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Rhode Island SIC

2016 Asset Liability Review
NASRA Public Fund Survey

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NASRA PUBLIC FUND SURVEY

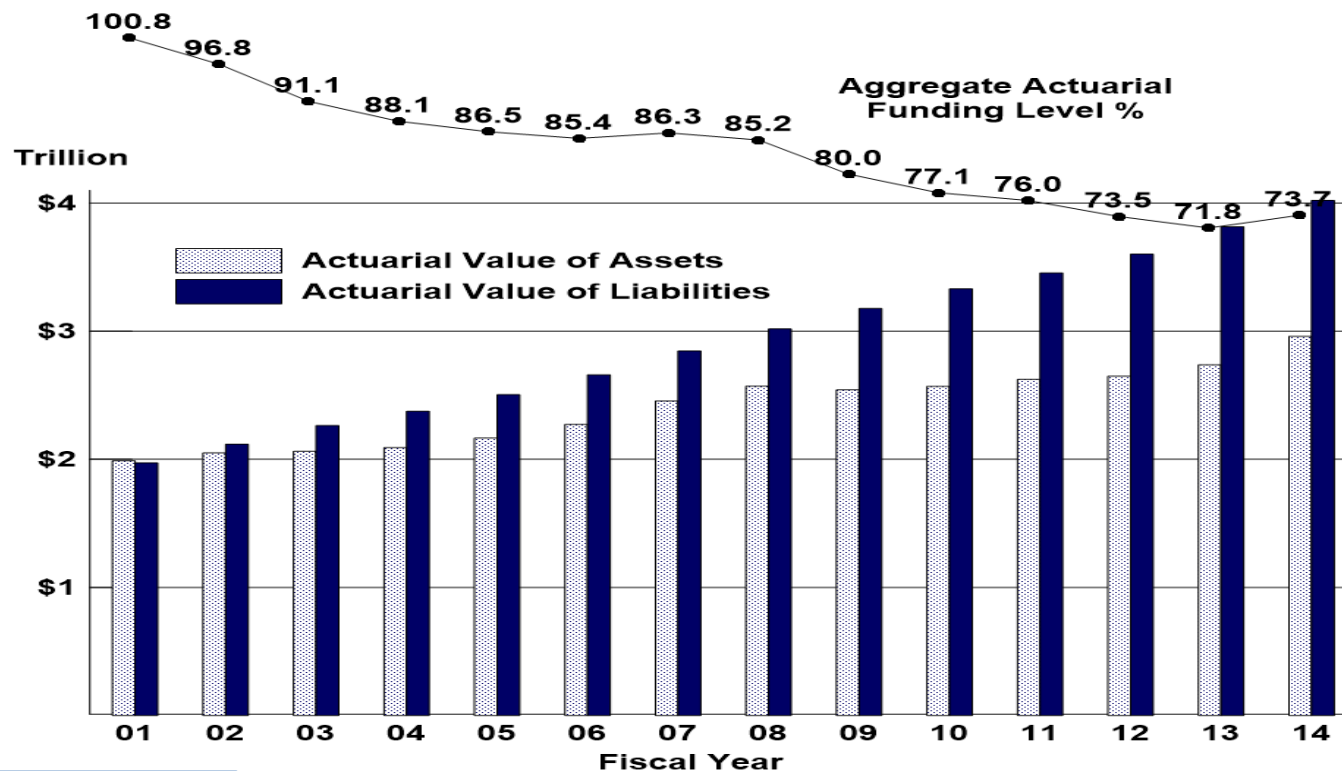
What is the state of the Public DB Plan Universe?

- The Survey is sponsored by the **National Association of State Retirement Administrators**.
- The report focuses on FY 2014 data.
- The membership and assets of systems included in the Survey comprise approximately 85 percent of the entire state and local government retirement system community.
- Individual plan's circumstances and experience vary widely.
- However, all plans are managed in a changing environment.
 - An examination of any longitudinal exhibit shows continual change.

Note: NASRA data

AGGREGATE ACTUARIAL FUNDING LEVELS

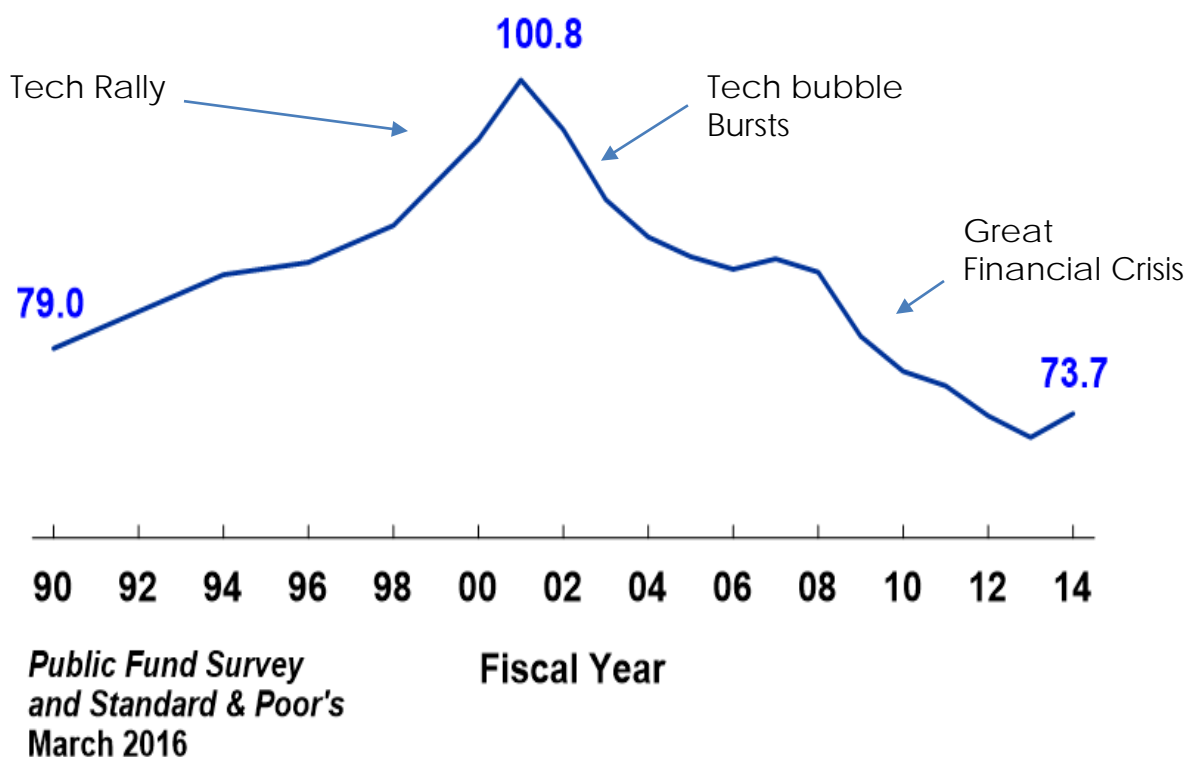
- Funding levels have declined for several reasons, impacting individual plans in different magnitudes:
 - Two periods of large negative equity market returns (below normal capital market returns over the period)
 - Increased benefits
 - Failure to make actuarial required contributions
 - Changes in actuarial return targets



ERSRI – 60% funded

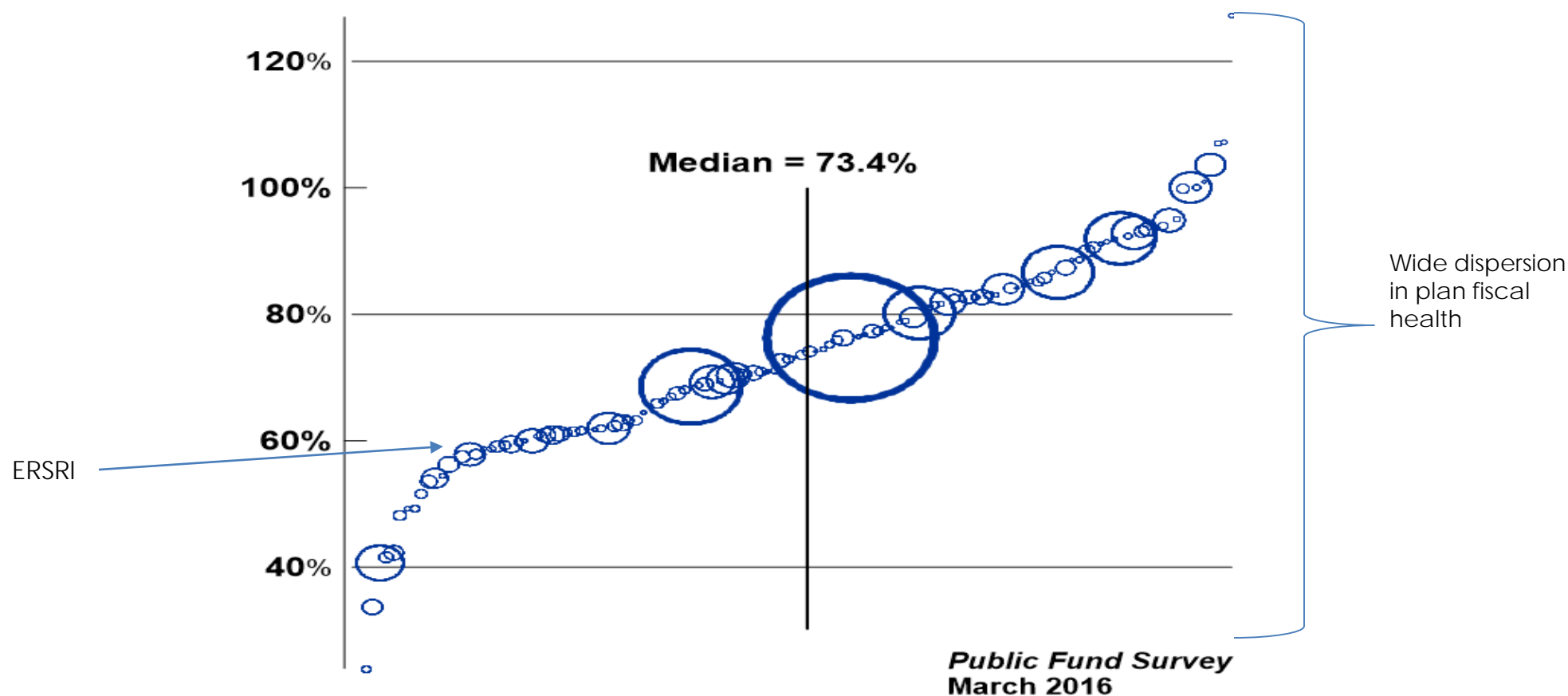
AGGREGATE ACTUARIAL FUNDING LEVEL 1990 - 2014

- Portfolio returns have large impact on funding levels
- Investment market performance was relatively strong during the 1990s, followed by two periods, in 2000-2002 and 2008-2009, of sharp market declines.



PUBLIC FUND MEDIAN FUNDING LEVEL

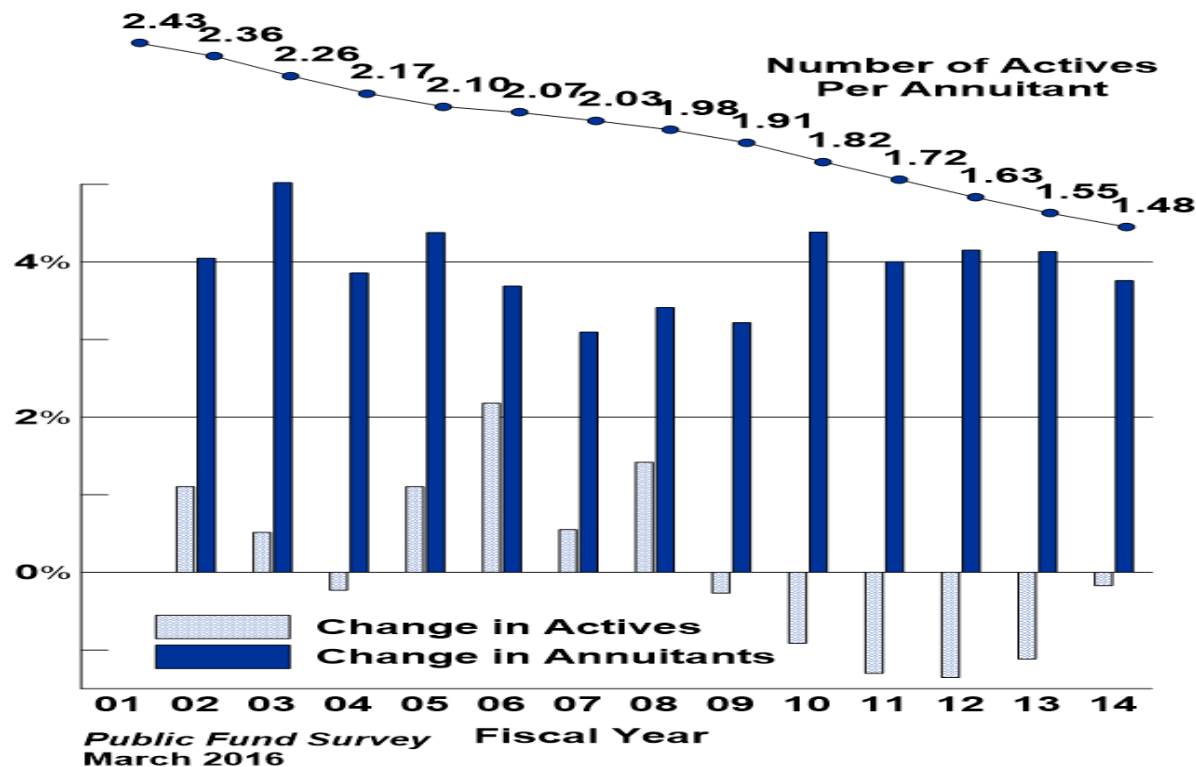
- The individual funding levels of the 126 plans in the Survey.
- The size of each circle in the chart is roughly proportionate to the size of each plan's actuarial liabilities—larger bubbles reflect larger plans and smaller bubbles reflect smaller plans.
- The median funding level is 73.4 percent, and the range is 23.9 percent to 127.2 percent.



ACTIVE EMPLOYEE TO ANNUITANT RATIO

Actives are those who currently are working and earning retirement service credits; most actives also make contributions toward the cost of their pension benefits.

Annuitants are those who receive a regular benefit from a public retirement system; these are predominantly retired members, but also include those who receive a disability benefit, and survivors of retired members or disabilitants.



- The average public fund is maturing. Annuitants are increasing, being supported by fewer active members.
- ERSRI ratio: 1:1

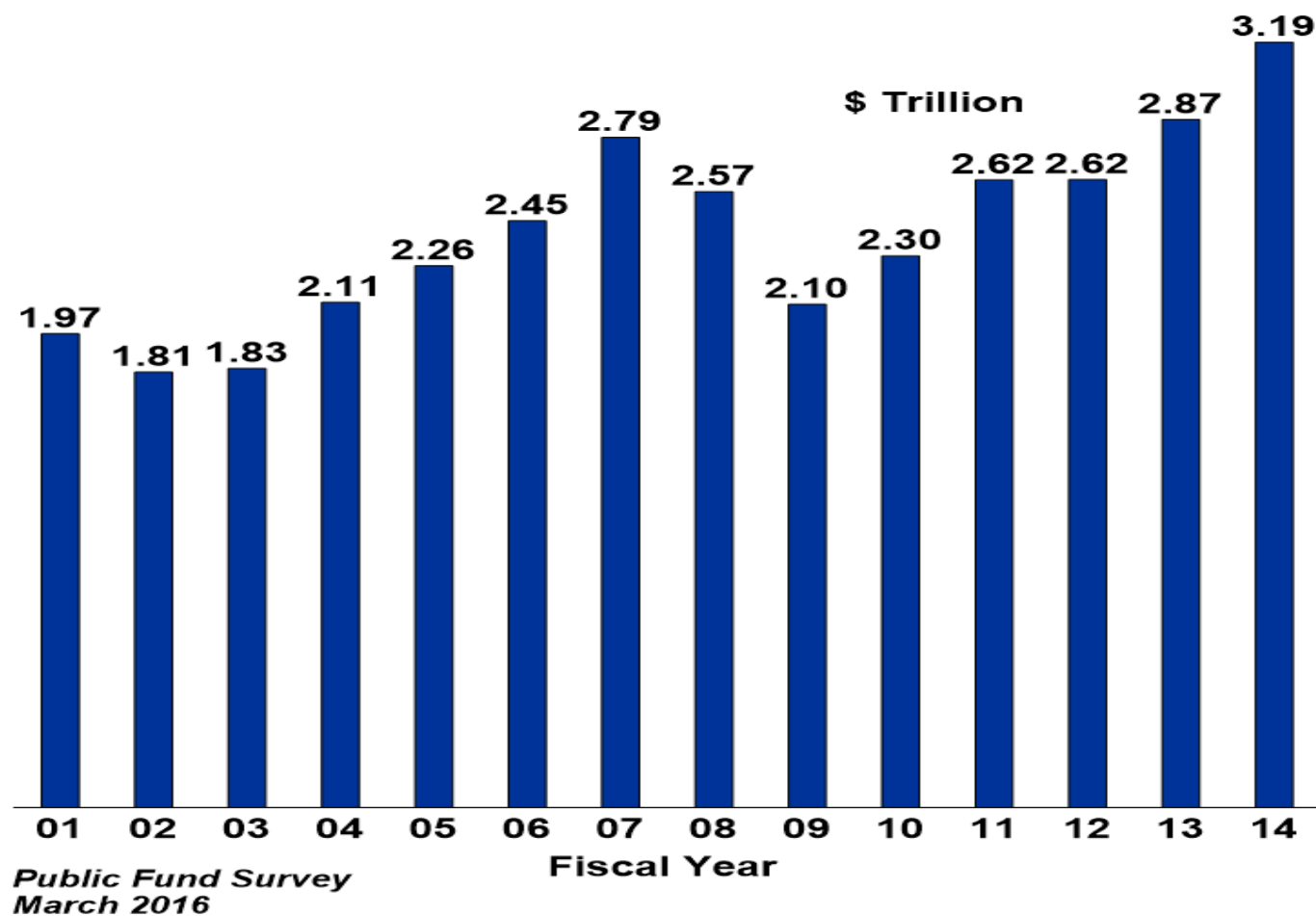
LOWER ACTIVE TO ANNUITANT RATIO - PERSPECTIVE

- A low or declining ratio of actives to annuitants is not necessarily problematic for a public pension plan, because the typical public pension funding model features accumulation, during plan participants' working years, of assets needed to fund retirement benefits.
- When combined with an unfunded liability, however, a low or declining ratio of actives to annuitants can cause fiscal distress for a pension plan sponsor. An unfunded liability represents a shortfall in accumulated assets, and results in an increase to the cost of the plan above the normal cost, which is the cost of benefits earned each year.
- A lower ratio of actives to annuitants results in costs to amortize a plan's unfunded liability over a relatively smaller payroll base, which increases the cost of the plan as a percentage of employee payroll. Thus, although a declining active-annuitant ratio does not, by itself, pose an actuarial or financial problem, when combined with a poorly-funded plan, a low or declining ratio of actives to annuitants can result in relatively high required pension costs.

Source: NASRA Public fund survey

MARKET VALUE OF PUBLIC FUND DB PLAN ASSETS

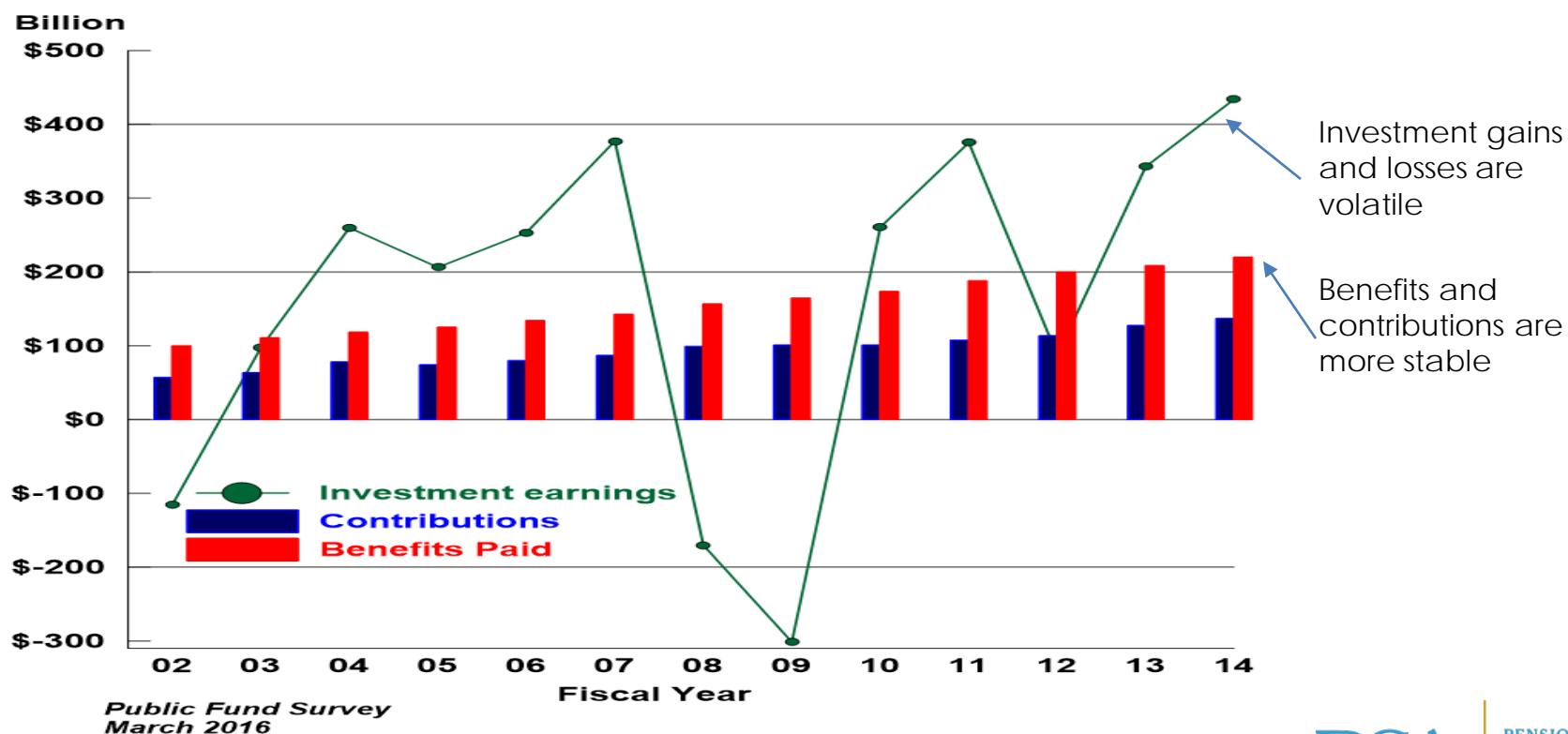
- On a market value basis, as of FY 2014, systems in the Survey held a combined \$3.19 trillion in assets.



PUBLIC DB PLAN REVENUES AND EXPENDITURES

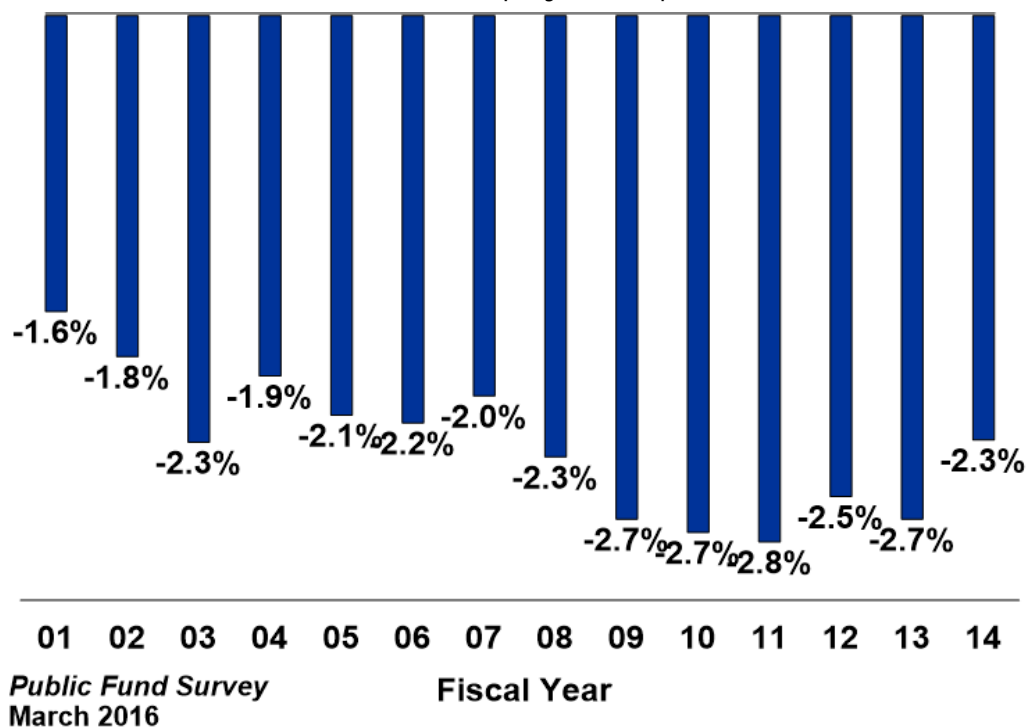
- The green line reflects investment gains and losses, which vacillate as financial markets fluctuate.
- Blue bars indicate contributions, from employees and employers, and red bars show benefit payments.
- Growth in levels of contributions and benefits is mostly stable and predictable over time.
- Investment earnings, **comprising over 60 percent of public pension revenues** over the past thirty years, fluctuate depending on market performance.

$$C + I = B + E$$



PUBLIC DB PLANS NET NEGATIVE EXTERNAL CASH FLOW

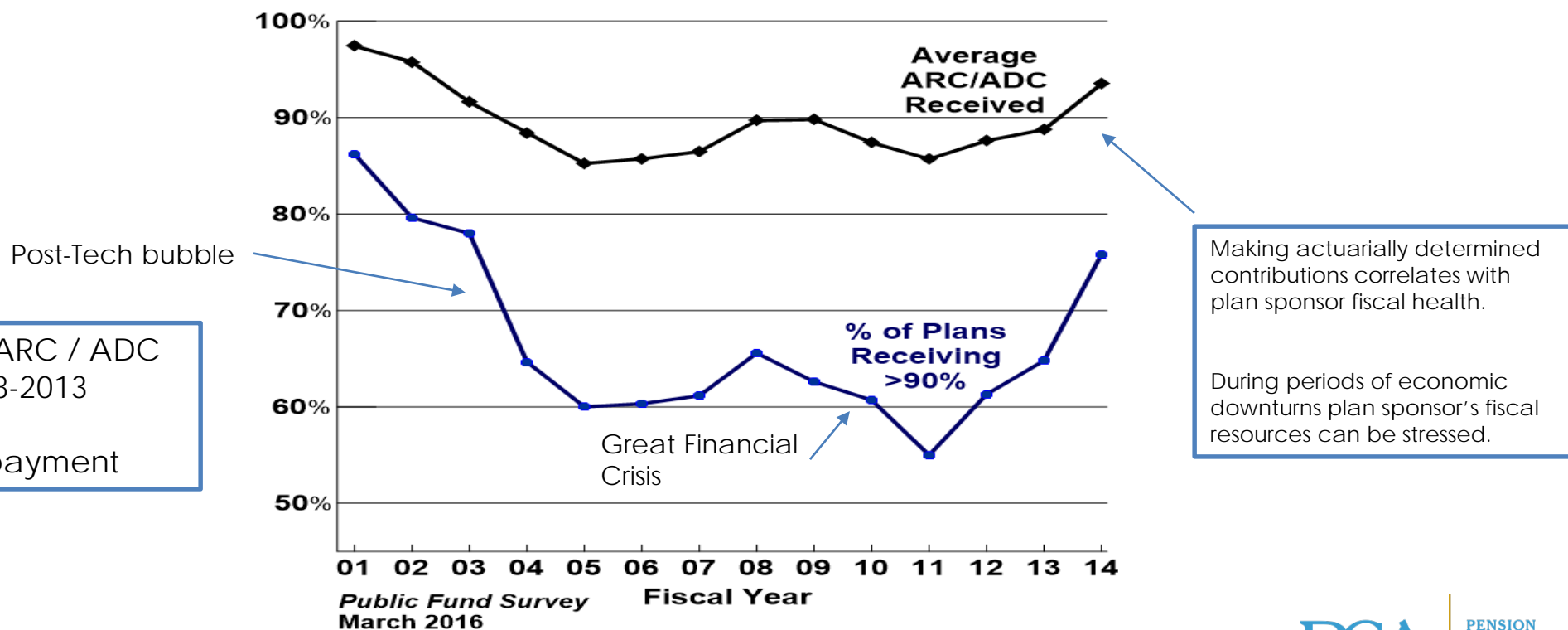
- Median external cash flow as a percentage of assets since FY 01. External cash flow is the difference between a system's revenue from contributions, and payouts for benefits and administrative expenses.
- A growing number of annuitants, combined with a low or negative rate of growth in active members will result in a reduction in a retirement system's external cash flow. Conversely, a growing asset base will offset a rate of negative cash flow.
- Nearly all systems in the survey have an external cash flow that is negative, meaning they pay out each year more than they collect in contributions. A negative cash flow is not, by itself, an indication of financial or actuarial distress. A lower (more negative) cash flow may require the system's assets to be managed more conservatively, with a larger allocation to more liquid assets in order to meet current benefit payroll requirements.



ERSRI net negative external cash flow: ~ 5% p.a.

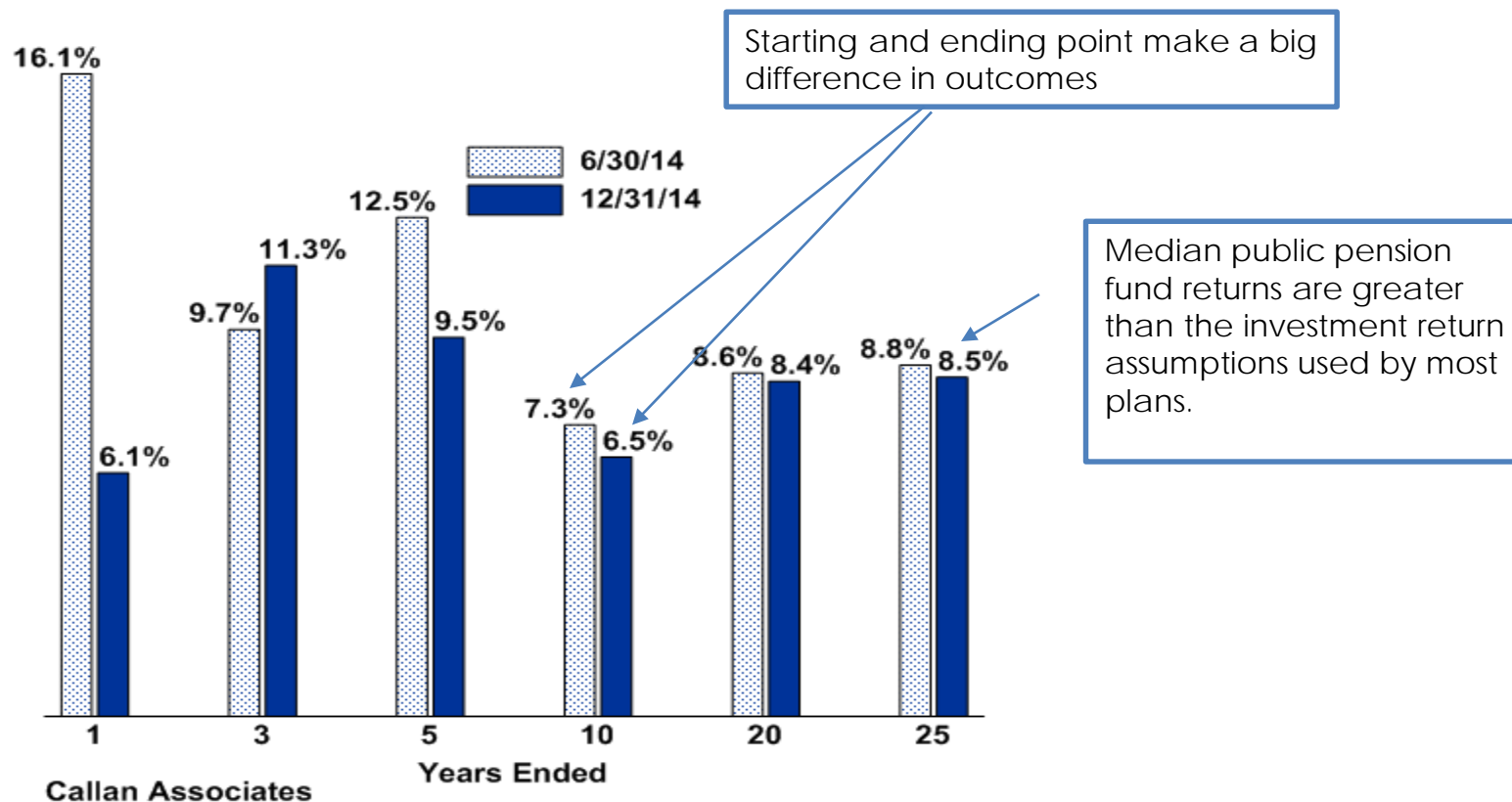
ANNUAL REQUIRED CONTRIBUTION (ARC), NOW ADC

- Governmental Accounting Standards Board Statements 25 and 27 defined the Annual Required Contribution (ARC) and prescribed its reporting by public pension plans and their sponsoring employers. Effective in FY 2014, public pension plans no longer are required by GASB to calculate and report an ARC.
- New GASB statements (67 and 68) require that, when an “actuarially determined contribution,” or ADC, is calculated, information about the ADC should be presented in the financial report of the retirement system and its sponsoring employer(s) (except in cases of agent plans). Per the new statements, an ADC is “a target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.”



PUBLIC DB PLANS - MEDIAN INVESTMENT RETURNS

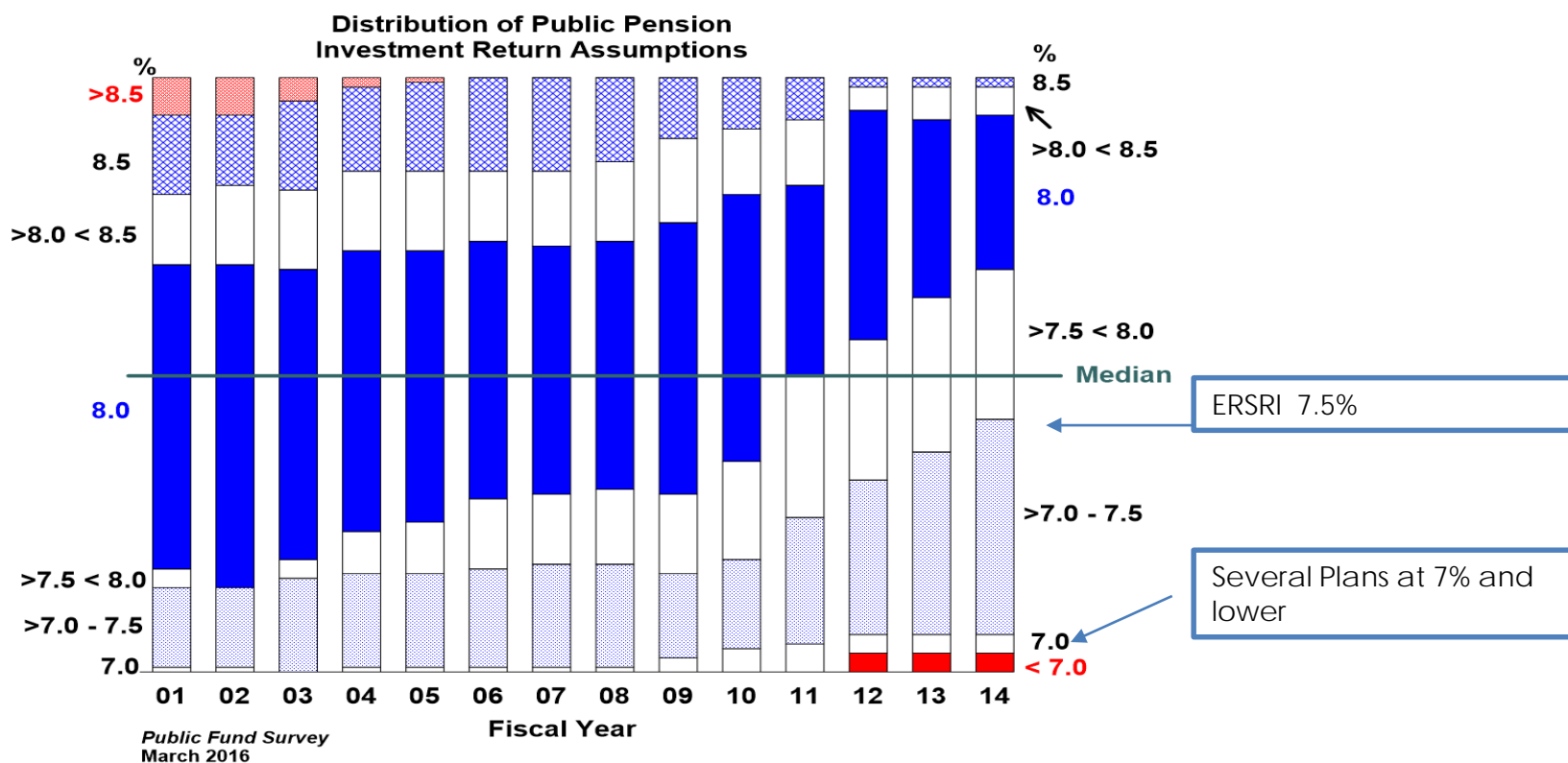
- Returns for longer periods are mostly strong for periods ended in FY 14, particularly 20+ years,



- Although asset portfolio returns have outperformed public plan's actuarial return targets over the long-term, future investment experience may not be as robust.
- The last 25 years of bond market experience is not expected over the next decade (or longer).

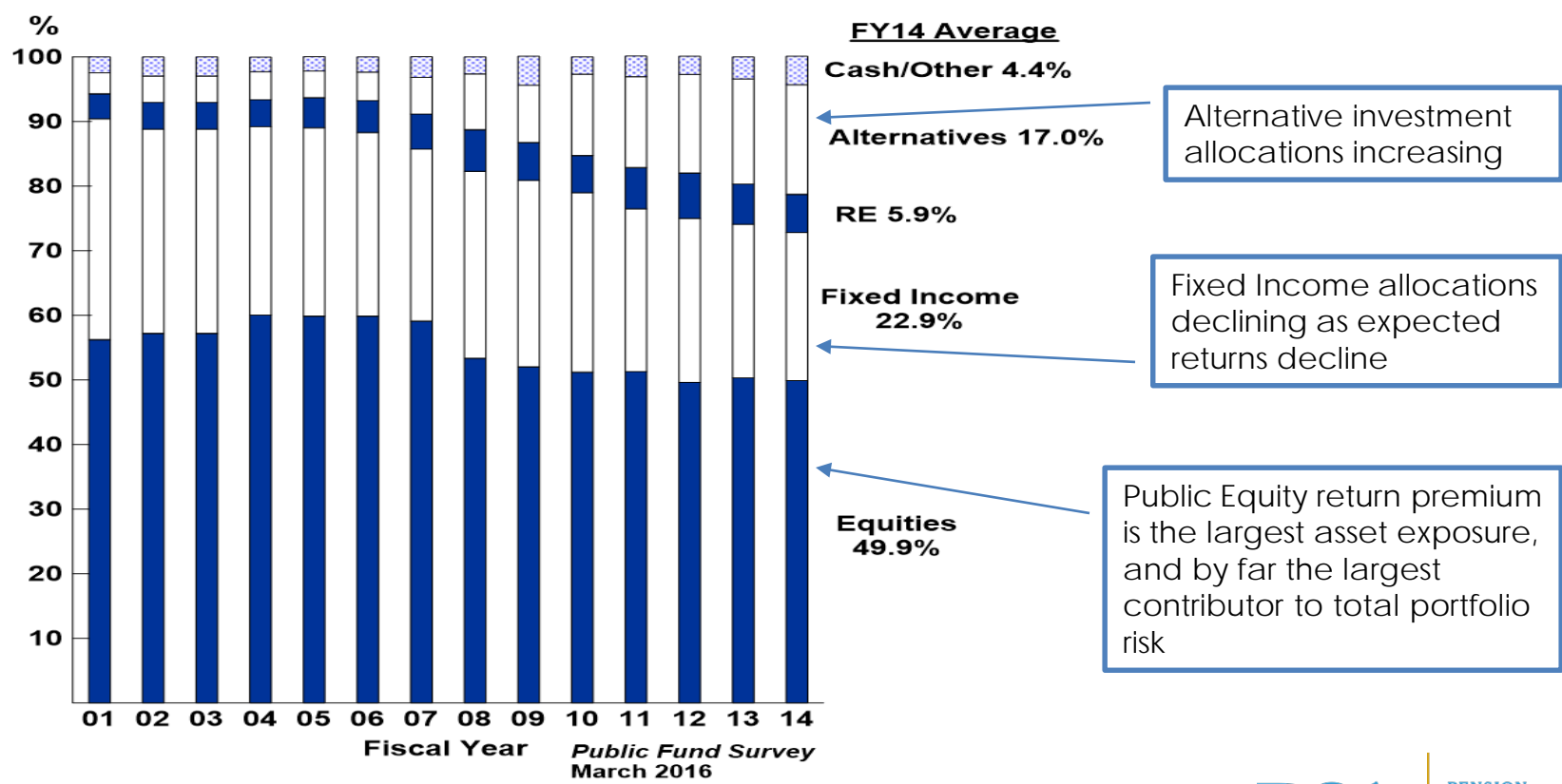
PUBLIC FUND DB PLAN INVESTMENT RETURN ASSUMPTIONS

- A public pension plan's investment return assumption has the greatest effect on the projected long-term cost of the plan. This is because a majority of revenues of a typical public pension fund come from investment earnings. Even a small change in a plan's investment return assumption can impose a disproportionate impact on a plan's funding level and cost.
- Since 2009, a majority of plans have reduced their assumed investment return, resulting in a reduction to the median return assumption toward 7.5 percent. This chart illustrates the steady reduction in assumed rates of return, particularly since 2009.



PUBLIC FUND AVERAGE ASSET ALLOCATION

- The average Public Fund asset allocation is changing; reflecting policymakers' desire to achieve their actuarial return target in an investment environment of falling interest rates.



AVERAGE ASSET ALLOCATION FOR STATE PENSION PLANS

Equity	2004	2009	2014	
U.S. Equity	44.5%	34.7%	27.9%	} More global
Non-U.S. Equity	14.4%	18.2%	21.0%	
Real Estate	3.8%	6.5%	7.2%	← Less Liquid
Private Equity	4.3%	7.4%	10.1%	← Less Liquid
Equity Subtotal	67.0%	66.7%	66.1%	
Debt				
U.S. Fixed	29.1%	27.1%	21.4%	
Non-U.S. Fixed	1.3%	1.2%	2.1%	
Other	2.6%	5.0%	10.4%	
Debt Subtotal	33.0%	33.3%	33.9%	
Total	100%	100%	100%	

Average Public pension plans' public equity portfolios have become more global

- U.S. / non-U.S. Equity allocation split 76%/24% (2004); 57% / 43% (2014)

Source: Wilshire Associates 2015 State Funding Report

ABOUT THE PUBLIC FUND SURVEY

- The Public Fund Survey is an online compendium of key characteristics of most of the nation's largest public retirement systems. This report focuses on FY 2014.
- The Survey is sponsored by the **National Association of State Retirement Administrators**.
- At the end of fiscal year 2014, systems in the Survey held assets of \$3.19 trillion.
- The membership and assets of systems included in the Survey comprise approximately 85 percent of the entire state and local government retirement system community.
- Beginning in FY 13, survey data have been compiled primarily by the Center for Retirement Research at Boston College.
- The primary source of Survey data is public retirement system annual financial reports. Data are also culled from actuarial valuations, benefits guides, system websites, and input from system representatives. The Survey is updated continuously as new information, particularly annual financial reports, becomes available. Using graphs, this summary describes changes in selected elements of the survey.

Source: NASRA

NASRA Public Fund Survey: 2016 edition

Center for Retirement Research at Boston College

	Actuarial Return Target	Funding Ratio %	Net cash flow (% of Assets)	Asset Portfolio Mkt Value (\$ 000)
Alabama ERS	8.00	67	-3.6	10,134,581
Alabama Teachers	8.00	68	-3.8	20,809,872
Alaska PERS	8.00	60	-2.2	7,731,438
Alaska Teachers	8.00	55	-2.9	3,771,139
Arizona Public Safety Personnel	7.50	49	-1.1	6,018,984
Arizona SRS	8.00	76	-2.5	31,547,987
Arkansas PERS	7.50	78	-1.6	6,895,000
Arkansas Teachers	8.00	77	-2.7	13,375,000
California PERS	7.50	76	-1.9	301,256,992
California Teachers	7.50	69	-3.3	158,495,008
Chicago Teachers	7.75	52	-5.0	10,045,543
City of Austin ERS	7.75	71	-0.9	2,193,881
Colorado Affiliated Local	7.50	74	N/A	1,516,275
Colorado Fire & Police Statewide	7.50	101	N/A	1,546,834
Colorado Municipal	7.50	79	1.1	3,629,400
Colorado School	7.50	61	-4.8	22,143,356
Colorado State	7.50	58	-5.4	13,523,488
Connecticut SERS	8.00	42	0.0	10,584,795
Connecticut Teachers	8.00	59	-3.3	15,546,500
Contra Costa County	7.25	82	-0.6	6,557,496
DC Police & Fire	6.50	107	1.7	4,288,727
DC Teachers	6.50	89	-0.5	1,638,583
Delaware State Employees	7.20	92	-2.6	8,067,032
Denver Employees	8.00	76	-3.1	2,062,320
Denver Public Schools	7.50	83	-3.7	3,151,456
Duluth Teachers	8.00	57	-6.5	202,875
Fairfax County Schools	7.50	77	-2.6	2,029,005
Florida RS	7.65	87	-3.9	138,621,200
Georgia ERS	7.50	73	-6.5	12,376,120
Georgia Teachers	7.50	82	-2.9	62,061,722
Hawaii ERS	7.55	61	-2.0	13,641,800
Houston Firefighters	8.50	87	-2.7	3,430,437
Idaho PERS	7.00	94	-1.6	13,833,100
Illinois Municipal	7.50	87	-1.2	32,700,208
Illinois SERS	7.25	34	0.1	13,315,613
Illinois Teachers	7.50	41	-1.8	42,150,764
Illinois Universities	7.25	42	-1.8	15,844,714
Indiana PERF	6.75	82	-1.2	13,791,261
Indiana Teachers	6.75	48	-1.8	10,393,583
Iowa PERS	7.50	83	-2.7	26,460,428
Kansas PERS	8.00	62	-2.5	15,662,010

	Actuarial Return Target	Funding Ratio %	Net cash flow (% of Assets)	Asset Portfolio Mkt Value (\$ 000)
Kentucky County	6.75	62	-2.3	8,084,774
Kentucky ERS	6.75	24	-17.7	2,951,854
Kentucky Teachers	7.50	54	-4.5	16,174,199
LA County ERS	7.50	80	-2.0	43,654,464
Louisiana SERS	7.75	59	-4.3	10,606,475
Louisiana Teachers	7.75	57	-3.0	16,145,773
Maine Local	7.13	91	0.0	2,415,219
Maine State and Teacher	7.13	81	-2.6	10,083,707
Maryland PERS	7.55	66	-1.7	14,547,390
Maryland Teachers	7.55	71	-1.6	26,067,577
Massachusetts SERS	7.50	70	0.0	21,581,132
Massachusetts Teachers	7.50	56	-1.6	22,940,196
Michigan Municipal	7.75	71	-1.2	8,539,183
Michigan Public Schools	8.00	60	-5.6	39,625,616
Michigan SERS	8.00	62	-4.3	9,961,903
Minnesota PERF	8.00	74	-3.2	15,644,540
Minnesota State Employees	8.00	83	-3.4	10,326,272
Minnesota Teachers	8.40	74	-4.9	18,181,932
Mississippi PERS	7.75	61	-2.9	22,569,940
Missouri DOT and Highway Patrol	7.75	49	-2.4	1,795,264
Missouri Local	7.25	92	-0.2	5,388,199
Missouri PEERS	8.00	85	-0.4	3,584,719
Missouri State Employees	8.00	75	-3.7	8,637,759
Missouri Teachers	8.00	83	-2.7	31,846,600
Montana PERS	7.75	74	-1.8	4,595,805
Montana Teachers	7.75	65	-2.0	3,397,436
Nebraska Schools	8.00	83	-1.0	8,622,024
Nevada Police Officer and Firefighter	8.00	71	0.1	6,261,882
Nevada Regular Employees	8.00	69	-1.1	22,846,660
New Hampshire Retirement System	7.75	61	-1.4	6,700,554
New Jersey PERS	7.90	61	-5.4	29,894,900
New Jersey Police & Fire	7.90	73	-3.5	25,128,684
New Jersey Teachers	7.90	54	-3.4	29,044,778
New Mexico PERF	7.75	76	-2.9	13,482,816
New Mexico Teachers	7.75	63	-2.6	10,714,996
New York City ERS	7.00	70	-1.3	50,505,972
New York City Teachers	8.00	58	-1.5	37,521,424
New York State Teachers	7.50	93	-3.6	90,007,125
North Carolina Local Government	7.25	100	-1.5	21,498,148
North Carolina Teachers and State Employees	7.25	95	-3.0	62,363,808
North Dakota PERS	8.00	65	0.0	1,895,837
North Dakota Teachers	7.75	62	-2.0	1,940,474

	Actuarial Return Target	Funding Ratio %	Net cash flow (% of Assets)	Asset Portfolio Mkt Value (\$ 000)
NY State & Local ERS	7.00	92	-1.9	146,046,000
NY State & Local Police & Fire	7.00	93	-2.1	25,513,000
Ohio PERS	8.00	84	-3.5	74,856,000
Ohio Police & Fire	8.25	68	-3.7	11,882,000
Ohio School Employees	7.75	71	-2.9	13,029,300
Ohio Teachers	7.75	69	-5.8	66,657,175
Oklahoma PERS	7.50	89	-2.2	7,759,258
Oklahoma Teachers	8.00	63	-1.4	12,368,961
Oregon PERS	7.50	104	-4.5	65,401,500
Pennsylvania School Employees	7.50	62	-5.9	57,231,800
Pennsylvania State ERS	7.50	59	-5.6	26,584,948
Phoenix ERS	7.50	59	-1.6	2,120,700
Rhode Island ERS	7.50	59	-6.3	6,191,278
Rhode Island Municipal	7.50	84	-3.0	1,341,063
San Diego County	7.50	81	-1.0	9,824,431
San Francisco City & County	7.50	85	-1.3	18,012,088
South Carolina Police	7.50	63	-2.1	26,910,740
South Carolina RS	7.50	70	-3.8	4,105,308
South Dakota PERS	7.25	100	-2.2	9,887,095
St. Louis School Employees	8.00	84	-6.5	922,922
St. Paul Teachers	8.00	62	-5.3	947,972
Texas County & District	8.00	91	0.0	23,751,800
Texas ERS	8.00	77	-4.3	25,431,922
Texas LECOS	8.00	73	-2.6	883,595
Texas Municipal	6.75	86	-0.1	22,860,398
Texas Teachers	8.00	80	-3.0	128,398,000
TN Political Subdivisions	7.50	95	0.6	7,398,284
TN State and Teachers	7.50	93	-2.4	31,851,034
Utah Noncontributory	7.50	84	-1.3	20,225,016
Vermont State Employees	8.10	78	-1.0	1,566,076
Vermont Teachers	7.90	60	-3.6	1,610,286
Virginia Retirement System	7.00	70	-2.1	57,144,568
Washington LEOFF Plan 1s	7.80	107	N/A	8,638,000
Washington LEOFF Plan 2	7.50	127	1.7	5,499,000
Washington PERS 1s	7.80	61	N/A	7,941,557
Washington PERS 2/3s	7.80	90	0.7	26,386,300
Washington School Employees Plan 2/3s	7.80	91	0.9	3,623,800
Washington Teachers Plan 1s	7.80	69	N/A	6,494,234
Washington Teachers Plan 2/3s	7.80	94	1.4	9,193,000
West Virginia PERS	7.50	83	-1.8	5,208,828
West Virginia Teachers	7.50	66	-1.1	6,682,093
Wisconsin Retirement System	7.20	100	-2.9	89,360,400
Wyoming Public Employees	7.75	79	-2.6	6,609,613

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