



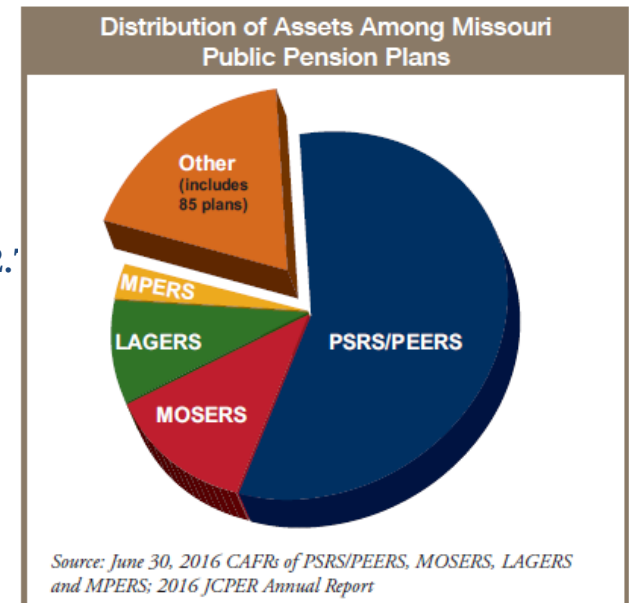
Serving Missouri's
Public Schools
Past, Present
and Future

PSRS/PEERS Update
April 2018

Quick Facts

PSRS/PEERS' benefit is an important source of financial security for members and retirees.

- PSRS/PEERS Quick Facts:
 - Over 260,000 active, inactive, retirees and beneficiaries
 - \$41.5 billion in invested assets as of June 30, 2017
 - For the year ended June 30, 2017, PSRS/PEERS paid more than **\$2.1 billion** in benefits to over 88,600 retirees and beneficiaries
 - As of June 30, 2017, 83.98% actuarially pre-funded for PSRS; 85.81% actuarially pre-funded for PEERS
 - FY 2017 investment return of 12.48%
 - 43rd largest public pension plan in the nation, 95th largest institutional investor in the world



today, *tomorrow*
together.

For the last 71 years, the Public School and Education Employee Retirement Systems of Missouri (PSRS/PEERS) have worked in partnership with Missouri public schools to provide retirement benefits to our members. We do so through the quality of PSRS/PEERS' plan design, professional plan management, strong investment performance and outstanding commitment to the over 260,000 members we serve.

PSRS/PEERS is the largest defined benefit plan in the United States. **43rd**

As well as the,

95th largest investor in the world.

2017 PSRS/PEERS Retirees

PSRS 59,772

PEERS 29,002



PSRS/PEERS QUICK FACTS

as of June 30, 2017

New PSRS/PEERS Memberships in 2017

13,564



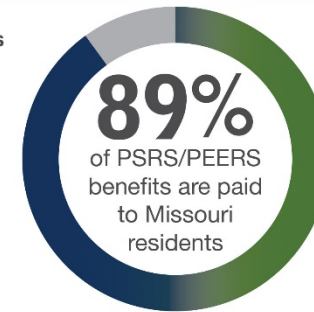
In fiscal year 2017, total benefit payments were more than

\$2.7 billion

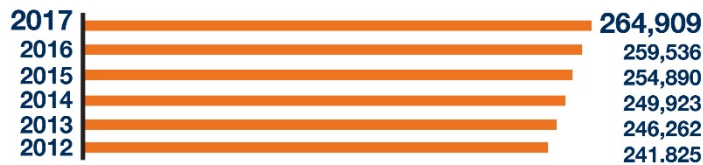
Of this amount, more than

\$2.4 billion

was distributed among Missouri's 114 counties



Growth of PSRS/PEERS Total Membership 2012-2017



PSRS/PEERS Over 80 Combined



*oldest PSRS - 109
oldest PEERS - 106*

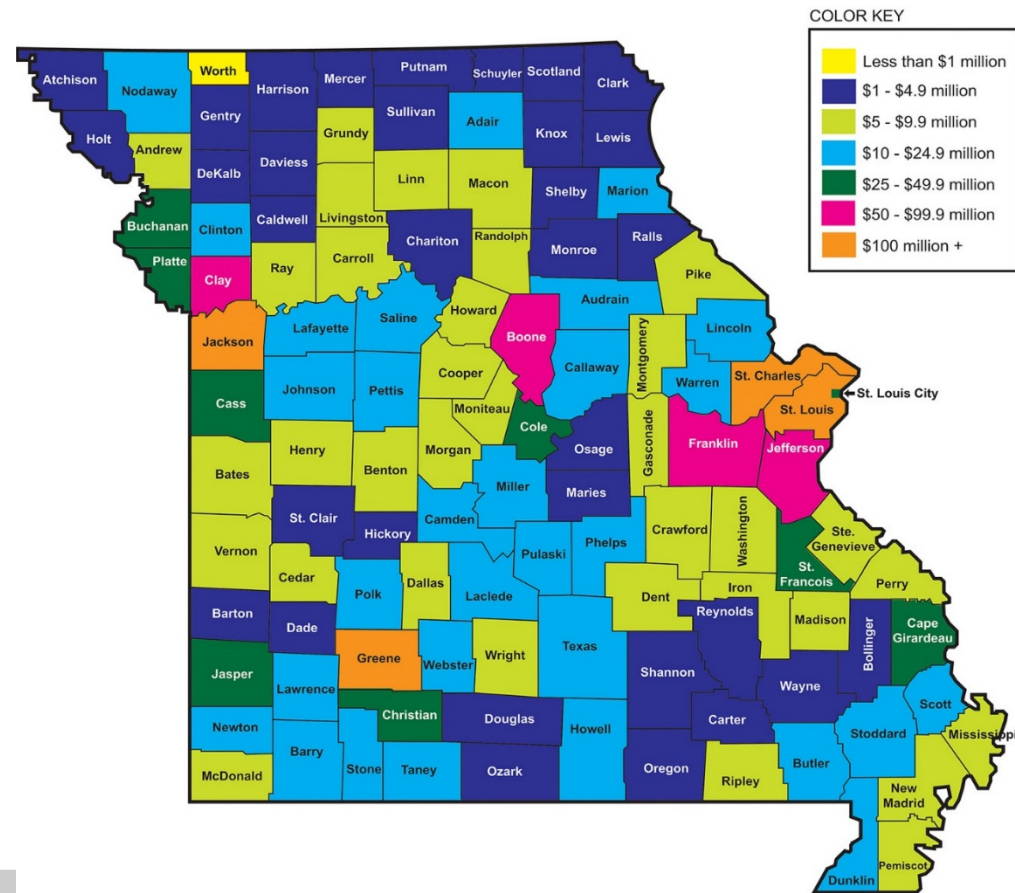
TOTAL MARKET VALUE of ASSETS



PSRS/PEERS: Major Economic Impact

Of the more than 91,000 individuals receiving benefits from PSRS/PEERS, approximately 88% of them live in Missouri. As of **December 31, 2017**, total benefit payments were more than **\$2.7 billion**. Of this amount, more than \$2.4 billion was distributed among Missouri's 114 counties, positively impacting the state's economy.

See PSRS/PEERS' [website](#) for an interactive map on Missouri's counties.



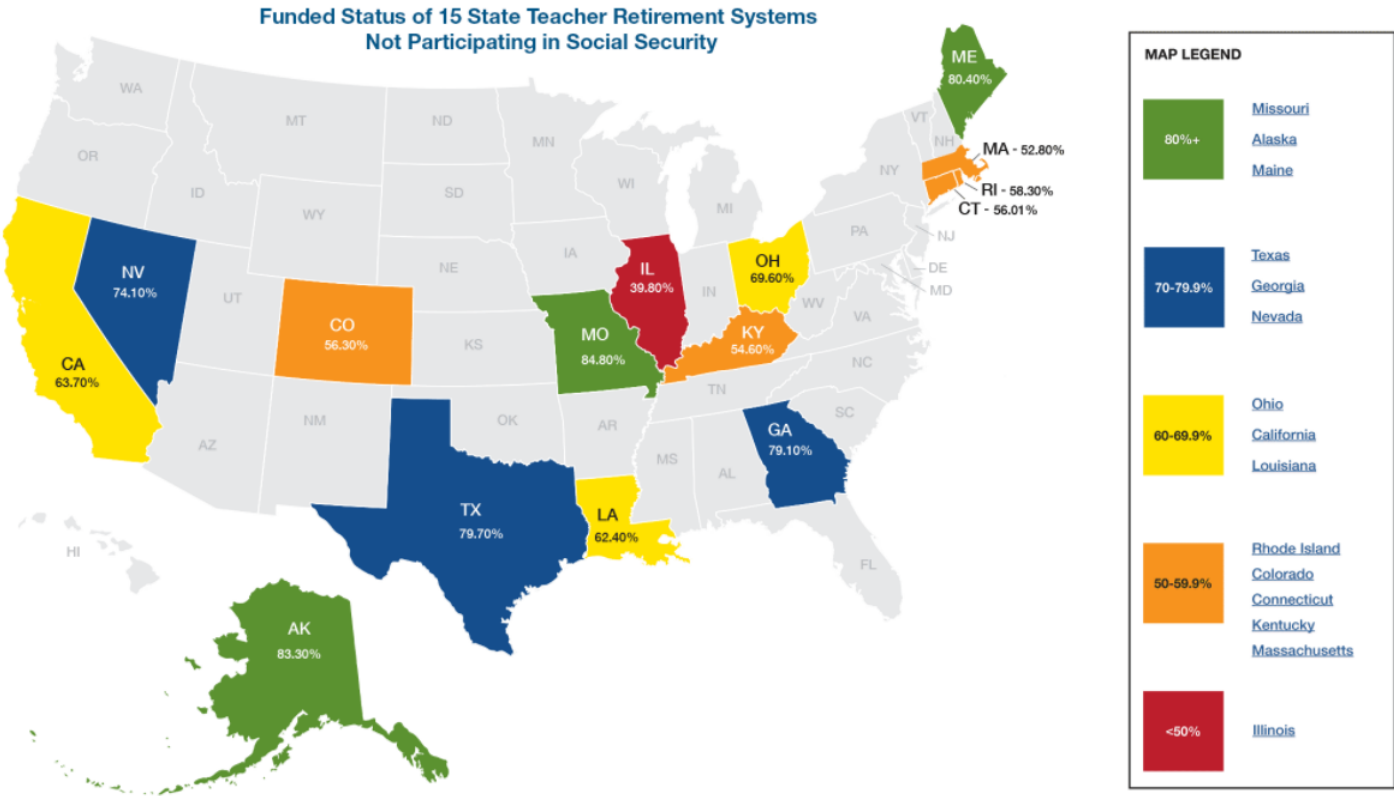
PSRS/PEERS Goals

- To provide retirement security to Missouri's educators and education employees after a full career of service.
- To help school districts attract and retain the best and brightest educators and employees for Missouri's school children.
- To manage the Systems in a prudent and cost-efficient manner.

PSRS - The Missouri Model

The "Missouri Model" is used in the retirement industry to describe our trust fund's operational model as the one others aspire to emulate. PSRS, as measured against all other large public retirement systems, is clearly one of, if not the top retirement system in the nation. PSRS has been and continues to be financially stable while providing lifetime retirement security to current and future members. PSRS has provided this financial stability to Missouri educators since 1946 based on sound governance decisions and will continue to do so for future educators.

The interactive map below provides a comparison of all 15 state teacher retirement systems whose members do not contribute to Social Security.

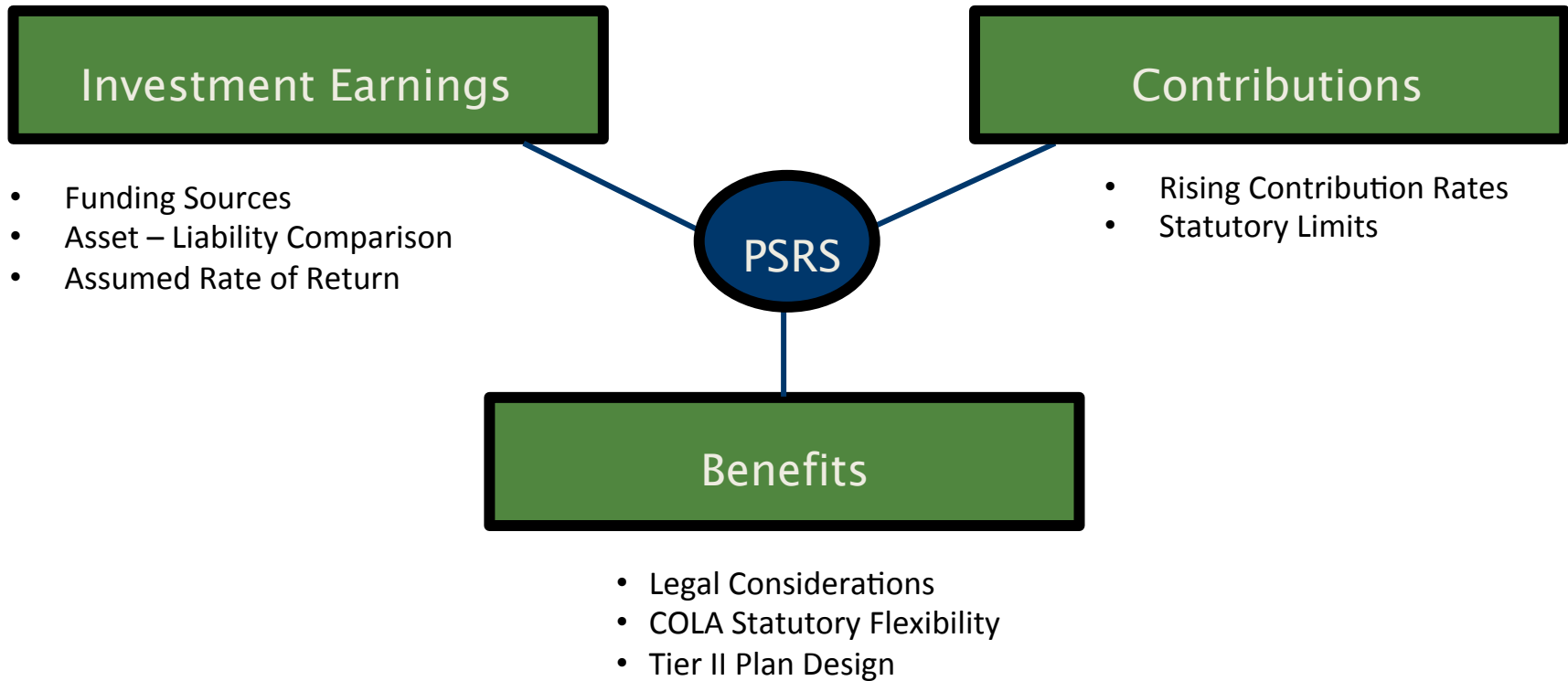




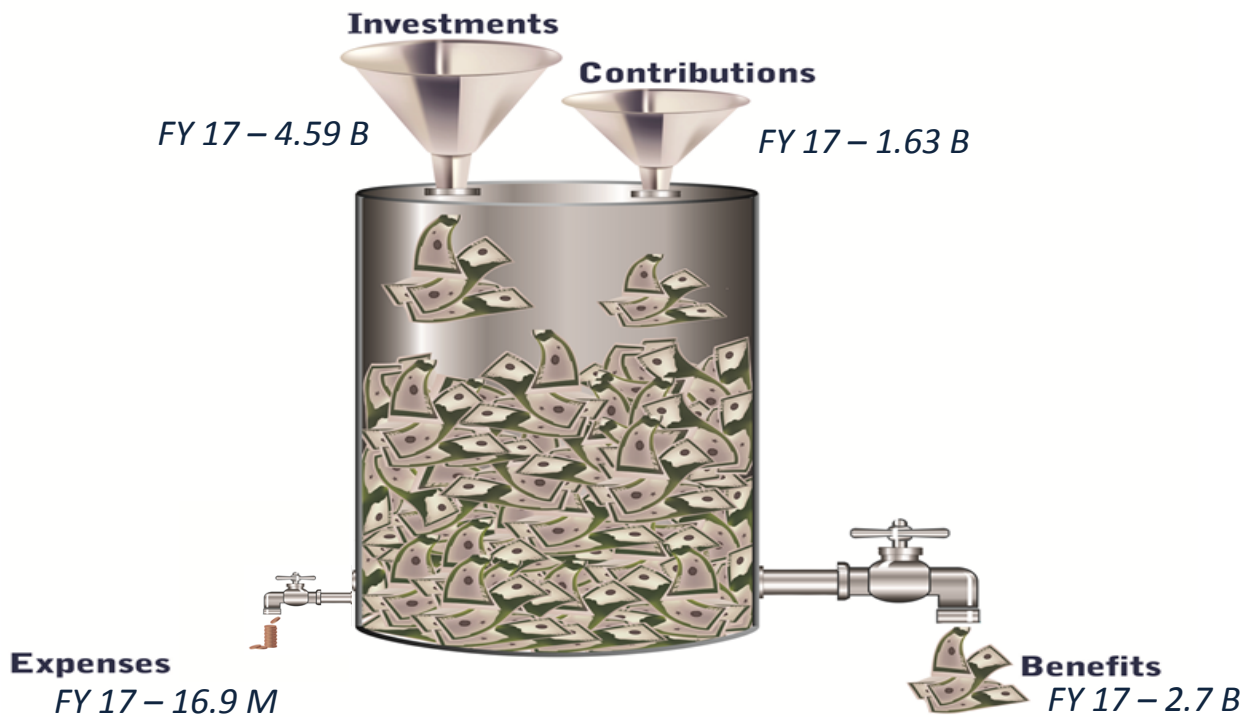
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FUNDING COMPONENTS

Funding Components



Pension Funding Components



Impact of 1% (PSRS/PEERS)

Investment Returns	\$414.8 million
Contribution Rate	\$62.2 million
COLA (1 year)	\$27.2 million

Investment Earnings

Funding Sources

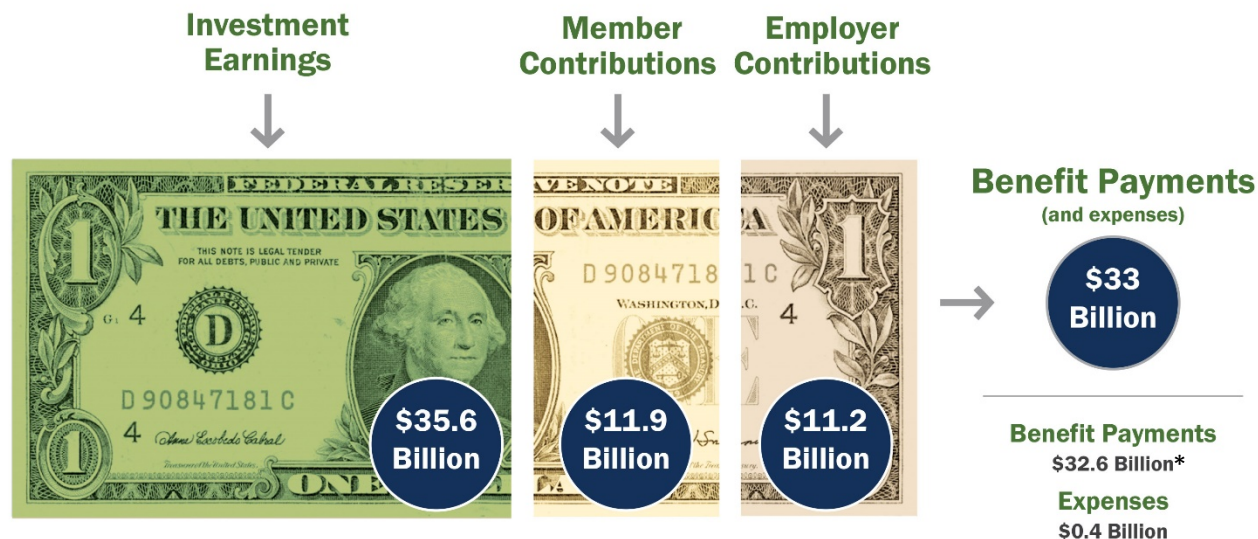
- The PSRS/PEERS Dollar:
 - Pensions are a shared responsibility
 - Every dollar paid to PSRS/PEERS retirees and beneficiaries comes from three sources:



Note: the member amount shown above is slightly higher than the employer amount because it includes funds paid by members to purchase and reinstate service, as well as their contributions.

* 20-year average is as of June 30, 2017.

20-Year Period Fiscal Year Ended 1997-2017



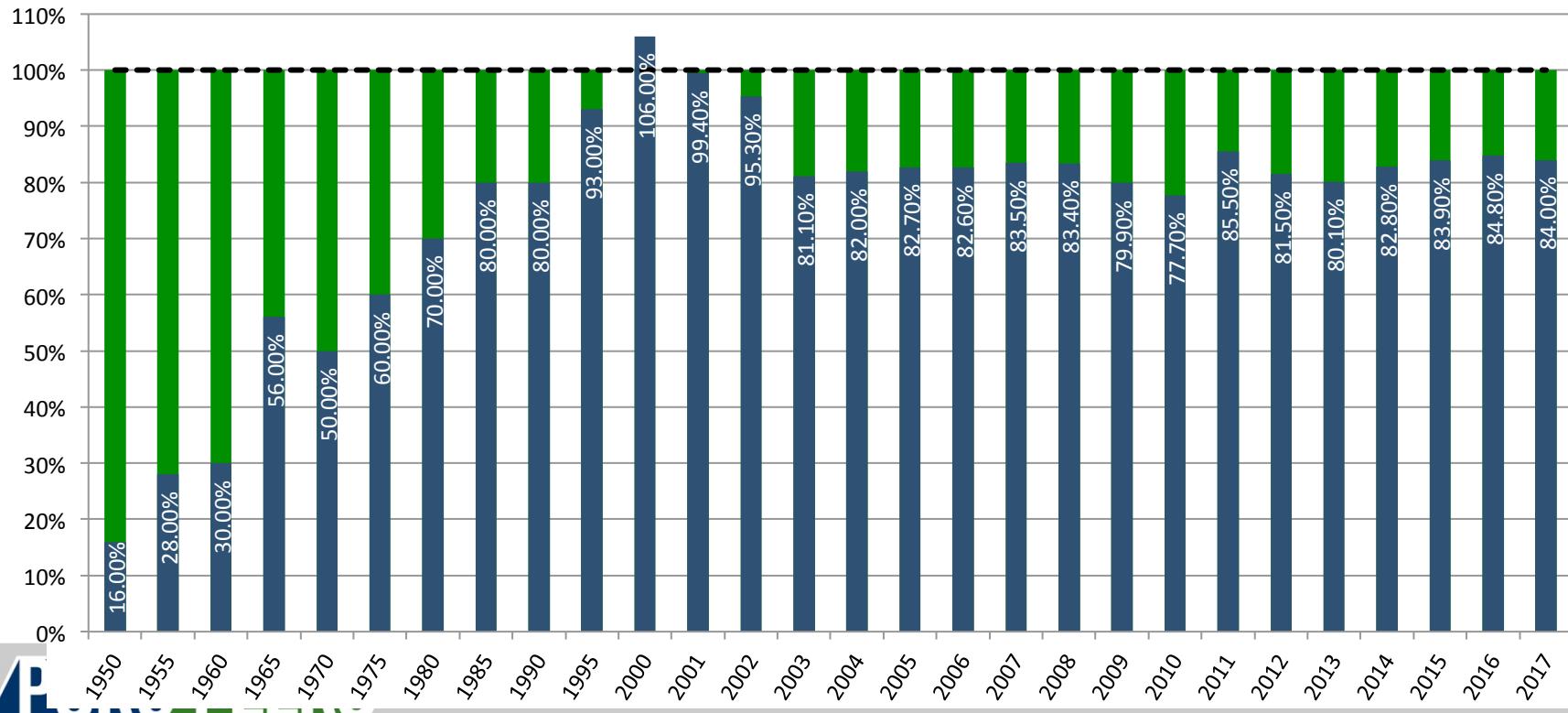
*Over 85% of the benefit paid (approx. \$27.7 B) was distributed to Missouri residents.

Market Value of Assets — 6/30/97: **\$15.8 Billion**

Market Value of Assets — 6/30/17: **\$41.5 Billion**

PSRS Pre-Funded History

- 1996-97 (106%)
- 1997-98 (104%)
- 1998-99 (105%)
- 1999-00 (106%)

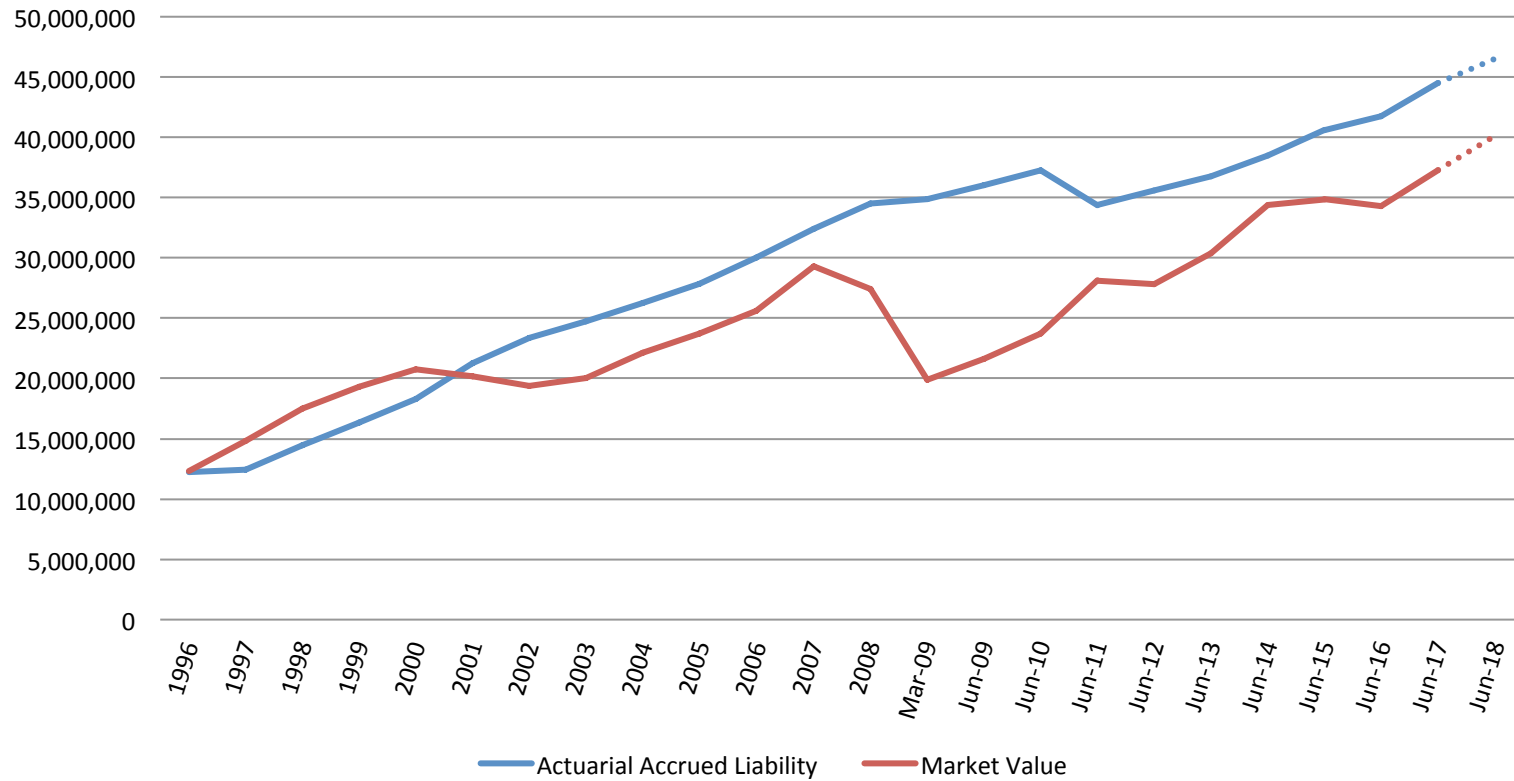


Investment Returns

- As of June 30, 2017, the annualized fund performance was 12.48%
 - In FY 2017, there was approximately \$4.7 billion in investment earnings.
 - Investment earnings have been approximately \$16 billion over the last five years.
 - 2016 Fiscal Year return: 1.8%
 - 2015 Fiscal Year return: 4.5%
 - 2014 Fiscal Year return: 16.9%
 - 2013 Fiscal Year return: 12.6%
- PSRS/PEERS closed FY 2017 with actuarial pre-funded ratios of 83.98% and 85.81%, respectively.
- PSRS/PEERS' investment returns for FY 2017 are close to median relative to peer universe of public plans above \$1 billion.
 - Investment returns continue to be above median relative to other public pension plans for every time period over the past seven years.
 - The Systems exhibit a lower risk profile than two-thirds of the peer group.
- The long-term (25-30 year) returns for PSRS/PEERS are above 7.6%.

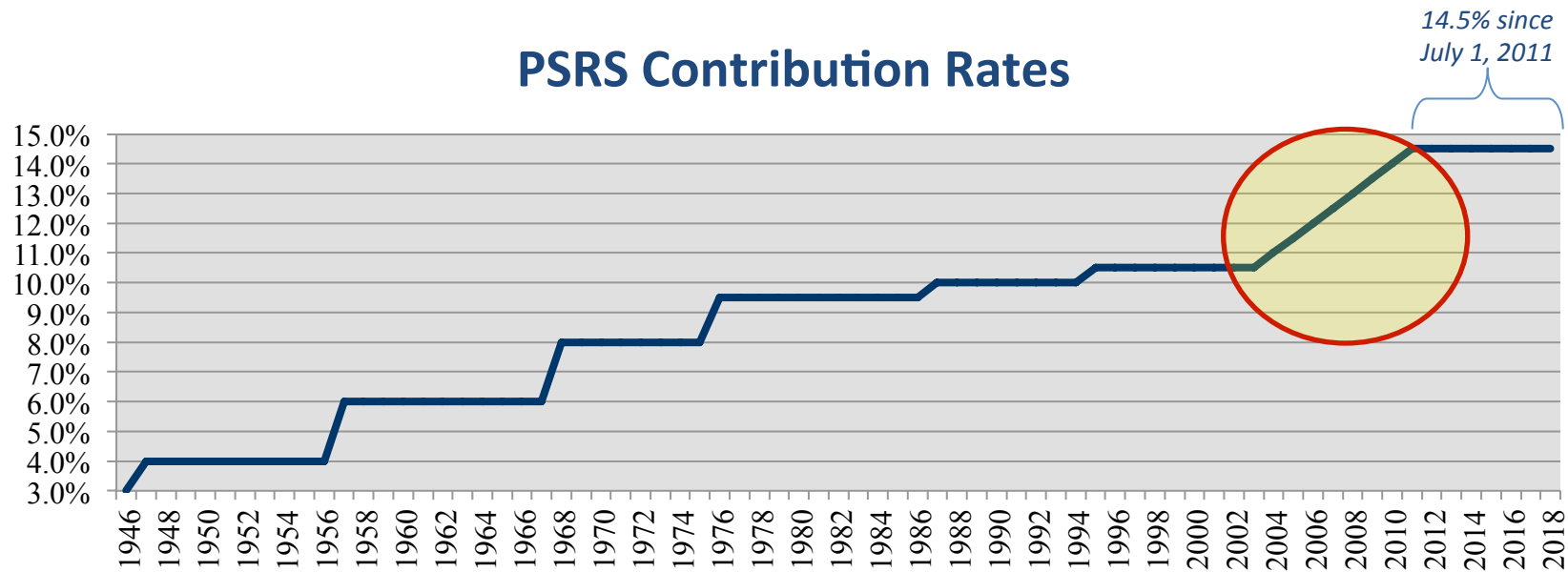


PSRS Asset-Liability Comparison



PSRS Contribution Rate History

- The law limits any change in contribution rates to 1.0% per year (.5% each to the member and the employer)
 - 14.5% (29% total) effective July 1, 2018



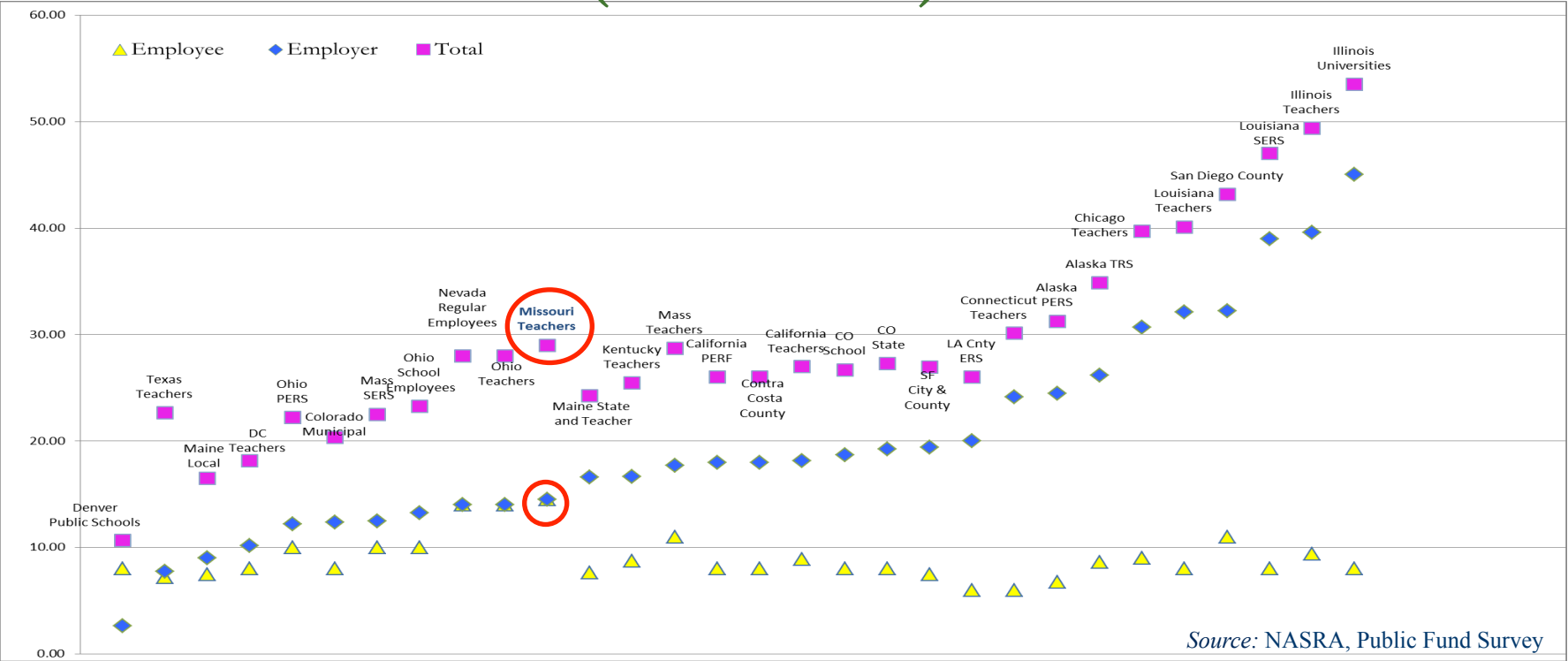
Contribution rates increased (despite long-term investment returns above 8%) primarily due to benefit increases

PSRS Benefit Improvement and Contribution Rate Increase¹ Timeline

1948 - 1957	1958 - 1968	1969 - 1976	1977 - 1987	1988 - 1995	1996 - 2004	2005 - 2011	2012 - 2018
8%	12%	16%	19%	20%	21%	22% - 28% ³	29% ⁴
<p>1948</p> <p>Full Benefits at Age 65</p> <p>10-Year Final Average Salary (FAS)</p> <p>30-Year Vesting</p> <p>1950</p> <p>Formula Increase</p> <p>1953</p> <p>Minimum Benefits at Age 65 with 25 Years of Service</p> <p>1954</p> <p>Formula Increase</p> <p>1957</p> <p>Formula Increase</p> <p>20-Year Vesting</p>	<p>1960</p> <p>Full Benefits at Age 60</p> <p>1967</p> <p>Formula Increase</p>	<p>1972</p> <p>Retiree "Special Advisors" ad hoc Benefit Increase</p> <p>5-Year FAS</p> <p>10-Year Vesting</p> <p>1975</p> <p>2.0% Formula Factor</p> <p>Ad hoc Retiree Increase, 2% for each year retired</p>	<p>1977</p> <p>COLA Program, 4th January, 2% Max</p> <p>Full Benefits at Age 55 with 30 Years of Service</p> <p>1979</p> <p>Full Benefits at any age with 30 Years of Service</p> <p>1980</p> <p>Annual COLA Max 4%</p> <p>1986</p> <p>2.1% Formula Factor</p> <p>1987</p> <p>Minimum Benefits</p> <p>Lifetime COLA cap raised:</p> <p>1981 – 24%</p> <p>1985 – 32%</p> <p>1987 – 40%</p>	<p>1988</p> <p>5-Year Vesting</p> <p>1991</p> <p>Full Benefits at Age 55 with 25 Years of Service</p> <p>1992</p> <p>Annual COLA Max 5%</p> <p>1994</p> <p>2.3% Formula Factor</p> <p>1995</p> <p>Ad hoc Retiree Increase</p> <p>1989, 1990, 1991, 1994, 1995</p> <p>Minimum Benefits Enhanced</p> <p>Lifetime COLA cap raised:</p> <p>1990 – 52%</p> <p>1991 – 56%</p> <p>1995 – 65%</p>	<p>1996</p> <p>25-and-Out Modified Formula</p> <p>Minimum Benefits Enhanced</p> <p>1998</p> <p>2.5% Formula Factor</p> <p>1999</p> <p>Rule of 80 Full Benefits</p> <p>3-Year FAS</p> <p>2002²</p> <p>2.55% Formula Factor with 31+ Years of Service</p> <p>1998, 1999, 2000, 2001</p> <p>Ad hoc Retiree Increases</p> <p>1998, 2000, 2003</p> <p>25-and-Out Extended</p> <p>COLA Effective Date</p> <p>2001</p> <p>3rd January</p> <p>2002</p> <p>2nd January</p> <p>Lifetime COLA cap raised:</p> <p>1997 – 75%</p> <p>2001 – 80%</p>	<p>2007</p> <p>25-and-Out Extended</p> <p>2011</p> <p><i>Funding Stabilization Policy Adopted</i></p>	<p>2013</p> <p>25-and-Out made⁵ permanent</p>
<p align="center">FOOTNOTES</p> <p>1- Fiscal year Contribution Rate Increase</p> <p>2- 2.55% Formula Factor Expired July 1, 2014</p> <p>3- Contributions increased annually by the statutory maximum of 1%</p> <p>4- Stable rate for seven consecutive years</p> <p>5- Benefit change resulted in a cost savings to PSRS</p>							



Non-Social Security Public Retirement Systems (As of FY16)



PSRS Contribution Rate Compared to Other Public Funds

- According to the Public Fund Survey for FY 2016 for plans that do not contribute to Social Security:
 - The average employee contribution rate is 8.93%
 - The average employer contribution rate is 19.94%
 - The average total contribution rate is 29.15%
- While the total contribution rate is in line with other funds, PSRS' employee contribution rate is the highest of the plans surveyed.
- PSRS/PEERS are relatively unique in that employee and employer contributions are split 50/50.



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COLA REVIEW

Cost of Living Statutory Flexibility

- Missouri statute provides the PSRS/PEERS Board of Trustees some discretion when setting annual benefit increases.
- Section 169.070.12 Provides:
 - An increase in benefits the 2nd January following retirement
 - An increase in benefits if the cost-of-living (COLA) increase is at least 2%
 - A maximum 5% annual cost of living adjustment (COLA)
 - 80% lifetime COLA cap

Change in Consumer Price Index (CPI-U)	Minimum Adjustment	Maximum Adjustment
<0%	0%	0%
0%-2%	0%	5%
2%-5%	2%	5%
>5%	5%	5%

COLA Discussion History

- Throughout the Spring/Summer 2016 the PSRS/PEERS Board worked with staff and consultants to identify various COLA scenarios and parameters within the stated goals
- The Board requested analysis on all scenarios at the following assumed rates of investment return: 7.75%, 7.6%, 7.5%, and 7.25%
- The Board then requested that the Systems' actuaries, PricewaterhouseCoopers (PwC), calculate the 2017 actuarial valuation with these different COLA scenarios and assumptions

Board Goals for COLA

- Provide for the security and financial stability of the Systems, which includes:
 - Maintaining an 80% pre-funded ratio
 - Allowing for a reasonable assumed rate of return given capital market projections
- Maintain the contribution rates of both Systems at or below current levels
- Maintain retiree purchasing power by providing a consistent cost-of-living adjustment for PSRS/PEERS' retirees
 - Cost of living increase should be dependable and affordable without harming the financial stability of the Systems
- Requires no statutory, legislative action or change

PSRS Board Meeting – November 3, 2017

- PwC presented the results of the June 30, 2017 actuarial valuations for the systems
- Contribution Rates 2018-2019: Board voted to keep the contribution rates at PSRS (29%) and PEERS (13.72%)
- Based on the information presented by PwC from the working session and Board meeting the Board reviewed the current funding policy assumptions:
 - Assumed Rate of Return – lowered from 7.75% to 7.6%
 - COLA Policy -changed to current COLA assumption effective with the January 2019 COLA and granted a one-time COLA for January 2018

COLA POLICY

- Effective January 1, 2018, eligible benefit recipients received a one-time 1.63% COLA, which was equal to the CPI-U for fiscal year 16-17

Raw CPI-U Index values			
	Index Value		
		month	to-date
Jun-16	241.038		
Jul-16	240.647	-0.0016	-0.1622%
Aug-16	240.853	0.0009	-0.0768%
Sep-16	241.428	0.0024	0.1618%
Oct-16	241.729	0.0012	0.2867%
Nov-16	241.353	-0.0016	0.1307%
Dec-16	241.432	0.0003	0.1635%
Jan-17	242.839	0.0058	0.7472%
Feb-17	243.603	0.0031	1.0641%
Mar-17	243.801	0.0008	1.1463%
Apr-17	244.524	0.0030	1.4462%
May-17	244.733	0.0009	1.5330%
Jun-17	244.955	0.0009	1.6251%

COLA POLICY

- Effective with the January 2019 COLA the policy will be:
 - 2% COLA for eligible retirees when CPI-U is between 0%-2% **and** cumulatively 2% or more,
 - CPI-U between 2-5% = 2% COLA,
 - CPI-U 5% or more = 5% COLA

2017 Board Approved Funding Policy Effective for January 1, 2019 COLA	
CPI - U	COLA per Board Approved Funding Policy
<i>Less than 0.0%</i>	0.0%
<i>0.0%-2.0%</i>	0.0% when CPI-U is cumulatively below 2.0%
<i>0.0%-2.0%</i>	2.0% when CPI-U cumulatively reaches 2.0% or more*
<i>2.0%-5.0%</i>	2.0%
<i>Over 5.0%</i>	5.0%

* Resets cumulative calculation after a COLA is provided

CPI-U Calculation FY 17-18

- In the United States, the Bureau of Labor Statistics publishes the Consumer Price Index-Urban (CPI-U) every month
- CPI-U is time period dependent
 - The PSRS/PEERS’ regulation requires that the time period for the calculation be from July 1 to June 30.
- CPI-U is 1.65% through February 28, 2018
 - *CPI-U Cumulative is 1.65%*

Raw CPI-U Index values			
	Index Value		
Jun-17	244.955	<u>month</u>	<u>to-date</u>
Jul-17	244.786	-0.0007	-0.0690%
Aug-17	245.519	0.0030	0.2302%
Sep-17	246.819	0.0053	0.7610%
Oct-17	246.663	-0.0006	0.6973%
Nov-17	246.669	0.0000	0.6997%
Dec-17	246.524	-.0.0006	0.6405%
Jan-18	247.867	0.0054	1.1888%
Feb-18	248.991	0.0045	1.6476%
Mar-18			
Apr-18			
May-18			
Jun-18			



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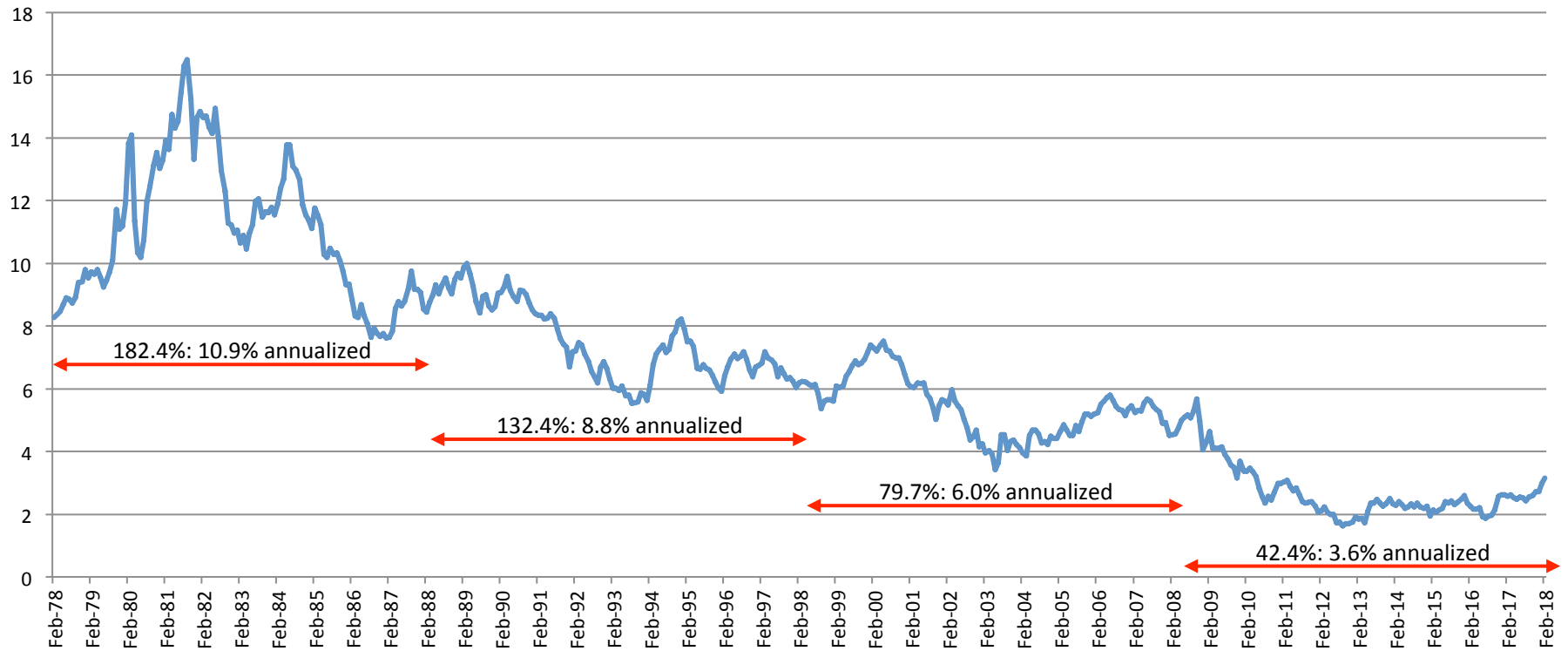
CHALLENGES

Challenges and Threats

- Economic
 - Overall Economic Reality
 - Federal Budget Deficit
 - Growing Level of Debt
 - Investment Challenges
 - Market “short-term” outlook
 - Potential Funding Challenges
 - Actuarial Challenges
 - Investment Returns
 - Mortality



Yield to Maturity: U.S. Bond Index Over Decades



Mortality

- People are living longer – mortality rising across the nation
 - Impact of changing mortality assumptions for the Systems’ are significant
 - Total financial impact in 2016:

Actuarial Accrued Liability	Funded Status	Actuarially Determined Contribution Rate
\$2.03 B	-3.99%	3.57%

- Example:

55 year old female PSRS Service Retiree:	
Life Expectancy prior to 2016: 80.6 years of age	
Life Expectancy since 2016: 83.3 years of age	
Thus, based on the current mortality assumption, a 55 year old female PSRS service retiree is expected to live approximately 32 months longer , or receive benefits for 32 additional months	
Based on the PSRS average month benefit amount of \$3,239, this member would receive an additional \$103,648 in total benefit payments	

Other Challenges and Threats

- Political
 - Mandatory Social Security
 - Defined Benefit (DB) vs. Defined Contribution (DC)
 - Pension Envy
 - Think Tanks
 - Manhattan Institute
 - National Council on Teacher Quality
 - Pew Center for the States/Laura and John Arnold Foundation
 - Show-Me Institute



This is just the tip of the iceberg!



American Institutes for Research in the Behavioral Sciences
\$732,193



Bellwether Education Partners, Inc.
\$1,549,487



Brookings Institution
\$1,646,554



Center for State & Local Government Excellence
\$997,979



An estimated \$3.3 Billion in Total Assets



The Novim Group
\$1,250,000



National Council on Teacher Quality
National Council on Teacher Quality
\$468,520



THE PEW CHARITABLE TRUSTS
Pew Charitable Trusts
\$9,700,000



The Federalist Society for Law & Public Policy Studies
The Federalist Society for Law and Public Policy Studies
\$102,464



George Mason University Foundation, Inc.
\$2,544,900



Liberty Initiative Fund
Up to \$4,999,999



LUCY BURNS INSTITUTE
Lucy Burns Institute, Inc.
\$282,500



National Alliance for Public Charter Schools
\$200,000

Over \$53.6 Million Spent on Pension Politics

Grants are "Strategic Investments"

The DB Model is "just a bad system," "we can provide the protections for workers that we want in a simpler, better system," namely DC or Cash Balance.

"The way to create a sound, sustainable and fair retirement savings program is to stop promising a benefit and instead promise an accrual or savings rate."

"Philosophy of Philanthropy"

- Seek transformation change, not incremental change
- Think big, take risks and be aggressive and highly goal-oriented
- Seek to solve problems and better lives and institutions, not just study or illuminate problems



Pro Publica, Inc.
\$2,000,000



Reason Foundation
\$3,513,000



Retirement Security Initiative
\$1,000,000 - \$4,999,999



StudentsFirst
\$16,999,999



Thomas B. Fordham Institute
\$210,000



Urban Institute
\$484,079

August 24, 2017

<http://www.truthaboutjohnarnold.com/national>
<https://www.forbes.com/profile/john-arnold/>

QUESTIONS?