



Kentucky Retirement Systems

KRS OVERVIEW

PPWG

David Eager, Executive Director

January 2019

JANUARY 29, 2019

- **KRS Profile**
 - **Governance structure**
 - **Agencies**
 - **Memberships**
 - **Benefits**
- **Understanding the funding process**
- **The history of funding and the plans' funding statuses**
 - **Attribution of the shortfalls**
- **Setting the economic assumptions for FY 2019 and FY 2020**
- **The retiree unfunded liability problem**
- **The need for fixed dollar funding**
- **Identify other issues KRS faces**

JANUARY 31, 2019

- **Investment overview**
- **GRS presentation – Trends in Investment Return Assumptions**
- **Discussion with KRS and GRS**
 - **Issues KRS faces**
 - **Potential initiatives to improve KRS**
 - **Other PPWG issues**



Kentucky Retirement Systems

Tiers 1-2-3

January 31, 2019



SCENARIO #1

Tier 1 – Age 65 member with 25 years of CERS Non-Hazardous service with participation date after 8/1/2004 but before 9/1/2008 with average final compensation of \$57,000.

$$\begin{aligned} \$57,000 \times 2.0\% \times 25 \text{ years} &= \$28,500 \div 12 \\ &= \mathbf{\$2,375 \text{ per month}} \end{aligned}$$



SCENARIO #2

Tier 2 – Age 65 member with 25 years of CERS Non-Hazardous service with participation date on or after 9/1/2008 but before 1/1/2014 with average final compensation of \$57,000.

$$\begin{aligned} \$57,000 \times 1.5\% \times 25 \text{ years} &= \$21,375 \div 12 \\ &= \mathbf{\$1,781.25 \text{ per month}} \end{aligned}$$



SCENARIO #3

Age 65 member with 25 years of CERS Non-Hazardous service with participation date of 1/1/2014 at \$57,000 annual salary for 25 years who interest is credited with the guaranteed 4% interest each year. Accumulated Account Balance at end of the a 25-year period would be **\$213,643.51**. Age 65 life annuity age factor is 121.00494.

$$\begin{aligned} & \$213,643.51 \div 121.00494 \\ & = \mathbf{\$1,765.58 \text{ per month}} \end{aligned}$$



SCENARIO #4

Age 65 member with 25 years of CERS Non-Hazardous service with participation date of 1/1/2014 at \$57,000 annual salary for 25 years and is credited with the same annual interest amount as provided on 6/30/2015 (7.77%). Accumulated Account Balance at end of 25-year period would be **\$362,798.87**. Age 65 life annuity age factor is 121.00494.

$$\begin{aligned} & \$362,798.87 \div 121.00494 \\ & = \mathbf{\$2,998.22 \text{ per month}} \end{aligned}$$

COMPARE SCENARIOS

Scenario
#1



\$2,375.00
Per month

Scenario
#2



\$1,781.25
Per month

Scenario
#3



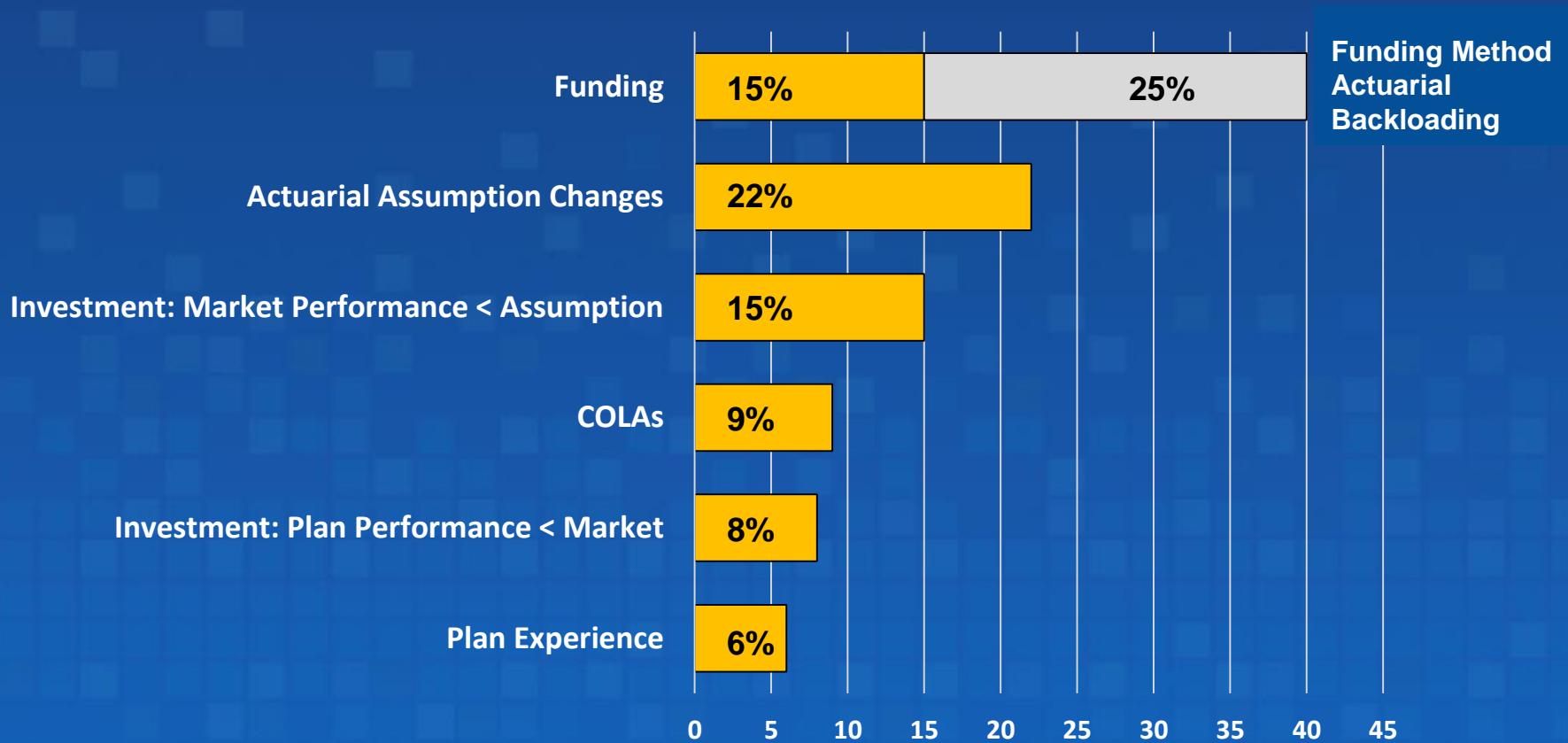
\$1,765.58
Per month

Scenario
#4



\$2,998.22
Per month

SUMMARY COMPONENTS OF \$25.3 BILLION INCREASE IN UNFUNDED PENSION LIABILITIES: ALL SYSTEMS













Source: PFM Consulting Group

FACTORS INCREASING THE UNFUNDED LIABILITY

FACTORS INCREASING THE UNFUNDED LIABILITY 6/30/2005 to 6/30/2016 (\$ in Millions)										
Causes	TRS	KERS-NH	KERS-H	CERS-NH	CERS-H	SPRS	KJRP	KLRP	TOTAL	
Actuarial Backloading	\$3,278	\$1,153	\$89	\$1,269	\$353	\$111	\$31	\$2	\$6,286	25%
Actuarial Assumption Changes	1,958	2,319	82	984	249	50	25	5	5,672	22%
Plan Experience	232	539	39	372	107	107	43	2	1,441	6%
Investment: Market Performance Below Assumption	1,926	639	80	931	297	45	5	2	3,925	15%
Investment: Market Performance Below Market	1,014	610	(5)	207	82	8	14	0	1,930	8%
Funding Less Than the ARC	1,588	2,561	(10)	(220)	(133)	42	(11)	3	3,820	15%
COLAs	0	1,291	68	672	267	72	27	3	2,400	9%
	\$9,996	\$9,112	\$343	\$4,215	\$1,222	\$435	\$133	\$17	\$25,473	100%

Source: PFM Consulting Group

IMPACT OF THE ECONOMIC ASSUMPTIONS






CONTRIBUTION RATES		FY 2018	FY 2019
 KERS Non-Hazardous		50.39%	83.43%*
 KERS Hazardous		21.82%	36.85%
 CERS Non-Hazardous		19.18%	28.05%**
 CERS Hazardous		31.55%	47.86%**
 SPRS		89.67%	146.25%
FUNDING STATUS		6/30/17	6/30/18
 KERS Non-Hazardous		16.0%	13.6%
 KERS Hazardous		59.7%	54.1%
 CERS Non-Hazardous		59.0%	52.8%
 CERS Hazardous		57.7%	48.1%
 SPRS		28.1%	27.0%

* HB 265 (2018 RS) allows Regional Mental Health/Mental Retardation Boards, Local and District Health Departments, Contracted Entities (domestic violence shelters, rape crisis centers, and child advocacy centers), state supported universities and community colleges, and any agencies eligible to voluntarily cease participating in KERS pursuant to KRS 61.522 to pay a reduced rate of 49.47% for FY 2019

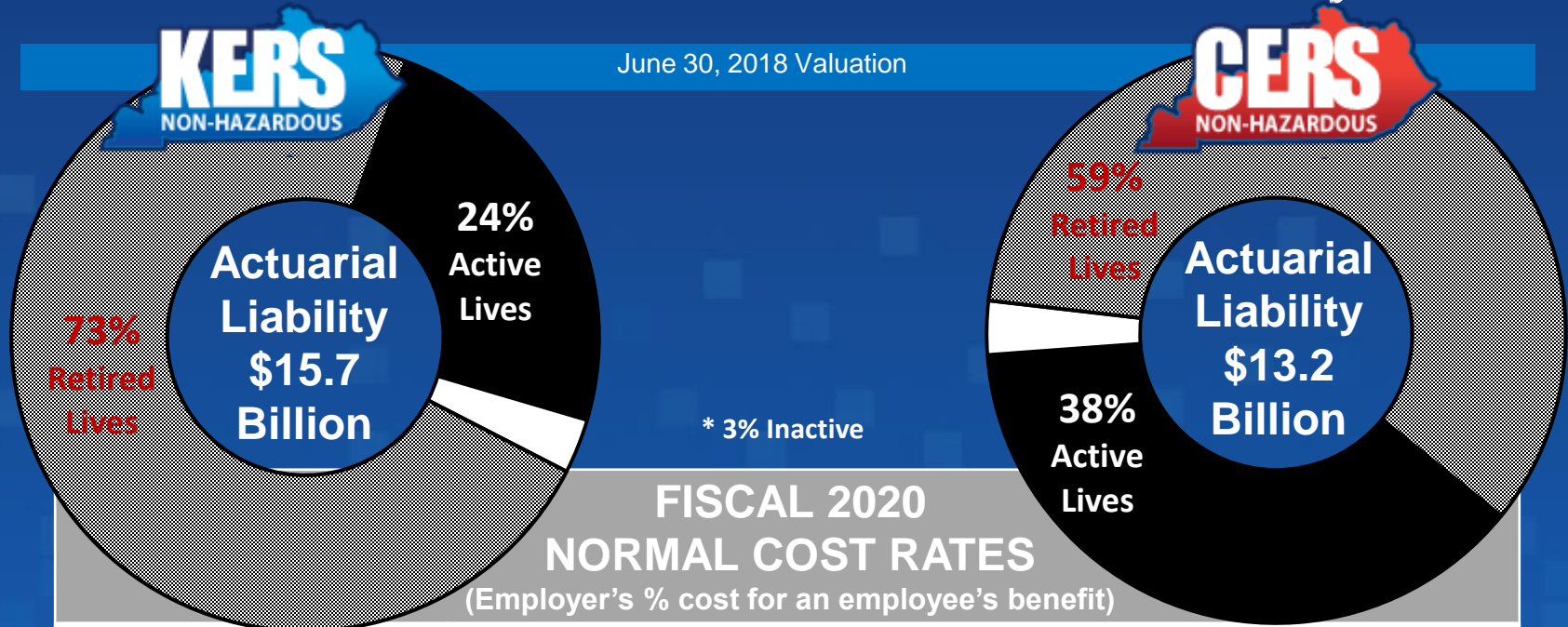
** HB 362 (2018 RS) provided for a phase-in of no more than 12% increase per year over the prior fiscal year from FY 2018 through FY 2018.

KRS PROJECTED BENEFIT PAYMENTS

(\$ in Millions)

	 KERS NH	 KERS H	 CERS NH	 CERS H	 SPRS
FY 2019	\$982	\$69	\$759	\$259	\$61
Peak \$ Amount	\$1,081	-	\$1,211	-	\$67
Peak Fiscal Year	FY2030	-	FY2037	-	FY2026
FY 2042	\$957	\$115	1,198	\$402	\$50

Underfunding of the KRS Pension Systems is Primarily Attributable to the Retired Lives Liability

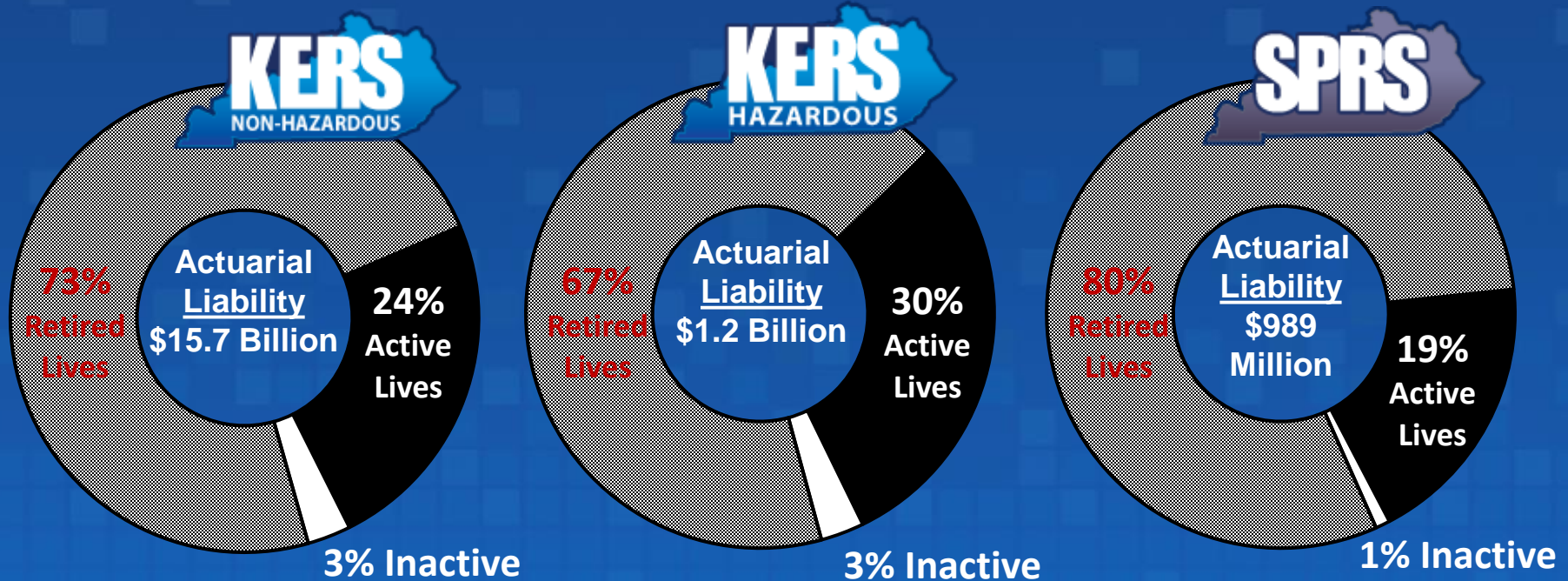


FISCAL 2020 NORMAL COST RATES (Employer's % cost for an employee's benefit)

10.46%	Total Pension & Insurance	8.69%
UNFUNDED LIABILITY COSTS (Employer's cost for the unfunded liability)		
66.56%	Pension	16.72%
8.17%	Insurance	1.87%
74.73%	Total Unfunded Liability Costs	18.59%
85.19%	TOTAL COST	27.28%
\$13.7B	Unfunded Liability \$	\$6.2B
0.83	Actives to Retired Ratio	1.49

Underfunding of the KRS Pension Systems is Primarily Attributable to the Retired Lives Liability

June 30, 2018 Valuation

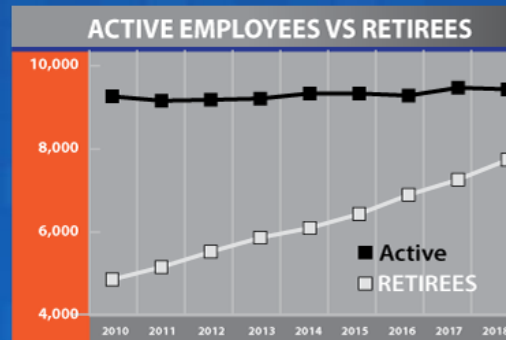
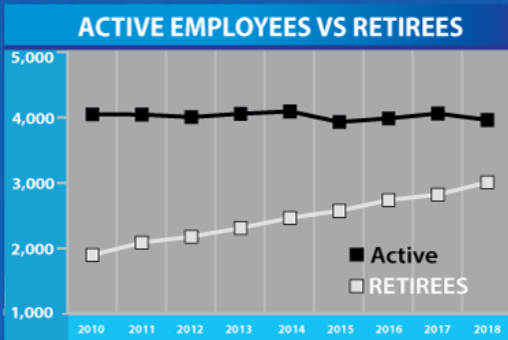
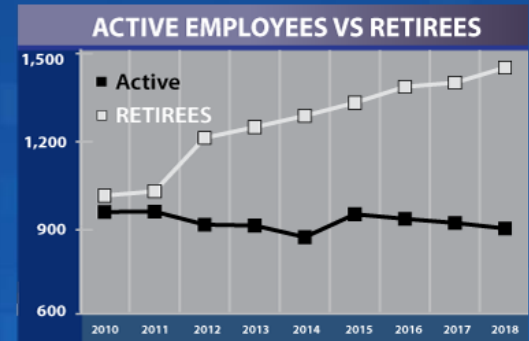
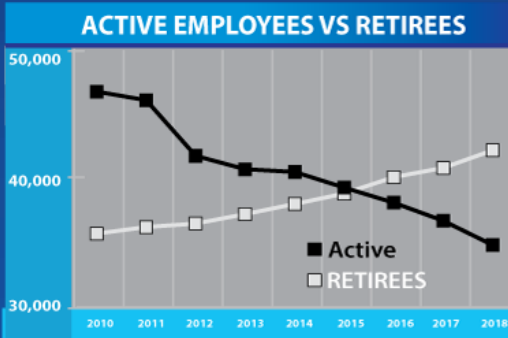


Unfunded Liability = \$13.7B
 Actives to Retired Ratio = 0.83

Unfunded Liability = \$513 M
 Actives to Retired Ratio = 1.32

Unfunded Liability = \$721 M
 Actives to Retired Ratio = 0.62

ACTIVE EMPLOYEES VS RETIREES



Tier 1 Actives retiring over next 10+ years



Projected Retirements	0 - 5 years	6 - 10 years	11 - 15 years	16 - 20 years	21 - 25 years	26 - 30 years	30+ years	Total
KERS NHZ	6,530	5,762	4,808	1,962	286	24	-	19,372
KERS HAZ	647	469	213	89	15	0	0	1,433
SPRS	236	180	39	17	-	-	-	472
Total	7,413	6,411	5,060	2,068	301	24	-	21,277

THE KRS PENSION CONUNDRUMS

As pension contribution rates go up, employers:

- **May outsource**
- **Might not replace retirees and other terminations**
- **May withhold wage increases**







All could potentially result in:

- **A declining payroll**
- **Requiring a higher contribution rate to cover the normal cost and pay the unfunded liability**
- **More employee cut backs**

...and so on.

THE SOLUTION: FIXED DOLLAR FUNDING

- Employers can't reduce their obligation by cutting payroll
- New hires will only cost the current normal cost
- Encourages a stable-to-growing workforce

					
	KERS NH	KERS H	CERS NH	CERS H	SPRS
Pension and Insurance Normal Cost for Tier 3	3.05%	6.13%	2.78%	2.75%	7.77%

KRS ISSUES FOR 2019 AND BEYOND

- **Implementing fixed dollar funding**
- **Receiving the ARC**
- **Using realistic economic assumptions and avoiding new unfunded liability**
- **Addressing a long-term solution to the Quasi conundrum**
- **Avoiding a CERS separation**
- **Continuing to improve our investment management**
- **Operating most effectively and efficiently**



Kentucky Retirement Systems

GRS

January 31, 2019

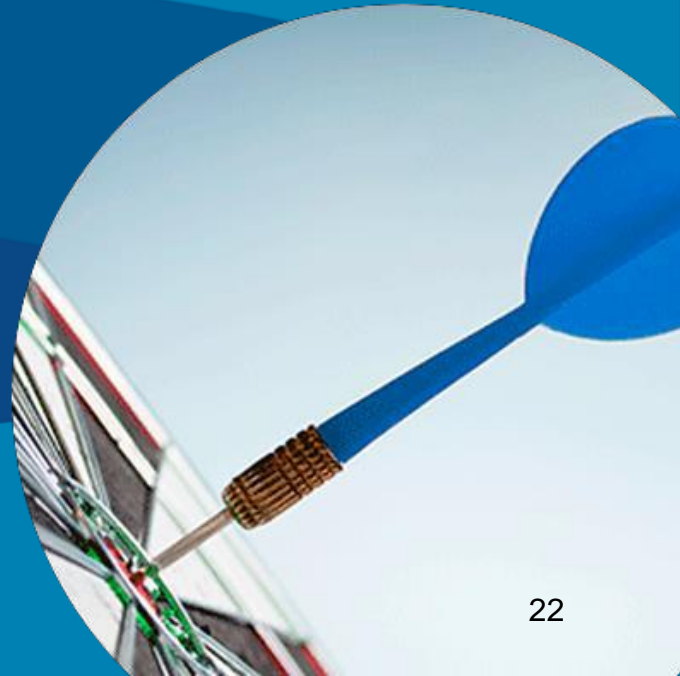
Public Pensions Working Group (PPWG)

Trends in Investment Return Assumptions for Public Pension Plans

January 31, 2019

Danny White, FSA, EA, MAAA

Janie Shaw, ASA, MAAA

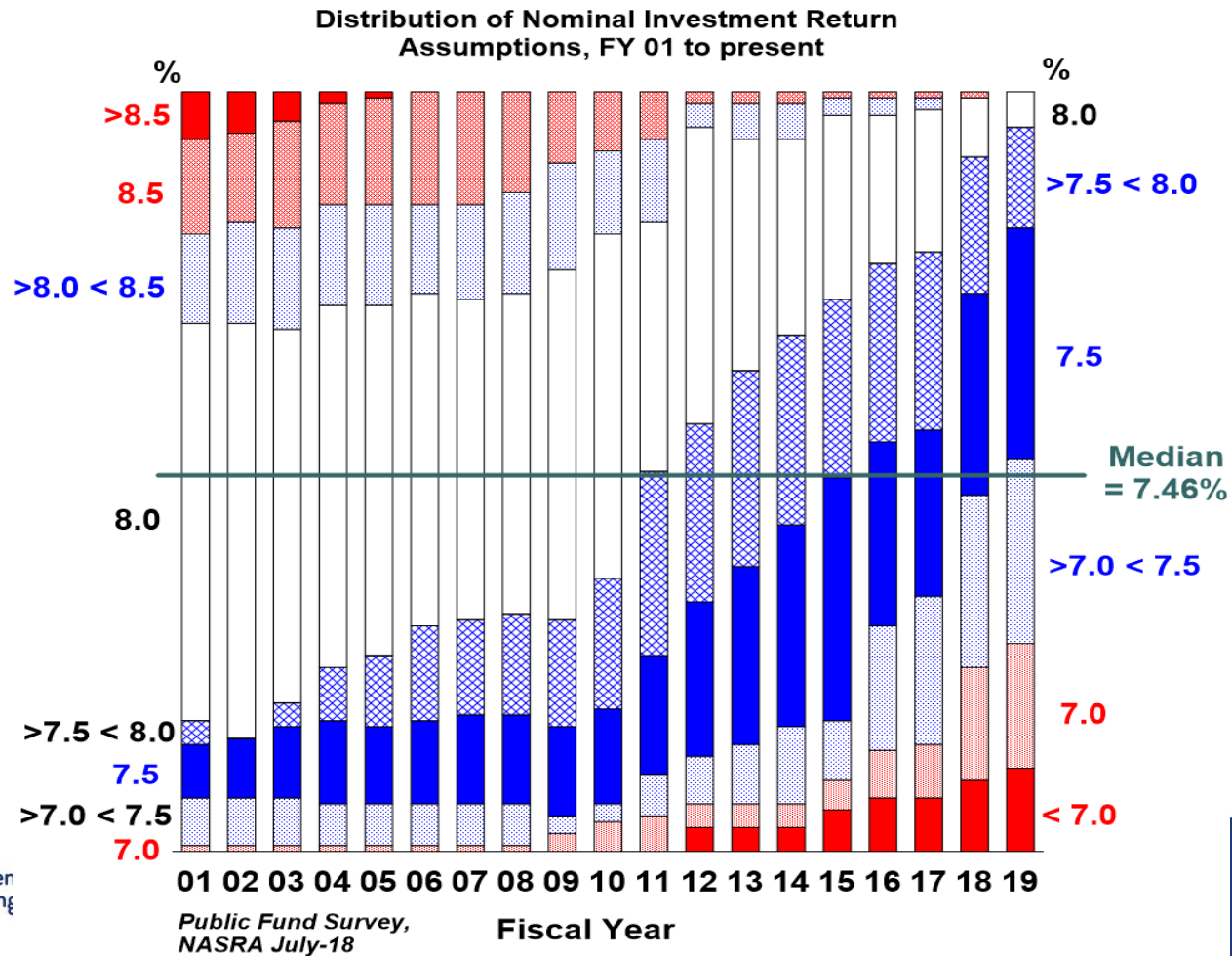


Agenda

- Trends in the Investment Return Assumption
- Purpose of an Actuarial Valuation and Funding Policy
- Actuarial Standards of Practice regarding Assumption Selection
- Time Horizon Considerations
- Primer on Mortality Assumption
- Closing Remarks

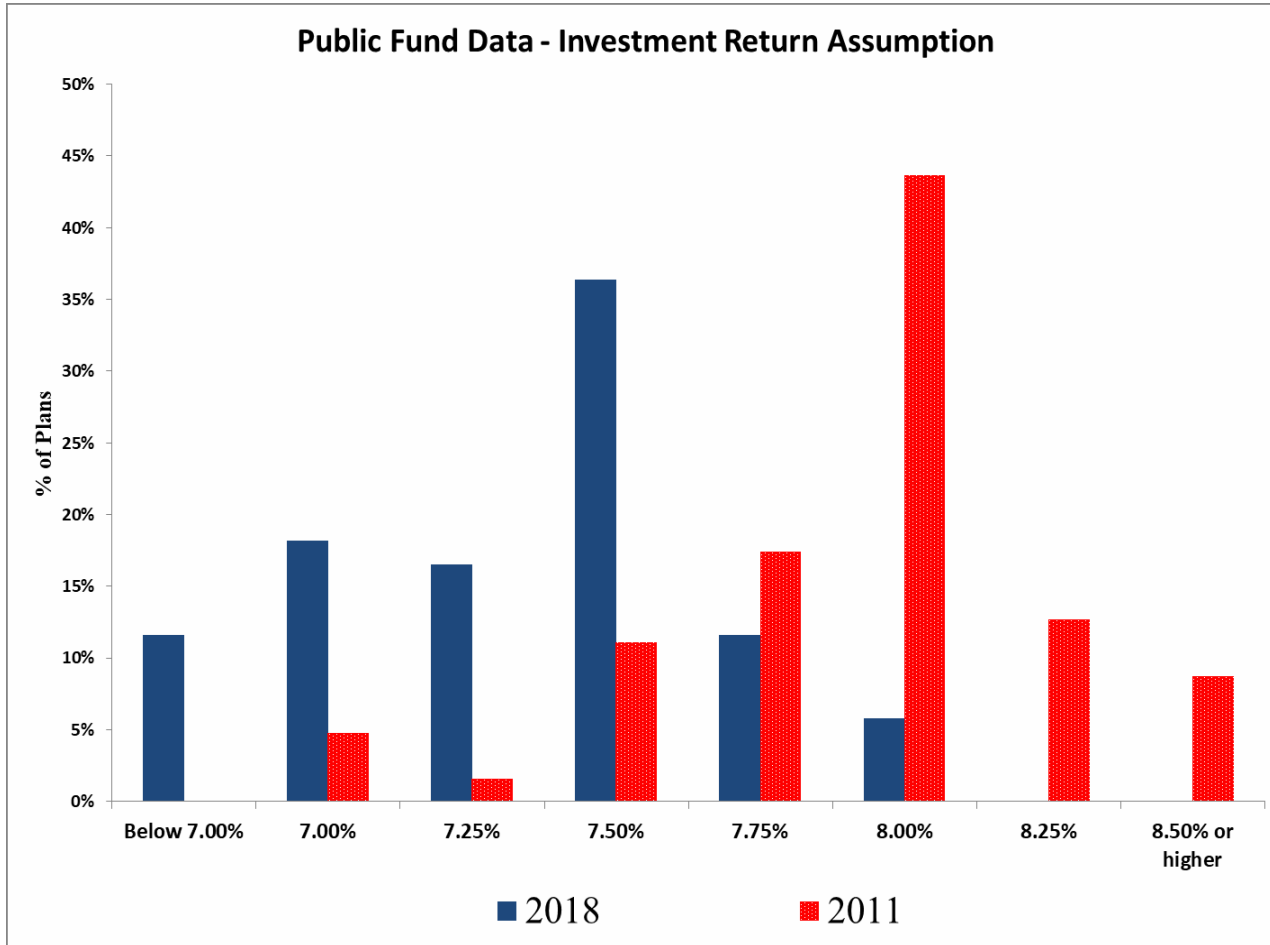
Trends in Investment Return Assumptions

Change in the Investment Return Assumption used by Large Public Retirement Systems



Investment Return Assumption

Expectations have dramatically lowered



2018 Median: 7.46%

Source: 2018 Public Plans Database

Purpose of an Actuarial Valuation and Funding Policy

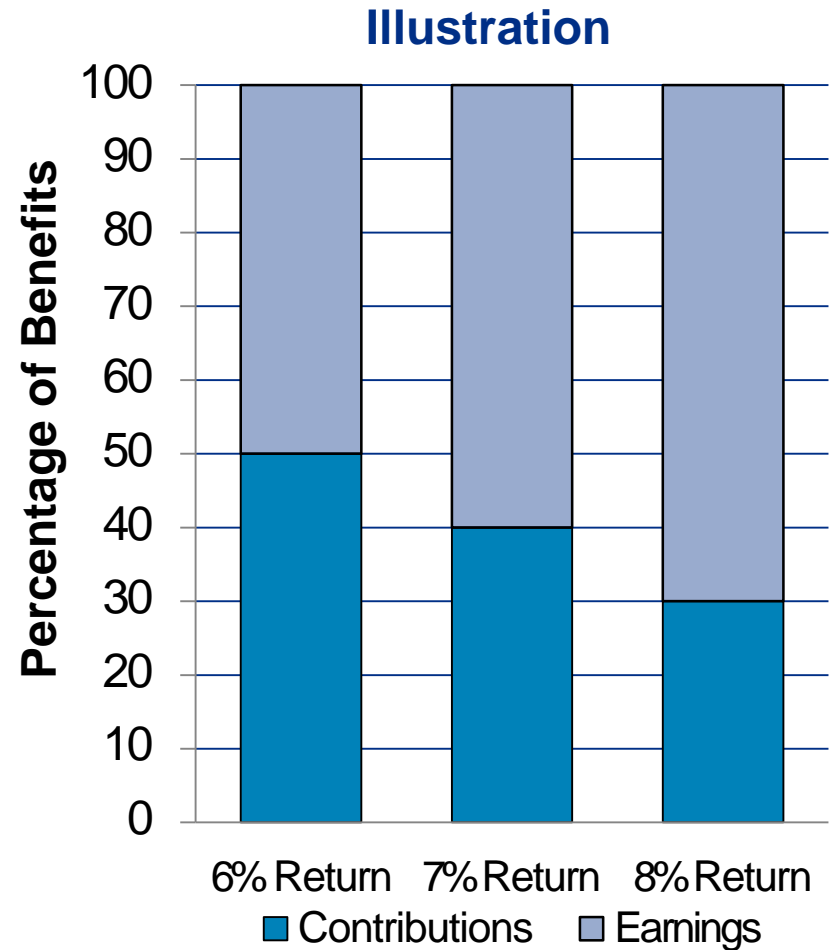
- An actuarial valuation is a snapshot of the System's assets and liabilities in a given year
- A primary use of an actuarial valuation is to assess the adequacy of the funding policy
 - The funding policy establishes an anticipated pattern of contributions
 - An adequate funding policy will finance the entire unfunded liability over a reasonable time-period
 - Positive amortization of the unfunded liability during each year of the funding period is a characteristic of strong funding policy
 - Resetting, or extending, the funding period should be considered with caution

How Assumptions are used in a Valuation

- Over time, the true cost of benefits will be borne out in actual experience
 - Cost of benefits NOT affected by actuarial assumptions
 - Determined by actual participant behavior (termination, retirement), plan provisions, and actual investment returns
- Assumptions help us anticipate and manage what each component of the equation will be
 - Develop expectations for future contributions, investment returns and benefit payments
 - Important for decision making
 - Assumptions dictate the timing of the contributions

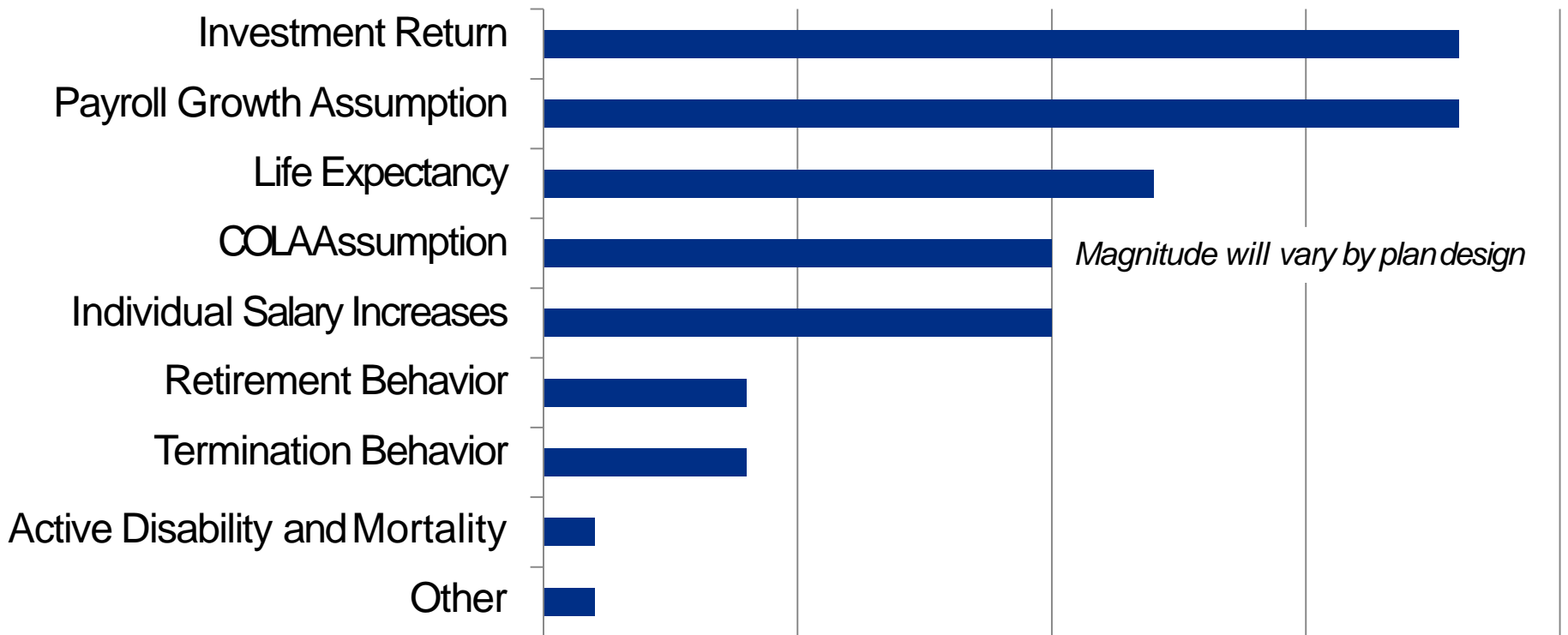
Investment Return Assumption

- This assumption is used to predict what percentage of a future benefit payments will be financed by investment returns versus contributions.
- Lower Returns/Higher Contributions



Principal Actuarial Assumptions

Magnitude of Impact on Determination of Contribution Rates



- Each individual assumption must satisfy the Actuarial Standards
- Assumption set should be internally consistent

Actuarial Standards of Practice

- Guidelines for the assumption setting process are set by the Actuarial Standards of Practice (ASOP)
 - ASOP #4 Measuring Pension Obligations
 - ASOP #27 Selection of Economic Assumptions
 - Revised 2013: Change from “Reasonable Range” to “Best Estimate”
 - ASOP #35 Selection of Demographic and Other Noneconomic Assumptions
 - Revised 2011: Increased emphasis on mortality assumption
 - ASOP #44 Selection and Use of Asset Valuation Methods

Per ASOP No. 27: Reasonable Assumptions

- An economic assumption is reasonable if
 - It is appropriate for the purpose of the measurement
 - It reflects the actuary's professional judgement
 - It takes into account historical and current economic data that is relevant as of the **measurement date**
 - It reflects the actuary's estimate of future experience
 - It has no significant bias (i.e., it is not significantly optimistic or pessimistic)
 - Allowance for adverse experience may be appropriate
- The standard of practice explicitly advises an actuary not to give undue weight to recent experience
- In addition to each individual assumption meeting the standard, the combined set of assumptions must also satisfy the standard of practice

Per ASOP No. 27: Selecting an Investment Return Assumption

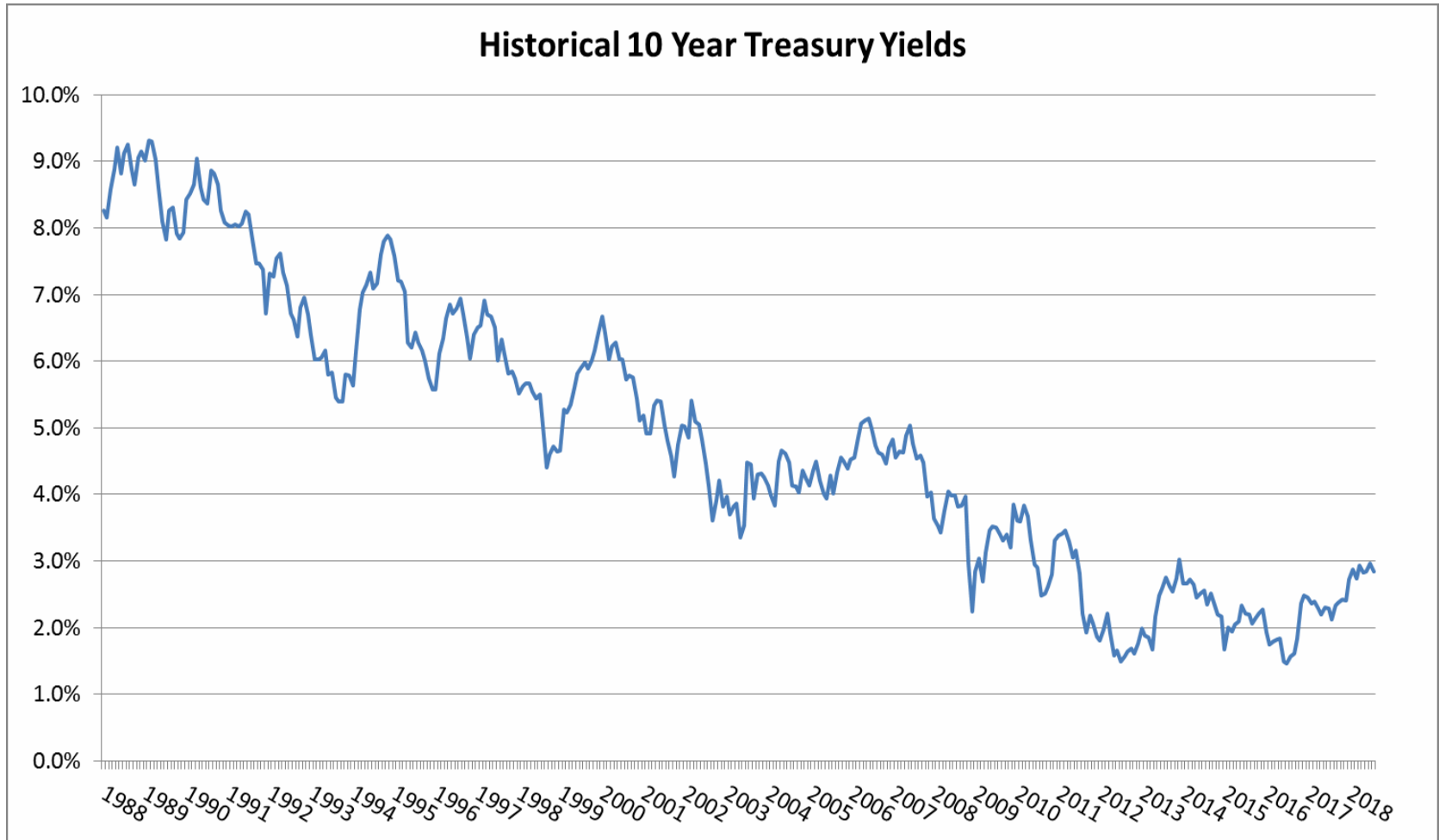
- The investment return assumption reflects the anticipated returns on the plan's current and, if appropriate for the measurement, future assets.
- This assumption is typically constructed by considering various factors including, but not limited to, the time value of money; inflation and inflation risk illiquidity; credit risk; macroeconomic conditions; and growth in earnings, dividends, and rents.

Per ASOP No. 27: Selecting an Investment Return Assumption

(Continued)

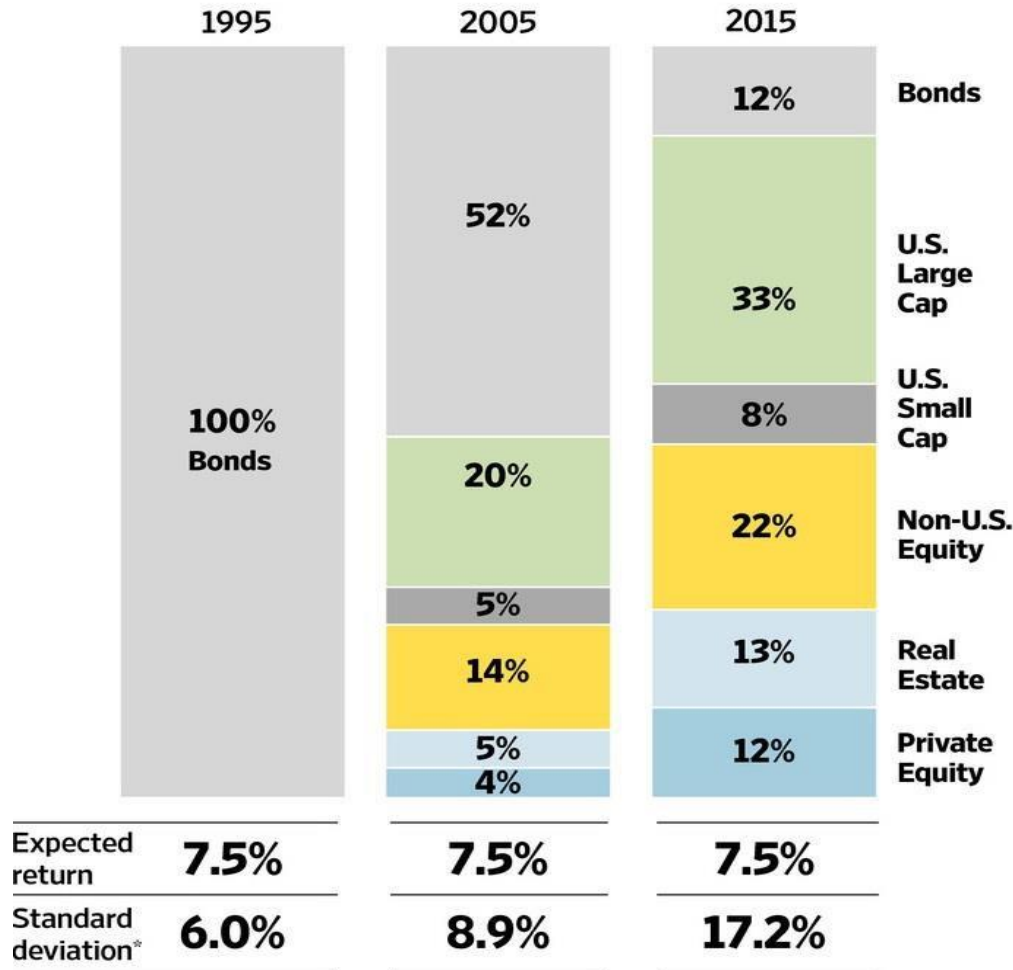
- The actuary should review appropriate **investment** data which may include:
 - current yields to maturity of fixed income securities
 - Forecasts of inflation, GDP growth, and total returns by asset class
 - Historical and current investment data including real and nominal returns, dividend yields, earnings yields, etc.
 - historical plan performance.
- The actuary may consider a broad range of data and other inputs, including the judgment of investment professionals

Historical Economic Conditions – Declining Interest Rate Environment



Change in Return Expectations

Estimates of what investors needed to earn 7.5%



*Likely amount by which returns could vary

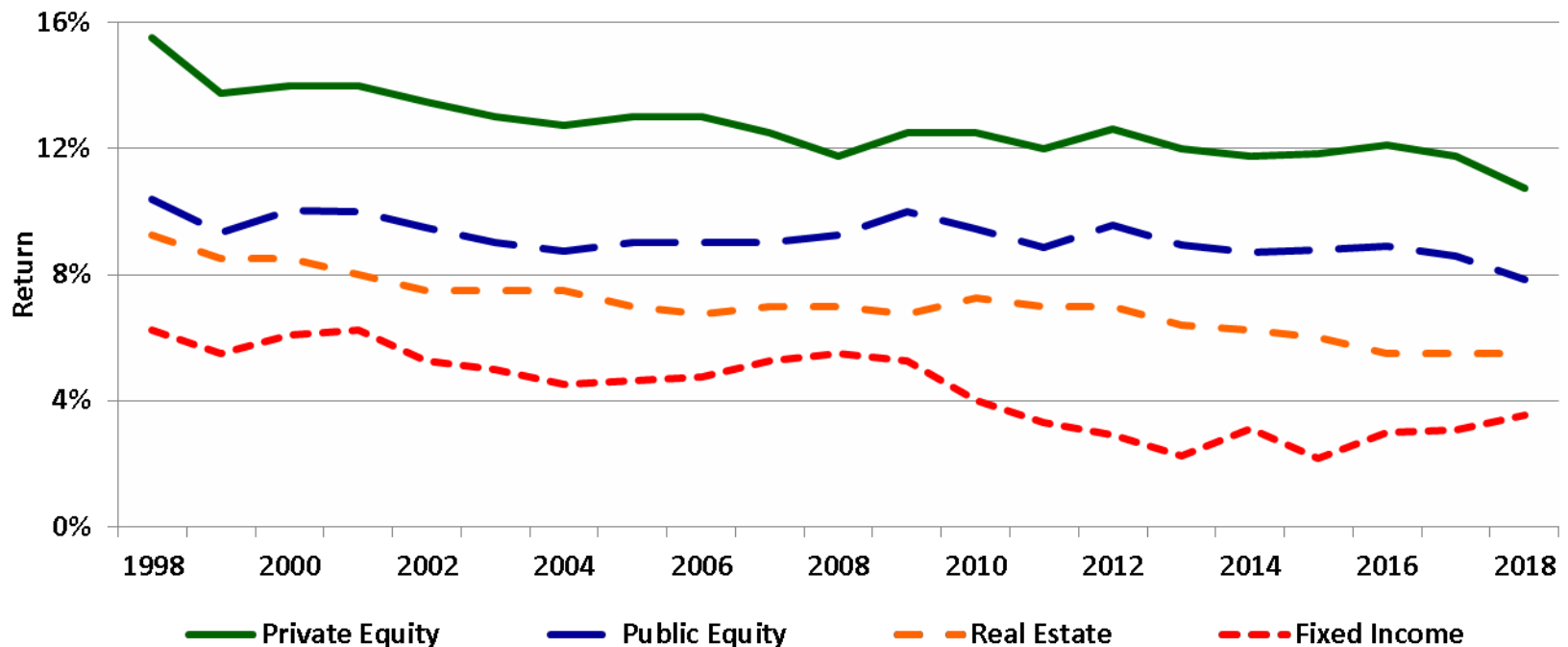
Source: Callan Associates

THE WALL STREET JOURNAL.

Trend of Declining Expectations in Future Investment Returns

History of Forward-Looking Return Expectations by Asset Class

Nominal Returns by Asset Class

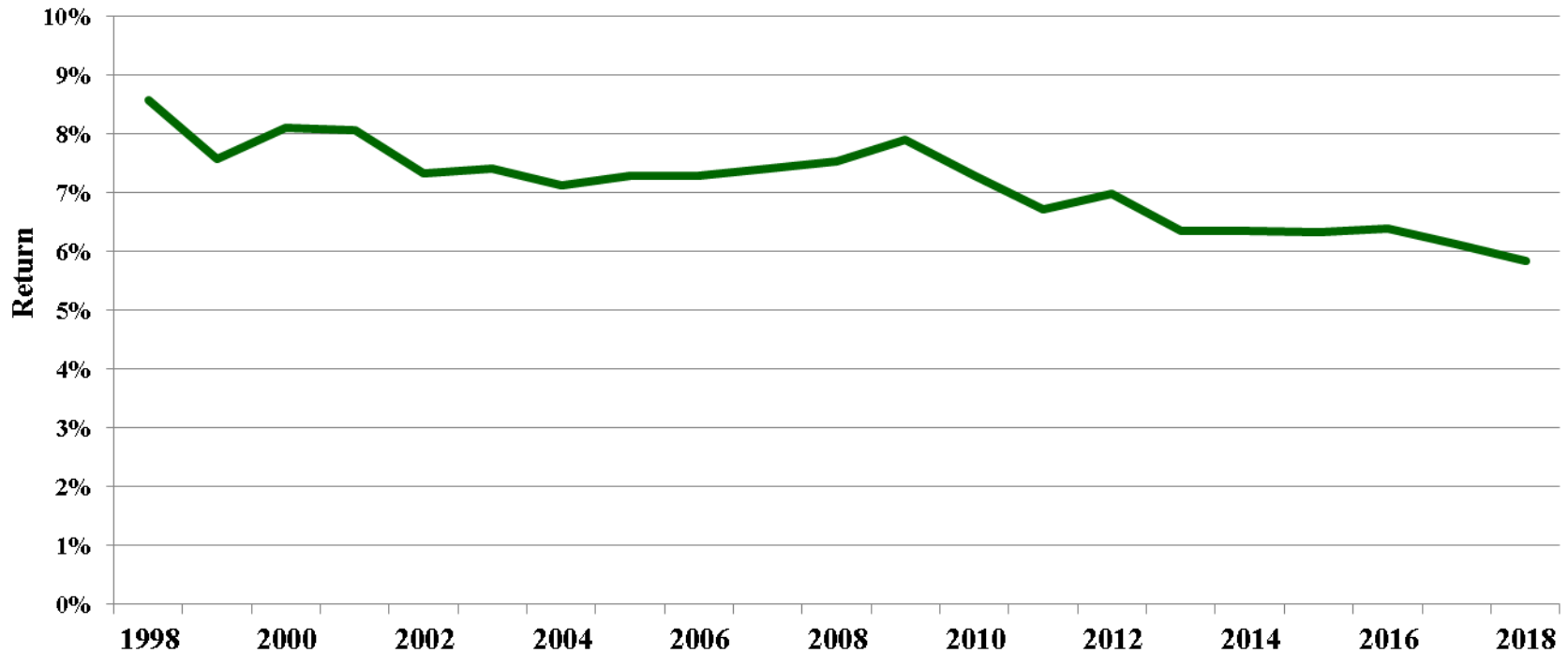


Source: Developed by GRS using forward-looking returns published by investment consulting firm Pension Consulting Alliance (PCA).

Trend of Declining Expectations in Future Investment Returns *(Continued)*

History of Forward-Looking Return Expectation for a Hypothetical Investment Portfolio

Expected 50th Percentile Return

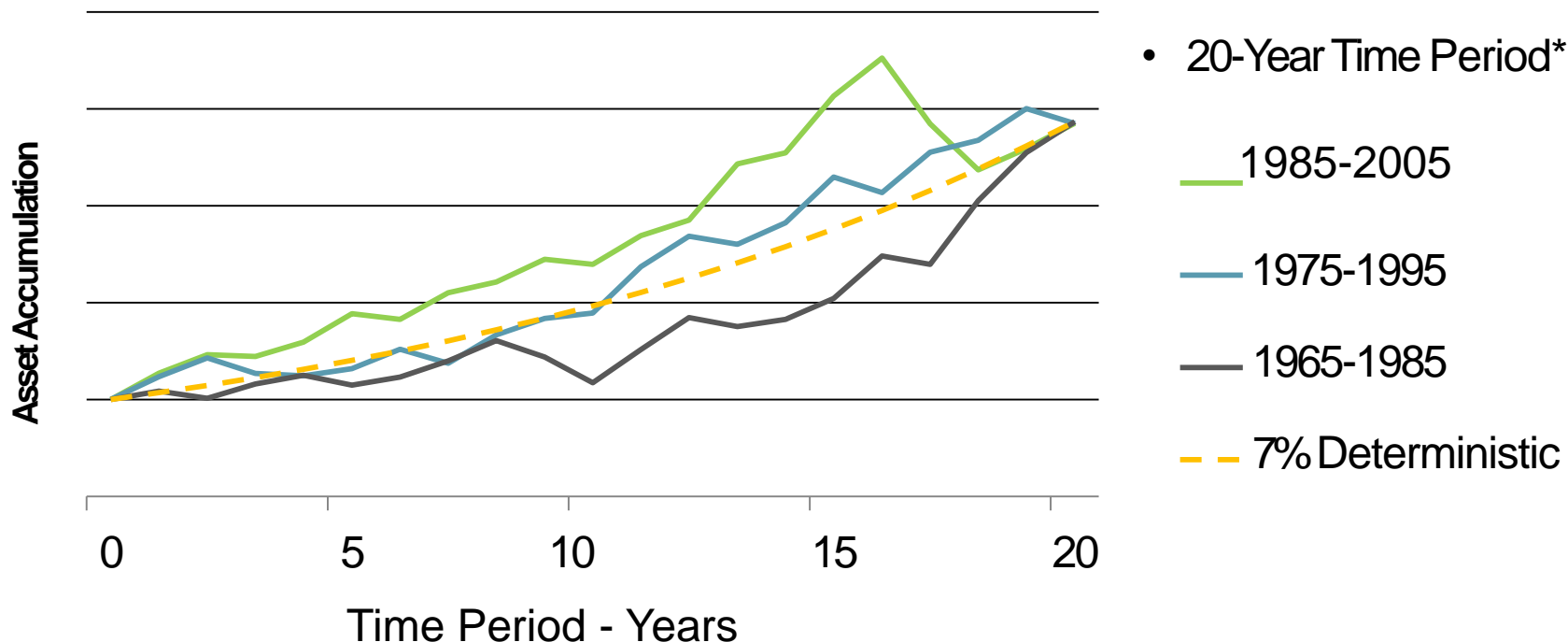


Time Horizon Considerations

- Most investment professionals develop market expectations have a 7 to 10 year time horizon
 - Some investment professionals develop longer 20 to 30 year return expectations
- Some retirement system stakeholders claim that pension plans have an almost infinite time horizon and should only focus on very long term expectations
- While the time horizon for most pension plans is much longer than 10 years, due to the duration of the liability and benefit payments, the applicable time horizon for choosing an investment return assumption most pension plans is approximately 15-20 years
 - Typically 60%-70% of liability is attributable to members already retired and receiving benefits from the System

Time Horizon Considerations – Impact of Order on Asset Accumulation

- Return Scenarios Based on Select Recent Time Periods' Volatilities
 - Asset Accumulation Illustration**



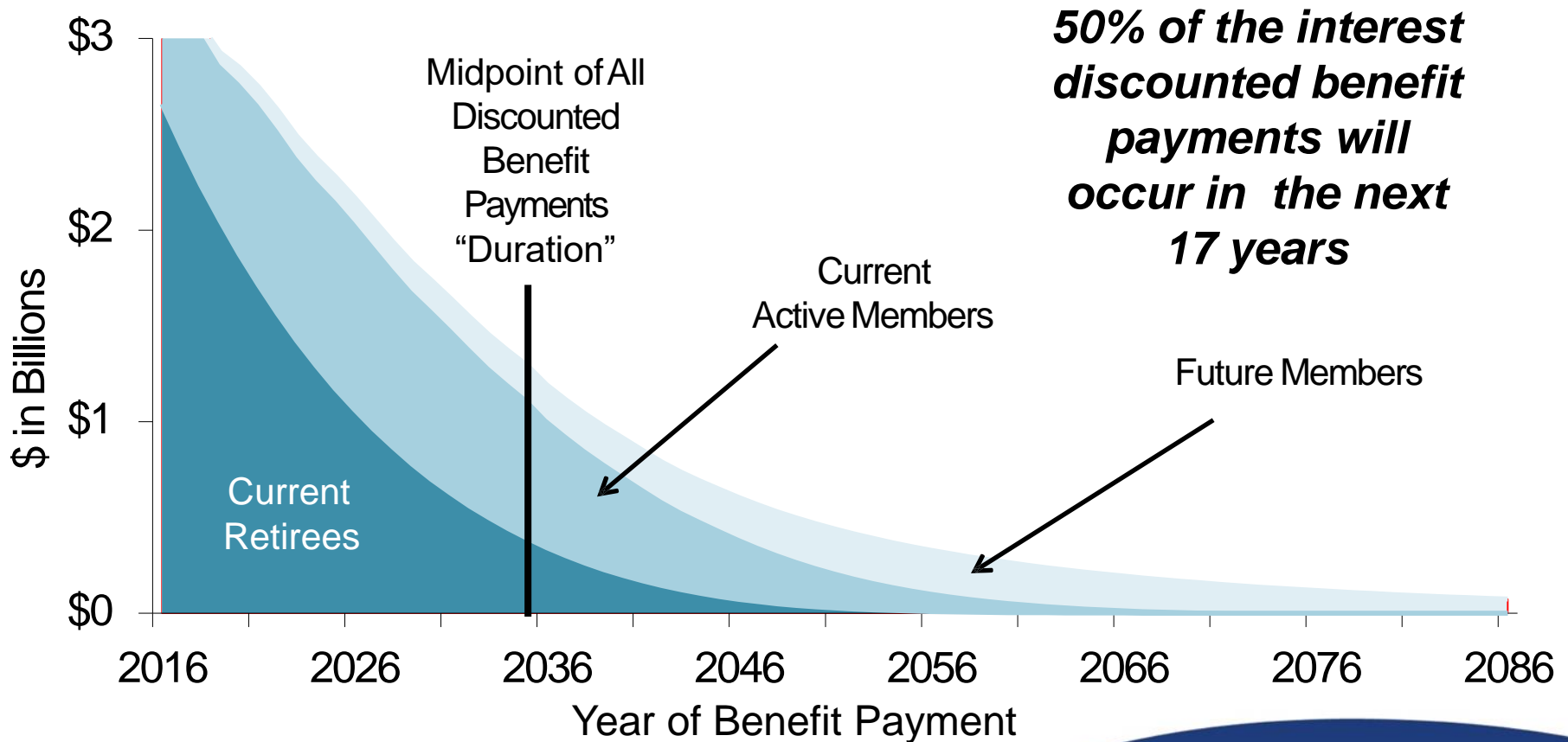
The above scenarios all achieve an 7% compound return over a 20-year period.

* Modeled returns each year are based on the actual historical pattern during the range provided, with an overall adjustment to achieve an 7% return.

Source: Developed by GRS

Time Horizon Considerations – Duration of the Liability

Illustration of an Analysis Performed by GRS for a Large Retirement System

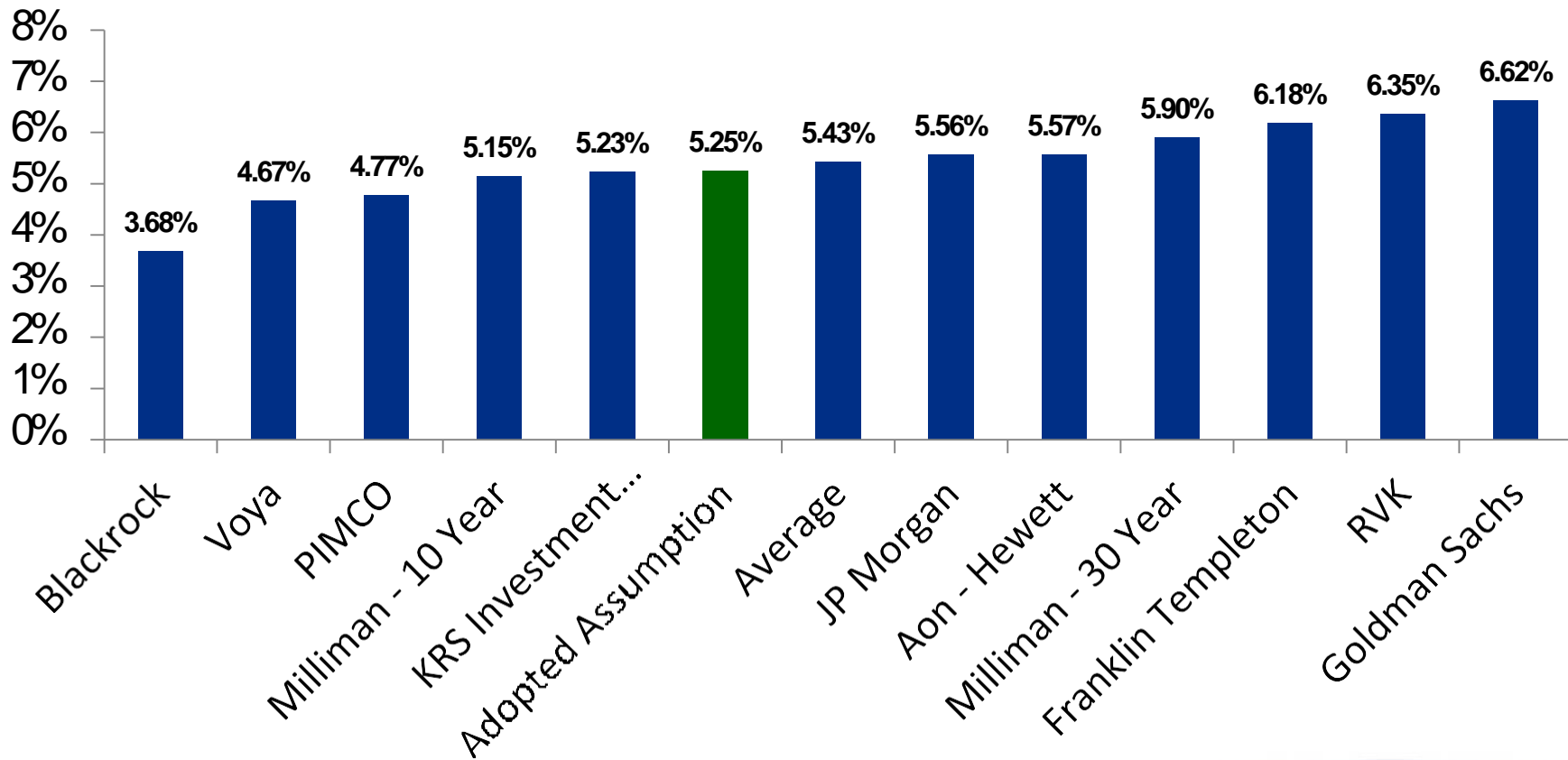


Time Horizon Considerations

- As shown on the previous slides, the order of the future investment returns impact the asset accumulation, meaning poor returns in the short term will result in fewer assets over time even if the longer term returns are closer to the return expectations
- The duration of the liabilities of the average pension plan (average interest discounted benefit payment) will typically occur 15- 20 years from the valuation date
 - Or, if the liability stream were compared to a portfolio of bonds, it would behave similarly to a bond with a 15-20 year duration
 - Meaning on average, the system has 15-20 years to invest the money before a payment is due
- Thus, we believe the preferable time horizon for setting this assumption to be approximately 15-20 years, or in the range between the shorter term (10 year) and longer term (20-30 year) capital market expectation developed by investment professionals

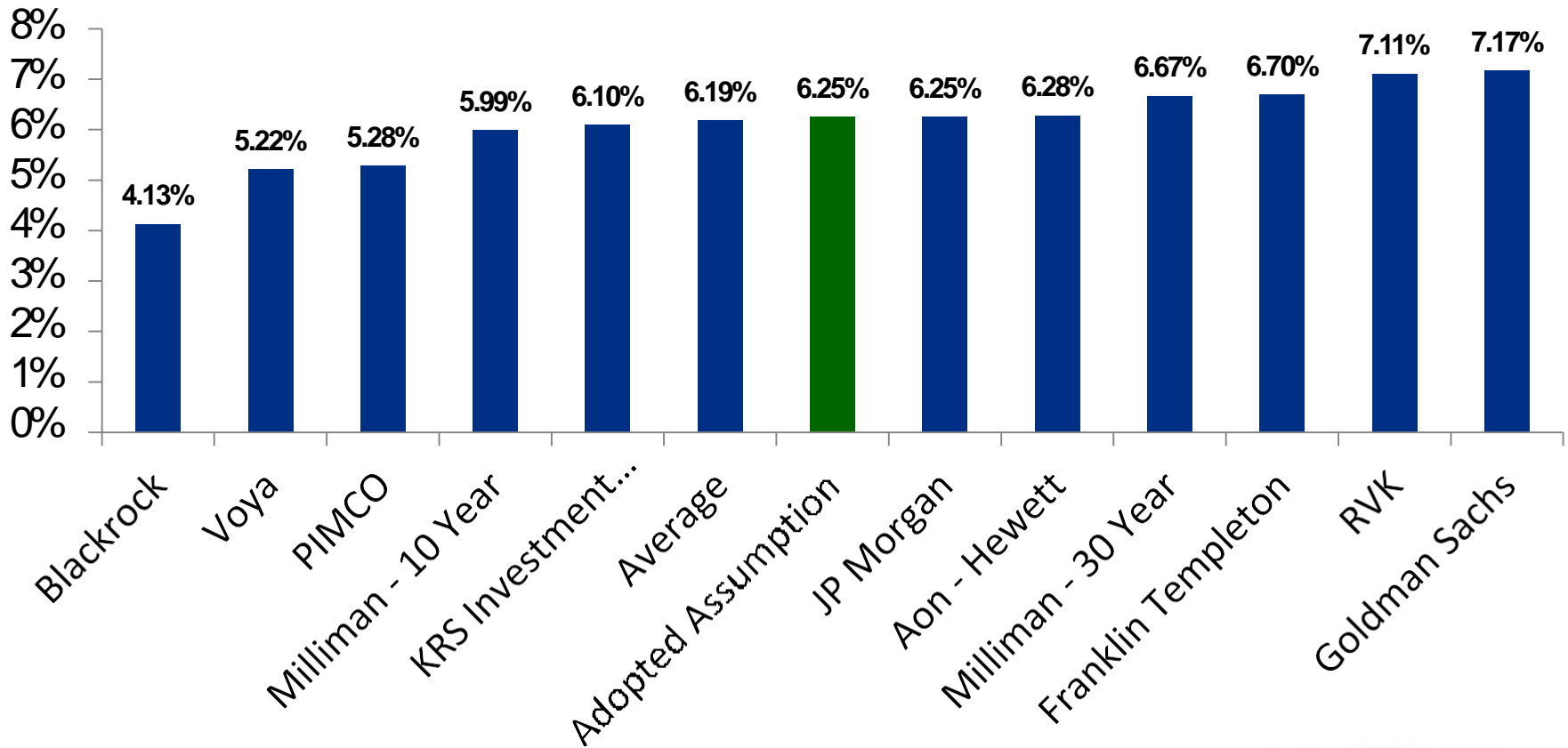
Data from 2017 Assumption Review (KRS Non-Haz & State Police)

Return Expectations



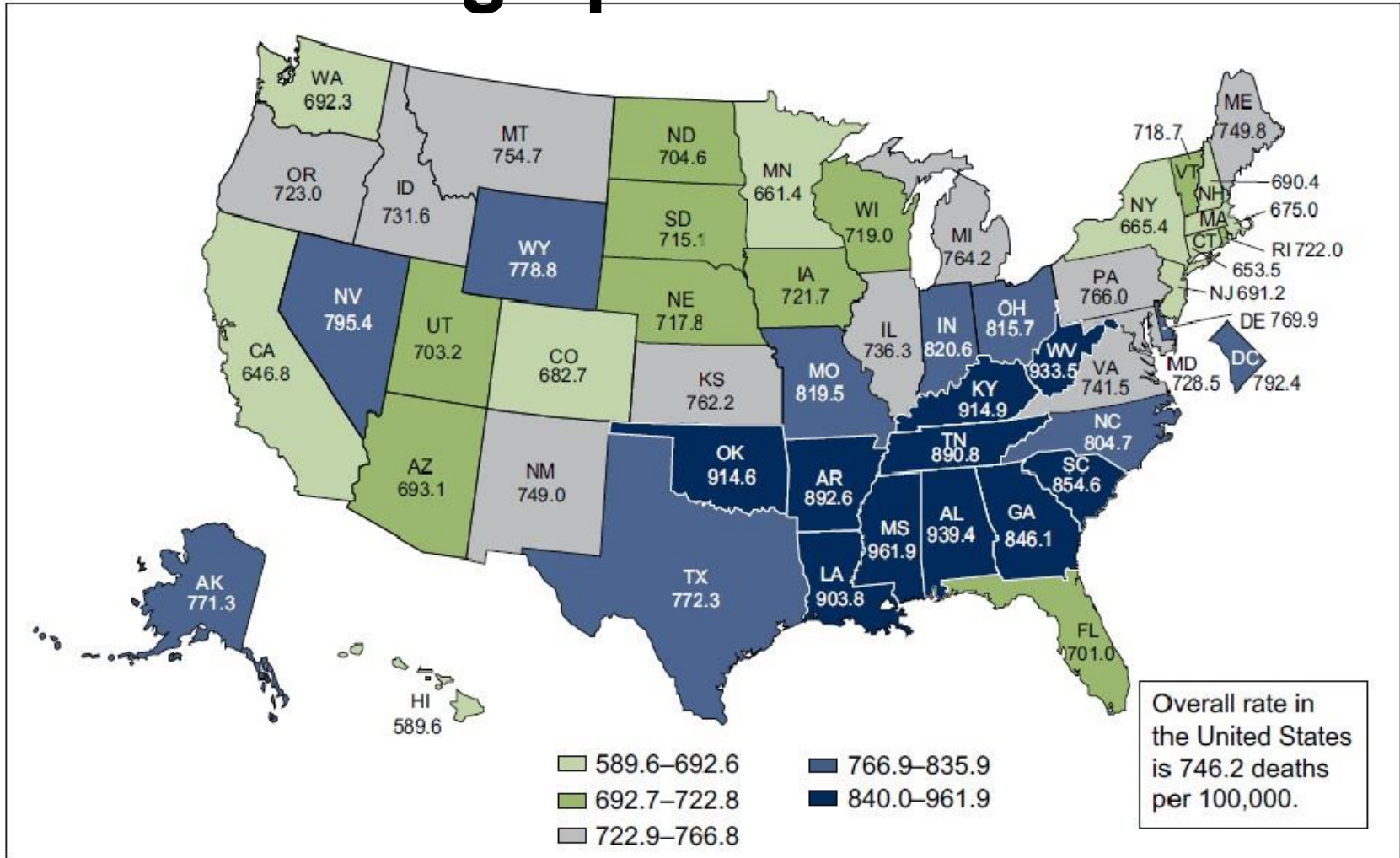
Data from 2017 Assumption Review (KERS Haz, CERS Non-Haz and Haz)

Return Expectations



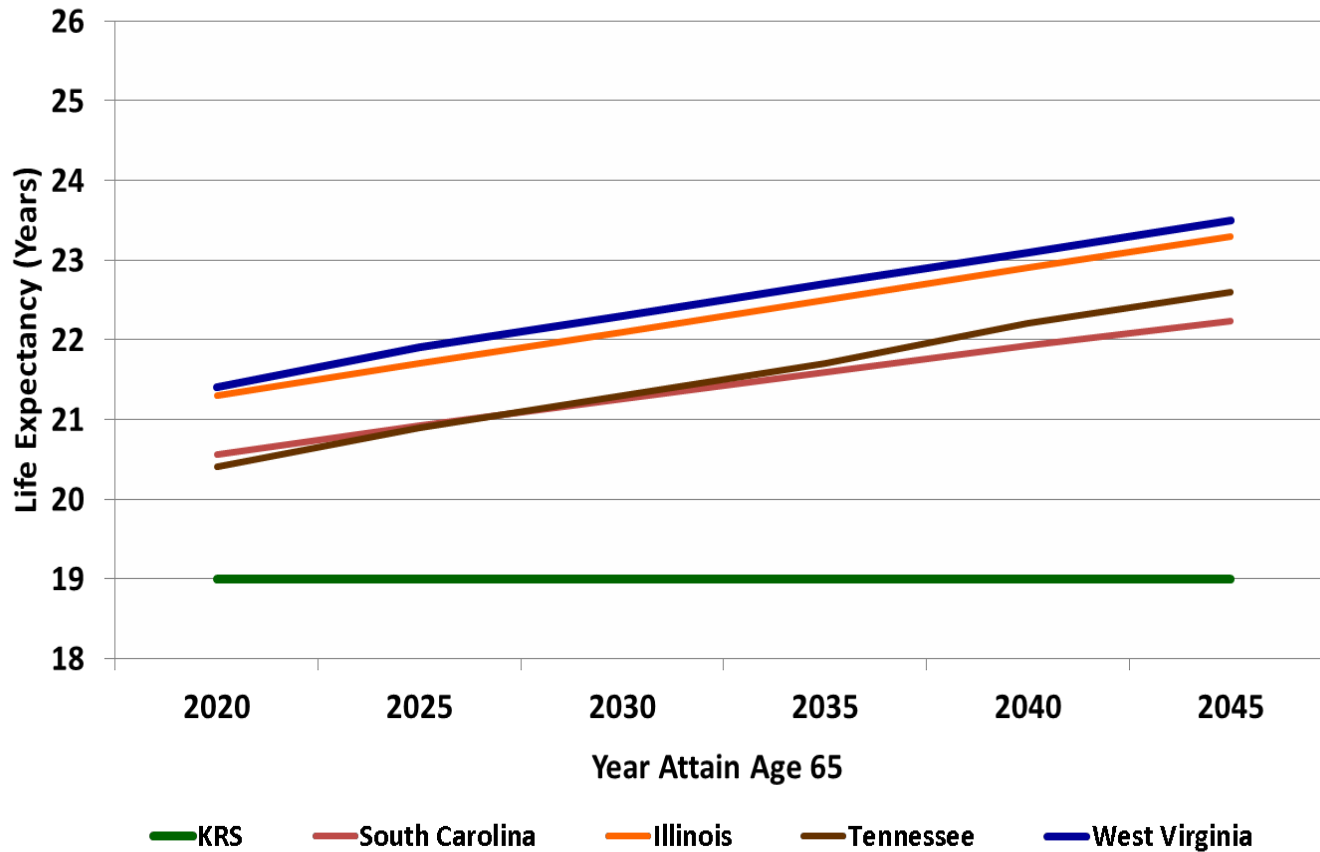
Primer on Mortality Assumption

Mortality Rates by Geographic Location



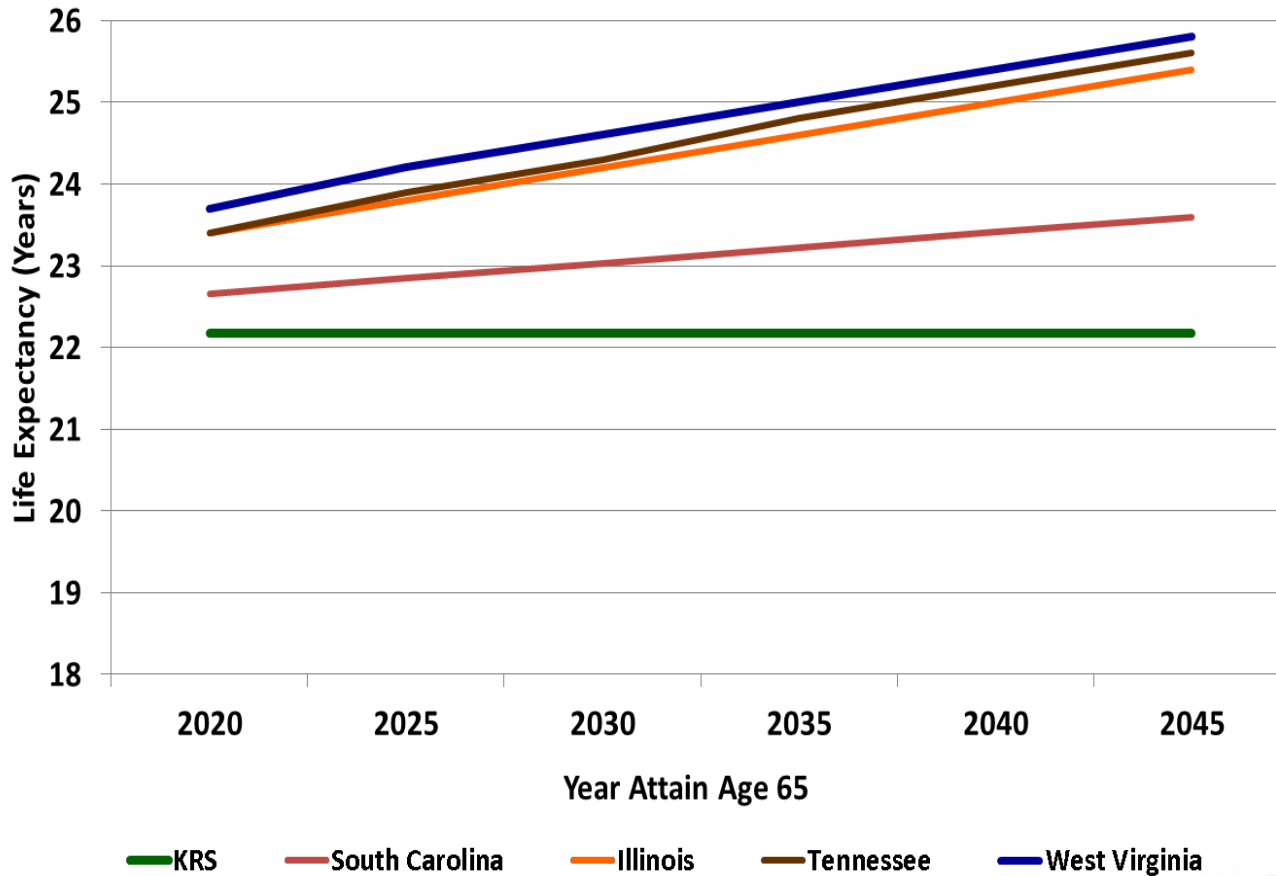
Life Expectancy Assumption Comparison - Males

Life Expectancy Assumption for Males - from Age 65



Life Expectancy Assumption Comparison - Females

Life Expectancy Assumption for Females - from Age 65



Closing Summary

- Forward-looking capital market expectations have been declining for the last several years
- Public pension systems have made material reductions in their investment return assumption
 - We expect many retirement systems will continue to reduce their investment return assumption over the next several years (especially those Systems with return assumptions above 7.50%)

Sources and other reference materials

- Macroeconomic Expectations and the Stock Market: The Importance of a Longer-Term Perspective, Vanguard Investment Counseling & Research,
<https://personal.vanguard.com/pdf/icrmaca.pdf>
- DIMINISHING RETURNS: WHY INVESTORS MAY NEED TO LOWER THEIR EXPECTATIONS, Mckinsey Global Institute,
<https://www.mckinsey.com/~media/McKinsey/Industries/Private%20Equity%20and%20Principal%20Investors/Our%20Insights/Why%20investors%20may%20need%20to%20lower%20their%20sights/MGI-Diminishing-returns-Full-report-May-2016.ashx>
- <http://www.mutpl.com/shiller-pe/>
- <https://www.nasra.org/latestreturnassumptions>
- <http://www.horizonactuarial.com/blog/category/publications>



Kentucky Retirement Systems

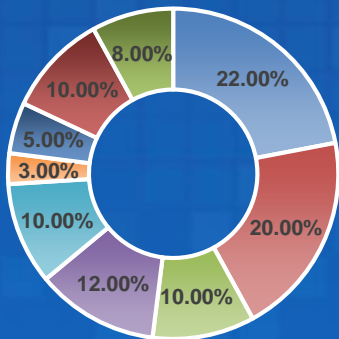
INVESTMENTS

January 31, 2019

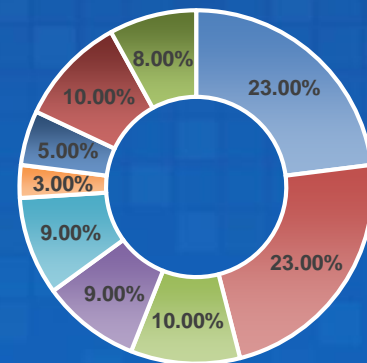
ASSET ALLOCATION (effective 1/2/2016)

Asset Class	Target Allocation		
	KERS	SPRS	KERS Haz, CERS, CERS Haz, Insurance
US Equity	22.00%	23.00%	26.50%
Non US Equity	20.00%	23.00%	26.50%
Private Equity	10.00%	10.00%	10.00%
High Yield/Specialty Credit	12.00%	9.00%	6.00%
Core Fixed Income	10.00%	9.00%	6.00%
Cash	3.00%	3.00%	2.00%
Real Estate	5.00%	5.00%	5.00%
Opportunistic/Absolute Return	10.00%	10.00%	10.00%
Real Return	8.00%	8.00%	8.00%

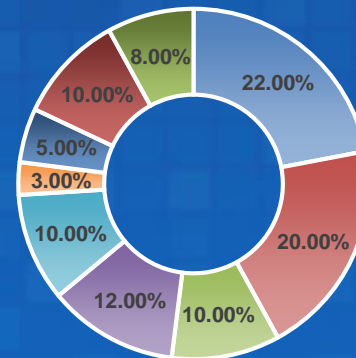
KERS
Target Asset Allocations



SPRS
Target Asset Allocations



KERS Haz, CERS, CERS Haz and Insurance
Target Asset Allocations

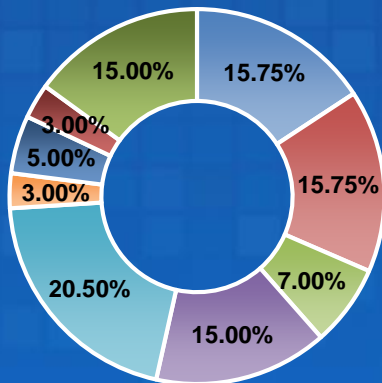


- US Equity
- Non US Equity
- Private Equity
- Specialty Credit
- Core Fixed Income
- Cash
- Real Estate
- Absolute Return
- Real Return

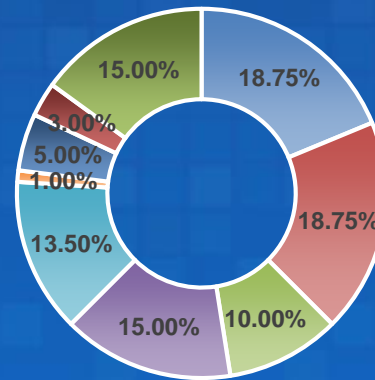
ASSET ALLOCATION (effective 6/7/2018)

Asset Class	Target Allocation	
	KERS/SPRS	KERS Haz, CERS, CERS Haz, Insurance
US Equity	15.75%	18.75%
Non US Equity	15.75%	18.75%
Private Equity	7.00%	10.00%
High Yield/Specialty Credit	15.00%	15.00%
Core Fixed Income	20.50%	13.50%
Cash	3.00%	1.00%
Real Estate	5.00%	5.00%
Opportunistic/Absolute Return	3.00%	3.00%
Real Return	15.00%	15.00%

**KERS/SPRS
Target Asset Allocations**



**KERS Haz, CERS, CERS Haz and Insurance
Target Asset Allocations**



- US Equity
- Non US Equity
- Private Equity
- Specialty Credit
- Core Fixed Income
- Cash
- Real Estate
- Absolute Return
- Real Return






BENCHMARKS

		Target Allocation	Target Allocation
Asset Class	Long-Term Benchmark	KERS and SPRS	KERS-Haz, CERS, CERS-Haz, and Insurance
Assumed Rate of Return		5.25%	6.25%
Growth		53.50%	62.50%
US Equity	Russell 3000	15.75%	18.75%
Non US Equity	MSCI ACWI Ex-US IMI	15.75%	18.75%
Private Equity	Russell 3000 + 300 bps (lagged)	7.00%	10.00%
High Yield / Specialty Credit	Bloomberg Barclays US High Yield	15.00%	15.00%
Fixed Income / Liquidity		23.50%	14.50%
Core Fixed Income	Bloomberg Barclays US Aggregate	20.50%	13.50%
Cash	Citi Grp 3-mos Treasury Bill	3.00%	1.00%
Diversifying Strategies		23.00%	23.00%
Real Estate	NCREIF ODCE	5.00%	5.00%
Opportunistic / Absolute Return	HFRI Diversified	3.00%	3.00%
Real Return	US CPI + 3%	15.00%	15.00%



Pension- Investment Update 12/31/2018

Annual Rates of Return (Net of Fees)

	Market Value (\$ in millions)	1 Month	FYTD	5 Years	10 Years	ITD
 KERS Non-Hazardous	\$1,971.0	-1.62%	-1.95%	5.08%	8.07%	8.88%
<i>Plan Index*</i>		-2.09%	-2.77%	4.93%	8.40%	8.97%
 KERS Hazardous	\$627.8	-2.35%	-3.15%	5.19%	8.19%	8.91%
<i>Plan Index*</i>		-2.40%	-3.43%	5.04%	8.47%	8.99%
 CERS Non-Hazardous	\$6,681.1	-2.40%	-3.26%	5.18%	8.19%	8.91%
<i>Plan Index*</i>		-2.40%	-3.43%	5.03%	8.47%	8.99%
 CERS Hazardous	\$2,237.9	-2.39%	-3.24%	5.21%	8.20%	8.91%
<i>Plan Index*</i>		-2.40%	-3.43%	5.03%	8.47%	8.84%
 SPRS	\$257.7	-1.91%	-2.50%	4.69%	7.93%	8.84%
<i>Plan Index*</i>		-2.00%	-2.88%	4.69%	7.93%	8.97%
Total Pension Fund	\$11,775.5	-2.25%	-2.99%	5.19%	8.18%	8.91%
<i>Plan Index**</i>		-2.33%	-3.33%	5.16%	8.51%	9.00%

*Plan Index – KRS Blended Index

** Weighted Composite of Individual Plans



Insurance - Investment Update 12/31/2018

Annual Rates of Return (Net of Fees)

	Market Value (\$ in millions)	1 Month	FYTD	5 Years	10 Years	ITD
KERS Non-Hazardous	\$820.4	-2.93%	-4.06%	4.63%	8.16%	7.13%
<i>Plan Index*</i>		-2.37%	-2.69%	5.18%	9.13%	7.54%
KERS Hazardous	\$488.9	-2.42%	-3.26%	5.12%	8.47%	7.23%
<i>Plan Index*</i>		-2.38%	-2.96%	5.29%	9.19%	7.56
CERS Non-Hazardous	\$2,259.9	-2.32%	-3.10%	5.29%	8.55%	7.25%
<i>Plan Index*</i>		-2.45%	-3.53%	5.24%	9.16%	7.55%
CERS Hazardous	\$1,216.8	-2.30%	-3.06%	5.35%	8.58%	7.26%
<i>Plan Index*</i>		-2.45%	-3.53%	5.24%	9.17%	7.55%
SPRS	\$182.6	-2.30%	-3.07%	5.33%	8.57%	7.26%
<i>Plan Index*</i>		-2.71%	-3.53%	5.25%	9.17%	7.55%
Total Pension Fund	\$4,968.6	-2.42%	-3.32%	5.20%	8.49%	7.23%
<i>Plan Index**</i>		-2.45%	-3.54%	5.43%	9.24%	7.57%

SB2 KRS IN COMPLIANCE WITH 45A

Compared to the past:

- Take a longer time period to complete the tasks
- Require more management, administrative time, and expense
- Provide less flexibility and responsiveness

SB2 INVESTMENT MANAGER CONTRACTS

- **Using a “gating” process for all new potential managers**
- **Have CFA compliance statements from all traditional managers**

SB2 CFA CODE OF ETHICS

Replace CFA Institute Code of Ethics and Standards of Professional Conduct and the CFA Institute Asset Manager Code of Professional Conduct with the SEC Investment Manager Code of Ethics.

REASONS:

1. Overall, the SEC requirement is the industry standard.
2. Both, the SEC and the CFA, require investment managers to comply with:
 - Prudent man rules
 - Customer protections
 - Ethical standards
3. The SEC is a governmental agency requiring registration whereas the CFA Institute is a voluntary association.
4. The SEC has punitive powers (“teeth”) whereas the CFA Institute can only censure or expel members.
5. The SEC conducts periodical on-site audits whereas the CFA has no audit power.

SB2 TRANSPARENCY

The American Legislation Exchange Council wrote in their December 2017 Pension Report

- *“Rather than merely presenting required information such as the actuarial valuation of assets and liabilities, Kentucky (KRS) provides the raw data along with computed key fundamentals.”*
- *“In addition, the financial investment’s actuarial and statistical sections of the report are laid out in a clear, organized, rationally flowing manner.”*

SB2 TRANSPARENCY

The American Legislation Exchange Council wrote in their December 2017 Pension Report

TRANSPARENCY LEADERS AND LAGGARDS	
MOST TRANSPARENT	LEAST TRANSPARENT
Kentucky	Alabama
Montana	California
Nebraska	Georgia
North Carolina	Louisiana



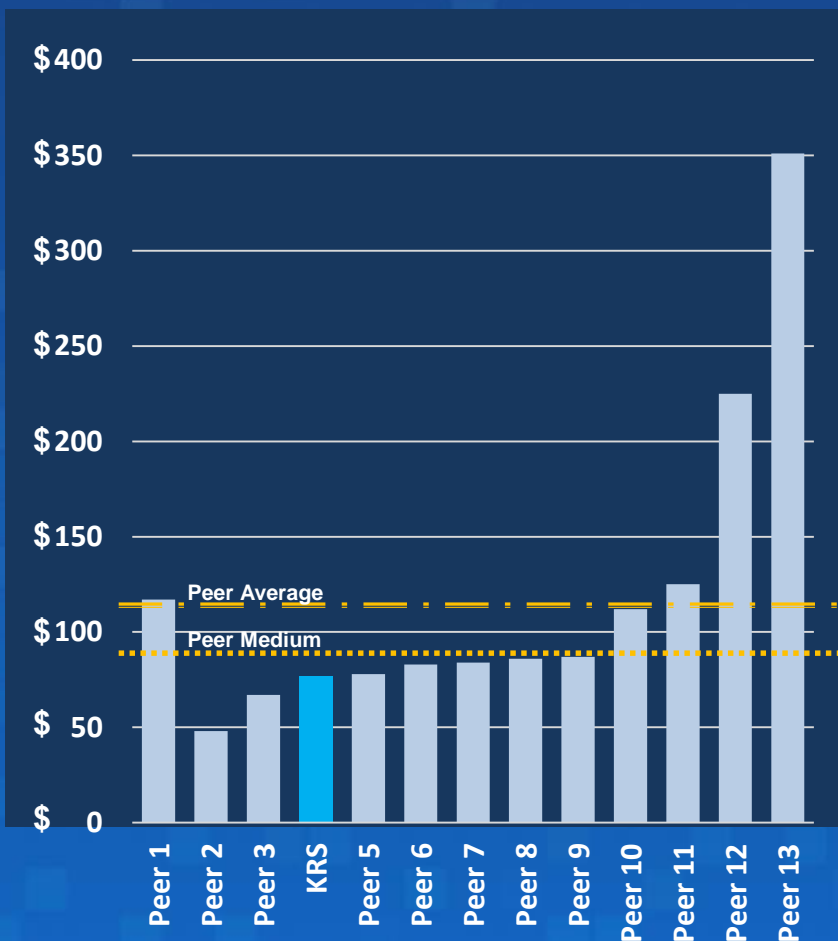
Kentucky Retirement Systems

CERS Separation

January 31, 2019

CEM BENCHMARKING DATA

Your total pension administration cost was \$77 per active member and annuitant. This was \$35 below the peer average of \$112.



Reasons why your total cost was \$35 below peer average

1.	Economies of scale advantage	\$ (1.50)
2.	Lower cost per member	(4.89)
3.	Lower transactions per FTE	3.67
4.	Lower cost per FTE for salaries, benefits, building, utilities, HR, and IT	(10.97)
5.	Lower third-party and other costs in front-office activities	(5.78)
6.	Lower cost for back-office activities	
	-Governance and Finance	(5.18)
	-Major Projects	(3.56)
	-IT strategy, database, applications	(3.82)
	-Actuarial, Legal, Audit, Other Support Service	(2.80)
	Total	\$(34.83)

2016 CEM Benchmarking Inc.

CERS SEPARATION CONSIDERATIONS

Considerations	Scenario 1	Scenario 2
	<i>CERS - Separate Board</i>	<i>CERS – Total Separation</i>
Governance	CERS Board of Trustees (how many/who)	CERS Board of Trustees (how many/who)
		Separate Personnel policies (KRS under 18A)
	Disability/Administrative Appeals Committees	Disability/Administrative Appeals Committees
	Other Committees (Audit, Retiree HealthCare, Investments)	Other Committees (Audit, Retiree HealthCare, Investments)
	Bylaws	Bylaws
	Board and Management policies	Board and Management policies
	Liability insurance	Liability insurance
	Administrative regulations	Administrative regulations
Legal & Consulting		New legal entity contracts
		Dedicated legal counsel (fiduciary requirements)
		IRS tax rulings
		Trusts and custody agreements
	Investment Advisor	Investment Advisor
		Investment manager agreements
	Legal consultants	Legal consultants
		Audit services
Actuarial services	Actuarial services	

CERS SEPARATION CONSIDERATIONS

Considerations	Scenario 1	Scenario 2
	<i>CERS - Separate Board</i>	<i>CERS - Separate Trust</i>
Personnel		Separate Needs
Financial/Technology		Converts from Plans to Trusts (Pension and Insurance)
		Contract Management (KRS 45A Model Procurement)
		Investment custodial bank
		Buildings - rent and assets
		Retiree Healthcare risk pool (DEI, Humana)
		Actuarial assumptions (e.g. mortality)
		Separate Administrative budget
		CAFR/SAFR
		Financial audits and GASB reporting
		START modifications
		Code replication
		Separate licenses or usage seats
Member/Employer Services	Website and Social Media	Website and Social Media
	Benefit complexity as pension and health plans diverge	Benefit complexity as pension and health plans diverge
		Benefit materials
		Member forms

SEPARATE TRUSTS – COST SUMMARY

Expense Estimate Summary (\$ in thousand's)		
	Low	High
One Time Set-up	\$ 2,560	\$ 4,750
On-going Expenses	\$ 2,313	\$ 3,255
Initial Staffing	\$ 1,903	\$ 1,903
Estimated Total	\$ <u>6,776</u>	\$ <u>9,908</u>

KEY TAKEAWAYS

- **KRS runs efficiently**
- **Running two separate systems will cost more than one system alone...and will cause significant transitional issues**
- **Having a CERS Board governing CERS would be less costly and disruptive alternative**
- **KERS Non Haz's poorly funded position does not negatively impact CERS investment management**

RECENT QUESTIONS

Q. Since the introduction of SB 226 in 2017, any discussions with groups regarding CERS separation?

A. Many general discussions, but not centered on CERS separation.

Q. Has KRS discussed with employer groups, belief there is fiscal advantages to outsourcing?

A. Previously, but not since the recent presentation.

Q. After a 5-year transition period what would happen to the KRS staff?

A. Many would likely be hired by CERS

- **Others would retiree or find other employment during transition period**
- **Other would remain with KERS/SPRS**
- **KRS would lose a lot of talent and “history”**

RECENT QUESTIONS

Q. Can you address the point made by the employer groups that KRS' last experience study left out CERS data?

A. The 2008-2013 experience study included all plans. An audit of the experience study was completed by Segal Consulting in 2015 which included all plans. Both are on the KRS website.

<https://kyret.ky.gov/About/Board-of-Trustees/Pages/Experience-Studies.aspx>

Q. Address the 247% increase in administrative costs experienced by KRS over the last 15+ years?

A. Correct.

- 2001 to 2018 annualized administrative expense growth = 5%
- Membership growth = 3%
- Inflation = 2%
- Net adjusted expense growth rate = 0%

During period, KRS employer pension/insurance contributions increased from 5.89% to 49.47% and represents 20% of our administrative costs.

RECENT QUESTIONS

Investment Committee approves the purchase of \$100M in shares of a publically traded company. (Determines that it is too risky and/or illiquid for KNHZ and SPRS)

INITIAL STEP	Publicly Traded Investments (\$ in Millions)		
The manager is given the full amount of the approved funding in the amount \$100,000	KERS	0.0%	
	KHAZ	4.0%	4,000
	CERS	46.0%	46,000
	CHAZ	16.0%	16,000
	SPRS	0.0%	
	KINS	6.0%	6,000
	KZNS	4.0%	4,000
	CINS	15.0%	15,000
	CHNS	8.0%	8,000
	SINS	1.0%	1,000
		100.00%	\$100,000

Q. Does KRS Commingle Plan Investments?

A. Yes, often to make block investment purchases. No, once the shares go to BYN Mellon (our custodian bank). It is against federal law to move assets from one trust to another to pay benefits. See charts.

INCREASE IN MARKET VALUE	Publicly Traded Investments		
Due to favorable market conditions the value of the investments have increased by \$5,000.	KERS	0.0%	
	KHAZ	4.0%	4,200
	CERS	46.0%	48,300
	CHAZ	16.0%	16,800
	SPRS	0.0%	
	KINS	6.0%	6,300
	KZNS	4.0%	4,200
	CINS	15.0%	15,750
	CHNS	8.0%	8,400
	SINS	1.0%	1,050
		100.00%	\$105,000

RECENT QUESTIONS

Q. Would the state would still remain liable for the CERS share of the unfunded liability were a separate CERS board or any participating employer become insolvent?

A. If any participating employer became insolvent, the remainder of the participating CERS employers would be responsible for the provision of benefits. KRS cannot state with any certainty if the Commonwealth would be liable for the CERS share of the unfunded liability if CERS as a whole became insolvent. This would ultimately be a question left to the courts.

RECENT QUESTIONS

Q. Regarding a more rather than less consolidated system, can KRS explain the system in Tennessee and how it is different from KRS?

A. Tennessee (TCRS) consolidated seven systems (ex: Teachers, state, local employees) under the State Treasurer in 2014.

- The plans provide pension, disability, and death benefits (no health insurance).**
- Administration for TCRS is provided from state agencies including information systems, accounting, management services, human resources, and internal audit. Administration expenses were approximately \$19 million for the period ending June 30, 2017**
- There is one investment office managing all seven systems. Investment Staff expenses are not included in administrative fees.**

APPENDIX

KRS QUASI-GOVERNMENTAL ENTITIES OVERVIEW

(based on KRS Documentation and LRC Report #419)

- Quasi-governmental entities are not defined in statute, but are otherwise defined as entities that are created by government to service the public interests but maintain a legally separate status.
- Board members often are appointed by government officials, and government officials may serve on a governing board.
- Depending on the preferred definition of a “quasi” there are up to approximately 600 agencies in KRS within the *KERS* and *CERS* retirement plans.
- Classifications include airport boards, ambulance services, community action agencies, health departments, fire departments, housing authorities, libraries, regional mental health services, abuse victims, utility boards, and other special purpose agencies.
- KRS was established in 1956. Quasi agencies entered KRS through Executive Order or an Order from the county’s fiscal court or school board, and received final approval from the KRS Board of Trustees.

KERS NON-HAZ (Only)

Count of Eligible Agency Classification

Count of Eligible	
Agency Classification	Total
Health Departments	61
Non-P1 State Agencies	37
Regional Mental Health Units	13
Universities	7
Grand Total	118

Health Departments	61
ALLEN CO HEALTH DEPT	1
ANDERSON CO HEALTH DEPT	1
ASHLAND BOYD CO HEALTH DP	1
BARREN RVR DIST HLTH DEPT	1
BELL CO HEALTH DEPT	1
BOURBON CO HEALTH CENTER	1
BOYLE CO HEALTH DEPT	1
BRACKEN CO HEALTH DEPT	1
BREATHITT CO HEALTH DEPT	1
BRECKINRIDGE CO HEALTH BD	1
BUFFALO TRACE HEALTH DEPT	1
BULLITT CO HEALTH DEPT	1
CALLOWAY CO HEALTH DEPT	1
CARTER CO HEALTH DEPT	1
CHRISTIAN CO HEALTH DEPT	1
CLARK CO HEALTH DEPT	1
CUMBERLAND VLY DIST HEALT	1
ESTILL CO HEALTH DEPT	1
FLEMING CO HEALTH DEP	1
FLOYD CO HEALTH CENTER	1
FRANKLIN CO HEALTH DEPT	1
GARRARD COUNTY HEALTH DPT	1
GATEWAY DIST HEALTH DEPT	1
GRAVES CO HEALTH CENTER	1
GRAYSON COUNTY HEALTH DEPT	1
GREEN RVR DIST HLTH DEPT	1
GREENUP CO HLTH DEPT	1
HARLAN CO HEALTH DEPT	1
HOPKINS CO HEALTH DEPT	1
JESSAMINE CO HEALTH DEPT	1

JOHNSON CO HEALTH DEPT	1
KNOX CO HEALTH DEPT	1
KY RIVER DIST HEALTH DEPT	1
LAKE CUMBERLAND DISTRICT	1
LAUREL CO HEALTH DEPT	1
LAWRENCE CO HEALTH DEPT	1
LEWIS CO HEALTH DEPT	1
LEX FAYETTE CO HLTH DEPT	1
LINCOLN CO HEALTH DEPT	1
LINCOLN TRL DIST HLTH DEP	1
LITTLE SANDY DIST HEALTH	1
MADISON CO HEALTH DEP	1
MAGOFFIN CO HEALTH DEPT	1
MARSHALL CO HEALTH DEPT	1
MARTIN CO HEALTH DEPT	1
MERCER CO HEALTH DEPT	1
MONROE CO HEALTH DEPT	1
MONTGOMERY CO HEALTH DEPT	1
MUHLENBERG CO.HEALTH DEPT	1
N CENTRAL DIST HLTH DEPT	1
NORTHERN KY DIST HLTH DEP	1
OLDHAM CO HEALTH DEPT	1
PENNYRILE DIST HLTH DEPT	1
PIKE CO HEALTH DEPT	1
POWELL CO HEALTH DEPT	1
PURCHASE DIST HLTH DEPT	1
THREE RIVERS DIST HLTH	1
TODD CO HEALTH DEPT	1
WEDCO DIST HEALTH DEPT	1
WHITLEY CO HEALTH DEPT	1
WOODFORD CO HEALTH DEPT	1

Non P1			37
ASST OF COMMONWEALTH ATTY	1	NURSING HOME OMBUDSMAN	1
B.R.A.S.S.	1	O A S I S	1
BARREN RIVER CHILD ADVOCA	1	PENNYRILE CHILD ADV CTR	1
BETHANY HOUSE ABUSE SHELT	1	PURCHASE AREA SACAC	1
BLUEGRASS RAPE CRISIS CTR	1	SAFE HARBOR	1
BUFFALO TR CHILD ADV INC	1	SANCTUARY INC	1
CHILD ADV CTR OF GRN RVR	1	SPRINGHAVEN INC	1
CHILD WATCH ADVOCACY CTR	1	WOMEN AWARE	1
CSG HEADQUARTERS	1		
CUMBERLAND V C A CENTER	1		
D.O.V.E.S.	1		
FRANKLIN CO COUNCIL AGING	1		
GATEWAY CHILD ADVOCACY	1		
HIGHSCHOOL ATHLETIC ASSOC	1		
HOPE HARBOR INC	1		
JUDI'S PLACE FOR KIDS, INC.	1		
KACAC	1		
KASAP	1		
KDVA	1		
KENTUCKY HOUSING CORP	1		
KET FOUNDATION	1		
KY ASSOC OF REGIONAL PROG	1		
KY BAR ASSOCIATION	1		
KY HIGHER ED STUD LN CORP	1		
KY OFFICE OF BAR ADMISSIO	1		
KY RIVER CHILD ADVOCACY	1		
LAKE CUMB CHILD ADV CTR	1		
LINCOLN ADVOCACY SUPPORT	1		
MUN ELEC POW ASSOC OF KY	1		

Mental Health		13
ADANTA/BEHAVIORAL HLTH SR		1
BLUEGRASS.ORG		1
COMMUNICARE INC		1
COMPREHEND INC REG MHMR B		1
CUMBERLAND RIVER MHMR		1
GREEN RVR REG MHMR BD		1
KY RIVER COMM CARE INC		1
LIFESKILLS INC		1
MOUNTAIN COMP CARE CENTER		1
NORTHERN KY REG MHMR BD		1
PENNYROYAL REG MHMR BD		1
SEVEN CO SERVICES INC		1
WESTERN KY REG MHMR ADV		1

Universities		7
EASTERN KY UNIV		1
KCTCS		1
KENTUCKY STATE UNIVERSITY		1
MOREHEAD STATE UNIVERSITY		1
MURRAY STATE UNIV		1
NORTHERN KY UNIVERSITY		1
WESTERN KENTUCKY UNIV		1

EMPLOYER CLASSIFICATION



KERS



CERS



SPRS

KERS Employers

County Attorneys	61
Health Departments	60
Master Commissioner	34
Non-PI State Agencies	36
Other Retirement Systems	1
PI State Agencies	137
Regional Mental Health Units	12
Universities	7
County Attorneys	61
Health Departments	60
Master Commissioner	34
Non-PI State Agencies	36
Other Retirement Systems	1
PI State Agencies	137
Total	348

CERS Employers

Airport Boards	5	Jailers	2
Ambulance Services	19	Libraries	85
Area Development Districts	14	Other Retirement Systems	2
Boards of Education	173	PI State Agencies	4
Cities	221	Parks and Recreation	7
Community Action Agencies	21	Planning Commissions	16
Conservation Districts	49	Police Departments	2
County Attorneys	77	Riverport Authorities	5
County Clerks	16	Sanitation Districts	9
Development Authorities	6	Sheriff Departments	12
Fire Departments	38	Special Districts & Boards	49
Fiscal Courts	118	Tourist Commissions	23
Health Departments	1	Urban Government Agencies	2
Housing Authorities	42	Utility Boards	120
	Total		1,138

SPRS Employers

State Police	1
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TOP 10 EMPLOYERS



KERS Employers

Rank	Employer	# of employees
1	Department for Community Based Services	4,572
2	Department of Corrections	3,798
3	Department of Highways	3,710
4	Judicial Department Administrative Office of the Courts	1,393
5	Department of Juvenile Justice	1,195
6	Bluegrass.org	940
7	Kentucky State Police	904
8	Unified Prosecutorial System	862
9	Department of Veterans Affairs	847
10	Department of Revenue	809
	All Others	20,577
	Total	39,607

CERS Employers

Rank	Employer	# of employees
1	Jefferson County Board of Education	6,447
2	Louisville Jefferson County Metro Government	5,098
3	Fayette County Board of Education	1,918
4	Lexington Fayette Urban County Government	1,728
5	Judicial Department Administrative Office of the Courts	1,658
6	Boone County Board of Education	1,155
7	Bullitt County Board of Education	1,137
8	Hardin County Board of Education	1,105
9	Pike County Board of Education	974
10	Warren County Board of Education	958
	All Others	72,407
	Total	94,585

SPRS Employers

1	State Police	891
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Requires Pension Plan Funding Methodology Improvements – KERS Non-Haz Pension

	Member Liability <i>Pension Plan</i> (actives, inactives, future retirees)	
	Tiers 1, 2, 3 + 401a =	
5.51%	Average Normal Cost% +	\$82 M
9.85%	Level Dollar (SB 151) or other legislative action to pay plan unfunded	\$147 M
	Must retain federal \$	
15.36 %	Total = convert to ADC%	\$229 M

Legacy Retired Plan <i><u>must have statutory funding protection!</u></i>	
General Fund:	
-Redirected Agency Contributions	
-Direct Appropriations	\$845 M
*State Agency - fixed% ?	
*Quasi Agency - fixed % (with cap) ?	\$93
Total = \$ convert to ADC%	\$938 M

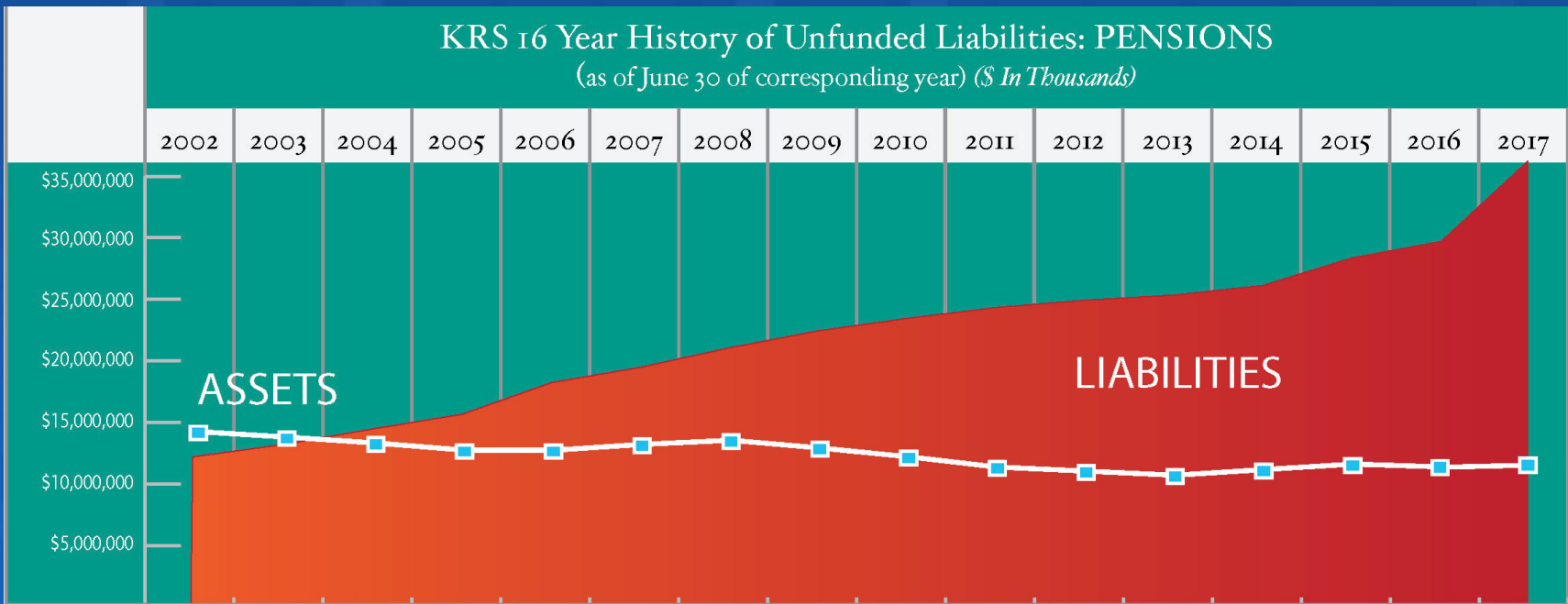
** Federal \$ funding is at the agency level*



KRS 15 Year History of Unfunded Liabilities

(as of June 30 of the corresponding year)

PENSIONS



SENATE BILL 2 – 2017 RS

Senate Bill 2

(“Pension transparency and accountability” bill)

- Made several changes to the governance and operational structure of Kentucky Retirement Systems, such as:
 - Created additional Investment reporting requirements
 - Increased membership of Board’s Investment Committee to nine (9) Trustees
 - Changed Actuarial Analysis requirements in KRS 6.350
 - Confirmed many aspects of Governor’s Executive Order 2016-340 (Board composition, etc.)

HOUSE BILL 351 – 2017 RS

House Bill 351

(Voluntary cessation of participating agencies)

PREVIOUSLY – House Bill 62 (2015 RS)

- **House Bill 62** created new statutes allowing agencies to voluntarily cease participation in KRS
 - Agency had to pay full actuarial cost of their obligation to KRS
 - Could be paid in lump sum, or with installment payments for as long as 20 years
 - KRS Board must approve
- **CURRENT LAW - House Bill 351 (2017 RS)**
 - Removed installment payment option
 - Specifies formula for determining the assumed rate of return in the cost calculation. Uses the 30-year Treasury Rate to calculate the exit liability.
 - New formula will help insure full actuarial cost of cessation will be paid by that agency

HOUSE BILL 362

House Bill 362 (2018):

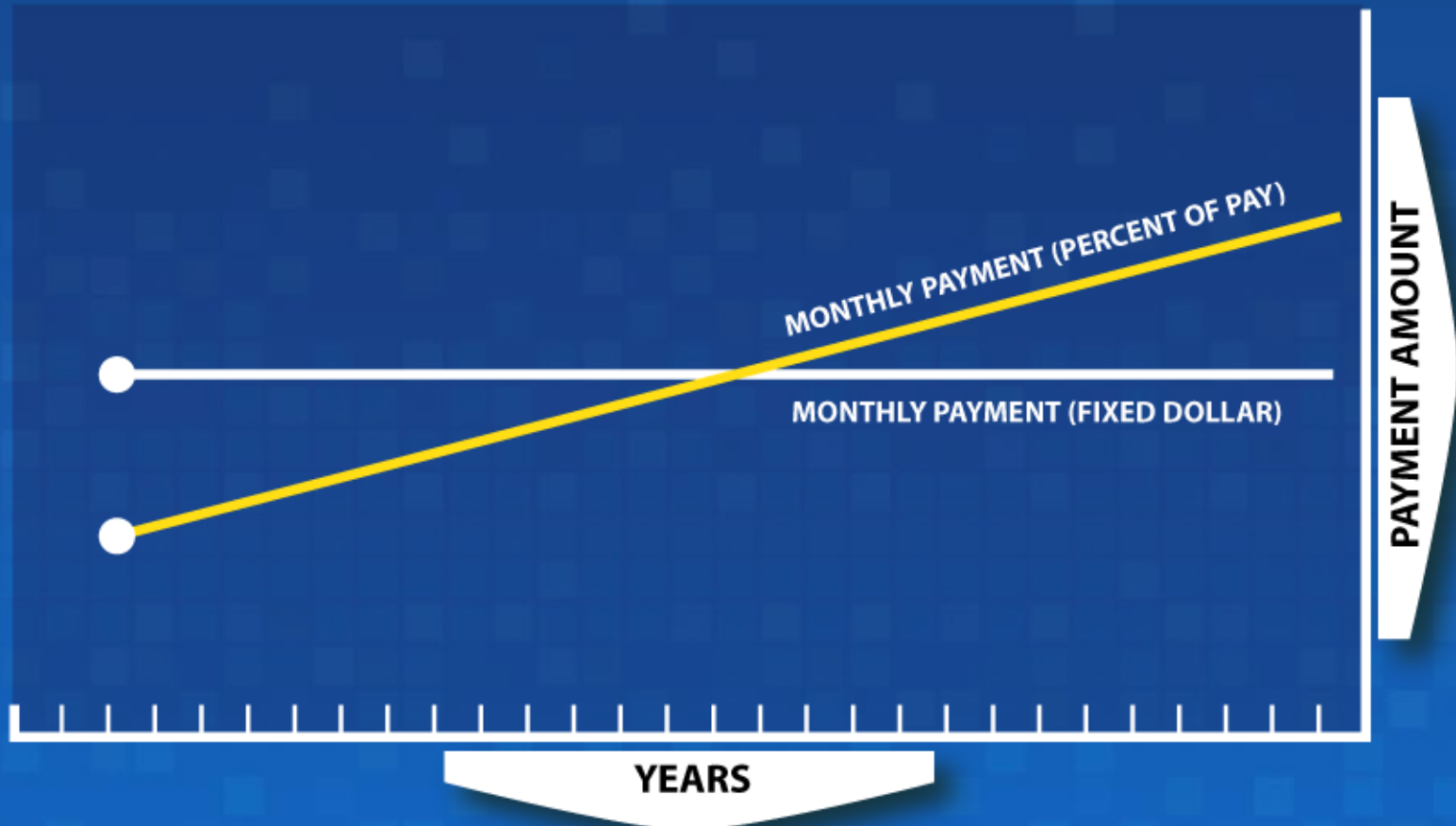
- Allows cities and counties to phase-in the increased employer contribution rate at 12% per year
- Gave the Quasi agencies a one year moratorium for a 49.43% contribution rate.
- Created a window for participating employers to withdraw from KRS (known as "voluntary cessation") Pay for the liability up to 40 years at 40% interest.
- Governor vetoed HB 362, citing support for phase-in section while stressing concern over cessation costs (estimated \$2 Billion cost left to remaining employers)
- General Assembly overrode veto, but voluntary cessation sections of HB 362 were repealed by House Bill 487 (2018 RS)

CURRENT STATUS

The General Assembly has asked KRS to propose an alternative plan to the existing “opt-out” provision in state law, and those originally passed in HB 362 allowing participating employers to voluntarily cease participation in the Systems. The proposed Bill will extend to Quasi moratorium on more year.

FUNDING METHODS: Fixed Dollar vs Percentage of Payroll

Paying off a mortgage



THE PERCENTAGE PAYMENT PROBLEM

