

NORTH CAROLINA  
DEPARTMENT OF STATE TREASURER



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STATE TREASURER OF NORTH CAROLINA  
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INVESTMENT MANAGEMENT DIVISION

# Performance Review

November 16, 2017



## Cost-Efficiencies Initiative Update

- Goal:
  - Obtain \$100 million of incremental cost-efficiencies for the NCRS investment program, consistent with fiduciary requirements and investment objectives
  - The \$100 million goal would be measured on a cumulative basis over a four-year timeframe
  - The goal is comprehensive of the Pension and Supplemental Retirement Plans
- Progress to date:

### **Fully Executed Activities**

Investment-related services: renegotiations / restructuring

Investment manager terminations / renegotiations

**Sub-Total**

### **Approx. Annual Savings (\$000)**

\$3,181

\$57,114

**\$60,295**

### **In Process**

Investment manager & services renegotiations / restructuring

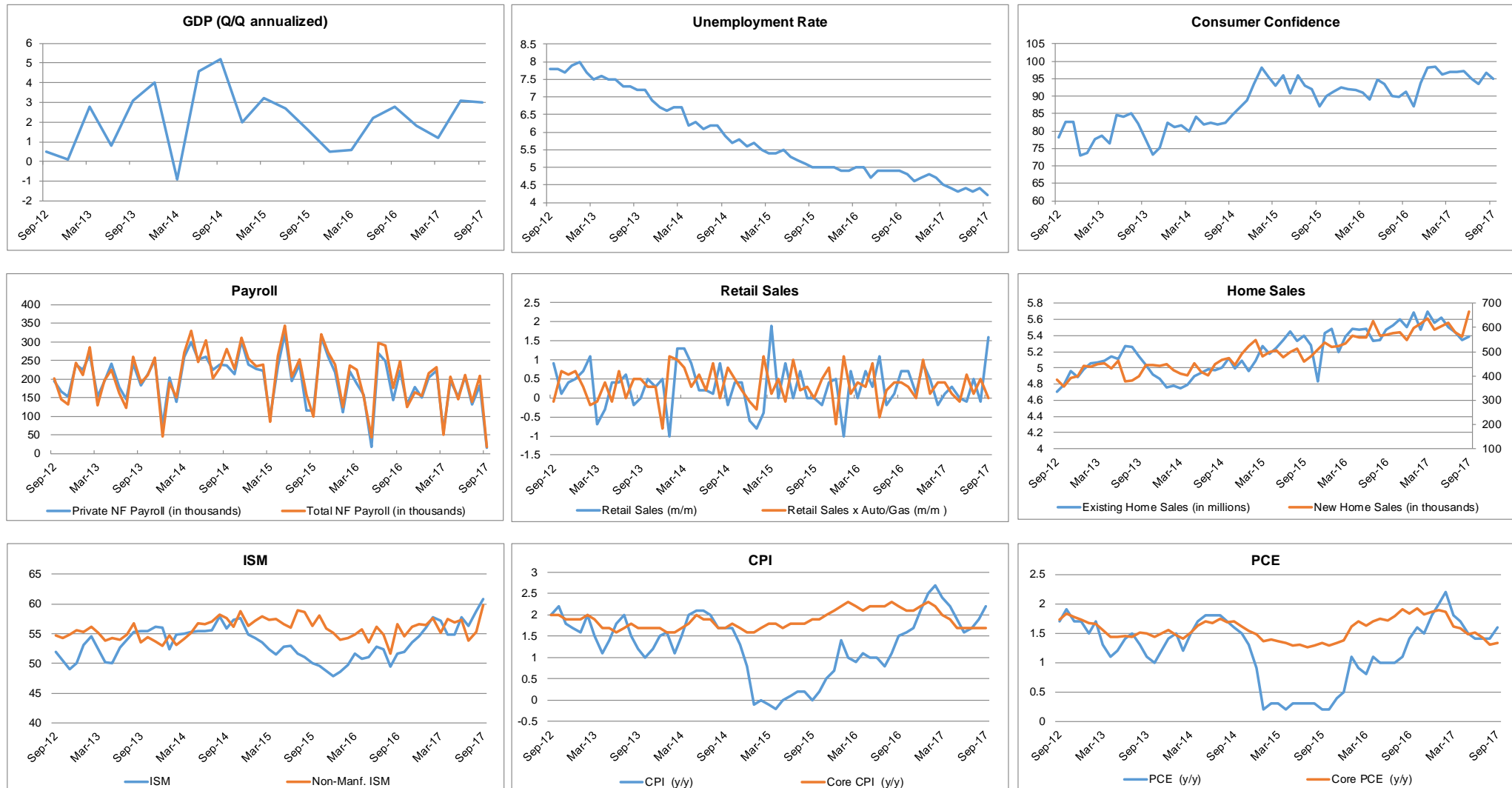
\$7,506

**Grand Total**

**\$67,801**



# US Economic Environment





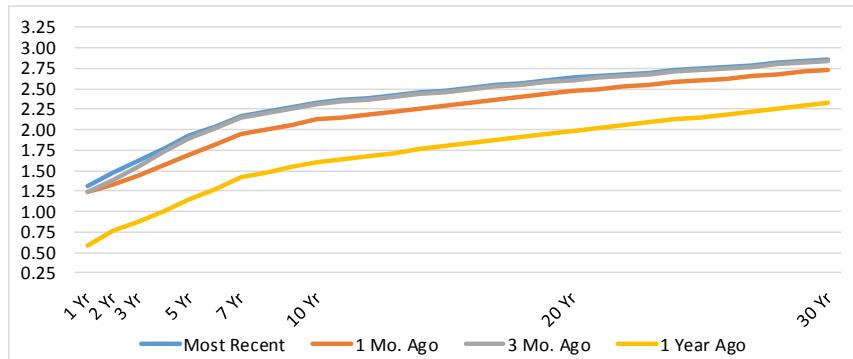
# Global Economic Environment

| Countries     | Real GDP YoY |       | Unemployment |       | CPI YoY |       | Countries                 | Real GDP YoY |       | Unemployment |       | CPI YoY |       |
|---------------|--------------|-------|--------------|-------|---------|-------|---------------------------|--------------|-------|--------------|-------|---------|-------|
|               | Date         | Value | Date         | Value | Date    | Value |                           | Date         | Value | Date         | Value | Date    | Value |
| <b>U.S.</b>   | 09/17        | 2.3   | 09/17        | 4.2   | 09/17   | 2.2   | <b>Asia/Pacific/Latam</b> |              |       |              |       |         |       |
| <b>Europe</b> |              |       |              |       |         |       | China                     | 09/17        | 6.8   |              |       | 09/17   | 1.6   |
| Germany       | 06/17        | 2.1   | 09/17        | 5.6   | 09/17   | 1.8   | India                     | 06/17        | 5.7   |              |       | 09/17   | 2.9   |
| France        | 09/17        | 2.2   | 09/17        | 9.7   | 09/17   | 1.0   | Japan                     | 06/17        | 1.4   | 09/17        | 2.8   | 09/17   | 0.7   |
| U.K.          | 09/17        | 1.5   | 08/17        | 4.3   | 09/17   | 3.0   | Indonesia                 | 09/17        | 5.1   |              |       | 09/17   | 3.7   |
| Italy         | 06/17        | 1.5   | 09/17        | 11.1  | 09/17   | 1.1   | Brazil                    | 06/17        | 0.3   |              |       | 09/17   | 2.5   |
| Spain         | 09/17        | 3.1   | 09/17        | 16.7  | 09/17   | 1.8   | Australia                 | 06/17        | 1.8   | 09/17        | 5.5   | 09/17   | 1.8   |

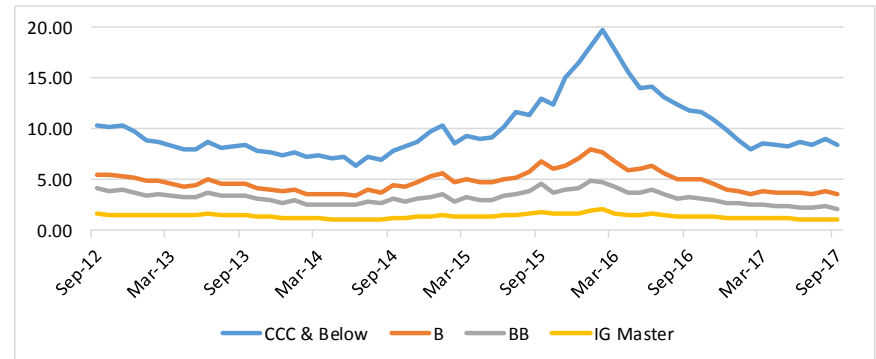


## Market Environment

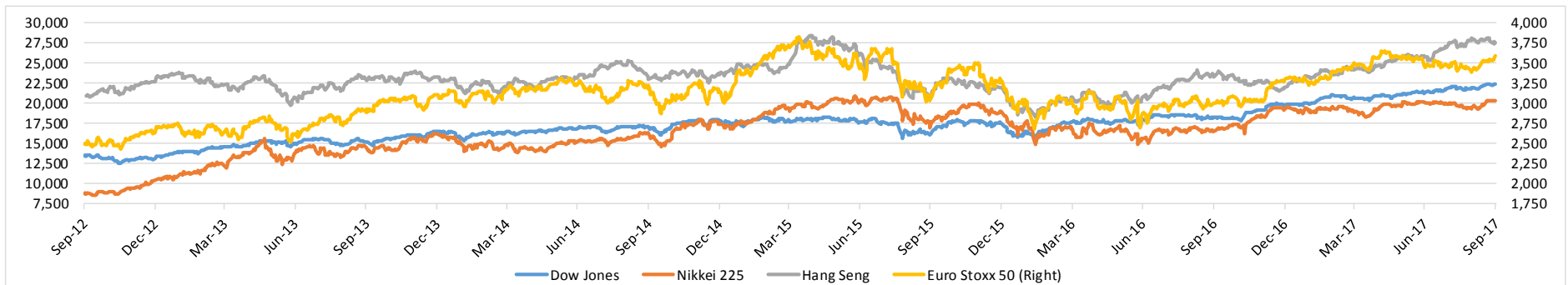
UST (Constant Maturity) Curve



Corporate Credit OAS (BofAML Indices)



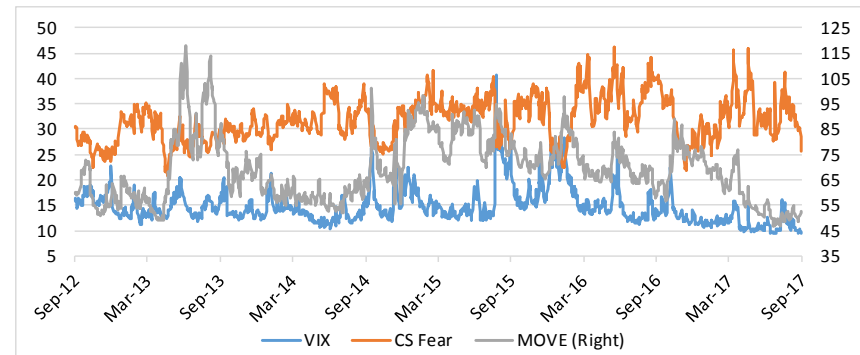
Global Equity Markets



US Dollar Trade Weighted Broad Index

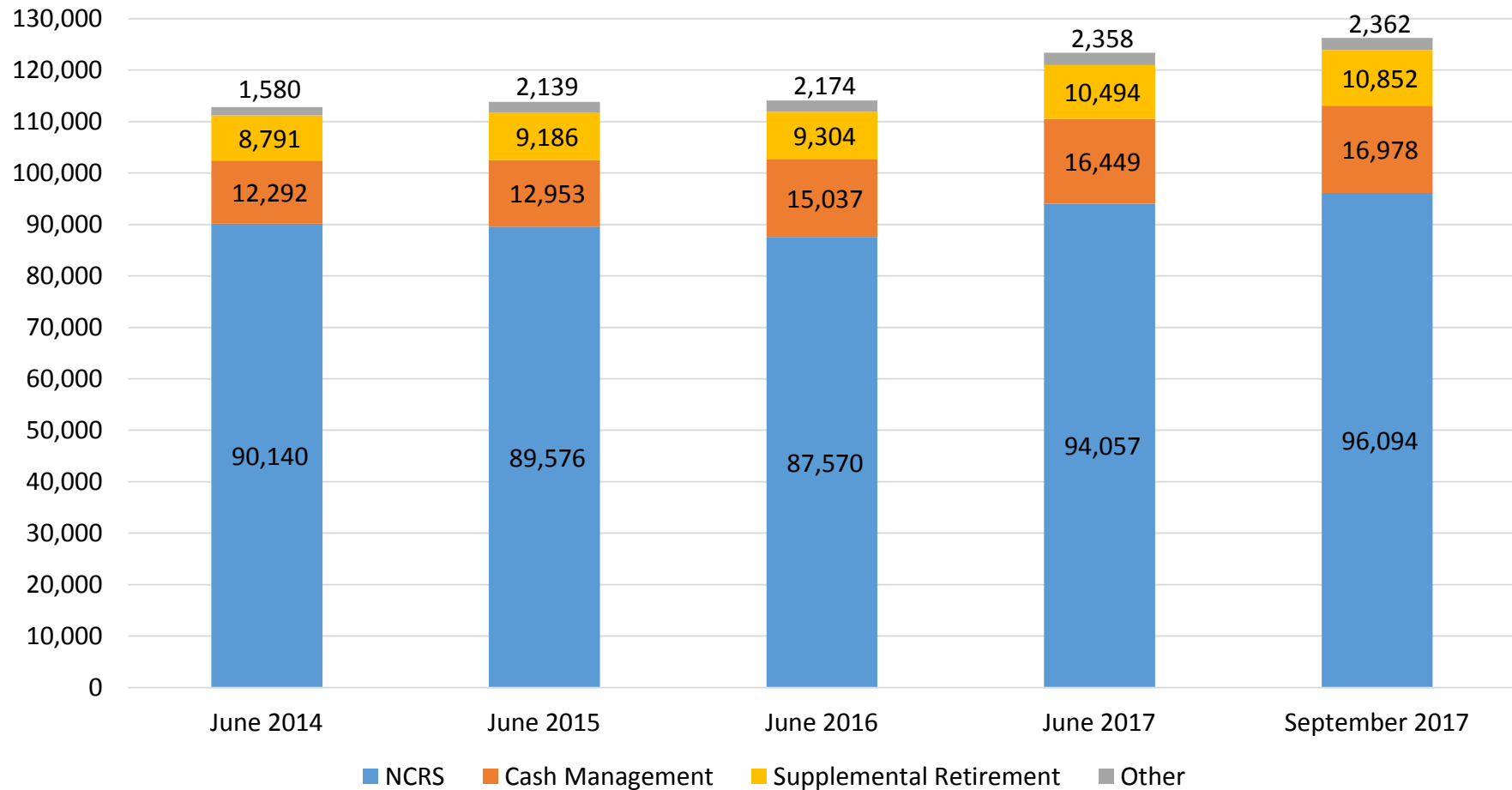


Volatility Indicators



## Assets Under Management (\$MM)

\$126.3 Billion as of September 30, 2017



Note: The Cash Management Program does not include Assets with Fiscal Agent which are reflected in the Bond Proceeds Fund. These funds which may have been reported in the Cash Management Program previously have now been removed for all years shown in this report to more accurately reflect the Cash Management Program balance.

## NCRS Asset Allocation

As of September 30, 2017

|                                               | Market Value<br>(\$MM) | %              | Target        | Range         |               | Relative %    | Relative \$<br>(\$MM) |
|-----------------------------------------------|------------------------|----------------|---------------|---------------|---------------|---------------|-----------------------|
|                                               |                        |                |               | Minimum       | Maximum       |               |                       |
| <b>Growth</b>                                 | <b>\$50,980</b>        | <b>53.05%</b>  | <b>58.00%</b> | <b>37.00%</b> | <b>71.00%</b> | <b>-4.95%</b> | <b>(\$4,754)</b>      |
| Public Equity                                 | 37,156                 | 38.67%         | 42.00%        | 37.00%        | 47.00%        | -3.33%        | (3,203)               |
| Private Equity                                | 4,892                  | 5.09%          | 6.00%         | 0.00%         | 8.75%         | -0.91%        | (874)                 |
| Non Core Real Estate                          | 3,447                  | 3.59%          | 3.00%         | 0.00%         | 8.00%         | 0.59%         | 564                   |
| Opportunistic Fixed Income                    | 5,485                  | 5.71%          | 7.00%         | 0.00%         | 7.50%         | -1.29%        | (1,242)               |
| <b>Rates &amp; Liquidity</b>                  | <b>32,148</b>          | <b>33.45%</b>  | <b>29.00%</b> | <b>24.00%</b> | <b>42.00%</b> | <b>4.45%</b>  | <b>4,281</b>          |
| IG Fixed Income & Cash                        | 28,628                 | 29.79%         | 28.00%        | 24.00%        | 32.00%        | 1.79%         | 1,722                 |
| Pension Cash                                  | 3,520                  | 3.66%          | 1.00%         | 0.00%         | 10.00%        | 2.66%         | 2,559                 |
| <b>Inflation Sensitive &amp; Diversifiers</b> | <b>11,144</b>          | <b>11.60%</b>  | <b>11.00%</b> | <b>4.00%</b>  | <b>16.00%</b> | <b>0.60%</b>  | <b>574</b>            |
| Inflation Sensitive                           | 6,429                  | 6.69%          | 6.00%         | 2.00%         | 7.50%         | 0.69%         | 663                   |
| Core Real Estate                              | 4,715                  | 4.91%          | 5.00%         | 2.00%         | 10.00%        | -0.09%        | (90)                  |
| <b>Multi-Strategy</b>                         | <b>1,822</b>           | <b>1.90%</b>   | <b>2.00%</b>  | <b>0.00%</b>  | <b>4.00%</b>  | <b>-0.10%</b> | <b>(100)</b>          |
| <b>Grand Total</b>                            | <b>\$96,094</b>        | <b>100.00%</b> |               |               |               |               |                       |

# NCRS Asset Allocation (Unaudited)

As of November 3, 2017

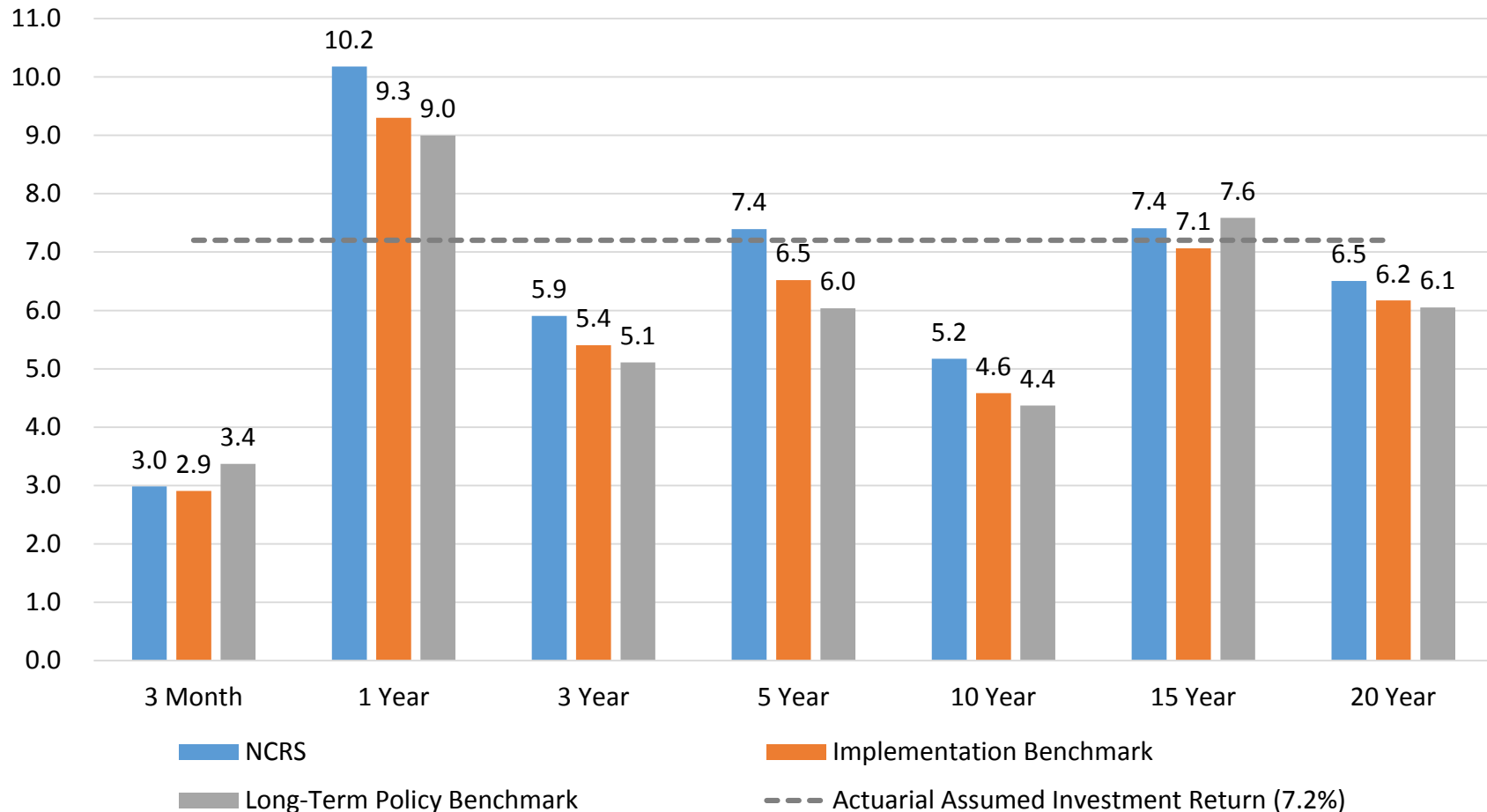
|                                               | Market Value<br>(\$MM) | %              | Target        | Range         |               | Relative %    | Relative \$<br>(\$MM) |
|-----------------------------------------------|------------------------|----------------|---------------|---------------|---------------|---------------|-----------------------|
|                                               |                        |                |               | Minimum       | Maximum       |               |                       |
| <b>Growth</b>                                 | <b>\$51,916</b>        | <b>53.65%</b>  | <b>58.00%</b> | <b>37.00%</b> | <b>71.00%</b> | <b>-4.35%</b> | <b>(\$4,212)</b>      |
| Public Equity                                 | 38,081                 | 39.35%         | 42.00%        | 37.00%        | 47.00%        | -2.65%        | (2,563)               |
| Private Equity                                | 4,893                  | 5.06%          | 6.00%         | 0.00%         | 8.75%         | -0.94%        | (913)                 |
| Non Core Real Estate                          | 3,473                  | 3.59%          | 3.00%         | 0.00%         | 8.00%         | 0.59%         | 570                   |
| Opportunistic Fixed Income                    | 5,469                  | 5.65%          | 7.00%         | 0.00%         | 7.50%         | -1.35%        | (1,306)               |
| <b>Rates &amp; Liquidity</b>                  | <b>31,871</b>          | <b>32.93%</b>  | <b>29.00%</b> | <b>24.00%</b> | <b>42.00%</b> | <b>3.93%</b>  | <b>3,806</b>          |
| IG Fixed Income & Cash                        | 28,741                 | 29.70%         | 28.00%        | 24.00%        | 32.00%        | 1.70%         | 1,644                 |
| Pension Cash                                  | 3,130                  | 3.23%          | 1.00%         | 0.00%         | 10.00%        | 2.23%         | 2,162                 |
| <b>Inflation Sensitive &amp; Diversifiers</b> | <b>11,143</b>          | <b>11.51%</b>  | <b>11.00%</b> | <b>4.00%</b>  | <b>16.00%</b> | <b>0.51%</b>  | <b>498</b>            |
| Inflation Sensitive                           | 6,408                  | 6.62%          | 6.00%         | 2.00%         | 7.50%         | 0.62%         | 602                   |
| Core Real Estate                              | 4,735                  | 4.89%          | 5.00%         | 2.00%         | 10.00%        | -0.11%        | (104)                 |
| <b>Multi-Strategy</b>                         | <b>1,843</b>           | <b>1.90%</b>   | <b>2.00%</b>  | <b>0.00%</b>  | <b>4.00%</b>  | <b>-0.10%</b> | <b>(92)</b>           |
| <b>Grand Total</b>                            | <b>\$96,773</b>        | <b>100.00%</b> |               |               |               |               |                       |





# NCRS Total Net Portfolio Return vs. Benchmarks

## As of September 30, 2017



### Notes:

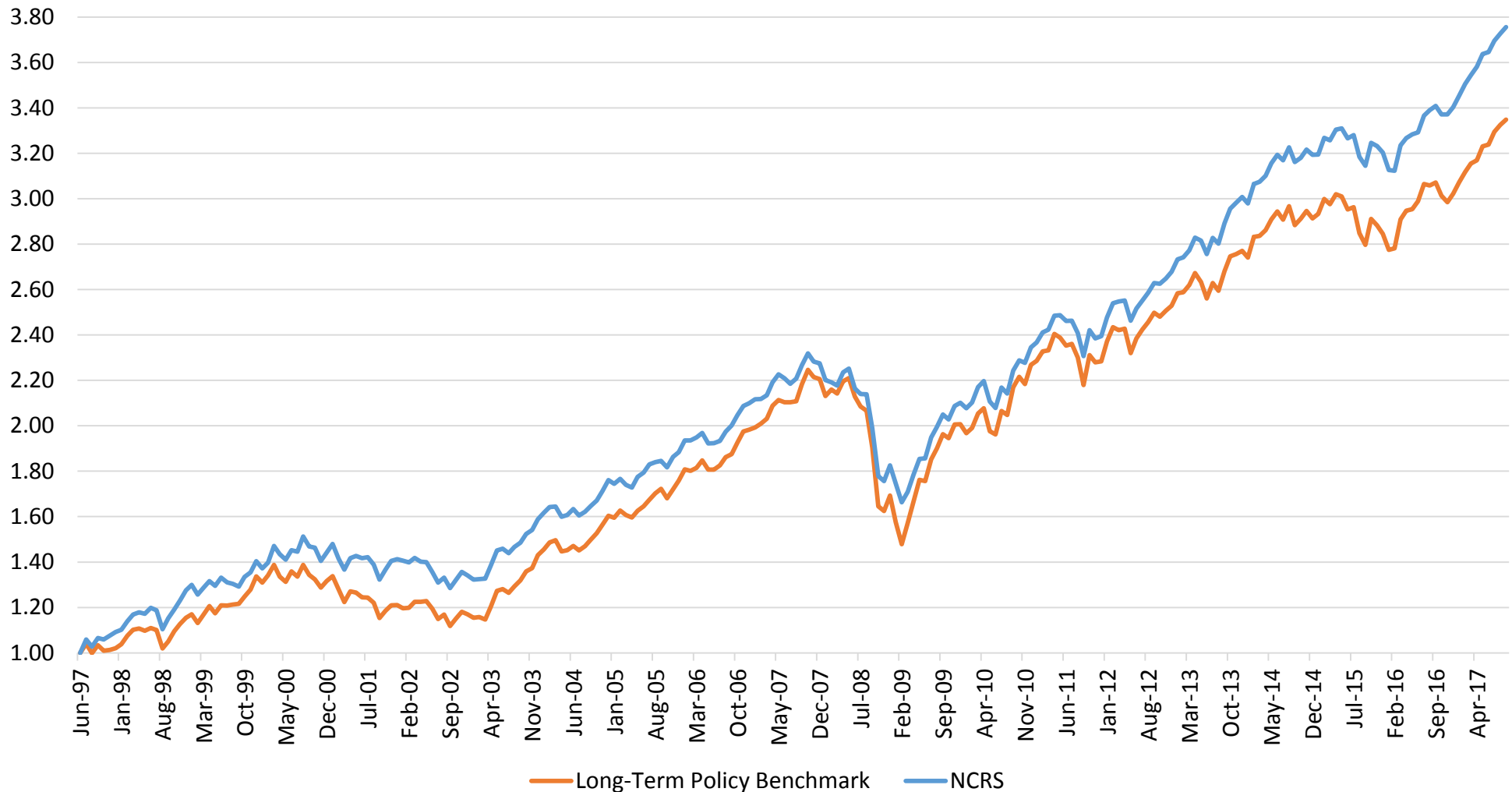
Returns for periods greater than one year are annualized.

*Implementation Benchmark* is a blend of the Asset Class Benchmarks at policy weights. It is currently weighted as follows: 58% Growth Benchmark, 29% Rates & Liquidity Benchmark, 11% Inflation Sensitive & Diversifiers Benchmark, and 2% Multi-Strategy Benchmark.

*Long-Term Policy Benchmark* is comprised of 57% MSCI ACWI IMI Net, 33% BOAML 5+ Years U.S. Treasury Index, 6% Bloomberg Commodity Index, and 4% BOAML 1-3 Years U.S. Inflation-Linked Treasury Index.



# Growth of a Dollar Through September 30, 2017



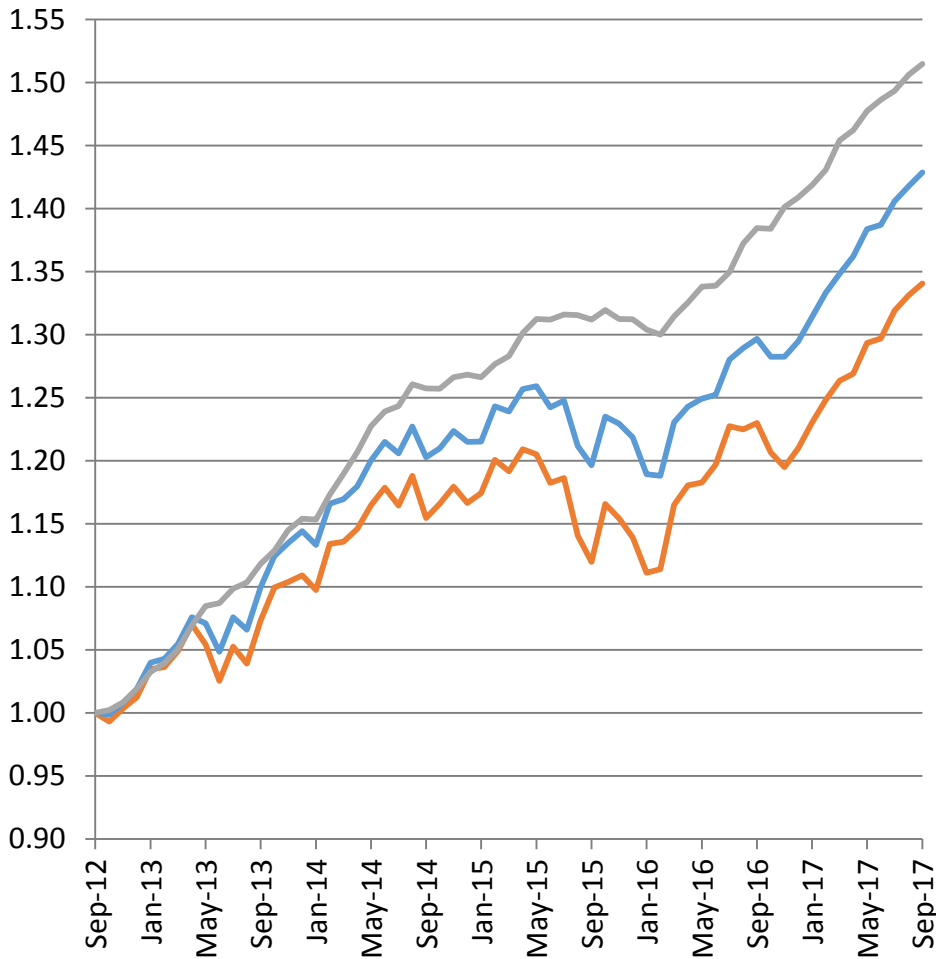
## Notes:

Long-Term Policy Benchmark is comprised of 57% MSCI ACWI IMI Net, 33% BOAML 5+ Years U.S. Treasury Index, 6% Bloomberg Commodity Index, and 4% BOAML 1-3 Years U.S. Inflation-Linked Treasury Index.



# Growth of a Dollar

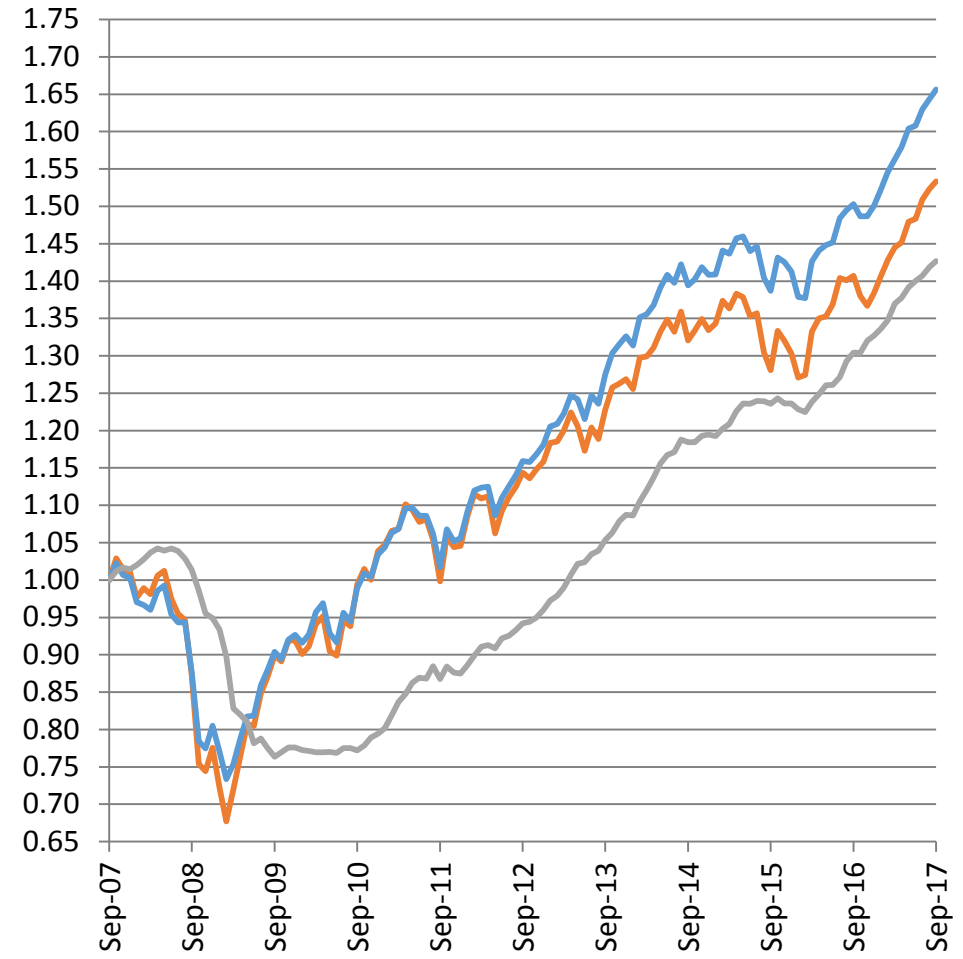
5 Years Ending Sep. 30, 2017



Long-Term Policy Benchmark NCRS NCRS Alternatives

Note: NCRS Alternatives includes the following: Core Real Estate, Inflation Sensitive - Private Natural Resources, Inflation Sensitive - Real Assets and Other, Multi-Strategy Investments, Non Core Real Estate, Opportunistic Fixed Income, Private Equity, Equity Hedge Strategies and closed-end Public Natural Resource funds.

10 Years Ending Sep. 30, 2017



Long-Term Policy Benchmark NCRS NCRS Alternatives



# NCRS Net of Fees Return Attribution

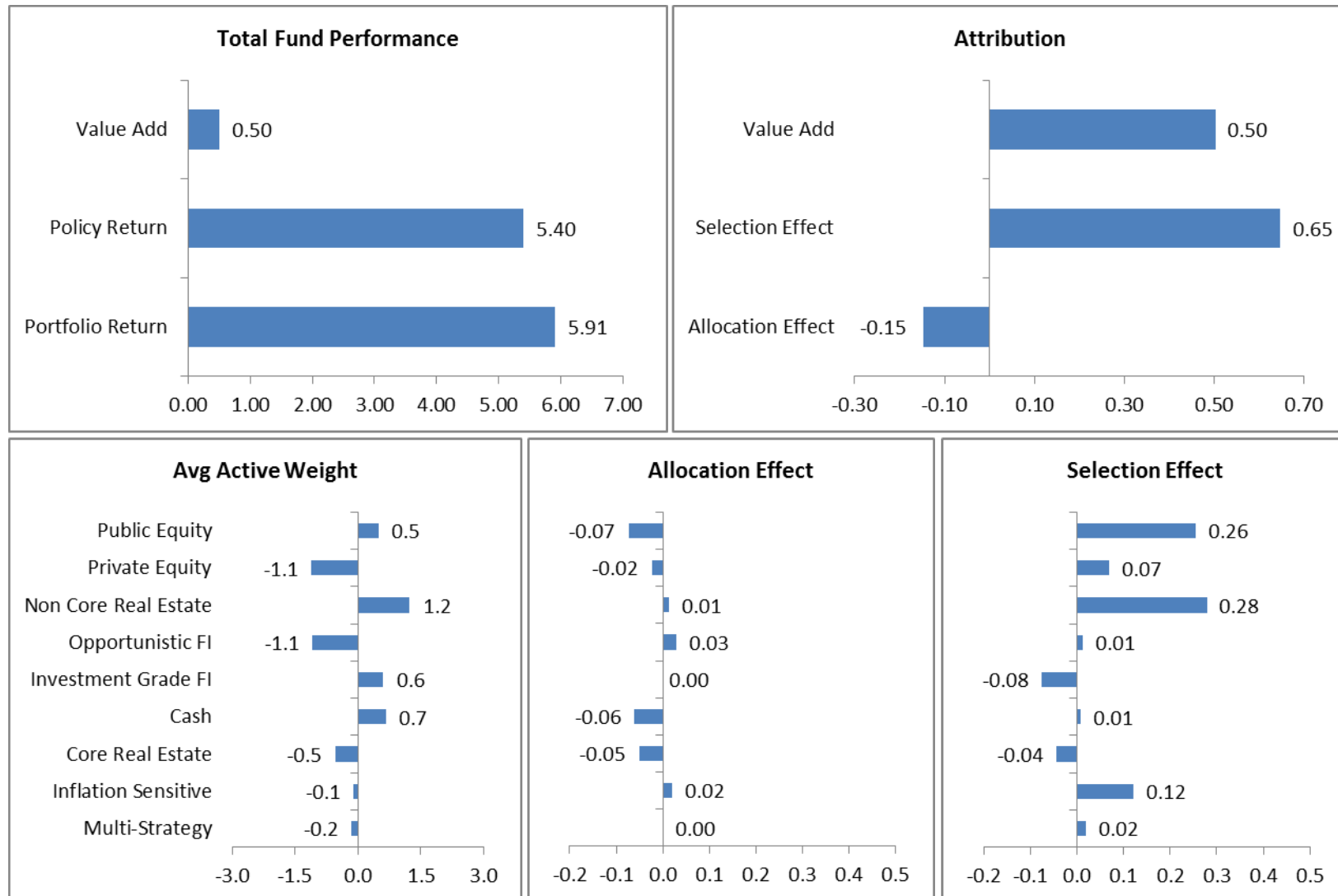
Total Fund vs. Implementation Benchmark: 1 Year Ending Sep. 30, 2017





# NCRS Net of Fees Return Attribution

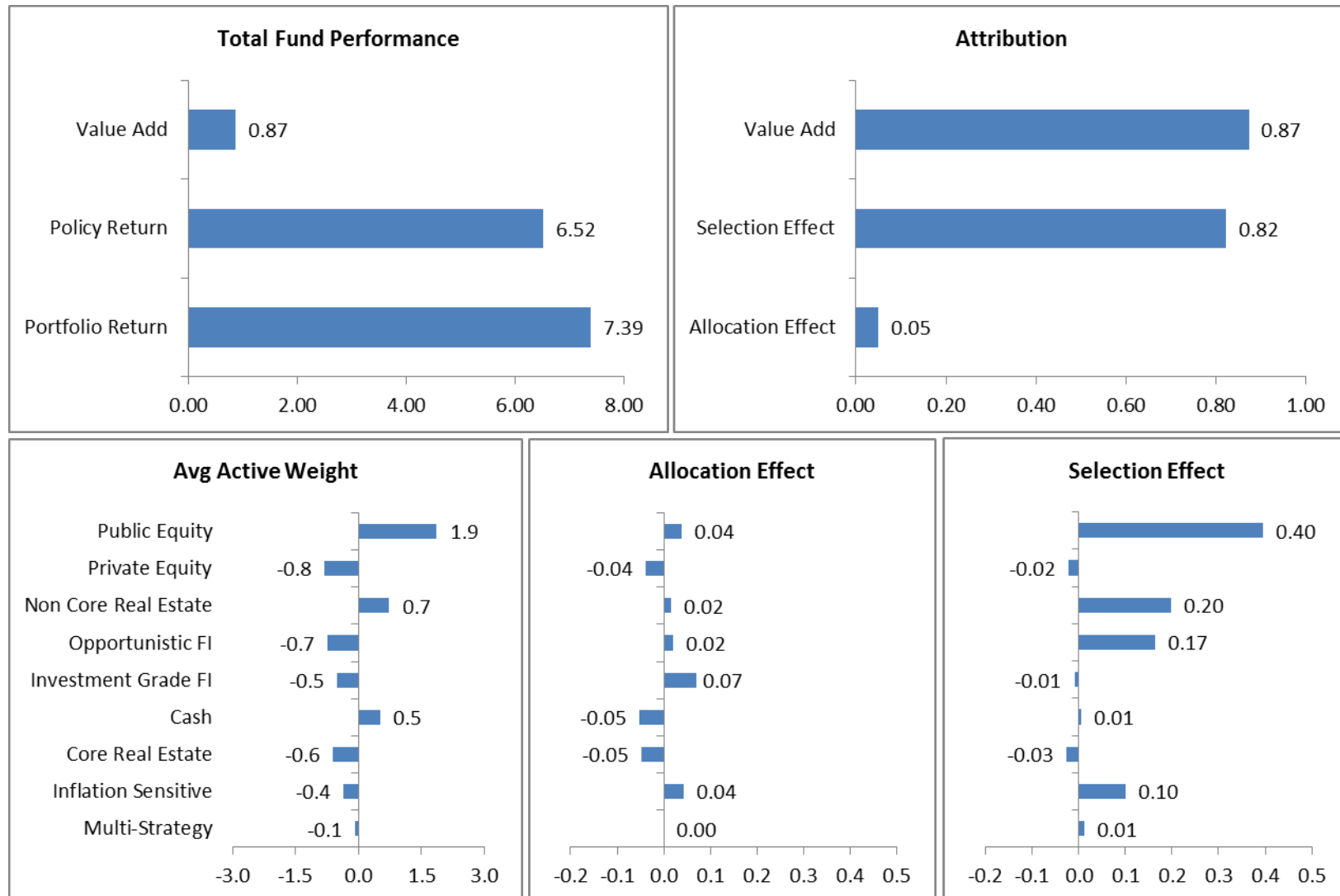
Total Fund vs. Implementation Benchmark: 3 Years Ending Sep. 30, 2017





# NCRS Net of Fees Return Attribution

Total Fund vs. Implementation Benchmark: 5 Years Ending Sep. 30, 2017



## NCRS Gross of Fees Return and Risk

BNY Mellon Universe: Public Funds > \$20B; Data as of September 30, 2017

| <u>Returns</u>                               | <u>3 Years</u> | <u>5 Years</u> | <u>10 Years</u> | <u>15 Year</u> | <u>20 Year</u> |
|----------------------------------------------|----------------|----------------|-----------------|----------------|----------------|
| 25th percentile                              | 7.51           | 9.04           | 5.69            | 8.75           | 7.19           |
| <b>Median</b>                                | <b>7.06</b>    | <b>8.57</b>    | <b>5.38</b>     | <b>8.23</b>    | <b>6.85</b>    |
| 75th percentile                              | 6.15           | 7.64           | 4.66            | 7.92           | 6.63           |
| <b>NCRS</b>                                  | <b>6.55</b>    | <b>8.01</b>    | <b>5.69</b>     | <b>7.80</b>    | <b>6.80</b>    |
| Percentile Rank<br>(1 = highest performance) | 69             | 73             | 26              | 79             | 56             |

| <u>Risk</u>                           | <u>3 Years</u> | <u>5 Years</u> | <u>10 Years</u> | <u>15 Year</u> | <u>20 Year</u> |
|---------------------------------------|----------------|----------------|-----------------|----------------|----------------|
| 25th percentile                       | 5.54           | 5.56           | 9.79            | 8.92           | 9.59           |
| <b>Median</b>                         | <b>5.15</b>    | <b>5.19</b>    | <b>9.30</b>     | <b>8.43</b>    | <b>8.73</b>    |
| 75th percentile                       | 4.56           | 4.50           | 8.43            | 7.92           | 8.19           |
| <b>NCRS</b>                           | <b>4.57</b>    | <b>4.72</b>    | <b>8.10</b>     | <b>7.36</b>    | <b>7.93</b>    |
| Percentile Rank<br>(99 = lowest risk) | 75             | 71             | 81              | 90             | 88             |

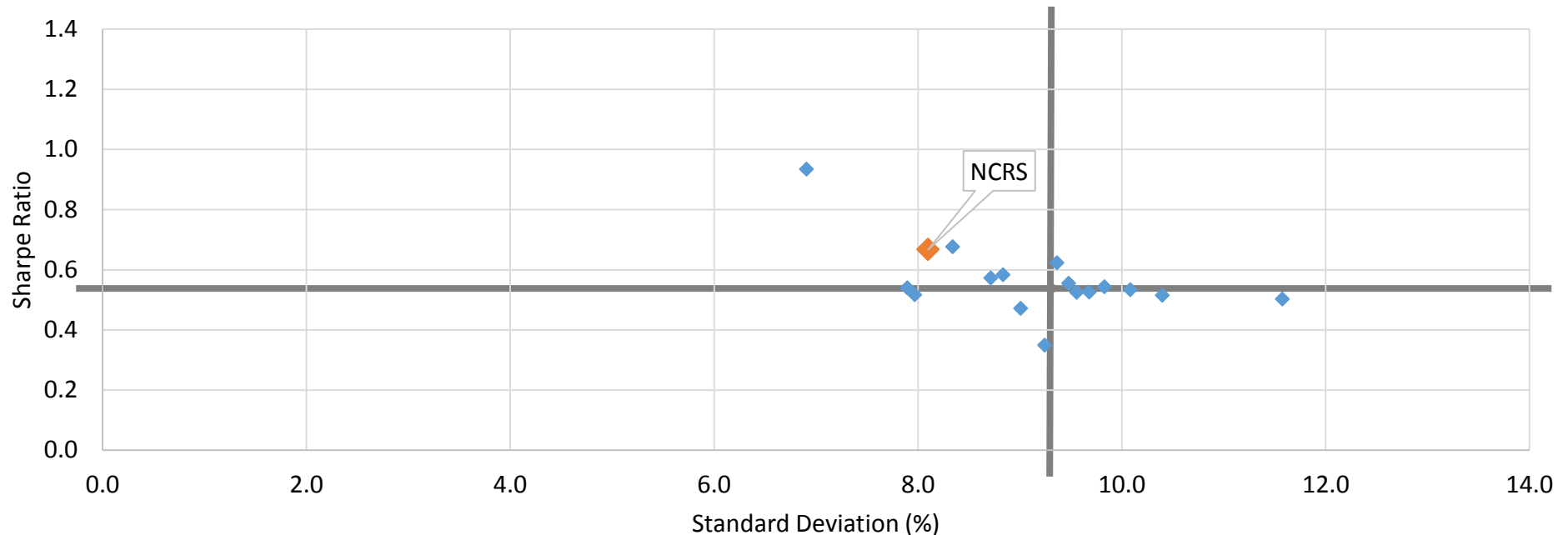


# NCRS Gross of Fees Sharpe Ratio

BNY Mellon Universe: Public Funds > \$20B; Data as of September 30, 2017

| <b>Sharpe Ratio</b>                          | <b>3 Years</b> | <b>5 Years</b> | <b>10 Years</b> | <b>15 Year</b> | <b>20 Year</b> |
|----------------------------------------------|----------------|----------------|-----------------|----------------|----------------|
| 25th percentile                              | 1.38           | 1.71           | 0.58            | 0.90           | 0.60           |
| <b>Median</b>                                | <b>1.24</b>    | <b>1.51</b>    | <b>0.54</b>     | <b>0.82</b>    | <b>0.56</b>    |
| 75th percentile                              | 1.11           | 1.36           | 0.52            | 0.78           | 0.51           |
| <b>NCRS</b>                                  | <b>1.34</b>    | <b>1.61</b>    | <b>0.67</b>     | <b>0.89</b>    | <b>0.61</b>    |
| Percentile Rank<br>(1 = highest performance) | 27             | 39             | 13              | 28             | 23             |

10 Year Plot: Sharpe Ratio vs. Volatility



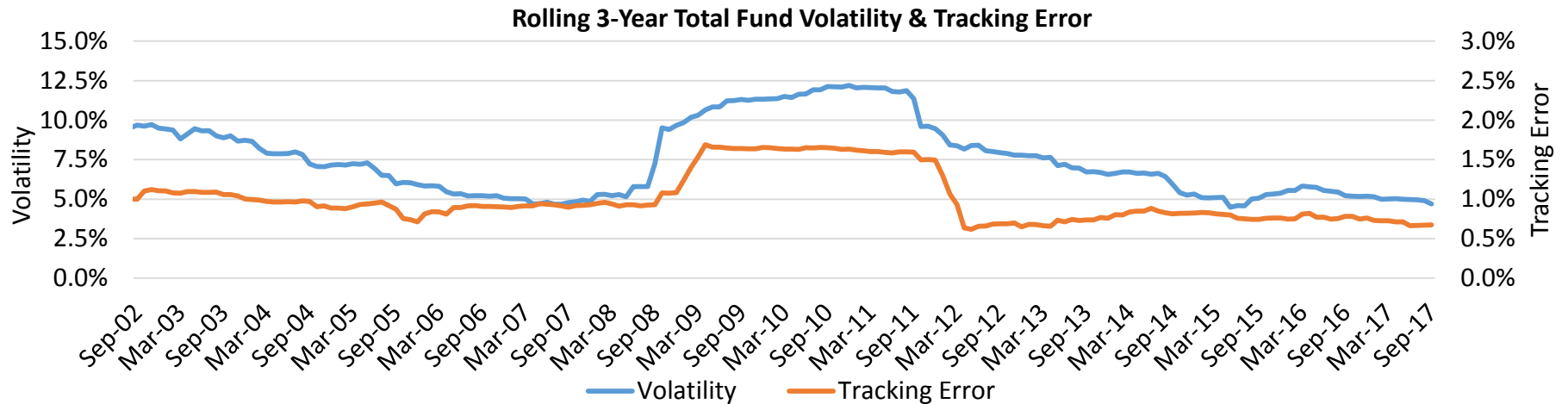
Note: Data shown is gross of fees with the exception of incentive payments which have been deducted from NAV when applicable.





# NCRS Net of Fees Risk and Return Metrics

## As of September 30, 2017

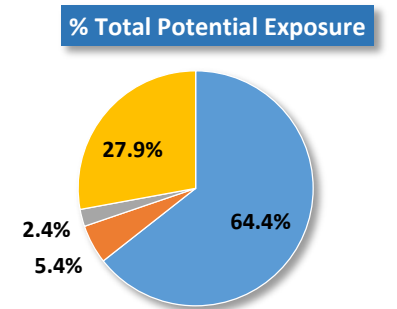
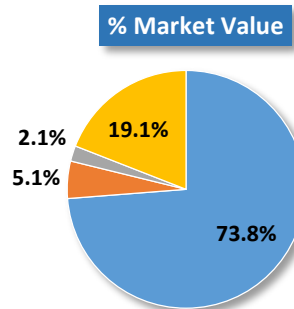


|                                    | POSITION |       | 36-MONTH |         |        |     |      | 60-MONTH |         |        |     |      |
|------------------------------------|----------|-------|----------|---------|--------|-----|------|----------|---------|--------|-----|------|
|                                    |          |       |          |         | Active |     |      |          |         | Active |     |      |
| Program                            | \$ Bil   | % Wgt | Return   | St. Dev | Return | TE  | IR   | Return   | St. Dev | Return | TE  | IR   |
| Total NCRS                         | 96.1     | 100.0 | 5.9      | 4.7     | 0.5    | 0.7 | 0.7  | 7.4      | 4.8     | 0.9    | 0.8 | 1.2  |
| Growth                             | 51.0     | 53.1  | 7.8      | 7.7     | 1.1    | 0.8 | 1.3  | 10.8     | 7.6     | 1.3    | 0.9 | 1.5  |
| Public Equity                      | 37.2     | 38.7  | 8.0      | 10.2    | 0.6    | 0.6 | 1.0  | 11.1     | 9.9     | 0.9    | 0.7 | 1.4  |
| Private Equity                     | 4.9      | 5.1   | 8.2      | 3.1     | 1.6    | 2.2 | 0.7  | 9.9      | 3.1     | -0.5   | 3.5 | -0.1 |
| Non-Core Real Estate               | 3.4      | 3.6   | 13.6     | 2.9     | 6.9    | 4.0 | 1.7  | 14.0     | 3.1     | 4.8    | 3.8 | 1.3  |
| Opportunistic Fixed Income         | 5.5      | 5.7   | 2.5      | 3.2     | 0.2    | 3.9 | 0.0  | 6.5      | 3.2     | 3.6    | 3.6 | 1.0  |
| Rates & Liquidity                  | 32.1     | 33.5  | 3.0      | 3.2     | -0.3   | 0.6 | -0.4 | 2.4      | 3.6     | -0.1   | 0.6 | -0.1 |
| IG Fixed Income & Cash             | 28.6     | 29.8  | 3.2      | 3.4     | -0.2   | 0.6 | -0.4 | 2.5      | 3.7     | 0.0    | 0.6 | -0.1 |
| Pension Cash                       | 3.5      | 3.7   | 0.8      | 0.1     | 0.5    | 0.1 | 5.8  | --       | --      | --     | --  | --   |
| Inflation Sensitive & Diversifiers | 11.1     | 11.6  | 3.5      | 2.8     | 0.1    | 2.5 | 0.0  | 3.7      | 2.9     | 0.3    | 2.4 | 0.1  |
| Inflation Sensitive                | 6.4      | 6.7   | -0.3     | 4.7     | 1.6    | 3.2 | 0.5  | -0.3     | 4.5     | 1.6    | 2.9 | 0.5  |
| Core Real Estate                   | 4.7      | 4.9   | 8.8      | 2.4     | -1.2   | 2.1 | -0.6 | 9.7      | 3.7     | -0.6   | 2.7 | -0.2 |
| Multi-Strategy                     | 1.8      | 1.9   | 5.8      | 7.3     | 1.1    | 1.0 | 1.2  | 8.7      | 7.0     | 0.7    | 0.9 | 0.8  |

Note: Active Return= Net Managed less benchmark returns; TE=Tracking Error; IR = Information Ratio



## NCRS Liquidity Profile As of September 30, 2017



Level 1 Level 2 Level 3 Level 4

Level 1 Level 2 Level 3 Level 4

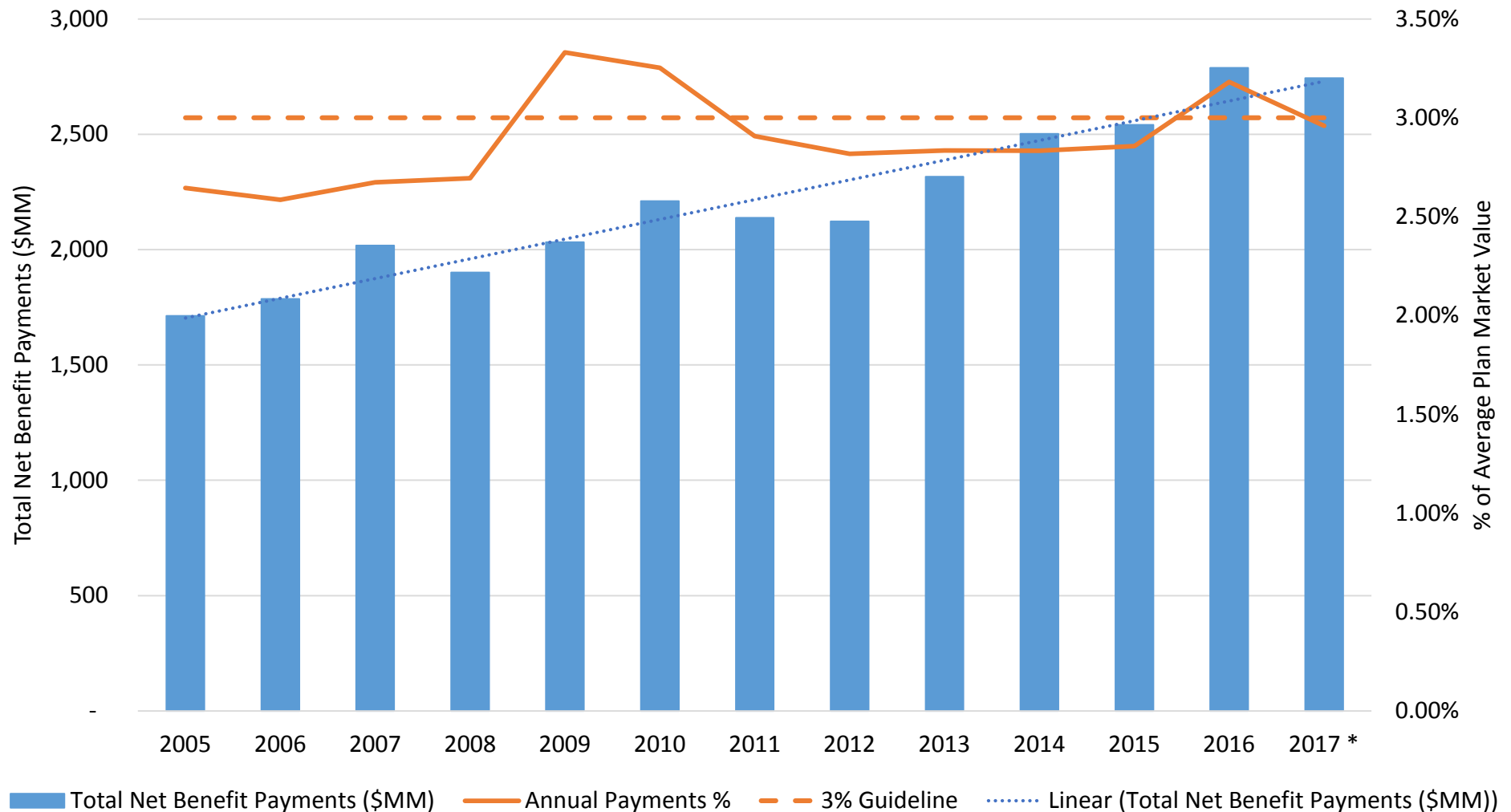
|          | Current Exposure (\$MM Market Value) |                |                      |                            |                               |              |                     |                  |                |          |         |
|----------|--------------------------------------|----------------|----------------------|----------------------------|-------------------------------|--------------|---------------------|------------------|----------------|----------|---------|
|          | Global Public Equity                 | Private Equity | Non Core Real Estate | Opportunistic Fixed Income | Investment Grade Fixed Income | Pension Cash | Inflation Sensitive | Core Real Estate | Multi-Strategy | Total \$ | Total % |
| Level 1  | \$35,739                             | \$24           | \$0                  | \$518                      | \$28,628                      | \$3,520      | \$269               | \$687            | \$1,494        | \$70,878 | 73.8%   |
| Level 2  | \$813                                | \$0            | \$0                  | \$1,808                    | \$0                           | \$0          | \$1,110             | \$997            | \$147          | \$4,874  | 5.1%    |
| Level 3  | \$215                                | \$0            | \$0                  | \$1,149                    | \$0                           | \$0          | \$219               | \$440            | \$0            | \$2,023  | 2.1%    |
| Level 4  | \$390                                | \$4,868        | \$3,447              | \$2,010                    | \$0                           | \$0          | \$4,832             | \$2,592          | \$180          | \$18,319 | 19.1%   |
| Total \$ | \$37,156                             | \$4,892        | \$3,447              | \$5,485                    | \$28,628                      | \$3,520      | \$6,429             | \$4,715          | \$1,822        | \$96,094 | 100.0%  |
| Total %  | 38.67%                               | 5.09%          | 3.59%                | 5.71%                      | 29.79%                        | 3.66%        | 6.69%               | 4.91%            | 1.90%          |          |         |

|          | Total Potential Exposure (Market Value + Unfunded Commitments) |                |                      |                            |                               |              |                     |                  |                |          |         |
|----------|----------------------------------------------------------------|----------------|----------------------|----------------------------|-------------------------------|--------------|---------------------|------------------|----------------|----------|---------|
|          | Global Public Equity                                           | Private Equity | Non Core Real Estate | Opportunistic Fixed Income | Investment Grade Fixed Income | Pension Cash | Inflation Sensitive | Core Real Estate | Multi-Strategy | Total    | Total % |
| Level 1  | \$29,272                                                       | \$24           | \$0                  | \$518                      | \$26,104                      | \$3,520      | \$269               | \$687            | \$1,494        | \$61,886 | 64.4%   |
| Level 2  | \$813                                                          | \$0            | \$0                  | \$1,944                    | \$0                           | \$0          | \$1,110             | \$1,139          | \$147          | \$5,153  | 5.4%    |
| Level 3  | \$215                                                          | \$0            | \$0                  | \$1,264                    | \$0                           | \$0          | \$219               | \$568            | \$0            | \$2,266  | 2.4%    |
| Level 4  | \$800                                                          | \$7,685        | \$5,405              | \$3,042                    | \$0                           | \$0          | \$6,296             | \$3,190          | \$372          | \$26,789 | 27.9%   |
| Total \$ | \$31,099                                                       | \$7,709        | \$5,405              | \$6,768                    | \$26,104                      | \$3,520      | \$7,893             | \$5,584          | \$2,014        | \$96,094 | 100.0%  |
| Total %  | 32.36%                                                         | 8.02%          | 5.62%                | 7.04%                      | 27.16%                        | 3.66%        | 8.21%               | 5.81%            | 2.10%          |          |         |

Note: Level 1 Liquidity = T+3; Level 2 = T+3 to 12 Months; Level 3 = 12 to 24 Months; Level 4 = Greater than 24 Months

# NCRS Liquidity Profile

## Net Benefit Payments by Calendar Year



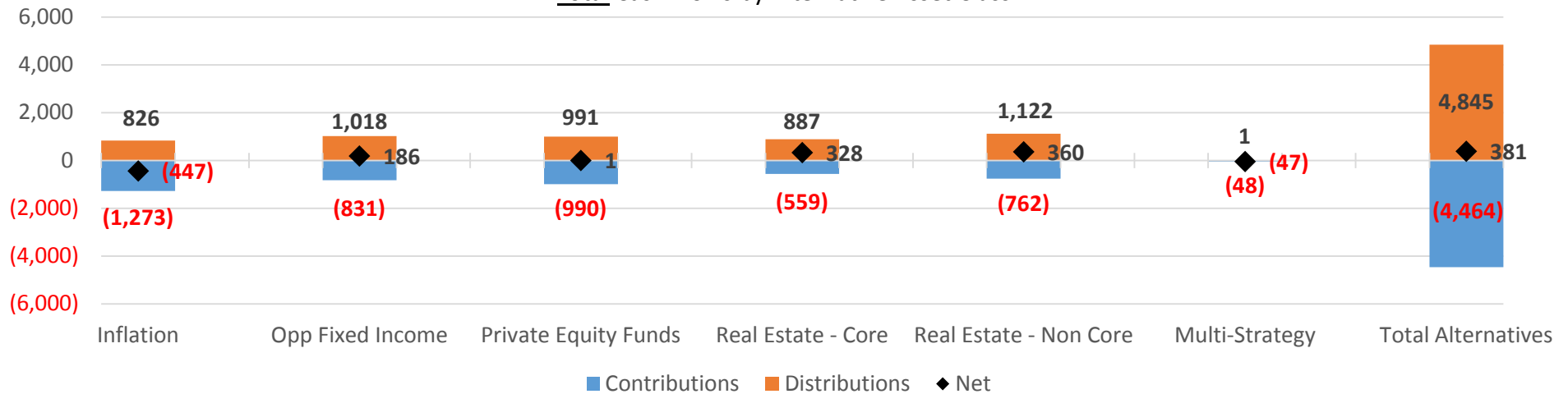
\* 2017 figures include actual net benefit payments through October, then forecasted payments for November and December based on the trailing 12-month average.



## NCRS Liquidity Profile October 2017

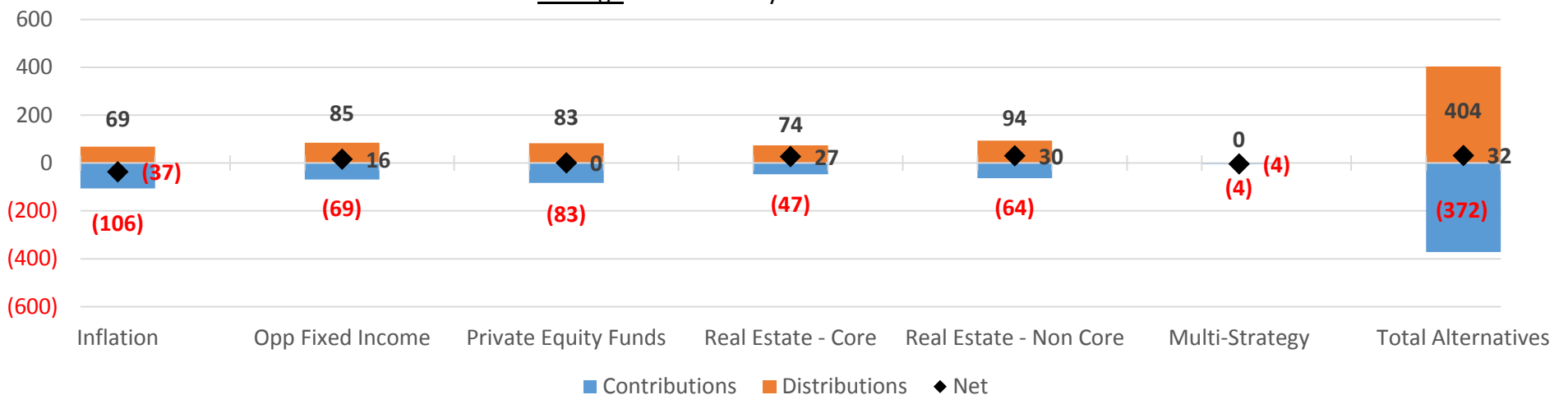
### Prior 12-Months

#### Total Cash Flows by Alternative Asset Class



### Prior 12-Months

#### Average Cash Flows by Alternative Asset Class



# NCRS Asset Class Net of Fees Performance

## As of September 30, 2017

|                                               | Market Value (\$MM) | 1 Year       | 3 Years      | 5 Years      | 10 Years     | 15 Years    | 20 Years    |
|-----------------------------------------------|---------------------|--------------|--------------|--------------|--------------|-------------|-------------|
| <b>Growth</b>                                 | <b>\$50,980</b>     | <b>16.41</b> | <b>7.82</b>  | <b>10.78</b> | <b>4.61</b>  | <b>8.81</b> | <b>6.41</b> |
| Benchmark <sup>1</sup>                        |                     | 15.22        | 6.73         | 9.46         | 3.84         | 8.32        | 5.76        |
| <b>Public Equity</b>                          | <b>\$37,156</b>     | <b>19.01</b> | <b>8.00</b>  | <b>11.13</b> | <b>4.88</b>  | <b>9.00</b> | <b>6.50</b> |
| Benchmark <sup>2</sup>                        |                     | 17.75        | 7.37         | 10.19        | 4.13         | 8.38        | 5.68        |
| <b>Private Equity</b>                         | <b>\$4,892</b>      | <b>10.18</b> | <b>8.22</b>  | <b>9.93</b>  | <b>6.00</b>  | <b>6.98</b> | <b>6.76</b> |
| Benchmark <sup>3</sup>                        |                     | 11.51        | 6.63         | 10.41        | 7.14         | 11.03       | 12.17       |
| <b>Non-Core Real Estate</b>                   | <b>\$3,447</b>      | <b>10.73</b> | <b>13.59</b> | <b>14.03</b> | <b>2.67</b>  | <b>6.55</b> | <b>8.17</b> |
| Benchmark <sup>4</sup>                        |                     | 7.50         | 6.70         | 9.22         | -0.15        | 7.06        | 8.01        |
| <b>Opportunistic Fixed Income</b>             | <b>\$5,485</b>      | <b>8.61</b>  | <b>2.50</b>  | <b>6.50</b>  | <b>6.68</b>  | -           | -           |
| Benchmark <sup>5</sup>                        |                     | 6.99         | 2.32         | 2.88         | 0.38         | -           | -           |
| <b>Rates &amp; Liquidity</b>                  | <b>\$32,148</b>     | <b>-0.04</b> | <b>3.02</b>  | <b>2.36</b>  | <b>5.67</b>  | <b>5.29</b> | <b>6.19</b> |
| Benchmark <sup>6</sup>                        |                     | -0.23        | 3.29         | 2.44         | 5.42         | 5.12        | 5.99        |
| <b>IG Fixed Income</b>                        | <b>\$28,628</b>     | <b>0.11</b>  | <b>3.17</b>  | <b>2.47</b>  | <b>5.73</b>  | <b>5.33</b> | <b>6.22</b> |
| Benchmark <sup>7</sup>                        |                     | -0.27        | 3.39         | 2.50         | 5.45         | 5.14        | 6.01        |
| <b>Cash</b>                                   | <b>\$3,520</b>      | <b>1.05</b>  | <b>0.83</b>  | -            | -            | -           | -           |
| Benchmark <sup>8</sup>                        |                     | 0.73         | 0.32         | 0.21         | -            | -           | -           |
| <b>Inflation Sensitive &amp; Diversifiers</b> | <b>\$11,144</b>     | <b>8.28</b>  | <b>3.47</b>  | <b>3.68</b>  | <b>0.57</b>  | <b>4.05</b> | <b>5.24</b> |
| Benchmark <sup>9</sup>                        |                     | 4.53         | 3.38         | 3.39         | -0.51        | 3.88        | 5.55        |
| <b>Inflation Sensitive</b>                    | <b>\$6,429</b>      | <b>8.20</b>  | <b>-0.30</b> | <b>-0.33</b> | <b>-1.46</b> | <b>3.19</b> | <b>3.54</b> |
| Benchmark <sup>10</sup>                       |                     | 2.94         | -1.91        | -1.89        | 0.78         | 4.29        | 4.61        |
| <b>Core Real Estate</b>                       | <b>\$4,715</b>      | <b>8.57</b>  | <b>8.81</b>  | <b>9.66</b>  | <b>4.17</b>  | <b>6.57</b> | <b>7.20</b> |
| Benchmark <sup>11</sup>                       |                     | 6.47         | 9.96         | 10.30        | 4.38         | 7.26        | 8.12        |
| <b>Multi-Strategy</b>                         | <b>\$1,822</b>      | <b>11.95</b> | <b>5.81</b>  | <b>8.74</b>  | <b>5.63</b>  | <b>6.19</b> | -           |
| Benchmark <sup>12</sup>                       |                     | 11.26        | 4.70         | 8.01         | 4.75         | 7.73        | -           |

# New, Incremental, & Unfunded Investment Commitments

## Calendar Year to Date

| <u>Fund Name</u>                  | <u>Firm Name</u> | <u>New or Incremental<br/>Commitment (\$MM)</u> | <u>Closing<br/>Date</u> |
|-----------------------------------|------------------|-------------------------------------------------|-------------------------|
| <b>Public Equity</b>              |                  |                                                 |                         |
| NCRS R200 Passive                 | NCDST            | \$50                                            | 11/1/2017               |
| NCRS RMidCap Passive              | NCDST            | \$50                                            | 11/1/2017               |
| <b>Private Equity</b>             |                  |                                                 |                         |
| None                              | --               | --                                              | --                      |
| <b>Non-Core Real Estate</b>       |                  |                                                 |                         |
| None                              | --               | --                                              | --                      |
| <b>Opportunistic Fixed Income</b> |                  |                                                 |                         |
| None                              | --               | --                                              | --                      |
| <b>Inflation Sensitive</b>        |                  |                                                 |                         |
| None                              | --               | --                                              | --                      |
| <b>Core Real Estate</b>           |                  |                                                 |                         |
| None                              | --               | --                                              | --                      |
| <b>Multi Strategy</b>             |                  |                                                 |                         |
| None                              | --               | --                                              | --                      |

## As of September 30, 2017

| <u>Asset Class</u>                | <u>Unfunded<br/>Commitments (\$MM)</u> |
|-----------------------------------|----------------------------------------|
| <b>Public Equity</b>              | <b>410</b>                             |
| <b>Private Equity</b>             | <b>2,817</b>                           |
| <b>Non-Core Real Estate</b>       | <b>1,958</b>                           |
| <b>Opportunistic Fixed Income</b> | <b>1,283</b>                           |
| <b>Inflation Sensitive</b>        | <b>1,464</b>                           |
| <b>Core Real Estate</b>           | <b>869</b>                             |
| <b>Multi Strategy</b>             | <b>192</b>                             |
| <b>Total</b>                      | <b>8,992</b>                           |



# Exited Investments

## Calendar Year to Date

| <u>Fund Name</u>                                | <u>Redemption Amount</u> | <u>Redemption Effective</u> |
|-------------------------------------------------|--------------------------|-----------------------------|
| <b><u>Public Equity</u></b>                     |                          |                             |
| Piedmont Strategic Core                         | ~\$345,000,000           | 01/30/2017                  |
| GMO International Active Strategy               | ~\$520,000,000           | 01/30/2017                  |
| Leading Edge Large Cap Composite                | ~\$225,000,000           | 03/09/2017                  |
| Longview Global Equity                          | ~\$1,700,000,000         | 03/20/2017                  |
| TimesSquare Focused Growth                      | ~\$230,000,000           | 03/20/2017                  |
| Numeric Emerging Growth                         | ~\$380,000,000           | 03/20/2017                  |
| Brandes Global Equity                           | ~\$1,062,000,000         | 04/17/2017                  |
| Sands Large Cap Growth Equity                   | ~\$598,000,000           | 05/04/2017                  |
| Hotchkis Large Cap Fundamental Value            | ~\$952,000,000           | 05/04/2017                  |
| Wellington Large Cap Value                      | ~\$788,000,000           | 05/04/2017                  |
| FIS International Composite                     | ~\$200,000,000           | 06/13/2017                  |
| Wasatch Emerging Markets Small Cap              | ~\$200,000,000           | 06/13/2017                  |
| <b><u>Core Real Estate</u></b>                  |                          |                             |
| Prudential Property Investment Separate Account | ~\$161,000,000           | 04/17/2017                  |
| UBS Trumbull Property Fund                      | ~\$321,000,000           | 07/17/2017                  |



## Appendix



# NCRS Public Equity Net of Fees Performance

As of September 30, 2017

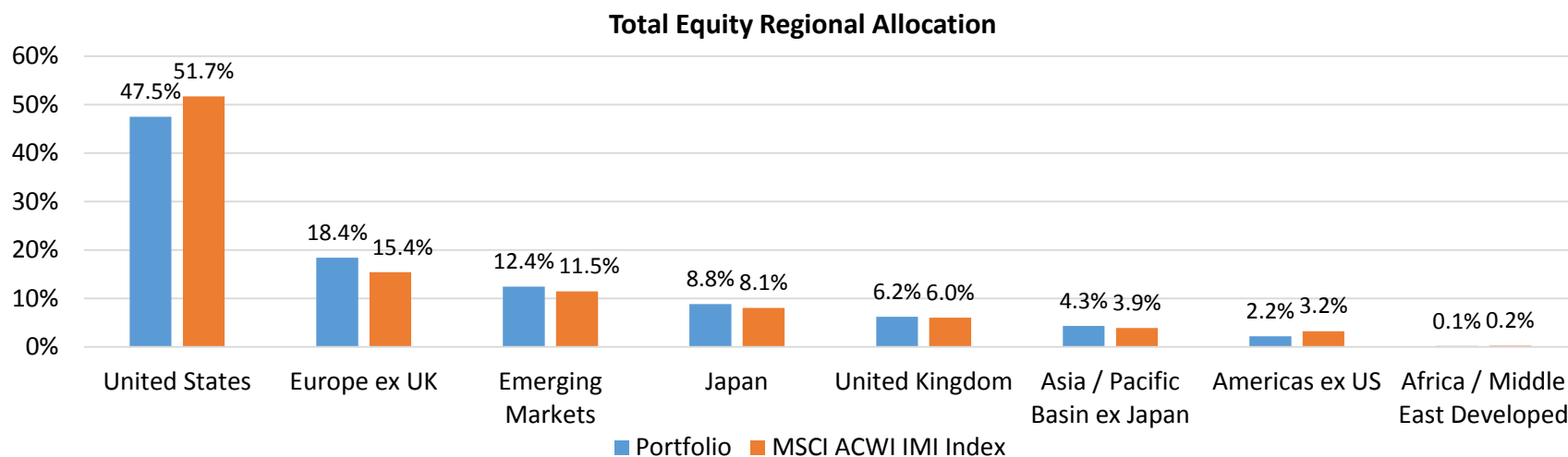
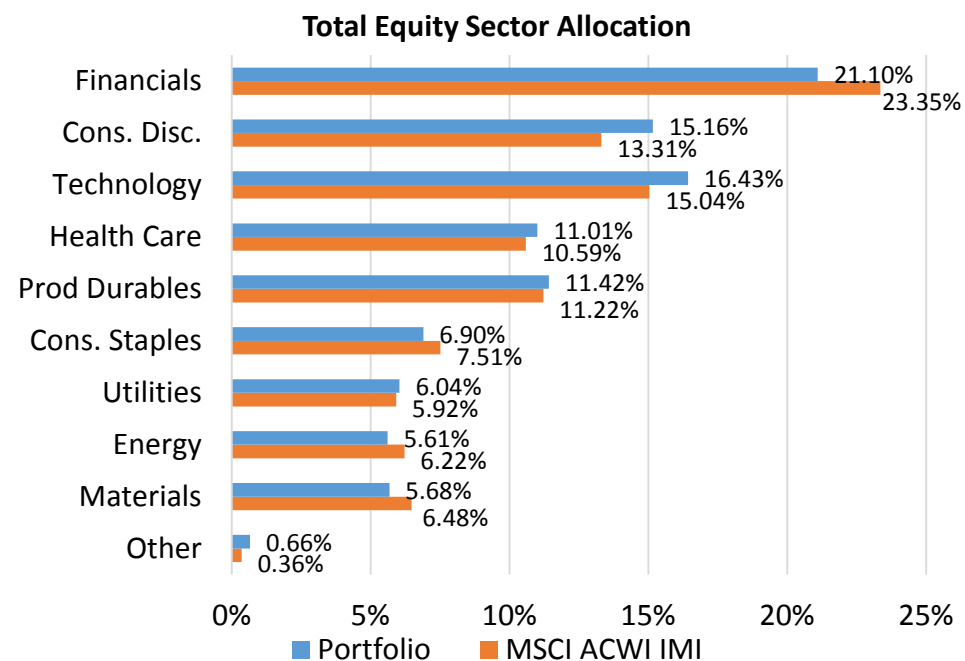
|                           | Market Value (\$MM) | 3 Month     | 1 Year       | 3 Years      | 5 Years      | 10 Years    |
|---------------------------|---------------------|-------------|--------------|--------------|--------------|-------------|
| <b>Public Equity*</b>     | <b>\$37,156</b>     | <b>5.72</b> | <b>19.01</b> | <b>8.00</b>  | <b>11.13</b> | <b>4.88</b> |
| Benchmark <sup>2</sup>    |                     | 5.04        | 17.75        | 7.37         | 10.19        | 4.13        |
|                           |                     |             |              |              |              |             |
| <b>Domestic Portfolio</b> | <b>\$16,241</b>     | <b>4.71</b> | <b>18.76</b> | <b>10.25</b> | <b>14.20</b> | <b>7.65</b> |
| Russell 3000              |                     | 4.57        | 18.71        | 10.74        | 14.23        | 7.57        |
|                           |                     |             |              |              |              |             |
| <b>Non-US Portfolio</b>   | <b>\$17,774</b>     | <b>7.25</b> | <b>21.34</b> | <b>6.35</b>  | <b>8.40</b>  | <b>1.82</b> |
| Custom Benchmark          |                     | 6.27        | 19.55        | 5.16         | 7.32         | 0.98        |
|                           |                     |             |              |              |              |             |
| <b>Equity Hedge</b>       | <b>\$3,136</b>      | <b>2.51</b> | <b>7.98</b>  | <b>6.27</b>  | <b>5.40</b>  | <b>-</b>    |
| MSCI ACWI (beta adjusted) |                     | 2.11        | 7.16         | 2.61         | 2.99         | -           |

\*Public Equity returns also include the global portfolio, which has been liquidated, but currently contains a residual amount of roughly \$1 million.

# NCRS Public Equity Portfolio Characteristics

## As of September 30, 2017

| Portfolio Characteristics        |           |               |
|----------------------------------|-----------|---------------|
|                                  | Portfolio | MSCI ACWI IMI |
| Price / Earnings                 | 21.8      | 20.9          |
| Dividend Yield                   | 2.07      | 2.28          |
| Price / Book                     | 3.24      | 2.90          |
| Debt / Equity                    | 0.90      | 0.96          |
| Market Cap (\$B Weighted Median) | 40.499    | 40.031        |
| Return on Equity - 1 Year        | 15.5      | 15.0          |



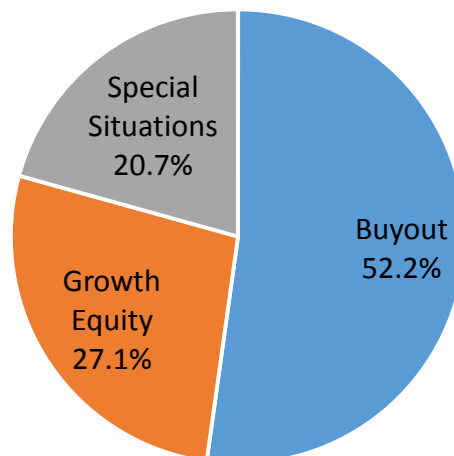
## NCRS Private Equity Portfolio

As of September 30, 2017

| Net of Fees Performance   |                     |             |              |              |              |             |
|---------------------------|---------------------|-------------|--------------|--------------|--------------|-------------|
|                           | Market Value (\$MM) | 3 Month     | 1 Year       | 3 Years      | 5 Years      | 10 Years    |
| <b>Private Equity*</b>    | <b>\$4,892</b>      | <b>2.88</b> | <b>10.18</b> | <b>8.22</b>  | <b>9.93</b>  | <b>6.00</b> |
| Benchmark <sup>3</sup>    |                     | 3.37        | 11.51        | 6.63         | 10.41        | 7.14        |
| <b>Buyout</b>             | <b>\$2,068</b>      | <b>2.85</b> | <b>10.92</b> | <b>8.33</b>  | <b>8.81</b>  | <b>4.69</b> |
| <b>Growth</b>             | <b>\$1,140</b>      | <b>1.95</b> | <b>10.51</b> | <b>10.16</b> | <b>12.83</b> | <b>8.49</b> |
| <b>Special Situations</b> | <b>\$711</b>        | <b>0.82</b> | <b>7.05</b>  | <b>2.81</b>  | <b>5.34</b>  | <b>4.88</b> |
| <b>Fund of Funds</b>      | <b>\$949</b>        | <b>5.62</b> | <b>11.51</b> | <b>10.09</b> | <b>12.46</b> | <b>7.15</b> |

|            |                 | IRR by Vintage Year |             |             |             |             |             |             |             |             |             |             |             |             |             |              |  |  |
|------------|-----------------|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--|--|
|            | <u>Pre-2004</u> | <u>2004</u>         | <u>2005</u> | <u>2006</u> | <u>2007</u> | <u>2008</u> | <u>2009</u> | <u>2010</u> | <u>2011</u> | <u>2012</u> | <u>2013</u> | <u>2014</u> | <u>2015</u> | <u>2016</u> | <u>2017</u> | <u>Total</u> |  |  |
| NCRS       | 12.04           | 7.15                | 5.21        | 3.22        | 8.95        | 9.08        | 12.24       | 20.78       | 11.18       | 12.80       | 8.95        | 16.12       | 6.83        | -2.07       | -1.94       | 7.72         |  |  |
| # of Funds | 28              | 3                   | 11          | 21          | 15          | 17          | 3           | 1           | 6           | 6           | 9           | 4           | 9           | 6           | 7           | 146          |  |  |

Strategy Allocation (Based on Commitments)



\*Private Equity returns include a stock distribution account, in the amount of roughly \$24 million, which does not fall under any specific sub-section. 27

## NCRS Non-Core Real Estate Portfolio

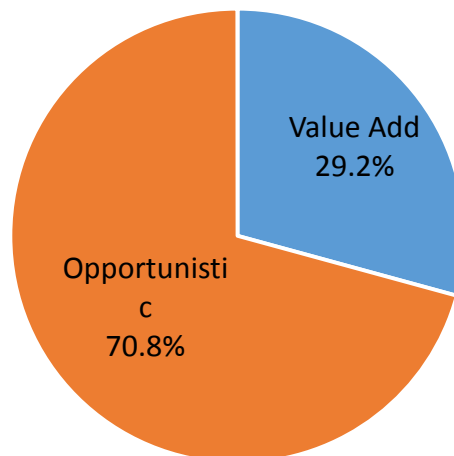
As of September 30, 2017

| Net of Fees Performance     |                     |             |              |              |              |             |
|-----------------------------|---------------------|-------------|--------------|--------------|--------------|-------------|
|                             | Market Value (\$MM) | 3 Month     | 1 Year       | 3 Years      | 5 Years      | 10 Years    |
| <b>Non-Core Real Estate</b> | <b>\$3,447</b>      | <b>2.76</b> | <b>10.73</b> | <b>13.59</b> | <b>14.03</b> | <b>2.67</b> |
| Benchmark <sup>4</sup>      |                     | 2.67        | 7.50         | 6.70         | 9.22         | (0.15)      |
| <b>Opportunistic</b>        | <b>\$2,439</b>      | <b>3.09</b> | <b>10.76</b> | <b>12.33</b> | <b>13.58</b> | <b>0.88</b> |
| <b>Value Add</b>            | <b>\$1,008</b>      | <b>2.19</b> | <b>10.59</b> | <b>15.83</b> | <b>14.79</b> | <b>5.68</b> |

### IRR by Vintage Year

|            | <u>Pre-2004</u> | <u>2004</u> | <u>2005</u> | <u>2006</u> | <u>2007</u> | <u>2008</u> | <u>2009</u> | <u>2010</u> | <u>2011</u> | <u>2012</u> | <u>2013</u> | <u>2014</u> | <u>2015</u> | <u>2016</u> | <u>2017</u> | <u>Total</u> |
|------------|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| NCRS       | 8.98            | 15.69       | -1.31       | 2.53        | 2.18        | 16.86       | N/A         | 16.58       | 16.67       | 7.62        | 15.41       | 6.57        | 6.94        | 2.23        | N/A         | 5.83         |
| # of Funds | 17              | 3           | 15          | 13          | 8           | 6           | 0           | 6           | 7           | 5           | 7           | 7           | 6           | 7           | 0           | 107          |

### Strategy Allocation (Based on Valuation)



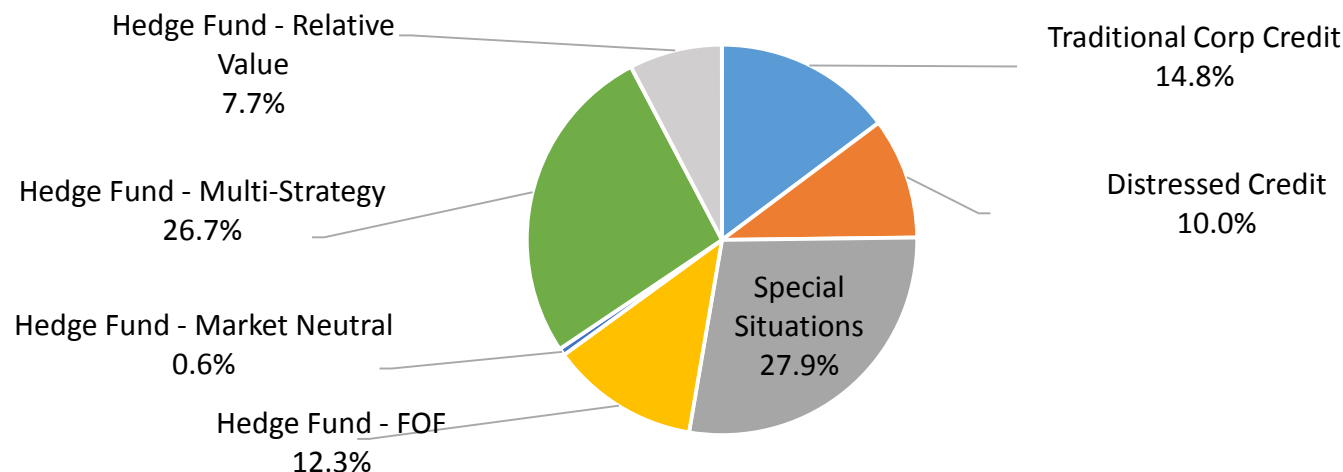
# NCRS Opportunistic Fixed Income Portfolio

As of September 30, 2017

| Net of Fees Performance             |                     |             |              |             |              |              |
|-------------------------------------|---------------------|-------------|--------------|-------------|--------------|--------------|
|                                     | Market Value (\$MM) | 3 Month     | 1 Year       | 3 Years     | 5 Years      | 10 Years     |
| <b>Opportunistic Fixed Income</b>   | <b>\$5,485</b>      | <b>0.96</b> | <b>8.61</b>  | <b>2.50</b> | <b>6.50</b>  | <b>6.68</b>  |
| Benchmark <sup>5</sup>              |                     | 0.62        | 6.99         | 2.32        | 2.88         | 0.38         |
| <b>Traditional Corporate Credit</b> | <b>\$811</b>        | <b>1.00</b> | <b>9.84</b>  | <b>2.93</b> | <b>6.98</b>  | <b>-</b>     |
| <b>Distressed Credit</b>            | <b>\$550</b>        | <b>1.96</b> | <b>12.85</b> | <b>6.27</b> | <b>10.33</b> | <b>7.11</b>  |
| <b>Special Situations</b>           | <b>\$1,530</b>      | <b>2.18</b> | <b>12.08</b> | <b>9.09</b> | <b>15.44</b> | <b>10.68</b> |
| <b>Hedged Fixed Income</b>          | <b>\$2,594</b>      | <b>0.05</b> | <b>5.99</b>  | <b>0.19</b> | <b>4.15</b>  | <b>-</b>     |

| IRR by Vintage Year |             |             |             |             |             |             |             |             |             |             |             |             |             |              |
|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
|                     | <u>2005</u> | <u>2006</u> | <u>2007</u> | <u>2008</u> | <u>2009</u> | <u>2010</u> | <u>2011</u> | <u>2012</u> | <u>2013</u> | <u>2014</u> | <u>2015</u> | <u>2016</u> | <u>2017</u> | <u>Total</u> |
| NCRS                | 2.85        | N/A         | 17.08       | 8.54        | 22.42       | 6.80        | 4.49        | 2.03        | 4.93        | 3.67        | 14.13       | 9.99        | -7.97       | 6.12         |
| # of Funds          | 1           | 0           | 1           | 3           | 1           | 4           | 9           | 2           | 7           | 3           | 1           | 8           | 1           | 41           |

Strategy Allocation (Based on Valuation)





# NCRS Rates & Liquidity Portfolio

As of September 30, 2017

| Net of Fees Performance           |                        |             |               |             |             |             |
|-----------------------------------|------------------------|-------------|---------------|-------------|-------------|-------------|
|                                   | Market Value<br>(\$MM) | 3 Month     | 1 Year        | 3 Years     | 5 Years     | 10 Years    |
| <b>Rates &amp; Liquidity</b>      | <b>\$32,148</b>        | <b>0.94</b> | <b>(0.04)</b> | <b>3.02</b> | <b>2.36</b> | <b>5.67</b> |
| Benchmark <sup>6</sup>            |                        | 0.96        | (0.23)        | 3.29        | 2.44        | 5.42        |
| <b>IG Fixed Income &amp; Cash</b> | <b>\$28,628</b>        | <b>1.02</b> | <b>0.11</b>   | <b>3.17</b> | <b>2.47</b> | <b>5.73</b> |
| Core Fixed Income                 | \$25,637               | 1.11        | 0.01          | 3.47        | 2.59        | 5.81        |
| IG Fixed Income Cash              | \$2,991                | 0.30        | 1.05          | 0.79        | -           | -           |
| <b>Pension Cash</b>               | <b>\$3,520</b>         | <b>0.30</b> | <b>1.05</b>   | <b>0.83</b> | <b>-</b>    | <b>-</b>    |

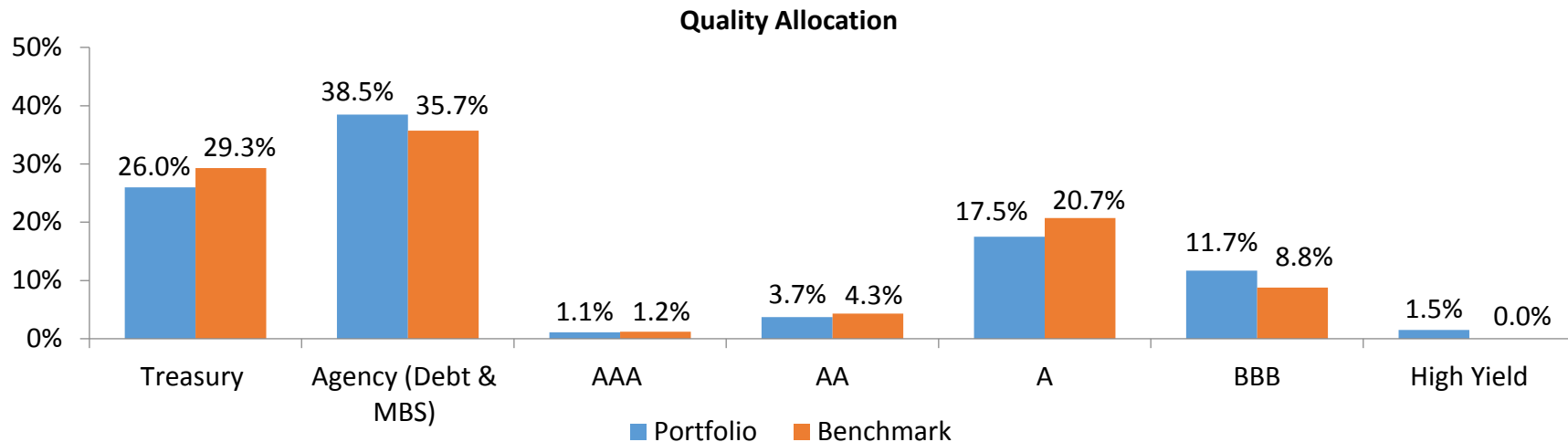
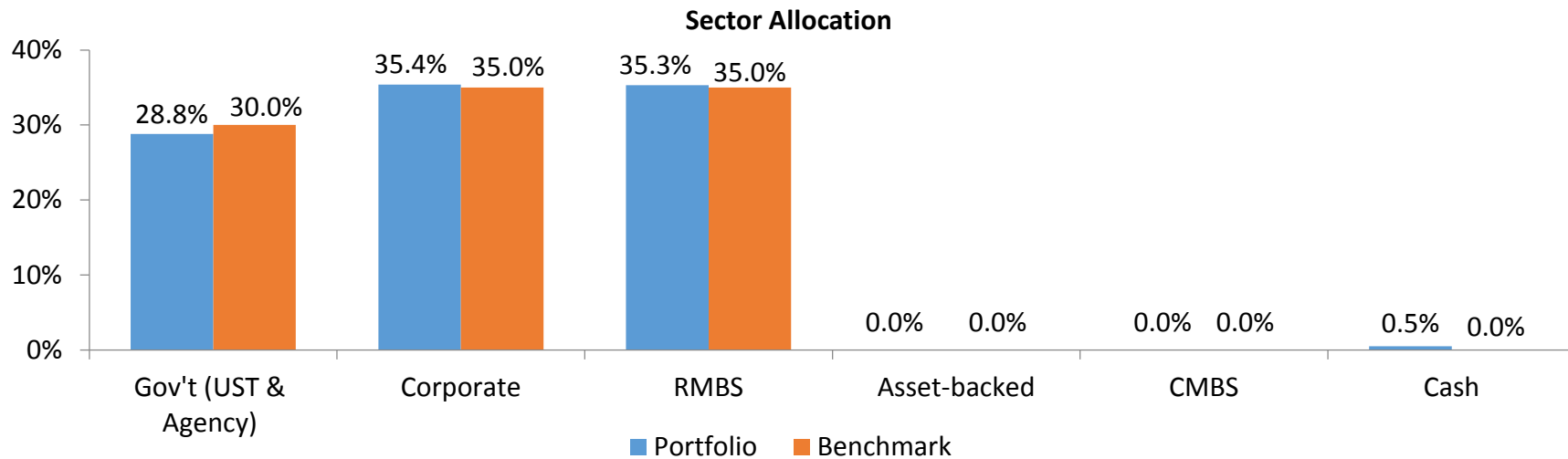
## Core Fixed Income Portfolio Characteristics

|                                | <u>Avg. Coupon</u> | <u>Yield to Maturity</u> | <u>Duration (Years)</u> |
|--------------------------------|--------------------|--------------------------|-------------------------|
| Government (Treasury & Agency) | 4.25%              | 2.42%                    | 10.0                    |
| Corporate                      | 4.60%              | 3.49%                    | 9.2                     |
| Mortgage                       | 3.74%              | 2.73%                    | 4.3                     |
| <b>Total</b>                   | <b>4.19%</b>       | <b>2.91%</b>             | <b>7.7</b>              |



# NCRS Core Fixed Income Portfolio Characteristics

## As of September 30, 2017



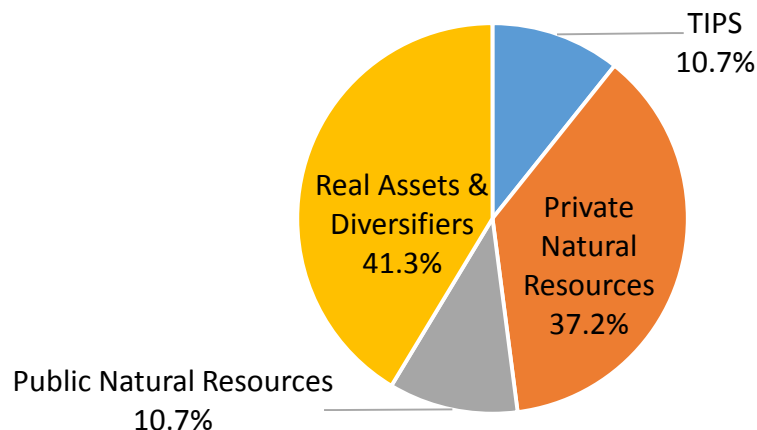
# NCRS Inflation Sensitive Portfolio

As of September 30, 2017

| Net of Fees Performance                     |                     |               |               |                |               |               |
|---------------------------------------------|---------------------|---------------|---------------|----------------|---------------|---------------|
|                                             | Market Value (\$MM) | 3 Month       | 1 Year        | 3 Years        | 5 Years       | 10 Years      |
| <b>Inflation Sensitive</b>                  | <b>\$6,429</b>      | <b>0.62</b>   | <b>8.20</b>   | <b>(0.30)</b>  | <b>(0.33)</b> | <b>(1.46)</b> |
| Benchmark <sup>10</sup>                     |                     | 0.73          | 2.94          | (1.91)         | (1.89)        | 0.78          |
| <b>Private Natural Resources</b>            | <b>\$2,546</b>      | <b>(0.43)</b> | <b>10.87</b>  | <b>(0.37)</b>  | <b>3.25</b>   | <b>0.96</b>   |
| <b>Public Natural Resources</b>             | <b>\$688</b>        | <b>1.31</b>   | <b>(1.10)</b> | <b>(10.33)</b> | <b>(9.54)</b> | <b>-</b>      |
| <b>TIPS</b>                                 | <b>\$56</b>         | <b>0.47</b>   | <b>0.38</b>   | <b>-</b>       | <b>-</b>      | <b>-</b>      |
| <b>Real Assets &amp; Other Diversifiers</b> | <b>\$2,505</b>      | <b>1.38</b>   | <b>9.62</b>   | <b>7.50</b>    | <b>7.71</b>   | <b>-</b>      |

|            | IRR by Vintage Year |             |             |             |             |             |             |             |             |             |             |             |              |
|------------|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
|            | <u>2006</u>         | <u>2007</u> | <u>2008</u> | <u>2009</u> | <u>2010</u> | <u>2011</u> | <u>2012</u> | <u>2013</u> | <u>2014</u> | <u>2015</u> | <u>2016</u> | <u>2017</u> | <u>Total</u> |
| NCRS       | -0.26               | 7.19        | 0.25        | N/A         | -8.01       | -7.31       | 6.31        | 5.84        | 10.25       | 3.72        | 4.90        | N/A         | -0.27        |
| # of Funds | 3                   | 2           | 2           | 0           | 3           | 9           | 7           | 11          | 12          | 4           | 4           | 0           | 57           |

Strategy Allocation (Based on Valuation)







# NCRS Core Real Estate Portfolio

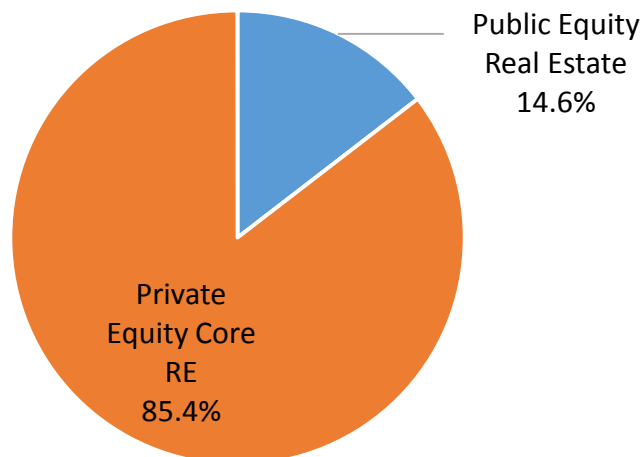
As of September 30, 2017

| Net of Fees Performance                |                     |             |             |             |             |             |
|----------------------------------------|---------------------|-------------|-------------|-------------|-------------|-------------|
|                                        | Market Value (\$MM) | 3 Month     | 1 Year      | 3 Years     | 5 Years     | 10 Years    |
| <b>Core Real Estate</b>                | <b>\$4,715</b>      | <b>2.26</b> | <b>8.57</b> | <b>8.81</b> | <b>9.66</b> | <b>4.17</b> |
| Benchmark <sup>11</sup>                |                     | 1.85        | 6.47        | 9.96        | 10.30       | 4.38        |
| <b>Public Equity Real Estate</b>       | <b>\$687</b>        | <b>2.99</b> | <b>4.65</b> | <b>7.70</b> | <b>9.02</b> | <b>3.63</b> |
| <b>Private Equity Core Real Estate</b> | <b>\$4,028</b>      | <b>2.14</b> | <b>9.27</b> | <b>8.97</b> | <b>9.98</b> | <b>4.66</b> |

## IRR by Vintage Year

|            | <u>Pre-2004</u> | <u>2004</u> | <u>2005</u> | <u>2006</u> | <u>2007</u> | <u>2008</u> | <u>2009</u> | <u>2010</u> | <u>2011</u> | <u>2012</u> | <u>2013</u> | <u>2014</u> | <u>2015</u> | <u>2016</u> | <u>2017</u> | <u>Total</u> |
|------------|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| NCRS       | 7.58            | 9.76        | -10.76      | 5.37        | 1.39        | 9.75        | N/A         | 23.62       | N/A         | N/A         | 7.33        | 7.61        | 1.87        | 28.69       | N/A         | 7.56         |
| # of Funds | 5               | 1           | 1           | 2           | 3           | 1           | 0           | 1           | 0           | 0           | 2           | 6           | 2           | 9           | 0           | 33           |

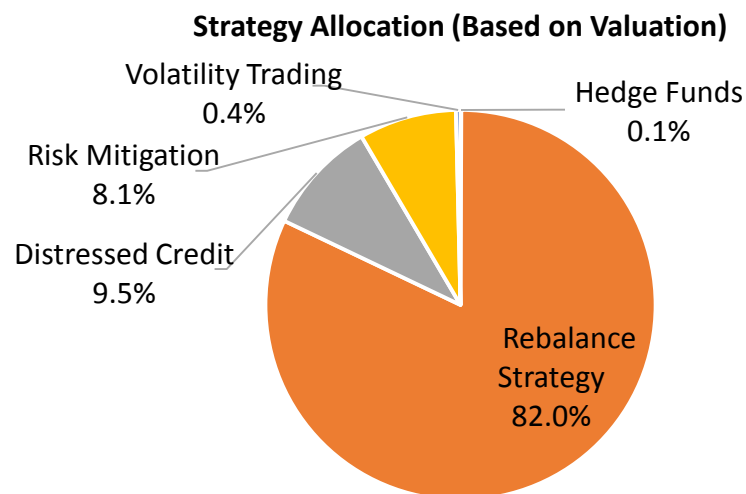
## Strategy Allocation (Based on Valuation)



# NCRS Multi-Strategy Portfolio

As of September 30, 2017

| Net of Fees Performance   |                     |                |                |                |               |               |
|---------------------------|---------------------|----------------|----------------|----------------|---------------|---------------|
|                           | Market Value (\$MM) | 3 Month        | 1 Year         | 3 Years        | 5 Years       | 10 Years      |
| <b>Multi-Strategy</b>     | <b>\$1,822</b>      | <b>2.68</b>    | <b>11.95</b>   | <b>5.81</b>    | <b>8.74</b>   | <b>5.63</b>   |
| Benchmark <sup>12</sup>   |                     | 2.89           | 11.26          | 4.70           | 8.01          | 4.75          |
| <b>Hedge Funds</b>        | <b>\$1</b>          | <b>(11.10)</b> | <b>(20.28)</b> | <b>(10.58)</b> | <b>(4.16)</b> | <b>(2.78)</b> |
| <b>Rebalance Strategy</b> | <b>\$1,494</b>      | <b>3.50</b>    | <b>13.46</b>   | <b>6.93</b>    | <b>9.97</b>   | <b>-</b>      |
| <b>Distressed Credit</b>  | <b>\$172</b>        | <b>(0.80)</b>  | <b>10.38</b>   | <b>-</b>       | <b>-</b>      | <b>-</b>      |
| <b>Risk Mitigation</b>    | <b>\$147</b>        | <b>(0.79)</b>  | <b>-</b>       | <b>-</b>       | <b>-</b>      | <b>-</b>      |
| <b>Volatility Trading</b> | <b>\$7</b>          | <b>(8.88)</b>  | <b>-</b>       | <b>-</b>       | <b>-</b>      | <b>-</b>      |



## Notes:

All data presented are based on currently available information at time of publication and may be revised subsequently.

1. The Growth Benchmark is a blend of the Public Equity Benchmark, Private Equity Benchmark, Non-Core Real Estate Benchmark, & Opportunistic FI Benchmark at policy weights.
2. The Public Equity Benchmark is the dynamically weighted combination of the MSCI ACWI IMI Net (Long-Only) and a beta adjusted MSCI ACWI IMI Net (Hedged Equity).
3. The Private Equity Benchmark is comprised of the following Burgiss Group Private iQ indices: 50% Buyout, 20% Venture Capital, and 30% Distressed.
4. The Non-Core Real Estate Benchmark is comprised of the following Burgiss Group Private iQ indices: 80% U.S. Non-Core Real Estate (Opportunistic and Value-Added) and 20% Non-U.S. Non-Core Real Estate (Opportunistic and Value-Added).
5. The Opportunistic Fixed Income Benchmark is comprised of 50% HFRX Distressed Securities Index, 20% HFRX Relative Value Index, 15% Credit Suisse Leveraged Loan Index, and 15% BOAML High Yield Index\*.
6. The Rates & Liquidity Benchmark is a blend of the IG Fixed Income Benchmark and the Cash Benchmark at policy weights.
7. The IG Fixed Income Benchmark is comprised 10% iMoneyNet First Tier Institutional Money Market Funds Net Index and 90% custom BOAML Core Investment Grade Index\*. The custom BOAML core index comprised of the following weightings: 30% BOAML 5+ Years Governments, 35% BOAML 5+ Years Investment Grade Corporates, and 35% BOAML Mortgage Master.
8. The Cash Benchmark is the iMoneyNet First Tier Institutional Money Market Funds Net Index.
9. The Inflation Sensitive & Diversifiers Benchmark is a blend of the Inflation Sensitive Benchmark and the Core Real Estate Benchmark at policy weights.
10. The Inflation Sensitive Benchmark is the dynamically weighted combination of the Bank of America Merrill Lynch 1-3 Years U.S. Inflation-Linked Treasury Index (TIPS)\*, the Bloomberg Commodities Index (Commodities), and a combination of the benchmarks of investments classified within Private Natural Resources or Other Real Assets and Diversifiers.
11. The Core Real Estate Benchmark is comprised of 80% NCREIF ODCE Net and 20% FTSE EPRA NAREIT Global Index.
12. The Multi-Strategy Benchmark is comprised of a dynamically weighted combination of the HFRX ED: Multi-Strategy Index, net of fees, and the market value weighted benchmarks for any other total fund strategies within the Portfolio.

\*Source: BofA Merrill Lynch , used with permission. See disclaimer on page.



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DEPARTMENT OF STATE TREASURER



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## INVESTMENT MANAGEMENT DIVISION