

Understanding the UAAL

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Chief Executive Officer

I.

Understanding the UAAL

This Is Simply A Math Problem

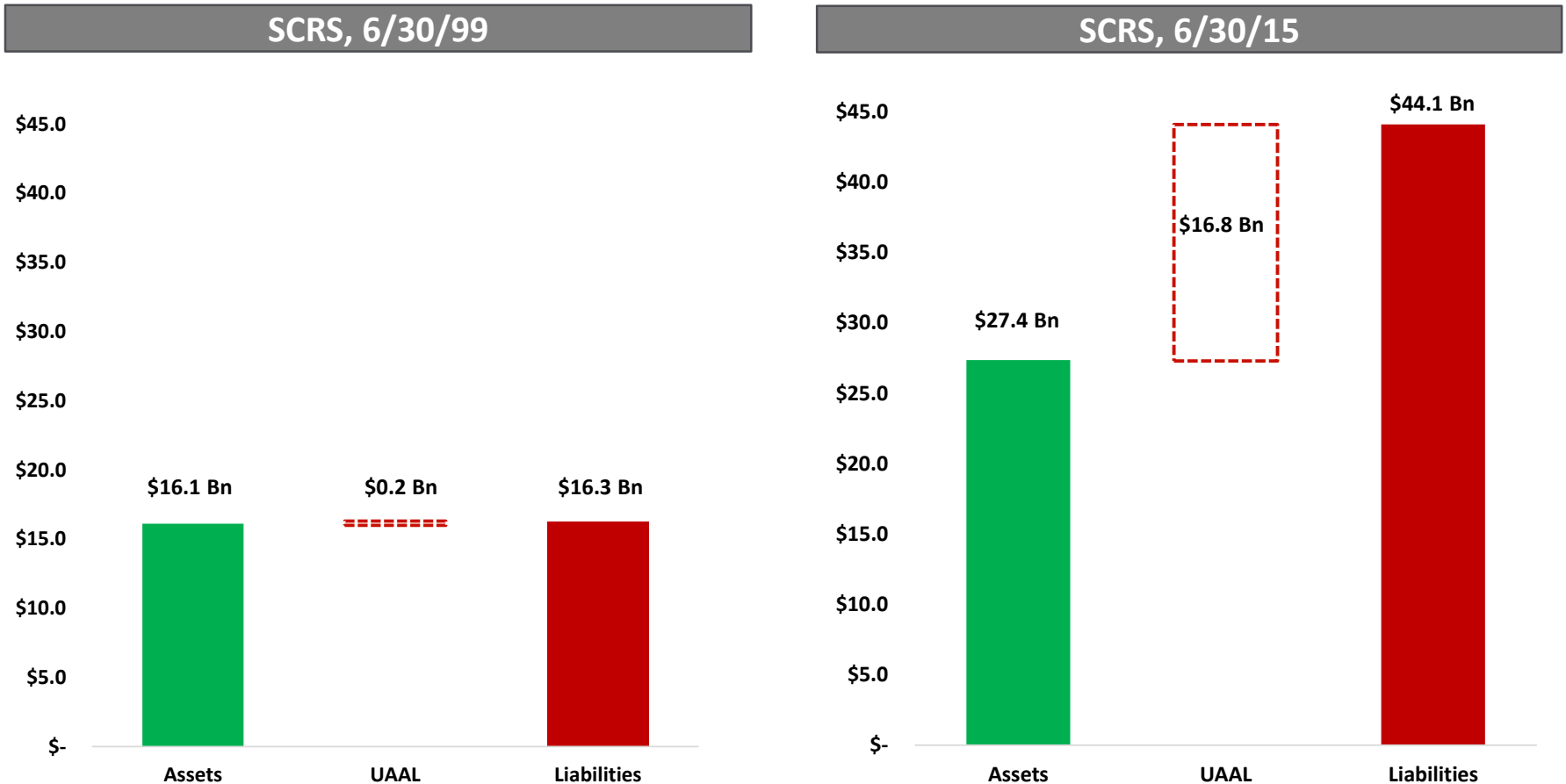
$$\frac{\text{Assets}}{\text{Liabilities}} = \textit{Funded Ratio}$$

This Is Simply A Math Problem

$$\frac{\$27.4 \text{ billion}}{\$44.1 \text{ billion}} = 62\% \text{ funded}$$

How Has SC's Pension Plan Evolved?

- Approximately fully funded only 16 years prior to most recent actuarial valuation
- Significant deterioration since '99 has led to the current ~62% funded status

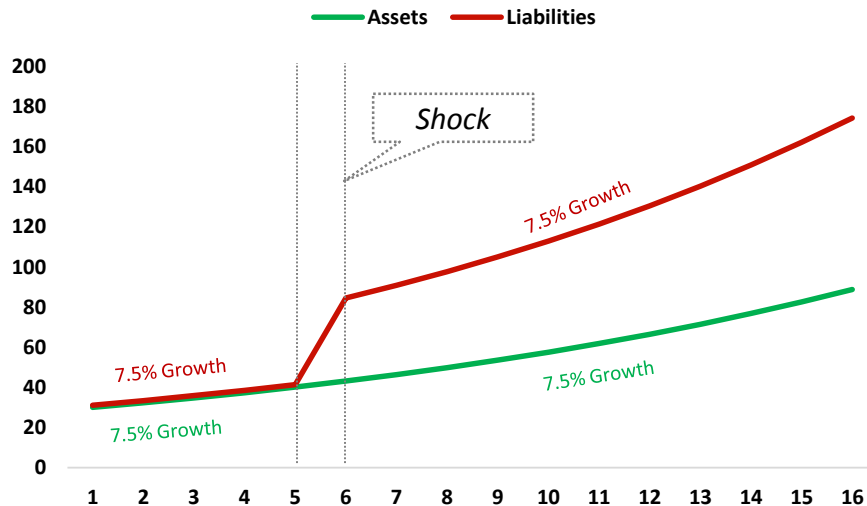


Source: PEBA CAFRs, Actuarial Valuations from 1999 – 2015

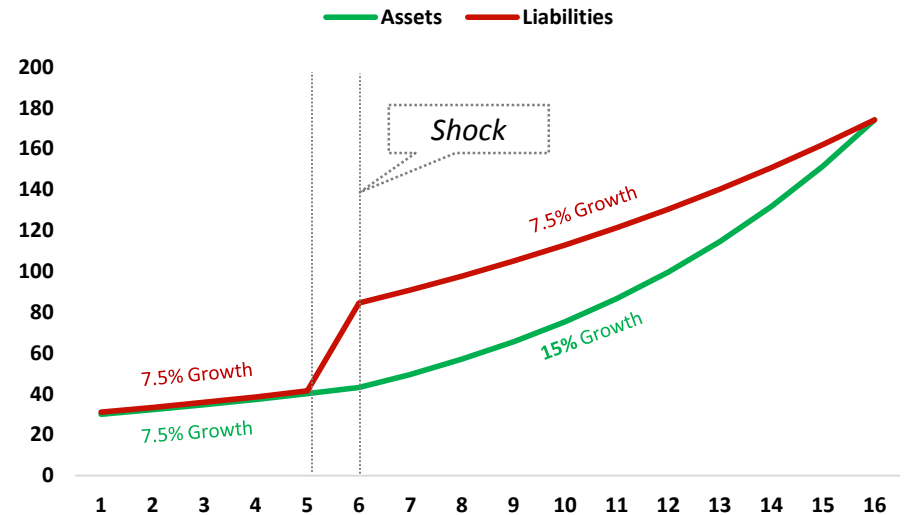
What Is Wrong With A UAAL?

- System is designed with very long-term assumptions in mind.
- If unfavorable events occur with respect to the funded status, a reversion to long-term original assumptions is no longer sufficient to maintain funding status.
- Even if reversion to long-term assumptions occurs following a shock, the UAAL will continue to grow unless sufficient contribution increases are made.

Impact of Shock to UAAL: Constant Growth

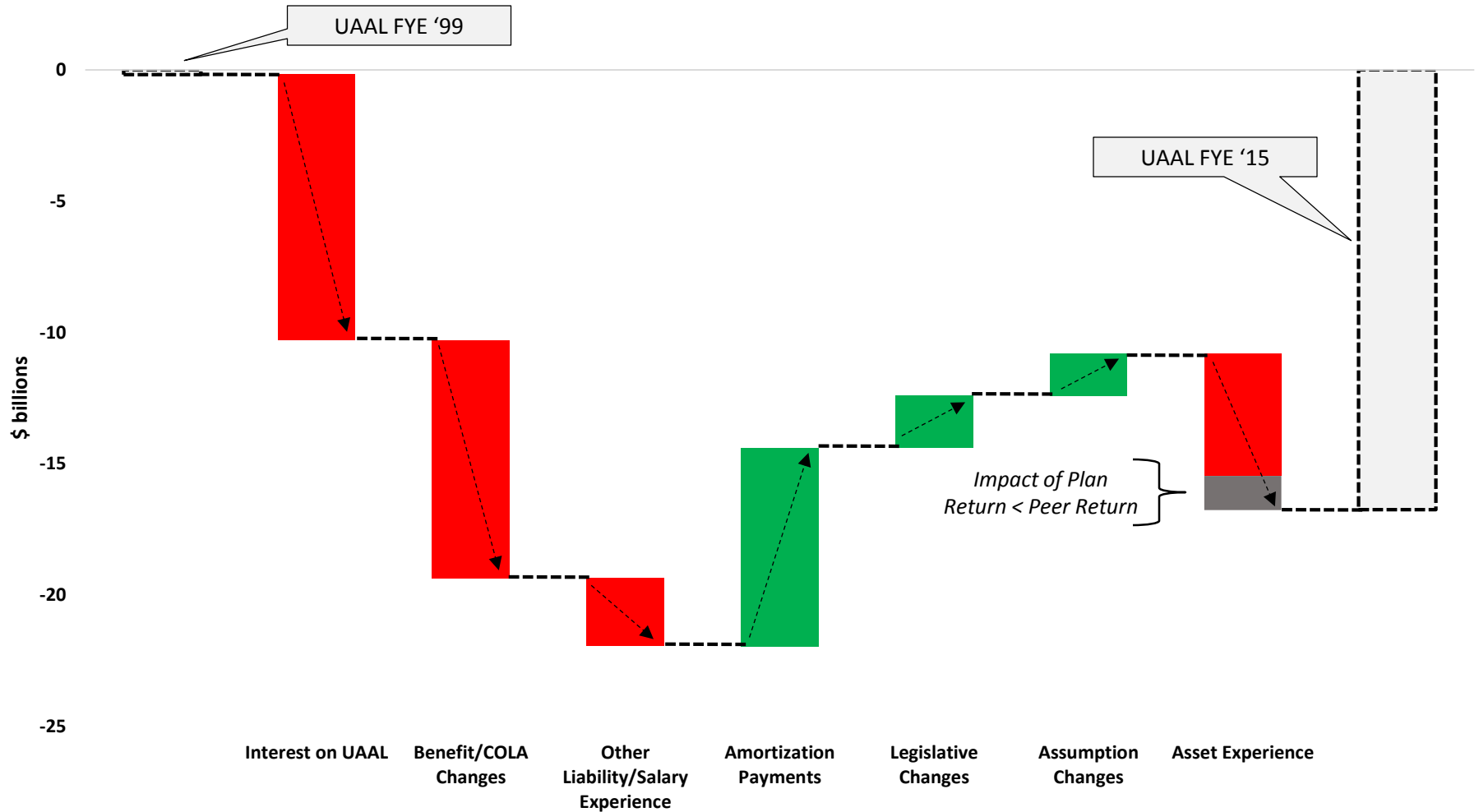


Impact of Shock to UAAL: Required Subsequent Growth



UAAL Decomposition - SCRS

Unfunded Actuarial Assumed Liability ("UAAL") Reconciliation: FY '99 – FY '15

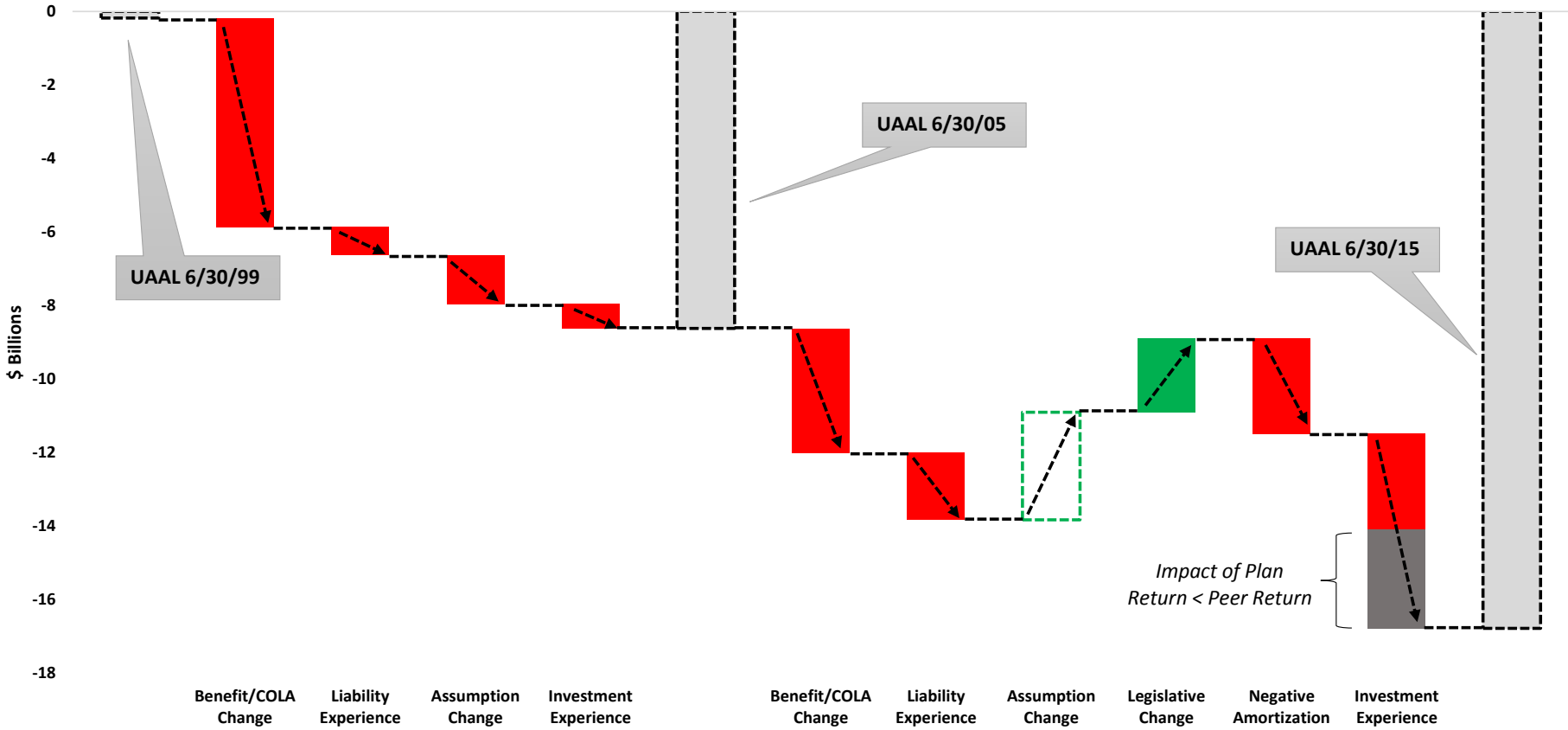


Source: PEBA Actuarial Valuations from 1999 – 2015, RSIC

UAAL Attribution

UAAL Reconciliation: FY '99 – FY '05 (Pre-IC)

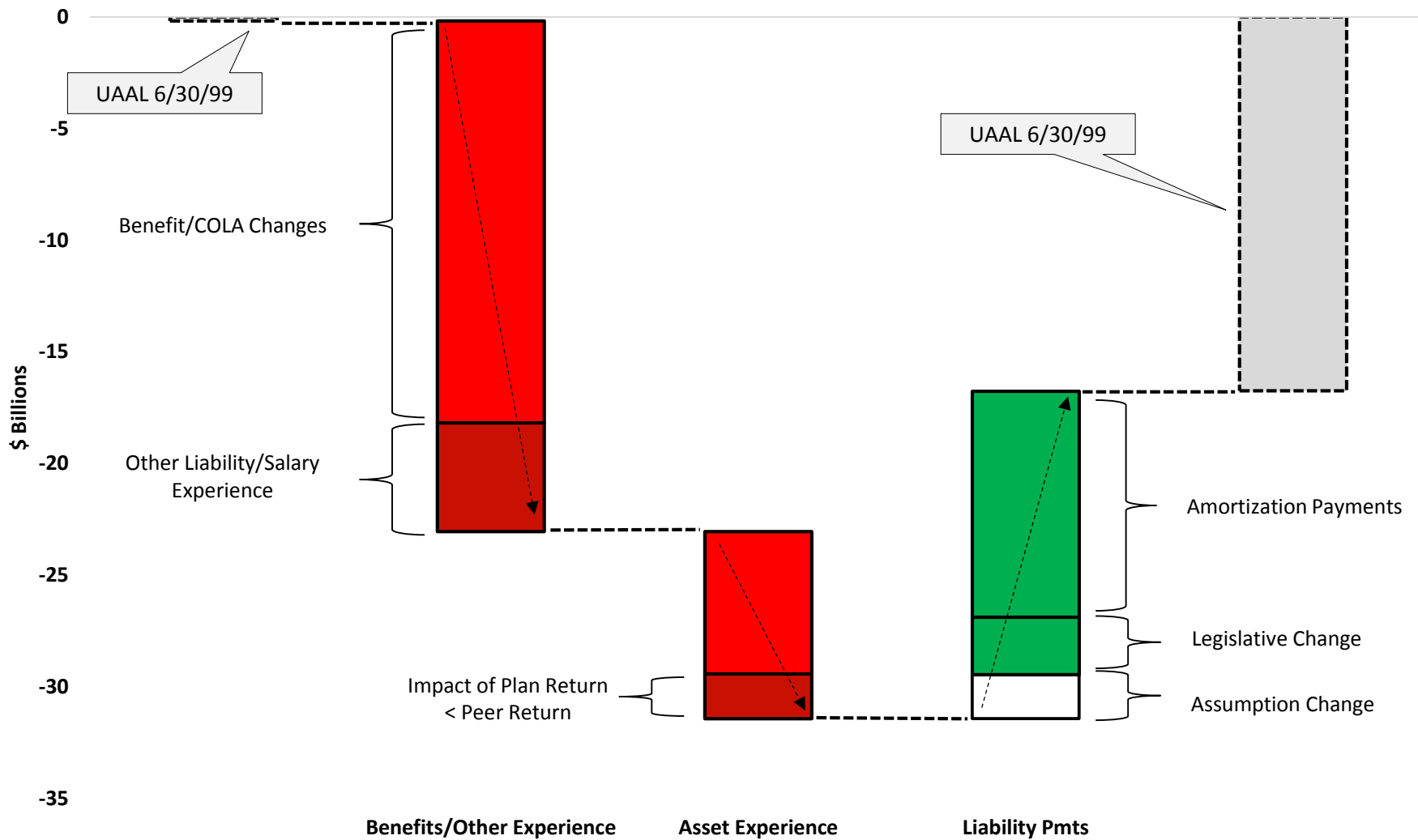
UAAL Reconciliation: FY '05 – FY '15 (Post-IC)



Source: PEBA Actuarial Valuations from 1999 – 2015, RSIC

UAAL Attribution

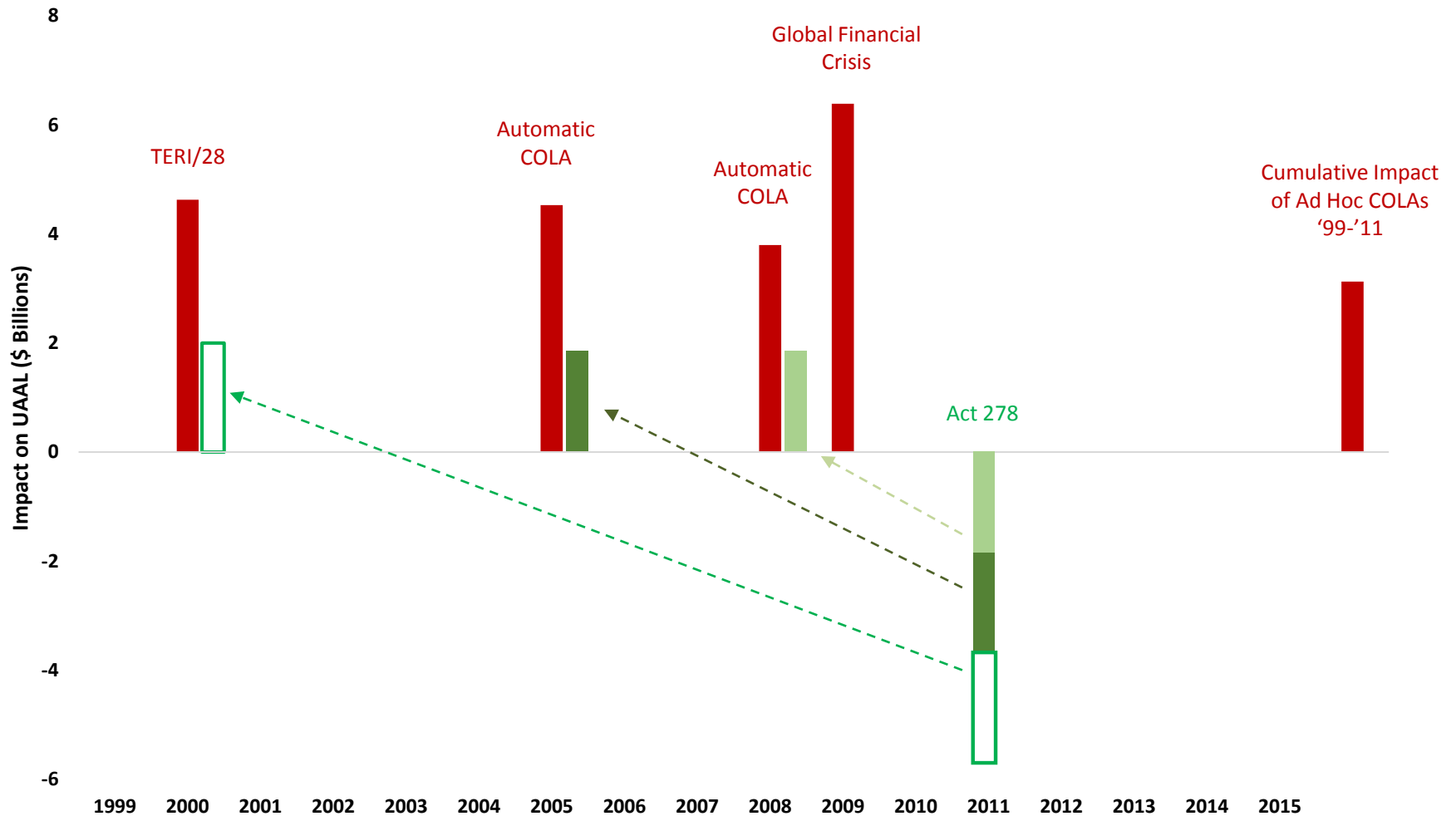
UAAL Reconciliation: FY '99 – FY '15 (SCRS, with Interest)



Source: PEBA Actuarial Valuations from 1999 – 2015, RSIC

SCRS UAAL: Key Events

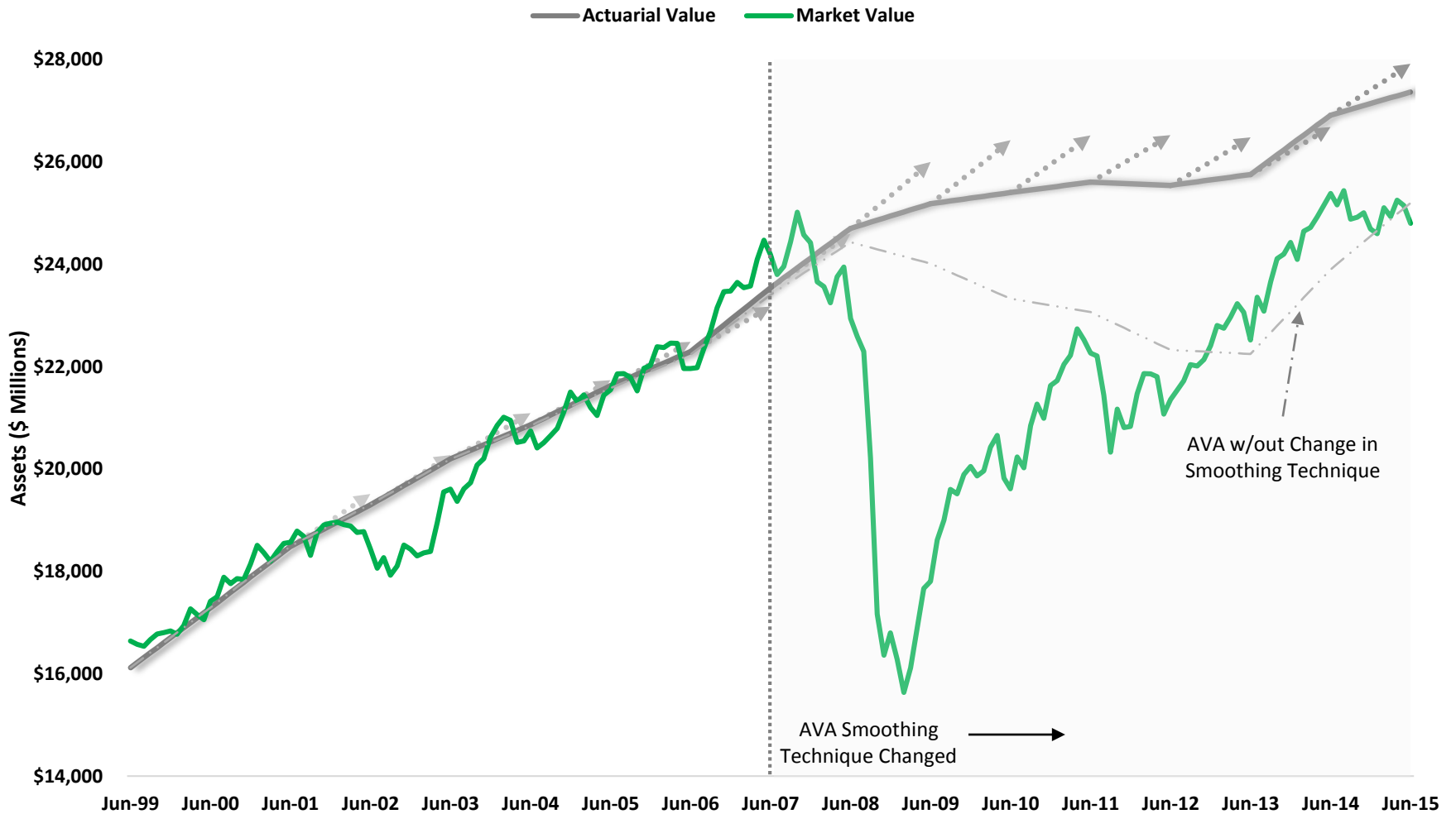
SCRS: Timeline and Impact of Major Events Affecting the UAAL



Source: PEBA Actuarial Valuations from 1999 – 2015, RSIC

SCRS Investment Performance

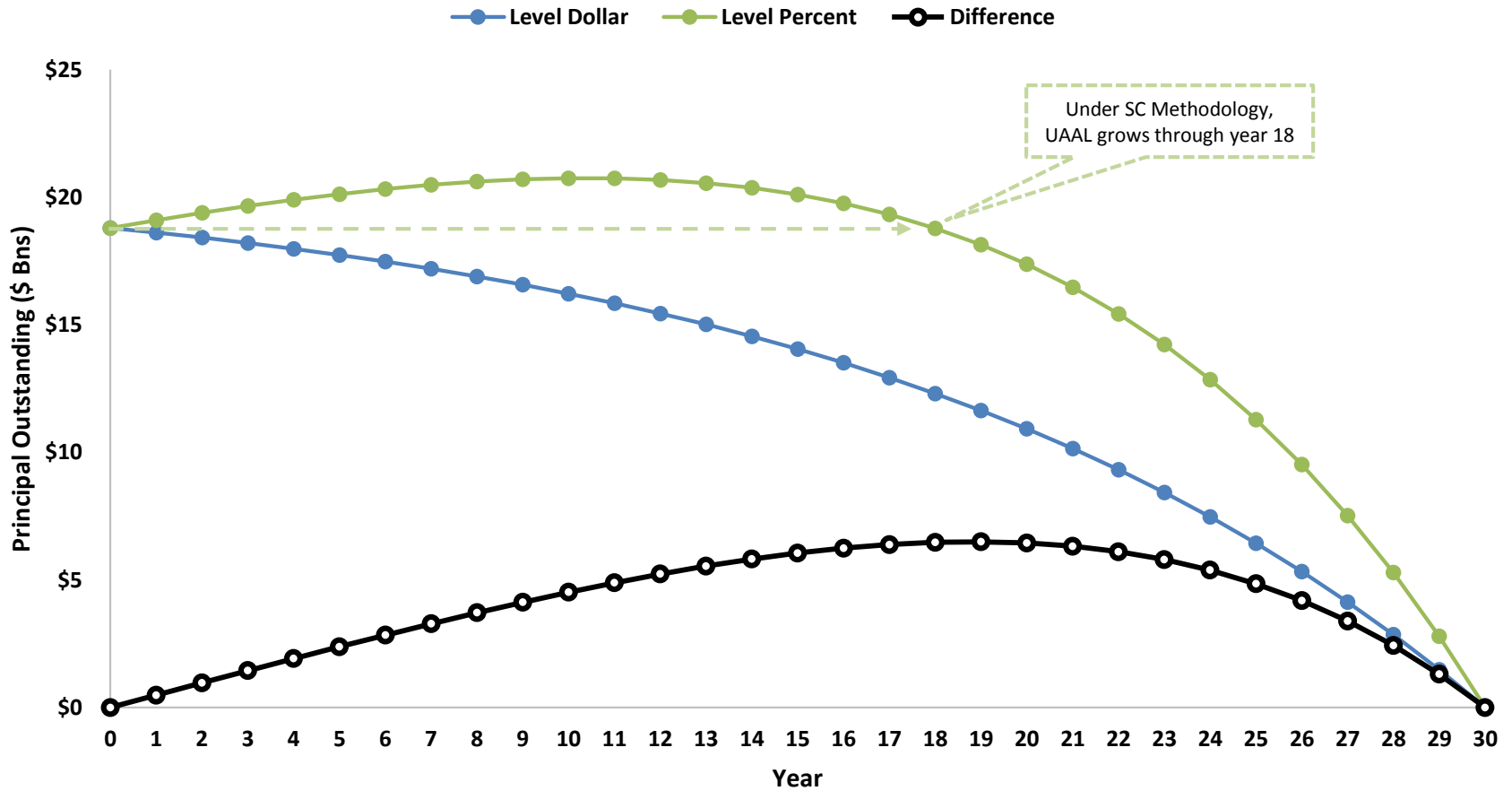
SCRS: Market Value vs Actuarial Value



Source: PEBA Actuarial Valuations from 1999 – 2015, RSIC

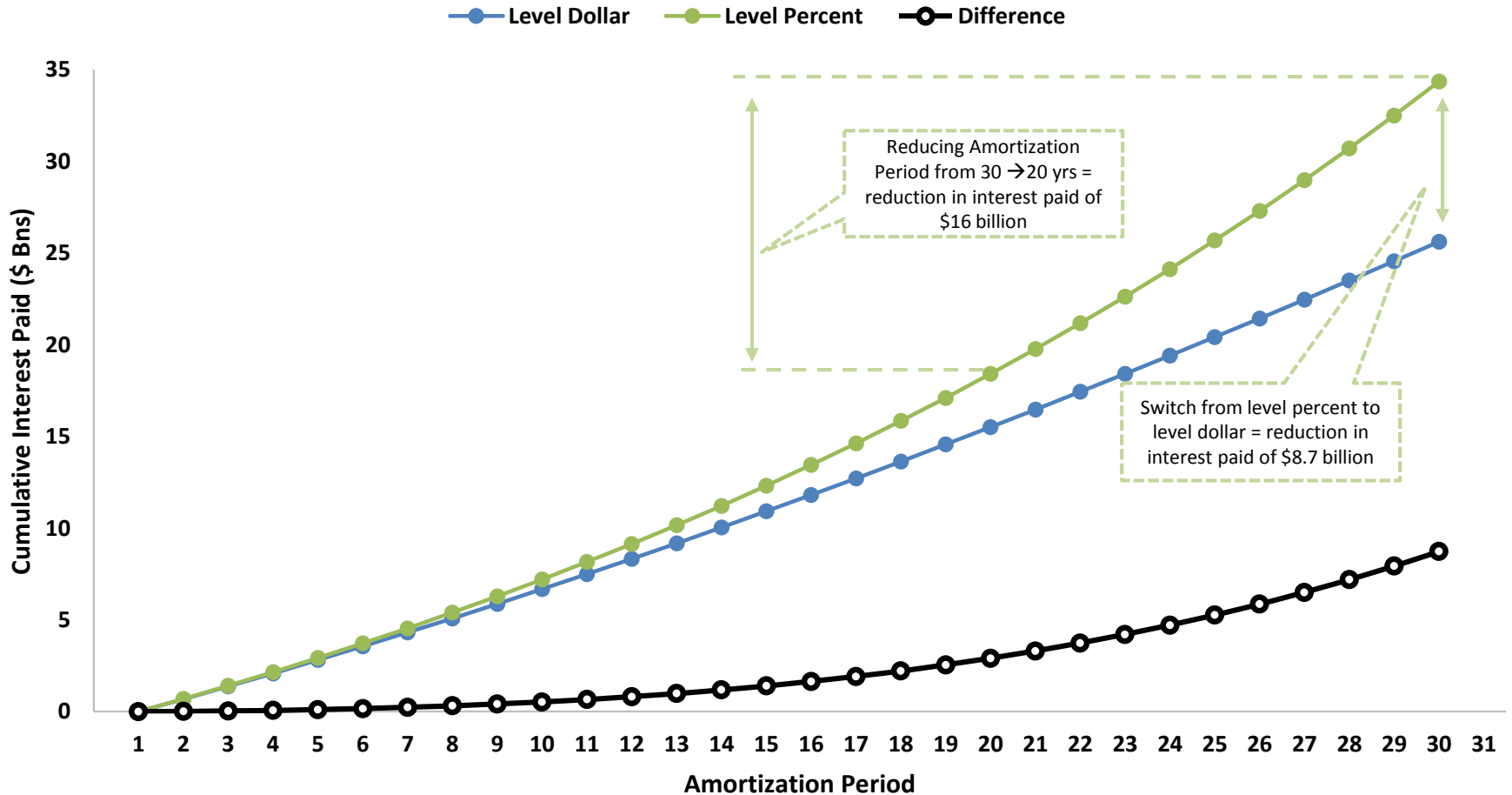
Amortization Method

Principal Outstanding (\$ Billions) Under Different Amortization Methods



Amortization Method: Impact of Changes

Amortization Period Impact on Interest Paid



Source: PEBA Actuarial Valuations from 1999 – 2015, RSIC

The Value Of Assets

- Improve investment returns
- Properly fund benefits granted during last two decades
- Disciplined funding policy
- Stress test investment performance
 - Level of returns (30-years)
 - Path of returns
- Use conservative assumptions

The Value Of Liabilities

- Do not grant new benefits without paying for them
- Stress-test liabilities
- Use conservative assumptions

Concept: Margin Of Safety

- Margin of Safety: Structuring the pension system using conservative assumptions, so that unanticipated (adverse) experiences can be absorbed without requiring further cost increases.
- Fund the system as if we expect to earn less than the projected rate of return.

Monitoring Assumptions

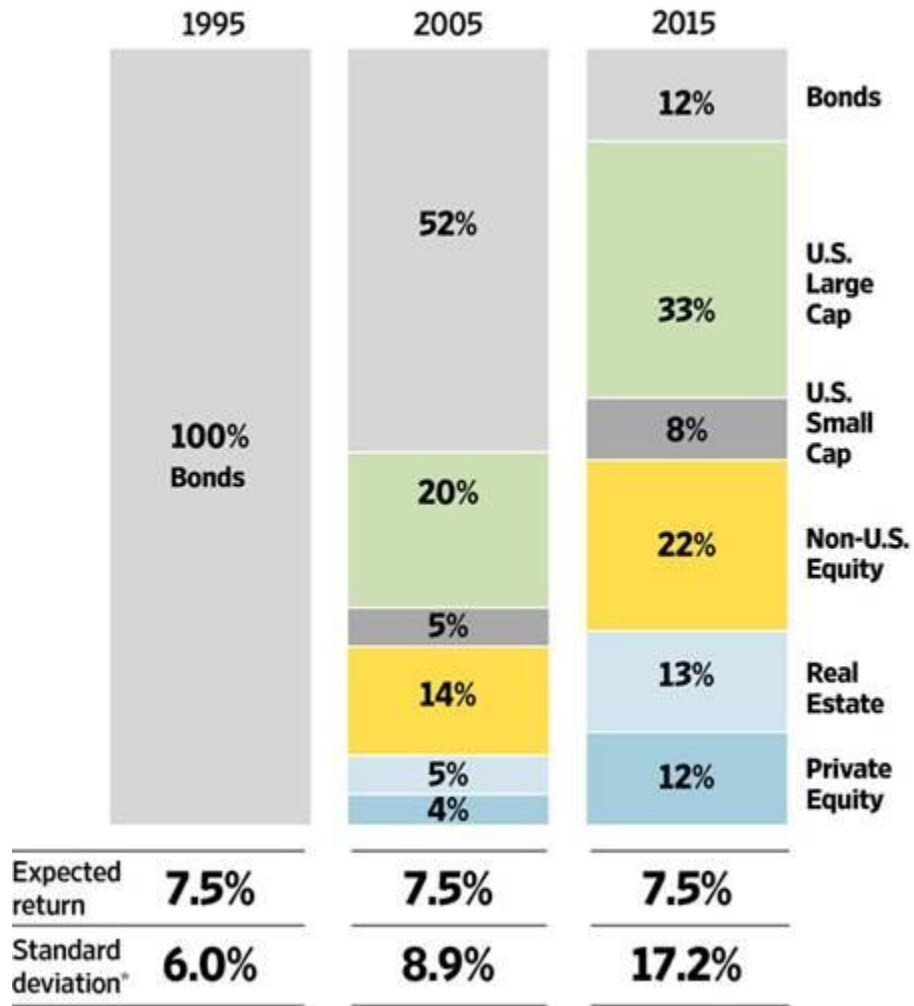
- Understand the assumptions that make the plan work:
 - Assumed rate of return: 7.5%
 - Payroll growth: 3.5% → 3.0%
 - Amortization of UAAL: 30-years (open)
 - Rates of termination/decrement
 - % choosing early retirement
 - % choosing ORP vs. DB plan
 - Mortality
- React quickly when assumptions are not met.

II.

Investment Performance

Evolution Of Expected Returns:

Estimates of what investors needed to earn 7.5%



*Likely amount by which returns could vary

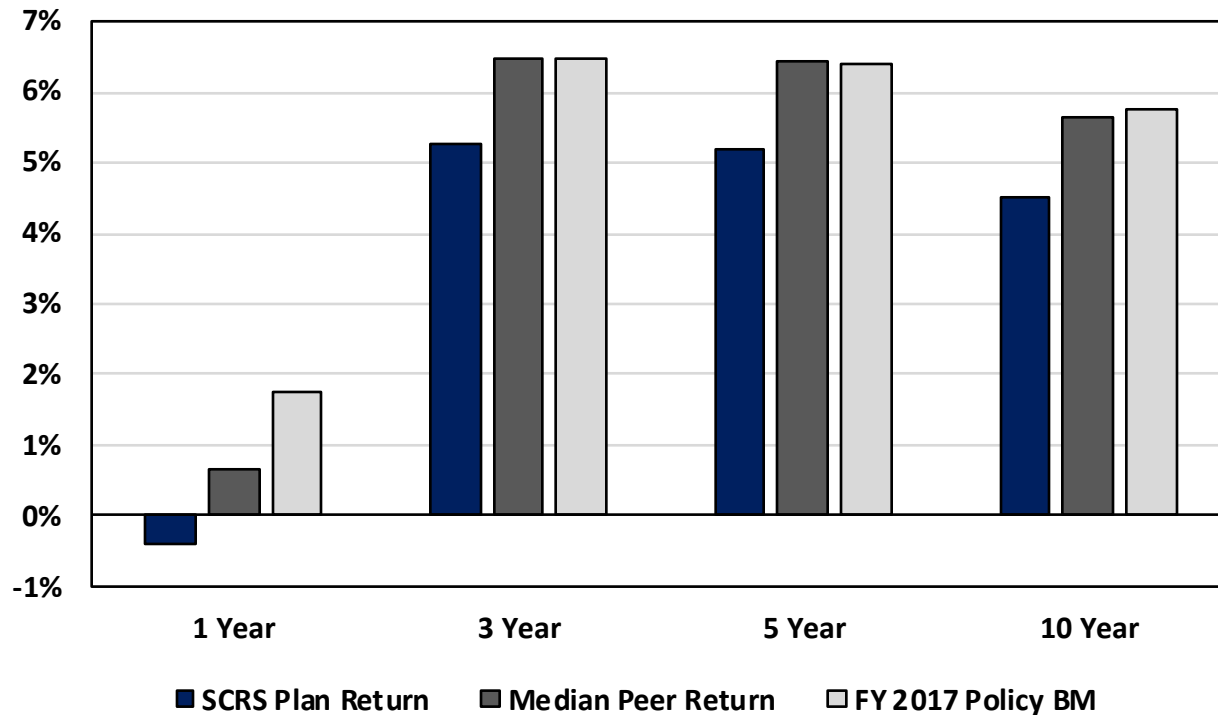
Source: Callan Associates

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New Asset Allocation

Asset Class	Prior Allocation	FYE 2017 Allocation
Equity	43%	47%
Conservative Fixed Income	12%	12%
Diversified Credit	17%	18%
Opportunistic	20%	12%
Real Assets	8%	11%
Total	100%	100%
30 Year Metrics - 4Q15 Capital Market Assumptions		
Expected Nominal Return	6.96%	7.34%
Expected Real Return	4.87%	5.24%
Expected Risk (Volatility)	11.63%	12.81%
Sharpe Ratio	0.384	0.378

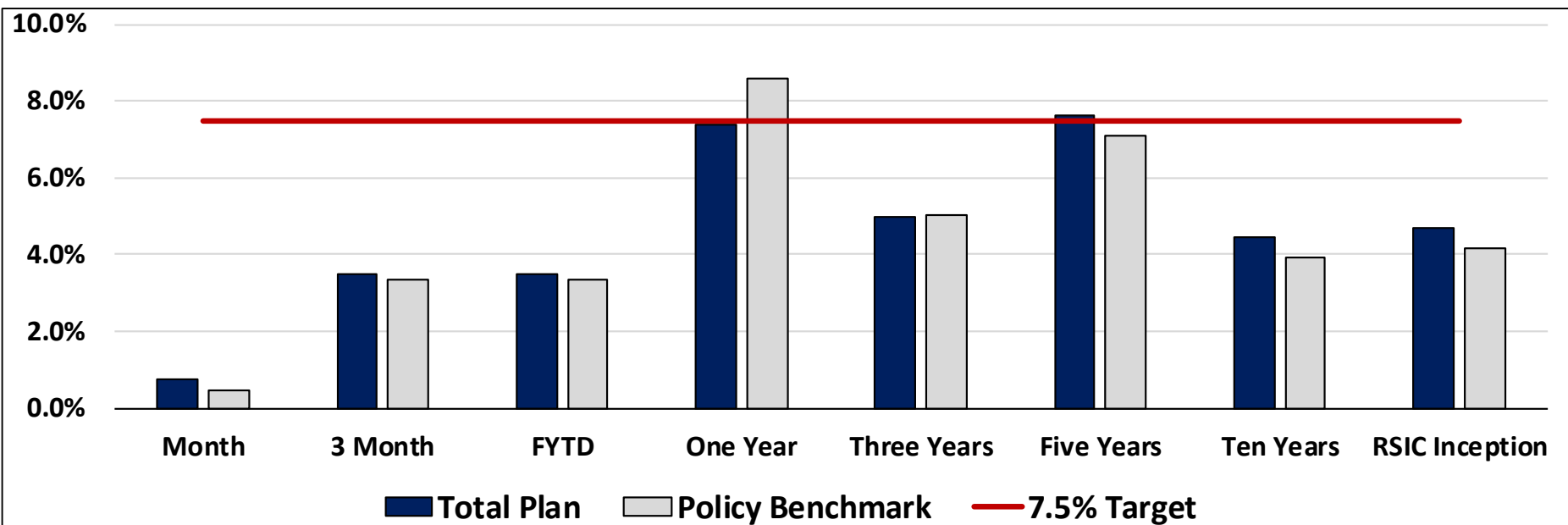
New Policy BM (Back-Tested vs Universe)



As of	SCRS Plan	Median Peer	FY 2017
6/30/2016	Return	Return	Policy BM
1 Year	-0.39%	0.66%	1.75%
3 Year	5.28%	6.48%	6.48%
5 Year	5.19%	6.42%	6.38%
10 Year	4.49%	5.65%	5.74%

Plan / Policy Performance

as of 09/30/2016



Historic Plan Performance	Market Value (In Millions)	Annualized							
		Month	3 Month	FYTD	One Year	Three Years	Five Years	Ten Years	RSIC Inception
Total Plan	\$28,642	0.77%	3.48%	3.48%	7.37%	4.99%	7.62%	4.43%	4.70%
Policy Benchmark		0.48%	3.33%	3.33%	8.58%	5.04%	7.11%	3.90%	4.16%
Excess Return		0.30%	0.15%	0.15%	-1.21%	-0.05%	0.51%	0.53%	0.53%
Net Benefit Payments (In Millions)		(\$305)	(\$686)	(\$686)	(\$1,422)	(\$3,568)	(\$5,592)	(\$9,762)	(\$10,802)

*Preliminary 9/30 numbers

RSIC Versus BNYM / TUCS Universes:

as of 09/30/2016

Universe Median Returns	Number of Funds in Universe	Quarter Ended 9/30/2016
Wilshire (TUCS)	1200+	3.19%
Wilshire Foundations and Endowments	n/a	3.47%
Wilshire (TUCS) Public : Plans > \$1B	59	3.68%
Wilshire (TUCS) Public : Plans > \$5B	44	3.68%
Bank of New York Mellon Public Funds >\$1B	64	3.73%
Bank of New York Mellon Public Funds >\$5B	33	3.76%
North Carolina Plan	n/a	3.50%
RSIC Performance as of 9/30/16	n/a	3.48%

Sources: Bank of New York Mellon, Wilshire

Wilshire Trust Universe Comparison Service (TUCS) represents over 1200 plans with 3.6 trillion in AUM

*Preliminary 9/30 numbers



BENEFICIARIES FIRST:
THEIR FUTURE, OUR MISSION.