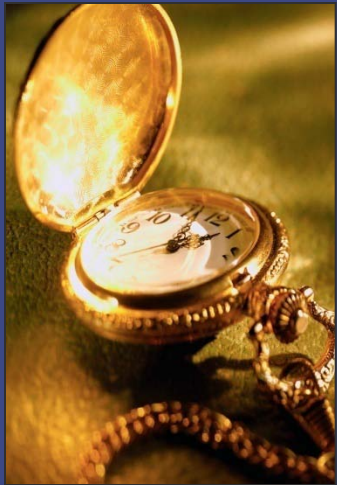




Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

Virginia Retirement System 2009 Actuarial Valuation Results



Virginia
Retirement
System

- Key Findings
- Assumption Changes
- Funded Status
- Pension Results
 - Active and Retired Data
 - Market and Actuarial Value of Assets
 - Funding Results
 - Gain/Loss Analysis
- Health Insurance Credit (HIC) Program Results
 - Comments on HIC Valuation
 - Funding Results
- Virginia Sickness and Disability Program (VSDP) Results
 - Comments on VSDP LTD Valuation
 - Funding Results
- Group Life Insurance Results
 - Comments on Group Life Insurance Results
 - Funding Results

Key Findings



- Funded status has deteriorated for the pension and the group life plans.
- Employer contribution rate increases for the pension and Group Life Insurance plans.
- Assumption changes made based on recent experience study had little effect on funded status and employer contribution rates.
- Recommend removing corridor from actuarial value of assets.

Assumption Changes



- Following changes were made based on experience from 2004 to 2008:

SYSTEM	ASSUMPTION CHANGE	Impact on Pension Contribution Rate
State	Increase rates of withdrawals Increase rates of disability retirement up to age 52, females Decrease rates of disability retirement after age 52, all members Decrease rates of service retirement	-0.29%
Teachers	Increase rates of withdrawals Increase rates of disability retirement Decrease rates of service retirement	-0.56%
SPORS	Decrease rates of withdrawals, males Decrease rates of service retirement	-0.34%
VaLORS	Increase rates of withdrawals Decrease rates of disability retirement Change rates of service retirement	-1.92%
Judicial	Increase rates of salary increases	1.99%

- Minor impact on contribution rates to HIC, VSDP and Group Life plans.

Funded Status



System	June 30			
	2008	2009 (no changes)	2009 (assumption changes-with corridor)	2009 (assumption changes-no corridor)
State	88.0%	75.8%	75.3%	84.0%
Teachers	79.8%	68.2%	68.4%	76.1%
SPORS	76.6%	65.6%	66.1%	73.6%
VaLORS	68.2%	60.1%	58.7%	64.7%
Judicial	75.6%	65.3%	65.3%	72.5%
HIC	13.4%	13.4%	13.6%	14.6%
VSDP	78.9%	87.5%	97.0%	97.0%
Group Life	55.0%	42.1%	42.9%	48.5%

Funded status based on actuarial value of assets.
VSDP funded status without LTC asset transfer.

➤ Basic Retirement Funding Equation

$$C + I = B + E$$

C = Contributions

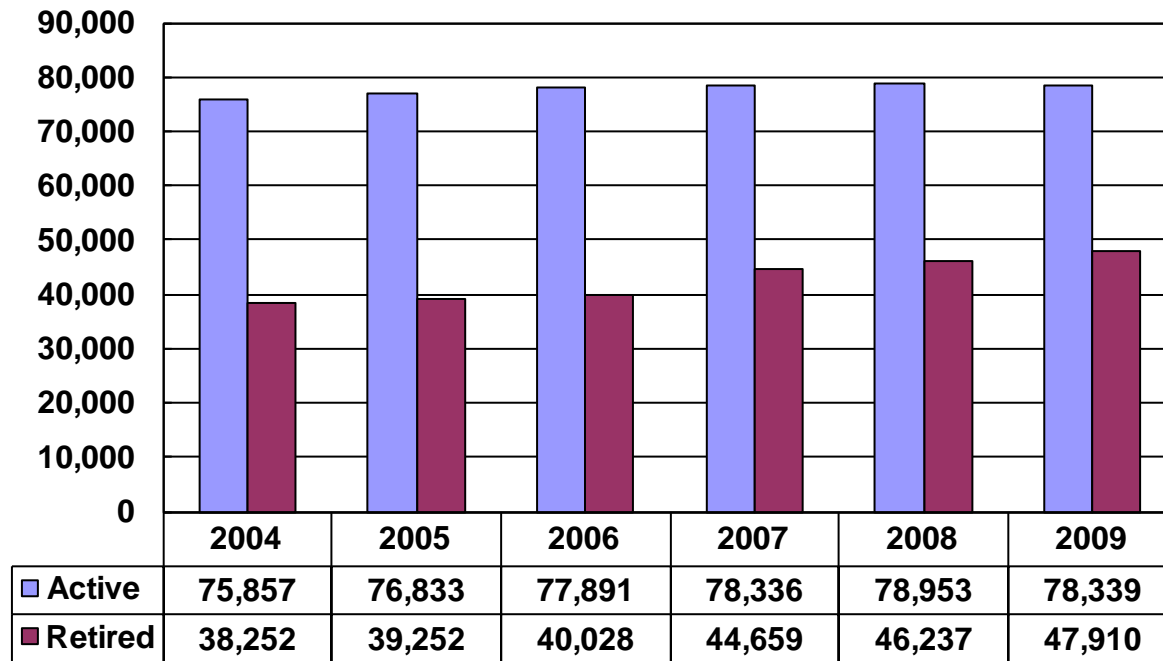
I = Investment Income

B = Benefits Paid

E = Expenses (administration)

Pension Results

State Employees

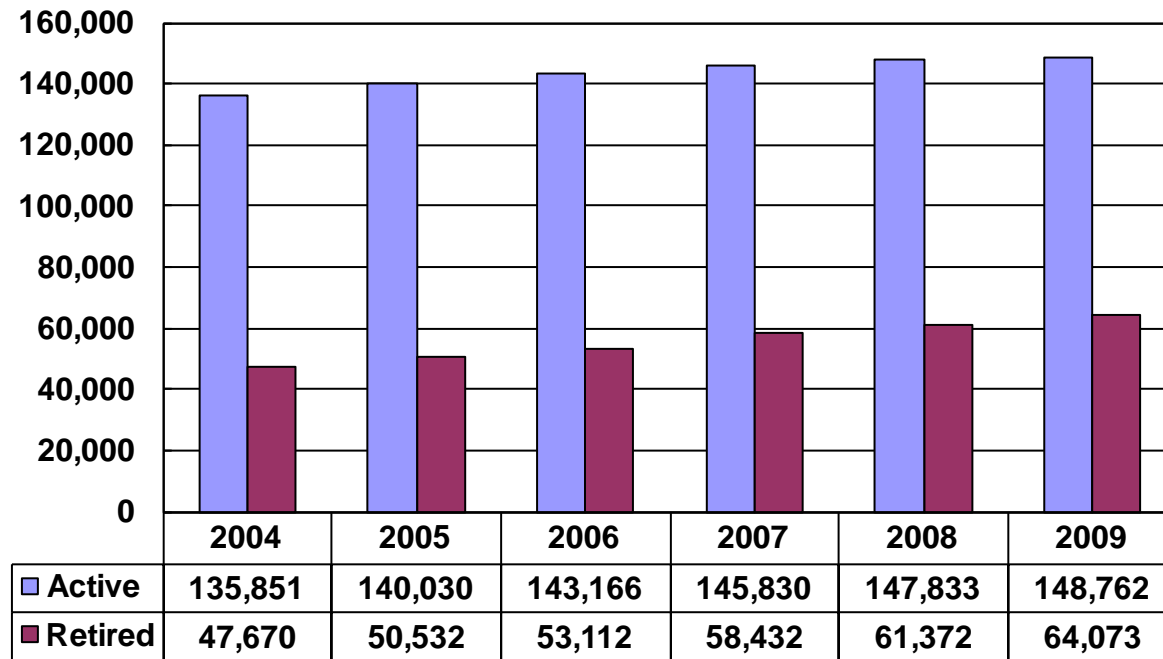


0.6% average increase for active members since 2004; (0.8)% increase for 2009.

4.7% average increase for retired members since 2004; 3.6% increase for 2009.

2.0 actives per retiree 5 years ago; 1.6 actives per retiree now.

Teachers

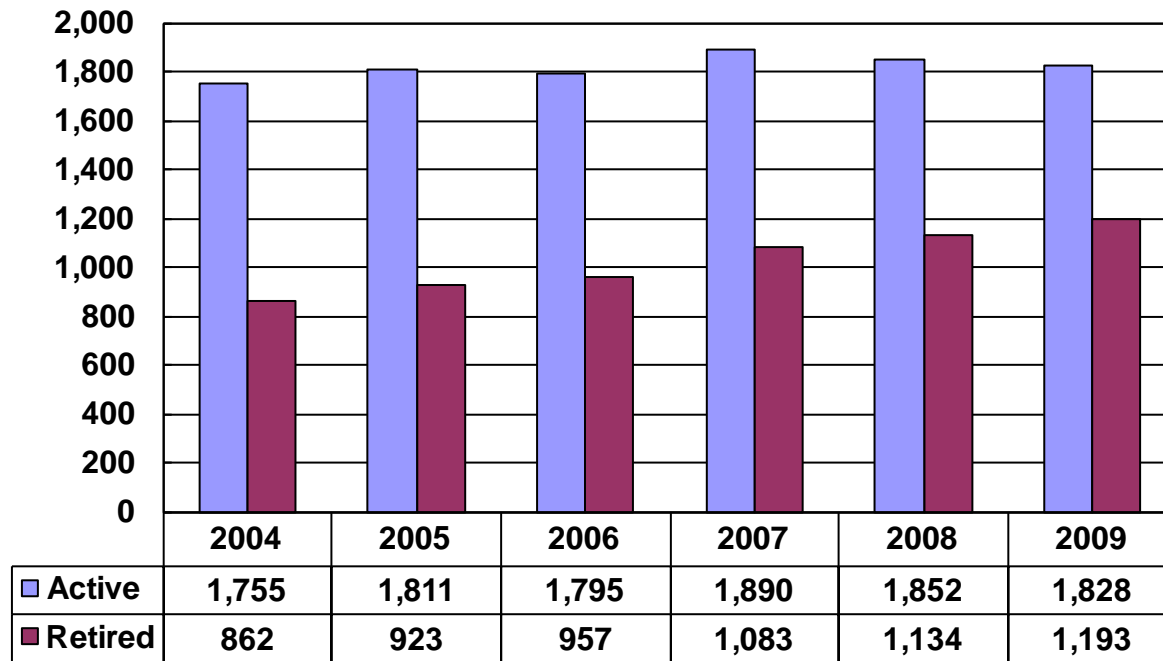


1.8% average increase for active members since 2004; 0.6% increase for 2009.

6.1% average increase for retired members since 2004; 4.4% increase for 2009.

2.8 actives per retiree 5 years ago; 2.3 actives per retiree now.

State Police

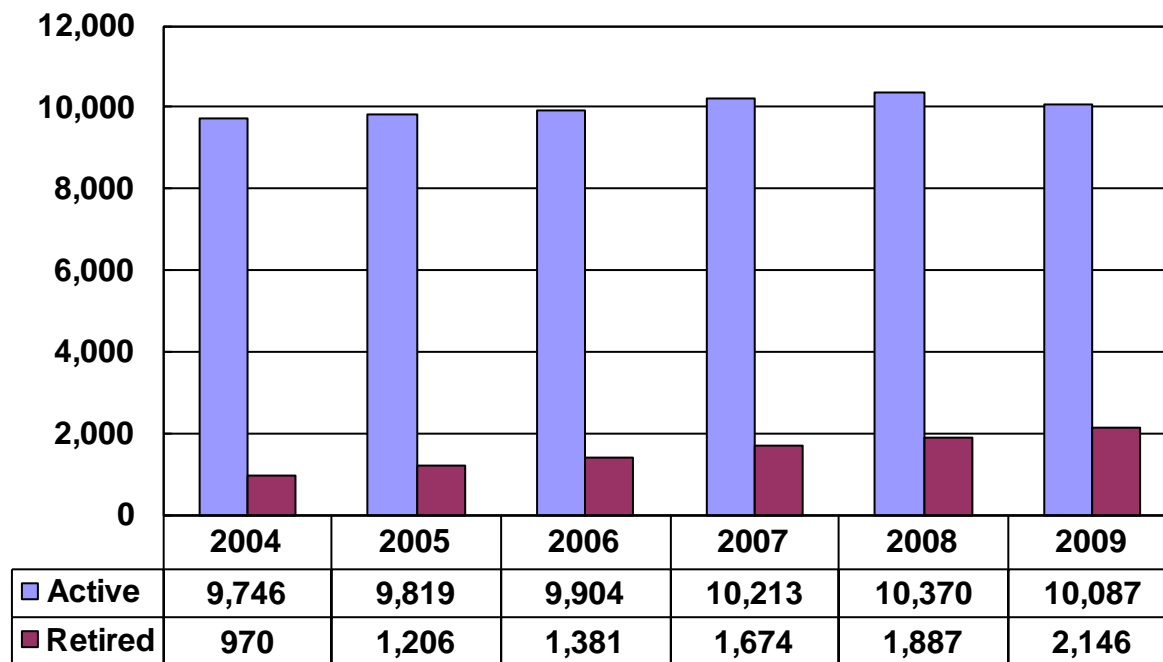


0.9% average increase for active members since 2004; (1.3%) increase for 2009.

6.8% average increase for retired members since 2004; 5.2% increase for 2009.

2.0 actives per retiree 5 years ago; 1.5 actives per retiree now.

Virginia Law Officers

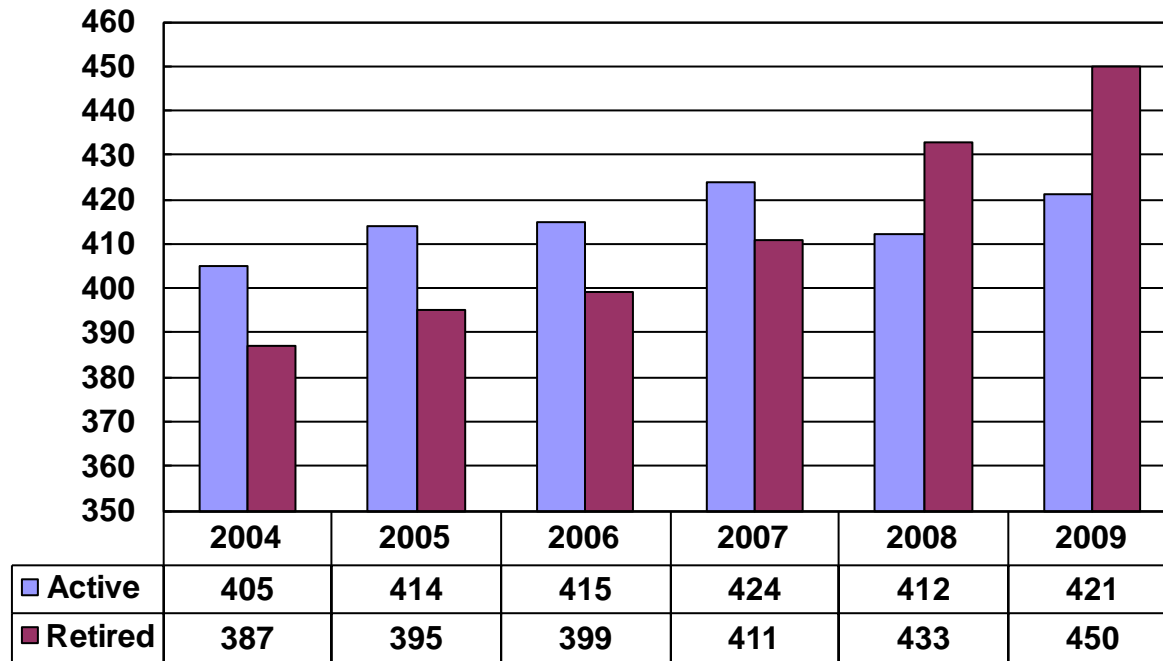


0.7% average increase for active members since 2004; (2.7%) increase for 2009.

17.3% average increase for retired members since 2004; 13.7% increase for 2009.

10.0 actives per retiree 5 years ago; 4.7 actives per retiree now.

Judicial



0.8% average increase for active members since 2004; 2.2% increase for 2009.

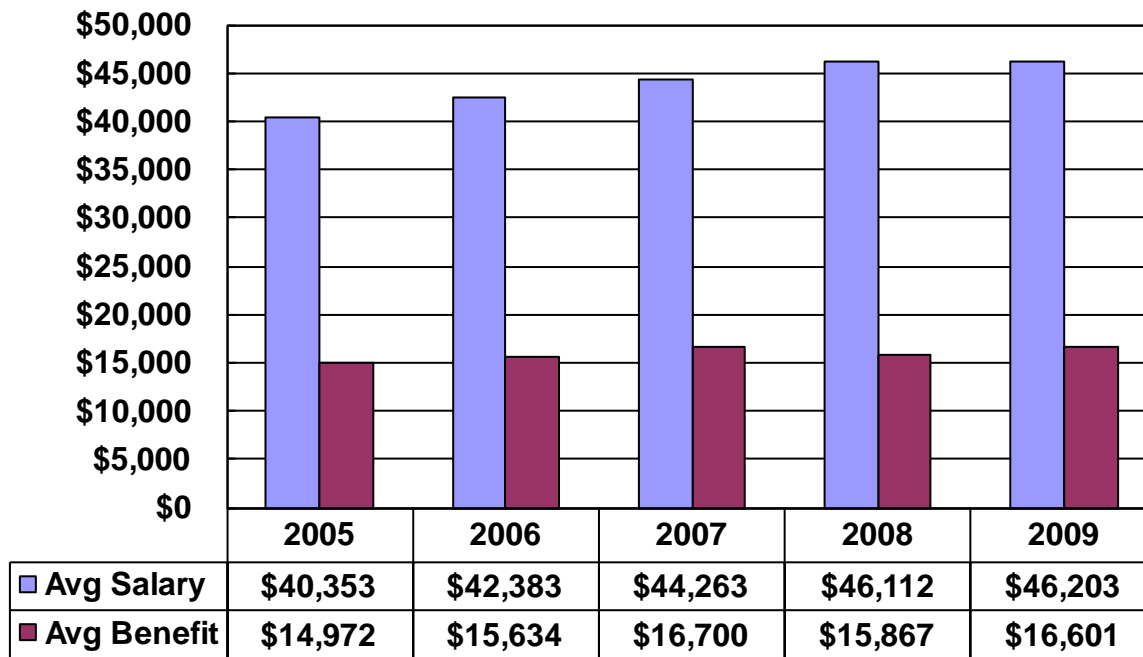
3.1% average increase for retired members since 2004; 3.9% increase for 2009.

1.0 active per retiree 5 years ago; 0.9 actives per retiree now.

Average Salary & Benefits



State Employees



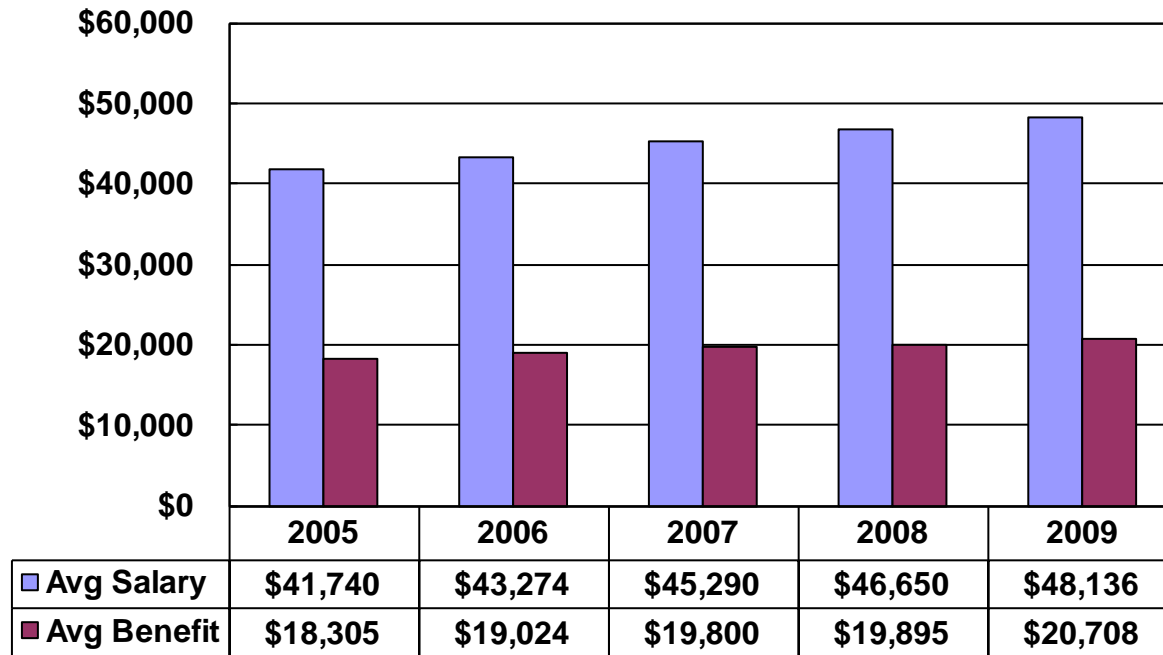
0.2% increase in Average Salary for 2009.

4.6% increase in Average Benefit for 2009.

Average Salary & Benefits



Teachers



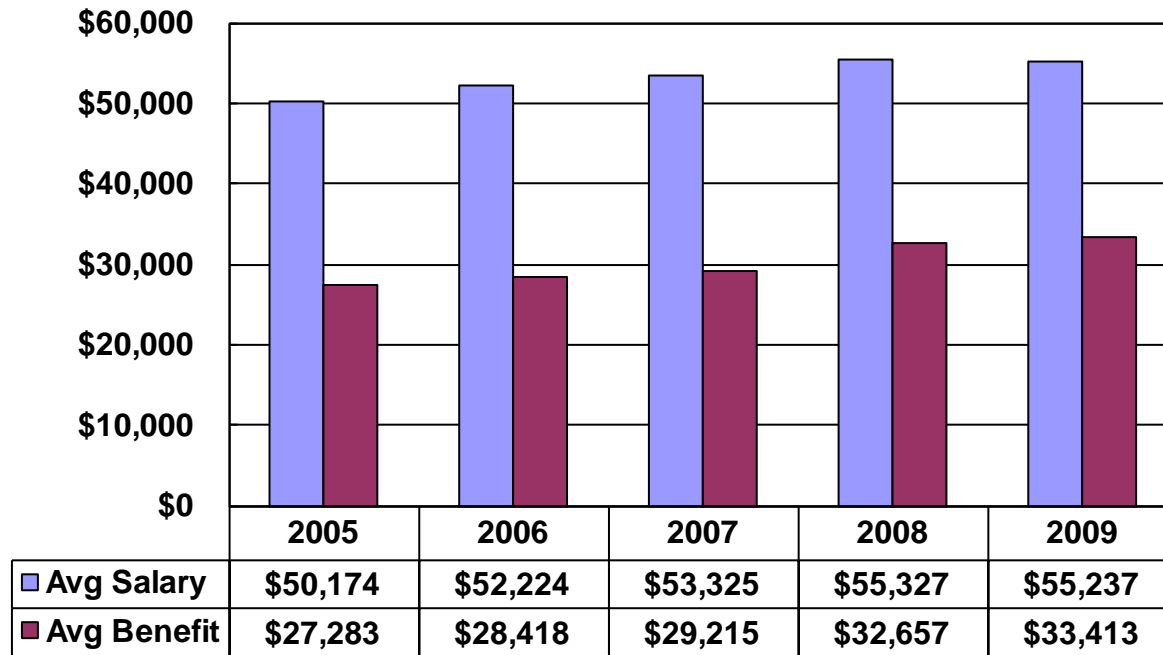
3.2% increase in Average Salary for 2009.

4.1% increase in Average Benefit for 2009.

Average Salary & Benefits



State Police



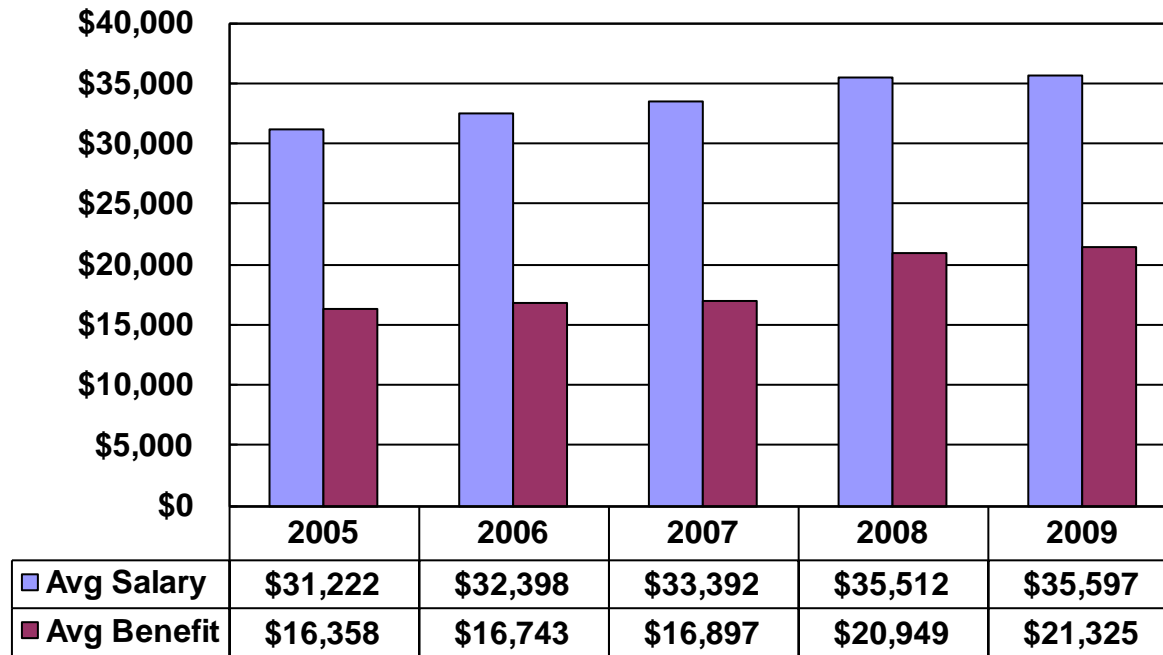
(0.2%) increase in Average Salary for 2009.

2.3% increase in Average Benefit for 2009.

Average Salary & Benefits



Virginia Law Officers

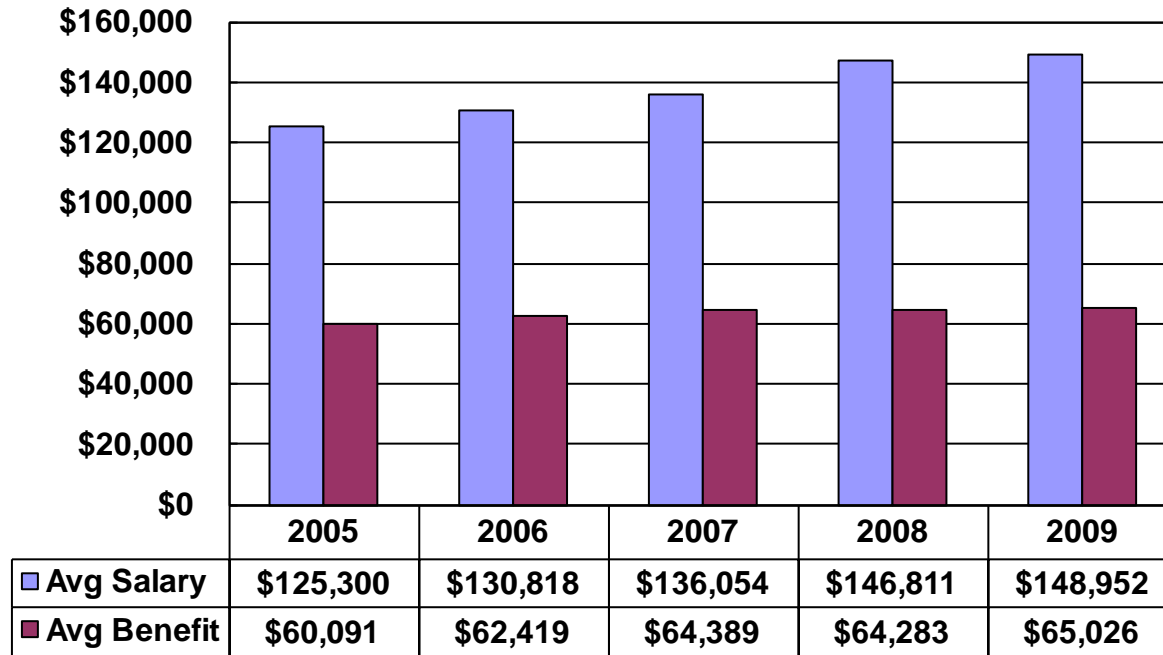


0.2% increase in Average Salary for 2009.

1.8% increase in Average Benefit for 2009.

Average Salary & Benefits

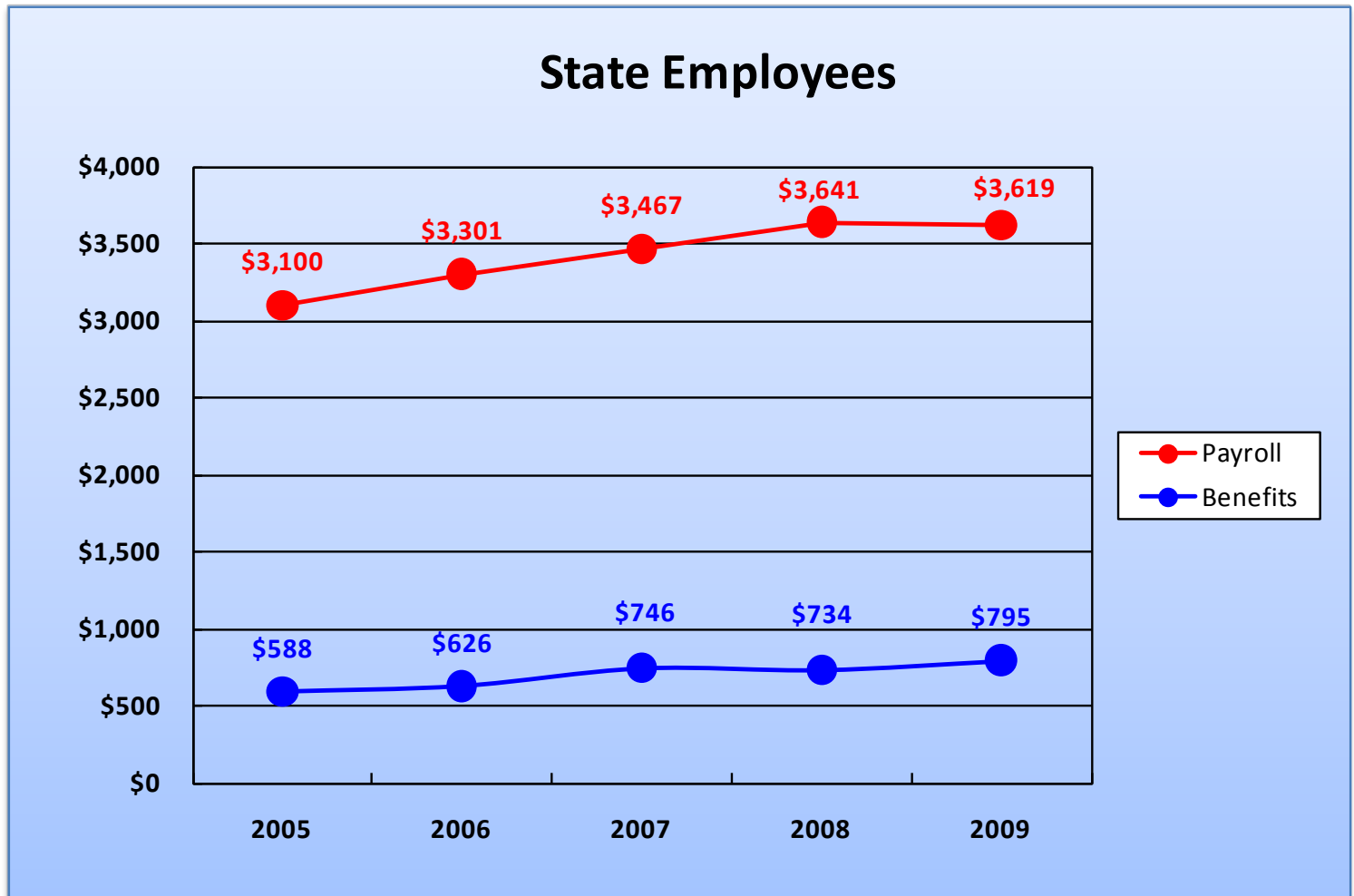
Judicial



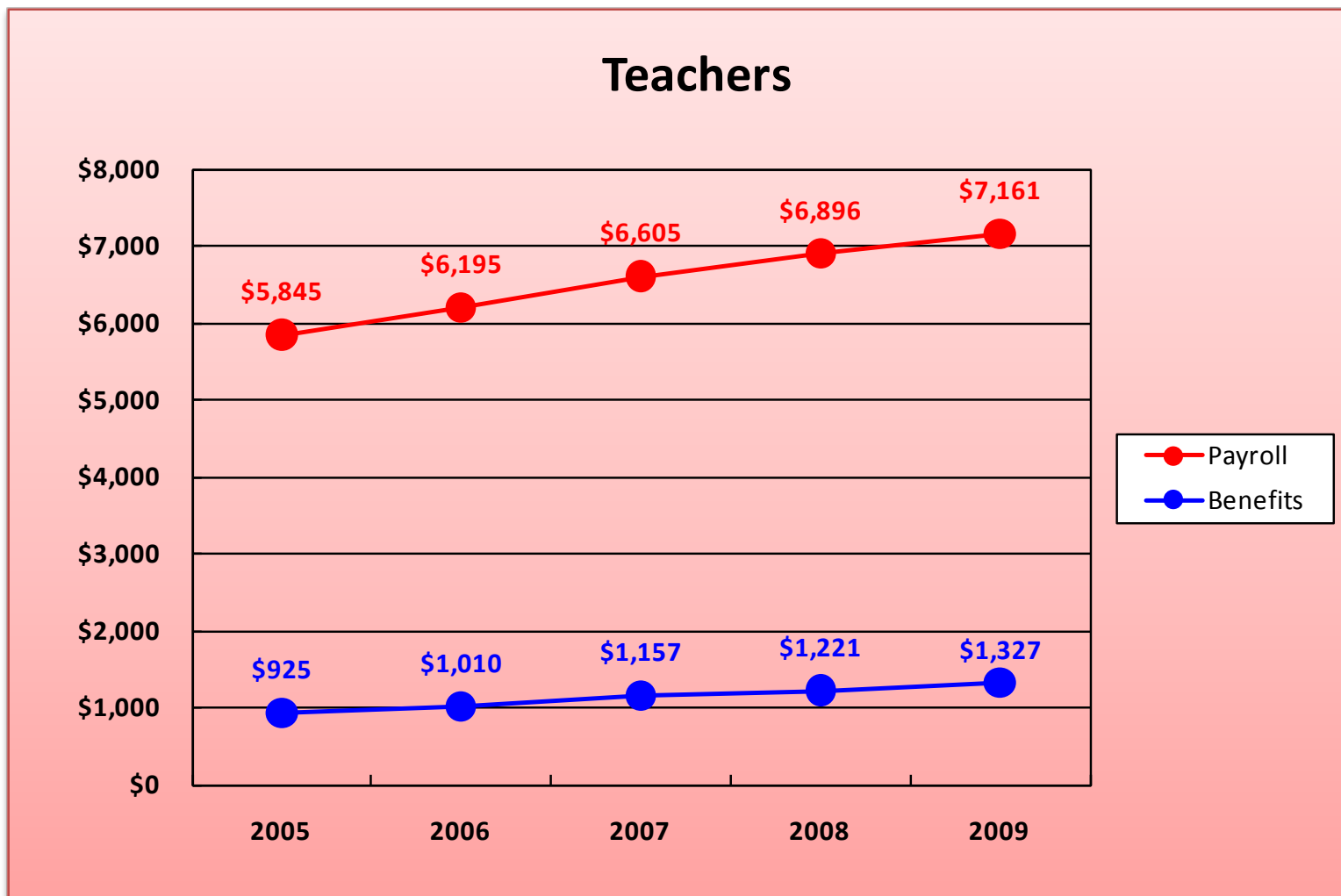
1.5% increase in Average Salary for 2009.

1.2% increase in Average Benefit for 2009.

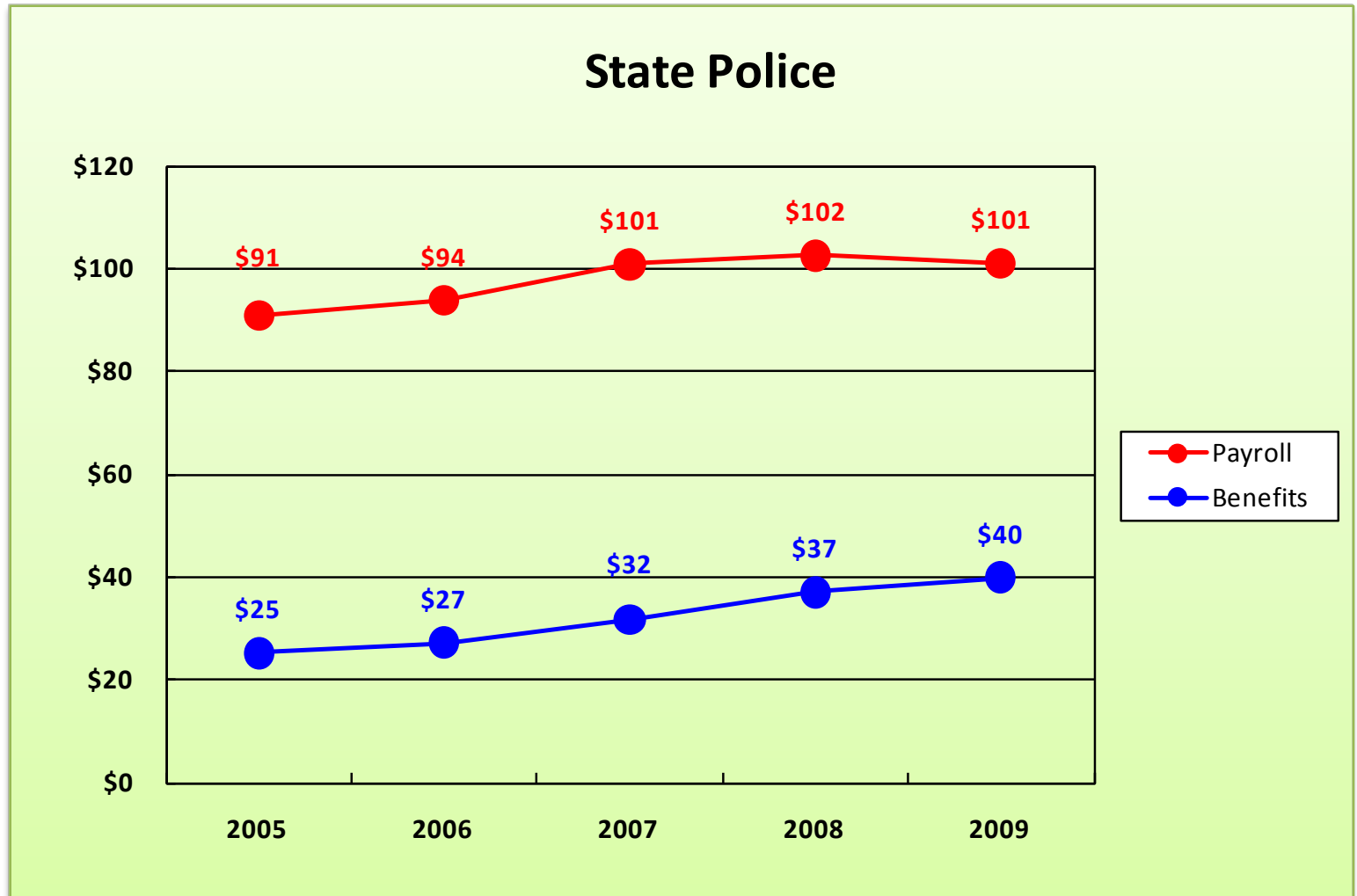
Payroll & Benefits (\$ Millions)



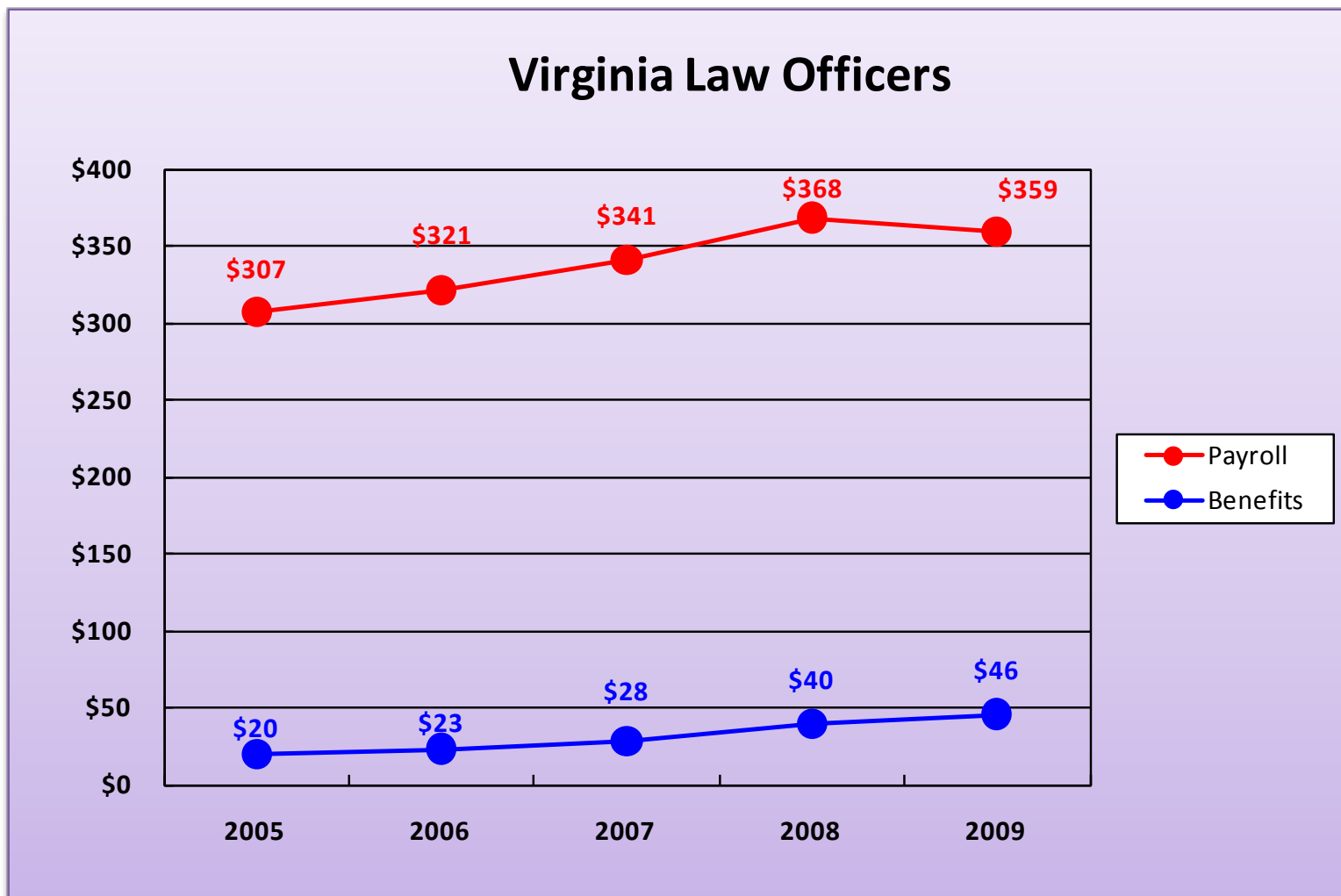
Payroll & Benefits (\$ Millions)



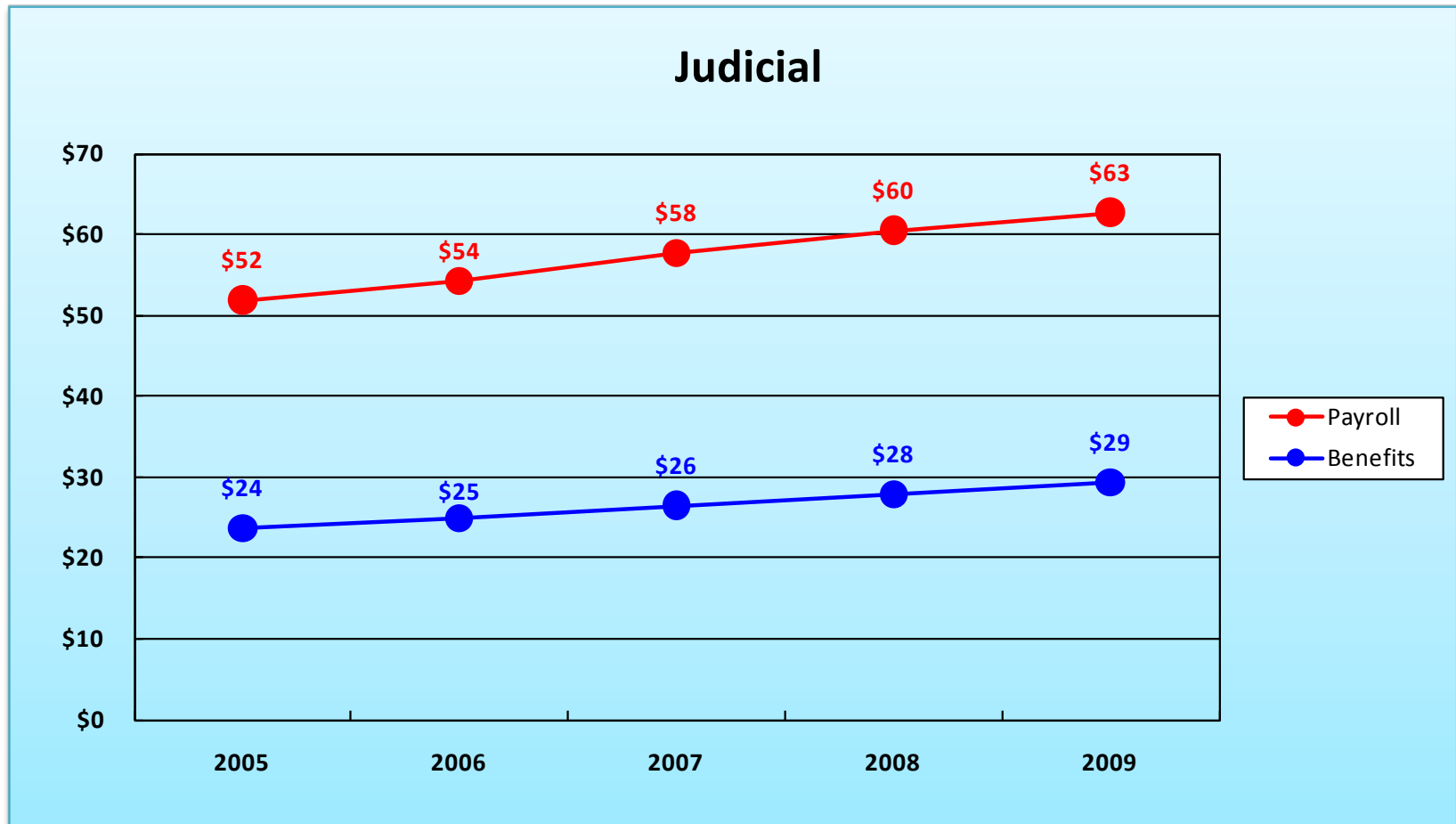
Payroll & Benefits (\$ Millions)



Payroll & Benefits (\$ Millions)



Payroll & Benefits (\$ Millions)



Average Age, Service & Benefits



	June 30, 2009 Valuation				
	State	Teachers	SPORS	VaLORS	Judicial
Active Average Age	47.71	44.74	40.44	41.09	57.24
Active Average Service	12.88	11.37	14.01	8.68	10.93
Average Age at Retirement	60.70	59.31	55.79	56.63	64.32
Average Service at Retirement	24.37	24.60	31.92	22.74	34.29
Average Benefit at Retirement as a Percent of Pay	41.43%	41.82%	59.05%	45.48%	58.29%

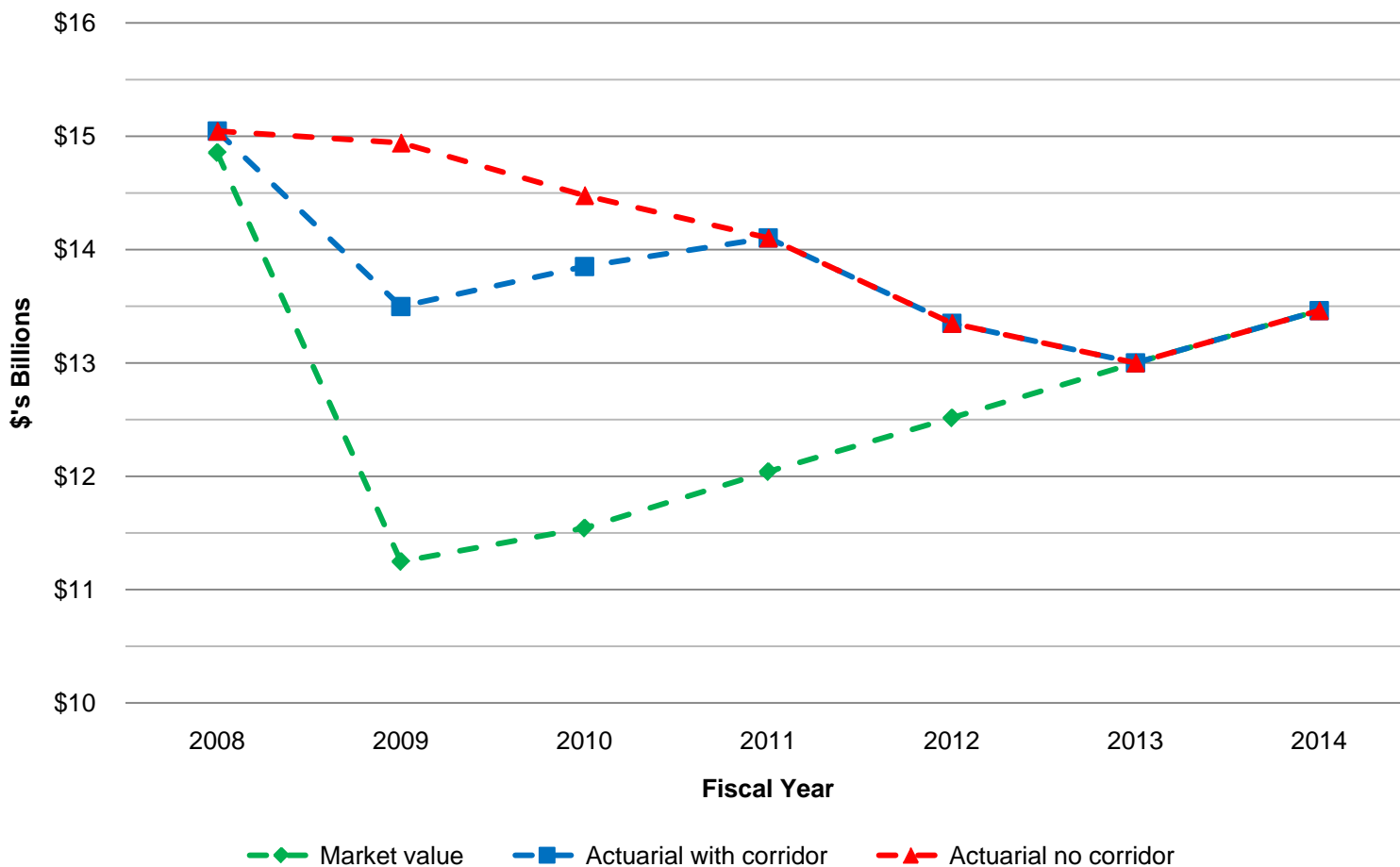
Smoothing Methods



- Recognize some portion of market return each year
- Can be straight line or weighted
- Most commonly used is straight line, 5-year smoothing (VRS uses 5-year smoothing)
- Can be with or without corridor, i.e., actuarial value cannot be less than x% or more than x% of market value
- Most common corridor is 80%-120% of market value (VRS uses this method)

State Employees Asset Values

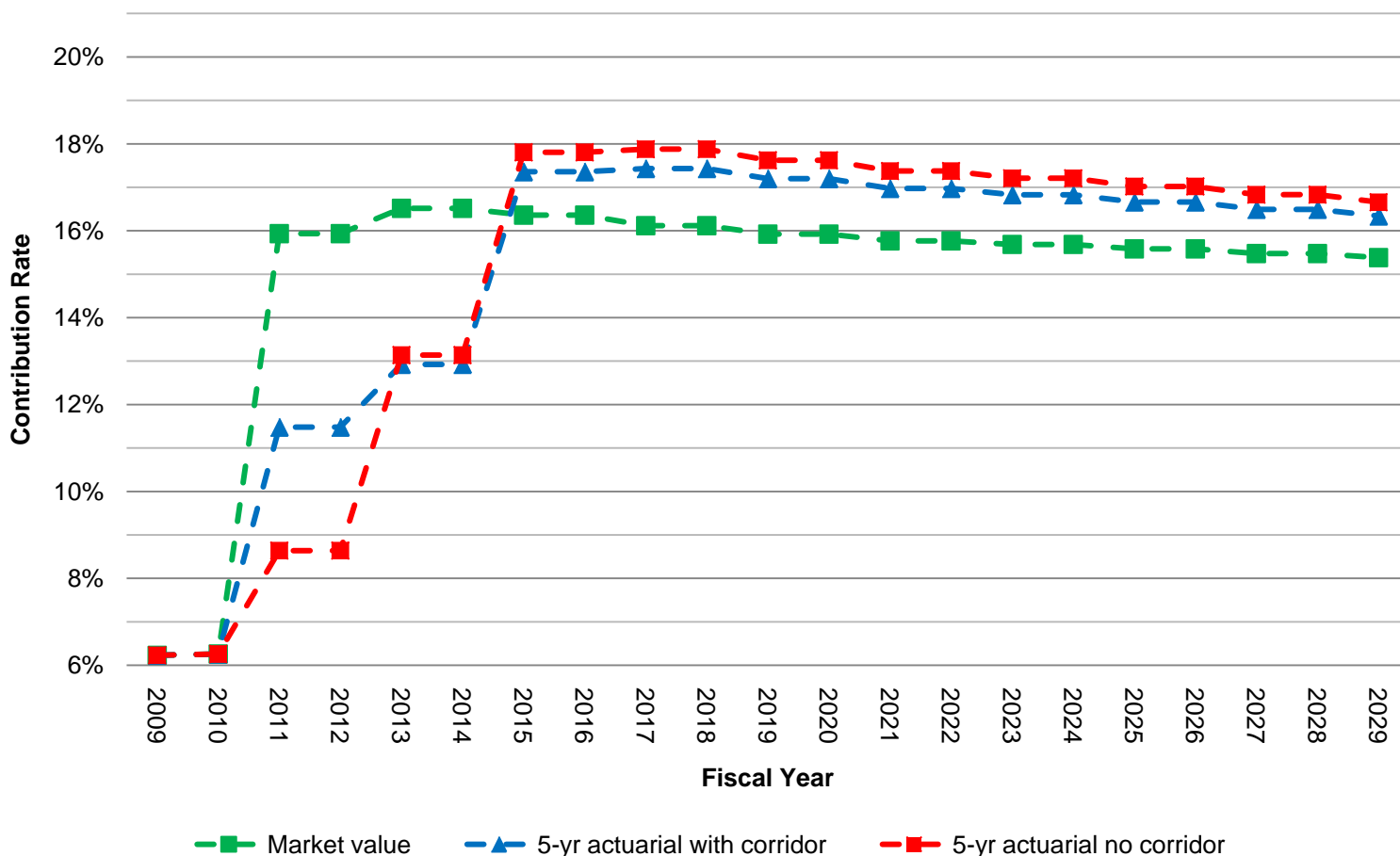
(21.1)% Return FY 2009



State Employees Contribution Rates

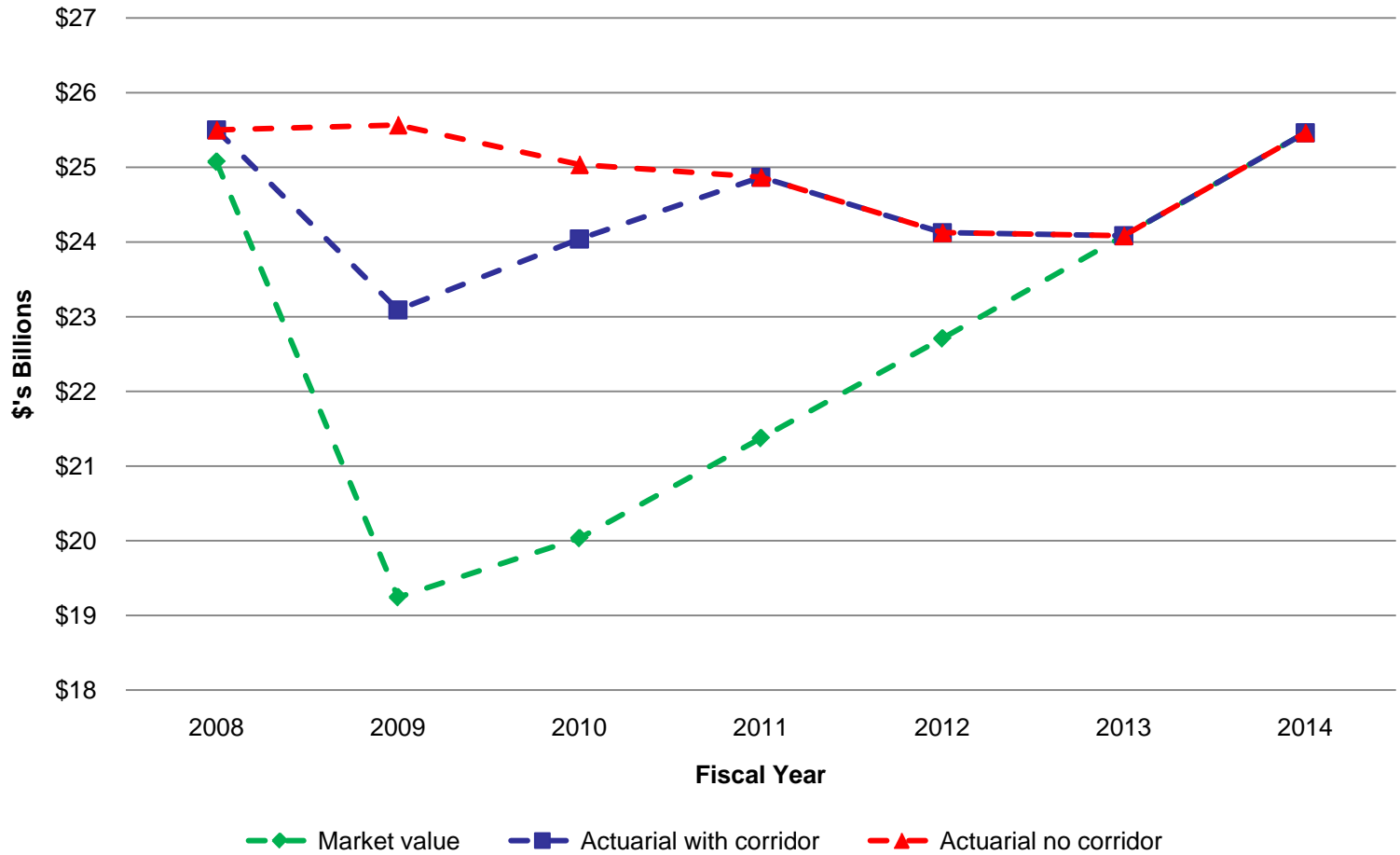
5 Year Smoothing

(21.1)% Return FY 2009



Teachers Asset Values

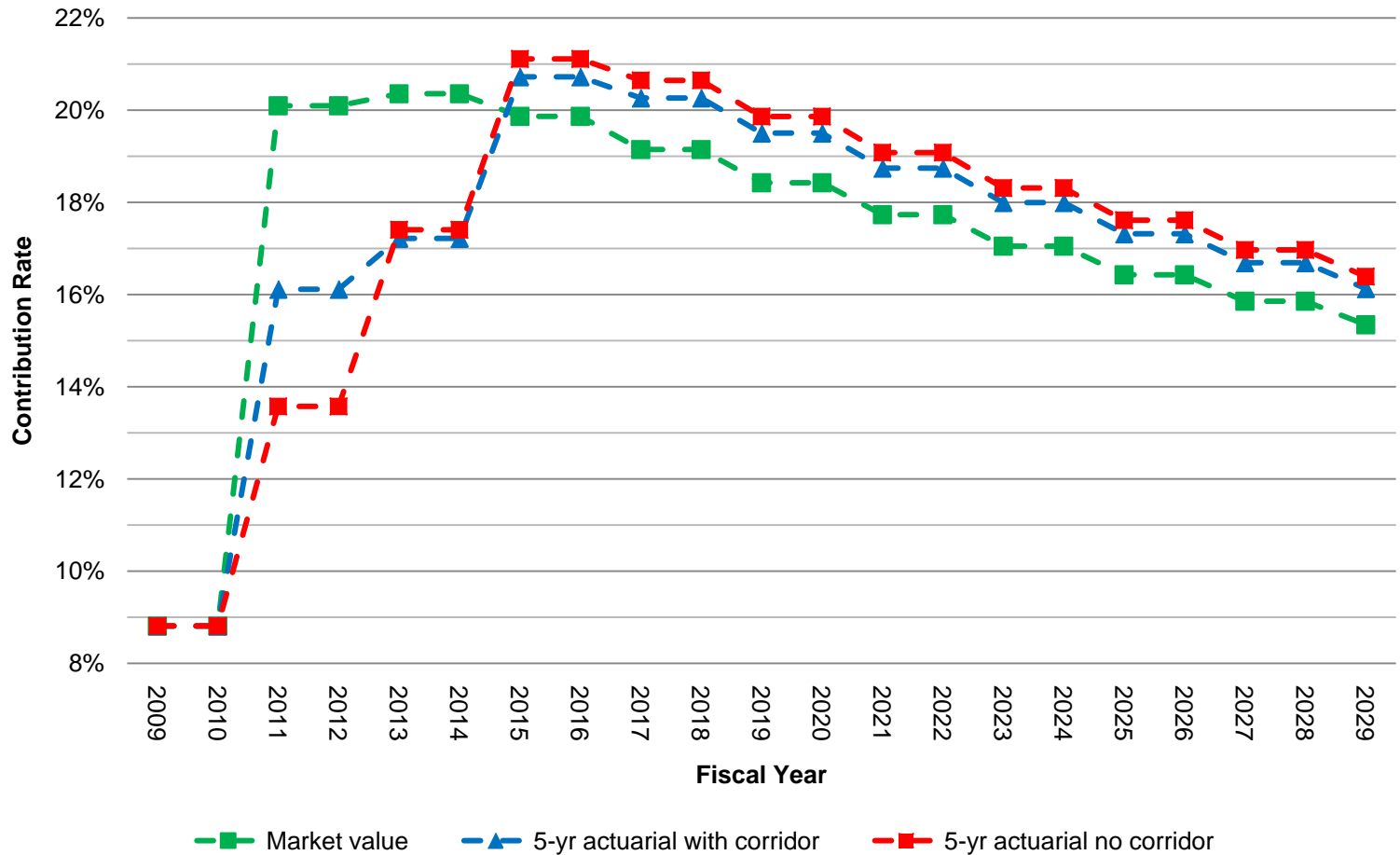
(21.1)% Return FY 2009



Teachers Contribution Rates

5 Year Smoothing

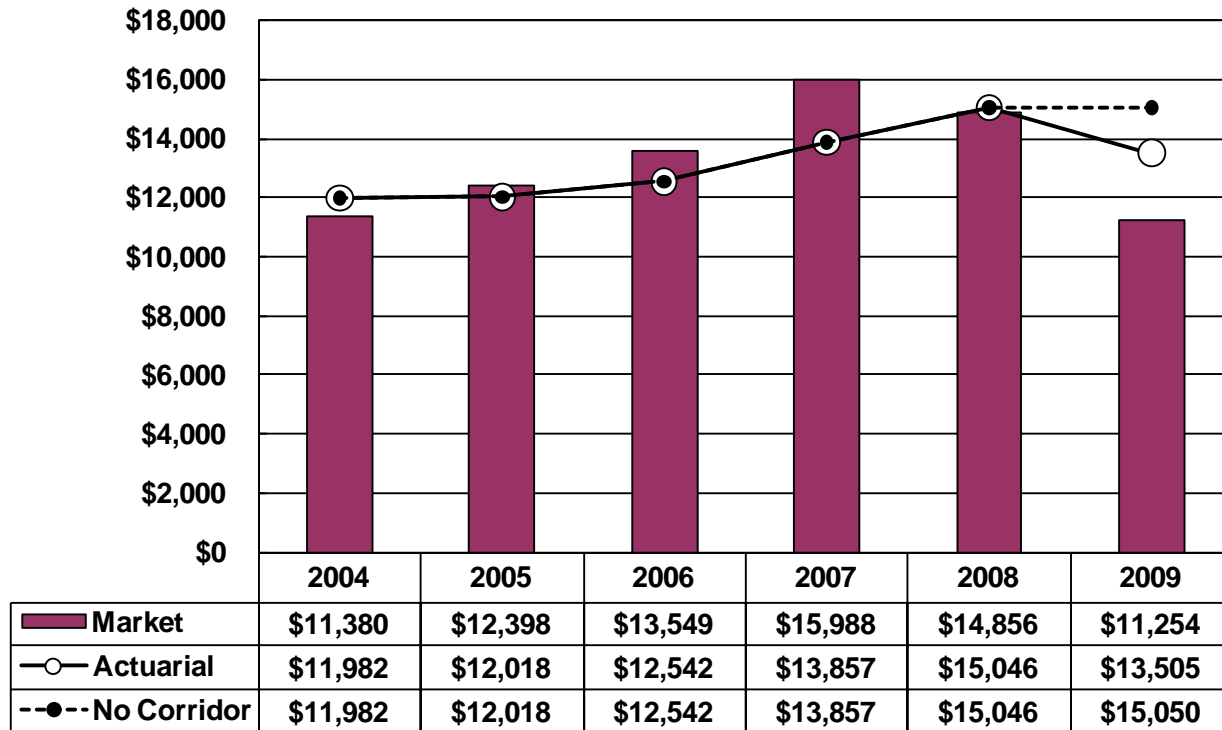
(21.1)% Return FY 2009



Assets (\$ Millions)



State Employees

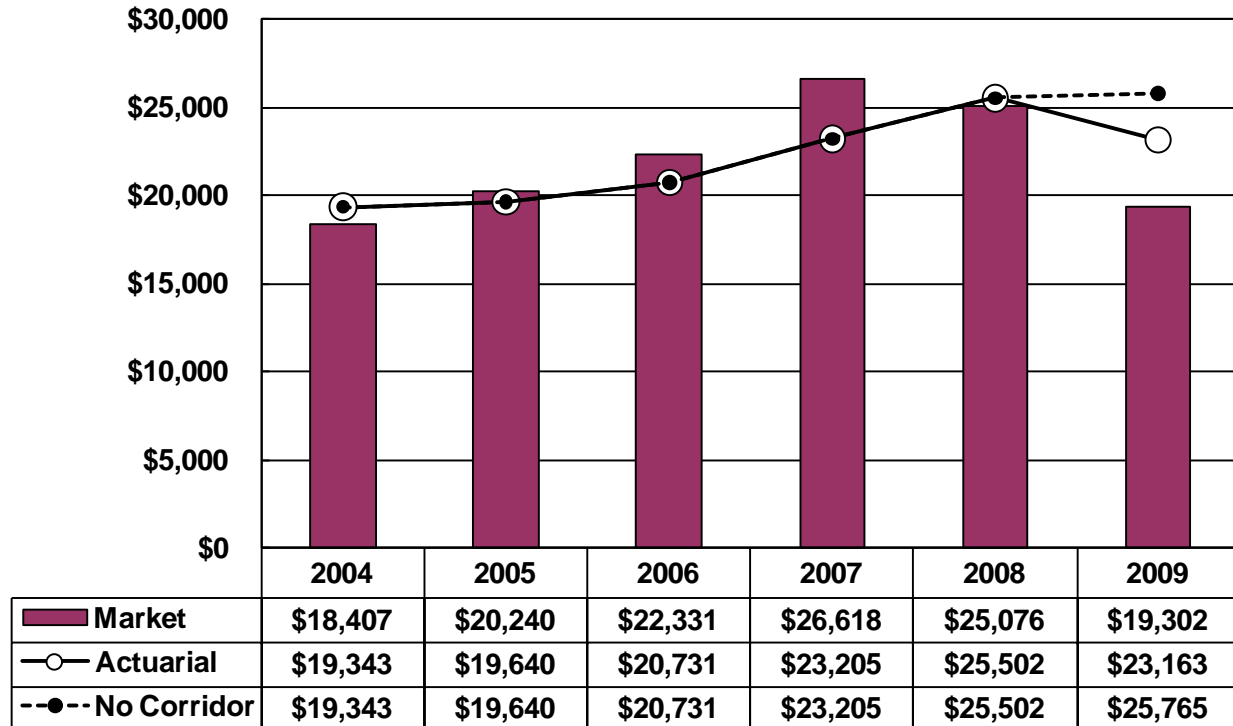


	2005	2006	2007	2008	2009
Market Return	11.78%	12.10%	20.73%	-4.92%	-21.85%
Actuarial Return with Corridor	2.99%	7.34%	13.34%	11.27%	-7.69%

Assets (\$ Millions)



Teachers



	2005	2006	2007	2008	2009
Market Return	11.78%	12.10%	20.32%	-4.96%	-21.66%
Actuarial Return with Corridor	3.19%	7.34%	13.10%	10.93%	-7.72%

Assets (\$ Millions)



State Police

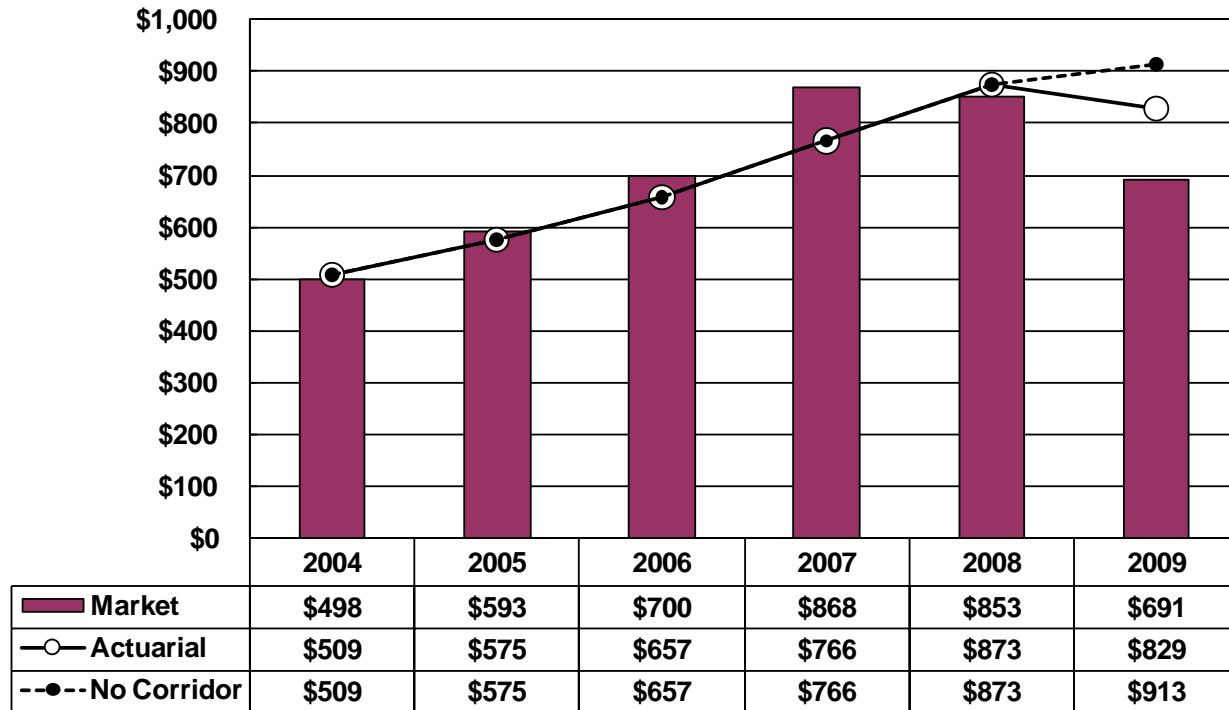


	2005	2006	2007	2008	2009
Market Return	11.73%	12.08%	20.43%	-4.97%	-21.67%
Actuarial Return with Corridor	3.15%	7.29%	13.15%	11.08%	-7.71%

Assets (\$ Millions)



Virginia Law Officers

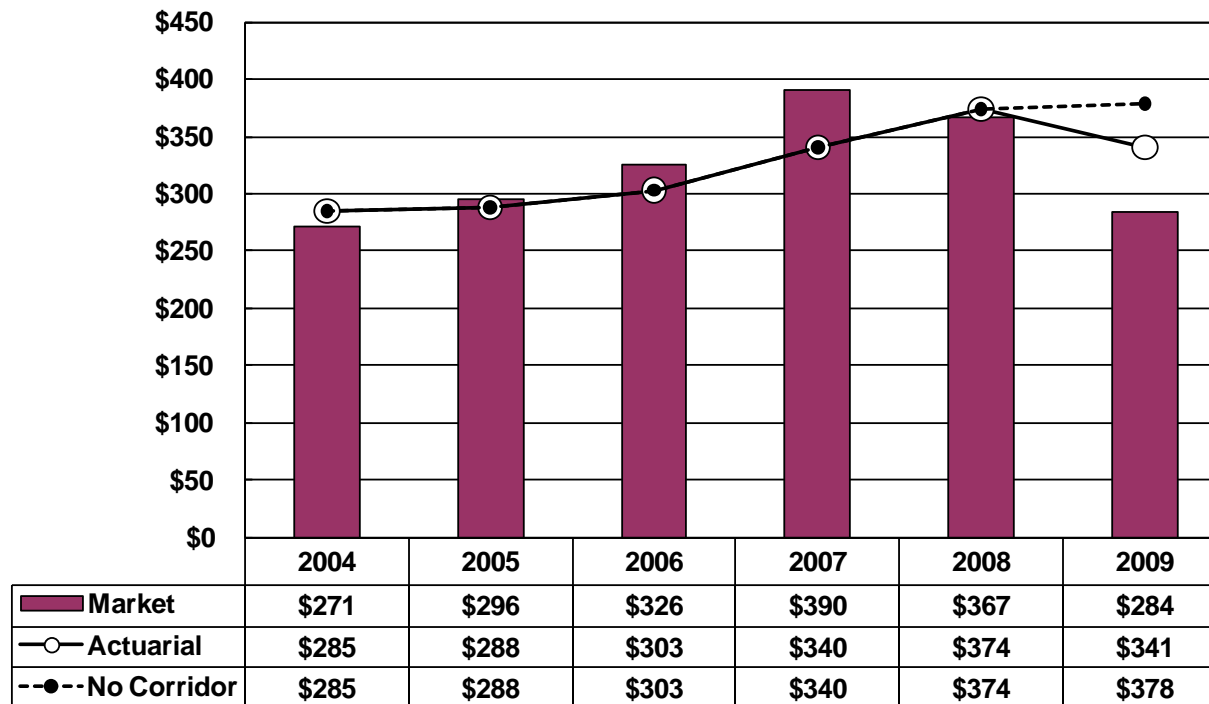


	2005	2006	2007	2008	2009
Market Return	11.50%	11.73%	20.11%	-5.06%	-21.04%
Actuarial Return with Corridor	5.79%	7.83%	12.62%	10.03%	-7.27%

Assets (\$ Millions)



Judicial



	2005	2006	2007	2008	2009
Market Return	11.66%	12.01%	20.26%	-5.02%	-21.42%
Actuarial Return with Corridor	3.14%	7.25%	13.01%	10.85%	-7.56%

Pension Funding Results With AVA Corridor



	June 30, 2009 Valuation				
	State	Teachers	SPORS	VaLORS	Judicial
Total Normal Cost Rate	7.67%	9.68%	13.81%	10.81%	35.15%
Member Rate	<u>5.00%</u>	<u>5.00%</u>	<u>5.00%</u>	<u>5.00%</u>	<u>5.00%</u>
Employer Normal Cost Rate	2.67%	4.68%	8.81%	5.81%	30.15%
Rate to Amortize UAAL	8.90%	10.88%	21.51%	11.83%	20.99%
Total Employer Contribution Rate	11.57%	15.56%	30.32%	17.64%	51.14%
Unfunded Actuarial Accrued Liability (\$ Millions)	\$4,421	\$10,698	\$298	\$583	\$181
Funding Period (Years)	20	20	20	20	20
	June 30, 2009 Valuation - Employer Contribution Rates for FY's 2011 & 2012				
	State	Teachers	SPORS	VaLORS	Judicial
2009 Calculated (no change)	11.74%	16.12%	30.66%	19.54%	49.14%
2009 Calculated (after assumption changes)	11.57%	15.56%	30.32%	17.64%	51.14%
2008 Calculated - Informational	7.09%	11.96%	22.46%	16.70%	41.78%
Funded FY's 2009 & 2010	6.23%*	8.81%	20.05%	14.23%	34.51%

*6.26% for fiscal year 2010

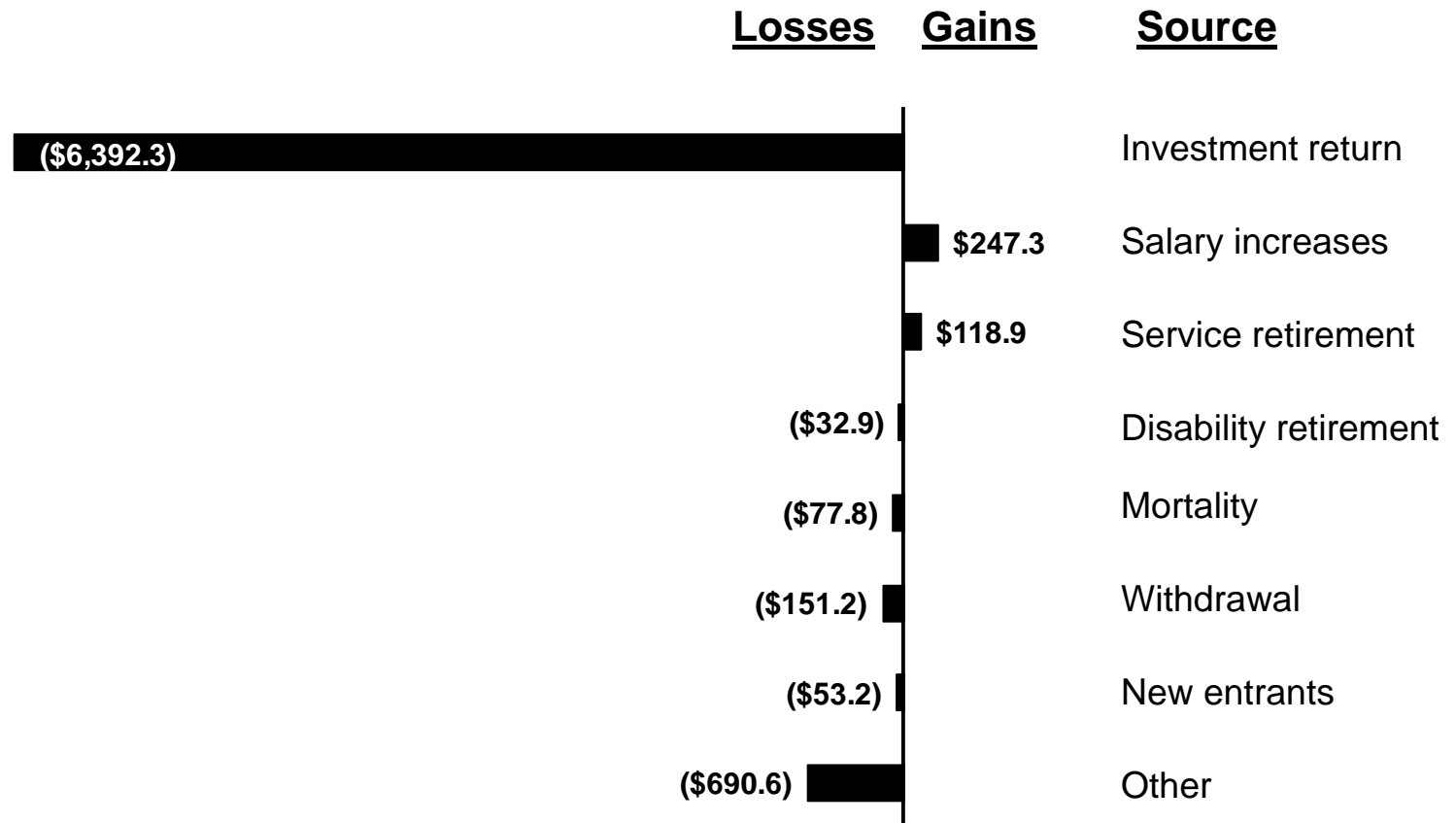
Pension Funding Results Without AVA Corridor



	June 30, 2009 Valuation				
	State	Teachers	SPORS	VaLORS	Judicial
Total Normal Cost Rate	7.67%	9.68%	13.81%	10.81%	35.15%
Member Rate	<u>5.00%</u>	<u>5.00%</u>	<u>5.00%</u>	<u>5.00%</u>	<u>5.00%</u>
Employer Normal Cost Rate	2.67%	4.68%	8.81%	5.81%	30.15%
Rate to Amortize UAAL	5.79%	8.23%	16.75%	10.12%	16.64%
Total Employer Contribution Rate	8.46%	12.91%	25.56%	15.93%	46.79%
Unfunded Actuarial Accrued Liability (\$ Millions)	\$2,876	\$8,096	\$232	\$499	\$143
Funding Period (Years)	20	20	20	20	20
	June 30, 2009 Valuation - Employer Contribution Rates for FY's 2011 & 2012				
	State	Teachers	SPORS	VaLORS	Judicial
2009 Calculated (with corridor)	11.57%	15.56%	30.32%	17.64%	51.14%
2009 Calculated (no corridor)	8.46%	12.91%	25.56%	15.93%	46.79%
2008 Calculated - Informational	7.09%	11.96%	22.46%	16.70%	41.78%
Funded FY's 2009 & 2010	6.23%*	8.81%	20.05%	14.23%	34.51%

*6.26% for fiscal year 2010

2009 Pension Gain/Loss Analysis (\$ Millions)



Health Insurance Credit (HIC) Program Results

- Data Changes from Prior Year
 - Eligible vested and terminated participants included for the first time.
 - UVA Medical Center participants included for the first time.
- State includes SPORS, VaLORS, Judges, UVA employees and ORP members (about 108,000 actives and 38,000 retirees).
- UVA and ORP liability reflects active employees only.
- Basic benefit \$4 per month per year of service.
- Actuarial value of assets based upon 5 year smoothing.

HIC Funding Results With AVA Corridor



June 30, 2009 Valuation		
	State*	Teachers
Normal Cost Rate	0.31%	0.23%
Rate to Amortize UAAL	0.77%	0.85%
Total Employer Contribution Rate	1.08%	1.09%
Unfunded Actuarial Accrued Liability (\$ Millions)	\$687	\$998
Funded Status	18.4%	9.9%
Funding Period (Years)	27	27
June 30, 2008 Valuation		
	State*	Teachers
Total Employer Contribution Rate	1.06%	1.09%
Funded Fiscal Year 2010	1.00%	1.04%

*Includes SPORS, VaLORS, Judges, UVA employees and ORP members. Eligible vested and terminated participants not included in June 30, 2008 valuation.

HIC Funding Results Without AVA Corridor



June 30, 2009 Valuation		
	State*	Teachers
Normal Cost Rate	0.31%	0.23%
Rate to Amortize UAAL	0.75%	0.85%
Total Employer Contribution Rate	1.06%	1.08%
Unfunded Actuarial Accrued Liability (\$ Millions)	\$673	\$992
Funded Status	20.1%	10.5%
Funding Period (Years)	27	27
June 30, 2008 Valuation		
	State*	Teachers
Total Employer Contribution Rate	1.06%	1.09%
Funded Fiscal Year 2010	1.00%	1.04%

*Includes SPORS, VaLORS, Judges, UVA employees and ORP members. Eligible vested and terminated participants not included in June 30, 2008 valuation.

Virginia Sickness and Disability Program (VSDP) Results

- Actuarial valuation of the VSDP long-term disability (LTD) benefit by Cavanaugh Macdonald.
- Actuarial valuation of the VSDP long-term care benefit (LTC) prepared by Milliman.
- Reduction in contribution rate and increase in funded status for LTD benefit due to changes in methodology from prior valuation.
- Actuarial value of assets equal to market value.
- Alternative 2009 valuation results prepared with asset transfer of approximately \$7.1 million from LTC.
- Actuarial cost method is Projected Unit Credit (PUC).

- State, SPORS and VaLORS employees hired on or after January 1, 1999 are automatically enrolled in VSDP.
- Active membership about 73,000. Does not include Teachers or Judges.
- Basic benefit 60% of pay minus offsets (e.g., Social Security benefits, Workers' Compensation), payable to normal retirement from pension plan.

VSDP LTD Funding Results



	June 30, 2009 Valuation	June 30, 2009 Valuation with LTC Transfer
Total Normal Cost Rate	0.64%	0.64%
Rate to Amortize UAAL	0.01%	0.00%
Total Employer Contribution Rate	0.65%	0.64%
Unfunded Actuaial Liability (\$ Millions)	\$8.0	\$0.9
Funding Period (Years)	27	27

	June 30, 2008 Valuation
Total Employer Contribution Rate (excluding long-term care benefit)	0.87%

Milliman prepared the actuarial valuation as of June 30, 2009 of the VSDP long-term care (LTC) benefit and reported a required employer contribution for fiscal year 2010 of \$3.8 million if there is no LTC asset transfer. The required employer contribution to LTC would be \$4.4 million with a transfer of LTC assets to LTD. The employer contribution rate for the LTC benefit as a percent of payroll is 0.09% without an asset transfer and 0.11% with an asset transfer. The covered payroll is \$4,079.5 million.

Group Life Insurance Results

Comments on Group Life Insurance Valuation



- Membership includes all VRS members, including Political Subdivisions, five political subdivisions not participating in VRS and certain Optional Retirement Plan members not participating in VRS.
 - 366,000 active members
 - 126,000 retired members
- UVA Medical Center participants and Roanoke School District included for the first time.
- Basic benefit 2 times annual pay, reducing by 25% per year to final benefit of 25% of initial amount.
- \$5.4 billion total current life insurance amount for retired members.
- Actuarial value of assets based upon 5 year smoothing.

Group Life Insurance Funding Results With AVA Corridor



June 30, 2009 Valuation	Contribution Rates	
	Percent of Active Payroll	Cents/\$1,000 of Active Insurance Amount
Active	0.33%	13.7
Retired	<u>0.82%</u>	<u>40.9</u>
Total	1.15%	54.6
June 30, 2008 Valuation	Percent of Active Payroll	Cents/\$1,000 of Active Insurance Amount
Active	0.27%	13.7
Retired	<u>0.59%</u>	<u>29.5</u>
Total	0.86%	43.2

Group Life Insurance Funding Results Without AVA Corridor



June 30, 2009 Valuation	Contribution Rates	
	Percent of Active Payroll	Cents/\$1,000 of Active Insurance Amount
Active	0.33%	13.7
Retired	<u>0.78%</u>	<u>38.9</u>
Total	1.11%	52.6
June 30, 2008 Valuation	Percent of Active Payroll	Cents/\$1,000 of Active Insurance Amount
Active	0.27%	13.7
Retired	<u>0.59%</u>	<u>29.5</u>
Total	0.86%	43.2