

# Oklahoma State Pension Commission Retirement System Summary of Actuarial Reports

February 2006

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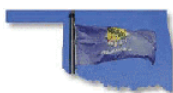
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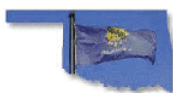


# System Characteristics and Assumptions

- Retirement System comprises seven plans (Teachers, PERS, Firefighters, Police, Law Enforcement, Judges, and Wildlife)
- Based on July 1, 2005 Actuarial Valuation Reports from Actuaries<sup>1</sup> and System Financial Statements
  - All plans employ similar funding method – Entry Age Normal
    - Entry age normal is a conservative funding schedule
  - All plans employ similar asset valuation method (smoothed value)
  - Investment return assumptions range from 7.5% to 8.0%
  - Public Fund assumed investment return median is 8.1%<sup>2</sup>
  - All plans have in place long term schedules (15 years and longer) to fully fund

1. Buck Consultants, Mercer Human Resource Consulting and Gabriel, Roeder, Smith & Company.

2. Greenwich Associates survey, January 2005



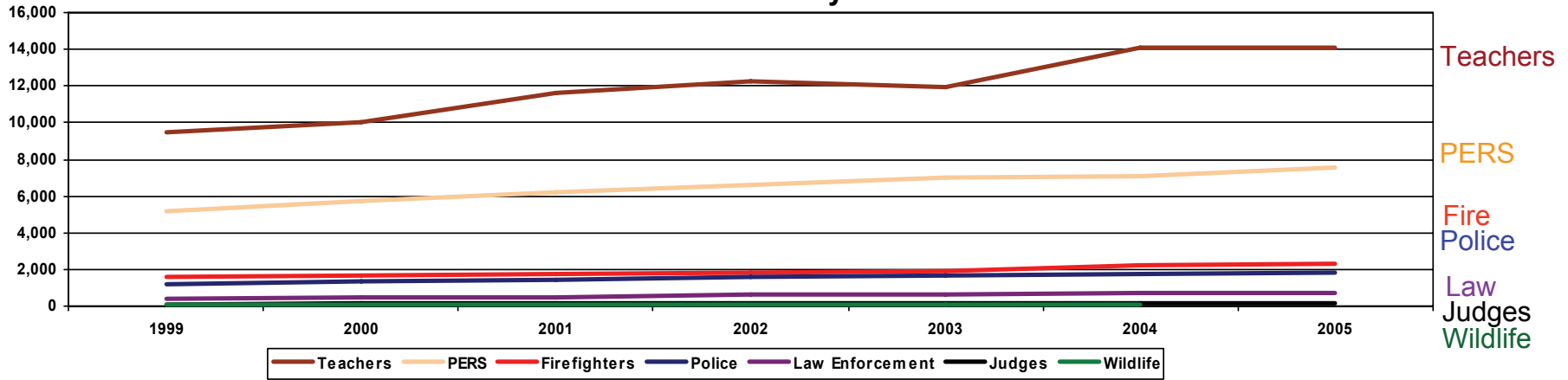
# Evolving Pension Landscape

- The bad markets in 2000-2002 and ongoing decline in long interest rates have heightened concern over pensions
  - Corporate pension plans face new contribution and accounting rules on a more marked-to-market basis
  - Public pension fund accounting based on Governmental Accounting Standards Board may eventually change as well
  - Moody's and Standard & Poor's have both staffed pension analysis groups for their bond ratings, which may spread to State pension commitments
- On a market basis, pension plans are very interest rate sensitive (have a long duration) and would benefit from increased duration of assets

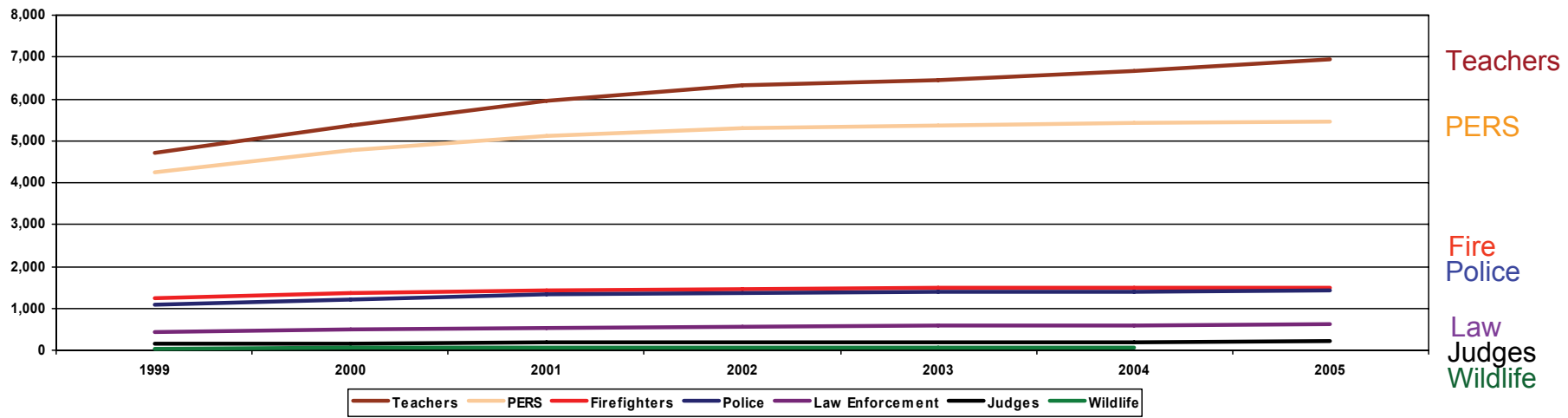


# Liability and Asset History - Actuarial

### Actuarial Liability

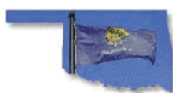


### Actuarial Assets

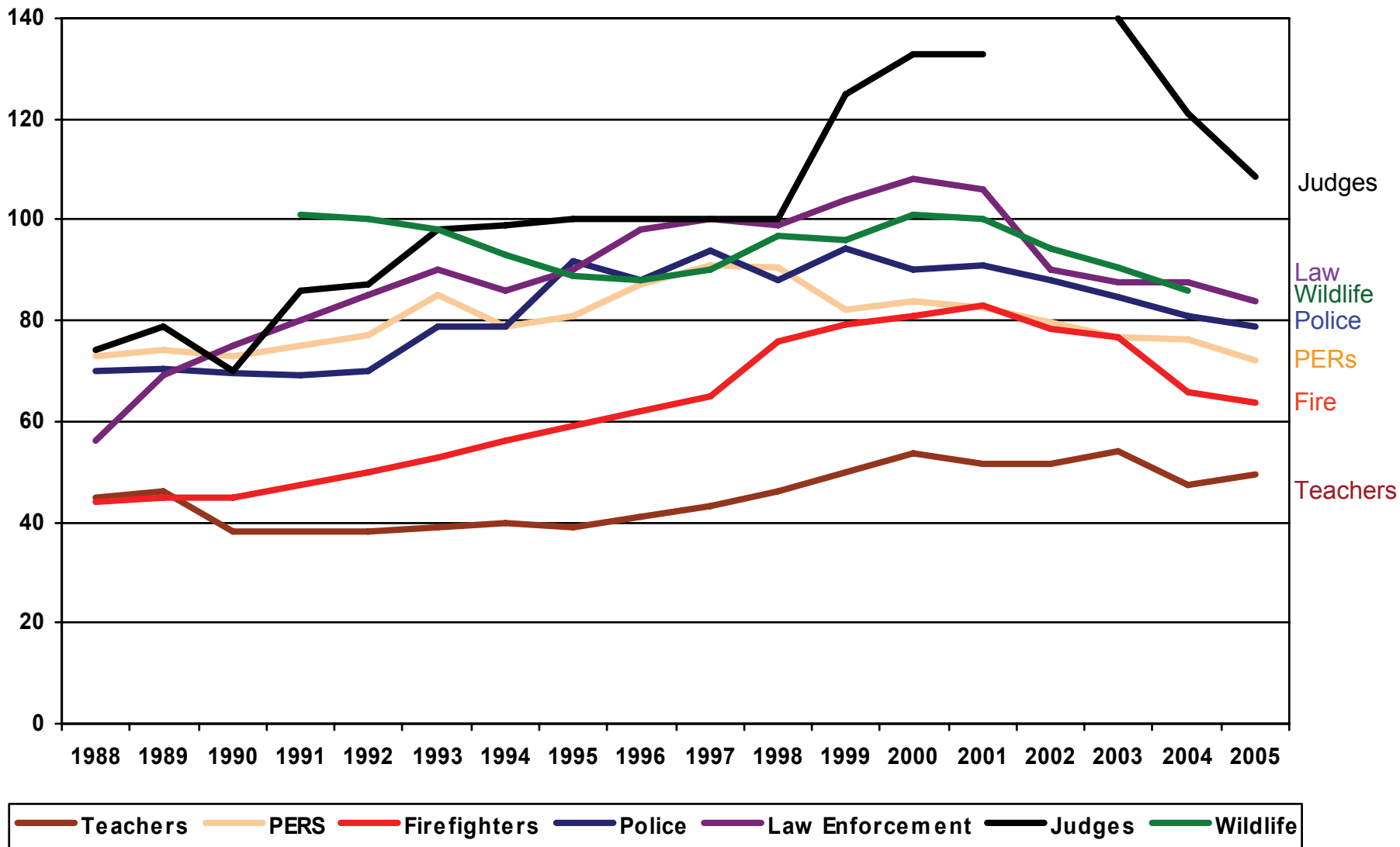


Source: 1999 and earlier: R.V. Kuhns & Associates,  
 2000 and later: Buck Consultants, Mercer Human Resource Consulting and Gabriel, Roeder, Smith & Company



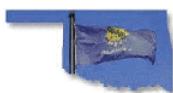


# Funded Status History – Actuarial

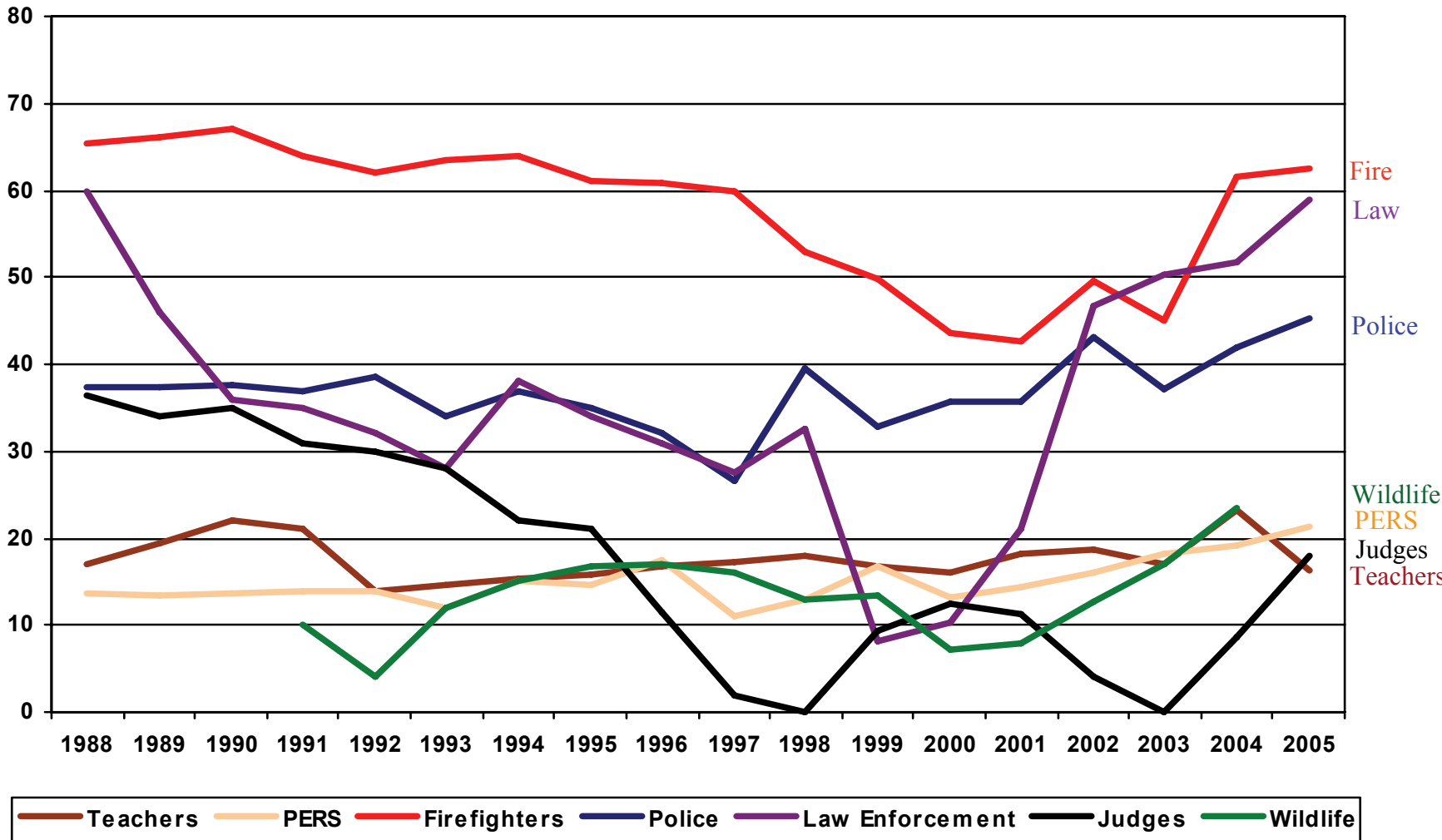


Source: 1999 and earlier: R.V. Kuhns & Associates,  
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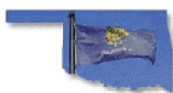


# GASB 25 Total Employer Cost as % of Payroll



Source: 1999 and earlier: R.V. Kuhns & Associates,  
2000 and later: Buck Consultants, Mercer Human Resource Consulting and Gabriel, Roeder, Smith & Company





# Employer Contributions

## Required Employer Contribution (assuming GASB 25 funding requirements)

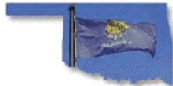
Plan Year Beginning	7/1/1996	7/1/1997	7/1/1998	7/1/1999	7/1/2000	7/1/2001	7/1/2002	7/1/2003	7/1/2004	7/1/2005
Teachers	\$446.5	\$446.2	\$456.9	\$455.3	\$451.5	\$556.2	\$585.1	\$534.8	\$722.1	\$535.2
PERS	110.9	96.0	107.2	161.8	169.6	188.0	232.8	257.0	266.0	239.0
Firefighters	59.7	56.1	57.0	57.0	62.0	63.1	76.5	73.7	106.7	118.3
Police	26.5	22.4	39.8	34.7	53.0	54.9	71.7	63.5	73.8	85.4
Law Enforcement	6.6	6.1	8.7	6.3	4.1	10.7	23.0	25.4	25.3	30.0
Judges	1.2	0.0	0.0	0.4	1.1	1.0	0.0	0.0	2.2	3.1
Wildlife	1.5	1.5	1.1	1.2	0.8	0.9	1.5	2.0	3.0	
<b>Total</b>	<b>\$652.9</b>	<b>\$628.3</b>	<b>\$670.7</b>	<b>\$716.7</b>	<b>\$742.1</b>	<b>\$873.9</b>	<b>\$990.6</b>	<b>\$956.4</b>	<b>\$1,199.1</b>	<b>\$1,011.0</b>

## Actual Employer Contribution

Plan Year Beginning	7/1/1996	7/1/1997	7/1/1998	7/1/1999	7/1/2000	7/1/2001	7/1/2002	7/1/2003	7/1/2004	7/1/2005
Teachers	\$276.8	\$263.7	\$244.4	\$275.9	\$328.2	\$364.9	\$362.0	\$375.4	\$405.8	TBD
PERS	135.4	143.7	149.2	125.9	131.1	139.6	137.5	133.5	139.8	TBD
Firefighters	55.9	58.3	59.0	61.6	65.7	68.8	72.6	22.8	82.2	TBD
Police	33.0	35.4	36.2	37.7	40.0	42.2	44.2	23.9	48.7	TBD
Law Enforcement	17.0	18.0	18.0	19.6	19.4	20.4	21.1	13.8	21.8	TBD
Judges	4.9	0.0	0.0	2.9	1.9	--	--	0.5	0.5	TBD
Wildlife	1.4	1.5	1.2	1.2	0.8	0.9	1.2	1.2		TBD
<b>Total</b>	<b>\$524.5</b>	<b>\$520.7</b>	<b>\$508.0</b>	<b>\$524.8</b>	<b>\$587.1</b>	<b>\$636.8</b>	<b>\$638.6</b>	<b>\$571.1</b>	<b>\$698.8</b>	<b>TBD</b>

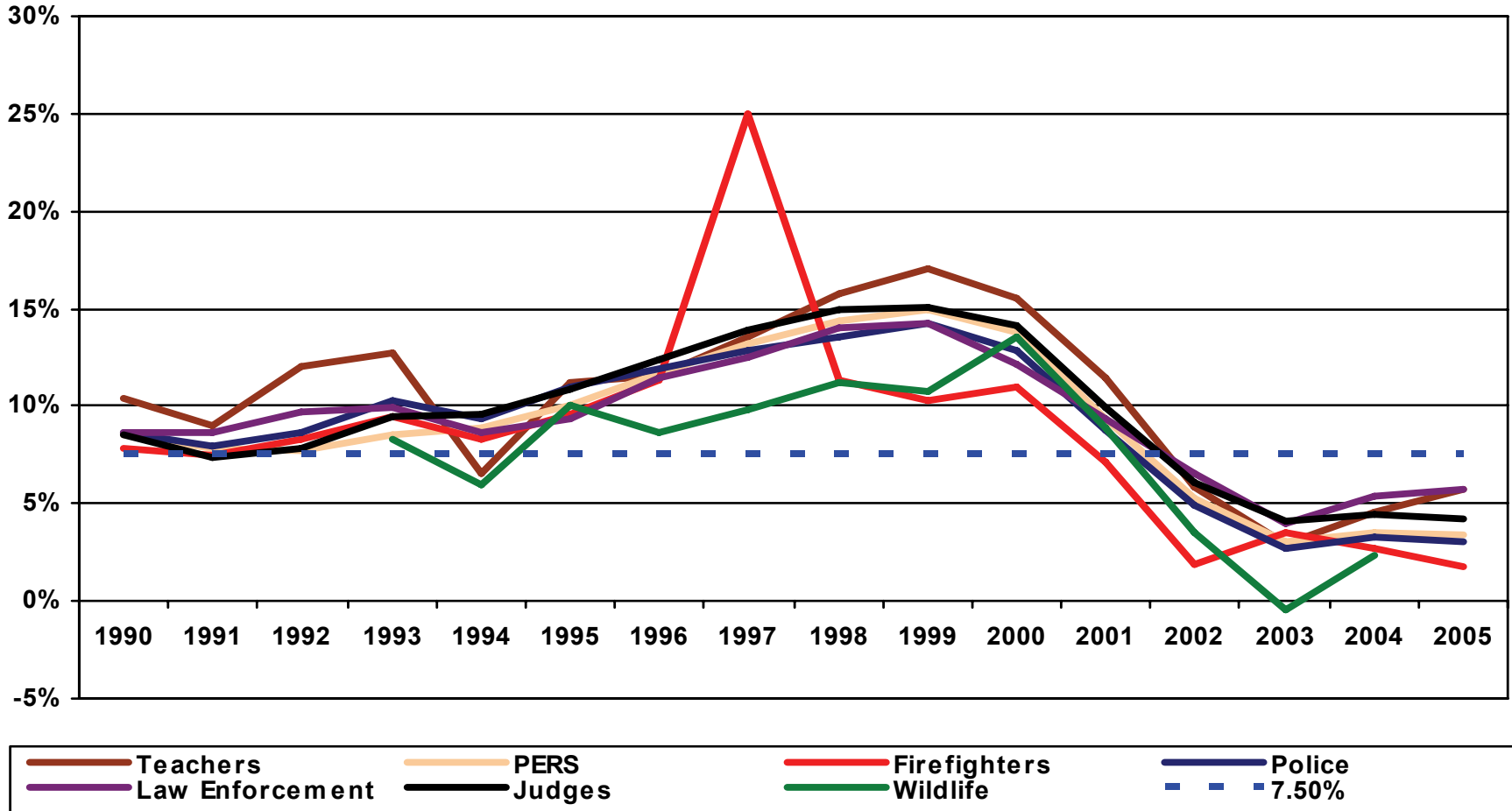
Source: 1999 and earlier: R.V. Kuhns & Associates,  
2000 and later: Buck Consultants, Mercer Human Resource Consulting and Gabriel, Roeder, Smith & Company





# Investment Return – Actuarial Value

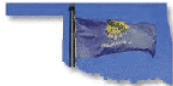
## Annual Rates of Return



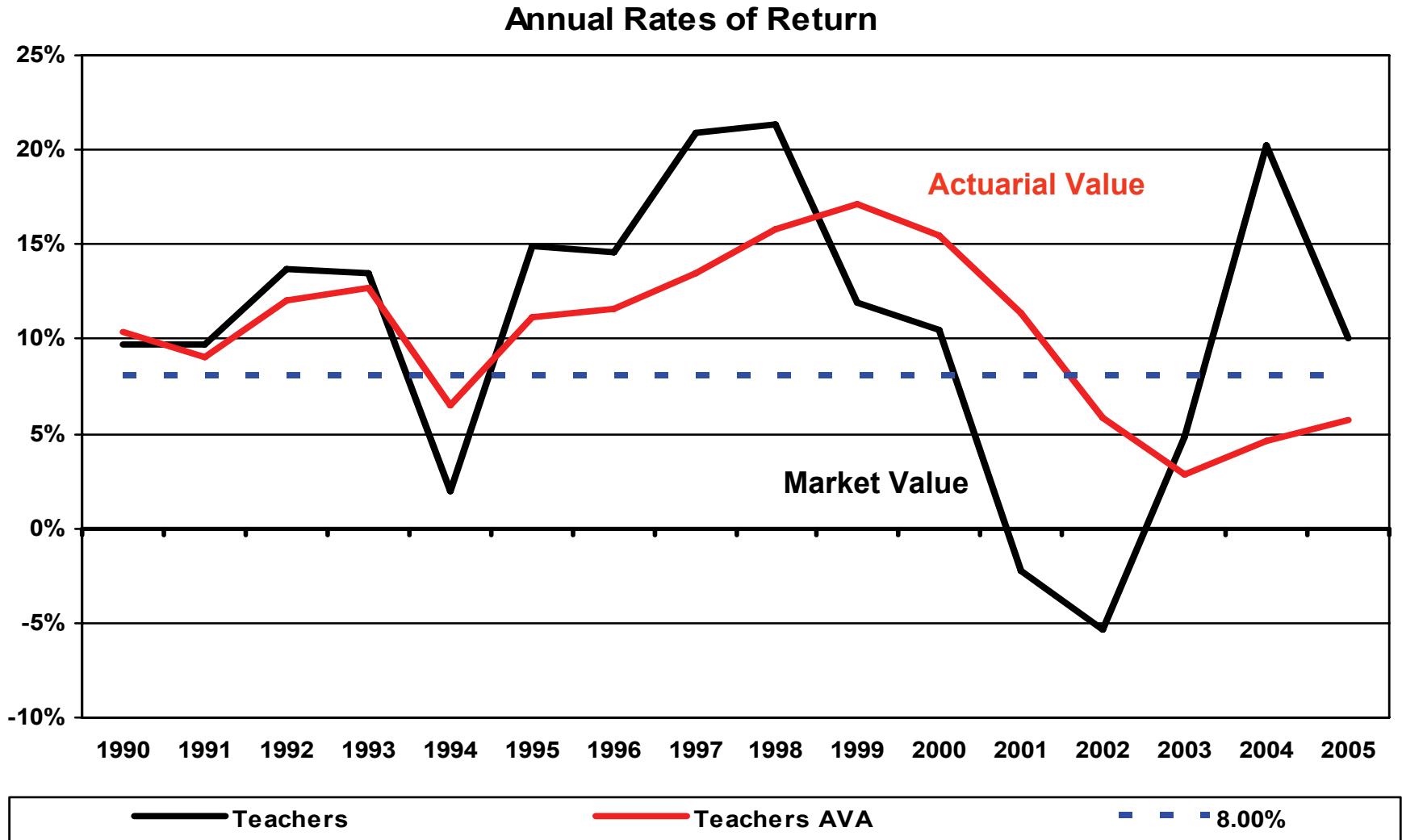
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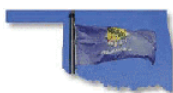


# Investment Return – Market Value Volatility



Source: 1999 and earlier: R.V. Kuhns & Associates,  
2000 and later: Buck Consultants, Mercer Human Resource Consulting and Gabriel, Roeder, Smith & Company





# Retirement System Investment Return Assumptions

- Based on July 1, 2005 Actuarial Valuation Reports from Actuaries<sup>1</sup>
- The assumed investment return assumption ranges from 7.5% to 8.0%
- Public Fund assumed investment return median is 8.1%<sup>2</sup>
- Distribution of investment return assumptions for surveyed funds below<sup>2</sup>

## Actuarial Earnings Rate of Return on Plan Assets

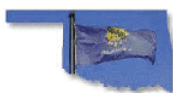
Greenwich Associates - Total Market - Total Funds (1032) (1045)

	Mean		Under 7.0%	7.0- 7.4%	7.5- 7.9%	8.0- 8.5%	8.6- 9.1%	9.2- 9.7%	9.8- 10.5%	Over 10.5%	No Answer/ Uncertain
	2002	2003									
<b>Corporate Funds (ex Unions)</b>	8.9%	8.5%	2%	3%	5%	35%	24%	5%	2%	*	24%
Over \$5 billion	9.1%	8.6%	0%	3%	6%	31%	37%	10%	0%	0%	13%
\$1-5 billion	8.9%	8.6%	0%	3%	7%	38%	29%	7%	2%	*	13%
\$501 million-\$1 billion	8.9%	8.2%	4%	3%	3%	36%	15%	5%	1%	0%	33%
\$500 million and under	8.8%	8.4%	3%	4%	3%	31%	20%	1%	3%	1%	34%
<b>Public Funds</b>	8.0%	8.0%	2%	5%	14%	47%	6%	1%	2%	1%	24%
State	8.0%	8.0%	2%	6%	14%	40%	8%	0%	0%	0%	29%
Municipal	8.1%	8.0%	2%	4%	14%	51%	4%	1%	3%	1%	19%
Over \$5 billion	8.0%	8.0%	1%	6%	13%	52%	6%	0%	0%	0%	21%
\$1-5 billion	8.1%	8.0%	1%	7%	12%	44%	5%	1%	1%	1%	26%
\$501 million-\$1 billion	8.0%	8.1%	2%	2%	19%	49%	6%	2%	2%	0%	17%
\$500 million and under	7.9%	8.0%	4%	2%	12%	41%	6%	0%	4%	2%	29%
<b>Union Funds</b>	7.7%	7.8%	0%	10%	48%	33%	0%	0%	5%	0%	5%
<b>Total Funds</b>	8.6%	8.3%	1%	3%	7%	30%	14%	3%	2%	*	39%

Note: Means exclude "None."

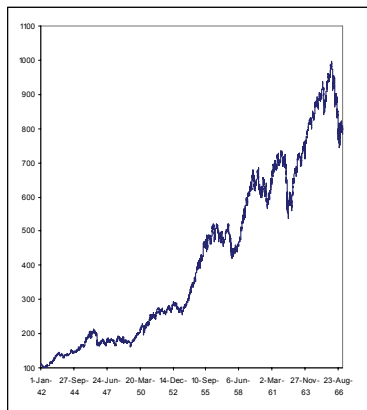
1. Buck Consultants, Mercer Human Resource Consulting and Gabriel, Roeder, Smith & Company
2. Greenwich Associates survey.



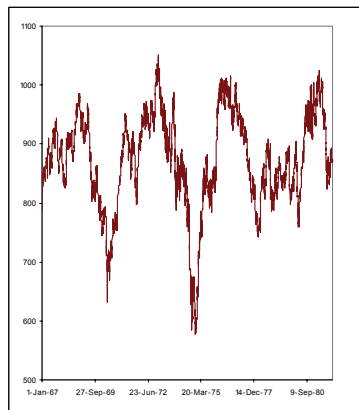


# The Need for Sound Management Over Generations

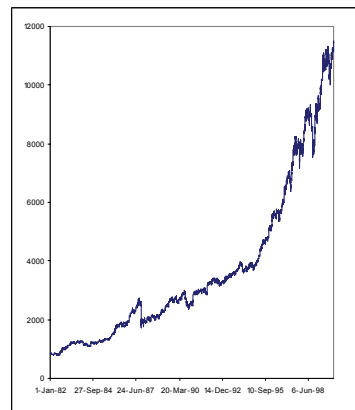
Dow Jones Index



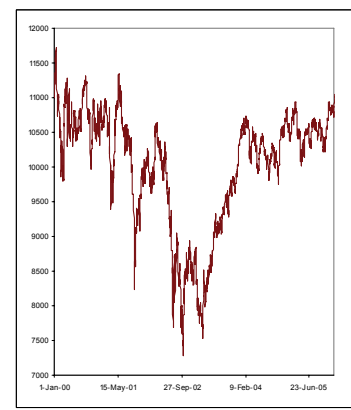
1942 ← → 1967



1967 ← → 1982

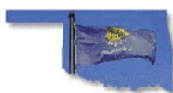


1982 ← → 2000



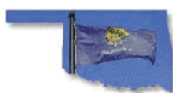
2000 ← → 2006

- Both bond and stock markets have long spells of going nowhere, with fierce rallies and declines throughout the dry spell
- Volatility hurts buy-and-hold strategies: over-weight equities at market tops and under-weight equities at market bottoms
- Sometimes discipline is not essential (Charts #1 and #3), sometimes it's the key ingredient to long-term success (Charts #2 and #4)
- Discipline now more than ever
- Sharpen your rebalancing plans and execute
- Think outside the box



# Summary of Major Plan Changes

System	Benefit Provisions	Assumption & Methods	Funding	Legislative
<b>Teachers'</b>	None	Yes	None	None
		An actuarial experience study resulted in assumption changes for the salary scale, as well as rates of retirement, withdrawal, mortality, and disability. The net impact of these changes was primarily responsible for a gain of \$721.3 million.		
<b>OPERS</b>	None	Yes	None	None
		An actuarial experience study resulted in assumption changes for the rates of retirement, withdrawal, mortality, and disability. These changes resulted in an increase in liabilities of \$54.7 million.		
<b>Firefighters</b>	None	None	None	Yes
				SB 377: Compliance w/Federal requirements. No actuarial impact.
				HB 1547: Procedures to refund System for reduction in taxes from insurance premium tax credits.



# Summary of Major Plan Changes (continued)

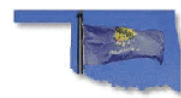
System	Benefit Provisions	Assumption & Methods	Funding	Legislative
<b>Police</b>	None	None	None	Yes SB 529: Compliance w/Federal requirements. No actuarial impact. HB 1547: Procedures to refund System for reduction in taxes from insurance premium tax
<b>Law Enforcement</b>	None	None	None	Yes SB 283: Compliance w/Federal requirements. No actuarial impact. HB 1547: Procedures to refund System for reduction in taxes from insurance premium tax
<b>Justices and Judges</b>	Yes, see HB 1858	Yes The mortality assumption was changed, increasing liabilities by \$9.7 million.	None	Yes HB 1858: Employee contribution rate set at 8% of pay. New survivor benefits options adopted.

# Teachers' Retirement System – Submission of Information to State Pension Commission



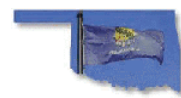
- During the 2002 legislative session, legislation was adopted that requires the Retirement Board to submit information to the State Pension Commission
- A valuation was to be performed, for informational purposes only, using a prescribed set of assumptions (70 O.S. 2001, Section 17-106.1, Section H)
  - Interest rate of 7.5% (instead of 8.0%)
  - COLA assumption of 2% (instead of 0%)
  - Mortality table (2000 tables instead of 1994 tables)
  - Set amortization period of 30 years (instead of a floating period)
- Required information was provided to the Board as an addendum to the Actuarial Valuation Report performed by Gabriel, Roeder, Smith & Company
  - AAL = \$16.1 billion (vs. \$14.1 billion)
  - UAAL = \$9.2 billion (vs. \$7.1 billion)
  - Required State contribution = \$730.9 million (vs. contributions received in prior year of \$163.9 million)

# OPERS Retirement System – Submission of Information to State Pension Commission



- During the 2002 legislative session, legislation was adopted that requires the Retirement Board to submit information to the State Pension Commission
- A valuation was to be performed, for informational purposes only, using a prescribed set of assumptions (11 O.S. 2001, Section 50-105.4, Section H)
  - Interest rate of 7.5% (same as current valuation)
  - COLA assumption of 2% (same as current valuation)
  - Mortality table (same as current valuation)
  - Set amortization period of 30 years (instead of 40 years)
- Required information was provided to the Board by Mercer (included in the System's Annual Financial Statement)
  - AAL = \$7.7 billion (vs. \$7.6 billion)
  - UAAL = \$2.2 billion (vs. \$2.1 billion)
  - Required State contribution = \$301.7 million (vs. contributions received in prior year of \$139.8 million)

# Firefighters Retirement System – Submission of Information to State Pension Commission



- During the 2002 legislative session, legislation was adopted that requires the Retirement Board to submit information to the State Pension Commission
- A valuation was to be performed, for informational purposes only, using a prescribed set of assumptions (11 O.S. 2001, Section 49-100.9, Section H)
  - Interest rate of 7.5% (same as current valuation)
  - COLA assumption of 2% (instead of 50% of assumed increase in base pay)
  - Mortality table (2000 tables instead of 1983 and 1994 tables)
  - Set amortization period of 30 years (same as current valuation)
- Required information was provided to the Board as an addendum to the Actuarial Valuation Report performed by Buck
  - AAL = \$2.5 billion (vs. \$2.3 billion)
  - UAAL = \$1,054 million (vs. \$847 million)
  - Required State contribution = \$116.1 million (vs. contributions received in prior year of \$58.2 million)



# Police– Submission of Information to State Pension Commission

- During the 2002 legislative session, legislation was adopted that requires the Retirement Board to submit information to the State Pension Commission
- A valuation was to be performed, for informational purposes only, using a prescribed set of assumptions (11 O.S. 2001, Section 50-105.4, Section H)
  - Interest rate of 7.5% (same as current valuation)
  - COLA assumption of 2% (same for some retirees, others receive 33% to 50% of assumed increase in base pay)
  - Mortality table (same as current valuation)
  - Set amortization period of 30 years (instead of 20 years)
- Required information was provided to the Board as an addendum to the Actuarial Valuation Report performed by Buck
  - AAL = \$1.8 billion (vs. \$1.7 billion)
  - UAAL = \$390 million (vs. \$327 million)
  - Required State contribution = \$45.8 million (vs. contributions received in prior year of \$23.7 million)

# Law Enforcement Retirement System – Submission of Information to State Pension Commission



- During the 2002 legislative session, legislation was adopted that requires the Retirement Board to submit information to the State Pension Commission
- A valuation was to be performed, for informational purposes only, using a prescribed set of assumptions (11 O.S. 2001, Section 2-303.1, Section H)
  - Interest rate of 7.5% (same as current valuation)
  - COLA assumption of 2% (instead of 3%)
  - Mortality table (same as current valuation)
  - Set amortization period of 30 years (instead of 20 years)
- Required information was provided to the Board as an addendum to the Actuarial Valuation Report performed by Buck
  - AAL = \$694 million (vs. \$752 million)
  - UAAL = \$64 million (vs. \$122 million)
  - Required State contribution = \$14.4 million (vs. contributions received in prior year of \$16.0 million)

# Retirement System for Justices and Judges – Submission of Information to State Pension Commission



- During the 2002 legislative session, legislation was adopted that requires the Retirement Board to submit information to the State Pension Commission
- A valuation was to be performed, for informational purposes only, using a prescribed set of assumptions (11 O.S. 2001, Section 50-105.4, Section H)
  - Interest rate of 7.5% (same as current valuation)
  - COLA assumption of 2% (same as current valuation)
  - Mortality table (2000 tables instead of 1983 table)
  - Set amortization period of 30 years (same as current valuation)
- Required information was provided to the Board as an addendum to the Actuarial Valuation Report performed by Mercer
  - AAL = \$185.9 million (vs. \$187.6 million)
  - UAAL = -\$18.0 million (vs. -\$16.4 million)
  - Required State contribution = \$4.3 million (vs. contributions received in prior year of \$0.5 million)