

## **Meeting Agenda | Retirement Policy Committee**

Wednesday, August 17, 2016 | 9:30 a.m.

200 Arbor Lake Dr., Columbia, SC 29223 | Second Floor Conference Room

- I. Call to Order
- II. Adoption of Proposed Agenda
- III. Approval of Meeting Minutes- July 20, 2016
- IV. Election of Committee Vice-Chairman
- V. Review of the Defined Benefit Plan
  1. Update from the South Carolina Retirement System Investment Commission (RSIC)
  2. Update from Gabriel, Roeder, Smith & Company (GRS)
- VI. Defined Contribution Quarterly Reports
  1. Deferred Compensation Plan Summary Report
  2. Deferred Compensation Performance Report
  3. State ORP Performance Report
- VII. Old Business/Director's Report
- VIII. Adjournment

### **Notice of Public Meeting**

This notice is given to meet the requirements of the S.C. Freedom of Information Act and the Americans with Disabilities Act. Furthermore, this facility is accessible to individuals with disabilities, and special accommodations will be provided if requested in advance.

**PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM**  
**Retirement Policy Committee**

**Meeting Date:** August 17, 2016

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**1. Subject:** Election of Retirement Policy Committee Vice-Chairman

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**2. Summary:** According to the PEBA Board Bylaws: At the first committee meeting after the Chairman's appointment of the standing committee members and chairmen each even-numbered year, each standing committee shall elect a vice-chairman to preside over the committee and oversee committee business in the absence of the committee chairman.

**3. What is Committee asked to do?** Elect a Retirement Policy Committee Vice-Chairman

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**4. Supporting Documents:**

(a) Attached: none

**PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM  
RETIREMENT POLICY COMMITTEE**

**Meeting Date:** August 17, 2016

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**1. Subject:** Review of the Defined Benefit Plan

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**2. Summary:** Mike Hitchcock, Chief Executive Officer; and Geoff Berg, Acting Chief Investment Officer, from RSIC will review the investment returns for the period ending June 30, 2016. Also, Danny White and Joe Newton from GRS will review the Overview of 2011-12 Benefit Assessment and Legislation and the estimated financial condition of the Retirement System as of July 1, 2016.

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**3. What is Committee asked to do?** Receive as information

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**4. Supporting Documents:**

- (a) Attached:
1. June 2016 Executive Summary
  2. Overview of 2011-12 Benefit Assessment and Legislation
  3. Estimated Financial Condition of Retirement System as of 7/1/16

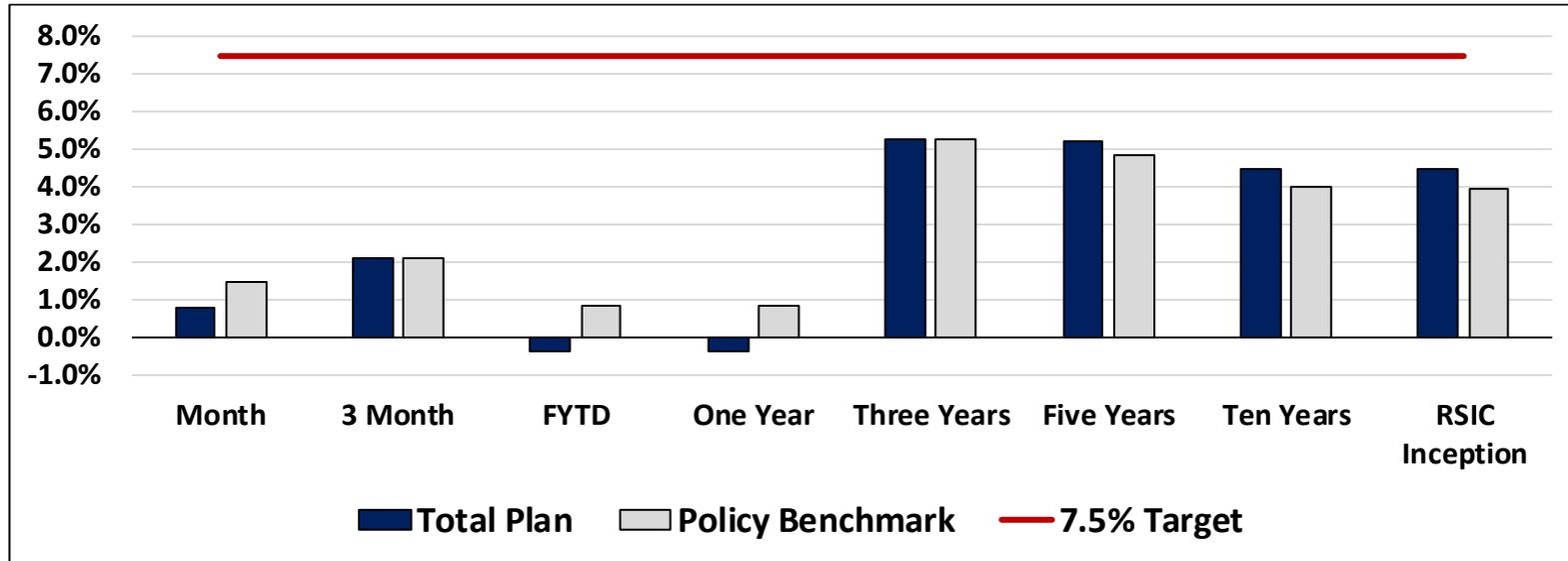
# Performance Update

RSIC Internal Reporting

June 30, 2016

# Performance – Plan and Asset Classes<sup>2</sup>

As of June 30, 2016



		Annualized							
Historic Plan Performance	Market Value (In Millions)	Month	3 Month	FYTD	One Year	Three Years	Five Years	Ten Years	RSIC Inception
Total Plan	\$27,980	0.77%	2.11%	-0.39%	-0.39%	5.28%	5.19%	4.49%	4.47%
Policy Benchmark		1.48%	2.10%	0.82%	0.82%	5.25%	4.86%	3.99%	3.94%
Excess Return		-0.71%	0.01%	-1.21%	-1.21%	0.03%	0.33%	0.50%	0.53%
Net Benefit Payments (In Millions)		(\$107)	(\$280)	(\$1,058)	(\$1,058)	(\$3,169)	(\$5,182)	(\$9,398)	(\$10,116)
Current Quarter Roll off Return:			0.49%	N/A	0.44%	-0.92%	1.19%	-1.46%	N/A
Next Quarter Roll off Return:			2.11%	N/A	-3.99%	4.33%	-7.67%	4.10%	N/A

Current Quarter Roll off Return: represents the 3-month period that has fallen off of each time frame's rolling returns. If the current quarter underperforms the roll off return, the performance would decrease for the period.

Next Quarter Roll off Return: represents the 3-month period that will fall off of each time frame's rolling returns in the next quarter. If the next quarter underperforms the roll off return, the performance would decrease for the period.

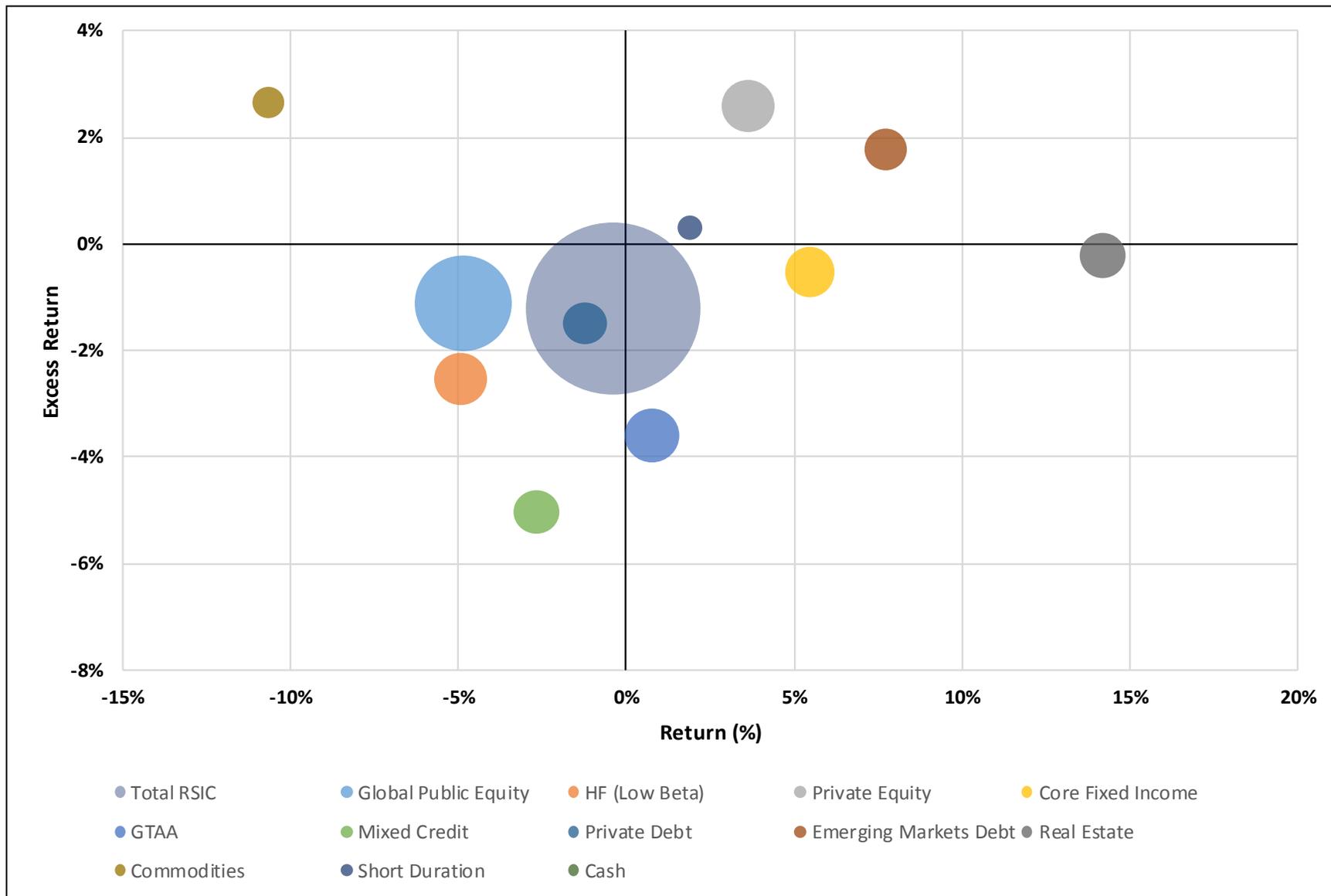
# Performance – Plan and Asset Classes<sup>1,3,4</sup>

As of June 30, 2016

Asset Class / Benchmark returns as of 06/30/16	Plan Weight	Month	3 Month	YTD	FYTD	Annualized		
						One Year	Three Years	Five Years
<b>Total Plan</b>	100.0%	0.77%	2.11%	2.62%	-0.39%	-0.39%	5.28%	5.19%
<b>Policy Benchmark</b>		1.48%	2.10%	4.09%	0.82%	0.82%	5.25%	4.86%
Global Public Equity <i>MSCI All-Country World Index Net</i>	31.7%	-0.97%	0.75%	0.04%	-4.85%	-4.85%	5.87%	4.94%
		-0.61%	0.99%	1.23%	-3.73%	-3.73%	6.03%	5.38%
HF (Low Beta) <i>HFRI Fund weighted Composite Index</i>	9.3%	-1.40%	-1.94%	-4.94%	-4.94%	-4.94%	5.36%	N/A
		0.40%	1.81%	1.20%	-2.39%	-2.39%	2.90%	N/A
Private Equity <i>Private Equity Blend</i>	9.4%	2.70%	2.13%	0.70%	3.64%	3.64%	11.43%	11.05%
		7.12%	1.09%	7.26%	1.05%	1.05%	12.36%	12.27%
Core Fixed Income <i>Barclays US Aggregate Bond Index</i>	8.3%	1.51%	2.11%	5.02%	5.47%	5.47%	3.83%	3.81%
		1.80%	2.21%	5.31%	6.00%	6.00%	4.06%	3.76%
GTAA <i>GTAA Blend</i>	9.8%	1.46%	2.82%	5.25%	0.74%	0.74%	4.01%	5.11%
		1.29%	2.24%	5.73%	4.34%	4.34%	4.96%	4.10%
Mixed Credit <i>Mixed Credit Blend</i>	6.5%	0.30%	3.02%	3.03%	-2.67%	-2.67%	1.65%	2.91%
		0.58%	3.18%	5.56%	2.37%	2.37%	3.61%	4.25%
Private Debt <i>S&amp;P/LSTA Leveraged Loan + 150 Bps on a 3-month lag</i>	6.1%	0.85%	3.46%	2.03%	-1.23%	-1.23%	6.03%	6.97%
		2.88%	2.04%	0.13%	0.25%	0.25%	3.35%	4.74%
Emerging Markets Debt <i>Emerging Markets Debt Blend</i>	5.6%	4.99%	5.19%	12.94%	7.74%	7.74%	2.13%	1.78%
		4.63%	3.90%	12.25%	5.97%	5.97%	1.76%	2.10%
Real Estate <i>NCREIF ODCE + 75 Bps</i>	7.1%	1.40%	3.12%	7.18%	14.21%	14.21%	17.85%	16.16%
		2.16%	2.30%	5.80%	14.42%	14.42%	14.38%	14.01%
Commodities <i>Bloomberg Commodity Index Total Return</i>	3.2%	4.63%	11.28%	13.73%	-10.66%	-10.66%	-9.59%	-11.89%
		4.13%	12.78%	13.25%	-13.32%	-13.32%	-10.55%	-10.82%
Short Duration <i>Barclays 1-3 Year Government/Credit Index</i>	2.0%	0.35%	0.70%	1.74%	1.90%	1.90%	1.57%	1.61%
		0.60%	0.67%	1.65%	1.59%	1.59%	1.22%	1.10%
Infrastructure <i>Dow Jones Brookfield Global Infrastructure Net Index</i>	1.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Internal Cash <i>Merrill Lynch 3-Month T-Bill</i>	0.1%	0.04%	0.07%	0.15%	0.19%	0.19%	0.09%	0.09%
		0.04%	0.07%	0.15%	0.19%	0.19%	0.09%	0.09%

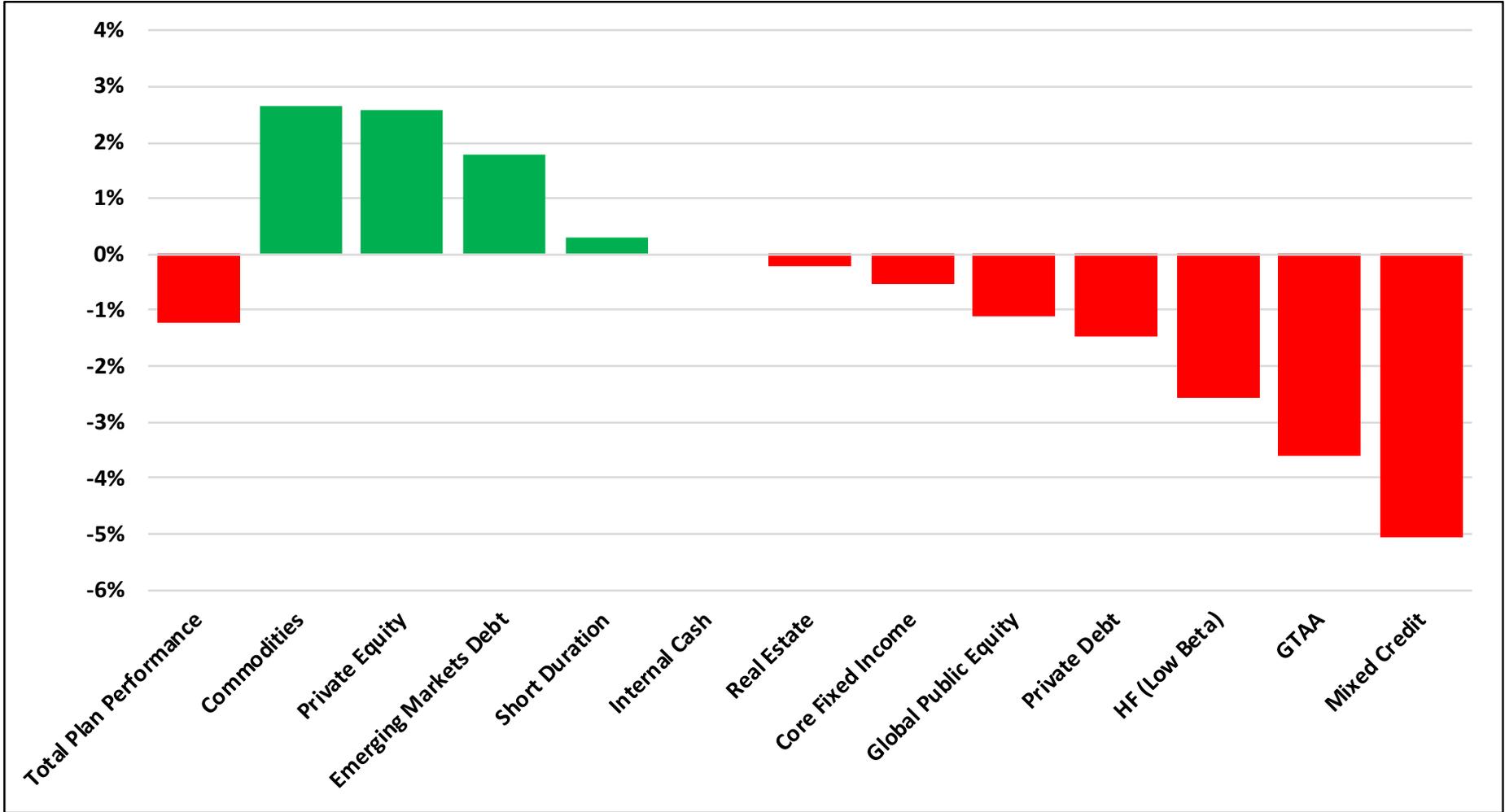
# Asset Class Return and Excess Return AUM<sup>3,4</sup>

FYTD as of June 30, 2016



# Relative Performance to Policy Benchmarks<sup>3,4</sup>

FYTD as of June 30, 2016



# Attribution of Excess Returns<sup>1,3,4,7</sup>

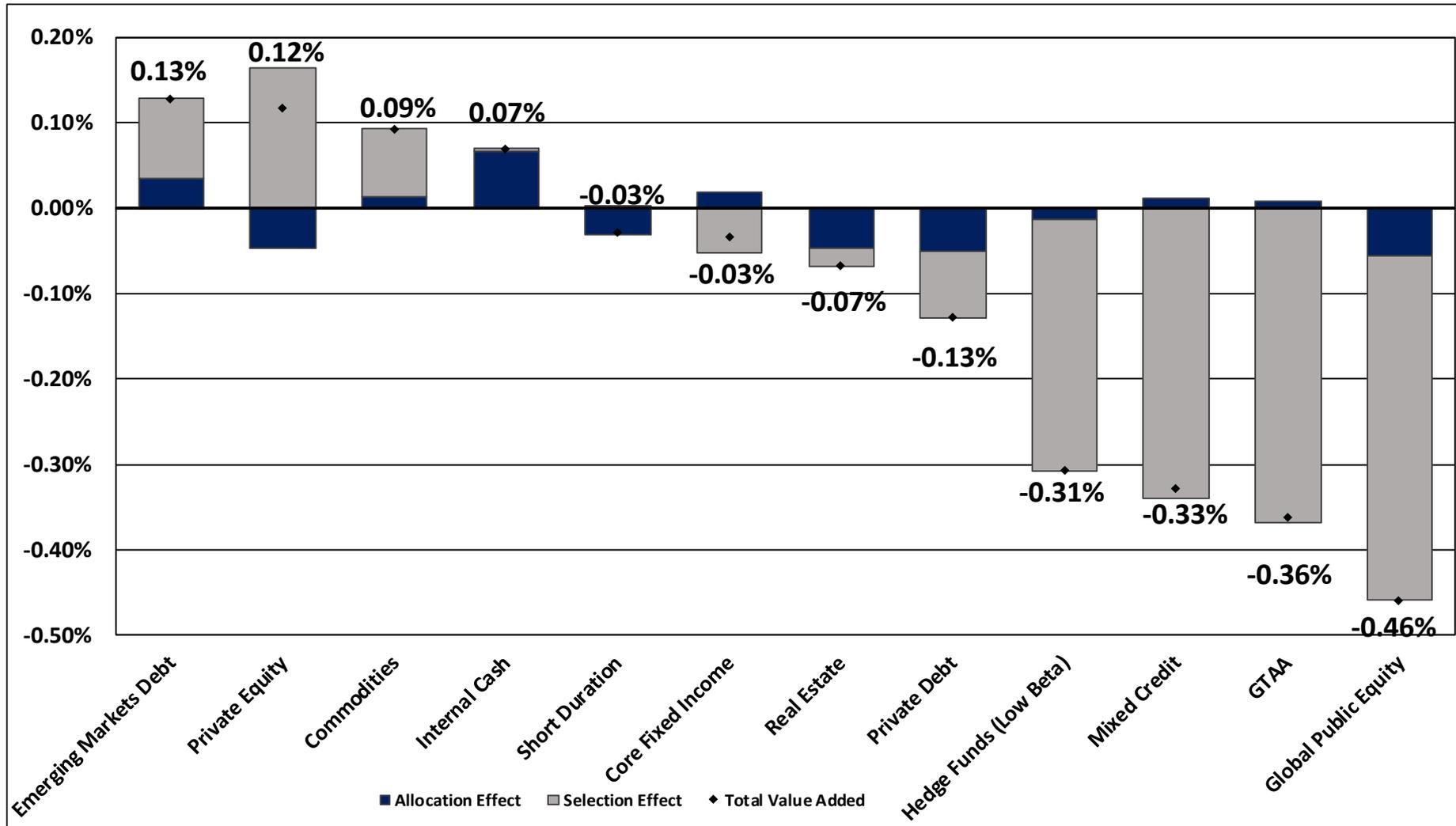
FYTD as of June 30, 2016

FYTD 2016 Attribution:	Total Value	Allocation	Selection	Avg O/U	Asset Class	Benchmark
	Added	Effect	Effect	Weight	Return	Return
Emerging Markets Debt	0.13%	0.03%	0.09%	0.09%	7.74%	5.97%
Private Equity	0.12%	-0.05%	0.16%	0.14%	3.64%	1.05%
Commodities	0.09%	0.01%	0.08%	-0.21%	-10.66%	-13.32%
Internal Cash	0.07%	0.07%	0.00%	-0.54%	0.19%	0.19%
Short Duration	-0.03%	-0.03%	0.00%	-0.41%	1.90%	1.59%
Core Fixed Income	-0.03%	0.02%	-0.05%	0.38%	5.47%	6.00%
Real Estate	-0.07%	-0.05%	-0.02%	-0.25%	14.21%	14.42%
Private Debt	-0.13%	-0.05%	-0.08%	-0.79%	-1.23%	0.25%
Hedge Funds (Low Beta)	-0.31%	-0.01%	-0.29%	-0.33%	-4.94%	-2.39%
Mixed Credit	-0.33%	0.01%	-0.34%	1.35%	-2.67%	2.37%
GTAA	-0.36%	0.01%	-0.37%	0.22%	0.74%	4.34%
Global Public Equity	-0.46%	-0.06%	-0.40%	0.17%	-4.85%	-3.73%

FYTD Summary	Total Value	Allocation	Selection	Interaction
	Added	Effect	Effect	/ Other
<b>FYTD Total</b>	<b>-1.21%</b>	<b>-0.11%</b>	<b>-1.23%</b>	<b>0.13%</b>

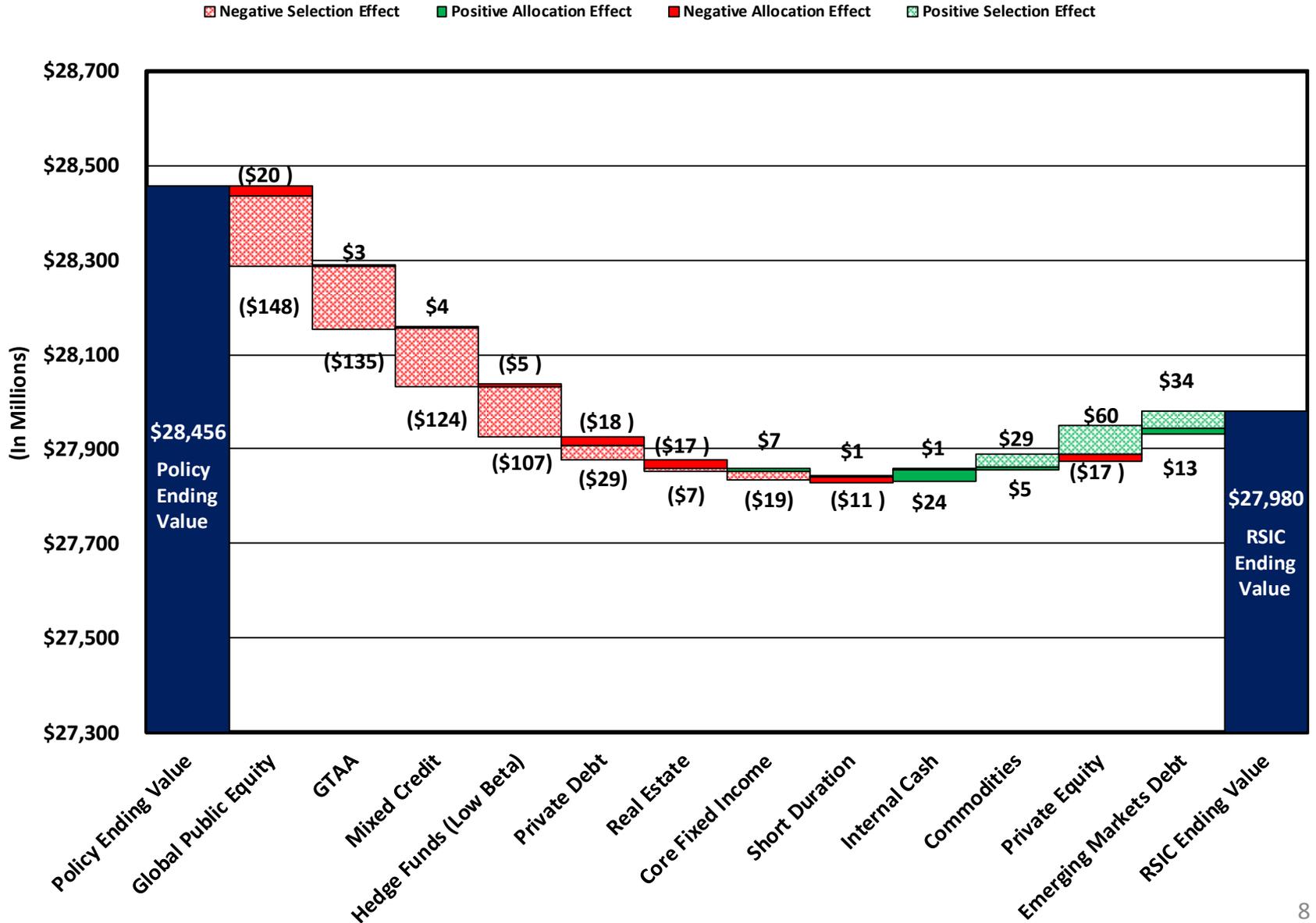
# Attribution of Excess Returns<sup>1,3,4,7</sup>

FYTD as of June 30, 2016



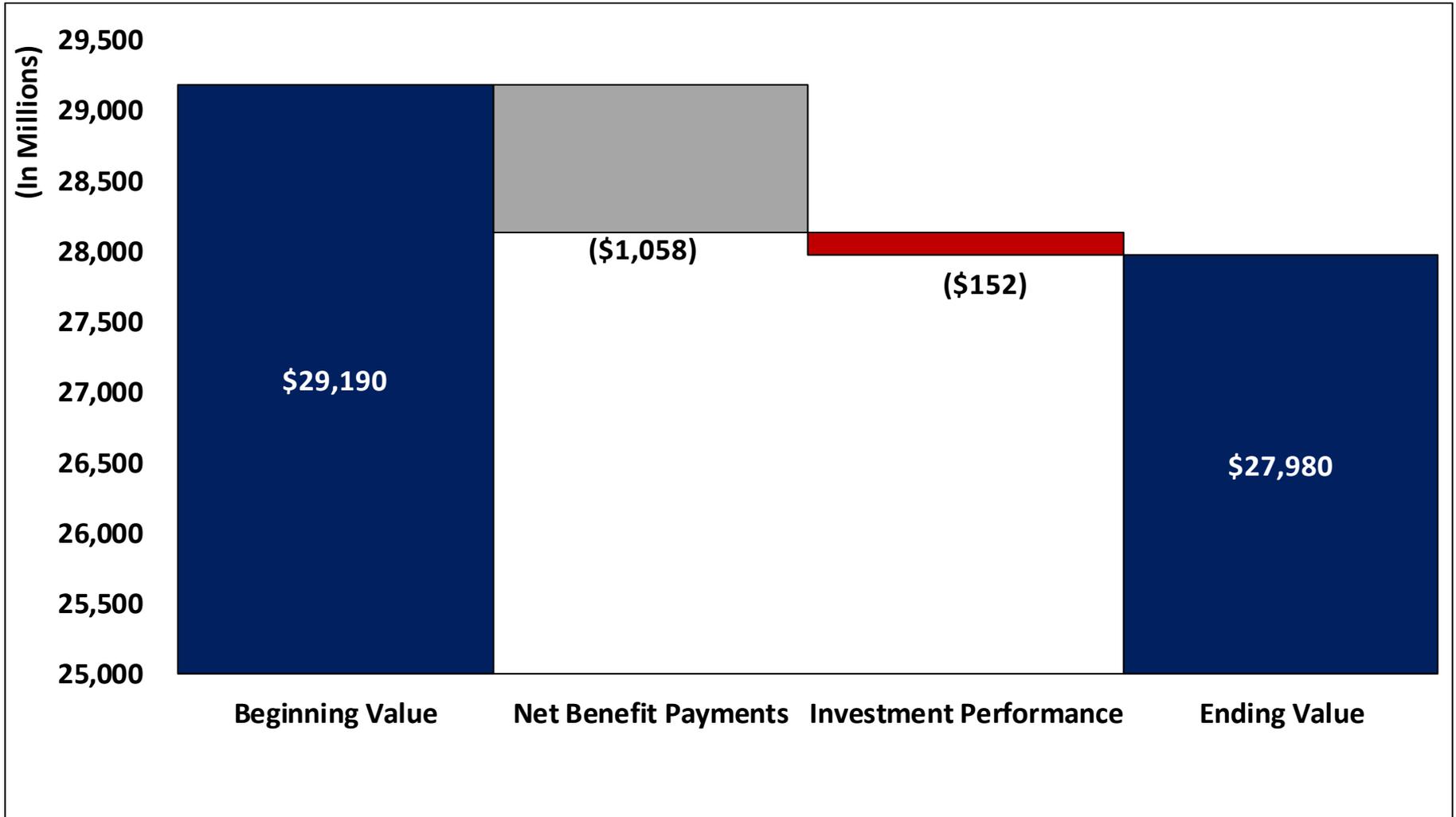
# Attribution of Excess Returns<sup>1,3,4,7,9</sup>

FYTD as of June 30, 2016



# Fiscal YTD Benefits & Performance<sup>2</sup>

FYTD as of June 30, 2016



# Portfolio Exposure<sup>4,8</sup>

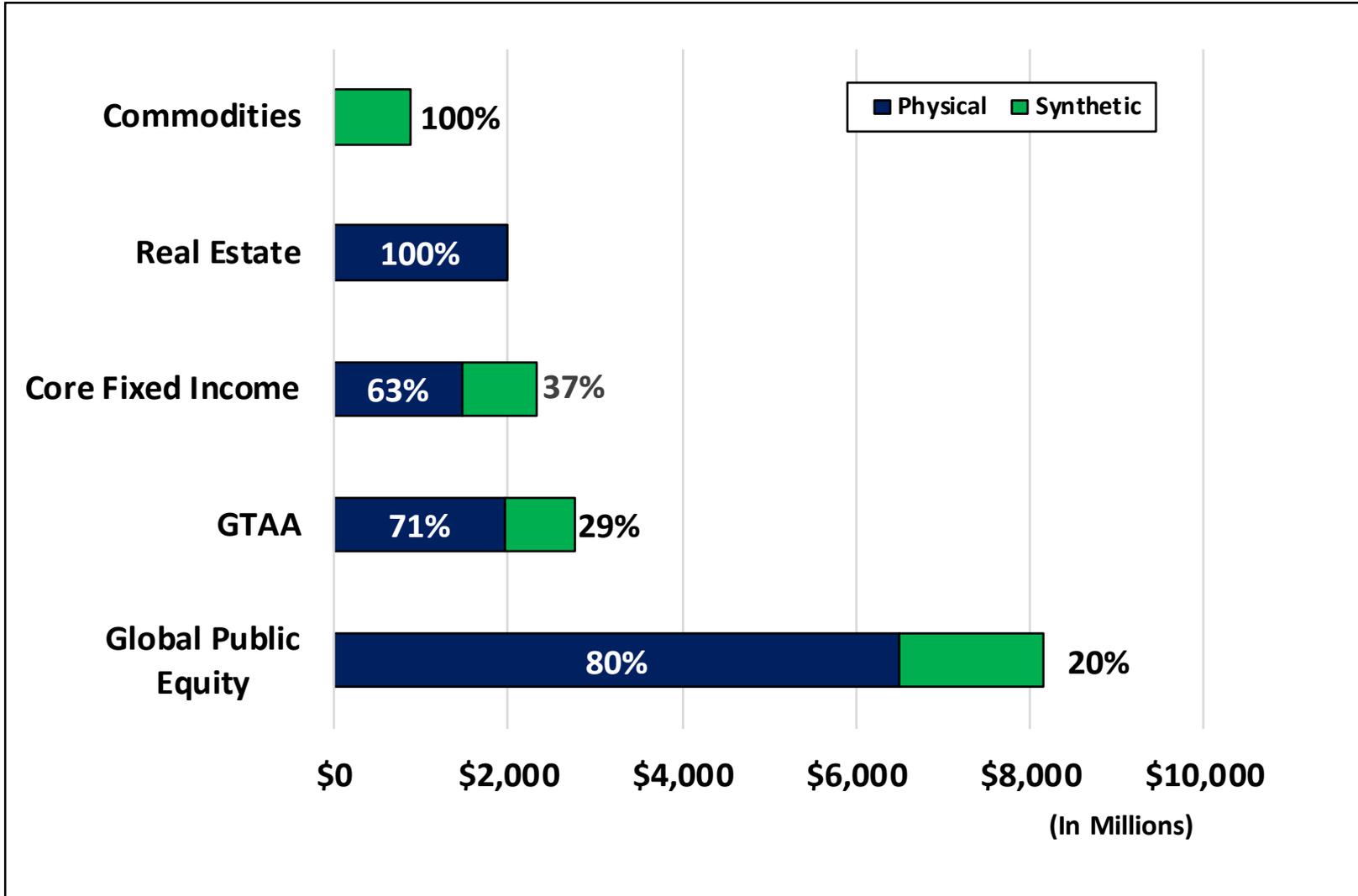
As of June 30, 2016

Asset Allocation	Market Value as of 06/30/16	Overlay Exposures	Net Position	% of Total Plan	Policy Targets	Difference	Allowable Ranges	SIOP Compliance
<b>Global Equity</b>	<b>\$9,837</b>	<b>\$1,669</b>	<b>\$11,505</b>	<b>41.1%</b>	<b>43.0%</b>	<b>-1.9%</b>		
Global Public Equity	7,206	1,669	8,875	31.7%	33.6%	-1.9%	25% - 40%	YES
Private Equity	2,631	-	2,631	9.4%	9.4%	0.0%	6% - 12%	YES
<b>Real Assets</b>	<b>\$2,256</b>	<b>\$886</b>	<b>\$3,142</b>	<b>11.2%</b>	<b>8.0%</b>	<b>3.2%</b>		
Real Estate	1,977	0	1,977	7.1%	5.0%	2.1%	3% - 10%	YES
Commodities	0	886	886	3.2%	3.0%	0.2%	0% - 5%	YES
Infrastructure	279	0	279	1.0%	0.0%	1.0%	0% - 5%	YES
<b>Opportunistic</b>	<b>\$4,556</b>	<b>\$792</b>	<b>\$5,348</b>	<b>19.1%</b>	<b>20.0%</b>	<b>-0.9%</b>		
GTAA	1,964	792	2,756	9.8%	10.0%	-0.2%	5% - 20%	YES
HF ( Low Beta)	2,592	-	2,592	9.3%	10.0%	-0.7%	5% - 20%	YES
<b>Diversified Credit</b>	<b>\$5,082</b>	<b>-</b>	<b>\$5,082</b>	<b>18.2%</b>	<b>17.0%</b>	<b>1.2%</b>		
Mixed Credit	1,813	-	1,813	6.5%	5.9%	0.6%	2% - 10%	YES
Emerging Markets Debt	1,567	-	1,567	5.6%	5.0%	0.6%	2% - 10%	YES
Private Debt	1,703	-	1,703	6.1%	6.1%	0.0%	3% - 10%	YES
<b>Conservative Fixed Income</b>	<b>\$6,249</b>	<b>(\$3,347)</b>	<b>\$2,902</b>	<b>10.4%</b>	<b>12.0%</b>	<b>-1.6%</b>		
Core Fixed Income	1,465	849	2,314	8.3%	10.0%	-1.7%	5% - 20%	YES
Cash and Short Duration (Net)	4,783	(4,195)	588	2.1%	2.0%	0.1%	0% - 10%	YES
<b>Total Plan</b>	<b>\$27,980</b>		<b>\$27,980</b>	<b>100.0%</b>				

Notes: Total Plan allocations are based on values obtained from BNYM and adjusted for overlay exposures based on information provided by Russell. Total Hedge Fund exposure at 06/30/16 comprised 11.3% and consisted of: 0.3% Global Equity Hedge Funds, 1.7% Mixed Credit Hedge Funds, and 9.3% Low Beta Hedge Funds.

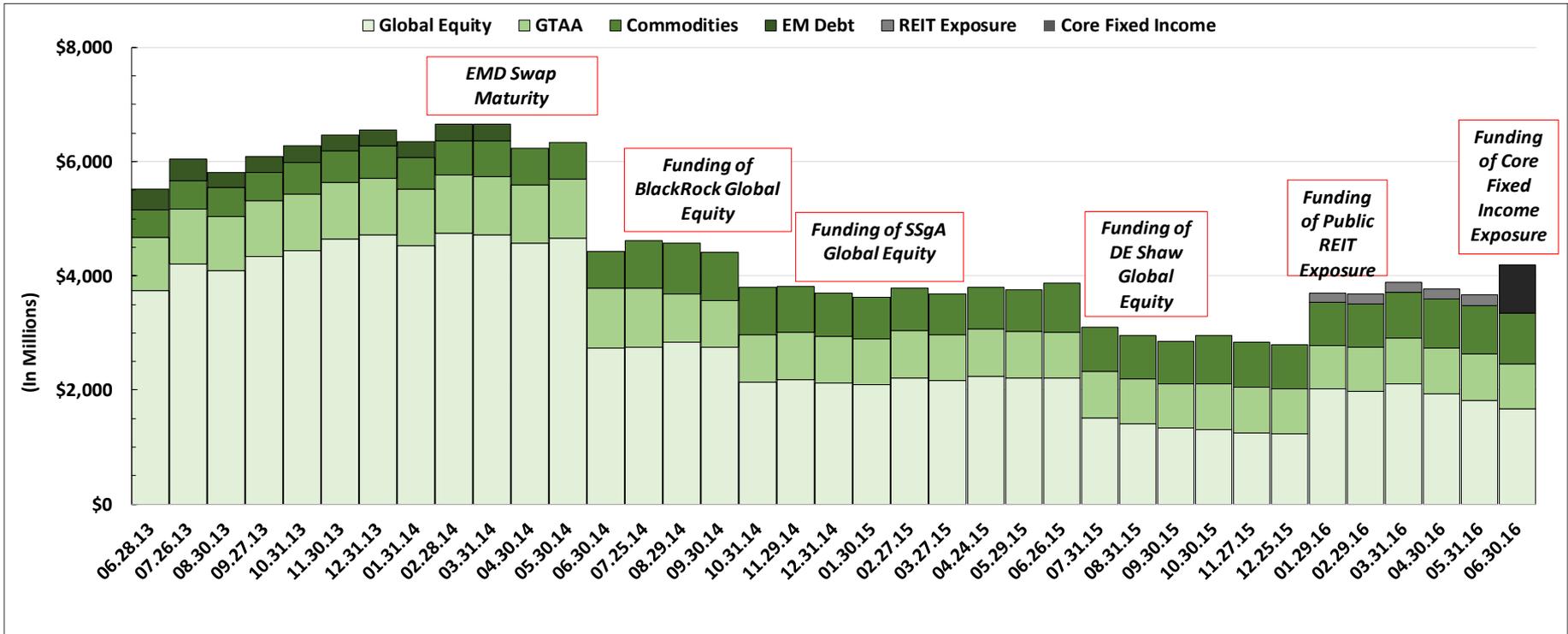
# Overlay Percentage by Asset Class<sup>6</sup>

As of June 30, 2016



# Monthly Change in Overlay Exposure<sup>6</sup>

As of June 30, 2016

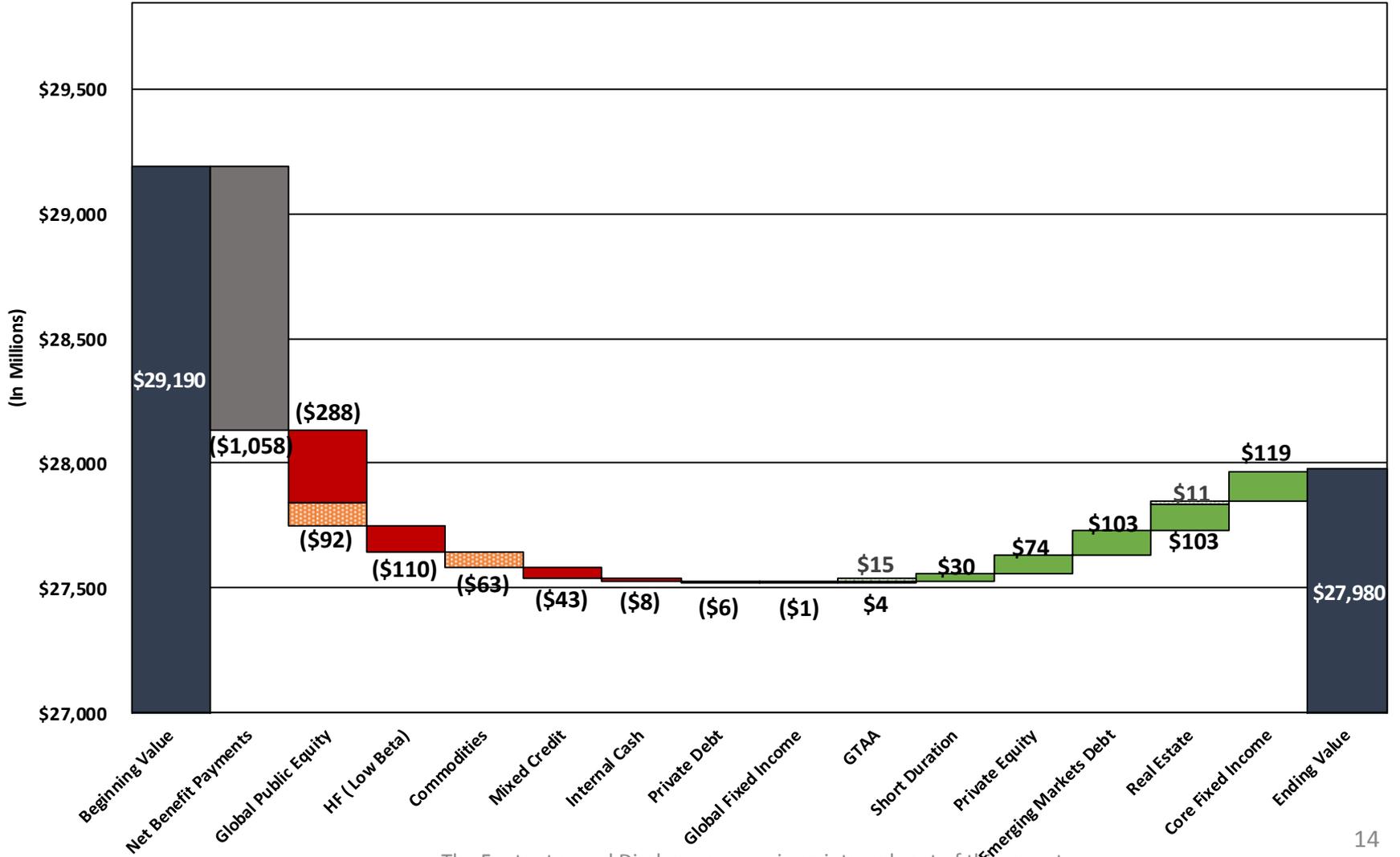


# APPENDIX

# FYTD Contribution by Asset Class<sup>2,4,5</sup>

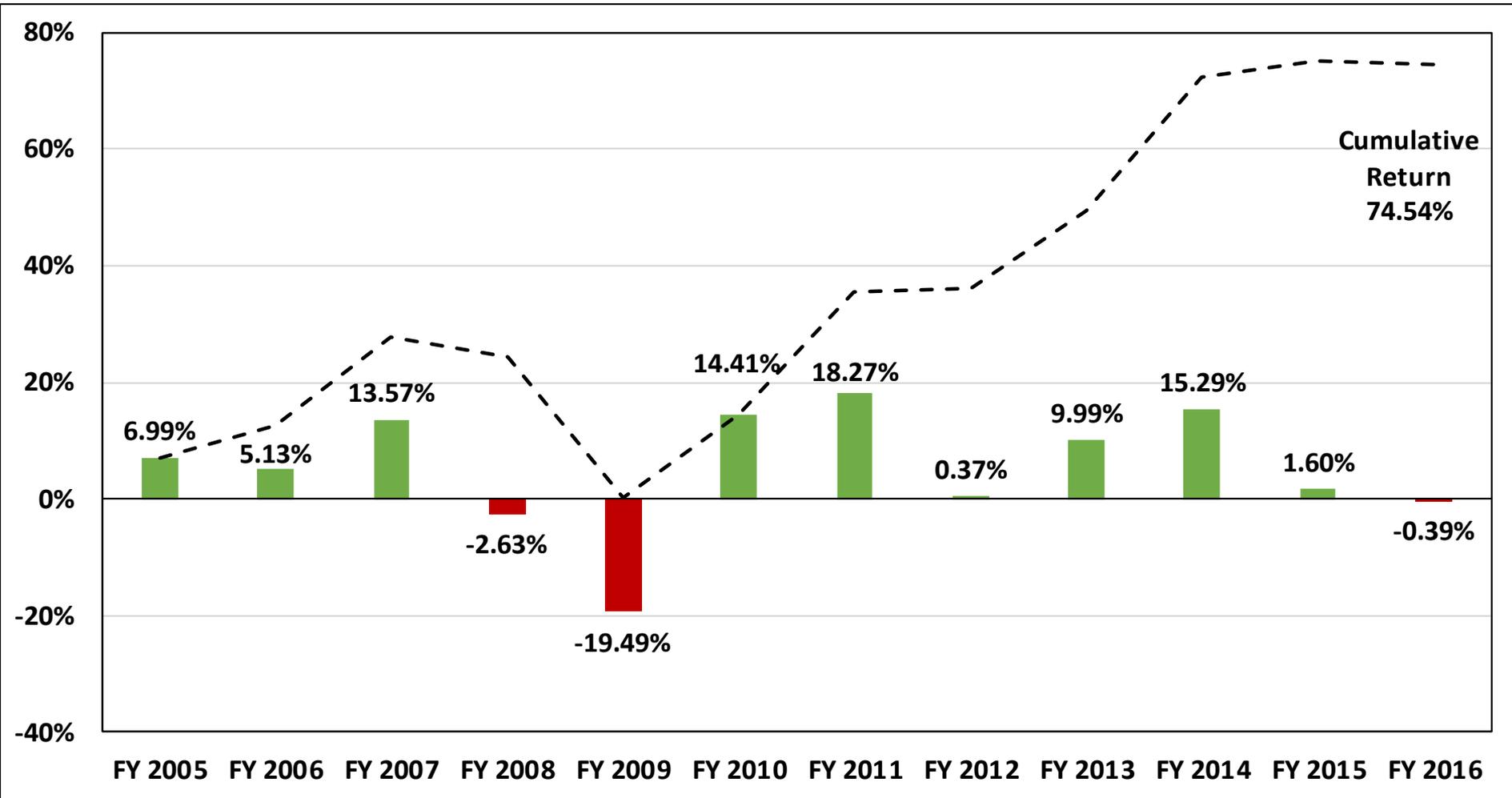
FYTD as of June 30, 2016

■ Negative Overlay Contribution    
 ■ Positive Physical Contribution    
 ■ Negative Physical Contribution    
 ■ Positive Overlay Contribution



# Cumulative Plan Performance

FYTD as of June 30, 2016



## Footnotes

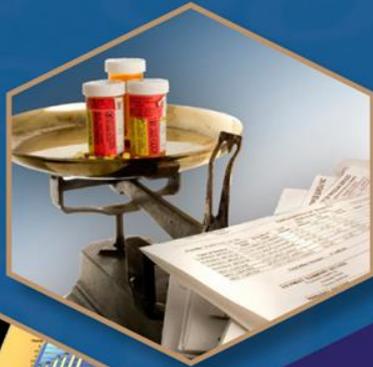
1. Represents asset class benchmarks as of reporting date. Benchmarks for asset classes may have changed over time.
2. Benefit payments are net of Plan contributions and disbursements.
3. “Cash” market value is the aggregate cash held at the custodian, Russell Investments, and strategic partnerships. Cash performance is estimated using the BofA Merrill Lynch 3-Month T-Bill rate.
4. Asset class exposures and returns include blended physical and synthetic returns and notional values (EM Debt, GTAA, Global Public Equity, Real Estate, and Commodities).
5. Performance contribution methodology: Contribution is calculated by taking the sum of the [beginning weight] X [monthly return].
6. Source: Russell Investments; Net notional exposure.
7. Allocation Effect:  $[\text{Asset Class Weight} - \text{Policy Weight}] * [\text{Benchmark Return} - \text{Plan Policy Benchmark}]$   
Selection Effect:  $[\text{Manager Return} - \text{Policy Benchmark Return}] * \text{Manager's Weight in Asset Class}$
8. The Target weights to Private Equity and Private Debt will be equal to their actual weights, reported by the custodial bank, as of the prior month end. In the case of Private Equity, the use of the actual eight will affect the target allocation to Public Equity, such that the combined target weight of both asset classes shall equal 43% of the plan. For Private Debt, the use of the actual weight will affect the target allocation to Mixed Credit, such that the combined target weight of both asset classes shall equal 12% of the plan.
9. Policy Ending Value is an estimate of the Plan NAV had it earned the Policy Benchmark return.

## Disclosures

- Returns are provided by BNY Mellon and are time-weighted, total return calculations. Net of fee performance is calculated and presented after the deduction of fees and expenses. Periods greater than one year are annualized. Past performance is no guarantee of future results. Policy benchmark is the blend of asset class policy benchmarks using policy weights. Asset class benchmarks and policy weights are reviewed annually by the Commission’s consultant and adopted by the Commission and have changed over time. The policy benchmark return history represents a blend of these past policies.
- Overlay allocation detail is provided by Russell Investments.
- This report was compiled by the staff of the South Carolina Retirement System Investment Commission and has not been reviewed, approved or verified by the external investment managers. No information contained herein should be used to calculate returns or compare multiple funds, including private equity funds.
- Effective October 1, 2005, the State Retirement System Preservation and Investment Reform Act (“Act 153”) established the Commission and devolved fiduciary responsibility for investment and management of the assets of the South Carolina Retirement Systems upon RSIC.
- Allocation percentages might not add up to 100% due to rounding.

## **Benchmarks**

- Global Public Equity: MSCI All-Country World Index (net of dividends)
- Private Equity: 80% Russell 3000 Index on a 3-month lag / 20% MSCI EAFE (net of dividends) on a 3-month lag Plus 300 basis points
- Core Fixed Income: Barclays US Aggregate Bond Index
- Global Fixed Income: Barclays Global Aggregate Index (USD Hedged)
- Emerging Market Debt: 50% JP Morgan EMBI Global Diversified (US Dollar) / 50% JP Morgan GBIEM Global Diversified (Local)
- Private Debt: S&P/LSTA Leveraged Loan Index + 150 basis points on a 3-month lag
- Mixed Credit: 1/3 Barclays US Corporate High Yield 2% Issuer Capped Bond Index  
1/3 S&P/LSTA Leveraged Loan Index  
1/3 Barclays US Mortgage Backed Securities (MBS) Index
- GTAA: 50% MSCI World Index (net of dividends) / 50% Citi World Government Bond Index (WGBI)
- Hedge Funds (Low Beta): HFRI Fund Weighted Composite Index
- Real Estate: NCREIF Open-end Diversified Core (ODCE) Index + 75 basis points
- Commodities: Bloomberg Commodity Index
- Cash & Short Duration: BofA Merrill Lynch 3-Month US Treasury Bill Index



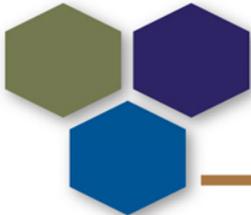
# South Carolina Retirement System

## Overview of 2011/12 Benefit Assessment and Legislation

Joe Newton and Danny White  
August 17, 2016



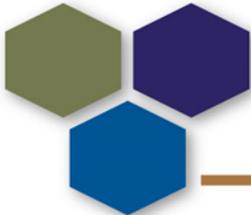
Gabriel Roeder Smith & Company  
Consultants & Actuaries  
[www.gabrielroeder.com](http://www.gabrielroeder.com)



# 2011 Benefit Analysis

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- ◆ GRS was hired in 2011 to provide consulting to the SC Budget and Control Board and the Office of Executive Director for the Retirement Systems
- ◆ Deliverables included:
  - ▶ Experience study
  - ▶ Actuarial valuation
  - ▶ Benefit structure analysis
  - ▶ Provide commentary on funding policies
  - ▶ Provide possible modifications to be considered
  - ▶ Various meetings with Board, Staff, and Others
  - ▶ Presentations to the Senate Finance Subcommittee on Retirement and Employee Benefits

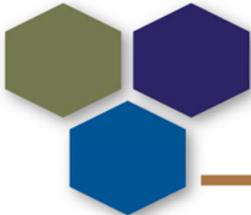


# Significant Recommendations from the 2011 Experience Study

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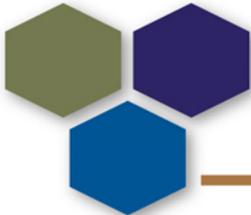
## ◆ Significant Proposed Changes

- ▶ Decrease the inflation assumption from 3.00% to 2.75%
- ▶ Decrease the investment return rate from 8.00% to 7.50%
- ▶ Decrease the payroll growth assumption from 4.00% to 3.50%
- ▶ Improve the mortality assumption



# Cost Impact - SCRS

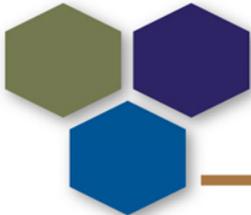
	<b>Current Assumptions 2.0% COLA</b>	<b>Recommended Assumptions 2.0% COLA</b>	<b>Recommended Assumptions 1.0% COLA</b>
	(1)	(2)	(3)
Actuarial Accrued Liability (AAL)	\$38,774	\$42,421	\$38,729
Actuarial Value of Assets (AVA)	<u>25,400</u>	<u>25,400</u>	<u>25,400</u>
Unfunded Actuarial Accrued Liability (UAAL)	\$13,374	\$17,021	\$13,328
Funded Ratio – Actuarial Value of Assets	66%	60%	66%
Funded Ratio – Market Value of Assets	51%	46%	51%
Current Contribution Rate	9.68%	9.68%	9.68%
Amortization Period – Current Rate	38 Years	Never	65 Years
30-Year Contribution Rate – Actuarial Assets	10.60%	14.76%	11.56%
30-Year Contribution Rate – Market Assets	13.84%	18.94%	15.67%



# Benefit Redesign: Suggested Guiding Principals

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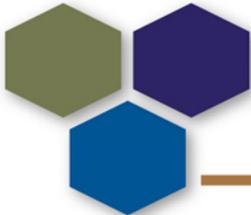
- ◆ Provide an adequate level of benefits so members may retire at an appropriate age
- ◆ Costs are appropriately shared by the employer and member
- ◆ Risks are appropriately shared between the employer and member
- ◆ Self-correcting mechanisms can substantially increase the plan's ability to withstand adverse experience



# Benefit Adequacy

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- ◆ Provide an adequate level of benefits so members may retire at an appropriate age
- ◆ Financial planners often recommend a replacement ratio of 70% to 90% of preretirement income
  - ▶ Ratio could vary depending on family needs
- ◆ Members retiring after 28 years receive approximately 80% to 90% in preretirement income (without reflecting personal savings)
  - ▶ 50% from SCRS
  - ▶ 30% to 40% from Social Security

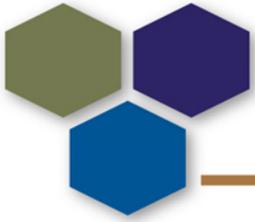


# Strawman Design Alternatives

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- ◆ Four strawman design alternatives were analyzed that were each fundamentally different in structure
- ◆ The guiding principles were considered when developing each of the alternative structures
  - ▶ Benefit adequacy
  - ▶ Cost sharing between employee and employer
  - ▶ Risk sharing between employee and employer
- ◆ Other Considerations
  - ▶ It may also be possible to provide future benefits in a new program for current employees<sup>1</sup>
  - ▶ Transitional cost to maintain funding to SCRS
  - ▶ Modifications to the EIP to maintain appropriate alignment in the retiree health program

<sup>1</sup> This is not a legal opinion. South Carolina will need to seek legal counsel to obtain an opinion regarding the implications of changes in benefits for current employees.



# Characteristics of Alternative Benefit Structures

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**What is the Appropriate Balance for Sharing the Risk?**

**Defined Contribution (State ORP)**

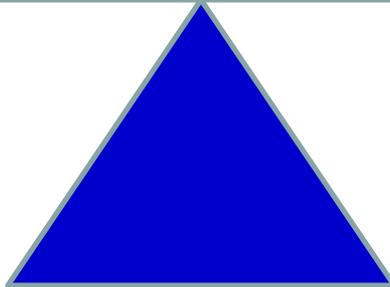
**Cash Balance**

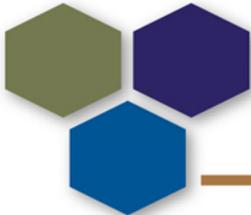
**Hybrid Plan (DB and DC)**

**Traditional Defined Benefit (SCRS)**

**Member**

**Employer**

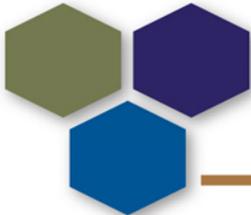




# SC Legislation Enacted (Act 278)

## Changes Impacting Current and Future Members

	SCRS	PORS
<b>Member Contribution Rates</b>	<ul style="list-style-type: none"> <li>- Increased member contributions from 6.50% of pay</li> <li>- Maintain a 2.90% differential with the employer rate</li> </ul>	<ul style="list-style-type: none"> <li>- Increased member contributions from 6.50% of pay</li> <li>- Maintain a 5.00% differential with the employer rate</li> </ul>
<b>Benefit Adjustment (current and future retirees)</b>	Lesser of 1.00% or \$500 per annum	Lesser of 1.00% or \$500 per annum
<b>TERI</b>	Phased-out by June 30, 2018	N/A
<b>Return to Work (future retirees)</b>	\$10,000 annual earnings limit applies to members retiring before age 62	\$10,000 annual earnings limit applies to members retiring before age 57
<b>Service Purchase</b>	Current rates but not less than true actuarial cost	Current rates but not less than true actuarial cost
<b>Disability Retirement</b>	Slight modification in eligibility and benefit amount	Slight modification in benefit amount
<b>Earnable Compensation</b>	Overtime pay is excluded (unless the additional hours are mandated by the employer)	No change

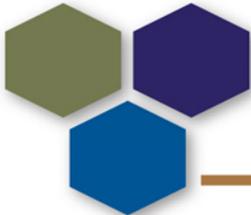


# SC Legislation Enacted (Act 278)

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## Significant Changes Impacting Future Members Only

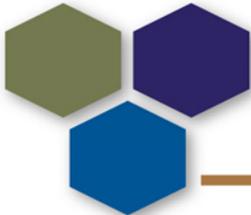
	SCRS	PORS
<b>Vesting</b>	8 years of service	8 years of service
<b>Average Final Compensation</b>	5 year averaging period	5 year averaging period
<b>Retirement Eligibility</b>	The rule of 90 or age 60 with 8 years of service	27 years of service or age 55 with 8 years of service
<b>Unused Sick and Annual Leave</b>	Excluded from the calculation of benefits	Excluded from the calculation of benefits



# Summary of Cost Impact (\$ in millions)

Item	2011 Valuation Results			
	SCRS		PORS	
	H. 4967	Prior to Enactment	H. 4967	Prior to Enactment
(1)	(2)	(3)	(4)	(5)
Actuarial accrued liability	\$38,012	\$40,016	\$5,123	\$4,825
Actuarial value assets	<u>25,605</u>	<u>25,605</u>	<u>3,728</u>	<u>3,728</u>
Unfunded liability (UAAL)	\$12,407	\$14,411	\$1,395	\$1,097
Funded ratio	67%	64%	73%	77%
Member contribution rate	7.50%	6.50%	7.84%	6.50%
Employer contribution rate	<u>10.60%</u>	<u>12.23%</u>	<u>12.84%</u>	<u>12.30%</u>
Total contribution rate (FY 2014)	18.10%	18.73%	20.68%	18.80%
Amortization period	25 Years	30 Years	30 Years	22 Years

Note: Providing PORS members a 1% benefit adjustment increased the actuarial accrued liability by approximately \$460 million.



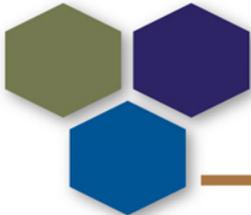
# Post-2011 Experience

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- ◆ In General, on a smoothed asset basis, the actual valuation results have tracked relatively well with the projections from the Act 278 impact statement

	Projected 2015 Result	Actual 2015 Result
UAAL	\$16,977	\$16,753
Funded Ratio	61%	62%
Employer Contribution Rate	11.2%	11.1%

- ◆ However, the 2016 results will reflect the new assumptions (less the investment return assumption) and further recognition of the 2015 and 2016 investment underperformance. Projections that fully recognize the deferred asset losses as of June 30, 2015 anticipate ultimate contribution requirements approximately 3.00% higher in total than current levels



# Disclaimer

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- ◆ Circular 230 Notice: Pursuant to regulations issued by the IRS, to the extent this presentation concerns tax matters, it is not intended or written to be used, and cannot be used, for the purpose of (i) avoiding tax-related penalties under the Internal Revenue Code or (ii) marketing or recommending to another party any tax-related matter addressed within. Each taxpayer should seek advice based on the individual's circumstances from an independent tax advisor.
- ◆ The strawman design alternatives are presented to provide a framework of different retirement benefit structures. We recommend obtaining a legal opinion to determine feasibility before enacting any changes that impact current members of SCRS
- ◆ This presentation shall not be construed to provide tax advice, legal advice or investment advice.



# South Carolina Retirement Systems

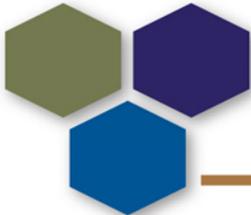
## Estimated Financial Condition of Retirement System as of July 1, 2016

Joe Newton and Danny White  
August 17, 2016

**GRS**

Gabriel Roeder Smith & Company  
Consultants & Actuaries  
[www.gabrielroeder.com](http://www.gabrielroeder.com)

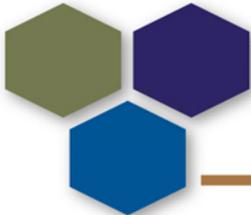
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# Summary of Expected Results

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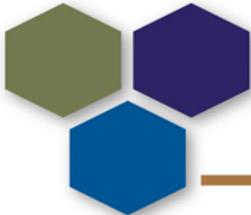
- ◆ SFAA approved assumptions and methods adopted by PEBA
  - ▶ Investment return assumption remains 7.50%
- ◆ The actual investment return for FY 2016 was approximately 0.00%
- ◆ Summary of expected cost and liabilities for SCRS:
  - ▶ Employer contribution rate will increase from 11.56% in FY 2017 to an ultimate rate of 12.9% in FY 2022 (9.97% for members)
  - ▶ On a smoothed basis, the Unfunded Accrued Liability projected to increase from \$16.8 billion at FYE 2015 to \$18.2 billion at FYE 2016 (funded ratio decreases from 62% to 60%)



# SCRS Short Term Projections

July 1,	Contribution Rate		Contributions		Actuarial Accrued Liability	Actuarial Value of Assets	Market Value of Assets	Unfunded Liability	Funded Ratio AVA / AAL	Funding Period (years)
	Employer	Member	Employer	Member						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2015	11.06%	8.16%	\$ 1,045	\$ 716	\$ 44,119	\$ 27,336	\$ 25,132	\$ 16,783	62%	30
2016	11.56%	8.66%	1,111	768	45,602	27,447	24,050	18,155	60%	30
2017	11.56%	8.66%	1,139	784	46,779	27,327	24,780	19,452	58%	30
2018	12.04%	9.14%	1,217	845	47,980	27,215	25,517	20,765	57%	30
2019	12.30%	9.40%	1,275	887	49,201	27,203	26,354	21,998	55%	30
2020	12.53%	9.63%	1,339	932	50,438	27,255	27,255	23,183	54%	30
2021	12.73%	9.83%	1,400	976	51,683	28,234	28,234	23,449	55%	28
2022	12.87%	9.97%	1,456	1,014	52,932	29,288	29,288	23,644	55%	27

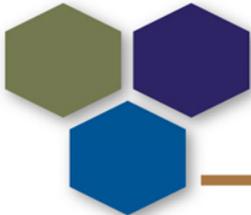
Based on new assumptions approved by PEBA and SFAA and assumes a 0% return in FY16



# Member Contribution Efficiency

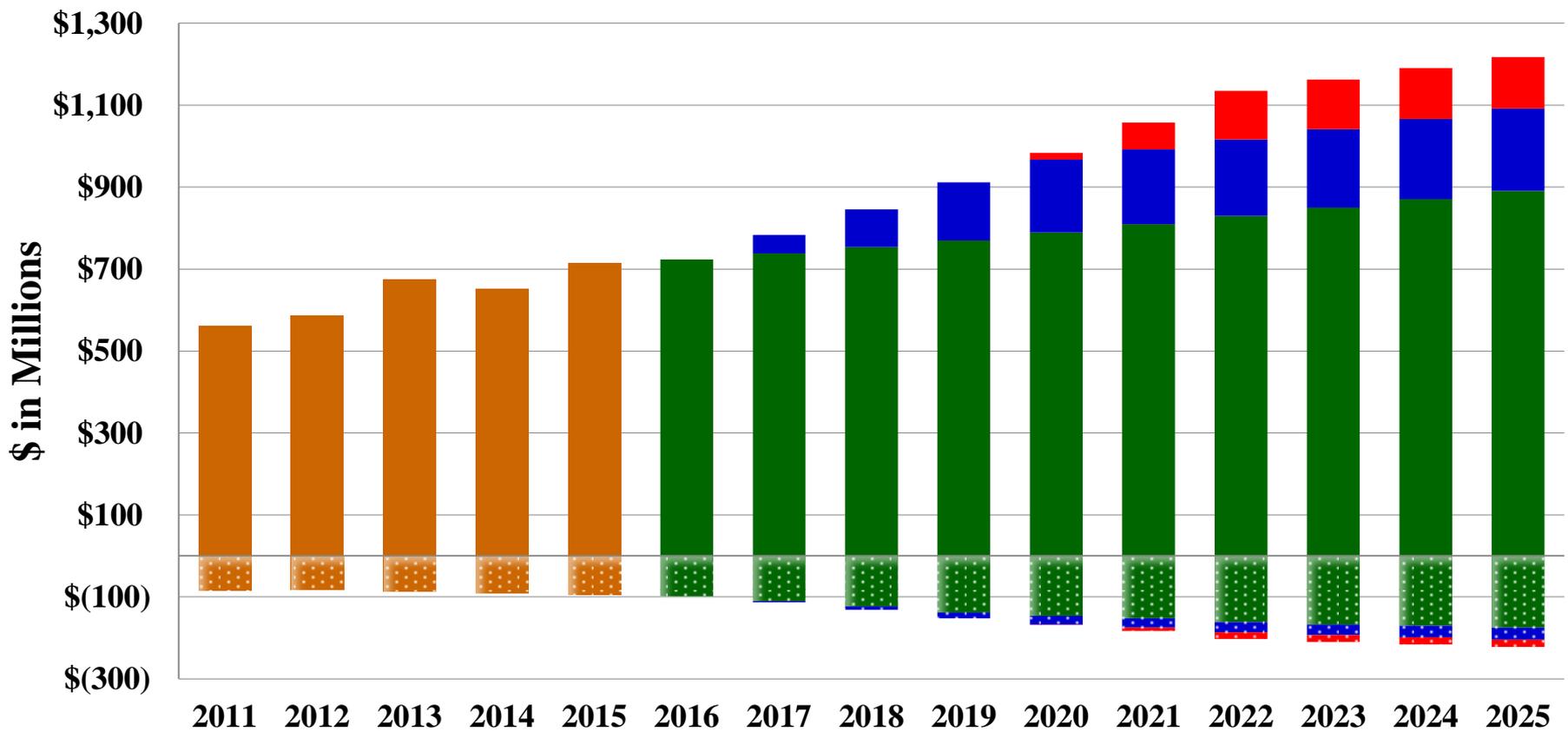
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- ◆ The employer and member contribution rates are currently linked
  - ▶ Members share equally in the risk that contribution rates will increase in future years
- ◆ Due to the refund benefit member contributions are relatively less efficient than employer contributions in funding the plan:
  - ▶ Members can refund their employee contribution balances
  - ▶ Employer contributions remain in plan when a member elects a refund

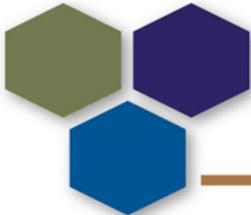


# SCRS Member Contribution and Refund Experience

Assumes 0.50% Annual Increases in Member Contribution Rates for the Next Six (6) Years



8.66% Contribution Rate    8.66% < Contribution Rate < 10%    Contribution Rate > 10%

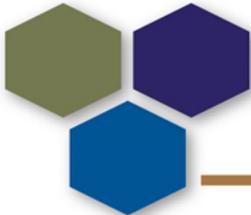


# Member Contribution Efficiency

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- ◆ Approximately 20% of member contributions are returned as refund benefits
- ◆ For purposes of financing the unfunded actuarial accrued liability
  - ▶ An 0.80% increase in the employer contribution rate is about as effective as a 1.00% increase in the member contribution rate for funding annuity benefits
- ◆ Compared to the current projected longer term policy of 12.9% employer/9.97% member; if the member contribution was held as the current 8.66%, the projected longer term employer contribution would be 13.9%

**A Members' Contribution Effort  
is Ultimately a Policy Decision**



# Disclaimers

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- ◆ This presentation should not be relied on for any purpose other than the purpose described by the presenters.
- ◆ Circular 230 Notice: Pursuant to regulations issued by the IRS, to the extent this presentation concerns tax matters, it is not intended or written to be used, and cannot be used, for the purpose of (i) avoiding tax-related penalties under the Internal Revenue Code or (ii) marketing or recommending to another party any tax-related matter addressed within. Each taxpayer should seek advice based on the individual's circumstances from an independent tax advisor.
- ◆ This presentation shall not be construed to provide tax advice, legal advice or investment advice.

**PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM**  
**Retirement Policy Committee**

**Meeting Date:** August 17, 2016

---

**1. Subject:** Deferred Compensation Program Plan Summary Report

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**2. Summary:** Nancy Ornduff from Empower will present the SC Deferred Compensation Program (SCDCP) Plan Summary Report for the quarter ending June 30, 2016.

**3. What is Committee asked to do?** Receive as information

---

**4. Supporting Documents:**

(a) Attached: 1. Q2 2016 Performance Summary

South Carolina Deferred Compensation Program



## State of South Carolina

For the period from April 1, 2016 to June 30, 2016

Administered by:



# Plan Review Summary

South Carolina Deferred Compensation Program  
Empower-Retirement  
Second Quarter 2016

# Contents

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<b>MARKETING REPORT</b> .....	11
<b>COMMUNICATION AND EDUCATION</b> .....	12
 <b>SUPPORTING DOCUMENTATION</b>	
DETAILED QUARTERLY PLAN REPORT .....	TAB 1
MARKETING & NEWSLETTER .....	TAB 2
QUARTERLY PERFORMANCE GUARANTEE REPORT Q2 2016 .....	TAB 3
SURVEY RESULTS Q2 2016 .....	TAB 4

## Executive Summary

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The attached reports detail the progress we have experienced during the second quarter of 2016. A few of the items of note in the report include:

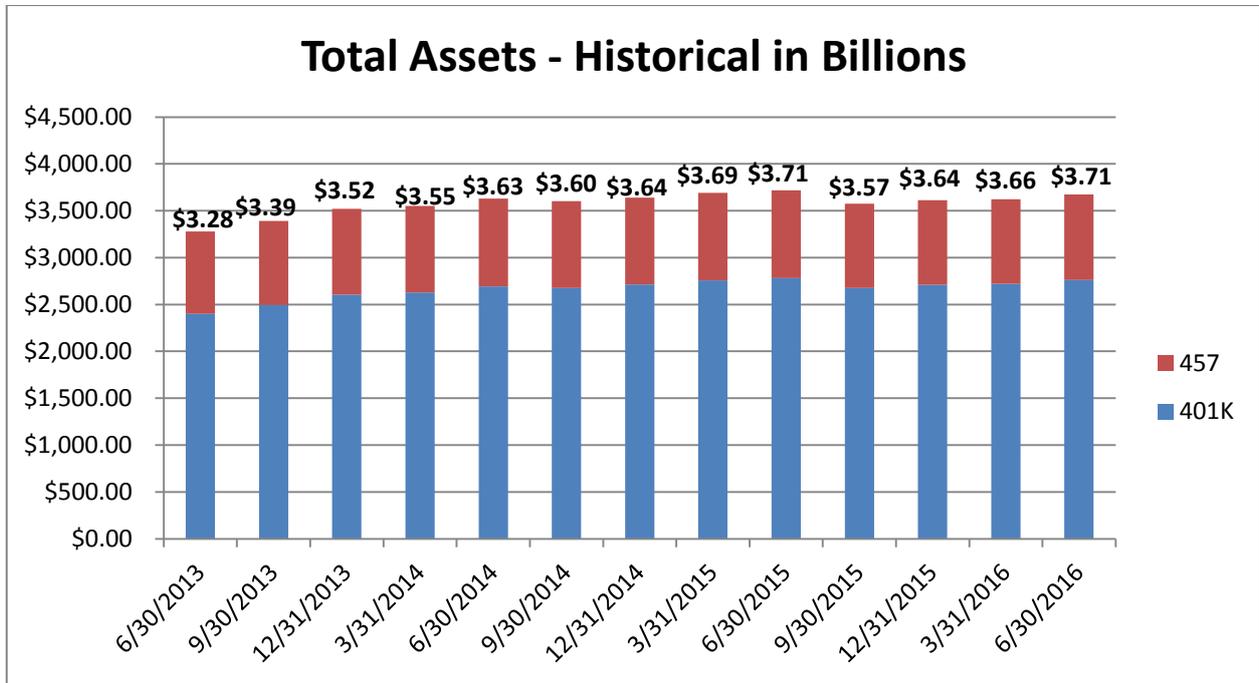
- Plan Assets grew by \$51.29 million (1.4%) as of June 30, 2016
- Incoming rollovers to the plan have increased to \$15,804,815.21 in 2Q2016 from \$10,947,967.26 in 1Q2016.
- “Stick with the Program” target email was sent to 6644 participants over the age of 55 with an account balance over \$25,000.00. Outgoing rollovers decreased from 18.5 million in 1Q2016 to 16.5 million in 2Q2016. Distributions also decreased from 58 million in 1Q2016 to 51.8 million in 2Q2016.
- South Carolina Stable Value Fund remains healthy with a market to book ratio of 102.2% (Market Value \$1,217.91 mm/Book Value \$1,191.76 mm).
- Increase in diversification: number of participants utilizing Managed Accounts or Advice Services increased from 13,356 to 14,255 in the 2nd quarter 2016 (total increase of 899 users).
- Contributions increased to \$53.64 million as of 06/30/2016 from \$49.82 million as of 03/31/2016.
- Total number of participants invested 100% in Target Date Funds increased from 5,399 to 5,587 (total increase of 188 participants).
- One new employer joined the plan; Garden City Fire District
- Enrollments increased to 1,346 in 2Q2016 in comparison to 1,172 in 1Q2016 (total increase of 174 new enrollments).
- Retirement Income Control Panel Usage increased from 2,036 (6.3% of all website users) in 1Q2016 to 2,156 (6.9% of all website users) in 2Q2016 (total increase of 120 participants)
- 726 total participating employers as of 06/30/2016; 85 state agencies, 641 non-state agencies.
- 3 employer Plan Service Center (PSC) webinars were held with 19 attendees in 2Q2016.
- As of 6/30/2016 73% of employers are 100% compliant with the Business Transformation Project.

## Plan Statistics Summary

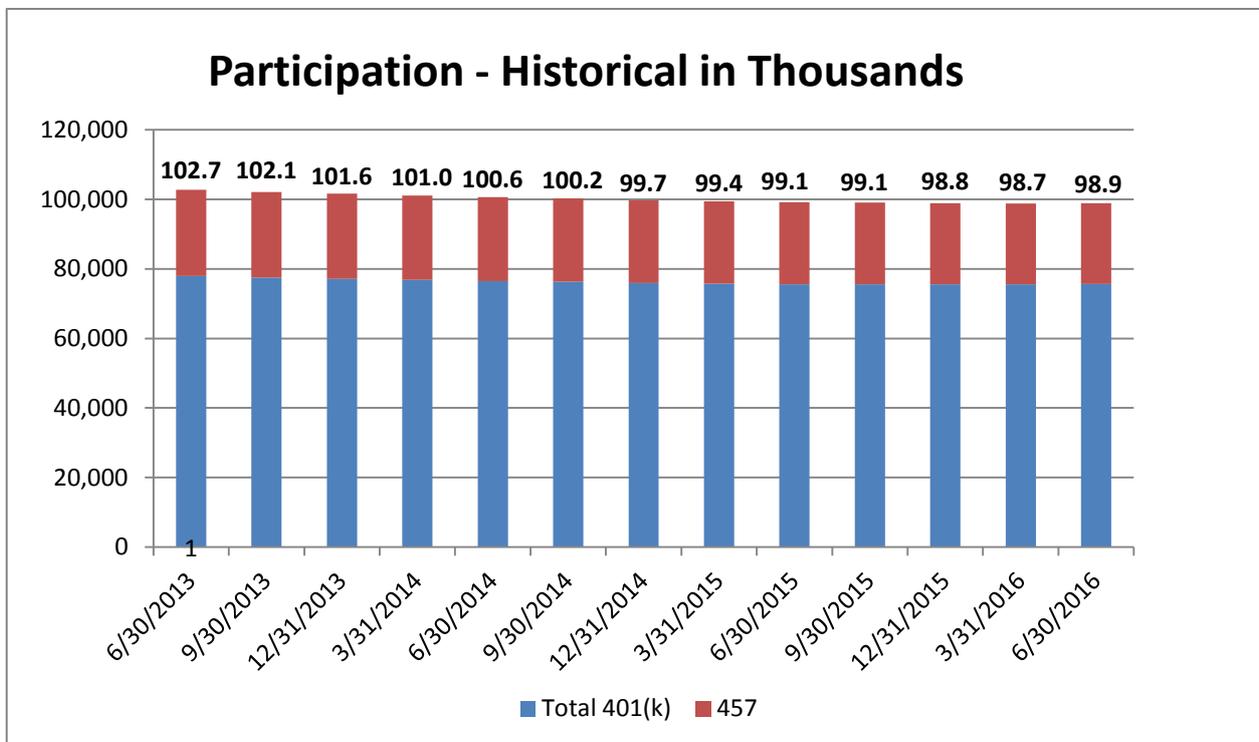
	401(k) Plan (pre-tax)	401(k) Plan (Roth)	457(b) Plan (pre-tax)	457(b) Plan (Roth)	Totals
<b>Plan Assets <sup>1</sup></b>	\$2,760.44	\$35.81	\$913.16	\$4.11	<b>\$3,713.52</b>
<b>Contributions <sup>1</sup></b>	\$42.23	\$1.70	\$9.22	\$0.49	<b>\$53.64</b>
<b>Distributions <sup>1</sup></b>	\$40.83	-	\$10.92	-	<b>\$51.75</b>
<b>Participant Accounts</b>	71,720	3,922	22,388	860	<b>98,890</b>
Active Employers	597		437		
Inactive Employers	129		289		
<b>Total Employers</b>	<b>726</b>		<b>726</b>		

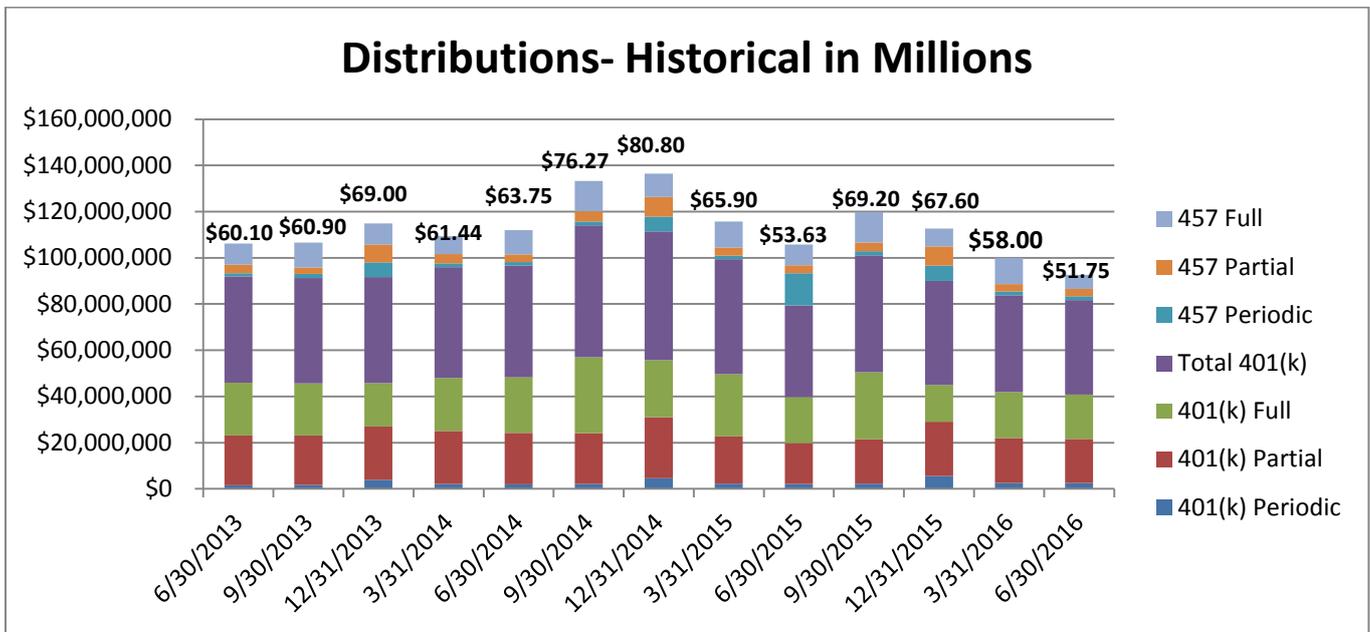
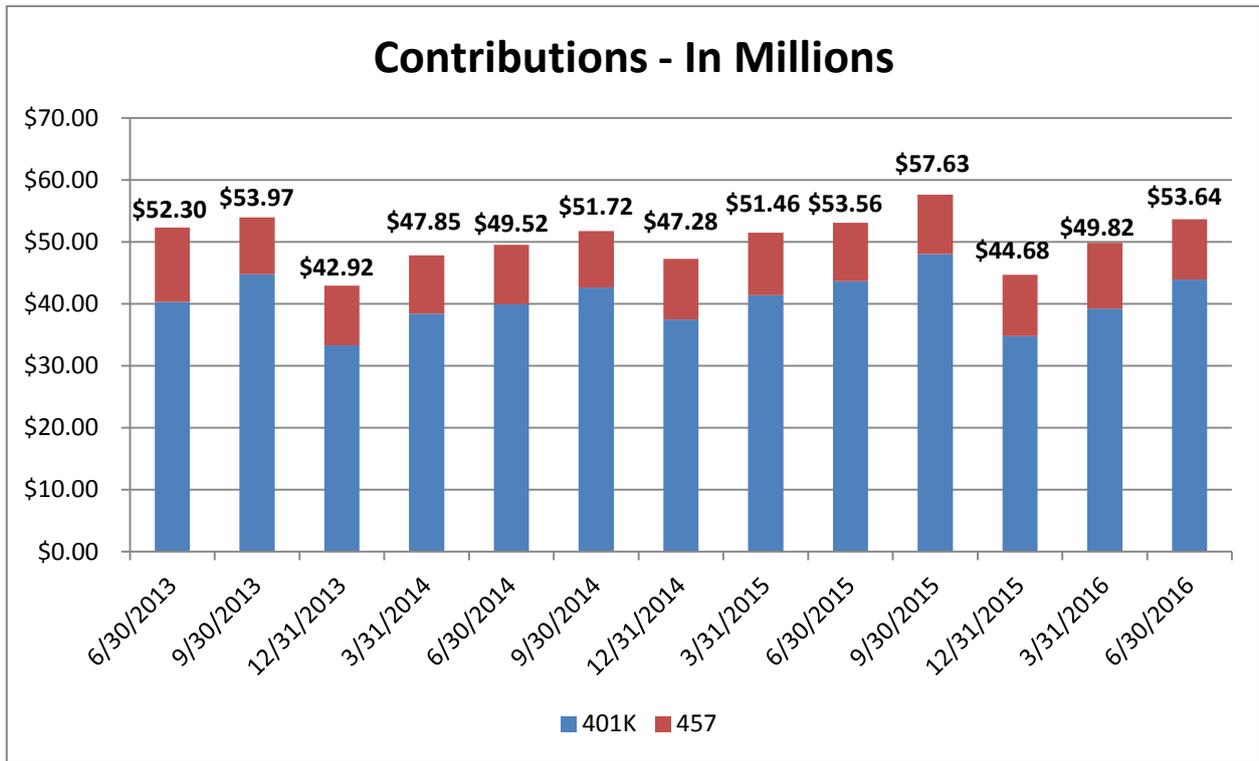
<sup>1</sup> Dollars (in millions)

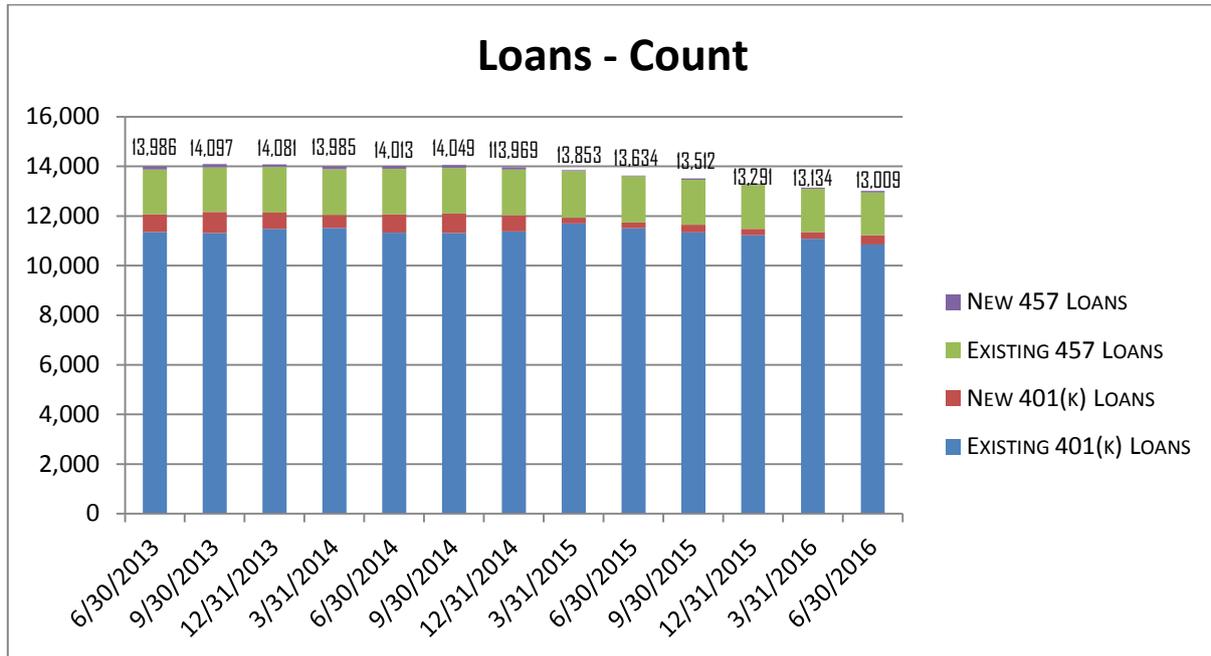
### Historical Trends Analysis



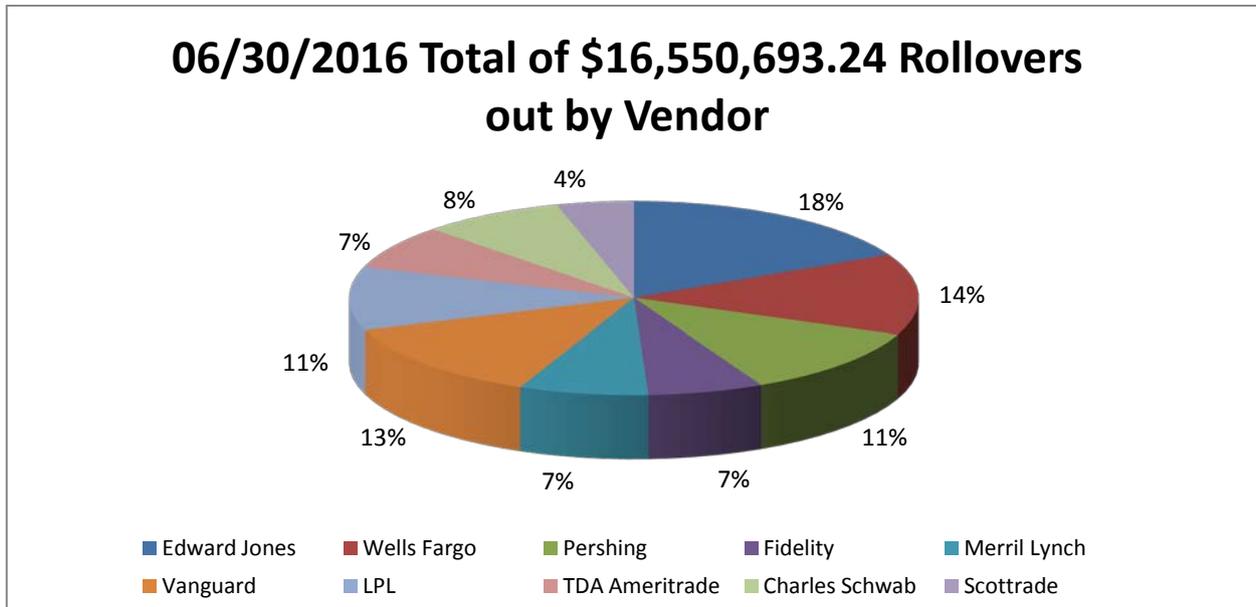
### Historical Trends Analysis (continued)

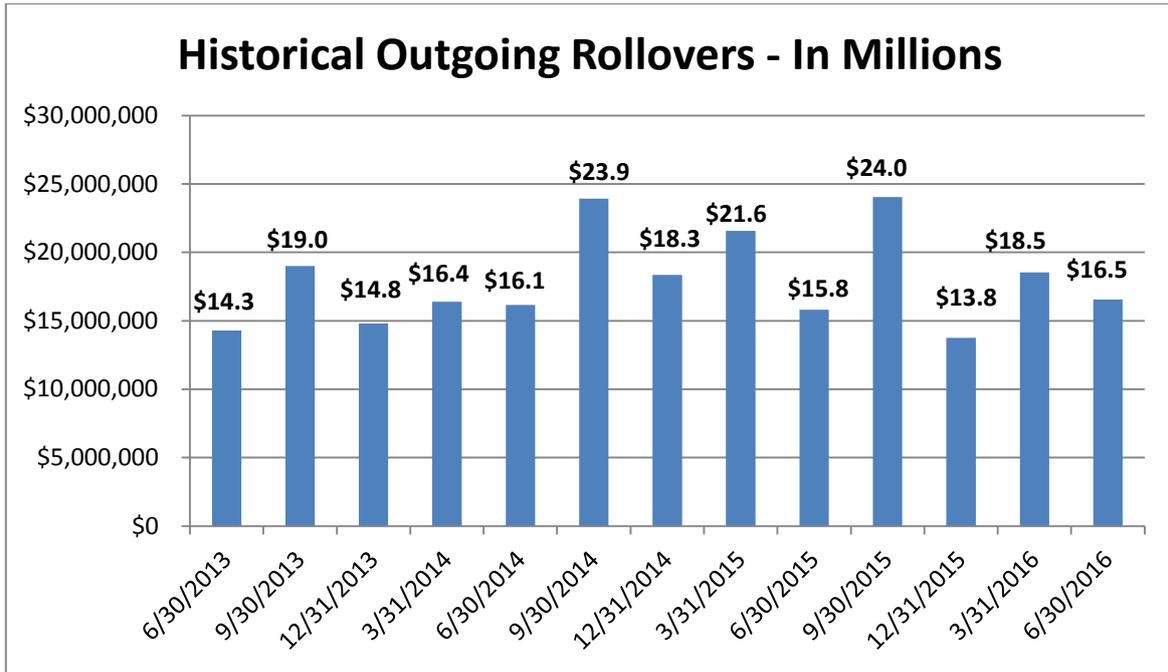




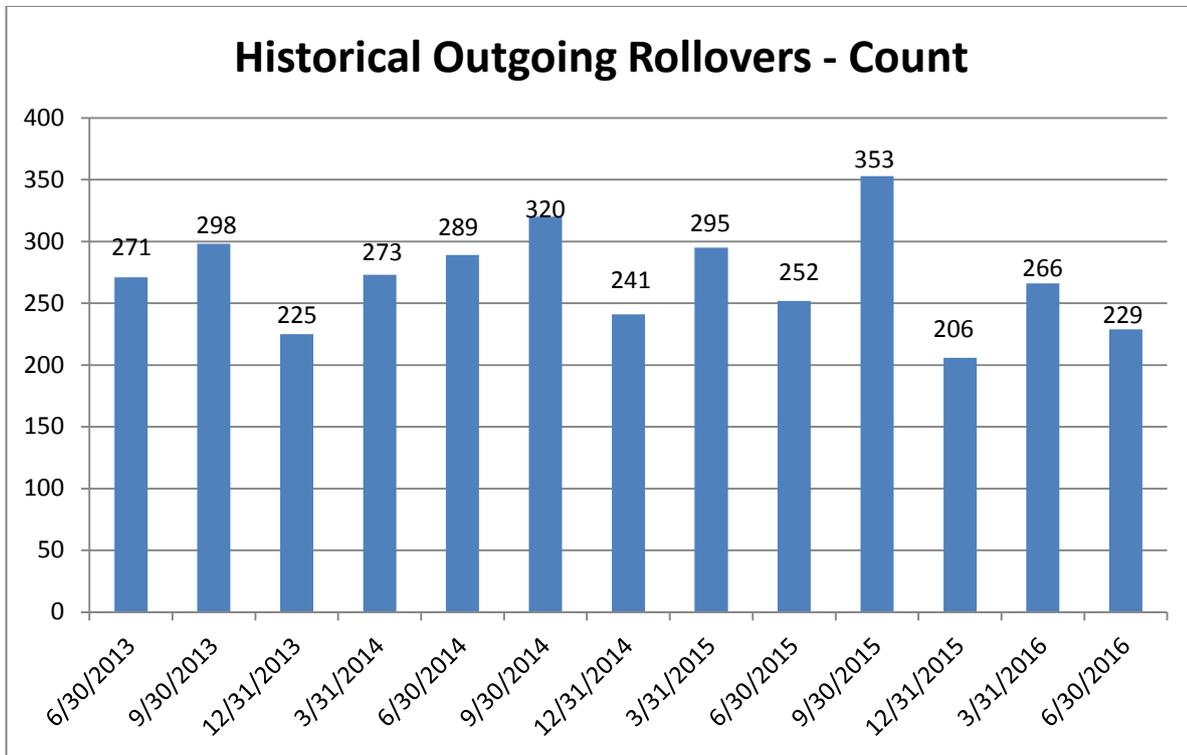


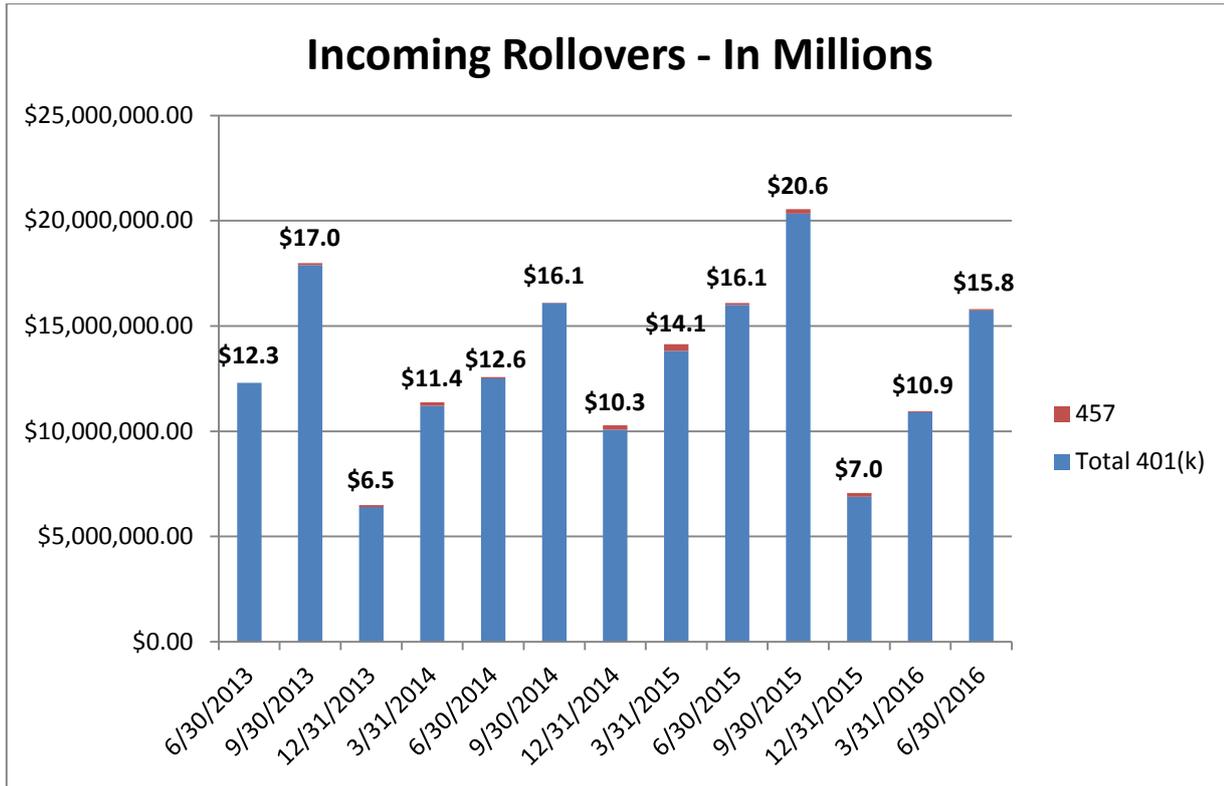
### Historical Trends Analysis (continued)



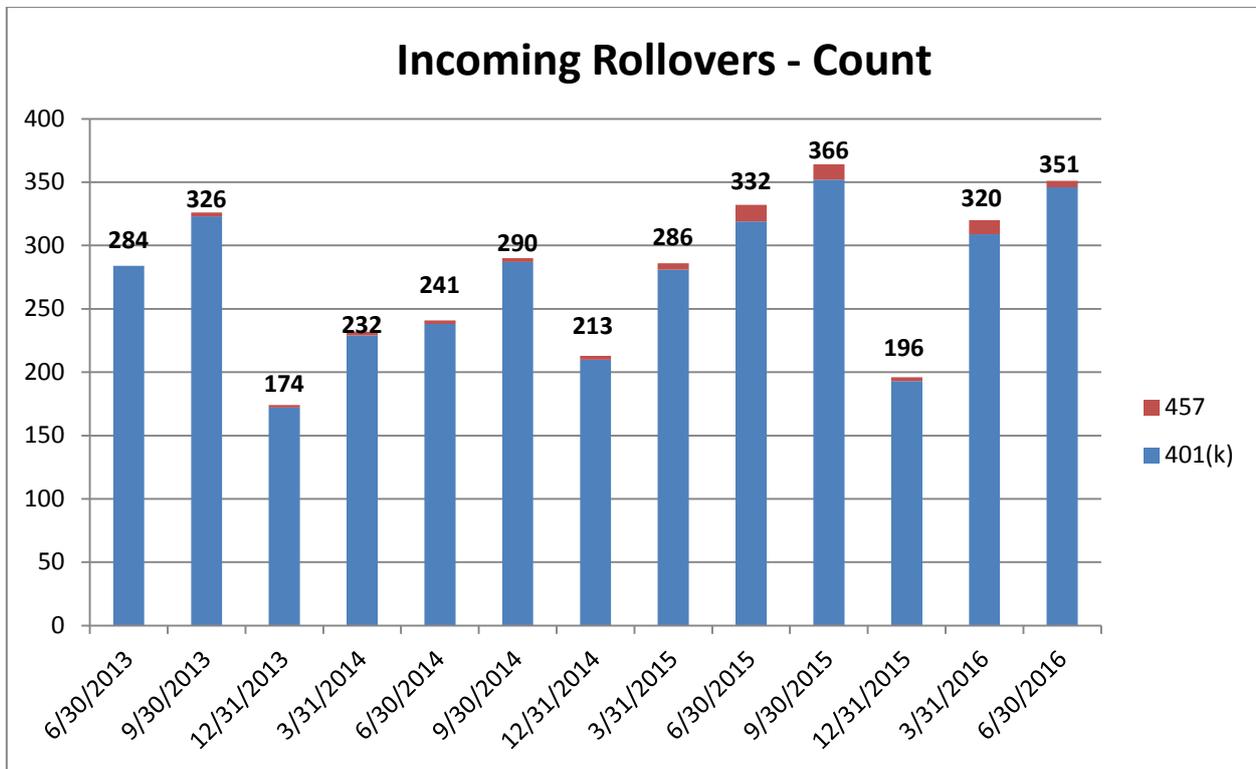


### Historical Trends Analysis (continued)





### Historical Trends Analysis (continued)



# Administrators Report – 2nd Quarter 2016

Project	Strategic Initiative	Project Status	Comments
Business Transformation Project	no	In Progress	73% completed, Letter sent to non-compliant employers
2015 Audit	no	Completed	PEBA in final stages of completing audit
Beneficiary Claim Project	no	In Process	Empower adding dates of death received from PEBA

## Retirement Income Control Panel (RICP) Usage

Measurement Period 04/01/2016 – 06/30/2016

Total number of users to visit [www.southcarolinadcp.com](http://www.southcarolinadcp.com)

32,282 (36.8% of total participants)

Total number of users to RICP

2,156 (2.5% of total participants, 6.9% of all website users)

69.0% of RICP visitors were return visitors, 31.0% were new visitors

Average session duration

Total website: 5 minutes, 2 seconds

RICP tool: 15 minutes, 3 seconds

## Communications Review

<b>COMPLETED Communications Projects</b>	<b>Completion or Target Date</b>
Distribution Options flier Rebrand an annual update	Completed 2Q2016 (4/1/2016)
1Q participant newsletter	Completed 2Q2016 (4/1/2016)
April PSC pop-up message on Business Transformation Project	Completed 2Q2016 (4/15/2016)
Annual Leave Worksheet updates	Completed 2Q2016 (4/20/2016)
2Q Targeted email campaign	Completed 2Q2016 (5/4/2016)
PEBA branded pens	Completed 2Q2016 (5/10/2016)
May PSC pop-up message on Business Transformation Project	Completed 2Q2016 (5/19/2016)
Upcoming retiree presentation Web banner and pop-up	Completed 2Q2016 (5/23/2016)
June PSC pop-up message on Business Transformation Project	Completed 2Q2016 (6/15/2016)
Business Transformation Guide updates – sticker & insert	Completed 2Q2016 (6/20/2016)
Stable Value Fund tile update	Completed 2Q2016 (6/21/2016)
2Q participant newsletter	Completed 2Q2016 (6/22/2016)
Mini-survey: What keeps you online?	Completed 2Q2016 (6/30/2016)
Short Tailored Participant Surveys (web, local office, seminars)	2Q2016 Data Compiled 7/22/2016

## Educational Campaigns-

Retirement Readiness Seminars: Getting Ready to Retire, Approaching Retirement, Fundamentals of Investing, Enrollment, and Investment Advisory Services.

## Second Quarter Local Office Activity-

Local Office	1 <sup>st</sup> Quarter 2016	2 <sup>nd</sup> Quarter 2016	3 <sup>rd</sup> Quarter 2016	4 <sup>th</sup> Quarter 2016	Year-To- Date
1) Group Meetings	357	413			770
2) Individual Appointments	1,843	1,714			3,557
New Employers	1	1			2
New Enrollments	1,172	1,346			2,518
Managed Accounts	790	712			1,502
100% Stable Value Fund	82	99			181
100% Target Date Fund	64	50			114
Walk-In Center: Phone Volume	2,886	3,080			5,966
Walk-In Center Visitors	341	401			742

### Field Campaigns:

- Build out Service Model components through annual planning meetings with Political Subdivision Key Contacts.
- Express the value of RICP during all Key Contact meetings, Group Seminars, and Individual Meetings.
- Blast email communication through employers to encourage increase savings rates and RPC/Employee interaction.

### Employer Outreach Program:

Meetings with Employers: 178

Employer Plan Service Center (PSC) webinars- 19

726 total participating employers as of 06/30/2016; 85 state agencies, 641 non-state agencies

**PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM**  
**Retirement Policy Committee**

**Meeting Date:** August 17, 2016

---

**1. Subject:** South Carolina Deferred Compensation Program

---

**2. Summary:** Mike Orso from Summit Strategies Group will present the SC Deferred Compensation Program (SCDCP) report and the Optional Retirement Plan (ORP) report for the quarter ending June 30, 2016.

**3. What is Committee asked to do?** Receive as information

---

**4. Supporting Documents:**

- (a) Attached:
1. Q2 2016 Performance Summary
  2. TRP MCV Share Class Memo



***Summit Strategies Group***

*8182 Maryland Avenue, 6th Floor*

*St. Louis, Missouri 63105*

*314.727.7211*

**PEBA 2Q 2016 Performance Summary**

**State of South Carolina  
Defined Contribution Plans**

*August 17, 2016*

### ECONOMIC

- The US economy continued to expand with contributions from personal consumption, employment, residential investments, government spending and exports. While global economic instability was heightened by the UK's vote to leave the EU, global policymakers pledged to keep monetary policy accommodative. Many developed market rates fell into negative territory.
  - US unemployment fell as low as 4.7%, but ended the quarter at 4.9%.
  - Core CPI (ex food and energy) continued to accelerate, rising 2.3% y-o-y; Headline CPI also rose by 1.0% y-o-y.
  - Q1 US GDP grew by 1.1%; the Atlanta Fed forecasts 2.4% growth in Q2.
  - US hourly wages increased by one of the highest rates since 2008, rising by 2.6% y-o-y.
  - Oil prices rebounded strongly, appreciating 26.1%.
  - The US Dollar Index gained 1.6% against foreign currencies.
- The Fed opted to maintain the Fed funds target rate in a range of 0.25% to 0.50% at its June meeting.

### CAPITAL MARKETS

- US equities were supported by expectations that additional interest rate rises would be delayed. Global stocks initially dropped sharply after the Brexit vote on June 23, but a strong bounce-back erased most of the losses. Investors shifted into defensive sectors and safe-haven assets.
  - The S&P 500 grew by 2.4% during the quarter, outperforming both the MSCI EAFE Index (-1.4%) and the MSCI Emerging Markets Index (0.6%).
  - Value stocks continued to outperform relative to growth.
  - Defensive sectors outperformed including utilities and healthcare; rising oil prices led to energy stocks outperforming all sectors.
  - Real assets were among the strongest performers: oil (+26.1%), commodities (+12.8%), REITs (+7.5%), gold (+7.3%) and TIPS (+1.7%).
  - Market volatility helped fixed income as all sectors posted positive returns.
  - High yield led all sectors (+5.5%) as potential losses from commodity focused borrowers decreased.

### MARKET PERFORMANCE

	<u>Quarter</u>	<u>1 Year</u>	<u>3 Year</u>	<u>5 Year</u>
S&P 500	2.46	3.99	11.66	12.10
Russell 1000 Index	2.54	2.93	11.48	11.88
Russell 1000 Value Index	4.58	2.86	9.87	11.35
Russell 1000 Growth Index	0.61	3.02	13.07	12.35
Russell 2000 Index	3.79	-6.73	7.09	8.35
Russell 2000 Value Index	4.31	-2.58	6.36	8.15
Russell 2000 Growth Index	3.24	-10.75	7.74	8.51
Russell 3000 Index	2.63	2.14	11.13	11.60
MSCI EAFE Index (Net)	-1.46	-10.16	2.06	1.68
MSCI Emerging Markets (Net)	0.66	-12.05	-1.56	-3.78
Barclays Aggregate	2.21	6.00	4.06	3.76
Barclays US Treasury	2.10	6.22	3.51	3.53
Barclays US TIPS	1.71	4.35	2.31	2.63
Barclays US Corporate	3.57	7.94	5.42	5.43
Barclays US High Yield	5.52	1.62	4.18	5.84
Barclays US Mortgage	1.11	4.34	3.76	3.01
Barclays Global Aggregate	2.89	8.87	2.80	1.77
NAREIT-All REIT Composite	7.54	22.72	12.84	12.02

### LOOKING AHEAD

- Elevated market volatility to continue.
- Spain, Italy and the Netherlands likely to hold referendums on exiting the EU, contributing to global economic instability.
- Growing populism around the world, potentially impacting global trade.
- Signs of economic stabilization in China.
- Markets forecast a low probability of Fed rate hikes in 2016.
- Tightening US labor markets and core inflation trending above the Fed's 2% target a boon to inflation-sensitive assets.
- US corporate earnings expected to rebound in Q3 or Q4.

### DEFINED CONTRIBUTION MARKET NEWS

#### Participant and Sponsor Behavior

- A study by BlackRock identified a disconnect between plan sponsors and plan participants.
  - 67% of plan sponsors believe participants understand plan options compared to 43% of participants who state they do.
  - 64% of plan sponsors believe participants know how much to save for retirement, versus 37% of participants who state they do.
  - *The study underscores the importance of understanding the participant's perspective in plan design and management.*
- Vanguard reports 41% of its recordkept plans utilized auto enrollment in 2015 versus just 10% in 2006.
- A report by Transamerica indicates only 38% of DC plans extend eligibility to part-time employees, potentially underserving the retirement savings needs of this group.

#### Industry, Legal and Regulatory Updates

- President Obama vetoed a resolution by the House and Senate that would have nullified the new DoL fiduciary rule. The first of several legal challenges by various stakeholders in the financial services industry is scheduled for August 25th.
- The SEC is expected to announce a new fiduciary rule in April 2017 following recent passage of the DoL fiduciary rule. The SEC rule is expected to focus on advisory and brokerage services provided to retail investors, particularly regulation allowing for third-party non-governmental examinations.
- Pennsylvania passed legislation creating a hybrid plan in which the first \$50,000 of a future employee's salary is covered by a traditional DB plan and any salary above that amount is covered by mandatory participation in a DC plan.
- Kodak settled a stock-drop case for \$9.7 million in which participants allege fiduciaries violated their duty by allowing the plan to offer Kodak stock as the financial condition of the firm deteriorated between 2010 and 2012, prior to filing for Chapter 11 bankruptcy protection in January of 2012.
- Recordkeepers Transamerica and MassMutual agreed to settlements stemming from allegations by their own retirement plan participants that the plans charged excessive fees.
- Fujitsu and its American subsidiary have been named in class-action litigation alleging the \$1.5 billion plan "failed to utilize the least expensive share classes for many mutual funds within the plan."

**Deferred Compensation Program**

## DEFERRED COMPENSATION SUMMARY

### Action Items

- Conduct formal reviews on the Victory Munder Mid Cap Core Growth fund and the PIMCO Total Return fund.

### **Fund Monitor**

- Six funds are on the Watch List this quarter.
  - Dodge & Cox was added to the Watch List this quarter.
  - T. Rowe Price Growth was added to the Watch List this quarter.
  - Victory Munder Mid Cap Growth fund has been on the Watch List for four quarters, and Summit will conduct a formal review on this fund.
  - AllianceBernstein Small Cap Growth fund has been on the Watch List for two quarters.
  - PIMCO Total Return fund has been on the watch list for four quarters, and Summit will conduct a formal review on this fund.
  - BlackRock Inflation Protected Bond fund has been on the Watch List for six quarters.

FUND MONITOR 6/30/2016

Investment Options											
Criteria	Dodge & Cox Stock	T. Rowe Price Growth Stock	T. Rowe Price Mid Cap Value	Victory Mid Cap Growth <sup>9</sup>	American Beacon Small Cap Value	AB Small Cap Growth	American Funds New Perspective	Fidelity Diversified International	American Funds EuroPacific Growth	PIMCO Total Return Instl	BlackRock Inflation Bond
<b>Performance<sup>1</sup></b>											
3 year	Fail	Fail	Pass	Fail	Pass	Fail	Pass	Pass	Pass	Fail	Fail
5 year	Fail	Fail	Fail	Fail	Pass	Fail	Pass	Pass	Pass	Fail	Fail
<b>Universe Ranking<sup>2</sup></b>											
3 year	Pass	Pass	Pass	Fail	Pass	Fail	Pass	Pass	Pass	Fail	Pass
5 year	Pass	Pass	Fail	Pass	Pass	Pass	Pass	Pass	Pass	Fail	Pass
<b>Risk Adjusted Performance<sup>3</sup></b>											
3 year	Fail	Fail	Pass	Fail	Pass	Fail	Pass	Pass	Pass	Fail	Fail
5 year	Fail	Fail	Pass	Fail	Pass	Fail	Pass	Pass	Pass	Fail	Fail
<b>Morningstar Overall Rating<sup>4</sup></b>											
Overall	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
<b>Consistency of Style<sup>5</sup></b>											
Style Box Rating	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
<b>Grade</b>	4/8	4/8	6/8	3/8	8/8	3/8	8/8	8/8	8/8	2/8	4/8
<b>Overall Pass/Fail<sup>6</sup></b>	Fail	Fail	Pass	Fail	Pass	Fail	Pass	Pass	Pass	Fail	Fail
<b>Watchlist?<sup>7</sup></b>	Yes	Yes	No	Yes	No	Yes	No	No	No	Yes	Yes
<b>Fund Review?<sup>8</sup></b>	No	No	No	Yes	No	No	No	No	No	Yes	Yes
<b>Cumulative Quarters Failed</b>	One	One	Zero	Four	Zero	Two	Zero	Zero	Zero	Four	Six

<sup>1</sup>Performance must meet or exceed its benchmark.

<sup>2</sup>The fund must rank in the top half of its peer universe (=> 50th percentile).

<sup>3</sup>The Sharpe Ratio must meet or exceed its benchmark.

<sup>4</sup>The fund must have an Overall Morningstar Rating of => 3 stars.

<sup>5</sup>The fund must maintain its Morningstar or Lipper Category style for 4 of the last 6 quarters.

<sup>6</sup>The Fund is measured against the 8 criteria listed above. At the end of each quarter, each fund must meet or exceed 5 of the 8 criteria in order to receive a passing grade. If less than 5 criteria receive a passing grade, the fund will receive a failing grade.

<sup>7</sup>If the fund received a failing grade, the fund will be placed on the Watch List and monitored for possible future action.

<sup>8</sup>If for a period of 4 consecutive quarters, the fund has received a failing grade, the fund will be placed under formal fund review.

<sup>9</sup>A hybrid was created with the Y shareclass due to lack of longer-term performance.

FUND MONITOR 6/30/2016

Criteria	Investment Option													SSgA Income	Stable Value	
	Vanguard Inst I Index <sup>5</sup>	TIAA-CREF Small Cap Blend	PIMCO All Asset	SSgA 2060	SSgA 2055	SSgA 2050	SSgA 2045	SSgA 2040	SSgA 2035	SSgA 2030	SSgA 2025	SSgA 2020	SSgA 2015			
<b>Performance<sup>1</sup></b>																
<b>3 year (within 50 bps)*</b>	Pass	Pass	Fail	N/A	Pass	Pass	Pass									
<b>5 year (within 50 bps)*</b>	Pass	Pass	Fail	N/A	Pass	Pass	Pass	Pass	Pass	Pass	Fail	Fail	Fail	Fail	Fail	Pass
<b>Performance (Secondary)<sup>2</sup></b>																
<b>3 year (within 50 bps) *</b>	N/A	N/A	Fail	N/A	N/A	N/A										
<b>5 year (within 50 bps) *</b>	N/A	N/A	Fail	N/A	N/A	N/A										
<b>Universe Ranking<sup>3</sup></b>																
<b>3 year</b>	N/A	N/A	N/A	N/A	Pass	Pass	N/A									
<b>5 year</b>	N/A	N/A	N/A	N/A	Pass	Pass	N/A									
<b>Risk Level (std deviation)<sup>4</sup></b>																
<b>3 year</b>	Pass	Pass	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>5 year</b>	Pass	Pass	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

<sup>1</sup>Performance must meet or exceed its benchmark.

<sup>2</sup>Performance must meet or exceed its secondary benchmark.

<sup>3</sup>The fund must rank in the top half of its peer universe (=> 50th percentile).

<sup>4</sup>Standard Deviation must be within 50bps = Standard Deviation of the Benchmark.

\*This additional bps measure (50 bps) is due to management fees of the mutual funds and small amounts of tracking error.

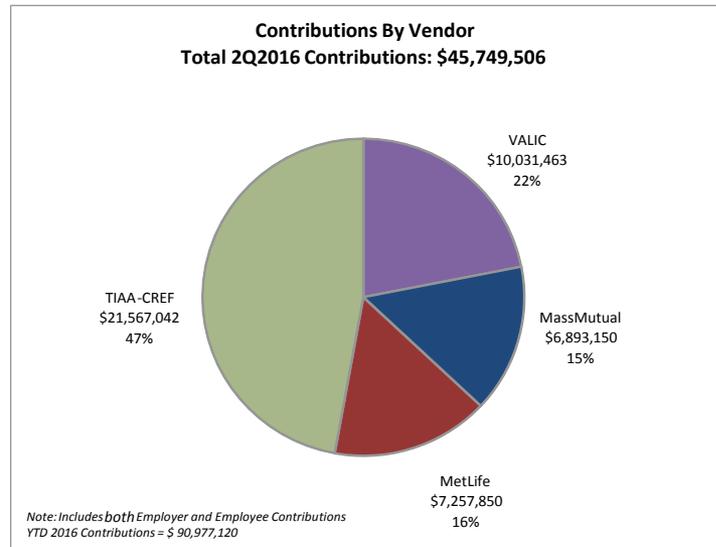
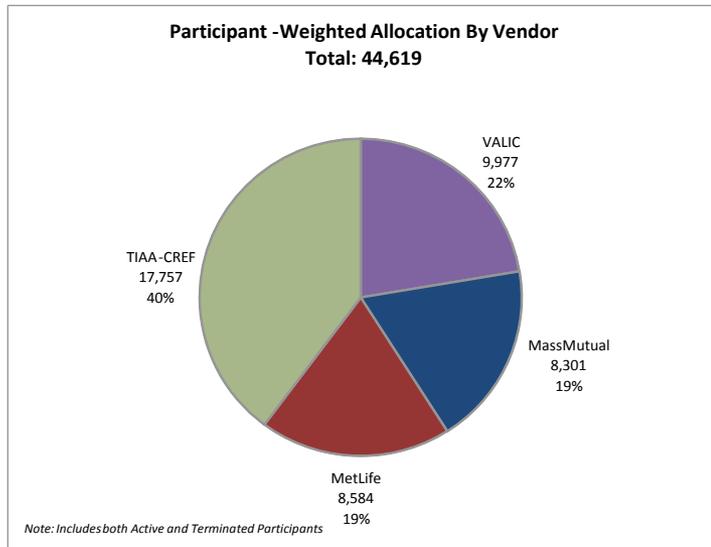
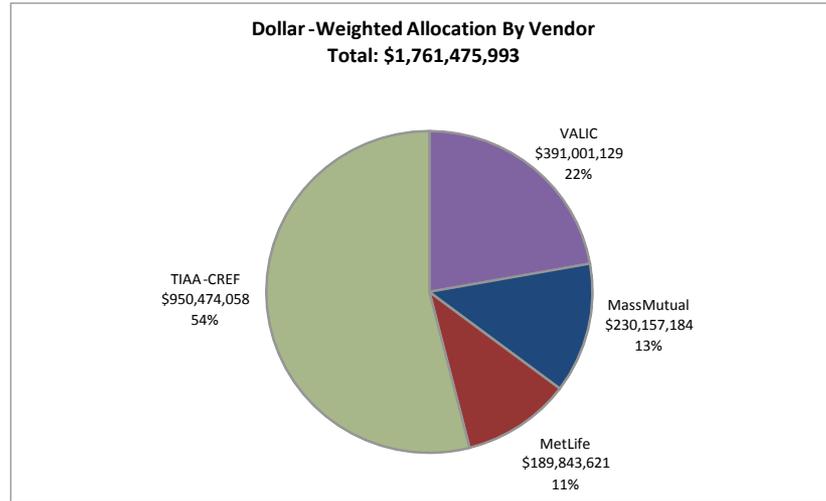
\*The Stable Value fund needs to outpace its benchmark over the 3-year period. The Index Fund and Age Based Funds need to replicate the benchmark over the periods measured.

\*The GTAA Fund needs to outpace its benchmark over the 3-year and 5-year period.

**Optional Retirement Plan**

TOTAL PLAN ALLOCATION

South Carolina ORP Total Plan Allocation  
As of June 30, 2016



LINE-UP COMPARISON

South Carolina ORP Fund Line-Up Comparison  
As Of June 30, 2016

Asset Class		MassMutual	MetLife	TIAA-CREF	VALIC
Domestic Equity	Large Core	Vanguard Institutional Index I (VINIX) (P)	Vanguard Institutional Index I (VINIX) (P)	TIAA-CREF Equity Index I (TIEIX) (P)	Vanguard Instl Index Inst (VINIX) (P)
	Large Value	MFS Value R5 (MEIKX)	JPMorgan Equity Income R6 (OIEJX)	T. Rowe Price Instl Large Cap Value (TILCX)	Vanguard Value Index I (VIVIX) (P)
	Large Growth	MassMutual Select Blue Chip Growth I (MBCZX)	ClearBridge Large Cap Growth I (SBLVX)	-	T. Rowe Price Instl Large Cap Growth (TRLGX)
	Mid/SMID	Vanguard Mid Cap Index Inst (VMCIX) (P)	Vanguard Mid Cap Index Inst (VMCIX) (P)	Vanguard Mid Cap Index Inst (VMCIX) (P)	Vanguard Mid Cap Index Inst (VMCIX) (P)
	Small Core	Vanguard Small Cap Index Inst (VSCIX) (P)	Delaware Small Cap Core (DCCIX)	TIAA-CREF Small Cap Index I (TISBX) (P)	Vanguard Small Cap Index Inst (VSCIX) (P)
	Small Value	American Beacon Small Cp Val Inst (AVFIX)	Victory Integrity Small-Cap Value R6 (MVSSX)	-	-
Small Growth	Invesco Small Cap Discovery R6 (VFSCX)	T. Rowe Price QM US Small-Cap Growth (PRDSX)	-	-	
International Equity	Large Core	-	-	CREF Stock Annuity	-
	Large Value	-	Causeway International Value I (CIVIX)	-	-
	Large Growth	Oppenheimer International Growth I (OIGIX)	-	American Funds EuroPacific Gr R6 (RERGX)	American Funds EuroPacific Gr R6 (RERGX)
	Emerging	Thornburg Developing World R6 (TDWRX)	Harding Loevner Instl EM I (HLMEX)	American Funds New World R6 (RNWGX)	Vanguard Emg Mkts Stock Index Adm (VEMAX) (P)
Fixed Income	Core	JPMorgan Core Bond R6 (JCBUX)	-	TIAA-CREF Bond Index I (TBIIX) (P)	Vanguard Total Bond Market Index I (VBTIX) (P)
	Core Plus	-	MetWest Total Return Bond Plan (MWTSX)	-	-
Inflation Hedge	TIPS / Real Assets	Vanguard Inflation-Protected Secs Adm (VAIPX)	PIMCO Real Return Inst (PRRIX)	CREF Inflation-Linked Bond Annuity	DFA Inflation-Protected Securities I (DIP SX)
Target Date / Balanced	Multi-Asset Class	T. Rowe Price Retirement / American Funds American Balanced R6 (RLBGX)	American Funds Trgt Date Retire R6 / Columbia Balanced Y (CBDYX)	TIAA-CREF Lifecycle Instl	Vanguard Target Retire Inv (P)
Cash & Equivalents	Money Market / Stable Value	General Fixed Interest Account	Vanguard Federal Money Market (VMFXX) / MetLife Gold Track Select	TIAA-CREF Money Market Instl (TCIXX) TIAA Traditional Annuity	VALIC Fixed Interest
Other	Industry Sector / Socially Responsible	Ivy Science and Technology R6 (ISTNX)	Principal Real Estate Securities I (PIREX)	CREF Real Estate Securities Fund Instl (TIREX) / CREF Social Choice Annuity	Vanguard Health Care Adm (VGHAX)

(P) = Passive Index Fund.  
CIT = Commingled investment trust.

## SUMMARY

### Action Items

- None
- The new plans were implemented during the second quarter.

### MassMutual

- Two funds are on the Watch List this quarter.
  - The Invesco Small Cap Discovery Fund is on the Watch List for the first time.
  - The Ivy Science & Technology Fund is also on the Watch List for the first time.

### MetLife

- One fund is on the Watch List this quarter.
  - The Causeway International Value Fund is on the Watch List for the first time.

### TIAA-CREF

- No funds are on the Watch List this quarter.

### VALIC

- No Funds are on the Watch List this quarter.

FUND MONITOR - MASSMUTUAL

Fund	Primary Benchmarks		Secondary Benchmarks		Other	# of Quarters on Watch List for		
	Excess Performance <sup>1</sup>	Peer Universe Rank <sup>2</sup>	Information Ratio Rank <sup>3</sup>	Sharpe Ratio Rank <sup>4</sup>		Status	Trailing 12 Quarters <sup>5</sup>	Change
<b>US Equity: Large Cap</b>								
Vanguard Institutional Index I (VINIX)	-	-	-	-	Pass	Good		
MFS Value R5 (MEIKX)	Pass	Pass	Pass	Pass	-	Good		
MassMutual Select Blue Chip Growth I (MBCZX)	Pass	Pass	Pass	Pass	-	Good		
<b>US Equity: Non-Large Cap</b>								
Vanguard Mid Cap Index I (VMCIX)	-	-	-	-	Pass	Good		
Vanguard Small Cap Index I (VSCIX)	-	-	-	-	Pass	Good		
American Beacon Small Cp Val Inst (AVFIX)	Pass	Pass	Pass	Pass	-	Good		
Invesco Small Cap Discovery R6 (VFSCX)	Fail	Fail	Fail	Fail	-	Watch List	1	
<b>International Equity</b>								
Oppenheimer International Growth I (OIGIX)	Pass	Pass	Pass	Pass	-	Good		
Thornburg Developing World R6 (TDWRX)	Pass	Pass	Fail	Fail	-	Good		
<b>Balanced Funds</b>								
American Funds American Balanced R6 (RLBGX)	Pass	Pass	Pass	Pass	-	Good		
T. Rowe Price Retirement Target-Date Suite*	-	-	-	-	Pass	Good		
<b>Sector Fund</b>								
Ivy Science and Technology R6 (ISTNX)	Fail	Fail	Fail	Fail	-	Watch List	1	
<b>Fixed Income</b>								
JPMorgan Core Bond R6 (JCBUX)	Fail	Pass	Pass	Pass	-	Good		
Vanguard Inflation-Protected Secs I (VIPIV)	Pass	Pass	Pass	Pass	-	Good		
<b>Stable Value</b>								
General Fixed Interest Account	-	-	-	-	Pass	Good		

Source: Lipper

**Methodology**

(P) Passive Funds

Other:

For Passive funds, Other is defined as tracking error commensurate with the asset class (domestic equity & fixed income less than or equal to .50%, International equity less than or equal to 2.00%).

For Insurance or Stable Value products, Other is defined as insurer's credit quality and competitiveness of rate of return.

For Target-Date funds, Other is defined as two out of the three one, three, and five-year peer ranks place the entire suite of funds in the top half of its applicable peer universe.

**Active Funds**

<sup>1</sup> Fund performance exceeds the return of the independent benchmark for at least two of the most recent one, three, and five-year trailing periods.

<sup>2</sup> Fund performance places it in the top half of its applicable peer universe for at least two of the most recent one, three, and five-year trailing periods.

<sup>3</sup> Information ratio places the fund in the top half of its applicable peer universe for at least two of the most recent one, three, and five-year trailing periods.

<sup>4</sup> Sharpe ratio places the fund in the top half of its applicable peer universe for at least two of the most recent one, three, and five-year trailing periods.

<sup>5</sup> Number represents the number of quarters (consecutive or non-consecutive) the fund has been on the watch list over the previous trailing 12 quarters.

\*Performance is limited for the Target Date Suite, as such an older share class was used as a proxy to measure performance.

FUND MONITOR - METLIFE

Fund	Primary Benchmarks		Secondary Benchmarks		Other	# of Quarters on Watch List for		
	Excess Performance <sup>1</sup>	Peer Universe Rank <sup>2</sup>	Information Ratio Rank <sup>3</sup>	Sharpe Ratio Rank <sup>4</sup>		Status	Trailing 12 Quarters <sup>5</sup>	Change
<b>US Equity: Large Cap</b>								
Vanguard Instl Index (VINIX)	-	-	-	-	Pass	Good		
JPMorgan Equity Income R6 (OIEJX)	Pass	Pass	Pass	Pass	-	Good		
ClearBridge Large Cap Growth I (SBLYX)	Pass	Pass	Pass	Pass	-	Good		
<b>US Equity: Non-Large Cap</b>								
Vanguard Mid Cap Index I (VMCIX)	-	-	-	-	Pass	Good		
Delaware Small Cap Core I (DCCIX)	Pass	Pass	Pass	Pass	-	Good		
Victory Integrity Small-Cap Value R6 (MVSSX)	Pass	Pass	Pass	Pass	-	Good		
T. Rowe Price QM US Small-Cap Gr Eq (PRDSX)	Pass	Pass	Pass	Pass	-	Good		
<b>International Equity</b>								
Causeway International Value Instl (CIVIX)	Fail	Pass	Fail	Fail	-	Watch List	1	
Harding Loevner Instl Emerg Mkts I (HLMEX)	Pass	Pass	Pass	Pass	-	Good		
<b>Balanced Funds</b>								
Columbia Balanced Y (CBDYX)	Pass	Pass	Pass	Pass	-	Good		
American Funds Target-Date Suite	-	-	-	-	Pass	Good		
<b>Sector Fund</b>								
Principal Real Estate Securities Inst (PIREX)	Pass	Pass	Pass	Pass	-	Good		
<b>Fixed Income</b>								
MetWest Total Return Bond Plan (MWT SX)	Pass	Pass	Pass	Pass	-	Good		
PIMCO Real Return Instl (PRRIX)	Fail	Pass	Pass	Pass	-	Good		
<b>Money Market/Stable Value</b>								
Vanguard Federal Money Market Inv (VMFXX)	-	-	-	-	-	-		
Metlife Gold Track Select	-	-	-	-	Pass	Good		

Source: Lipper

Methodology

(P) Passive Funds

Other:

For Passive funds, Other is defined as tracking error commensurate with the asset class (domestic equity & fixed income less than or equal to .50%, International equity less than or equal to 2.00%).

For Insurance or Stable Value products, Other is defined as insurer's credit quality and competitiveness of rate of return.

For Target-Date funds, Other is defined as two out of the three one, three, and five-year peer ranks place the entire suite of funds in the top half of its applicable peer universe.

Active Funds

<sup>1</sup> Fund performance exceeds the return of the independent benchmark for at least two of the most recent one, three, and five-year trailing periods.

<sup>2</sup> Fund performance places it in the top half of its applicable peer universe for at least two of the most recent one, three, and five-year trailing periods.

<sup>3</sup> Information ratio places the fund in the top half of its applicable peer universe for at least two of the most recent one, three, and five-year trailing periods.

<sup>4</sup> Sharpe ratio places the fund in the top half of its applicable peer universe for at least two of the most recent one, three, and five-year trailing periods.

<sup>5</sup> Number represents the number of quarters (consecutive or non-consecutive) the fund has been on the watch list over the previous trailing 12 quarters.

FUND MONITOR - TIAA-CREF

Fund	Primary Benchmarks		Secondary Benchmarks		Other	Status	# of Quarters on Watch List for Trailing 12 Quarters <sup>5</sup>	Change
	Excess Performance <sup>1</sup>	Peer Universe Rank <sup>2</sup>	Information Ratio Rank <sup>3</sup>	Sharpe Ratio Rank <sup>4</sup>				
<b>US Equity: Multi Cap</b> TIAA-CREF Equity Index I (TIEIX) (P)	-	-	-	-	Pass	Good		
<b>US Equity: Large Cap</b> T. Rowe Price Instl Large Cap Value (TILCX)	Pass	Pass	Pass	Pass	-	Good		
<b>US Equity: Non-Large Cap</b> Vanguard Mid Cap Index Inst (VMCIX) (P)	-	-	-	-	Pass	Good		
TIAA-CREF Small Cap Index I (TISBX) (P)	-	-	-	-	Pass	Good		
<b>International Equity</b> CREF Stock Annuity	Fail	Pass	Fail	Pass	-	Good		
Amer Funds EuroPacific Growth R6 (RERGX)	Pass	Pass	Pass	Pass	-	Good	1	
American Funds New World R6 (RNWGX)	Pass	Pass	Pass	Pass	-	Good		
<b>Balanced Funds</b> CREF Social Choice Annuity	Fail	Pass	Pass	Pass	-	Good		
TIAA-CREF Lifecycle Target-Date Suite	-	-	-	-	Pass	Good		
<b>Sector Fund</b> CREF Real Estate Securities Inst (TIREX)	Fail	Pass	Pass	Pass	-	Good		
<b>Fixed Income</b> TIAA-CREF Bond Index I (TBIIX) (P)	-	-	-	-	Pass	Good		
CREF Inflation-Linked Bond Annuity	Fail	Pass	Fail	Pass	-	Good	1	
<b>Money Market/Stable Value</b> TIAA-CREF Money Market I (TCIXX)	-	-	-	-	-	-		
TIAA Traditional Annuity	-	-	-	-	Pass	Good		

Source: Lipper

Methodology

(P) Passive Funds

Other:

For Passive funds, Other is defined as tracking error commensurate with the asset class (domestic equity & fixed income less than or equal to .50%, international equity less than or equal to 2.00%).

For Insurance or Stable Value products, Other is defined as insurer's credit quality and competitiveness of rate of return.

For Target-Date funds, Other is defined as two out of the three one, three, and five-year peer ranks place the entire suite of funds in the top half of its applicable peer universe.

Active Funds

<sup>1</sup>Fund performance exceeds the return of the independent benchmark for at least two of the most recent one, three, and five-year trailing periods.

<sup>2</sup>Fund performance places it in the top half of its applicable peer universe for at least two of the most recent one, three, and five-year trailing periods.

<sup>3</sup>Information ratio places the fund in the top half of its applicable peer universe for at least two of the most recent one, three, and five-year trailing periods.

<sup>4</sup>Sharpe ratio places the fund in the top half of its applicable peer universe for at least two of the most recent one, three, and five-year trailing periods.

<sup>5</sup>Number represents the number of quarters (consecutive or non-consecutive) the fund has been on the watch list over the previous trailing 12 quarters.

FUND MONITOR - VALIC

Fund	Primary Benchmarks		Secondary Benchmarks		Other	# of Quarters on Watch List for Trailing 12 Quarters <sup>5</sup>	Change
	Excess Performance <sup>1</sup>	Peer Universe Rank <sup>2</sup>	Information Ratio Rank <sup>3</sup>	Sharpe Ratio Rank <sup>4</sup>			
<b>US Equity: Large Cap</b>							
Vanguard Institutional Index Inst (VINIX) (P)	-	-	-	-	Pass	Good	
Vanguard Value Index Instl (VIVIX) (P)	-	-	-	-	Pass	Good	
T. Rowe Price Instl Large Cap Growth (TRLGX)	Fail	Pass	Pass	Pass	-	Good	
<b>US Equity: Non-Large Cap</b>							
Vanguard Mid Cap Index Inst (VMCIX) (P)	-	-	-	-	Pass	Good	
Vanguard Small Cap Index Inst (VSCIX) (P)	-	-	-	-	Pass	Good	
<b>International Equity</b>							
American Funds EuroPacific Growth R6 (REGX)	Pass	Pass	Pass	Pass	-	Good	
Vanguard Emerging Mkts Stock Index Adm (VEMAX) (P)	-	-	-	-	Pass	Good	
<b>Balanced Funds</b>							
Vanguard Retirement Target-Date Suite (P)	-	-	-	-	Pass	Good	
<b>Sector Fund</b>							
Vanguard Health Care Adm (VGHAX)	Pass	Pass	Pass	Pass	-	Good	
<b>Fixed Income</b>							
Vanguard Total Bond Market Index Instl (VBTIX) (P)	-	-	-	-	Pass	Good	
DFA Inflation Protected Sec I (DIPSX)	Pass	Pass	Pass	Pass	-	Good	
<b>Stable Value</b>							
VALIC Fixed Interest Option	-	-	-	-	Pass	Good	

Source: Lipper

Methodology

(P) Passive Funds

Other:

For Passive funds, Other is defined as tracking error commensurate with the asset class (domestic equity & fixed income less than or equal to .50%, International equity less than or equal to 2.00%).

For Insurance or Stable Value products, Other is defined as insurer's credit quality and competitiveness of rate of return.

For Target-Date funds, Other is defined as two out of the three one, three, and five-year peer ranks place the entire suite of funds in the top half of its applicable peer universe.

Active Funds

<sup>1</sup>Fund performance exceeds the return of the independent benchmark for at least two of the most recent one, three, and five-year trailing periods.

<sup>2</sup>Fund performance places it in the top half of its applicable peer universe for at least two of the most recent one, three, and five-year trailing periods.

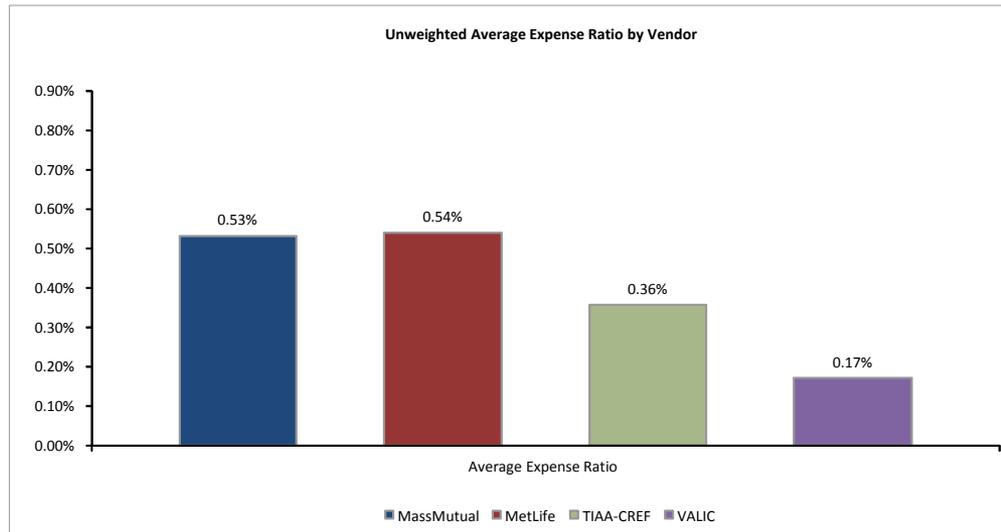
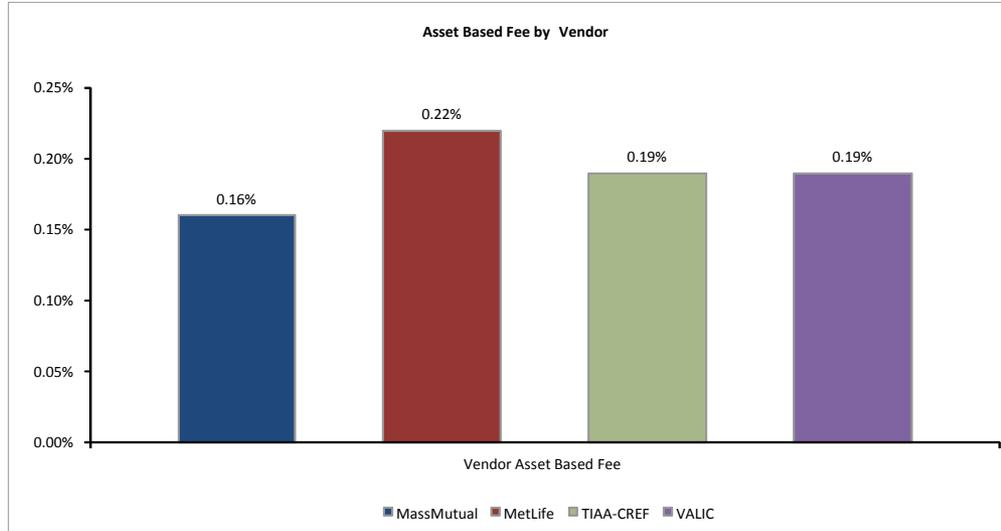
<sup>3</sup>Information ratio places the fund in the top half of its applicable peer universe for at least two of the most recent one, three, and five-year trailing periods.

<sup>4</sup>Sharpe ratio places the fund in the top half of its applicable peer universe for at least two of the most recent one, three, and five-year trailing periods.

<sup>5</sup>Number represents the number of quarters (consecutive or non-consecutive) the fund has been on the watch list over the previous trailing 12 quarters.

VENDOR FEE COMPARISON

Vendor Fee Comparison  
As of June 30, 2016



**Notes:**  
 Each vendor's asset based fee was changed when the ORP moved to a zero revenue share fee structure. MassMutual's 16 bps charge was previously 19 bps; MetLife's 22bps charge was 41 bps; VALIC's 19 bps was 23 bps and TIAA-CREF's new 19 bps charge was formerly 27 bps.  
 All vendor unweighted average expense ratios do not include fixed interest funds (which do not have an explicit expense ratios).

VENDOR MORNINGSTAR RATINGS

MassMutual					
Fund Name	Ticker	Three-Year	Five-Year	Ten-Year	Overall
American Beacon Small Cp Val Inst	AVFIX	4	4	3	4
American Funds American Balanced R6	RLBGX	5	5	5	5
Invesco Small Cap Discovery R6	VFSCX	3	3	3	3
Ivy Science and Technology R6	ISTNX	1	3	4	3
JPMorgan Core Bond R6	JCBUX	4	3	4	4
MassMutual Select Blue Chip Growth I	MB CZX	5	5	4	5
MFS Value R5	MEIKX	5	5	4	5
Oppenheimer International Growth I	OIGIX	3	4	5	3
T. Rowe Price Retirement I 2060 I	TRPLX	-	-	-	-
T. Rowe Price Retirement I 2055 I	TRPNX	-	-	-	-
T. Rowe Price Retirement I 2050 I	TRPMX	-	-	-	-
T. Rowe Price Retirement I 2045 I	TRPKX	-	-	-	-
T. Rowe Price Retirement I 2040 I	TRPDX	-	-	-	-
T. Rowe Price Retirement I 2035 I	TRPIX	-	-	-	-
T. Rowe Price Retirement I 2030 I	TRPCX	-	-	-	-
T. Rowe Price Retirement I 2025 I	TRPHX	-	-	-	-
T. Rowe Price Retirement I 2020 I	TRBRX	-	-	-	-
T. Rowe Price Retirement I 2015 I	TRFGX	-	-	-	-
T. Rowe Price Retirement I 2010 I	TRPAX	-	-	-	-
Thornburg Developing World R6	TDWRX	4	5	-	4
Vanguard Inflation-Protected Secs Adm	VAIPX	4	5	4	4
Vanguard Institutional Index I	VINIX	5	5	4	5
Vanguard Mid Cap Index I	VMCIX	5	5	4	5
Vanguard Small Cap Index I	VSCIX	4	4	4	4

TIAA-CREF					
Fund Name	Ticker	Three-Year	Five-Year	Ten-Year	Overall
American Funds Europacific Growth R6	REERG	4	3	4	3
American Funds New World R6	RNWGX	5	5	5	5
CREF Inflation-Linked Bond R3	QCILIX	3	3	3	3
CREF Social Choice R3	QCSCIX	4	4	3	4
CREF Stock R3	QCSTIX	2	2	2	2
T. Rowe Price Instl Large Cap Value	TILCX	4	4	4	4
TIAA-CREF Bond Index Institutional	TBIIX	4	3	-	3
TIAA-CREF Equity Index Instl	TIEIX	4	4	4	4
TIAA-CREF Lifecycle 2010 Instl	TCTIX	5	5	4	5
TIAA-CREF Lifecycle 2015 Instl	TCNIX	4	4	4	4
TIAA-CREF Lifecycle 2020 Instl	TCWIX	4	4	4	4
TIAA-CREF Lifecycle 2025 Instl	TCYIX	4	4	3	4
TIAA-CREF Lifecycle 2030 Instl	TCRIX	4	4	3	4
TIAA-CREF Lifecycle 2035 Instl	TCIIX	4	4	3	4
TIAA-CREF Lifecycle 2040 Instl	TCOIX	4	4	4	4
TIAA-CREF Lifecycle 2045 Instl	TTFIX	4	4	-	4
TIAA-CREF Lifecycle 2050 Instl	TFTIX	4	4	-	4
TIAA-CREF Lifecycle 2055 Instl	TTRIX	4	4	-	4
TIAA-CREF Lifecycle 2060 Institutional	TLXNX	-	-	-	-
TIAA-CREF Lifecycle Retire Inc Instl	TLRIX	5	5	-	5
TIAA-CREF Money Market Instl	TCIXX	-	-	-	-
TIAA-CREF Real Estate Sec Instl	TIREX	4	4	3	4
TIAA-CREF Small-Cap Blend Idx Inst	TISBX	3	3	3	3
Vanguard Mid Cap Index I	VMCIX	5	5	4	5

MetLife					
Fund Name	Ticker	Three-Year	Five-Year	Ten-Year	Overall
American Funds 2010 TD Retire R6	RFTTX	5	5	-	5
American Funds 2015 TD Retire R6	RFJTX	5	5	-	5
American Funds 2020 TD Retire R6	RRCTX	5	5	-	5
American Funds 2025 TD Retire R6	RFDTX	5	5	-	5
American Funds 2030 TD Retire R6	RFETX	5	5	-	5
American Funds 2035 TD Retire R6	RFFTX	5	5	-	5
American Funds 2040 TD Retire R6	RFGTX	5	5	-	5
American Funds 2045 TD Retire R6	RFHTX	5	5	-	5
American Funds 2050 TD Retire R6	RFITX	5	5	-	5
American Funds 2055 TD Retire R6	RFKTX	5	5	-	5
American Funds 2060 TD Retire R6	RFUTX	-	-	-	-
Causeway International Value Instl	CIVIX	2	3	3	3
ClearBridge Large Cap Growth I	SBLYX	5	5	5	5
Columbia Balanced Y	CBDYX	5	5	5	5
Delaware Small Cap Core I	DCCIX	4	4	4	4
Harding Loevner Instl Emerg Mkts I	HLMEX	4	5	4	4
JPMorgan Equity Income R6	OIEIX	4	5	5	4
MetWest Total Return Bond Plan	MWTSX	4	5	5	5
PIMCO Real Return Instl	PRRIX	4	4	5	5
Principal Real Estate Securities Inst	PIREX	5	5	5	5
T. Rowe Price QM US Small-Cap Gr Eq	PRDSX	5	5	5	5
Vanguard Federal Money Market Inv	VMFXX	-	-	-	-
Vanguard Institutional Index I	VINIX	5	5	4	5
Vanguard Mid Cap Index I	VMCIX	5	5	4	5
Victory Integrity Small-Cap Value R6	MVSSX	3	4	4	3

VALIC					
Fund Name	Ticker	Three-Year	Five-Year	Ten-Year	Overall
American Funds Europacific Growth R6	REERG	4	3	4	3
DFA Inflation-Protected Securities I	DIPSX	4	5	-	5
T. Rowe Price Instl Large Cap Growth	TRLGX	4	4	4	4
Vanguard Emerging Mkts Stock Idx Adm	VEMAX	3	3	3	3
Vanguard Health Care Adm	VGHAX	5	4	4	4
Vanguard Institutional Index I	VINIX	5	5	4	5
Vanguard Mid Cap Index I	VMCIX	5	5	4	5
Vanguard Small Cap Index I	VSCIX	4	4	4	4
Vanguard Target Retirement 2010 Inv	VTENX	4	4	5	5
Vanguard Target Retirement 2015 Inv	VTXVX	5	4	4	4
Vanguard Target Retirement 2020 Inv	VTWNX	5	5	5	5
Vanguard Target Retirement 2025 Inv	VTTVX	5	4	4	4
Vanguard Target Retirement 2030 Inv	VTHRX	5	4	4	4
Vanguard Target Retirement 2035 Inv	VTTX	5	4	4	4
Vanguard Target Retirement 2040 Inv	VFORX	4	4	4	4
Vanguard Target Retirement 2045 Inv	VTVIX	4	4	3	4
Vanguard Target Retirement 2050 Inv	VFIFX	4	4	4	4
Vanguard Target Retirement 2055 Inv	VFFVX	4	4	-	4
Vanguard Target Retirement 2060 Inv	VTTSX	-	-	-	-
Vanguard Target Retirement Income Inv	VTINX	4	4	5	5
Vanguard Total Bond Market Index I	VBTIX	4	3	3	3
Vanguard Value Index I	VIVIX	4	4	4	4

FUND LINE-UP STATISTICS - MASSMUTUAL

Fund	Ticker	Net Expense Ratio (%)	5-Year Sharpe Ratio <sup>1</sup>	5-Year Standard Deviation (%)	Total Return (%)			Total Return Percentile Rank <sup>2</sup>	
					1 Year	3 Year	5 Year	5-Year Summit Peer Group	5-Year Morningstar Peer Group
<b>Domestic Equity</b>									
Vanguard Institutional Index I (P)	VINIX	0.04	1.00	12.10	3.97	11.63	12.07	12	9
MFS Value R5	MEIKX	0.51	0.96	12.66	4.97	11.11	12.03	4	5
MassMutual Select Blue Chip Growth I <sup>3</sup>	MBCZX	0.67	0.93	14.51	1.75	13.93	13.33	4	2
Vanguard Mid Cap Index I (P)	VMCIX	0.07	0.79	13.94	-0.89	10.78	10.57	9	9
Vanguard Small Cap Index I (P)	VSCIX	0.07	0.68	15.60	-2.88	8.95	9.91	18	16
American Beacon Small Cap Value Instl	AVFIX	0.82	0.60	16.57	-4.35	7.40	8.96	19	24
Invesco Small Cap Discovery R6 <sup>3</sup>	VFSCX	0.86	0.48	16.72	-13.48	6.38	6.96	61	58
<b>International Equity</b>									
Oppenheimer International Growth I <sup>3</sup>	OIGIX	0.70	0.37	14.47	-5.41	3.68	4.49	3	15
Thornburg Developing World R6 <sup>3</sup>	TDWRX	0.99	0.09	17.09	-9.46	-1.25	0.19	8	8
<b>Balanced</b>									
American Funds American Balanced R6	RLBGX	0.29	1.19	8.36	6.61	9.35	10.12	1	1
<b>Target Date</b>									
T. Rowe Price Retirement I 2060 I	TRPLX	0.65	-	-	-	-	-	-	-
T. Rowe Price Retirement I 2055 I	TRPNX	0.65	-	-	-	-	-	-	-
T. Rowe Price Retirement I 2050 I	TRPMX	0.65	-	-	-	-	-	-	-
T. Rowe Price Retirement I 2045 I	TRPKX	0.65	-	-	-	-	-	-	-
T. Rowe Price Retirement I 2040 I	TRPDX	0.63	-	-	-	-	-	-	-
T. Rowe Price Retirement I 2035 I	TRPJX	0.61	-	-	-	-	-	-	-
T. Rowe Price Retirement I 2030 I	TRPCX	0.58	-	-	-	-	-	-	-
T. Rowe Price Retirement I 2025 I	TRPHX	0.55	-	-	-	-	-	-	-
T. Rowe Price Retirement I 2020 I	TRBRX	0.52	-	-	-	-	-	-	-
T. Rowe Price Retirement I 2015 I	TRFGX	0.50	-	-	-	-	-	-	-
T. Rowe Price Retirement I 2010 I	TRPAX	0.49	-	-	-	-	-	-	-
<b>Specialty</b>									
Ivy Science & Technology R6 <sup>3</sup>	ISTNX	0.83	0.64	15.72	-15.20	5.15	9.23	45	60
<b>Fixed Income</b>									
JPMorgan Core Bond R6	JCBUX	0.35	1.54	2.49	5.91	3.97	3.93	28	34
Vanguard Inflation-Protected Securities Adm	VAIPX	0.10	0.52	5.13	4.62	2.38	2.65	6	4
<b>Stable Value</b>									
General Fixed Interest	N/A	-	-	-	3.00	3.00	3.00	-	-

<sup>1</sup>Higher number is better

<sup>2</sup>Lower number is better

<sup>3</sup>A hybrid was created with longer dated share classes to capture 5-year performance and risk metrics.

## State of South Carolina Defined Contribution Plans

### FUND LINE-UP STATISTICS - METLIFE

Fund	Ticker	Net Expense Ratio (%)	5-Year Sharpe Ratio <sup>1</sup>	5-Year Standard Deviation (%)	Total Return (%)			Total Return Percentile Rank <sup>2</sup>	
					1 Year	3 Year	5 Year	5-Year Lipper Peer Group	5-Year Morningstar Peer Group
<b>Domestic Equity</b>									
Vanguard Institutional Index I (P)	VINIX	0.04	1.00	12.10	3.97	11.63	12.07	12	9
JPMorgan Equity Income R6 <sup>3</sup>	OIEJX	0.50	1.10	10.95	4.98	10.53	12.15	4	4
ClearBridge Large Cap Growth I	SBLYX	0.81	1.13	12.73	4.68	14.38	14.54	1	1
Vanguard Mid Cap Index I (P)	VMCIX	0.07	0.79	13.94	-0.89	10.78	10.57	9	9
Delaware Small Cap Core I	DCCIX	1.02	0.68	16.14	-4.53	9.85	10.27	13	10
Victory Integrity Small-Cap Value R6 <sup>3</sup>	MVSSX	1.01	0.60	16.24	-6.41	6.82	8.84	19	27
T. Rowe Price Diversified Small Cap Growth	PRDSX	0.82	0.72	16.16	-4.96	11.09	10.87	5	5
<b>International Equity</b>									
Causeway International Value Instl	CIVIX	0.90	0.19	15.64	-13.15	0.73	1.90	26	27
Harding Loevner Instl Emerging Markets I	HMEX	1.30	0.09	17.27	-6.07	1.39	0.21	9	7
<b>Balanced</b>									
Columbia Balanced Y <sup>3</sup>	CBDYX	0.65	1.14	8.16	3.33	9.10	9.41	1	3
<b>Target Date</b>									
American Funds 2060 Trgt Date Retire R6	RFUTX	0.47	-	-	0.41	-	-	-	-
American Funds 2055 Trgt Date Retire R6	RFKTX	0.47	0.81	11.09	0.36	8.61	8.74	1	1
American Funds 2050 Trgt Date Retire R6	RFITX	0.44	0.81	11.07	0.31	8.65	8.74	1	1
American Funds 2045 Trgt Date Retire R6	RFHTX	0.44	0.81	11.02	0.30	8.63	8.73	1	1
American Funds 2040 Trgt Date Retire R6	RF GTX	0.42	0.81	10.97	0.41	8.61	8.73	1	1
American Funds 2035 Trgt Date Retire R6	RFFTX	0.42	0.82	10.75	0.67	8.59	8.69	1	1
American Funds 2030 Trgt Date Retire R6	RFETX	0.41	0.85	10.39	1.34	8.62	8.75	1	1
American Funds 2025 Trgt Date Retire R6	RFDTX	0.40	0.90	9.40	2.70	8.29	8.45	1	1
American Funds 2020 Trgt Date Retire R6	RRCTX	0.37	0.98	7.77	3.46	7.57	7.64	1	1
American Funds 2015 Trgt Date Retire R6	RFJTX	0.36	1.05	6.74	4.19	7.08	7.13	1	1
American Funds 2010 Trgt Date Retire R6	RFTTX	0.36	1.1	5.96	4.34	6.47	6.64	1	1
<b>Specialty</b>									
Principal Real Estate Securities Instl	PIREX	0.89	0.82	16.44	22.72	14.69	12.93	5	5
<b>Fixed Income</b>									
Metropolitan West Total Return Bond Plan <sup>3</sup>	MWTSX	0.38	1.81	2.65	4.76	4.20	4.97	8	5
PIMCO Real Return Instl	PRRIX	0.45	0.43	5.65	3.31	1.86	2.36	14	10
<b>MMF/Stable Value</b>									
Vanguard Federal Money Market Inv	VMFXX	0.11	-2.89	0.03	0.18	0.07	0.04	19	-
Gold Track Select	N/A	-	-	-	0.03	0.03	0.03	-	-

<sup>1</sup>Higher number is better

<sup>2</sup>Lower number is better

<sup>3</sup>A hybrid was created to capture 5-year performance and risk metrics.

FUND LINE-UP STATISTICS - TIAA-CREF

Fund	Ticker	Net Expense Ratio (%)	5-Year Sharpe Ratio <sup>1</sup>	5-Year Standard Deviation (%)	Total Return (%)			Total Return Percentile Rank <sup>2</sup>	
					1 Year	3 Year	5 Year	5-Year Summit Peer Group	5-Year Morningstar Peer Group
<b>Domestic Equity</b>									
TIAA-CREF Equity Index Instl (P)	TIEIX	0.05	0.93	12.54	2.15	11.09	11.57	12	19
T. Rowe Large Cap Value I	TILCX	0.57	0.87	13.15	3.24	9.89	11.23	11	14
Vanguard Mid Cap Index I (P)	VMCIX	0.07	0.79	13.94	-0.89	10.78	10.57	9	9
TIAA-CREF Small-Cap Blend Index Instl (P) <sup>3</sup>	TISBX	0.06	0.58	16.56	-6.71	7.09	8.34	51	39
<b>International Equity</b>									
CREF Stock Annuity R3	QCSTIX	0.38	0.62	13.26	-2.60	7.86	7.71	18	89
American Funds Europacific Growth R6 <sup>3</sup>	RENGX	0.50	0.24	14.28	-9.60	3.72	2.45	22	45
American Funds New World R6	RNWXG	0.65	0.13	14.39	-6.02	1.58	0.95	4	3
<b>Balanced</b>									
CREF Social Choice Annuity R3	QCSCIX	0.32	0.9	7.51	1.95	6.28	6.75	22	37
<b>Target Date<sup>3</sup></b>									
TIAA-CREF Lifecycle 2060 Instl	TLXNX	0.44	-	-	-2.96	-	-	-	-
TIAA-CREF Lifecycle 2055 Instl	TTRIX	0.44	0.63	12.56	-3.20	6.97	7.22	37	23
TIAA-CREF Lifecycle 2050 Instl	TFTIX	0.44	0.63	12.53	-3.19	6.99	7.20	28	18
TIAA-CREF Lifecycle 2045 Instl	TTFIX	0.44	0.63	12.54	-3.20	6.96	7.19	25	18
TIAA-CREF Lifecycle 2040 Instl	TCOIX	0.44	0.63	12.51	-3.22	7.01	7.20	19	12
TIAA-CREF Lifecycle 2035 Instl	TCIIX	0.43	0.64	11.96	-2.41	6.94	7.05	24	13
TIAA-CREF Lifecycle 2030 Instl	TCRIX	0.42	0.68	10.90	-1.64	6.73	6.84	17	11
TIAA-CREF Lifecycle 2025 Instl	TCYIX	0.41	0.72	9.81	-0.87	6.44	6.58	21	12
TIAA-CREF Lifecycle 2020 Instl	TCWIX	0.39	0.76	8.71	0.00	6.19	6.29	11	8
TIAA-CREF Lifecycle 2015 Instl	TCNIX	0.38	0.81	7.69	0.50	5.78	5.89	24	12
TIAA-CREF Lifecycle 2010 Instl	TCTIX	0.37	0.85	6.88	0.91	5.45	5.60	18	11
TIAA-CREF Lifecycle Retirement Inc Instl	TLRIX	0.36	0.92	5.96	1.29	5.07	5.27	8	3
<b>Specialty</b>									
TIAA-CREF Real Estate Sec Instl	TIREX	0.51	0.78	15.55	19.35	12.79	11.56	43	43
<b>Fixed Income</b>									
TIAA-CREF Bond Index Instl (P)	TBIIX	0.12	1.24	2.85	5.99	3.98	3.63	5	53
CREF Inflation Linked Bond Annuity R3	QCILIX	0.28	0.44	4.96	3.51	1.78	2.13	22	20
<b>MMF/Stable Value</b>									
TIAA-CREF Money Market Instl	TCIXX	0.14	-2.87	0.03	0.17	0.06	0.05	17	-
TIAA Traditional	N/A	-	-	-	3.97	3.73	3.50	-	-

<sup>1</sup>Higher number is better

<sup>2</sup>Lower number is better

<sup>3</sup>A hybrid was created to capture 5-year performance and risk metrics.

FUND LINE-UP STATISTICS - VALIC

Fund	Ticker	Net Expense Ratio (%)	5-Year Sharpe Ratio <sup>1</sup>	5-Year Standard Deviation (%)	Total Return (%)			Total Return Percentile Rank <sup>2</sup>	
					1 Year	3 Year	5 Year	5-Year Summit Peer Group	5-Year Morningstar Peer Group
<b>Domestic Equity</b>									
Vanguard Institutional Index I (P)	VINIX	0.04	1.00	12.10	3.97	11.63	12.07	12	9
Vanguard Value Index I (P)	VIVIX	0.07	0.97	11.98	4.63	10.56	11.52	7	10
T. Rowe Price Instl Large Cap Growth	TRLGX	0.56	0.83	15.22	-3.14	12.63	12.26	13	9
Vanguard Mid Cap Index I (P)	VMCIX	0.07	0.79	13.94	-0.89	10.78	10.57	9	9
Vanguard Small Cap Index I (P)	VSCIX	0.07	0.68	15.60	-2.88	8.95	9.91	18	16
<b>International Equity</b>									
American Funds Europacific Growth R6	RERGX	0.50	0.24	14.28	-9.57	3.76	2.50	20	45
Vanguard Emg Mkts Stock Index Adm (P) <sup>3</sup>	VEMAX	0.15	-0.10	19.11	-12.11	-0.75	-3.53	53	54
<b>Target Date</b>									
Vanguard Target Retirement 2060 Inv	VTTSX	0.16	-	-	-1.56	7.47	-	-	-
Vanguard Target Retirement 2055 Inv	VFFVX	0.16	0.68	11.64	-1.57	7.47	7.58	23	19
Vanguard Target Retirement 2050 Inv	VFIFX	0.16	0.68	11.65	-1.48	7.52	7.56	14	14
Vanguard Target Retirement 2045 Inv	VTIVX	0.16	0.68	11.66	-1.51	7.50	7.56	15	13
Vanguard Target Retirement 2040 Inv	VFORX	0.16	0.68	11.63	-1.44	7.54	7.57	12	11
Vanguard Target Retirement 2035 Inv	VTTHX	0.15	0.7	11.05	-0.67	7.50	7.44	13	12
Vanguard Target Retirement 2030 Inv	VTHRX	0.15	0.74	10.05	0.11	7.27	7.21	9	9
Vanguard Target Retirement 2025 Inv	VTTVX	0.15	0.78	9.05	0.81	7.04	6.95	11	10
Vanguard Target Retirement 2020 Inv	VTWNX	0.14	0.83	8.06	1.44	6.76	6.67	5	5
Vanguard Target Retirement 2015 Inv	VTXVX	0.14	0.89	6.91	1.98	6.22	6.17	11	11
Vanguard Target Retirement 2010 Inv	VTENX	0.14	1.01	5.44	2.91	5.53	5.55	19	19
Vanguard Target Retirement Income Inv	VTINX	0.14	1.17	4.18	3.28	4.93	4.98	14	13
<b>Specialty</b>									
Vanguard Health Care Adm	VGHAX	0.31	1.45	11.47	-4.83	18.42	17.34	31	31
<b>Fixed Income</b>									
Vanguard Total Bond Market Index I (P)	VBTIX	0.05	1.27	2.88	6.13	4.04	3.74	3	47
DFA Inflation-Protected Securities I	DIPSX	0.12	0.51	5.55	4.80	2.52	2.76	3	2
<b>MMF/Stable Value</b>									
VALIC Fixed Interest Option	N/A	-	-	-	2.80	2.93	2.98	-	-

<sup>1</sup>Higher number is better

<sup>2</sup>Lower number is better

<sup>3</sup>A hybrid was created to capture 5-year performance and risk metrics.



Date: June 2016

From: Summit Strategies Group, Defined Contribution Services

Subject: Deferred Compensation Program, T. Rowe Price Mid Cap Value Fund

Summit Strategies Group evaluated the T. Rowe Price Mid Cap Value Fund (TRMCX) earlier this year and determined that relative performance and the current market environment warranted its place in the Deferred Compensation Program's line-up. During Summit's review, the cheaper Institutional share class was discovered (TRMIX) which shares zero revenue. Summit recommended the State of South Carolina consider this option.

#### **Background**

- With the current option priced at 80 bps, participants are being rebated 15 bps of revenue share resulting in a net expense of 65 bps.
- At the time of Summit's review the Institutional share class was priced at 65 bps, providing participants with the same net expense while avoiding the administrative complexities of collecting and rebating fees.
- When Summit initiated the share class conversion process it noticed that T. Rowe Price had updated its prospectus, dated May 2016. As a result, the fund's net expense ratio changed from 65 to 68 bps.
  - The new expense ratio is 3 bps higher than the current No Load share class after rebates.

#### **Considerations**

- While the existing share class is technically 3 bps less, Summit believes that a move to the Institutional share class is appropriate for the following reasons:
  - A move to the Institutional share class option avoids the complexity of collecting and rebating back fees. Also, participants who exit the plan may not receive the rebate and benefit more from paying lower fees up front.
  - Performance will be better. The current No Load option is evaluated using an expense ratio of 80 bps, not 65. The Institutional share class will rank more competitively as performance reflects a lower fee.
  - With the No Load option, participants see, and initially pay, an 80 bps expense ratio. Although participants are rebated the 15 bps, they still see the expense listed as 80 bps. Optically, the 68 bps expense ratio of the Institutional share class is viewed as cheaper.

#### **Conclusion**

Summit recommends moving to the Institutional share class to reduce operational complexities related to the rebate of revenue share, boost rankings as performance will reflect the lower fee, and change the optics so that the new fund is viewed as cheaper.