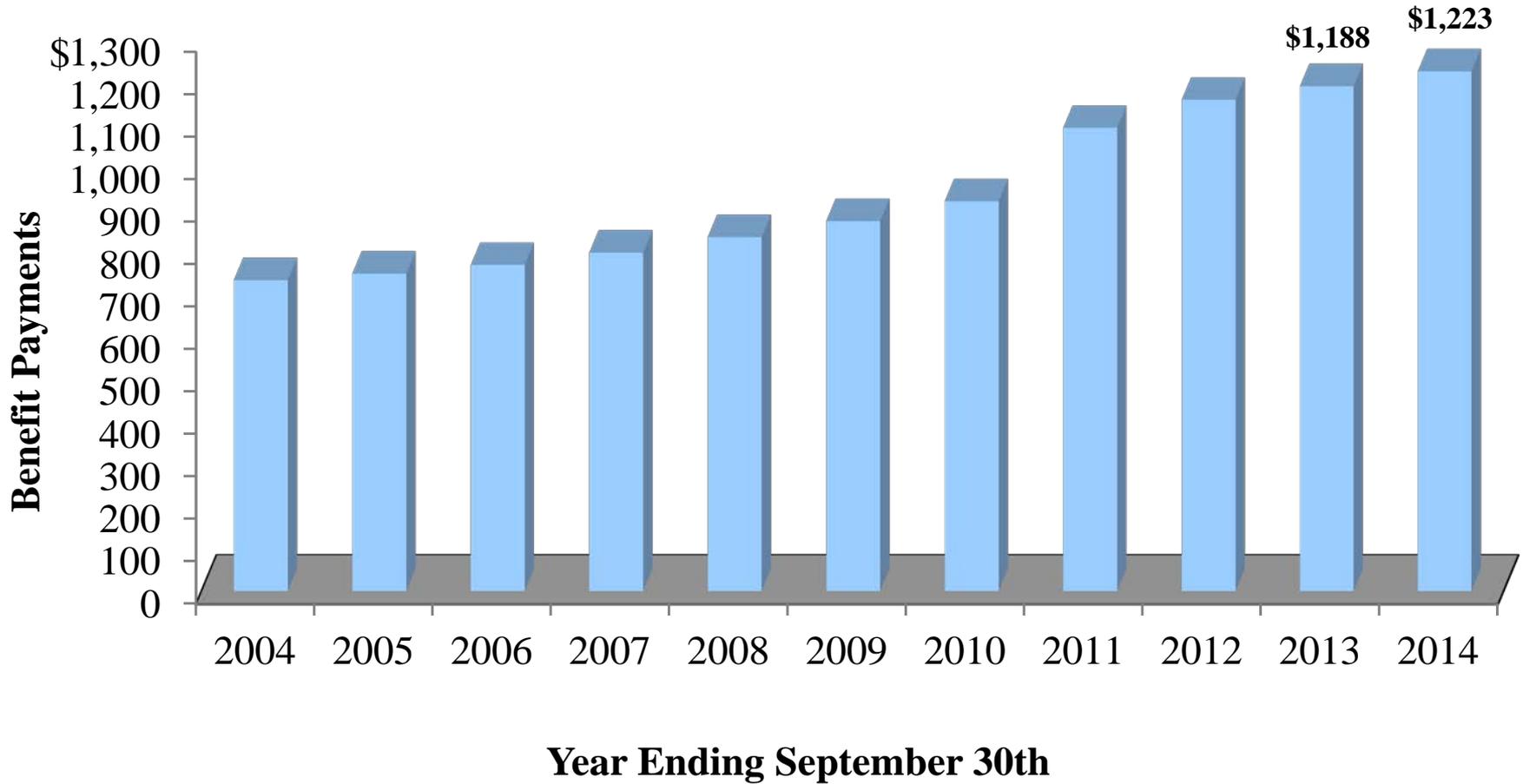
Average Annual Pension Benefits

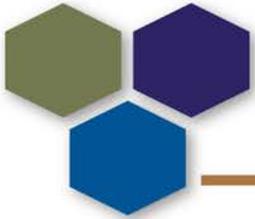




Pension Benefit Payments by Fiscal Year

(Amounts in Millions)





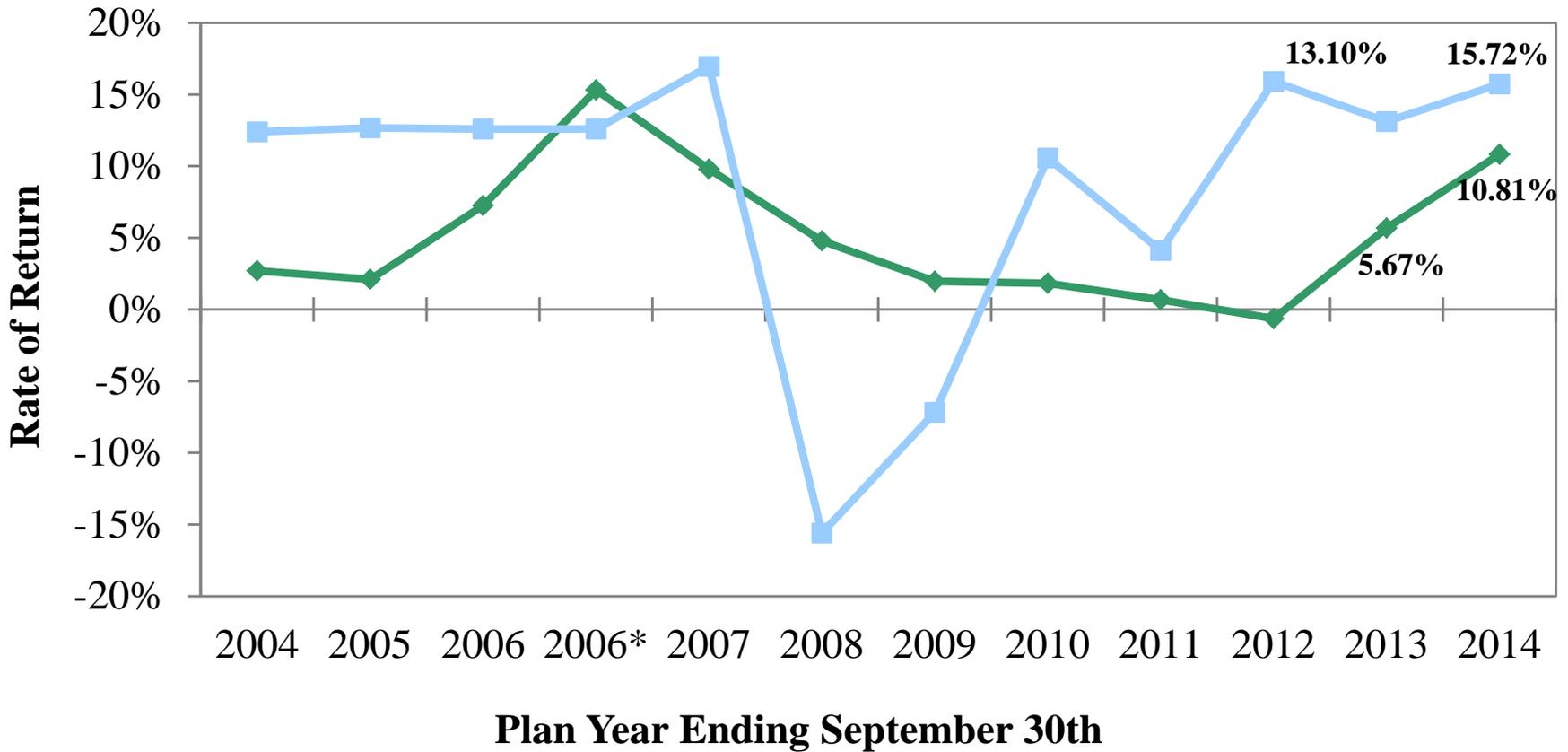
Pension Assets

(Amounts in Billions)



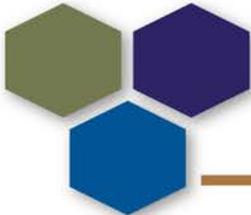
* After adjusting to market value.

Actuarial & Market Net Rates of Return



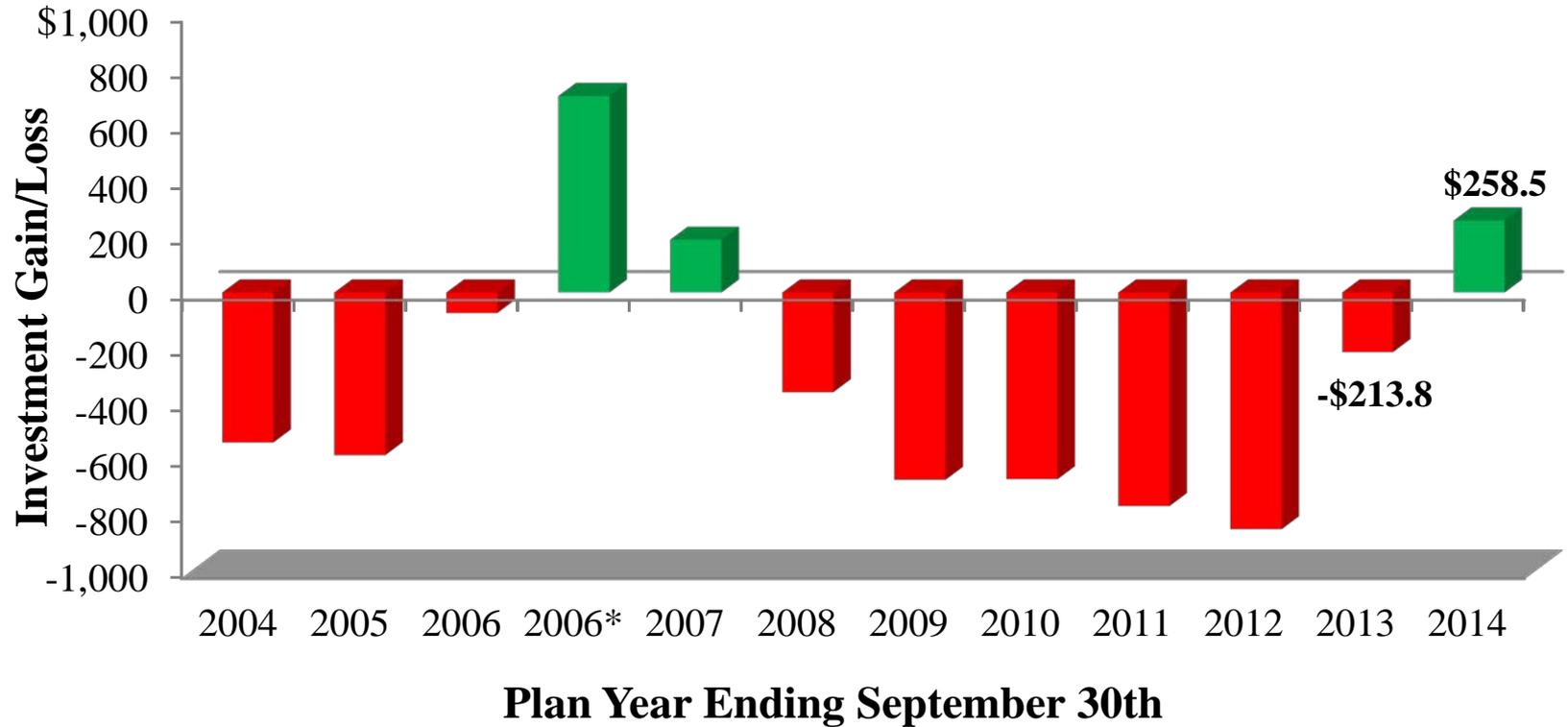
—◆— Actuarial —■— Market

* After adjusting to market value.

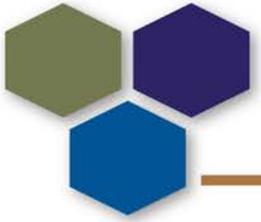


Investment Gain/Loss

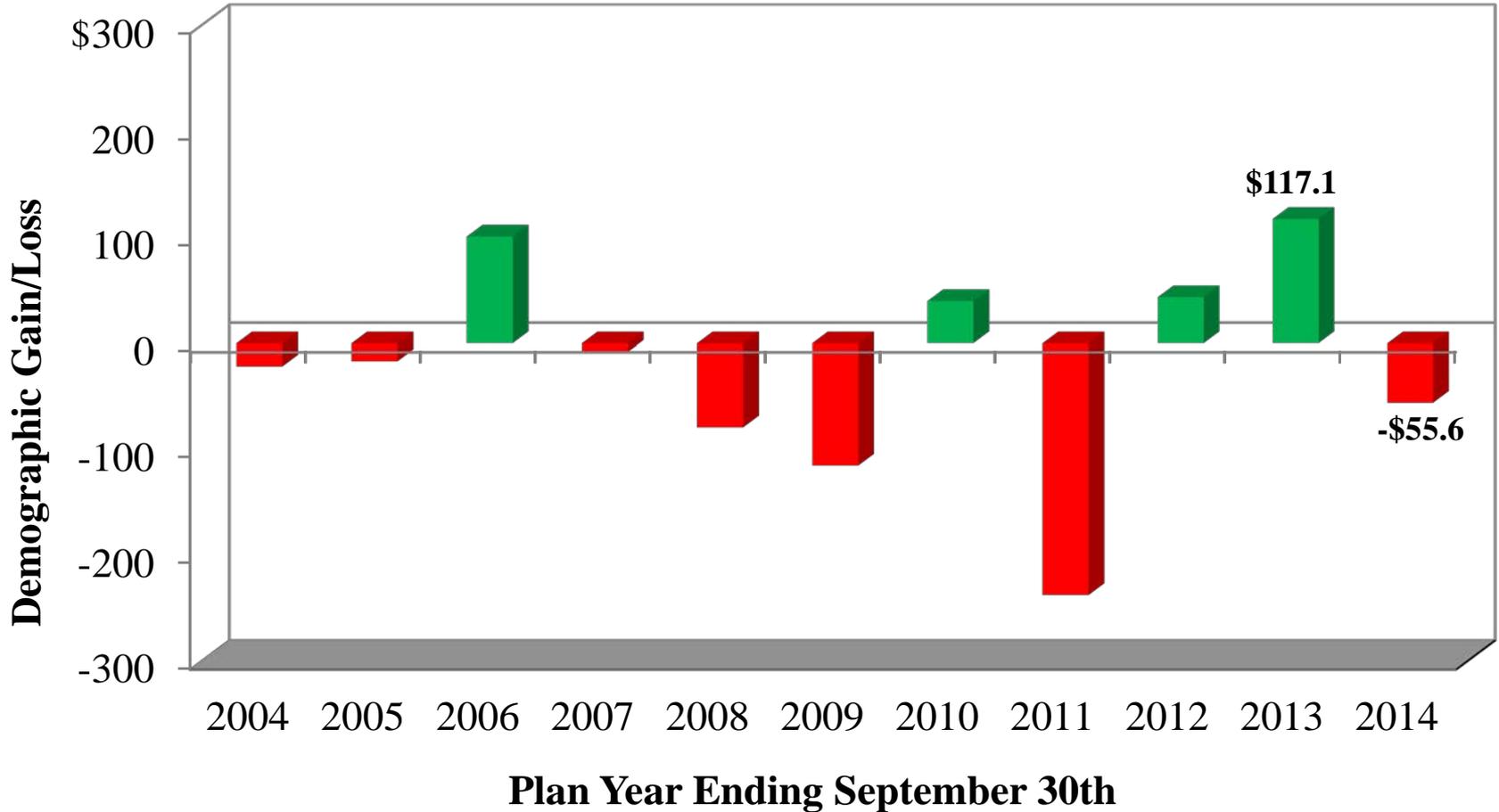
(Amounts in Millions)

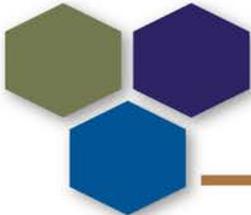


* After adjusting to market value.



Demographic Gain/Loss (Amounts in Millions)

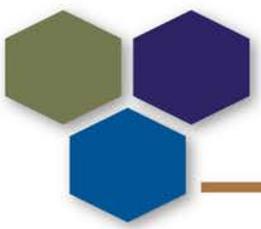




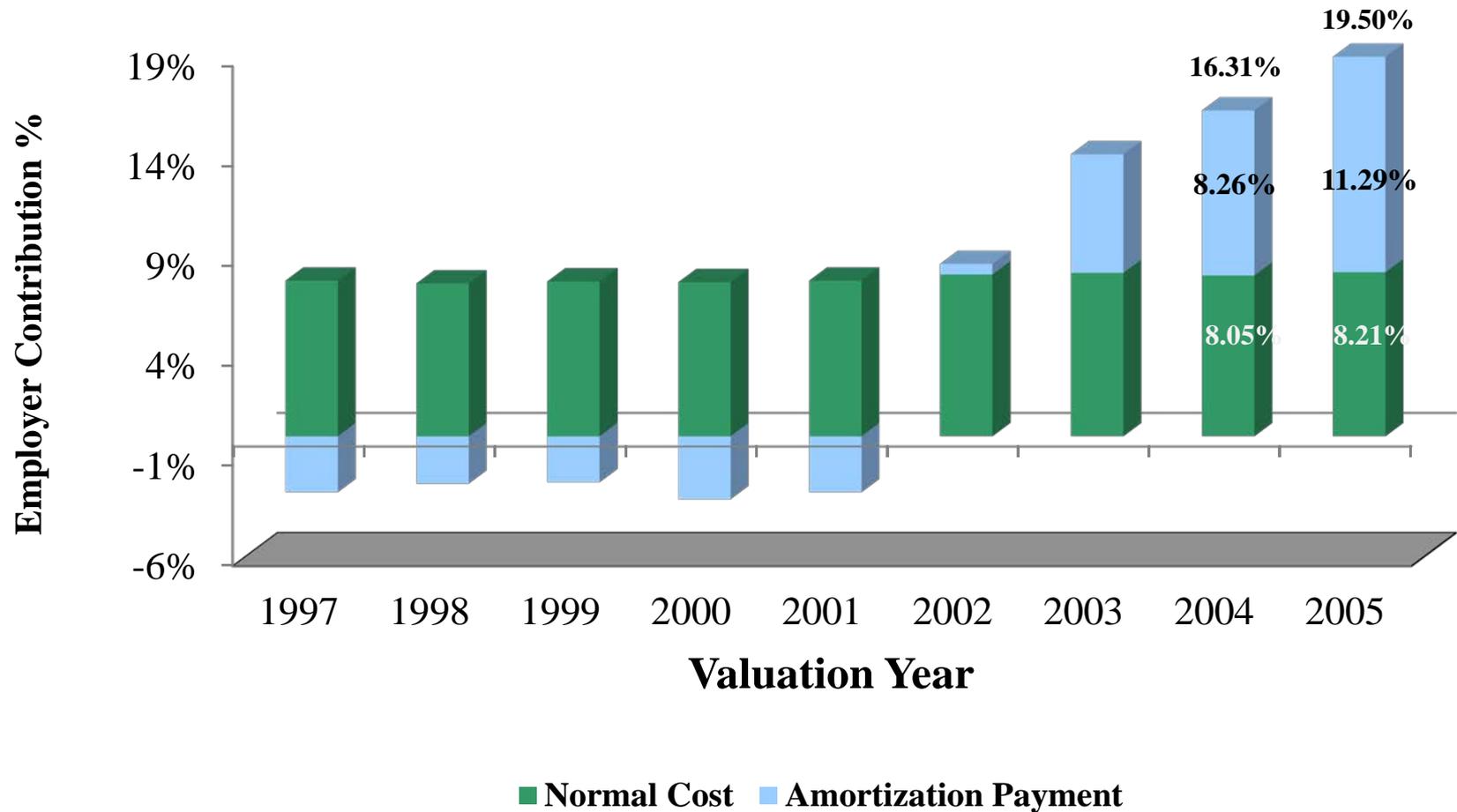
Gain/(Loss) by Type of Activity

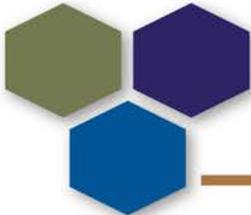
(Amounts in Millions)

Plan Year					
Ending 9/30	2014	2013	2012	2011	2010
Rehires	\$ (5.61)	\$ (4.99)	\$ (15.04)	\$ (21.97)	\$ (33.96)
Retiree Deaths	(21.37)	(35.30)	(36.07)	(51.64)	(27.00)
Investments	258.49	(213.85)	(850.82)	(767.32)	(670.79)
Pay Increases	28.47	85.62	152.18	10.70	127.51
Withdrawals	(9.24)	(8.17)	(1.63)	1.64	(3.51)
Retirements	(9.86)	(0.95)	(4.43)	(32.13)	(23.46)
Other	(37.95)	80.85	(51.80)	(144.05)	(0.07)
Total	202.93	(96.79)	(807.61)	(1,004.77)	(631.28)

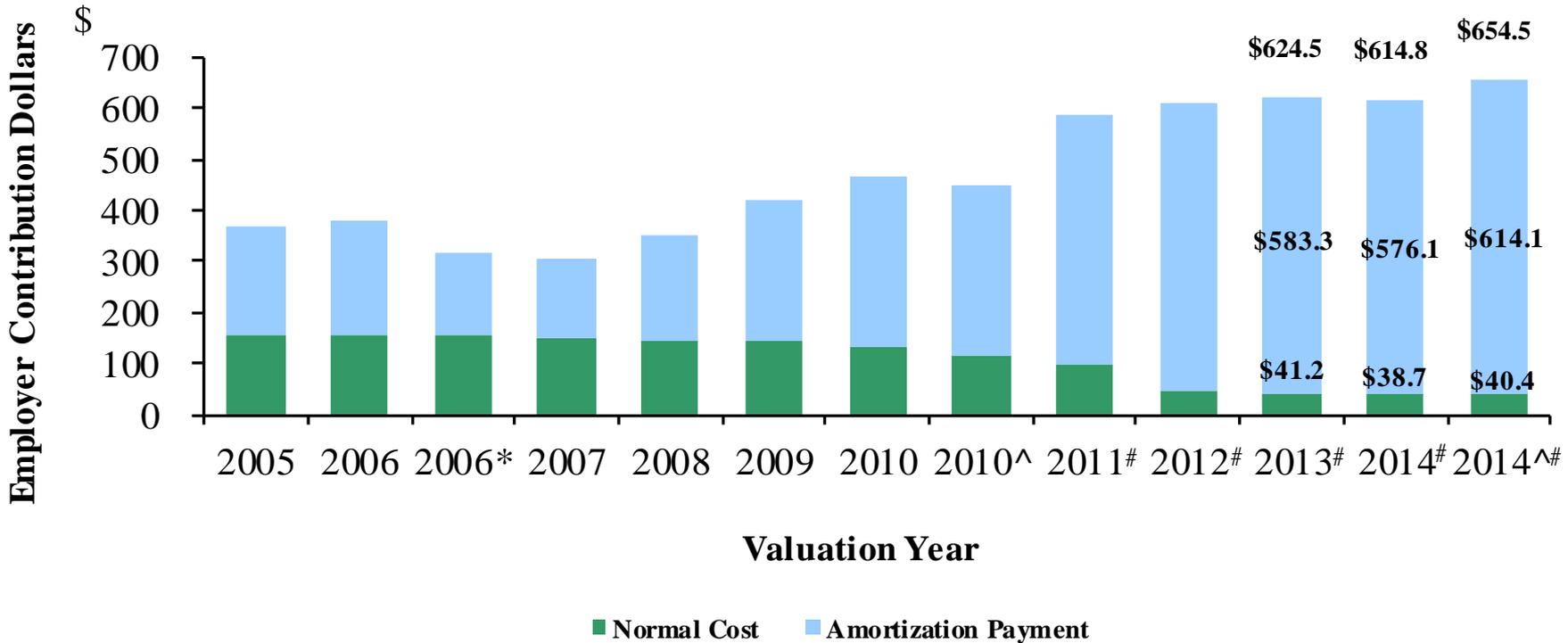


Historical Employer Contribution %'s Valuation as of September 30

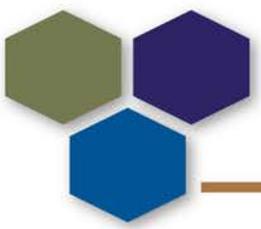




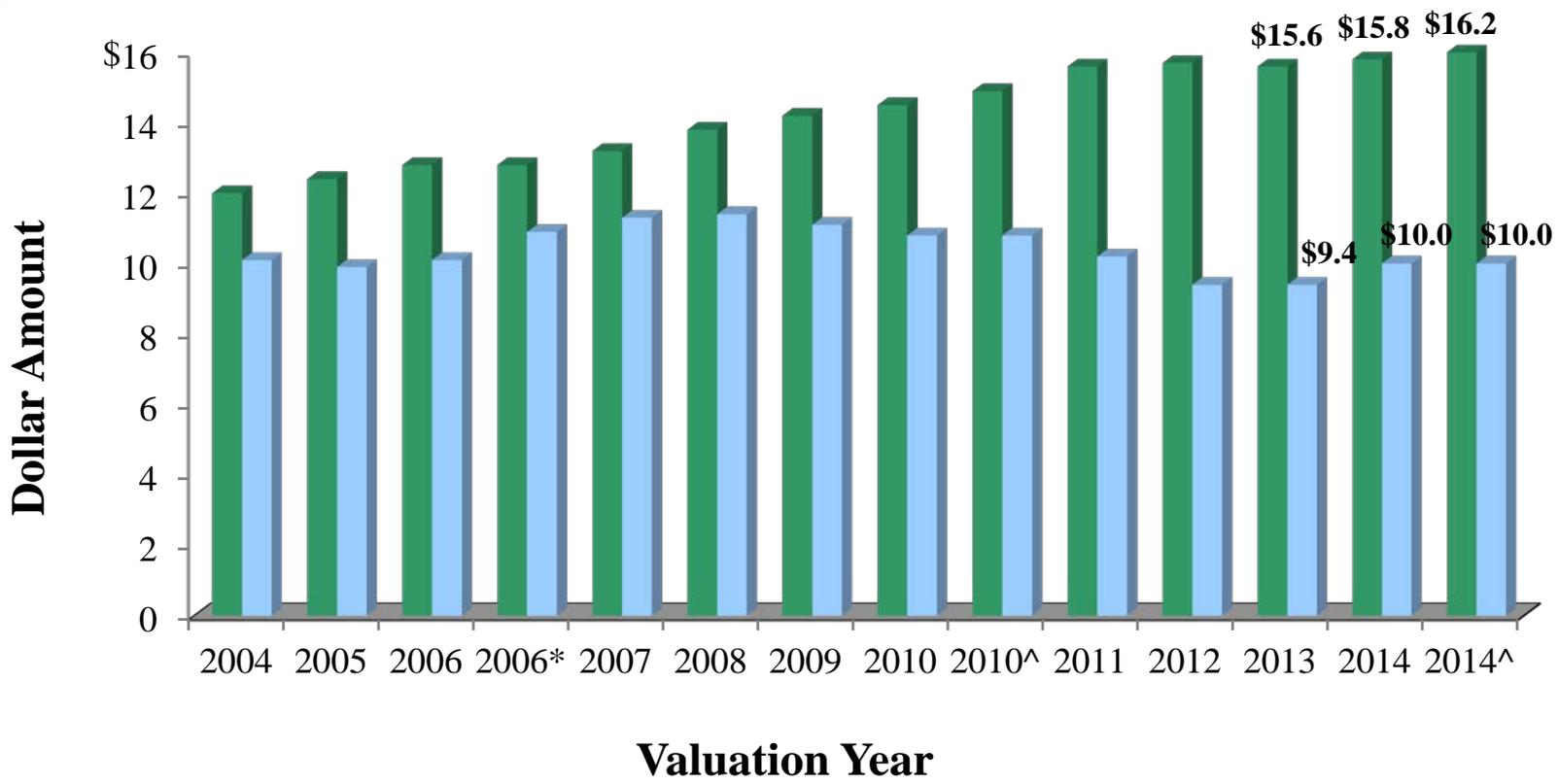
Employer Contribution Dollars (in Millions) Valuation as of September 30



* After adjusting to market value.
 ^ Revised actuarial assumptions and methods.
 # Includes ERI payment.



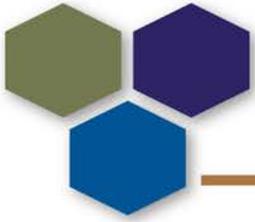
Actuarial Accrued Liability Compared to Actuarial Value of Assets (in Billions)



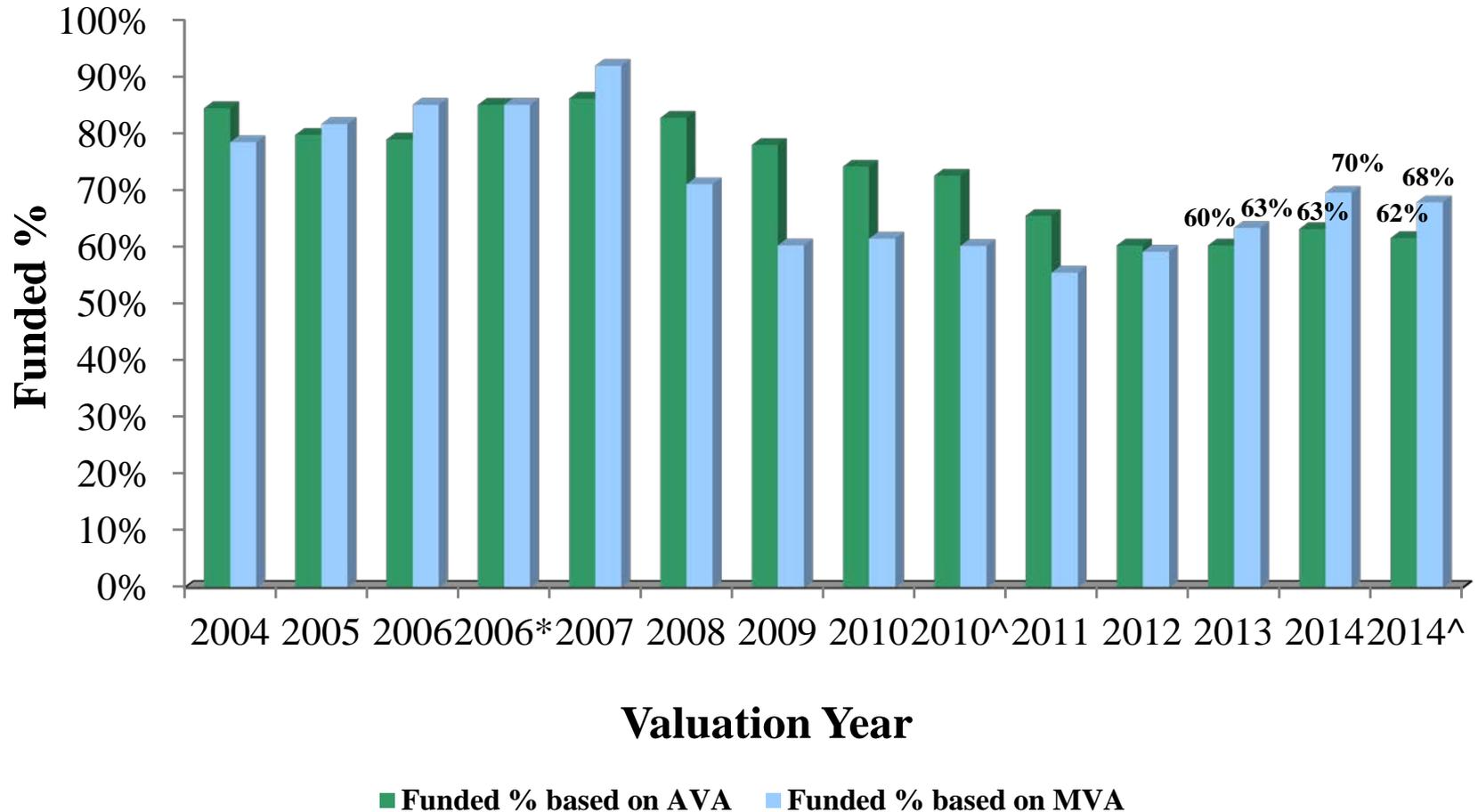
■ Actuarial Accrued Liability (AAL) ■ Actuarial Value of Assets (AVA)

* After adjusting to market value.

^ Revised actuarial assumptions and methods.

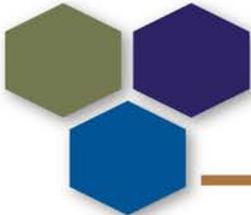


Retirement System Funded % Based on Actuarial Value and Market Value of Assets



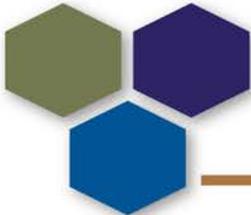
* After adjusting to market value.

^ Revised actuarial assumptions and methods.



Comments on the Investment Markets

- ◆ Investment markets have been very volatile.
- ◆ Valuation is based on a 5-year smoothed value of assets.
 - ▶ Reduces the volatility of the valuation results.
- ◆ 9/30/14 smoothed value of assets was lower than market value.
 - ▶ Market losses from 2008-2009 are completely recognized.
 - ▶ Provides some margin for possible adverse investment experience over the next few years.



Disclaimers

- ◆ This presentation is intended to be used in conjunction with the September 30, 2014 pension annual actuarial valuation report issued on May 5, 2015. This presentation should not be relied on for any purpose other than the purpose described in the valuation report.
- ◆ Circular 230 Notice: Pursuant to regulations issued by the IRS, to the extent this presentation concerns tax matters, it is not intended or written to be used, and cannot be used, for the purpose of (i) avoiding tax-related penalties under the Internal Revenue Code or (ii) marketing or recommending to another party any tax-related matter addressed within. Each taxpayer should seek advice based on the individual's circumstances from an independent tax advisor.
- ◆ This presentation shall not be construed to provide tax advice, legal advice or investment advice.
- ◆ The actuaries submitting this presentation (Mita Drazilov and Louise Gates) are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.