



THE GLOBAL RETIREMENT CHALLENGE

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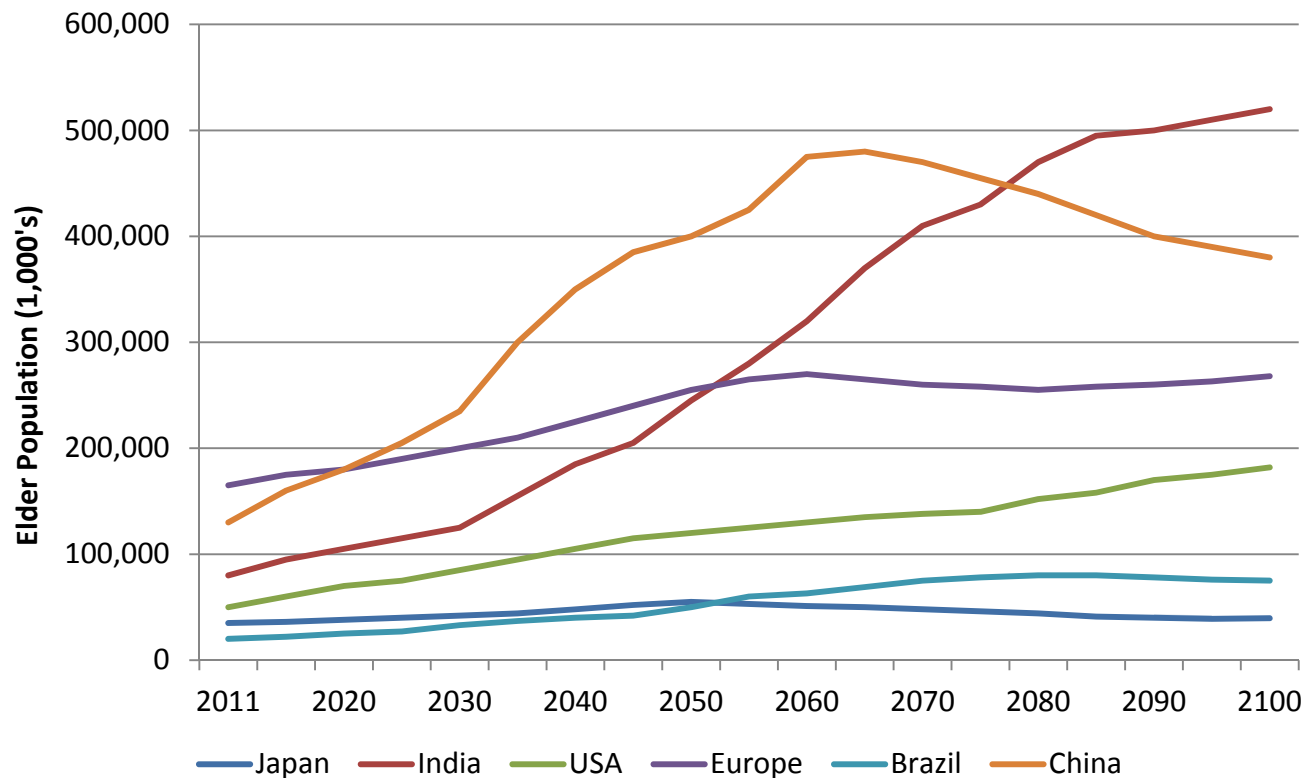
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Public School Employees' Retirement System (PSERS)

May 2013

Agenda

- Global Retirement Challenge
 - A general overview of retirement challenges
- State Level Retirement Challenge
 - Including a closer look at PSERS defined benefit plan
- Local Level Retirement Challenge
 - A look at the December 2012 Public Employee Retirement Commission Report
 - Prelude to the Funding and Benefit Structure Issues in PA Public Plans Round Tables

Projected Growth of Population Over 65 Years of Age

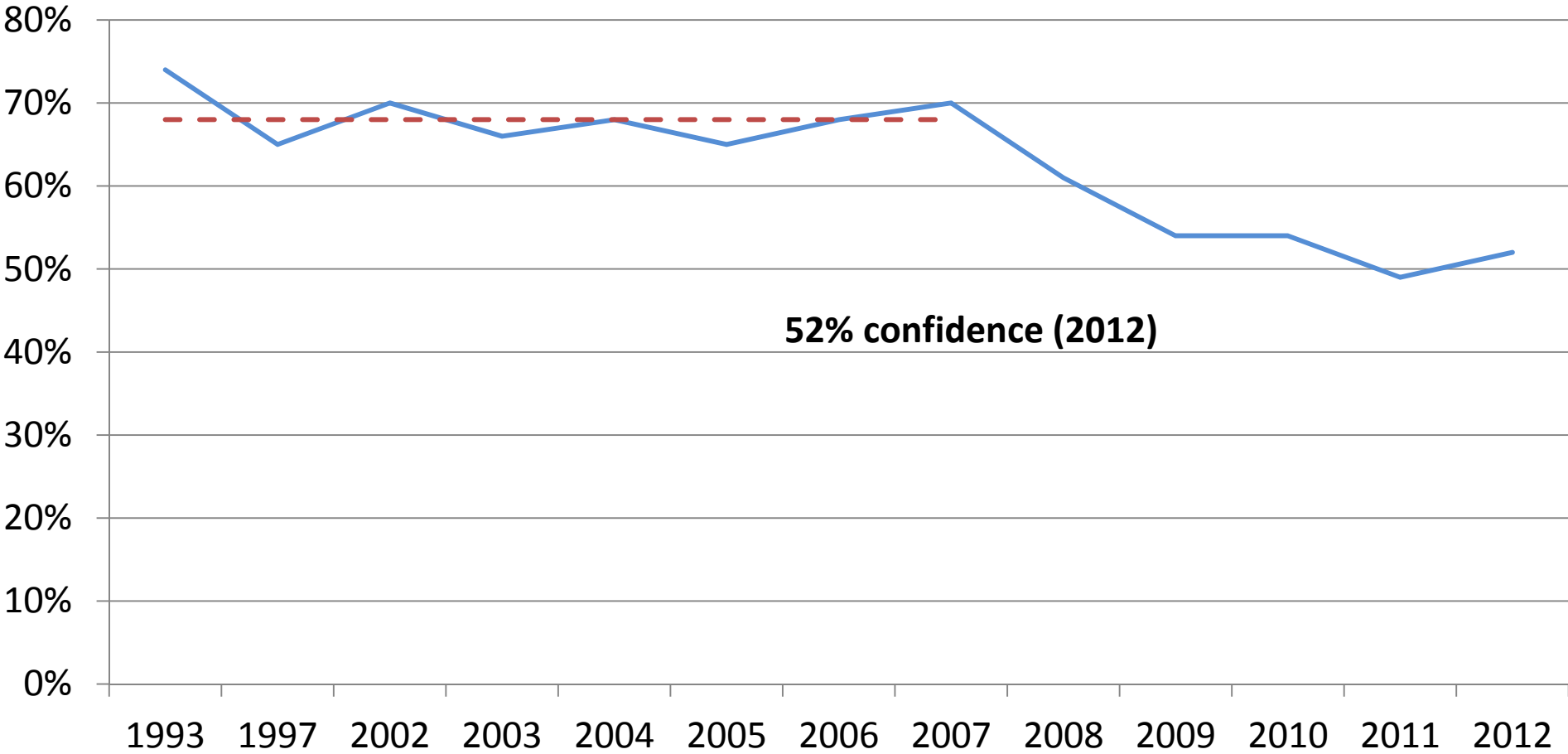


Note: As of June 28, 2011

Source: UN Population Division

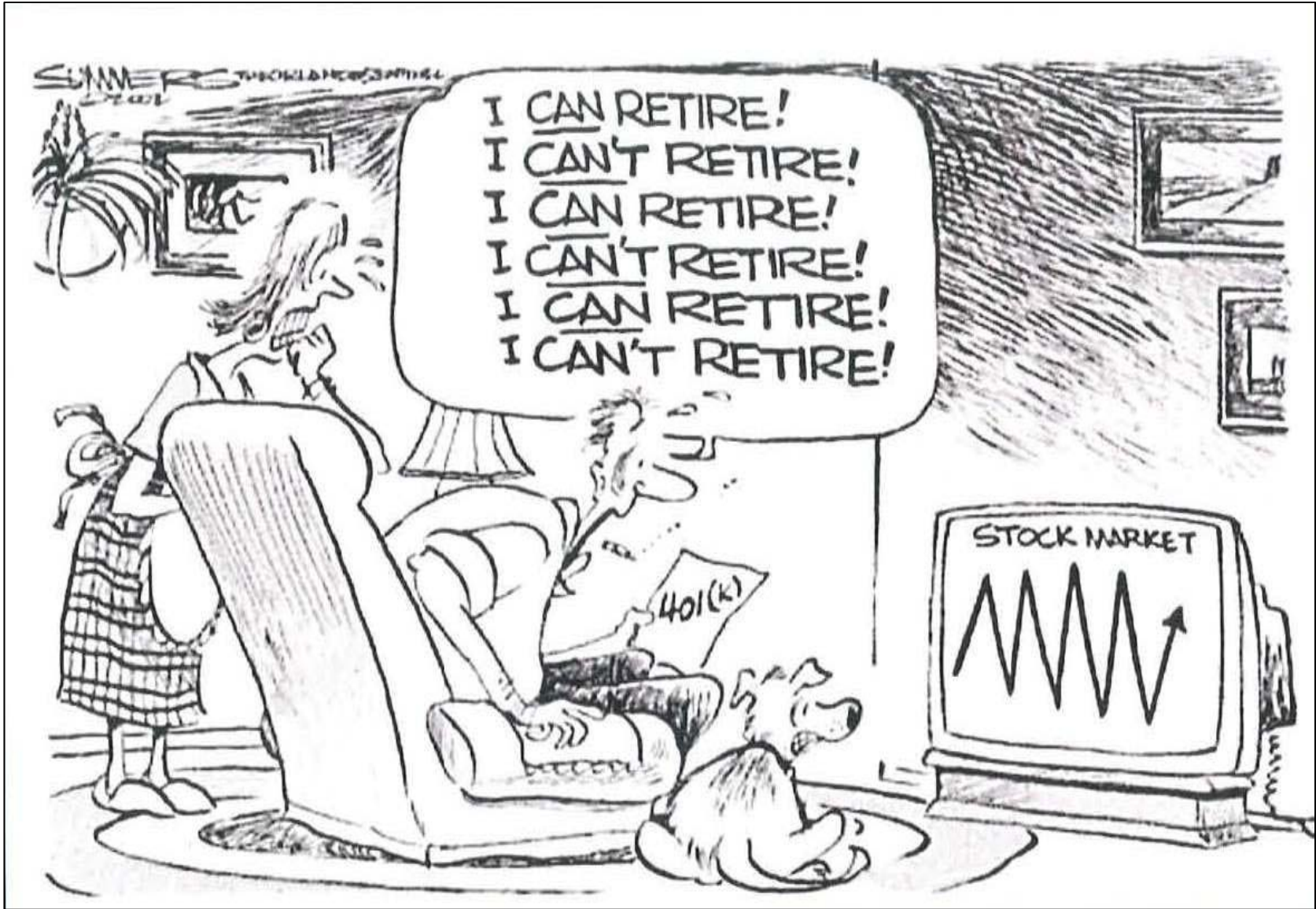
How confident are you that you (and your spouse) will have enough money to live comfortably throughout your retirement years?

68% Confidence (1993-2007 Average)



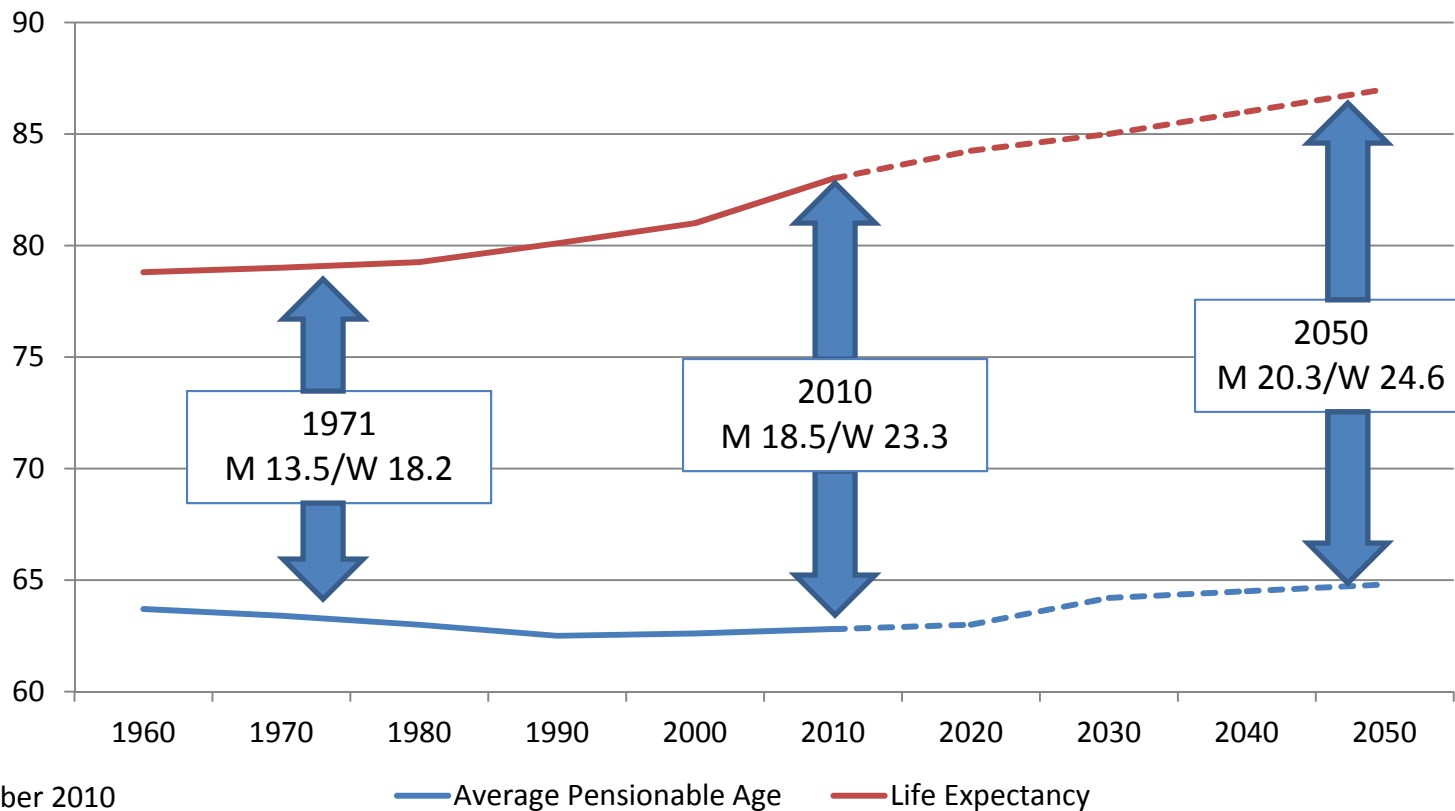
52% confidence (2012)

*Source: Employee Benefit Research Institute 2012 Retirement Confidence Survey



People are Spending More Time in Retirement

Average Ages for OECD* Countries (Years)



As of December 2010

— Average Pensionable Age — Life Expectancy

Source: OECD Pension at a Glance

+Data beyond 2010 is forecasted

*Organization for Economic Cooperation and Development

The Primary Sources of Income in Retirement

A. Social Security

- Virtually all retirees report receiving social security
- 69% report social security as a major source of income

B. Defined Benefit

- 56% of workers expect to receive benefits from a DB program
- 33% of workers have a DB benefit with current or former employer

C. Defined Contribution(DC)/Individual Retirement Accounts

- 64% of workers report having an IRA/401-k

D. Personal savings and home value

E. Part-time work

- 79% of workers expect to work in retirement
- 27% of retiree's work for pay in retirement

US Retirement Assets

As of 9/30/2012

Defined Contribution	\$5.00*
Individual Retirement Accounts	5.35
State and Local Government	3.24
Federal Pension	1.54
Private Sector Defined Benefit	2.56
Annuity Reserves	<u>1.68</u>
	\$19.37

*In Trillions \$

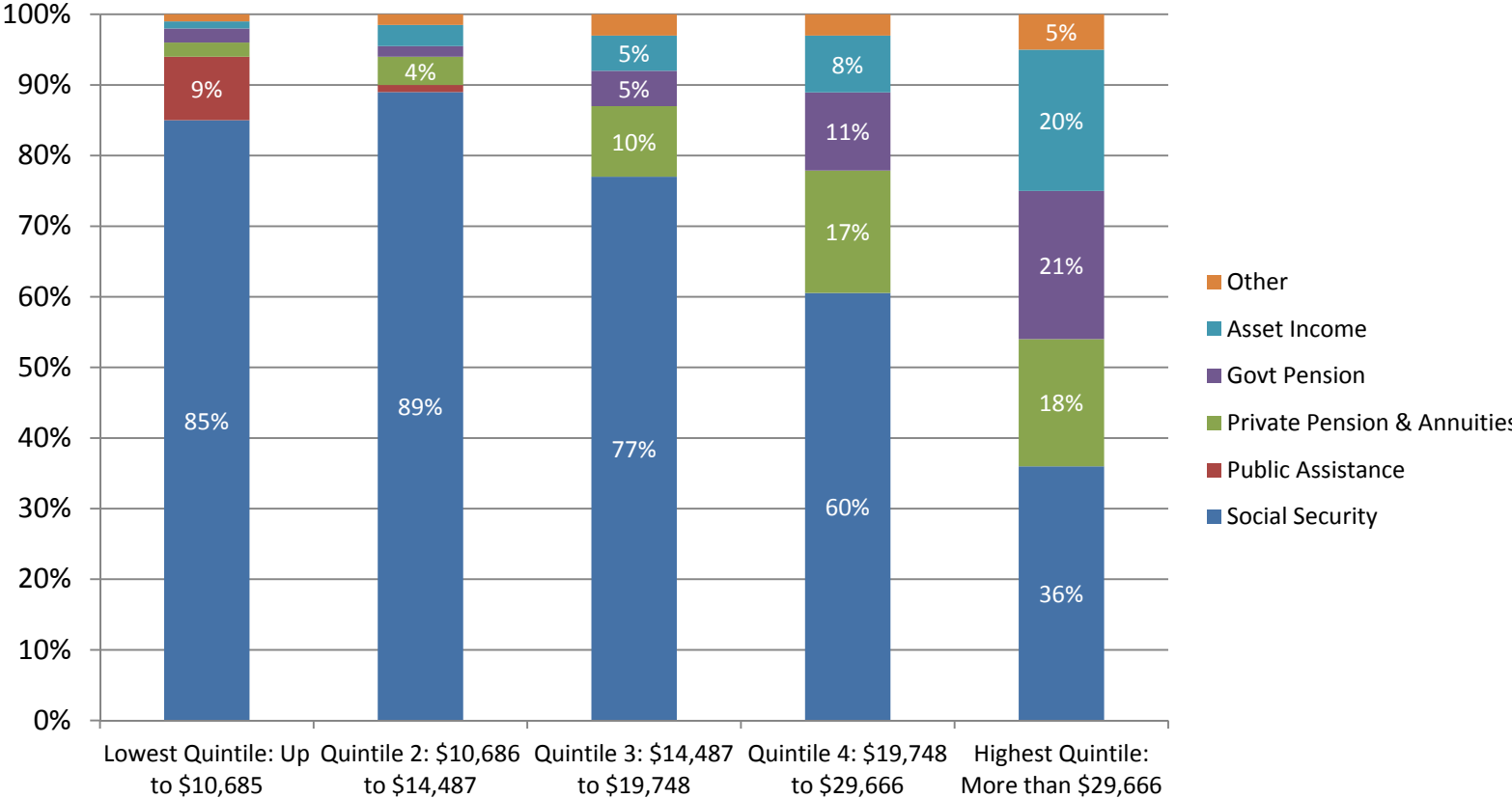
Source: ICI Investment Company Institute

Defined Contribution Plan Assets by Type 9/30/2012 (\$ billion)

401-k	\$3,515
403-b	791
457	209
Other DC	<u>480</u>
	\$5,000

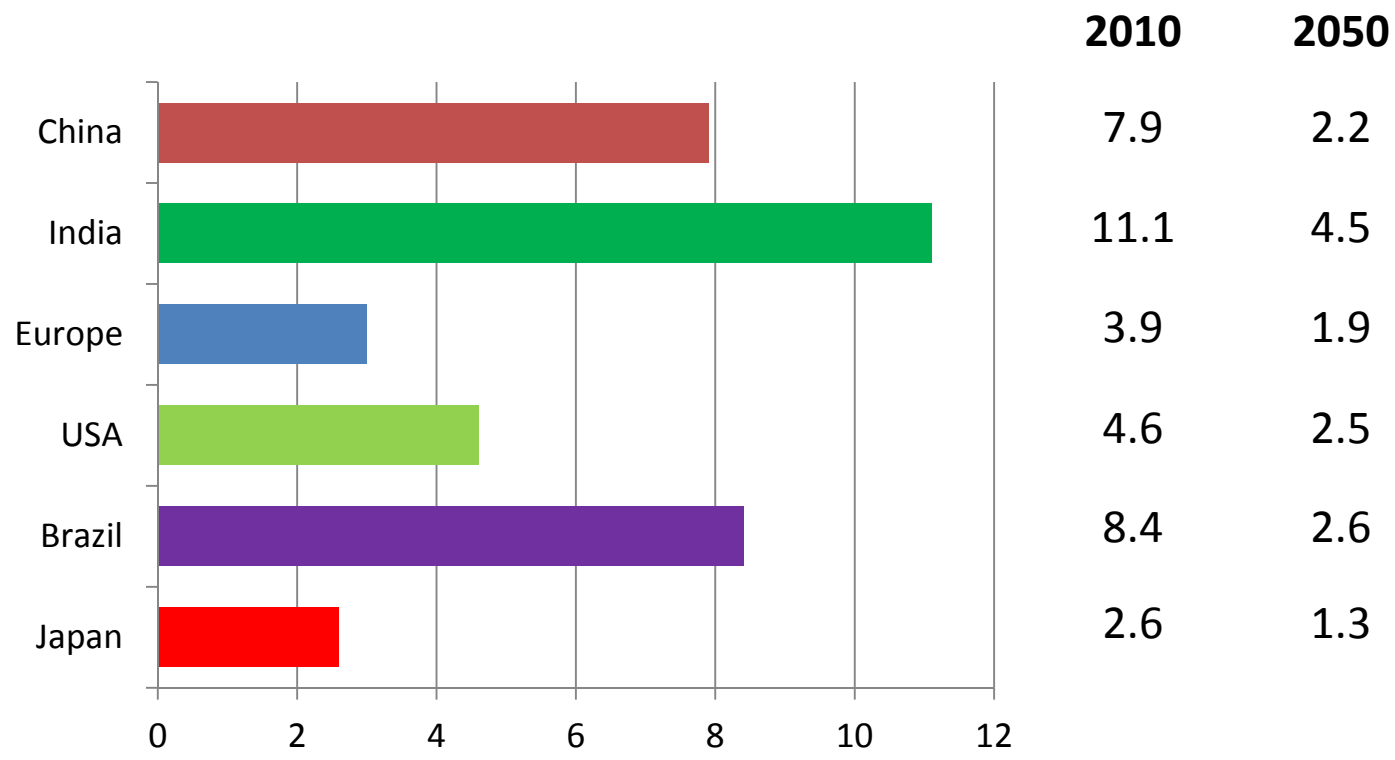
Source: ICI Investment Company Institute

Source of Retirement Income by Amount of Per Capita Income in 2009



Sources: Wolfe Trahan & Co. Portfolio Strategy and ICI Investment Company Institute

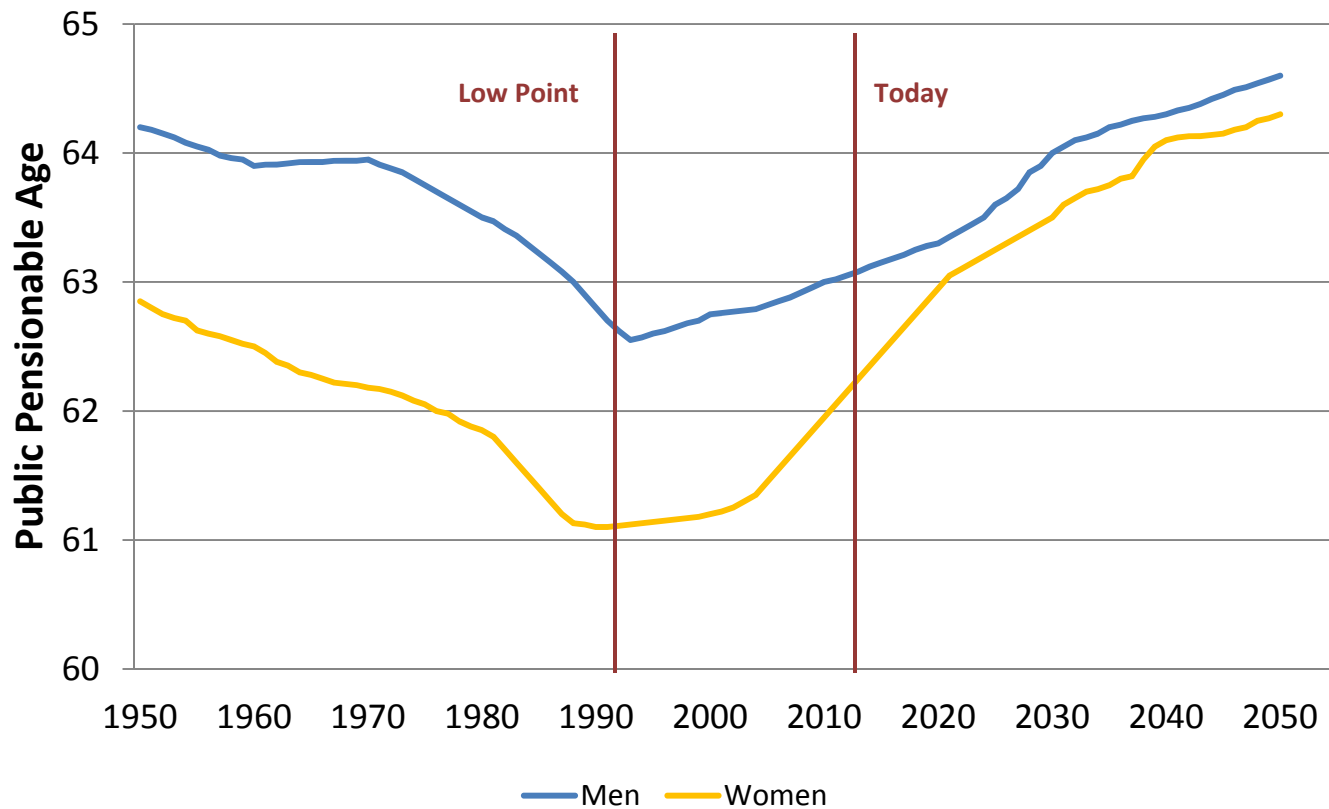
Worker to Elder Population* Shift Likely to Breach Social Contract...



*Population aged 20 to 65 to population 65 and older

Source: UN Population Division

Retirement Age is Rising..... Only Part of the Solution



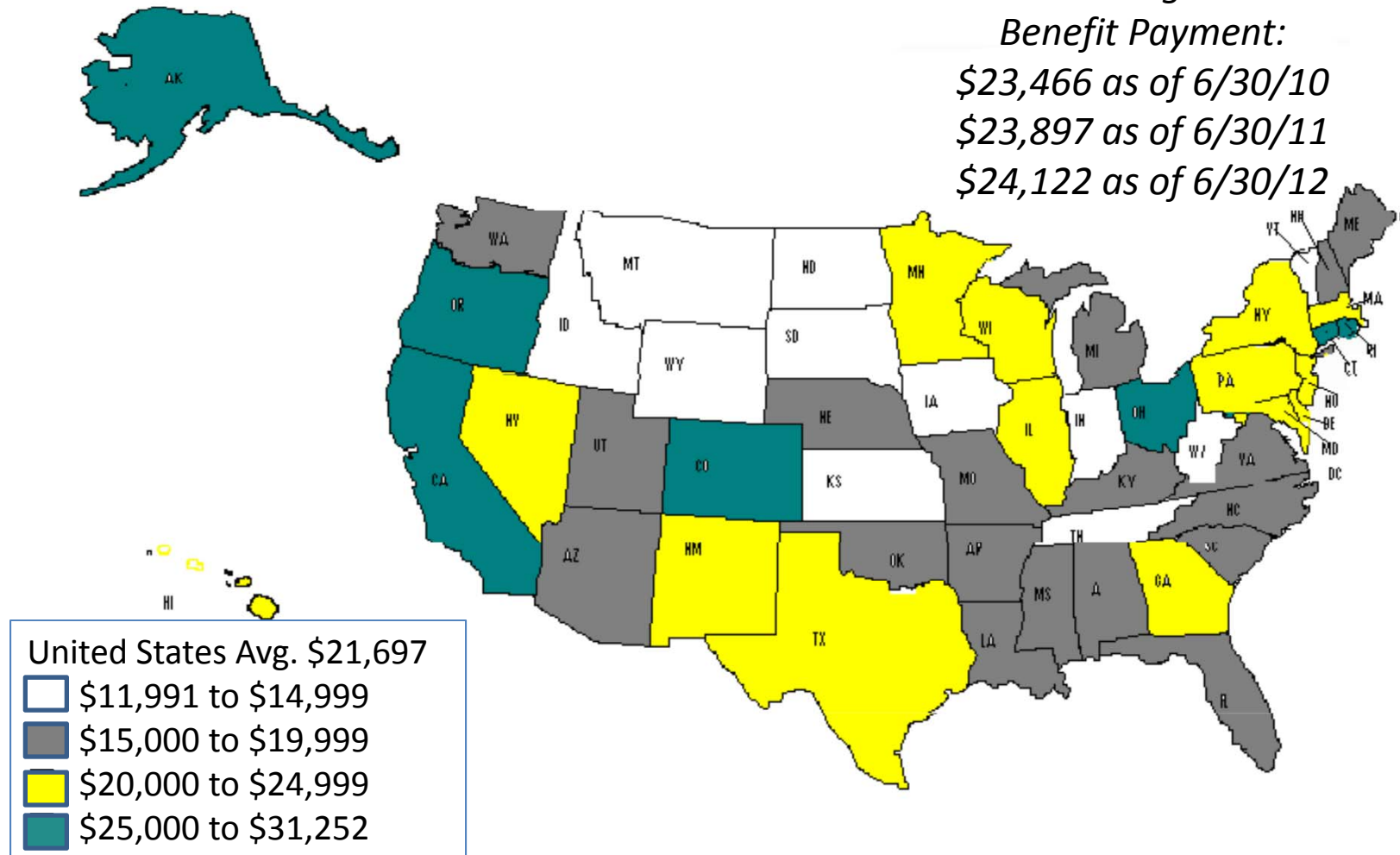
Source: OECD Pension at a Glance

THE STATE LEVEL RETIREMENT CHALLENGE

**A CLOSER LOOK AT THE
PSERS DEFINED BENEFIT PROGRAM**

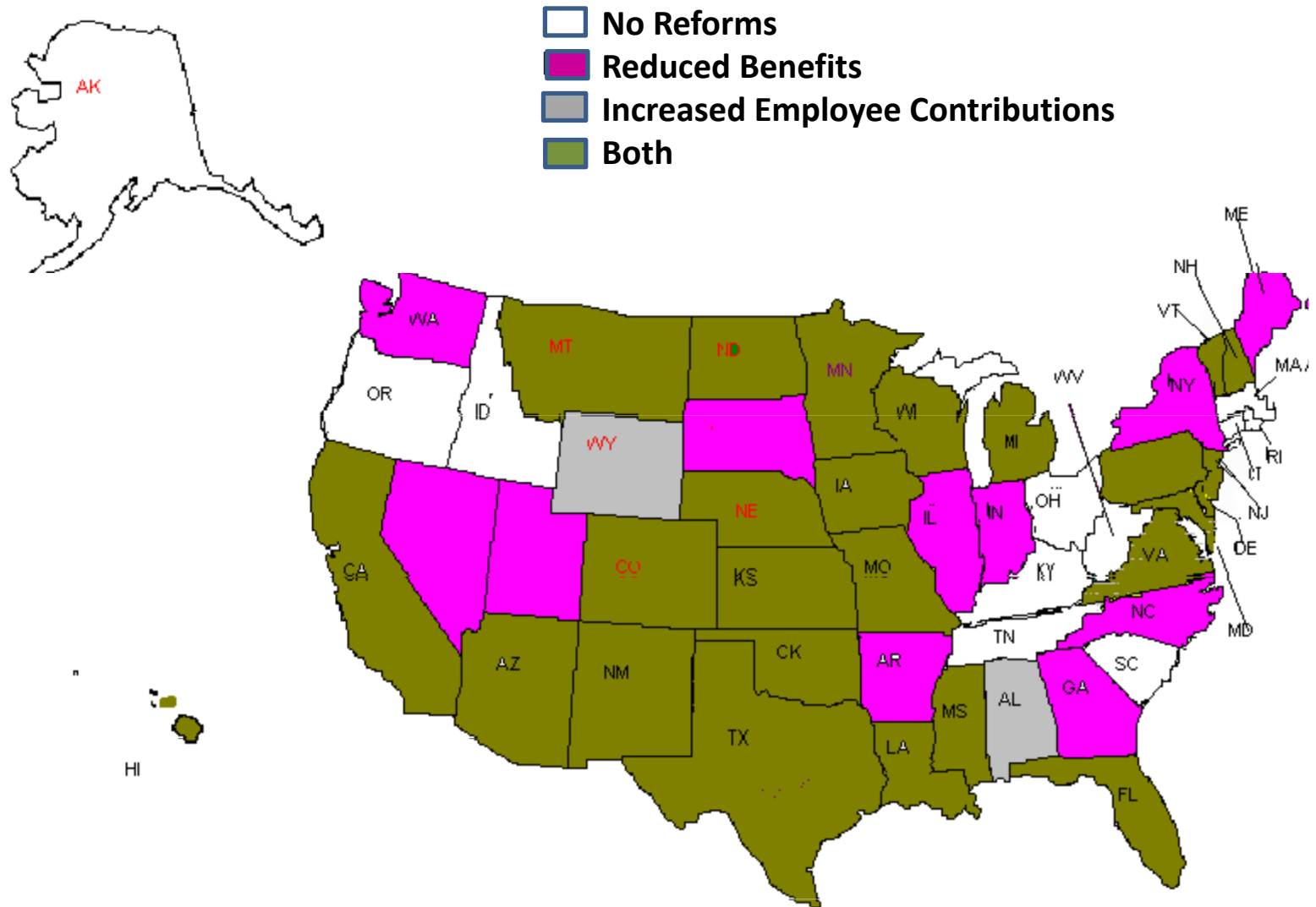
State and Local Government Pension 2010 Expenditures per Beneficiary

*PSERS Average Annual
Benefit Payment:
\$23,466 as of 6/30/10
\$23,897 as of 6/30/11
\$24,122 as of 6/30/12*



*Source: U.S. Census Bureau, DB Global Markets Research

State Pension Reforms, 2009-11

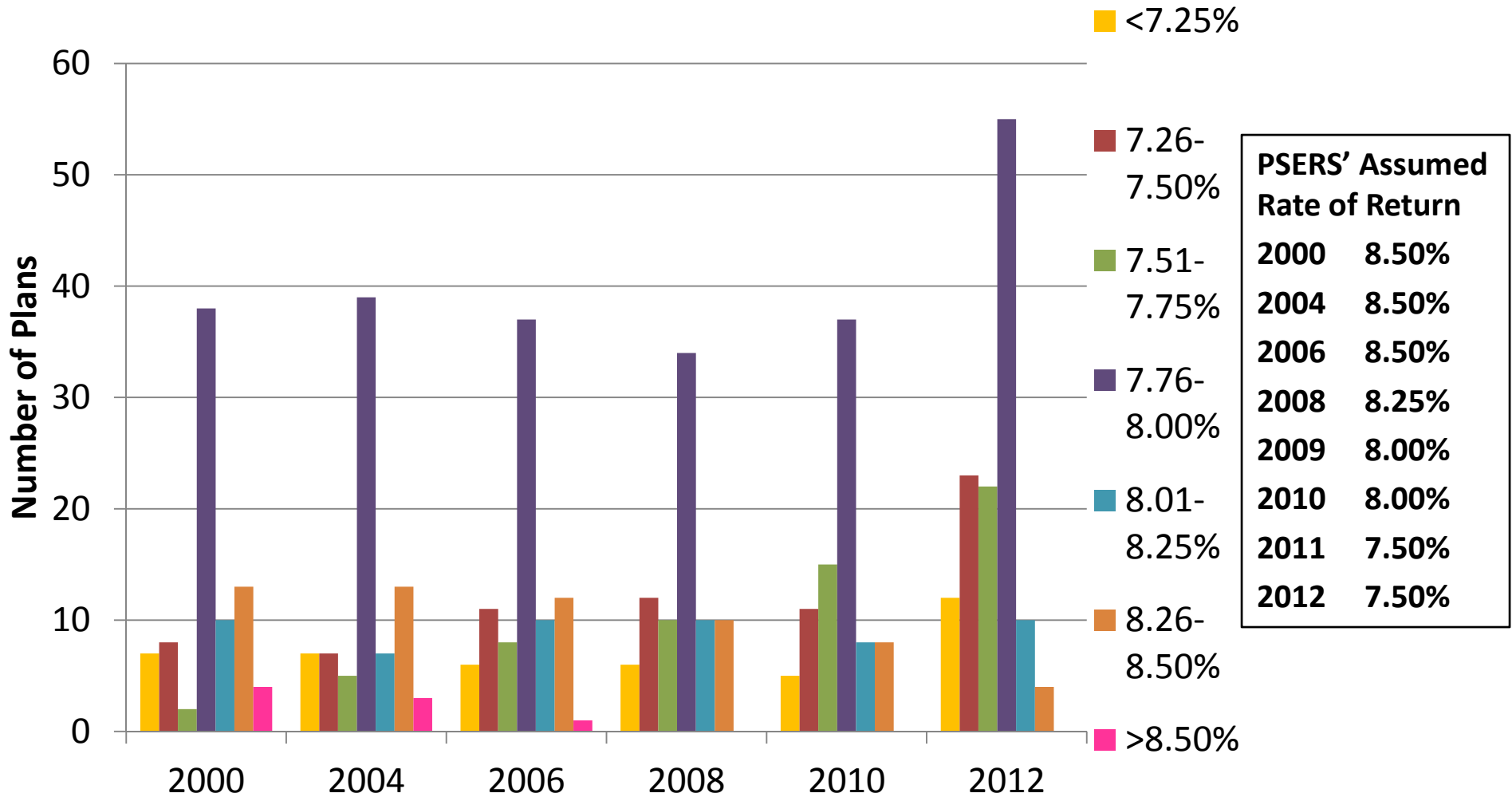


*Source: Pew Research Center on the States DB Global Markets Research

Assumed Rate of Return

- In 2012, the average assumed rate of return for state pension plans was 7.8%
- Drop in assumed rate of return for plans in study over the past decade
- PSERS current rate is 7.5%

Assumed Rate of Return for Pension Plans

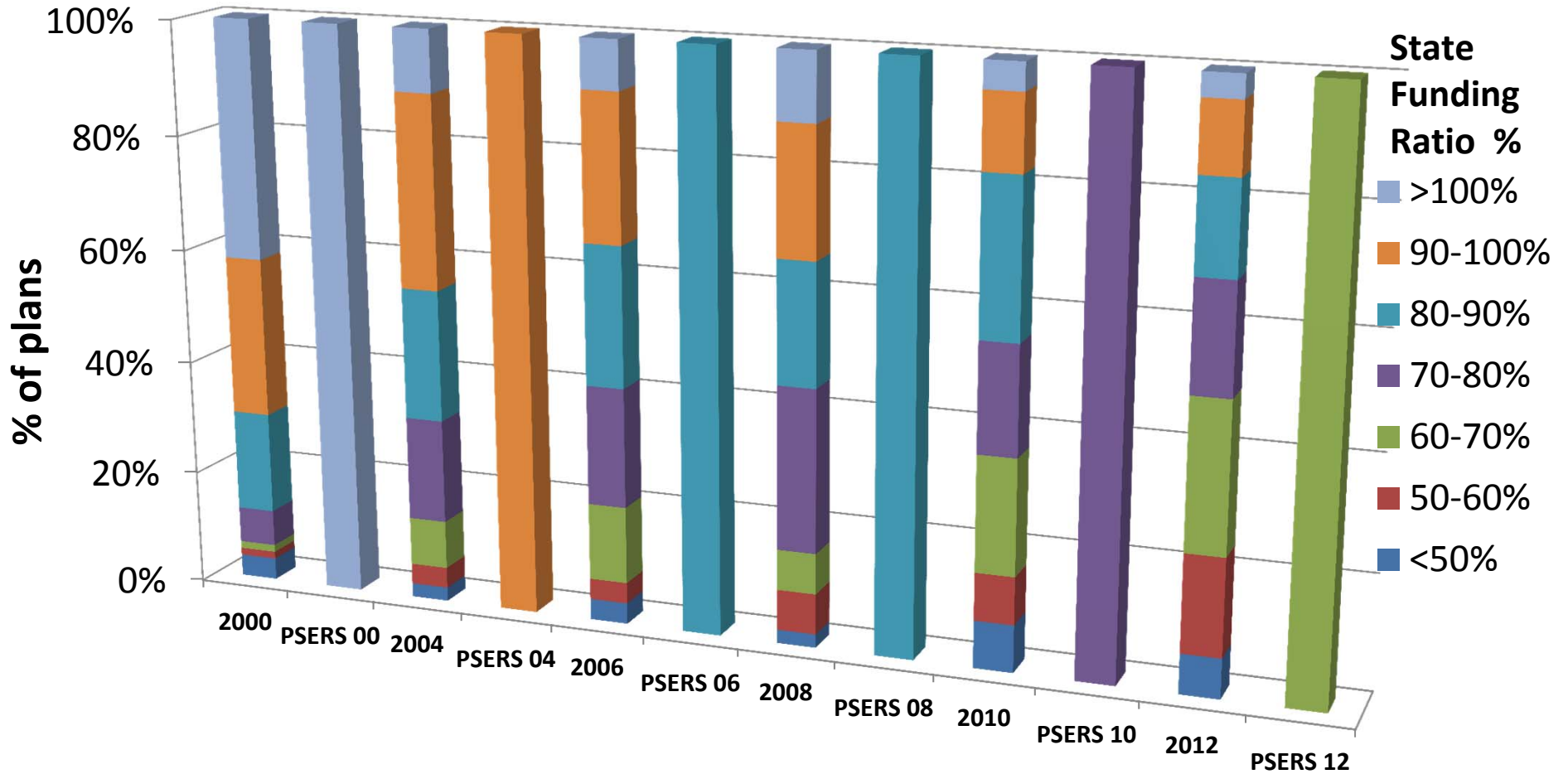


*Source: Wisconsin Legislative Council 2010 Comparative Study of Major Public Employees Retirement Systems
 -2012 data from NASRA: Public Pension Plan Return Assumptions

Funding Ratio

- Average funding ratio for state pension plans in 2012 was 69.0% down from 73% in 2011
- PSERS' funded status was 66.4% as of June 30, 2012, down from 69.1% as of June 30, 2011

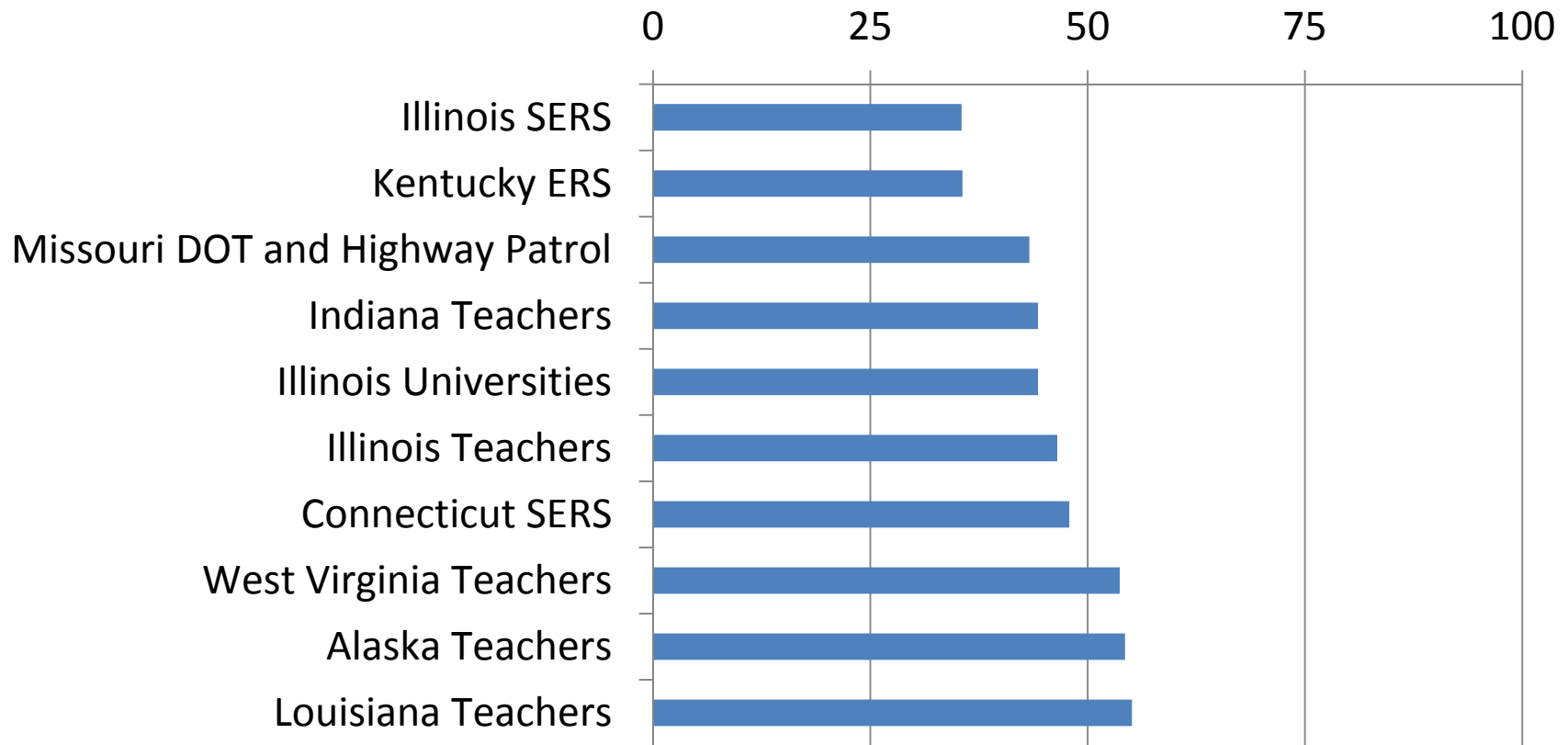
Funding Ratio for State Pension Plans



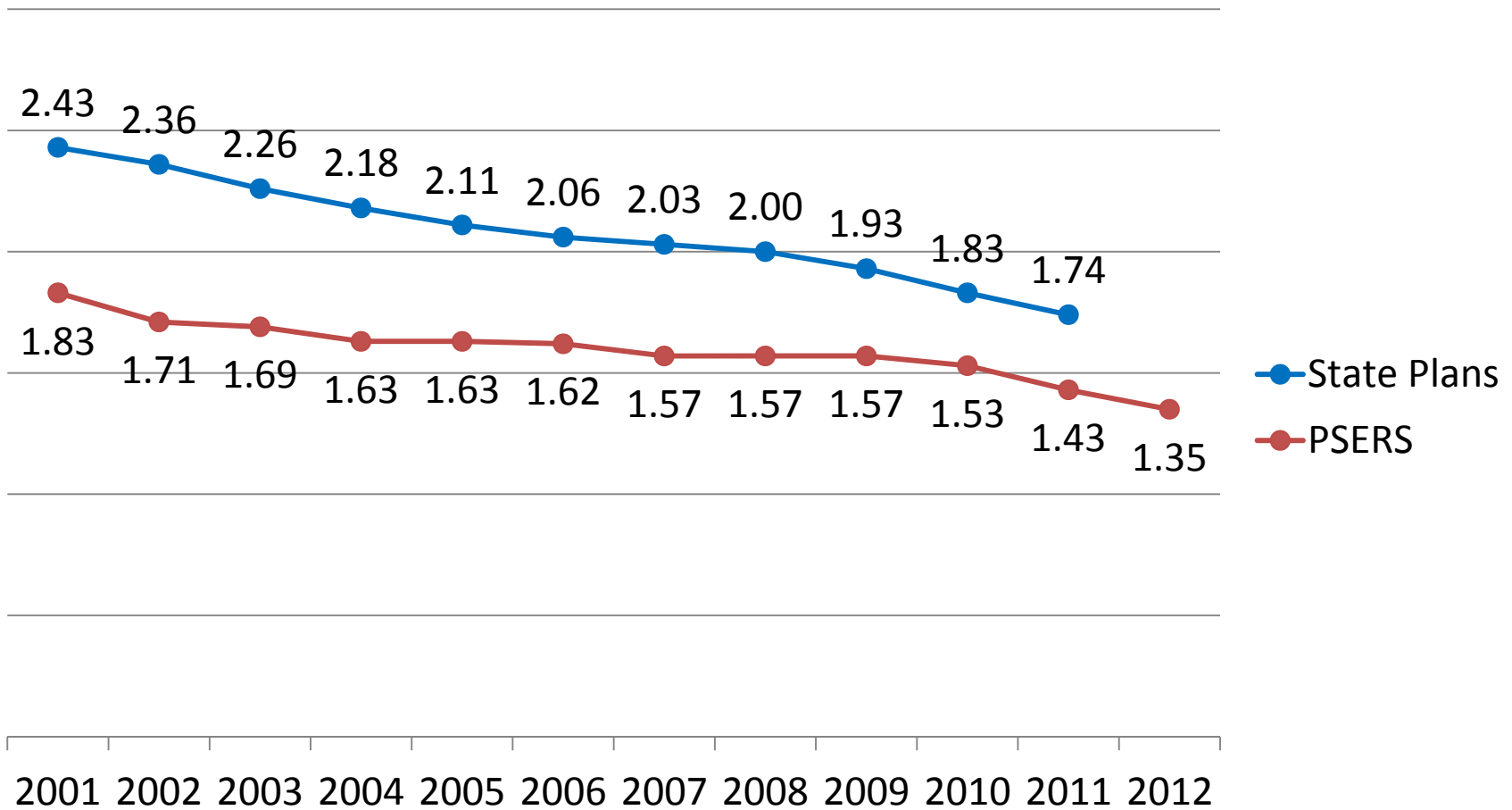
*Sources: Wisconsin Legislative Council 2010 Comparative Study of Major Public Employees Retirement System and Wilshire 2013 Report on State Retirement Systems

Ten Most Underfunded State Plans

Assets as a Percentage of Liabilities

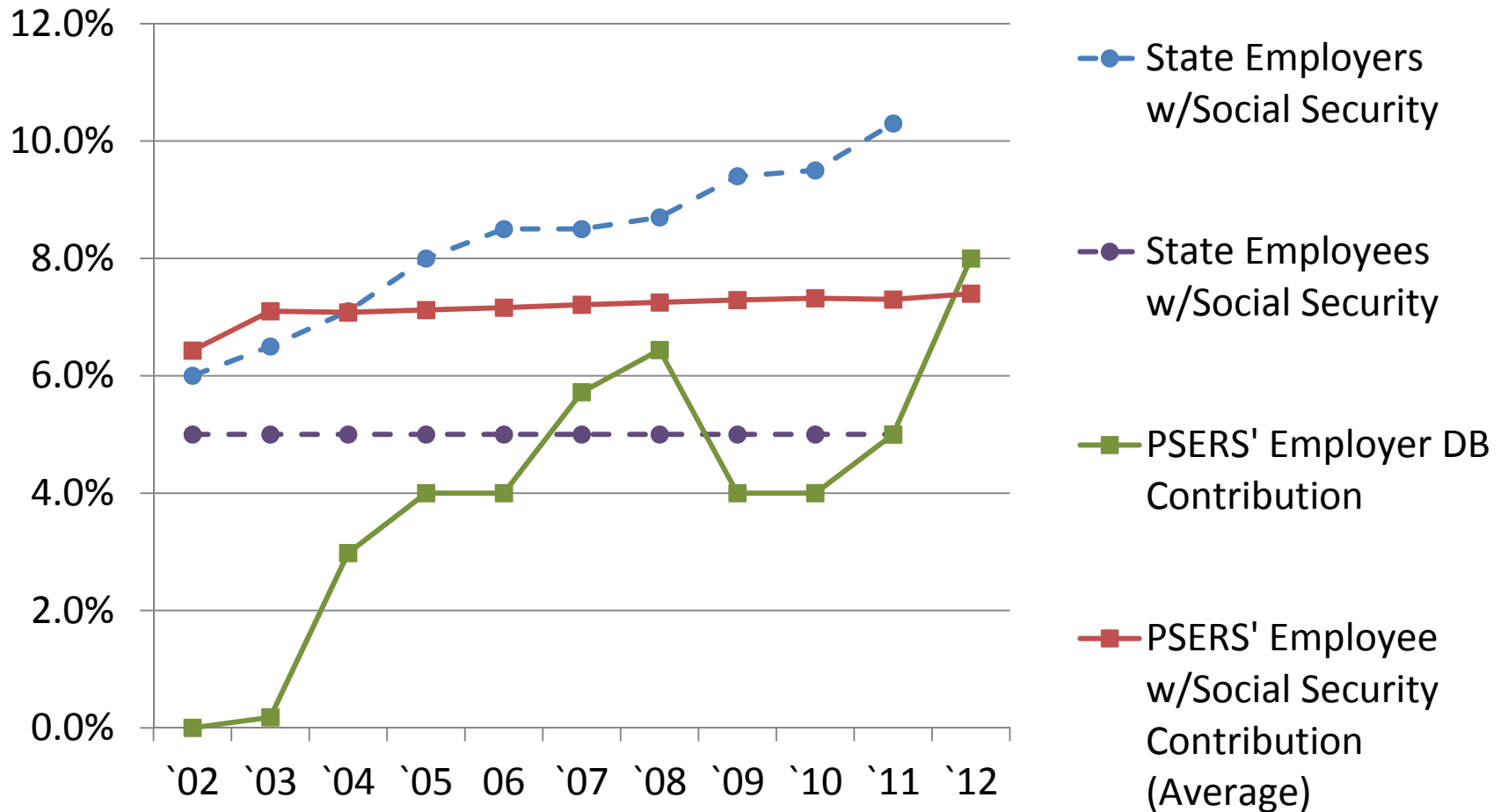


Ratio of Active Participants to Annuitants



*Source: NASRA Public Fund Summary of Findings for FY 2011

Median Employee and Employer Contribution Rates as a % of Pay



*Source: NASRA Public Fund Summary of Findings for FY 2011

Annual Required Contribution (ARC)

- Average state pension plan payments in FY 2011 was approximately 88% of the ARC*
- Over 50% of the plans received more than 90% of their ARC in 2011*
- PSERS' ARC in FY 2011 was 27% (Annual Required Contributions \$2,436,602 vs. actual \$646,560 net of purchase of service contributions)**
- PSERS' ARC in FY 2012 was 38% (Annual Required Contributions \$2,629,244 vs. actual \$1,001,140 net of purchase of service contributions)**

*Source: NASRA Public Fund Summary of Findings for FY 2011

** Source: PSERS Budget Book

PSERS

Schedule of Employer Contributions (Dollar Amounts in Thousands)

Year Ended June 30	Annual Required Contributions	Actual Employer Contributions	Percentage Contributed	Dollar Shortfall
2003	\$ 20,831	\$ 20,831	100%	\$ 0
2004	321,091	321,091	100%	0
2005	945,107	431,556	46%	513,551
2006	1,328,373	456,878	34%	871,495
2007	1,708,821	659,545	39%	1,049,276
2008	1,852,238	753,532	41%	1,098,706
2009	1,761,295	503,227	29%	1,258,068
2010	1,928,278	527,212	27%	1,401,066
2011	2,436,602	646,560	27%	1,790,042
2012	2,629,244	1,001,140	38%	1,628,104
Total dollar shortfall				<u>9,610,308</u>
Total dollar shortfall with interest accumulated at 7.5% per annum				<u>\$11,905,045</u>

PSERS

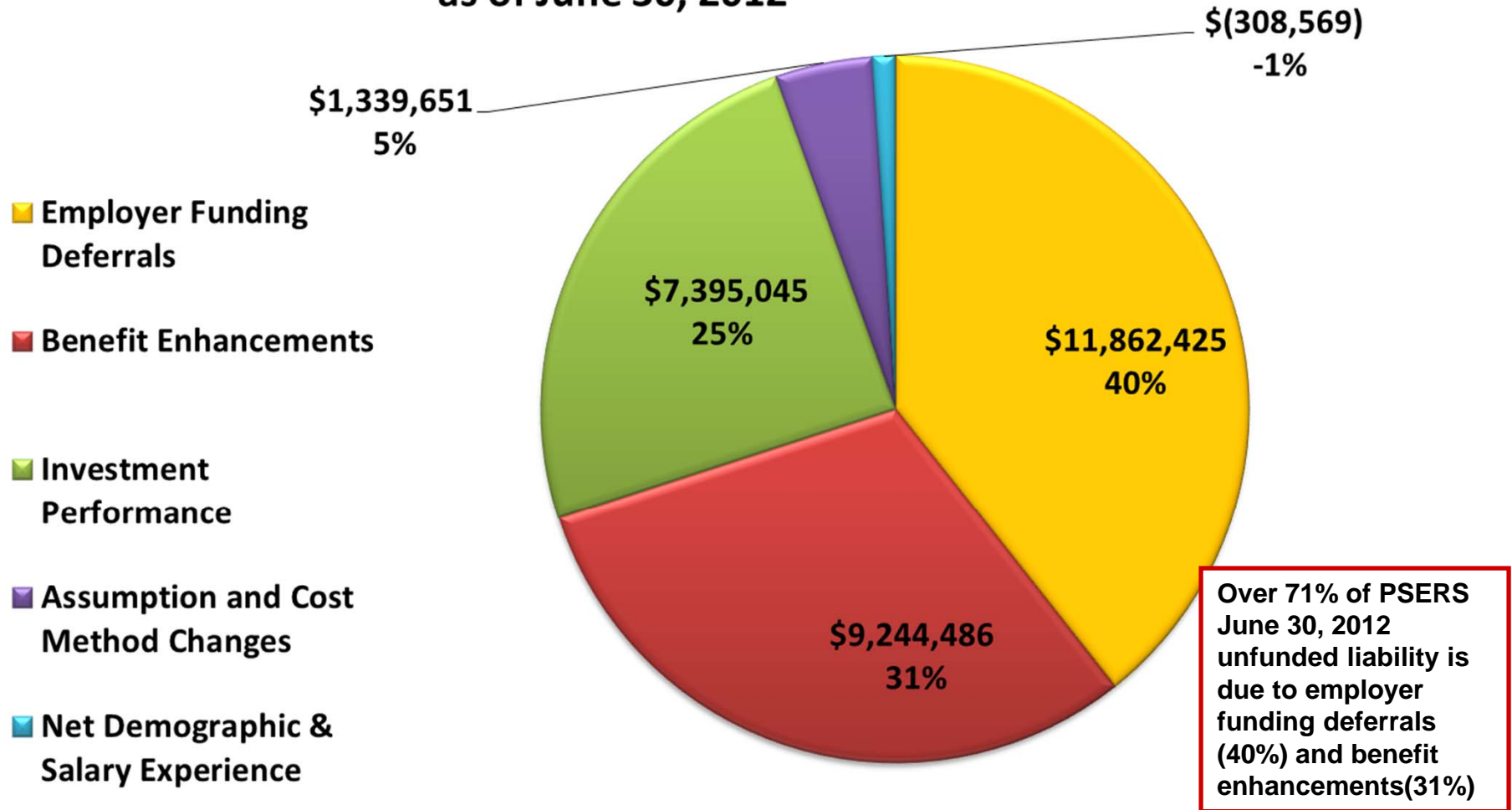
Schedule of Employer Contributions w/ Inflation Adj. (Dollar Amounts in Thousands)

Year Ended June 30	Annual Contributions	Contribution as a percentage of payroll	CPI Inflation to the period ended June 30, 2012*	Inflation- Adjusted Contribution
1991	\$ 1,142,086	19.18%	68.33%	\$ 1,922,473
1992	929,324	14.40%	63.40%	1,518,515
1993	931,829	13.74%	58.64%	1,478,254
1994	909,292	12.92%	54.78%	1,407,402

* Source: Bureau of Labor Statistics and Bloomberg

Source: PSERS

PSERS Sources of Unfunded Liability Total - \$29,533,038 as of June 30, 2012



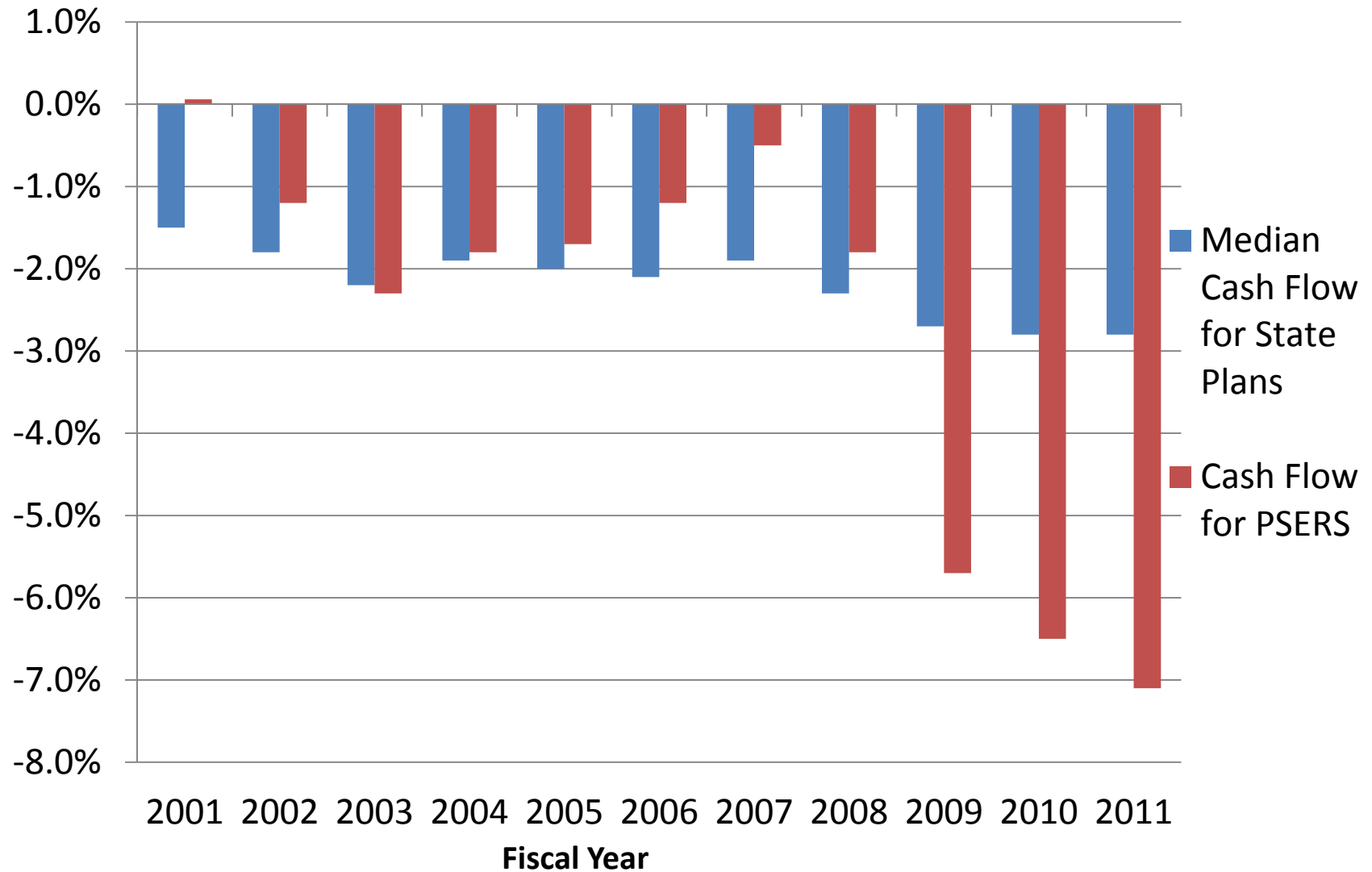
- For many years PSERS' investment performance exceeded the investment return assumption and compensated for unfunded benefit enhancements and employer funding deferrals
- The Great Recession eliminated the previous investment out-performance and reduced PSERS long-term investment performance to closer to the investment return assumption
- Without the investment out-performance to compensate, the employer funding deferrals and benefit enhancements have significantly increased PSERS unfunded liability

Cash Flow
Fiscal Years Ended in June 30
(Dollar Amounts in Millions)

		2012	2013	2014
Member Contributions		\$953	\$986	\$1,020
Employer Contributions		\$1,005	\$1,500	\$2,200
	Total Contributions	\$1,958	\$2,486	\$3,220
Less:				
Pension Benefits		\$5,655	\$6,000	\$6,400
	Negative Cash Flow	-\$3,697	-\$3,514	-\$3,180
	Beginning of Year Total Assets	\$51,200	\$48,534	\$48,706
	Negative Cash Flow (NCF) as a % of Total Assets	-7.1%	-7.2%	-6.5%
	Average NCF as a % of Total Assets (Public Funds)	-2.8%*		

* Based on the November 2012 Public Fund Survey prepared by the National Association of State Retirement Administrators

Cash Flow Comparison



*Source: NASRA Public Fund Summary November 2012

PSERS Pension Plan Changes in Net Assets
10 Year Cumulative Summary
(Dollar Amounts in Millions)

	Cumulative 10 Year Total July 1, 2002 – June 30, 2012	
Balance of Net Assets (07/01/2002)		\$ 43,473
Member Contributions	\$8,745	
Employer Contributions	5,358	
Net Investment Income	34,438	
Total Deductions – Benefits & Expenses	(43,480)	
Net Increase		\$ 5,061
Balance of Net Assets (06/30/2012)		\$ 48,534

PSERS

Employer/Member Contributions & Benefit Payments (Dollar Amounts in Thousands)

FISCAL YEAR ENDED JUNE 30	EMPLOYER CONTRIBUTION	MEMBER CONTRIBUTION	BENEFIT PAYMENT
2003	\$20,831	\$752,110	\$2,890,192
2004	\$321,091	\$783,691	\$3,252,424
2005	\$431,556	\$788,310	\$3,639,838
2006	\$456,878	\$827,647	\$3,860,658
2007	\$659,545	\$855,322	\$4,044,435
2008	\$753,532	\$879,598	\$4,636,340
2009	\$515,889	\$911,118	\$4,639,297
2010	\$535,331	\$952,047	\$4,962,222
2011	\$658,511	\$1,042,707	\$5,281,223
2012	\$1,004,584	\$952,887	\$5,655,306
TOTALS	\$5,357,748	\$8,745,437	\$42,861,935

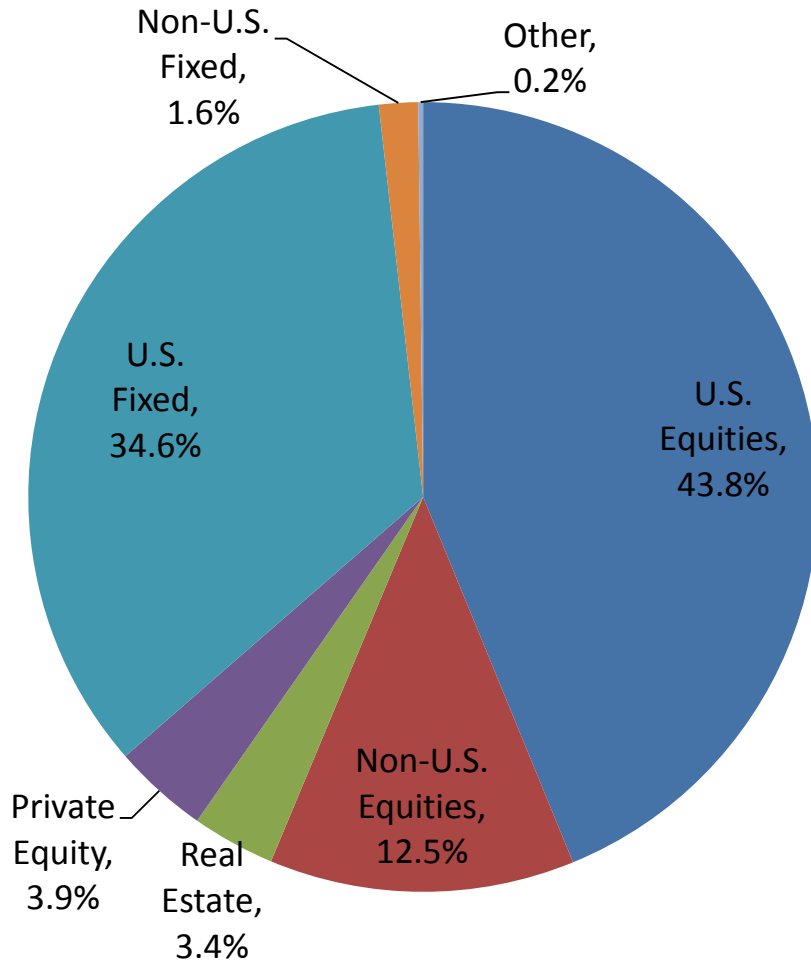
Source: PSERS

Asset Allocation

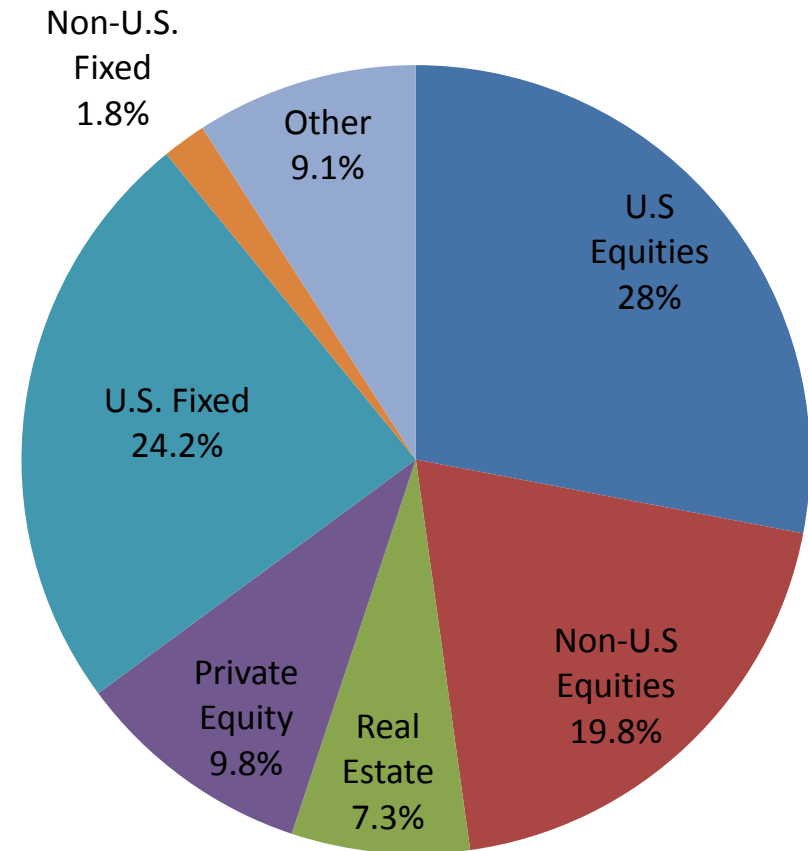
- Between 2001 and 2012, among the state pension plans, there was an increase in asset allocation to Non-U.S. Equities, Real Estate and Private Markets.
- In 2012, the average asset allocation was 64.8% equities (includes real estate, private equity) and 35.2% in non-equities (includes cash/cash equivalents, hedge funds, absolute return, commodities)
- In 2012, PSERS' allocation was 54.4% equities (includes real estate, private equity) and 45.6% non-equities (includes cash/cash equivalents, hedge funds, absolute return, commodities)

Asset Allocation for State Pension Plans

2001 Asset Allocation



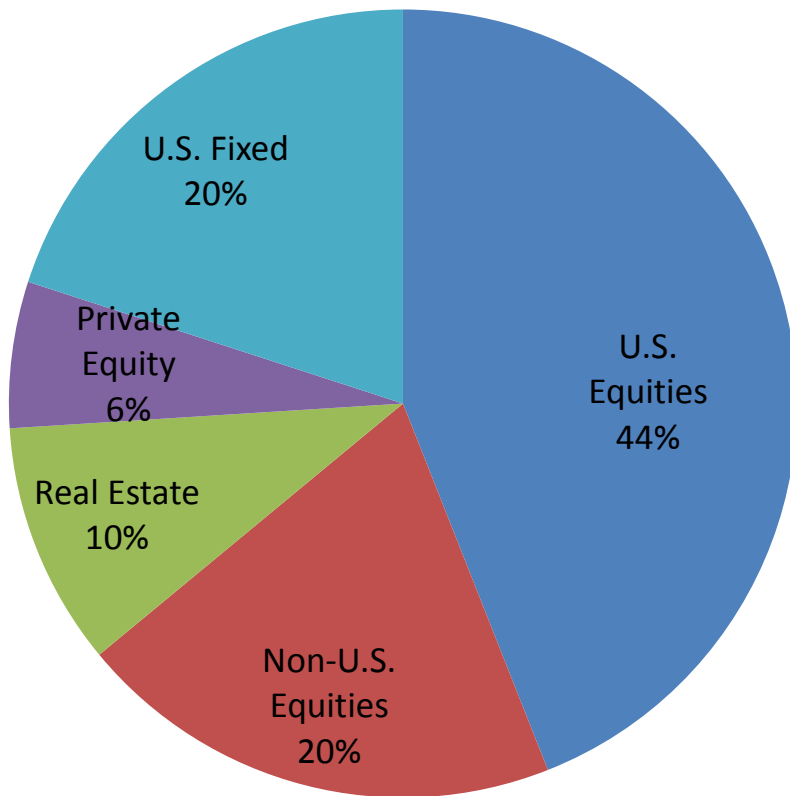
2012 Asset Allocation



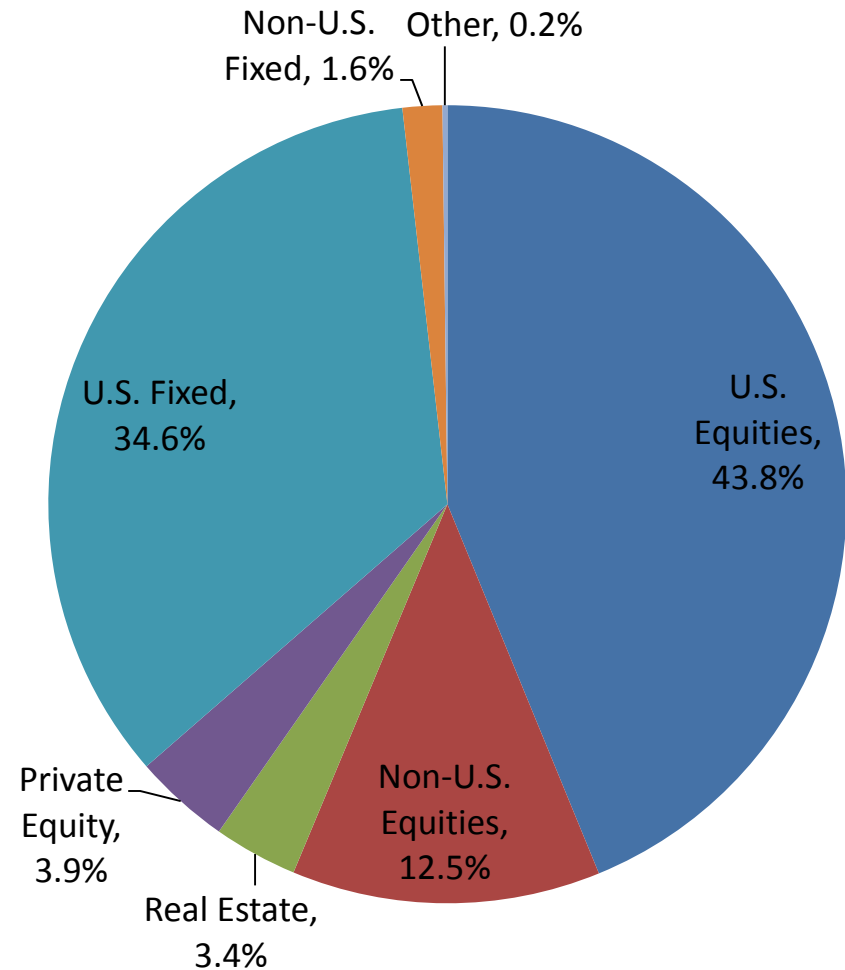
*Source: Wilshire Consulting 2013 Report on State Retirement Systems

Asset Allocation Comparison between PSERS and State Pension Plans

2001 Asset Allocation for PSERS



2001 Asset Allocation for State Plans

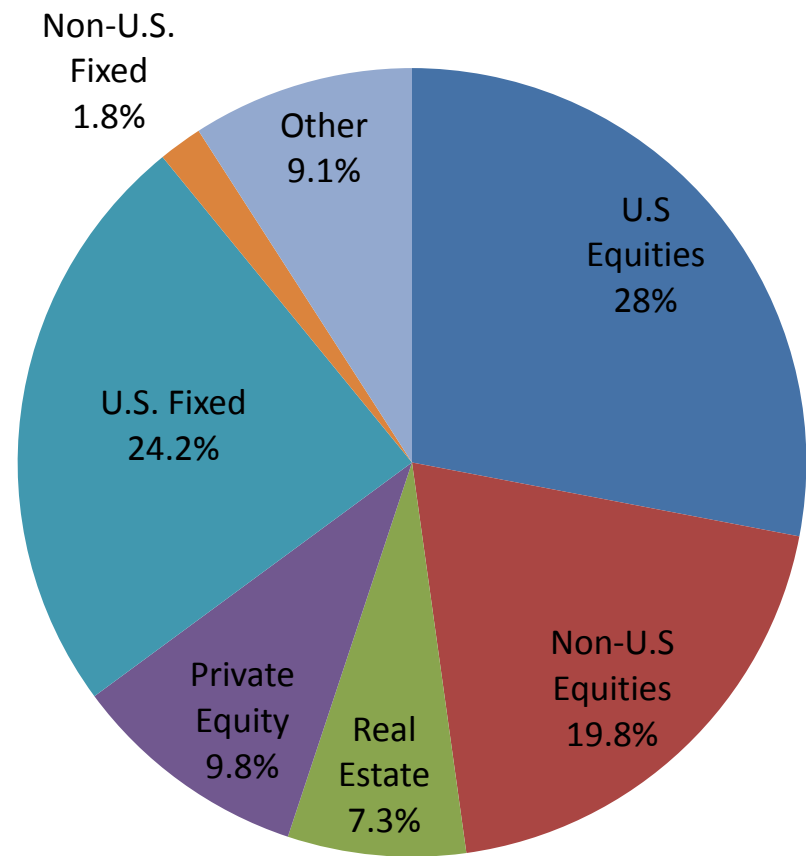
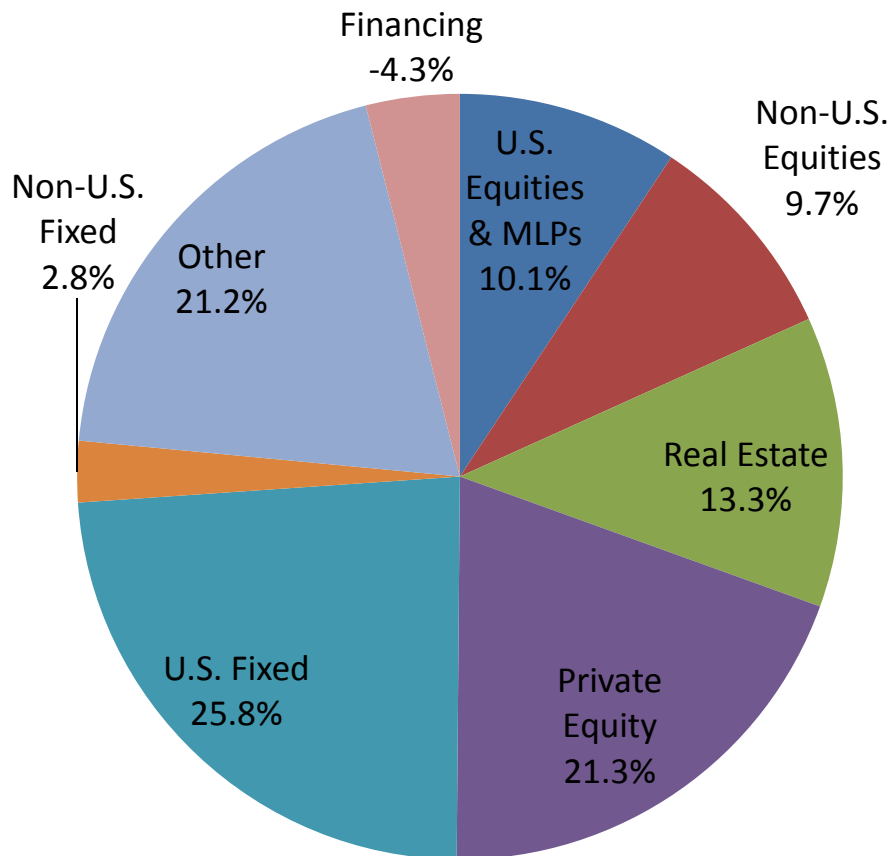


*Source: Wilshire Consulting 2013 Report on State Retirement Systems

Asset Allocation Comparison between PSERS and State Pension Plans

2012 Asset Allocation for PSERS

2012 Asset Allocation for State Plans



*Source: Wilshire Consulting 2013 Report on State Retirement Systems

Common Characteristics of Well-Funded Plans

1. Reasonable Economic Assumptions
2. Prefund COLA's
3. Avoid Spiking
4. Employee Participation
5. Investment Returns $>$ Assumed Rate of Return
6. Employer needs to pay in the Required Annual Contribution (ARC)

THE LOCAL LEVEL RETIREMENT CHALLENGE

**A Brief Look at
STATUS REPORT ON LOCAL GOVERNMENT PENSION PLANS
Published by
PUBLIC EMPLOYEE RETIREMENT COMMISSION (PERC)
December 2012**

CHART I

NUMBER OF LOCAL GOVERNMENT PENSION PLANS

	Police	Fire	Nonuniformed	Total
County	0	0	72	72
City	58	45	65	168
Borough	482	21	577	1,080
Township (1 st Class)	88	6	106	200
Township (2 nd Class)	306	7	841	1,154
Authority	0	0	494	494
Council of Gov't/Regional	31	3	26	60
Total	965	82	2,181	3,228

GRAPH I

GROWTH IN NUMBER OF LOCAL GOVERNMENT PENSION PLANS

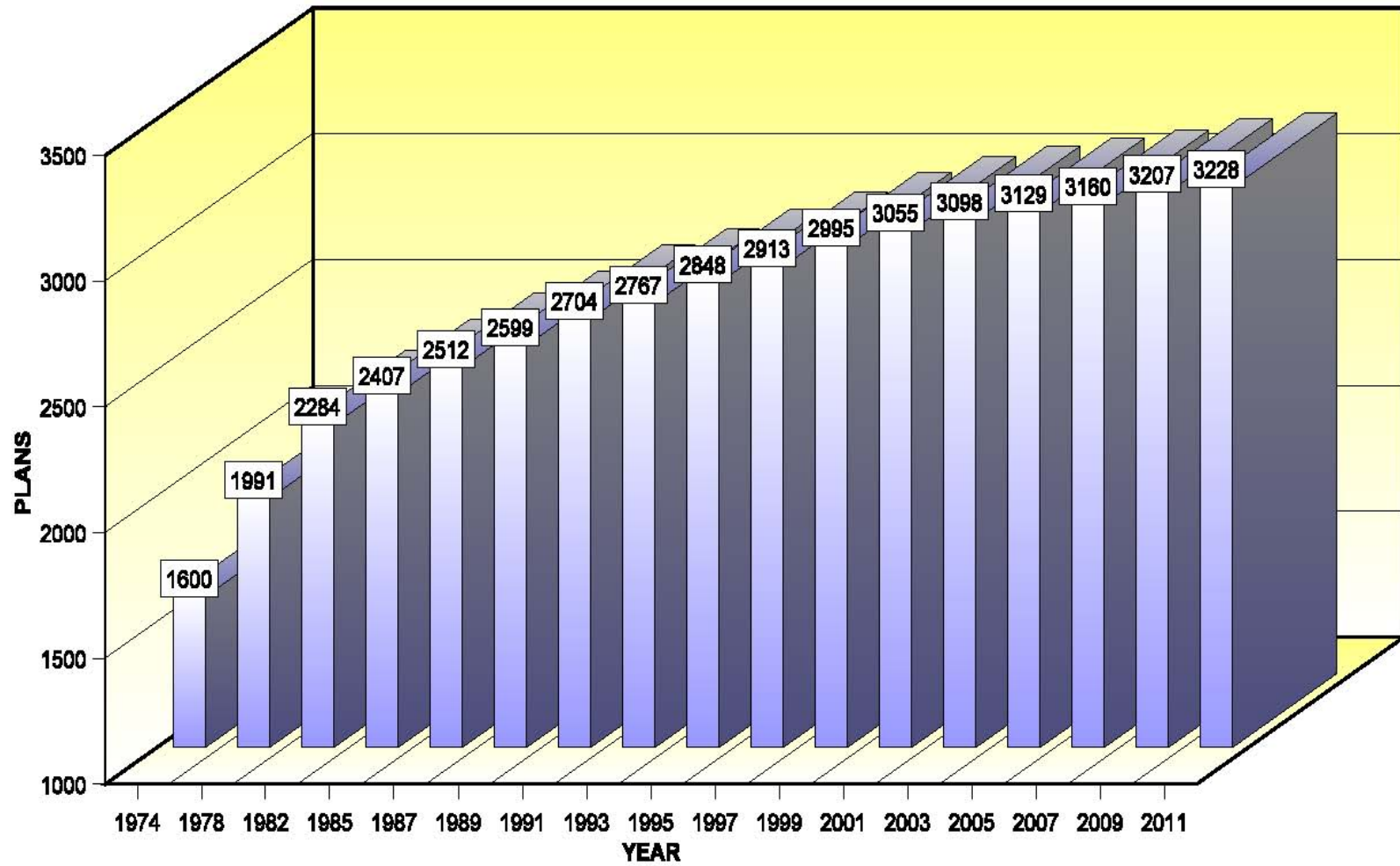


CHART II

PER-MEMBER ADMINISTRATIVE COST FOR SELECTED MUNICIPAL PENSION PLANS BASED ON PENSION PLAN SIZE

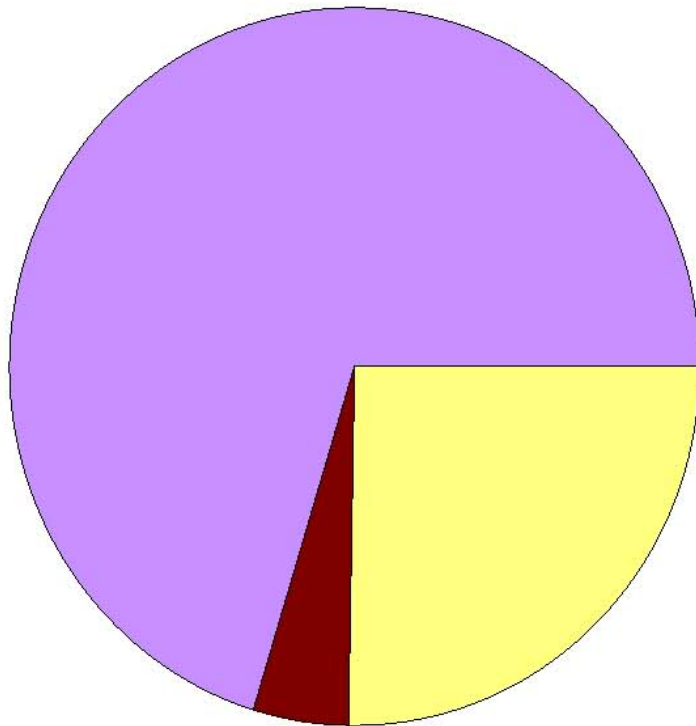
Pension Plan Size	Per-Member Administrative Cost	
	2011	2009
10 or fewer Active Members	\$1,567.84	\$1,440.62
11 to 100 Active Members	\$1,063.78	\$1,008.63
More than 100 Active Members	\$382.86	\$445.38
More than 500 Active Members	\$333.55	\$403.73

GRAPH III

LOCAL GOVERNMENT PENSION PLAN DISTRIBUTION

Pension Plan Distribution
by Plan Type

SELF-INSURED
DEFINED BENEFIT
2,247 (70.3%)

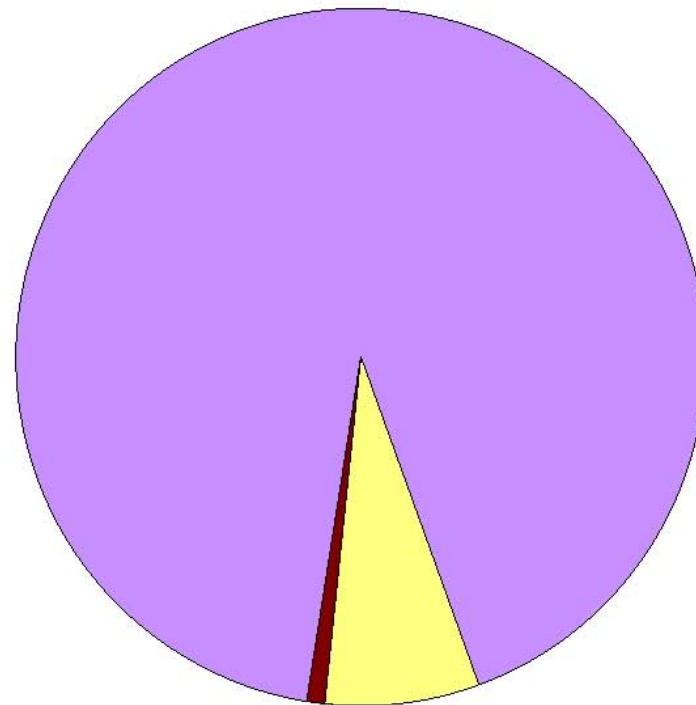


OTHER
145 (4.5%)

DEFINED CONTRIBUTION
805 (25.2%)

Employee Distribution
by Plan Type

SELF-INSURED
DEFINED BENEFIT
122,250 (92.2%)



OTHER
1,054 (0.8%)

DEFINED CONTRIBUTION
9,315 (7.0%)

GRAPH IV

DISTRIBUTION OF MUNICIPAL PENSION PLANS
BY NUMBER OF ACTIVE MEMBERS

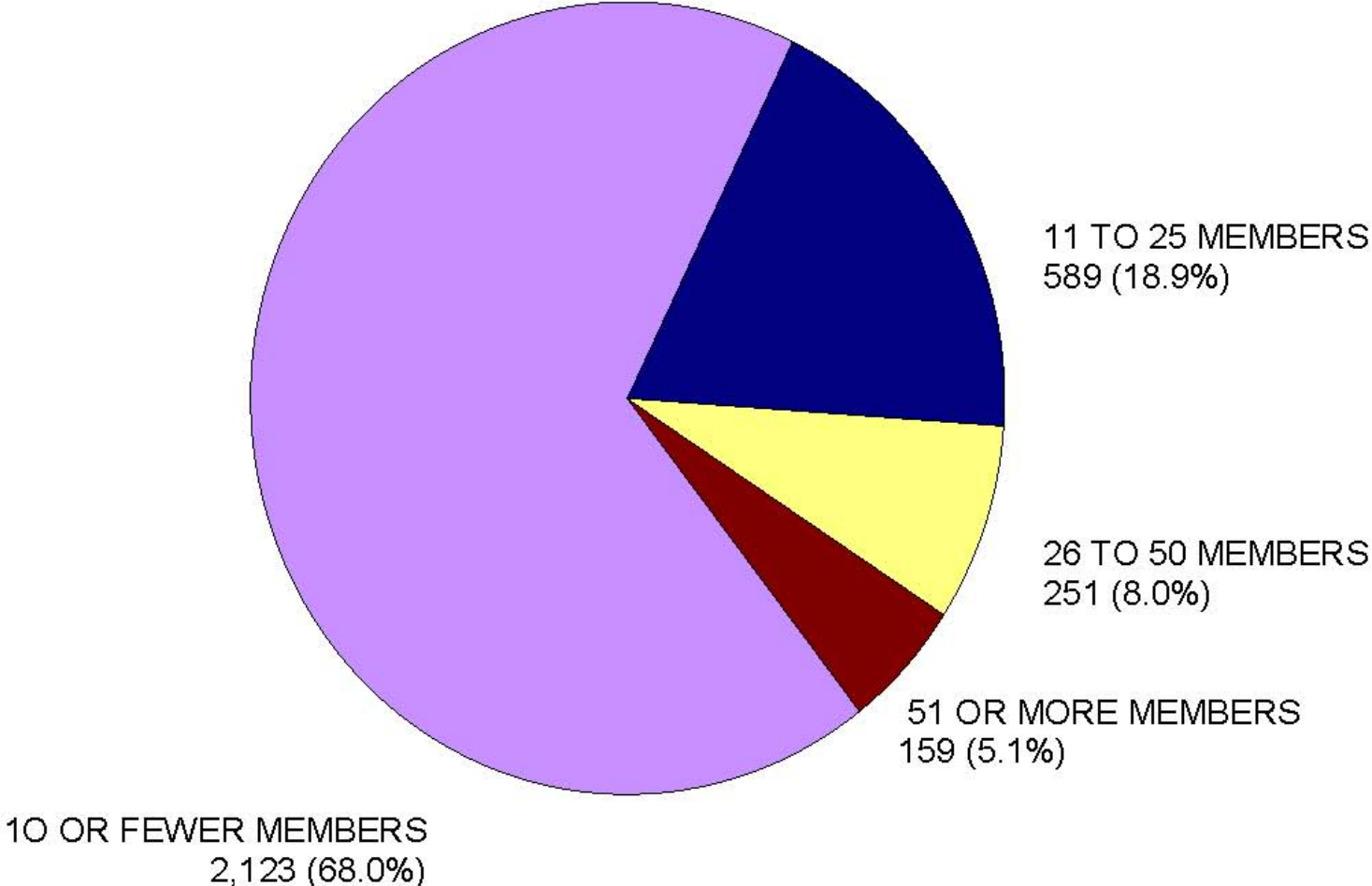


CHART III

DISTRIBUTION OF COUNTY PENSION PLANS BY THE NUMBER OF ACTIVE MEMBERS

Number of Members	Number of Plans	Average Active Members
100 or fewer	8	44
101 – 200	13	154
201 – 300	9	221
301 – 400	7	360
401 – 500	6	458
501 or more	29	1,691

CHART IV

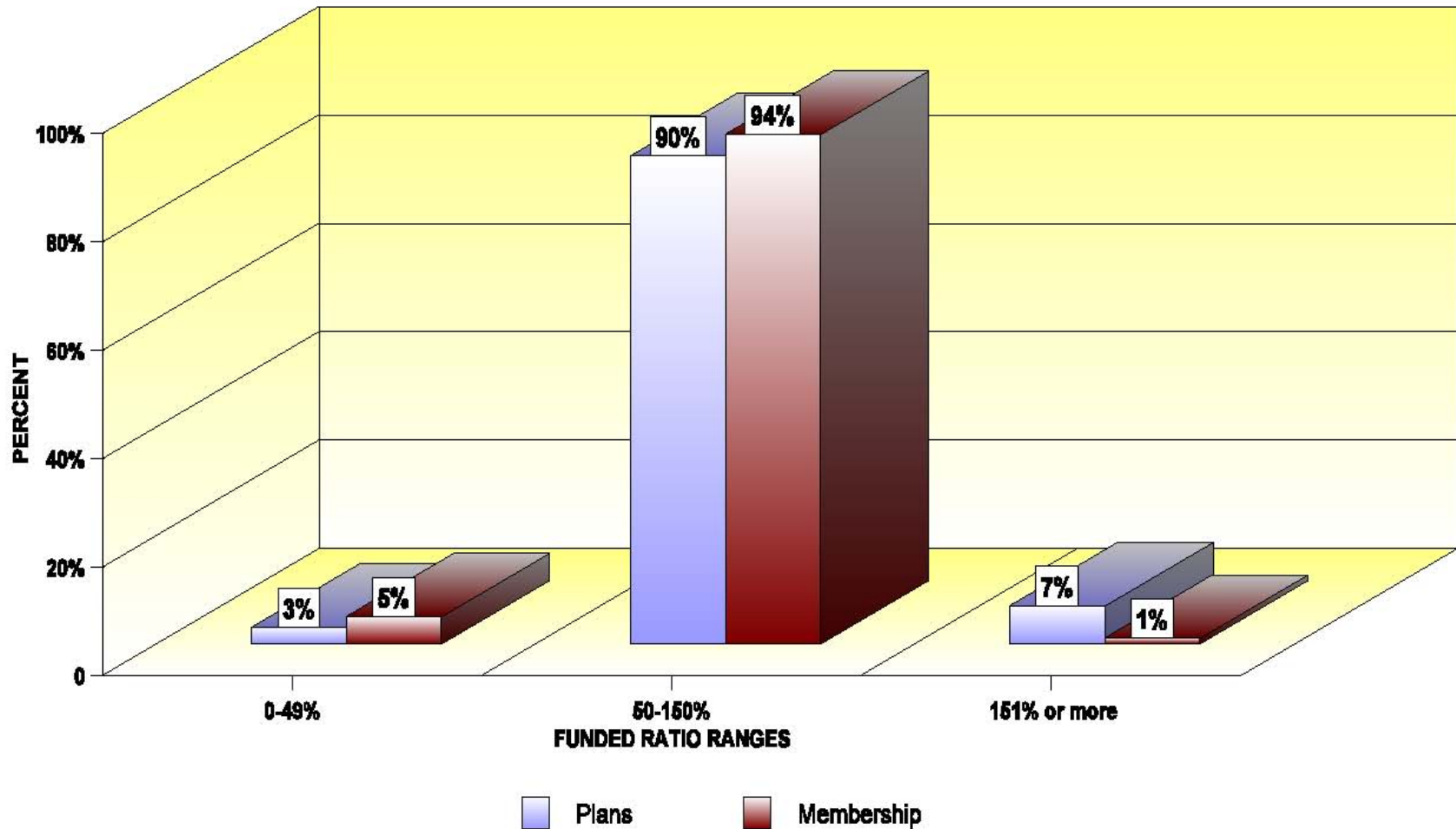
**MUNICIPAL GOVERNMENT RETIREMENT SYSTEMS
COMPARED WITH COUNTY GOVERNMENT RETIREMENT SYSTEMS**

	Active Members	Actuarial Accrued Liability	Actuarial Assets	Unfunded Actuarial Accrued Liability
Municipal Government Retirement Systems	73,974	\$20,273,404,368	\$13,515,212,872	\$6,984,567,525 ¹
County Government Retirement Systems	58,645	\$8,001,846,378	\$6,497,751,796	\$1,551,873,124 ¹

¹ Represents total of unfunded actuarial accrued liabilities reported for individual pension plans.

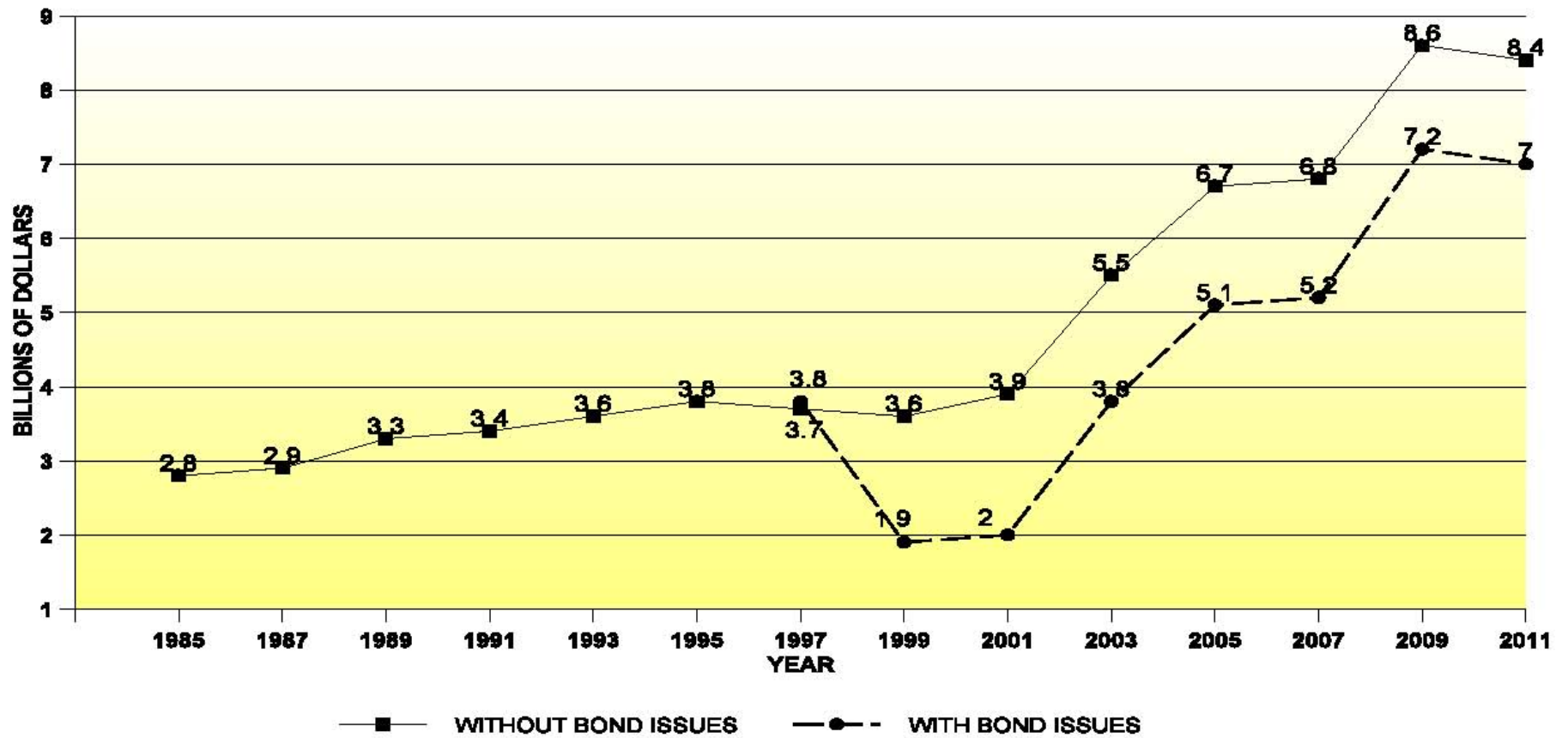
GRAPH V

DISTRIBUTION OF SELF-INSURED, DEFINED BENEFIT MUNICIPAL PENSION PLANS AND THEIR ACTIVE MEMBERSHIP AMONG FUNDED RATIO RANGES



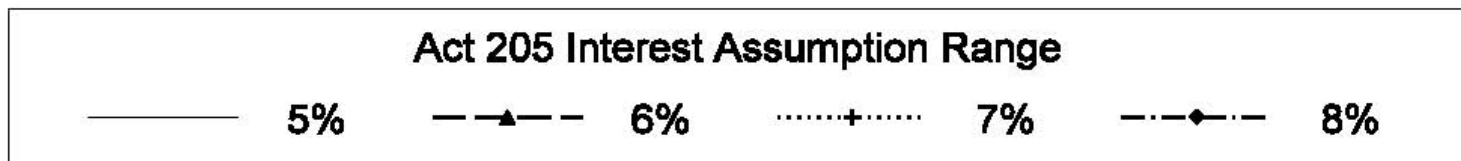
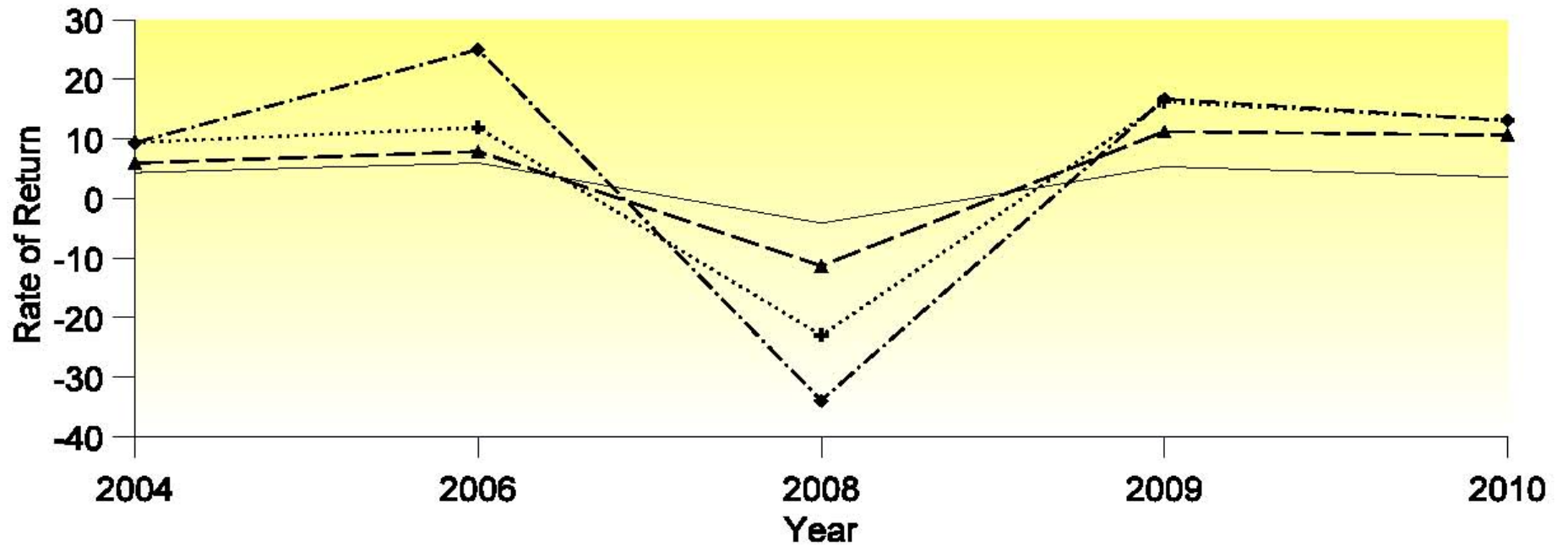
GRAPH VI

TREND OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES



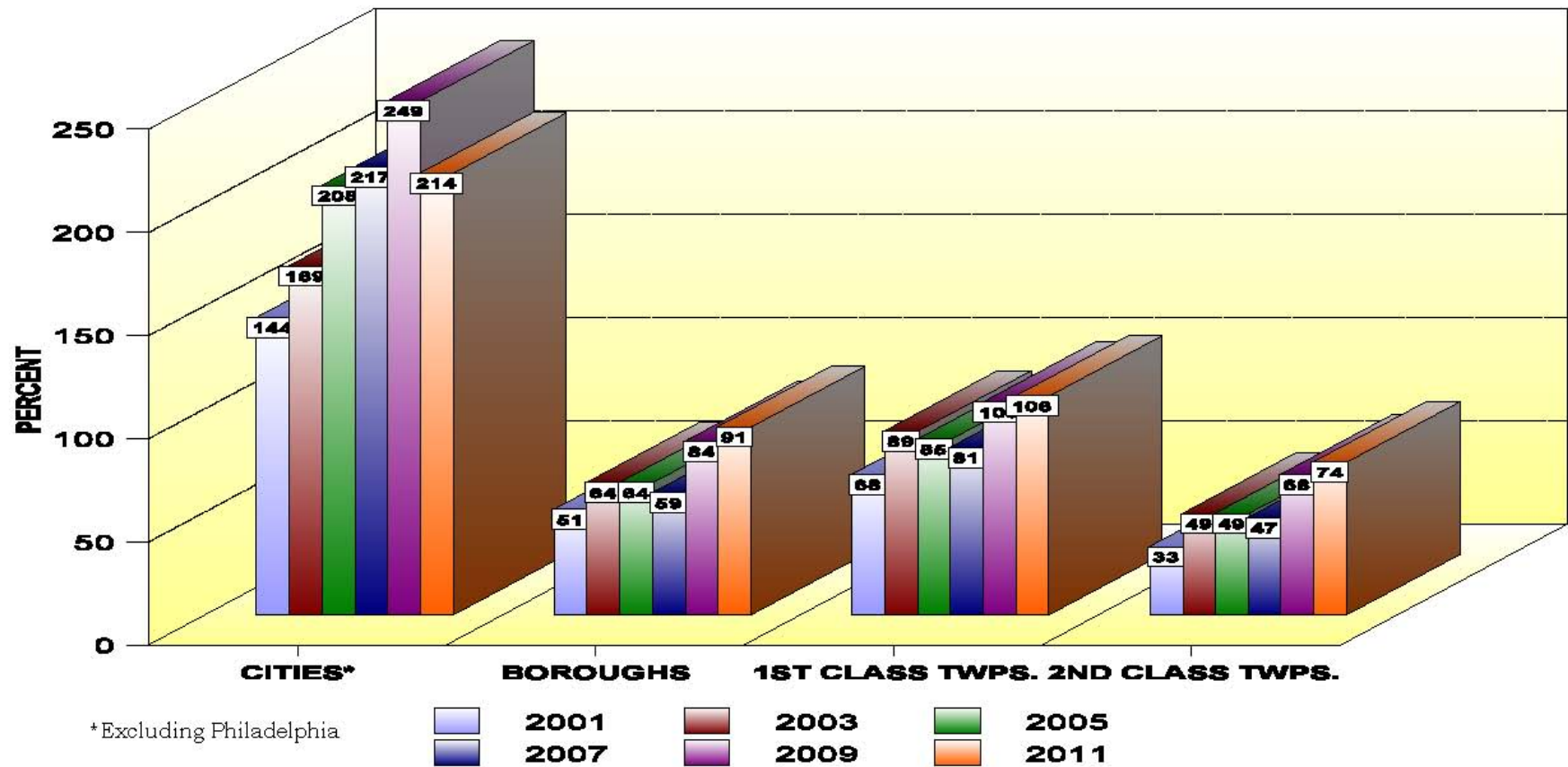
GRAPH VII

AVERAGE RATE OF RETURN BY INTEREST ASSUMPTION RANGE



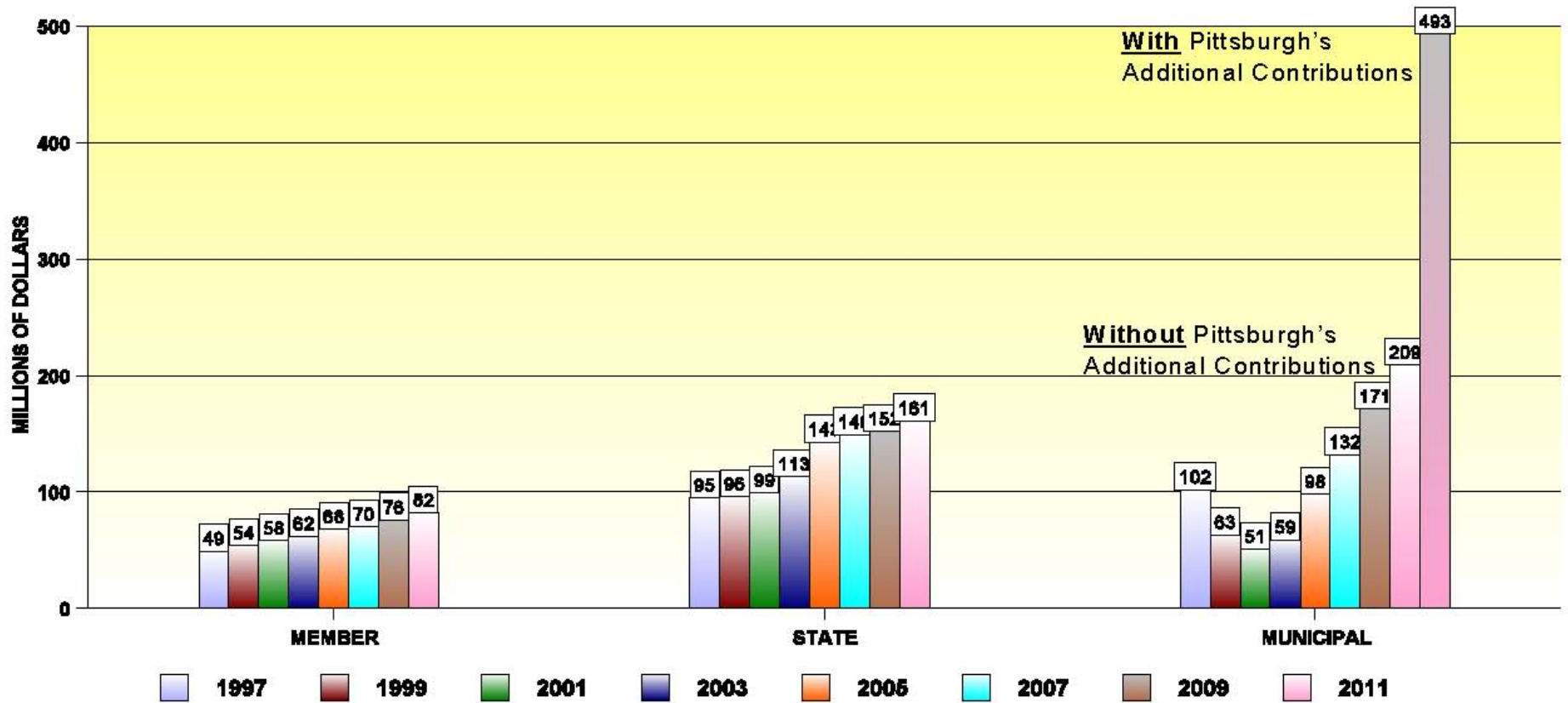
GRAPH VIII

TOTAL UNFUNDED ACCRUED LIABILITIES AS A PERCENTAGE OF PAYROLL BY MUNICIPAL CLASS



GRAPH IX

CONTRIBUTIONS TO MUNICIPAL PENSION PLANS EXCLUDING PHILADELPHIA



GRAPH X

APPROXIMATE RATES OF RETURN ON INVESTMENTS OF MUNICIPAL PENSION PLANS EXCLUDING PHILADELPHIA

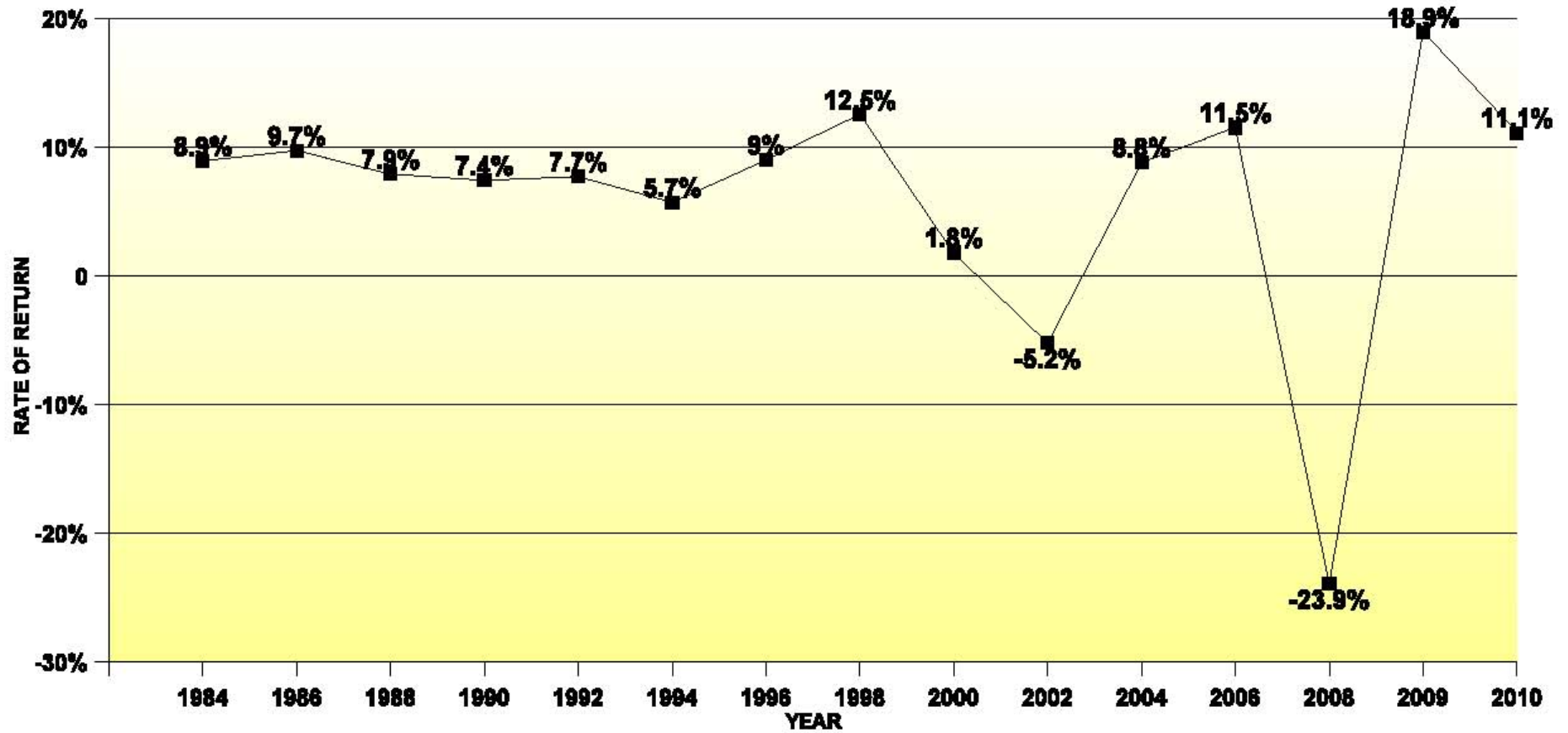


CHART X

DISTRESS SCORE BY DISTRESS LEVEL

Level	# of Municipalities		% of Municipalities		# of Active Members		% of Active Members	
	2012	2010	2012	2010	2012	2010	2012	2010
0 (Not Distressed)	801	776	55.3%	53.9%	13,009	13,158	19.3%	18.4%
1 (Minimal)	497	474	34.3%	32.9%	18,465	20,373	27.4%	28.6%
2 (Moderate)	125	162	8.6%	11.3%	35,022	5,146	52.0%	7.2%
3 (Severe)	26	27	1.8%	1.9%	844	32,675	1.3%	45.8%
	1,449	1,439			67,340	71,352		

Eight hundred one (801) municipalities (55.3%) are not considered distressed, representing only 13,009 active members (19.3%).

CHART XIV

CLASS OF MUNICIPALITY AT DISTRESS LEVEL 3

Class	# of Municipalities		% of Municipalities		# of Active Members		% of Active Members	
	2012	2010	2012	2010	2012	2010	2012	2010
Cities	3	3	0.2%	0.2%	782	32,524	1.2%	45.6%
Boroughs	2	3	0.1%	0.2%	2	7	0.0%	0.0%
1 st Class Townships	0	0	0.0%	0.0%	0	0	0.0%	0.0%
2 nd Class Townships	18	19	1.2%	1.3%	45	89	0.1%	0.1%
Authorities	3	2	0.2%	0.1%	15	55	0.0%	0.1%
Regionals/COGs	0	0	0.0%	0.0%	0	0	0.0%	0.0%
	26	27			844	32,675		

TABLE III

General Data Summary for Local Government Pension Plans

	MUNICIPAL PENSION PLANS	COUNTY PENSION PLANS	TOTAL
Active Members	73,974	58,645	132,619
Actuarial Accrued Liabilities	\$20,273,404,368	\$8,001,846,378	\$28,275,250,746
Assets	\$13,515,212,872	\$6,497,751,796	\$20,012,964,668
Unfunded Actuarial Accrued Liabilities	\$6,984,567,525	\$1,551,873,124	\$8,536,440,649
Assets Exceeding Actuarial Accrued Liabilities	\$226,376,025	\$47,245,290	\$273,621,315



Questions?

For more information about PSERS' Investments go to:
<http://www.psers.state.pa.us/investment/invest.htm>