



INVESTMENT ADVISORY SERVICES

Los Angeles • New York

## Sacramento County Employees' Retirement System Quarterly Performance Review

March 18, 2020



## *Executive Summary*

## Absolute Return Portfolio Performance Summary – as of December 31, 2019

### Growth Oriented Strategies

- The Growth Oriented Portfolio returned 4.37% in Q4 and 12.94% for the 1 year period ending December 31, 2019
  - Outperforming the HFRI FoF Index + 1% benchmark by 158 bps in Q4 and 417 bps for the 1 year period
    - The portfolio is also outperforming that benchmark by 105 bps (annualized) over the trailing 3 year period
  - Underperforming the T-bills + 5% long term objective by 218 bps (annualized) over the trailing 5 year period
- The 1 yr outperformance was driven by the direct funds – Third Point (+18%), Lakewood (+26%) and Sculptor (+16%)

### Diversifying Strategies

- The Diversifying Portfolio returned 0.76% in Q4 and 4.38% for the 1 year period ending December 31, 2019
  - Trailing the HFRI Conservative FoF Index benchmark by 53 bps in Q4 and 157 bps for the 1 year period
  - Underperforming the T-bills + 2% long term objective by 189 bps (annualized) over the trailing 5 year period
- AQR DELTA has been the primary detractor from performance over these periods

### Portfolio risk and market sensitivity remains within expectations for the Growth Oriented and Diversifying portfolios

- Growth Oriented
  - Portfolio standard deviation of 5.16% compared to the ACWI standard deviation of 11.28% since December 2011
  - Portfolio equity beta of 0.38 with an equity correlation of 0.84
    - Target standard deviation < 50% of global equities, with an equity beta < 0.5 and equity correlation < 0.8
- Diversifying
  - Portfolio standard deviation of 2.51% compared to the ACWI standard deviation of 11.28% since December 2011
  - Portfolio equity beta of 0.04 with an equity correlation of 0.19
    - Target standard deviation < 25% of global equities, with an equity beta < 0.1 and equity correlation < 0.1

### Relative differences between the Growth Oriented and Diversifying portfolios reflect objectives and design

- Expect higher returns over the long-term from the Growth Oriented portfolio, though with more volatility
  - Both portfolios expected to provide diversification and risk reduction benefits for the overall SCERS portfolio

# Growth Oriented Absolute Return Portfolio Performance – as of December 31, 2019

| Fund   | Market Value       | Actual %     | Returns      |              |               |              |               |              |              |              | Std Dev      | Sharpe Ratio | Incep Date    |
|--|--------------------|--------------|--------------|--------------|---------------|--------------|---------------|--------------|--------------|--------------|--------------|--------------|---------------|
|  |                    |              | Dec          | QTD          | YTD           | FYTD         | 1 Year        | 3 Year       | 5 Year       | Incep        |              |              |               |
| <b>Growth-Oriented Portfolio</b>               |                    |              |              |              |               |              |               |              |              |              |              |              |               |
| <b>Event Driven</b>                            |                    |              |              |              |               |              |               |              |              |              |              |              |               |
| Third Point Partners Qualified L.P.            | 51,693,308         | 5.3%         | 2.20%        | 3.88%        | 17.73%        | 3.84%        | 17.73%        | 7.28%        | 5.49%        | 9.10%        | 7.88%        | 1.02         | May-12        |
| Event Driven - HF Total                        | 51,693,308         | 5.3%         | 2.20%        | 3.88%        | 15.01%        | 3.55%        | 15.01%        | 5.34%        | 3.48%        | 7.43%        | 7.94%        | 0.81         | May-12        |
| <b>Equity Long/Short</b>                       |                    |              |              |              |               |              |               |              |              |              |              |              |               |
| Lakewood Capital Partners, LP                  | 49,048,389         | 5.0%         | 1.34%        | 6.25%        | 25.83%        | 9.59%        | 25.83%        | 5.32%        | 5.95%        | 6.62%        | 9.43%        | 0.61         | Jul-13        |
| Equity Long/Short - HF Total                   | 49,048,389         | 5.0%         | 1.34%        | 6.25%        | 25.83%        | 9.59%        | 25.83%        | 5.32%        | 5.95%        | 6.62%        | 9.43%        | 0.61         | Jul-13        |
| <b>Multi-Strategy</b>                          |                    |              |              |              |               |              |               |              |              |              |              |              |               |
| Sculptor Domestic Partners II, L.P.            | 52,968,807         | 5.4%         | 2.13%        | 5.79%        | 15.91%        | 3.06%        | 15.91%        | 8.27%        | 5.41%        | 7.36%        | 5.11%        | 1.22         | Jan-12        |
| Multi-Strategy - HF Total                      | 52,968,807         | 5.4%         | 2.13%        | 5.79%        | 15.91%        | 3.06%        | 15.91%        | 8.27%        | 5.41%        | 7.36%        | 5.11%        | 1.22         | Jan-12        |
| <b>Fund of Funds</b>                           |                    |              |              |              |               |              |               |              |              |              |              |              |               |
| Grosvenor SC Absolute Return Fund LLC (Growth) | 158,372,911        | 16.3%        | 2.19%        | 3.51%        | 8.03%         | 2.60%        | 8.03%         | 5.69%        | 3.47%        | 5.68%        | 4.46%        | 1.04         | Dec-11        |
| Fund of Funds - HF Total                       | 158,372,911        | 16.3%        | 2.19%        | 3.51%        | 8.03%         | 2.60%        | 8.03%         | 5.53%        | 3.50%        | 4.50%        | 5.90%        | 0.48         | Sep-04        |
| <b>Growth-Oriented Portfolio Total</b>         | <b>312,083,415</b> | <b>32.0%</b> | <b>2.05%</b> | <b>4.37%</b> | <b>12.94%</b> | <b>3.89%</b> | <b>12.94%</b> | <b>5.74%</b> | <b>3.89%</b> | <b>4.83%</b> | <b>6.25%</b> | <b>0.51</b>  | <b>Sep-04</b> |
| HFRI FoF Composite + 1%                        |                    |              | 1.36%        | 2.79%        | 8.77%         | 2.05%        | 8.77%         | 4.69%        | 3.25%        | 4.10%        | 4.92%        | 0.49         | Sep-04        |
| 3 Month T-Bills+5%                             |                    |              | 0.55%        | 1.68%        | 7.28%         | 3.48%        | 7.28%         | 6.67%        | 6.07%        | 6.40%        | 0.47%        | -            | Sep-04        |
| <b>Market Indices</b>                          |                    |              |              |              |               |              |               |              |              |              |              |              |               |
| Libor3Month                                    |                    |              | 0.16%        | 0.48%        | 2.29%         | 1.02%        | 2.29%         | 1.98%        | 1.40%        | 1.74%        | 0.49%        | -            | Sep-04        |
| Bloomberg Barclays US Aggregate Bond Index     |                    |              | -0.07%       | 0.18%        | 8.73%         | 2.45%        | 8.73%         | 4.04%        | 3.06%        | 4.15%        | 3.15%        | 0.75         | Sep-04        |
| Bloomberg Barclays US High Yield Bond Index    |                    |              | 2.00%        | 2.61%        | 14.30%        | 3.98%        | 14.30%        | 6.36%        | 6.13%        | 7.46%        | 8.97%        | 0.65         | Sep-04        |
| S&P 500 TR                                     |                    |              | 3.02%        | 9.07%        | 31.49%        | 10.92%       | 31.49%        | 15.27%       | 11.70%       | 9.50%        | 13.70%       | 0.61         | Sep-04        |
| MSCI AC World Index Free - Net                 |                    |              | 3.52%        | 8.95%        | 26.60%        | 8.92%        | 26.60%        | 12.44%       | 8.41%        | 7.65%        | 15.00%       | 0.45         | Sep-04        |
| MSCI EAFE - Net                                |                    |              | 3.25%        | 8.17%        | 22.01%        | 7.01%        | 22.01%        | 9.56%        | 5.67%        | 5.89%        | 16.34%       | 0.33         | Sep-04        |
| MSCI EMF (Emerging Markets Free) - Net         |                    |              | 7.46%        | 11.84%       | 18.44%        | 7.09%        | 18.44%        | 11.57%       | 5.61%        | 8.83%        | 21.32%       | 0.43         | Sep-04        |

# Diversifying Absolute Return Portfolio Performance – as of December 31, 2019

| Fund   | Market Value       | Actual %     | Returns       |               |               |               |               |               |               |               | Std Dev      | Sharpe Ratio | Incep Date    |
|--|--------------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|---------------|
|  |                    |              | Dec           | QTD           | YTD           | FYTD          | 1 Year        | 3 Year        | 5 Year        | Incep         |              |              |               |
| <b>Diversifying Portfolio</b>                              |                    |              |               |               |               |               |               |               |               |               |              |              |               |
| <b>Market Neutral</b>                                      |                    |              |               |               |               |               |               |               |               |               |              |              |               |
| Laurion Capital, Ltd.                                      | 47,694,026         | 4.9%         | 1.21%         | 0.35%         | 2.98%         | -1.71%        | 2.98%         | 4.41%         | 5.83%         | 5.45%         | 5.16%        | 0.82         | Mar-14        |
| LMR Fund Limited   | 45,874,594         | 4.7%         | 1.00%         | -             | -             | -             | -             | -             | -             | 1.94%         | -            | -            | Nov-19        |
| KLS Diversified Fund LP                                    | 40,240,977         | 4.1%         | 1.58%         | -0.26%        | 0.60%         | -1.25%        | 0.60%         | -             | -             | 0.60%         | 3.23%        | -0.51        | Jan-19        |
| Two Sigma Risk Premia Enhanced Fund, LP                    | 45,198,788         | 4.6%         | 2.26%         | -             | -             | -             | -             | -             | -             | 0.44%         | -            | -            | Sep-19        |
| <b>Market Neutral - HF Total</b>                           | <b>179,008,385</b> | <b>18.4%</b> | <b>1.50%</b>  | <b>0.52%</b>  | <b>2.35%</b>  | <b>-1.05%</b> | <b>2.35%</b>  | <b>4.20%</b>  | <b>5.70%</b>  | <b>5.34%</b>  | <b>4.77%</b> | <b>0.85</b>  | <b>Mar-14</b> |
| <b>Event Driven</b>  |                    |              |               |               |               |               |               |               |               |               |              |              |               |
| Elliott International Limited                              | 57,725,177         | 5.9%         | 1.40%         | 0.99%         | 6.44%         | 2.01%         | 6.44%         | 5.75%         | 6.18%         | 7.10%         | 3.35%        | 1.75         | Apr-12        |
| Davidson Kempner Institutional Partners LP                 | 33,683,694         | 3.5%         | 1.21%         | 1.82%         | -             | 2.65%         | -             | -             | -             | 3.09%         | 1.57%        | -            | May-19        |
| <b>Event Driven - HF Total</b>                             | <b>91,408,871</b>  | <b>9.4%</b>  | <b>1.33%</b>  | <b>1.30%</b>  | <b>5.96%</b>  | <b>2.25%</b>  | <b>5.96%</b>  | <b>5.59%</b>  | <b>6.08%</b>  | <b>7.03%</b>  | <b>3.29%</b> | <b>1.76</b>  | <b>Apr-12</b> |
| <b>Equity Long/Short</b>                                   |                    |              |               |               |               |               |               |               |               |               |              |              |               |
| Marshall Wace Funds LP - MW Global Opportunities (US) F    | 42,621,228         | 4.4%         | 1.74%         | 3.56%         | 6.55%         | 4.01%         | 6.55%         | -             | -             | 6.55%         | 5.20%        | 0.81         | Jan-19        |
| <b>Equity Long/Short - HF Total</b>                        | <b>42,621,228</b>  | <b>4.4%</b>  | <b>1.74%</b>  | <b>3.56%</b>  | <b>6.55%</b>  | <b>4.01%</b>  | <b>6.55%</b>  | <b>6.55%</b>  | <b>6.55%</b>  | <b>6.55%</b>  | <b>5.20%</b> | <b>0.81</b>  | <b>Apr-12</b> |
| <b>Macro-Systematic</b>                                    |                    |              |               |               |               |               |               |               |               |               |              |              |               |
| Graham Global Investment Fund II SPC Ltd. - Tactical Trend | 35,760,117         | 3.7%         | -3.23%        | -0.81%        | 17.78%        | 6.08%         | 17.78%        | -             | -             | 0.74%         | 13.13%       | -0.03        | Feb-17        |
| Winton Diversified Futures Fund L.P.                       | 38,351,581         | 3.9%         | 0.87%         | -2.49%        | 3.95%         | 2.75%         | 3.95%         | 3.10%         | -             | 3.10%         | 7.81%        | 0.18         | Jan-17        |
| <b>Macro-Systematic - HF Total</b>                         | <b>74,111,698</b>  | <b>7.6%</b>  | <b>-1.15%</b> | <b>-1.69%</b> | <b>10.20%</b> | <b>4.33%</b>  | <b>10.20%</b> | <b>1.79%</b>  | <b>-</b>      | <b>1.79%</b>  | <b>9.51%</b> | <b>0.03</b>  | <b>Jan-17</b> |
| <b>Multi-Strategy</b>                                      |                    |              |               |               |               |               |               |               |               |               |              |              |               |
| AQR DELTA Fund II, LP                                      | 43,207,193         | 4.4%         | 1.19%         | -2.41%        | -9.43%        | -3.76%        | -9.43%        | -7.25%        | -2.20%        | -0.22%        | 5.87%        | -0.19        | May-13        |
| <b>Multi-Strategy - HF Total</b>                           | <b>43,207,193</b>  | <b>4.4%</b>  | <b>1.19%</b>  | <b>-2.41%</b> | <b>-9.43%</b> | <b>-3.76%</b> | <b>-9.43%</b> | <b>-7.25%</b> | <b>-2.20%</b> | <b>-0.22%</b> | <b>5.87%</b> | <b>-0.19</b> | <b>May-13</b> |
| <b>Fund of Funds</b>                                       |                    |              |               |               |               |               |               |               |               |               |              |              |               |
| Grosvenor SC Absolute Return Fund LLC (Diversifying)       | 120,670,714        | 12.4%        | 1.17%         | 1.52%         | 5.76%         | 2.27%         | 5.76%         | 0.51%         | -0.07%        | 1.72%         | 2.99%        | 0.25         | Dec-11        |
| Grosvenor SC Absolute Return Fund LLC Series B             | 110,949,832        | 11.4%        | 1.16%         | 1.75%         | 6.22%         | 2.08%         | 6.22%         | -0.35%        | -0.89%        | 0.83%         | 2.64%        | -0.08        | Feb-13        |
| <b>Fund of Funds - HF Total</b>                            | <b>231,620,546</b> | <b>23.8%</b> | <b>1.16%</b>  | <b>1.63%</b>  | <b>6.01%</b>  | <b>2.15%</b>  | <b>6.01%</b>  | <b>0.17%</b>  | <b>-0.42%</b> | <b>1.56%</b>  | <b>2.78%</b> | <b>0.21</b>  | <b>Dec-11</b> |
| <b>Diversifying Portfolio Total</b>                        | <b>661,977,920</b> | <b>68.0%</b> | <b>1.05%</b>  | <b>0.76%</b>  | <b>4.38%</b>  | <b>1.51%</b>  | <b>4.38%</b>  | <b>0.82%</b>  | <b>1.18%</b>  | <b>2.07%</b>  | <b>2.51%</b> | <b>0.43</b>  | <b>Dec-11</b> |
| HFRI FOF: Conservative Index                               |                    |              | 0.66%         | 1.29%         | 5.95%         | 1.24%         | 5.95%         | 3.03%         | 2.26%         | 3.20%         | 2.24%        | 0.97         | Dec-11        |
| 3 Month T-Bills+2%   |                    |              | 0.31%         | 0.96%         | 4.28%         | 2.01%         | 4.28%         | 3.67%         | 3.07%         | 2.69%         | 0.24%        | -            | Dec-11        |

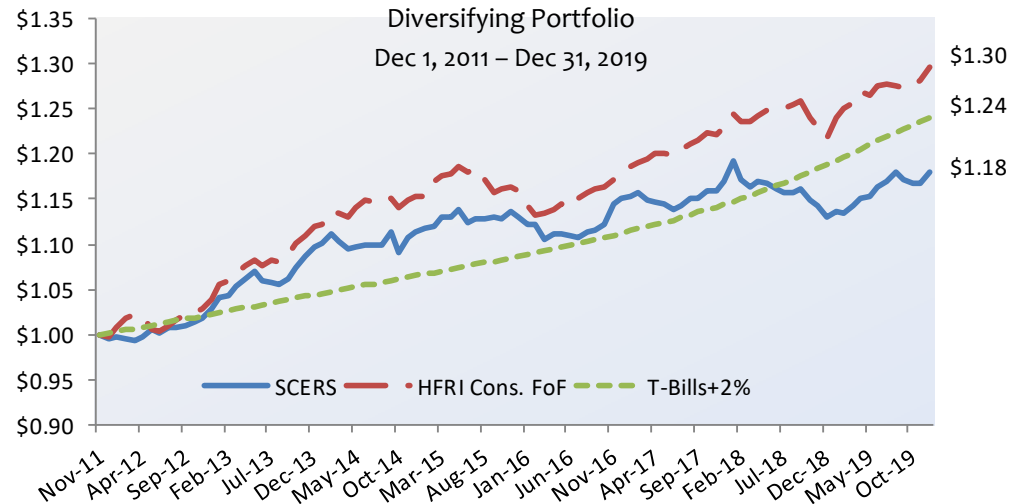
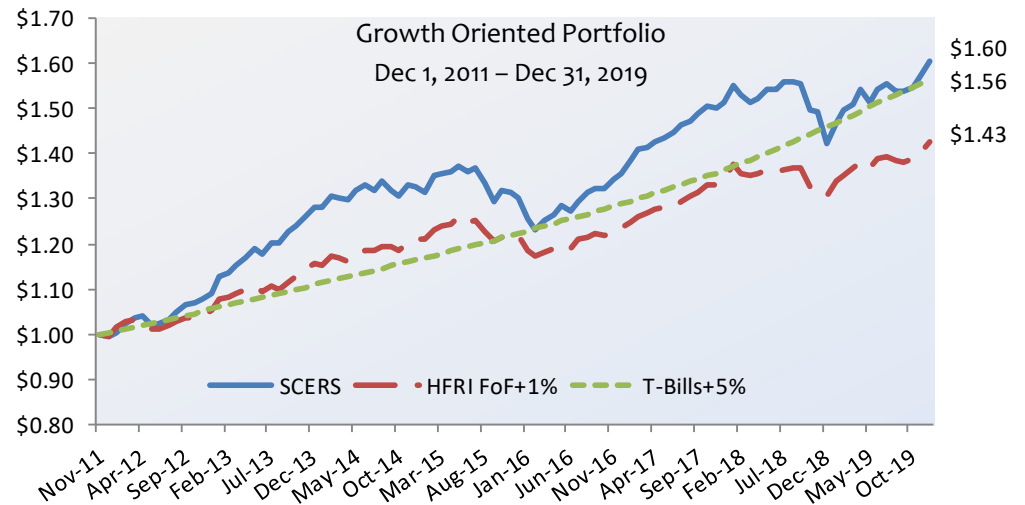
# Absolute Return Portfolios Cumulative Performance – Dec 2011 to December 2019

The Growth Oriented portfolio has outperformed the Fund of Funds Index + 1% benchmark and the T-bills + 5% long term objective

The Diversifying portfolio was tracking the T-bills + 2% long term objective until the Q4 2018 downturn and remains below the objective; the portfolio has underperformed the HFRI Fund of Funds Conservative Index over this period

Showing cumulative performance (growth of \$1) for each portfolio since the initial restructuring of the Absolute Return portfolio in December 2011

- The prior exposure of the Absolute Return portfolio was only Equity Long/Short fund of funds investments



## Private Equity Portfolio – as of September 30, 2019

The Private Equity portfolio's net IRR since inception is 15.24%, versus the Cambridge Associates benchmark IRR of 12.72%

- The long-term Policy objective (Russell 3000 + 3%) has a 15.03% IRR over this period

The private equity portfolio produced another quarter of solid gains, despite a flat global equity market in Q3

- Gains were again broad-based across most of the funds in Q3, with some funds producing double-digit returns
  - Summit Europe II, Marlin V, HIG V, Thoma Bravo XI, RCP Direct III, and Trinity Ventures XII reported the largest gains
- Distributions were particularly strong among the direct fund investments (\$83.3 million)
  - Linden III, Spectrum VII, RRJ III, Thoma Bravo XI, Accel-KKR V, and Waterland VI led distributions within directs

Longer-term performance remains quite strong across most of the private equity funds

- Double-digit net IRRs for all vintage years prior to 2018, with several years >20%
- Spectrum VII (43.3%), Summit VC IV (40.7%), Accel-KKR IV (37.6%), and Trinity XII (37.2%) are leading performance

The fund of funds reported modest decreases during the quarter

- Aggregate since inception net IRR decreased to 11.44% from 11.66%, during the quarter
  - The aggregate total value (TVPI) decreased to 1.65x from 1.66x
- The legacy fund of funds comprise only 12.9% of the current fair value of the Private Equity portfolio

Changes during the quarter

- SCERS committed \$30 million to DK Long-Term Distressed Opps V (distressed, reup with an existing GP) during Q3
  - SCERS committed \$30 million to a mid-market buyout fund in Q4 2019
- \$40.1 million in new contributions, \$92.9 million in distributions
- Total portfolio gain increased by \$20.1 million while the total portfolio IRR decreased by 0.26%

## Private Equity Portfolio Characteristics as of September 30, 2019

The SCERS Private Equity portfolio is diversified by strategy and geography

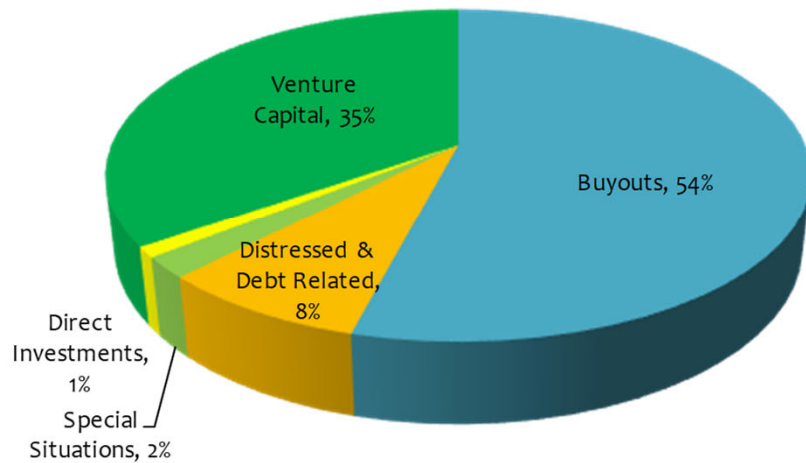
- Investments remain focused in North America, with meaningful exposure to Europe

The legacy fund of funds exposure remains relatively small as a percentage of the total portfolio's value

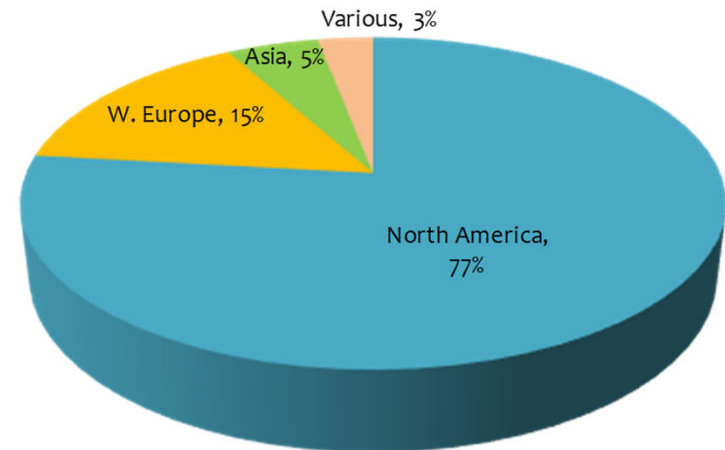
- Represents 13% of the total portfolio's value as of September 30, 2019

Portfolio strategy and geographic allocations, based on fair market value of invested capital, shown below

Market Value Strategy Exposure\*



Market Value Geographic Exposure\*



\* Exposures are based on the market values of investments as of 9/30/19.



## Private Equity Portfolio Performance Details – as of September 30, 2019

| Partnership Name   | Strategy        | (A)<br>Commit.<br>Amount | Unfund.<br>Amount | (B)<br>Cumulat.<br>Cont. | %<br>Drawn | (C)<br>Cumulat.<br>Dist. | (D)<br>Fair<br>Value | (C+D)<br>Total<br>Value | (C+D-B)<br>Gain/Loss | Net<br>IRR    | IRR<br>Bench. | TVPI         |
|--|-----------------|--------------------------|-------------------|--------------------------|------------|--------------------------|----------------------|-------------------------|----------------------|---------------|---------------|--------------|
| <b>Vintage Year 2006</b>   |                 |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| HarbourVest Partners VIII - Buyout Fund L.P.                               | Fund of Funds   | 37,500                   | 1,688             | 35,813                   | 96%        | 52,158                   | 10,293               | 62,451                  | 26,638               | 10.80%        | 7.67%         | 1.74x        |
| HarbourVest Partners VIII - Mezzanine and Distressed Debt Fund L.P.        | Fund of Funds   | 5,000                    | 200               | 4,800                    | 96%        | 5,865                    | 745                  | 6,611                   | 1,811                | 7.32%         | 7.67%         | 1.38x        |
| HarbourVest Partners VIII - Venture Fund L.P.                              | Fund of Funds   | 7,500                    | 150               | 7,350                    | 98%        | 10,045                   | 4,024                | 14,069                  | 6,719                | 10.79%        | 7.67%         | 1.91x        |
| <b>Vintage Year 2006 Total</b>   |                 | <b>50,000</b>            | <b>2,038</b>      | <b>47,963</b>            | <b>96%</b> | <b>68,068</b>            | <b>15,063</b>        | <b>83,131</b>           | <b>35,168</b>        | <b>10.53%</b> | <b>7.26%</b>  | <b>1.73x</b> |
| <b>Vintage Year 2008</b>   |                 |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| Abbott Capital Private Equity Fund VI, L.P.                                | Fund of Funds   | 75,000                   | 938               | 74,063                   | 99%        | 75,751                   | 48,371               | 124,122                 | 50,059               | 12.41%        | 12.49%        | 1.68x        |
| Goldman Sachs Private Equity Partners X, L.P.                              | Fund of Funds   | 75,000                   | 13,231            | 68,958                   | 82%        | 92,998                   | 23,008               | 116,006                 | 47,049               | 11.49%        | 12.49%        | 1.68x        |
| HarbourVest International Private Equity Partners VI-Partnership Fund L.P. | Fund of Funds   | 35,150                   | 2,109             | 37,619                   | 94%        | 25,865                   | 34,720               | 60,585                  | 22,966               | 11.55%        | 7.94%         | 1.61x        |
| <b>Vintage Year 2008 Total</b>   |                 | <b>185,150</b>           | <b>16,278</b>     | <b>180,639</b>           | <b>91%</b> | <b>194,614</b>           | <b>106,099</b>       | <b>300,713</b>          | <b>120,074</b>       | <b>11.86%</b> | <b>8.26%</b>  | <b>1.66x</b> |
| <b>Vintage Year 2011</b>   |                 |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| Waterland Private Equity Fund V C.V.                                       | Buyout          | 17,466                   | 3,441             | 15,681                   | 80%        | 28,975                   | 11,722               | 40,697                  | 25,016               | 36.00%        | 12.56%        | 2.60x        |
| Khosla Ventures IV, L.P.   | Venture Capital | 10,000                   | 190               | 9,810                    | 98%        | 11,838                   | 16,136               | 27,974                  | 18,164               | 22.09%        | 16.75%        | 2.85x        |
| <b>Vintage Year 2011 Total</b>   |                 | <b>27,466</b>            | <b>3,631</b>      | <b>25,491</b>            | <b>87%</b> | <b>40,813</b>            | <b>27,858</b>        | <b>68,671</b>           | <b>43,180</b>        | <b>29.15%</b> | <b>12.98%</b> | <b>2.69x</b> |
| <b>Vintage Year 2012</b>   |                 |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| Garrison Opportunity Fund III A LLC  | Distressed Debt | 20,000                   | 0                 | 20,000                   | 100%       | 7,660                    | 13,705               | 21,365                  | 1,365                | 1.34%         | 11.76%        | 1.07x        |
| New Enterprise Associates 14, L.P.   | Venture Capital | 25,000                   | 1,500             | 23,500                   | 94%        | 22,637                   | 28,164               | 50,801                  | 27,301               | 17.13%        | 15.10%        | 2.16x        |
| Summit Partners Venture Capital III-A, LP                                  | Venture Capital | 16,350                   | 2,122             | 18,995                   | 87%        | 20,439                   | 15,148               | 35,587                  | 16,591               | 17.14%        | 15.10%        | 1.87x        |
| <b>Vintage Year 2012 Total</b>   |                 | <b>61,350</b>            | <b>3,622</b>      | <b>62,495</b>            | <b>94%</b> | <b>50,736</b>            | <b>57,017</b>        | <b>107,753</b>          | <b>45,257</b>        | <b>12.40%</b> | <b>13.47%</b> | <b>1.72x</b> |
| <b>Vintage Year 2013</b>   |                 |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| Accel-KKR Capital Partners IV, L.P.  | Buyout          | 15,000                   | 823               | 14,177                   | 95%        | 22,442                   | 13,961               | 36,403                  | 22,226               | 37.57%        | 15.00%        | 2.57x        |
| H.I.G. Capital Partners V, L.P.  | Buyout          | 14,000                   | 2,761             | 11,239                   | 80%        | 3,685                    | 14,591               | 18,276                  | 7,037                | 24.51%        | 15.00%        | 1.63x        |
| Martin Equity IV, L.P.   | Buyout          | 20,000                   | 139               | 19,861                   | 99%        | 9,877                    | 14,985               | 24,862                  | 5,001                | 8.00%         | 15.00%        | 1.25x        |
| RRJ Capital Master Fund II, L.P.   | Buyout          | 35,000                   | 4,683             | 35,067                   | 87%        | 29,397                   | 18,019               | 47,416                  | 12,348               | 10.16%        | 14.55%        | 1.35x        |
| H.I.G. Bayside Loan Opportunity Fund III (Europe-US\$), L.P.               | Distressed Debt | 30,000                   | 5,769             | 24,231                   | 81%        | 21,103                   | 12,480               | 33,584                  | 9,353                | 9.81%         | 7.94%         | 1.39x        |
| Wayzata Opportunities Fund III, L.P.                                       | Distressed Debt | 30,000                   | 22,835            | 14,718                   | 24%        | 8,556                    | 5,252                | 13,809                  | -909                 | -2.12%        | 8.55%         | 0.94x        |

<sup>1</sup>Benchmarks:

Private Equity Investments: Cambridge Associates median return for the respective strategies and vintage years

Vintage Year Comparison: Cambridge Associates Global Private Equity & Venture Capital median return for the respective vintage years

Private Equity Portfolio: Cambridge Associates Global Private Equity & Venture Capital pooled internal rate of return

## Private Equity Portfolio Performance Details – as of September 30, 2019 (continued)

| Partnership Name                                | Strategy        | (A)<br>Commit.<br>Amount | Unfund.<br>Amount | (B)<br>Cumulat.<br>Cont. | %<br>Drawn | (C)<br>Cumulat.<br>Dist. | (D)<br>Fair<br>Value | (C+D)<br>Total<br>Value | (C+D-B)<br>Gain/Loss | Net<br>IRR    | IRR<br>Bench. | TVPI         |
|---|-----------------|--------------------------|-------------------|--------------------------|------------|--------------------------|----------------------|-------------------------|----------------------|---------------|---------------|--------------|
| Trinity Ventures XI, L.P.                       | Venture Capital | 25,000                   | 2,438             | 22,563                   | 90%        | 4,835                    | 37,458               | 42,294                  | 19,731               | 16.28%        | 13.53%        | 1.87x        |
| <b>Vintage Year 2013 Total</b>                  |                 | <b>169,000</b>           | <b>39,449</b>     | <b>141,855</b>           | <b>77%</b> | <b>99,896</b>            | <b>116,747</b>       | <b>216,643</b>          | <b>74,788</b>        | <b>13.77%</b> | <b>13.06%</b> | <b>1.53x</b> |
| <b>Vintage Year 2014</b>                        |                 |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| Dyal Capital Partners II                        | Buyout          | 35,000                   | 10,376            | 26,456                   | 70%        | 4,112                    | 17,236               | 21,348                  | -5,108               | -10.73%       | 16.88%        | 0.81x        |
| H.I.G. Europe Capital Partners II, L.P.         | Buyout          | 15,282                   | 5,190             | 10,899                   | 66%        | 2,499                    | 9,170                | 11,670                  | 770                  | 3.79%         | 14.42%        | 1.07x        |
| Marlin Heritage Fund                            | Buyout          | 10,000                   | -20               | 10,139                   | 100%       | 9,585                    | 12,423               | 22,008                  | 11,869               | 36.17%        | 16.88%        | 2.17x        |
| Thoma Bravo XI                                  | Buyout          | 30,000                   | 3,430             | 32,305                   | 89%        | 29,696                   | 47,655               | 77,350                  | 45,046               | 27.06%        | 16.88%        | 2.39x        |
| TPG Opportunities Partners III                  | Distressed Debt | 40,000                   | 16,726            | 45,191                   | 58%        | 31,444                   | 20,893               | 52,336                  | 7,146                | 8.95%         | 8.55%         | 1.16x        |
| Khosla Ventures V                               | Venture Capital | 20,000                   | 1,800             | 18,200                   | 91%        | 1,013                    | 23,757               | 24,770                  | 6,570                | 11.19%        | 14.96%        | 1.36x        |
| Spectrum Equity Investors VII, L.P.             | Venture Capital | 25,000                   | 2,375             | 22,625                   | 91%        | 29,154                   | 35,233               | 64,387                  | 41,762               | 43.31%        | 14.96%        | 2.85x        |
| <b>Vintage Year 2014 Total</b>                  |                 | <b>175,282</b>           | <b>39,877</b>     | <b>165,815</b>           | <b>77%</b> | <b>107,502</b>           | <b>166,367</b>       | <b>273,869</b>          | <b>108,054</b>       | <b>21.48%</b> | <b>14.92%</b> | <b>1.65x</b> |
| <b>Vintage Year 2015</b>                        |                 |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| * WPEF VI Overflow Fund C.V.                    | Buyout          | 6,550                    | 6,540             | 10                       | 0%         | 0                        | 0                    | 0                       | -10                  | 0.00%         | 11.56%        | 0.00x        |
| RRJ Capital Master Fund III, LP                 | Buyout          | 40,000                   | 12,697            | 30,142                   | 68%        | 19,081                   | 21,062               | 40,143                  | 10,001               | 16.18%        | 11.56%        | 1.33x        |
| WPEF VI Feeder, L.P.                            | Buyout          | 26,198                   | 11,022            | 17,600                   | 58%        | 4,544                    | 21,657               | 26,202                  | 8,602                | 20.92%        | 11.56%        | 1.49x        |
| Accel-KKR Growth Capital Partners II            | Mezzanine       | 15,000                   | 2,031             | 12,969                   | 86%        | 7,869                    | 10,261               | 18,130                  | 5,162                | 20.74%        | 9.55%         | 1.40x        |
| New Enterprise Associates 15, L.P.              | Venture Capital | 35,000                   | 3,675             | 31,329                   | 90%        | 7,456                    | 47,249               | 54,705                  | 23,375               | 21.45%        | 14.14%        | 1.75x        |
| Summit Partners Venture Capital Fund IV-A, L.P. | Venture Capital | 35,000                   | 33,163            | 21,887                   | 5%         | 20,050                   | 15,982               | 36,033                  | 14,146               | 40.70%        | 14.14%        | 1.65x        |
| <b>Vintage Year 2015 Total</b>                  |                 | <b>157,748</b>           | <b>69,128</b>     | <b>113,937</b>           | <b>56%</b> | <b>59,001</b>            | <b>116,211</b>       | <b>175,212</b>          | <b>61,276</b>        | <b>22.61%</b> | <b>14.12%</b> | <b>1.54x</b> |
| <b>Vintage Year 2016</b>                        |                 |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| Accel-KKR Capital Partners V, L.P.              | Buyout          | 25,000                   | 13,350            | 11,650                   | 47%        | 6,011                    | 10,754               | 16,765                  | 5,115                | 28.00%        | 10.44%        | 1.44x        |
| Dyal III Pension Investors LP                   | Buyout          | 35,000                   | 22,158            | 17,854                   | 37%        | 4,851                    | 19,223               | 24,073                  | 6,220                | 17.14%        | 10.44%        | 1.35x        |
| Linden Capital Partners III                     | Buyout          | 35,000                   | 4,613             | 32,853                   | 87%        | 25,757                   | 41,662               | 67,419                  | 34,566               | 35.71%        | 10.44%        | 2.05x        |
| Marlin Heritage Europe, L.P.                    | Buyout          | 14,191                   | 7,647             | 6,984                    | 46%        | 0                        | 9,024                | 9,024                   | 2,040                | 18.53%        | 5.51%         | 1.29x        |
| Thoma Bravo Fund XII, L.P.                      | Buyout          | 30,000                   | 2,527             | 35,505                   | 92%        | 8,033                    | 36,891               | 44,925                  | 9,420                | 15.09%        | 10.44%        | 1.27x        |
| TSG7 A L.P.                                     | Buyout          | 16,000                   | 4,145             | 11,855                   | 74%        | 147                      | 14,115               | 14,262                  | 2,407                | 10.45%        | 10.44%        | 1.20x        |
| TSG7 B L.P.                                     | Buyout          | 4,000                    | 1,621             | 2,379                    | 59%        | 6                        | 2,113                | 2,118                   | -261                 | -10.71%       | 10.44%        | 0.89x        |

<sup>1</sup>Benchmarks:

Private Equity Investments: Cambridge Associates median return for the respective strategies and vintage years

Vintage Year Comparison: Cambridge Associates Global Private Equity & Venture Capital median return for the respective vintage years

Private Equity Portfolio: Cambridge Associates Global Private Equity & Venture Capital pooled internal rate of return

## Private Equity Portfolio Performance Details – as of September 30, 2019 (continued)

| Partnership Name   | Strategy        | (A)<br>Commit.<br>Amount | Unfund.<br>Amount | (B)<br>Cumulat.<br>Cont. | %<br>Drawn | (C)<br>Cumulat.<br>Dist. | (D)<br>Fair<br>Value | (C+D)<br>Total<br>Value | (C+D-B)<br>Gain/Loss | Net<br>IRR    | IRR<br>Bench. | TVPI         |
|--|-----------------|--------------------------|-------------------|--------------------------|------------|--------------------------|----------------------|-------------------------|----------------------|---------------|---------------|--------------|
| Atalaya Special Opportunities Fund VI, L.P.                    | Distressed Debt | 25,000                   | 2,454             | 28,940                   | 90%        | 15,715                   | 19,889               | 35,604                  | 6,664                | 10.75%        | 10.04%        | 1.23x        |
| Trinity Ventures XII, L.P.                                     | Venture Capital | 30,000                   | 8,775             | 21,225                   | 71%        | 0                        | 38,178               | 38,178                  | 16,953               | 37.16%        | 15.33%        | 1.80x        |
| <b>Vintage Year 2016 Total</b>                                 |                 | <b>214,191</b>           | <b>67,290</b>     | <b>169,244</b>           | <b>69%</b> | <b>60,519</b>            | <b>191,849</b>       | <b>252,368</b>          | <b>83,124</b>        | <b>23.03%</b> | <b>12.15%</b> | <b>1.49x</b> |
| <b>Vintage Year 2017</b>                                       |                 |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| Marlin Heritage II   | Buyout          | 10,000                   | 4,905             | 5,095                    | 51%        | 0                        | 5,179                | 5,179                   | 84                   | N/M           | N/M           | 1.02x        |
| Summit Partners Europe Growth Equity Fund II, SCSP             | Buyout          | 32,748                   | 25,458            | 16,362                   | 22%        | 8,626                    | 16,401               | 25,027                  | 8,665                | N/M           | N/M           | 1.53x        |
| New Enterprise Associates 16, L.P.                             | Venture Capital | 35,000                   | 15,838            | 19,163                   | 55%        | 627                      | 20,530               | 21,157                  | 1,994                | 8.88%         | 11.04%        | 1.10x        |
| <b>Vintage Year 2017 Total</b>                                 |                 | <b>77,748</b>            | <b>46,200</b>     | <b>40,620</b>            | <b>41%</b> | <b>9,253</b>             | <b>42,111</b>        | <b>51,364</b>           | <b>10,744</b>        | <b>29.92%</b> | <b>10.24%</b> | <b>1.26x</b> |
| <b>Vintage Year 2018</b>                                       |                 |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| Linden Capital Partners IV LP                                  | Buyout          | 44,330                   | 34,388            | 11,563                   | 22%        | 1,907                    | 9,963                | 11,869                  | 306                  | N/M           | N/M           | 1.03x        |
| Marlin Equity V  | Buyout          | 25,000                   | 16,397            | 8,603                    | 34%        | 375                      | 10,096               | 10,471                  | 1,868                | N/M           | N/M           | 1.22x        |
| TSG8 L.P.  | Buyout          | 45,000                   | 44,109            | 891                      | 2%         | 0                        | -85                  | -85                     | -976                 | N/M           | N/M           | -0.10x       |
| Davidson Kempner Long-Term Distressed Opportunities Fund IV LP | Distressed Debt | 35,000                   | 10,850            | 24,150                   | 69%        | 0                        | 25,776               | 25,776                  | 1,626                | N/M           | N/M           | 1.07x        |
| TSSP Opportunities Partners IV (A), L.P.                       | Distressed Debt | 35,000                   | 29,336            | 6,556                    | 16%        | 901                      | 5,949                | 6,850                   | 293                  | N/M           | N/M           | 1.04x        |
| RCP Fund XIII  | Fund of Funds   | 50,000                   | 47,000            | 3,000                    | 6%         | 0                        | 1,948                | 1,948                   | -1,052               | N/M           | N/M           | 0.65x        |
| RCPDirect III  | Fund of Funds   | 25,000                   | 17,364            | 7,636                    | 31%        | 386                      | 8,125                | 8,511                   | 875                  | N/M           | N/M           | 1.11x        |
| Accel-KKR Growth Capital Partners III                          | Mezzanine       | 33,320                   | 31,308            | 2,012                    | 6%         | 0                        | 1,495                | 1,495                   | -517                 | N/M           | N/M           | 0.74x        |
| Khosla Ventures VI, L.P.                                       | Venture Capital | 35,000                   | 23,520            | 11,480                   | 33%        | 0                        | 11,483               | 11,483                  | 3                    | N/M           | N/M           | 1.00x        |
| Spectrum Equity VIII, L.P.                                     | Venture Capital | 25,000                   | 13,625            | 11,375                   | 46%        | 0                        | 10,414               | 10,414                  | -961                 | N/M           | N/M           | 0.92x        |
| <b>Vintage Year 2018 Total</b>                                 |                 | <b>352,650</b>           | <b>267,896</b>    | <b>87,268</b>            | <b>24%</b> | <b>3,569</b>             | <b>85,164</b>        | <b>88,733</b>           | <b>1,465</b>         | <b>N/M</b>    | <b>N/M</b>    | <b>1.02x</b> |
| <b>Vintage Year 2019</b>                                       |                 |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| Accel-KKR Capital Partners VI, LP                              | Buyout          | 30,000                   | 30,000            | 0                        | 0%         | 0                        | 0                    | 0                       | 0                    | N/M           | N/M           | N/A          |
| Thoma Bravo Fund XIII, LP                                      | Buyout          | 45,000                   | 28,753            | 16,246                   | 36%        | 0                        | 16,028               | 16,028                  | -218                 | N/M           | N/M           | 0.99x        |
| Davidson Kempner Long-Term Distressed Opportunities Fund V LP  | Distressed Debt | 30,000                   | 30,000            | 0                        | 0%         | 0                        | 0                    | 0                       | 0                    | N/M           | N/M           | N/A          |
| New Enterprise Associates 17, L.P.                             | Venture Capital | 20,000                   | 18,300            | 1,700                    | 9%         | 0                        | 1,646                | 1,646                   | -54                  | N/M           | N/M           | 0.97x        |
| <b>Vintage Year 2019 Total</b>                                 |                 | <b>125,000</b>           | <b>107,053</b>    | <b>17,946</b>            | <b>14%</b> | <b>0</b>                 | <b>17,674</b>        | <b>17,674</b>           | <b>-273</b>          | <b>N/M</b>    | <b>N/M</b>    | <b>0.98x</b> |

<sup>1</sup>Benchmarks:

Private Equity Investments: Cambridge Associates median return for the respective strategies and vintage years

Vintage Year Comparison: Cambridge Associates Global Private Equity & Venture Capital median return for the respective vintage years

Private Equity Portfolio: Cambridge Associates Global Private Equity & Venture Capital pooled internal rate of return

## Private Equity Portfolio Performance Details – as of September 30, 2019 (continued)

| Partnership Name                  | Strategy | (A)<br>Commit.<br>Amount | Unfund.<br>Amount | (B)<br>Cumulat.<br>Cont. | %<br>Drawn | (C)<br>Cumulat.<br>Dist. | (D)<br>Fair<br>Value | (C+D)<br>Total<br>Value | (C+D-B)<br>Gain/Loss | Net<br>IRR    | IRR<br>Bench. | TVPI         |
|-----------------------------------|----------|--------------------------|-------------------|--------------------------|------------|--------------------------|----------------------|-------------------------|----------------------|---------------|---------------|--------------|
| <b>Portfolio Strategy Totals</b>  |          |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| Buyout                            |          | 655,765                  | 301,152           | 401,415                  | 54%        | 219,605                  | 393,845              | 613,451                 | 212,035              | 21.48%        |               | 1.53x        |
| Distressed Debt                   |          | 245,000                  | 117,971           | 163,786                  | 52%        | 85,379                   | 103,944              | 189,323                 | 25,537               | 6.18%         |               | 1.16x        |
| Fund of Funds                     |          | 310,150                  | 82,679            | 239,238                  | 73%        | 263,068                  | 131,235              | 394,303                 | 155,065              | 11.44%        |               | 1.65x        |
| Mezzanine                         |          | 48,320                   | 33,339            | 14,981                   | 31%        | 7,869                    | 11,756               | 19,626                  | 4,644                | 18.73%        |               | 1.31x        |
| Venture Capital                   |          | 336,350                  | 127,321           | 233,851                  | 62%        | 118,049                  | 301,379              | 419,428                 | 185,576              | 21.62%        |               | 1.79x        |
| <b>Portfolio Total :</b>          |          | <b>1,595,584</b>         | <b>662,461</b>    | <b>1,053,272</b>         | <b>58%</b> | <b>693,970</b>           | <b>942,160</b>       | <b>1,636,130</b>        | <b>582,858</b>       | <b>15.24%</b> | <b>12.72%</b> | <b>1.55x</b> |
| <b>Portfolio Geography Totals</b> |          |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| US                                |          | 1,343,000                | 577,905           | 858,677                  | 57%        | 553,880                  | 787,904              | 1,341,784               | 483,106              | 15.15%        |               | 1.56x        |
| Non-US                            |          | 252,584                  | 84,556            | 194,595                  | 67%        | 140,091                  | 154,256              | 294,347                 | 99,752               | 15.74%        |               | 1.51x        |
| <b>Portfolio Total</b>            |          | <b>1,595,584</b>         | <b>662,461</b>    | <b>1,053,272</b>         | <b>58%</b> | <b>693,970</b>           | <b>942,160</b>       | <b>1,636,130</b>        | <b>582,858</b>       | <b>15.24%</b> | <b>12.72%</b> | <b>1.55x</b> |

<sup>1</sup>Benchmarks:

Private Equity Investments: Cambridge Associates median return for the respective strategies and vintage years

Vintage Year Comparison: Cambridge Associates Global Private Equity & Venture Capital median return for the respective vintage years

Private Equity Portfolio: Cambridge Associates Global Private Equity & Venture Capital pooled internal rate of return

## Private Credit Portfolio – as of September 30, 2019

The Private Credit portfolio's net IRR since inception is 8.06%, versus the benchmark return of 7.09%

- The benchmark is the Credit Suisse Leveraged Loan Index + 2%

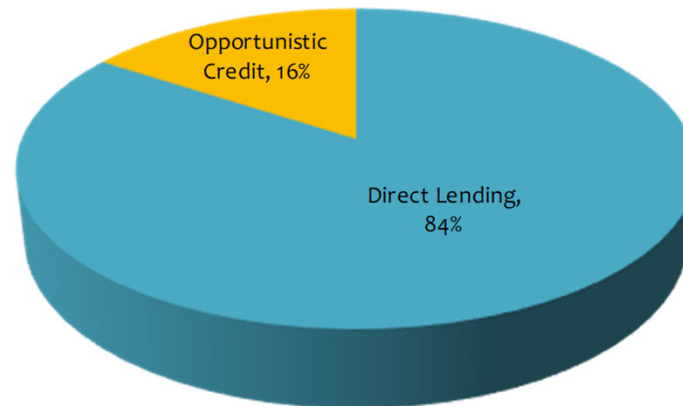
The Private Credit funds reported another quarter of steady gains in Q3

- The portfolio returned 1.8% in Q3 and 6.8% for the trailing 1 year period ending September 30, 2019
  - OrbiMed Royalty III reported a negative return in Q3 (just started investing), all other funds were up 1% - 3%+
- Longer term performance remains steady, with annualized returns of 7% - 8% over multi-year periods
  - 7.5% net IRR for the 3 year period and 7.7% net IRR for the 5 year period

Changes during the quarter

- SCERS made no new commitments to Private Credit funds during Q3
- \$12.5 million in new contributions, \$5.8 million in distributions
- Portfolio IRR decreased 0.06% while the total portfolio gain increased by \$3.3 million

*Market Value Strategy Exposure  
(based on fair value of investments)  
as of September 30, 2019*



## Private Credit Portfolio Details – as of September 30, 2019

| Partnership Name  | Strategy                | (A)<br>Commit.<br>Amount | Unfund.<br>Amount | (B)<br>Cumulat.<br>Cont. | %<br>Drawn | (C)<br>Cumulat.<br>Dist. | (D)<br>Fair<br>Value | (C+D)<br>Total<br>Value | (C+D-B)<br>Gain/Loss | Net<br>IRR | IRR<br>Bench. | TVPI  |
|---|-------------------------|--------------------------|-------------------|--------------------------|------------|--------------------------|----------------------|-------------------------|----------------------|------------|---------------|-------|
| <b>Vintage Year 2011</b>  |                         |                          |                   |                          |            |                          |                      |                         |                      |            |               |       |
| Summit Partners Credit Fund, LP                                   | Direct Lending          | 20,000                   | 2,125             | 20,697                   | 89%        | 24,512                   | 2,224                | 26,736                  | 6,040                | 8.93%      | N/A           | 1.29x |
| <b>Vintage Year 2011 Total</b>                                    |                         | 20,000                   | 2,125             | 20,697                   | 89%        | 24,512                   | 2,224                | 26,736                  | 6,040                | 8.93%      | 12.98%        | 1.29x |
| <b>Vintage Year 2014</b>  |                         |                          |                   |                          |            |                          |                      |                         |                      |            |               |       |
| Summit Partners Credit Fund II, L.P.                              | Direct Lending          | 35,000                   | 5,337             | 46,760                   | 85%        | 25,564                   | 28,994               | 54,558                  | 7,798                | 8.80%      | 3.97%         | 1.17x |
| <b>Vintage Year 2014 Total</b>                                    |                         | 35,000                   | 5,337             | 46,760                   | 85%        | 25,564                   | 28,994               | 54,558                  | 7,798                | 8.80%      | 14.92%        | 1.17x |
| <b>Vintage Year 2015</b>  |                         |                          |                   |                          |            |                          |                      |                         |                      |            |               |       |
| Athyrium Opportunities Fund II                                    | Opportunistic<br>Credit | 32,000                   | 6,194             | 38,973                   | 81%        | 31,490                   | 13,558               | 45,048                  | 6,076                | 8.48%      | 9.55%         | 1.16x |
| <b>Vintage Year 2015 Total</b>                                    |                         | 32,000                   | 6,194             | 38,973                   | 81%        | 31,490                   | 13,558               | 45,048                  | 6,076                | 8.48%      | 14.12%        | 1.16x |
| <b>Vintage Year 2017</b>  |                         |                          |                   |                          |            |                          |                      |                         |                      |            |               |       |
| Athyrium Opportunities Fund III                                   | Opportunistic<br>Credit | 25,000                   | 11,528            | 17,192                   | 54%        | 3,685                    | 13,979               | 17,665                  | 473                  | 2.46%      | 9.30%         | 1.03x |
| <b>Vintage Year 2017 Total</b>                                    |                         | 25,000                   | 11,528            | 17,192                   | 54%        | 3,685                    | 13,979               | 17,665                  | 473                  | 2.46%      | 10.24%        | 1.03x |
| <b>Vintage Year 2018</b>  |                         |                          |                   |                          |            |                          |                      |                         |                      |            |               |       |
| Benefit Street Partners Senior Secured<br>Opportunities Fund L.P. | Direct Lending          | 50,000                   | 4,124             | 48,532                   | 92%        | 6,034                    | 46,318               | 52,352                  | 3,820                | N/M        | N/M           | 1.08x |
| Summit Partners Credit Fund III, L.P.                             | Direct Lending          | 50,000                   | 33,689            | 17,322                   | 33%        | 1,011                    | 18,356               | 19,367                  | 2,045                | N/M        | N/M           | 1.12x |
| TCP Direct Lending Fund VIII-S, LLC                               | Direct Lending          | 100,000                  | 39,366            | 60,634                   | 61%        | 4,399                    | 60,206               | 64,605                  | 3,971                | N/M        | N/M           | 1.07x |
| <b>Vintage Year 2018 Total</b>                                    |                         | 200,000                  | 77,178            | 126,489                  | 61%        | 11,445                   | 124,880              | 136,324                 | 9,836                | N/M        | N/M           | 1.08x |
| <b>Vintage Year 2019</b>  |                         |                          |                   |                          |            |                          |                      |                         |                      |            |               |       |
| OrbiMed Royalty & Credit Opportunities III,<br>LP                 | Opportunistic<br>Credit | 35,000                   | 33,250            | 1,750                    | 5%         | 0                        | 1,661                | 1,661                   | -89                  | N/M        | N/M           | 0.95x |
| <b>Vintage Year 2019 Total</b>                                    |                         | 35,000                   | 33,250            | 1,750                    | 5%         | 0                        | 1,661                | 1,661                   | -89                  | N/M        | N/M           | 0.95x |
| <b>Portfolio Total :</b>  |                         | 347,000                  | 135,613           | 251,860                  | 61%        | 96,696                   | 185,296              | 281,992                 | 30,132               | 8.06%      | 7.09%         | 1.12x |
| <b>Portfolio Strategy Totals</b>                                  |                         |                          |                   |                          |            |                          |                      |                         |                      |            |               |       |
| Direct Lending  |                         | 255,000                  | 84,641            | 193,945                  | 67%        | 61,521                   | 156,098              | 217,619                 | 23,673               | 8.32%      |               | 1.12x |
| Opportunistic Credit  |                         | 92,000                   | 50,972            | 57,915                   | 45%        | 35,176                   | 29,198               | 64,374                  | 6,459                | 7.20%      |               | 1.11x |
| <b>Portfolio Total :</b>  |                         | 347,000                  | 135,613           | 251,860                  | 61%        | 96,696                   | 185,296              | 281,992                 | 30,132               | 8.06%      | 7.09%         | 1.12x |

<sup>1</sup>Benchmarks:

Private Credit Investments: Cambridge Associates median return for the respective debt strategies and vintage years

Private Credit Portfolio: Credit Suisse Leveraged Loan Index + 2%



## Real Assets Portfolio – as of September 30, 2019

The Real Assets portfolio's net IRR since inception is 12.98%, versus the blended benchmark return of 6.62%

- The Real Assets portfolio includes private Infrastructure, Energy, and Agriculture, Timber and Other
- Real Assets is part of the broader Real Return asset category

The Real Assets portfolio is primarily Energy and Infrastructure partnerships

- Both Energy and Infrastructure partnerships have performed well since inception, despite recent downturns in Energy
  - Since inception net IRRs of 14.0% for Energy and 13.3% for Infrastructure
- The Real Asset Debt separate account has also performed well with a 10.8% since inception net IRR
  - That separate account market value remains small at \$17.5 million, with very few new investments

The portfolio generated a 1.4% net return in Q3 despite another downturn in the Energy sector

- The portfolio's largest Q3 gains were generated across multiple strategies
  - Quantum VI, EnCap Flatrock IV, Carlyle Power II, BlackRock Global Energy & Power II, and I Squared led performance
- Most of the other energy funds declined, as did EQT Infrastructure, Wastewater and ACM (agriculture)

Changes during the quarter

- SCERS made no new commitments to Real Assets funds during Q3
  - SCERS committed \$35 million to a small midstream energy fund in Q4 2019 (reup with an existing GP)
- \$38.6 million in new contributions, \$10.5 million in distributions
- Portfolio IRR declined by 0.76% while the total portfolio gain increased by \$7.6 million

## Real Assets Portfolio Performance Details – as of September 30, 2019

| Partnership Name                               | Strategy        | (A)<br>Commit.<br>Amount | Unfund.<br>Amount | (B)<br>Cumulat.<br>Cont. | %<br>Drawn | (C)<br>Cumulat.<br>Dist. | (D)<br>Fair<br>Value | (C+D)<br>Total<br>Value | (C+D-B)<br>Gain/Loss | Net<br>IRR    | IRR<br>Bench. | TVPI         |
|--|-----------------|--------------------------|-------------------|--------------------------|------------|--------------------------|----------------------|-------------------------|----------------------|---------------|---------------|--------------|
| <b>Vintage Year 2013</b>                       |                 |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| EnCap Energy Capital Fund IX, L.P.             | Energy          | 33,000                   | 2,235             | 37,040                   | 93%        | 27,983                   | 18,331               | 46,315                  | 9,275                | 9.54%         | 3.36%         | 1.25x        |
| <b>Vintage Year 2013 Total</b>                 |                 | <b>33,000</b>            | <b>2,235</b>      | <b>37,040</b>            | <b>93%</b> | <b>27,983</b>            | <b>18,331</b>        | <b>46,315</b>           | <b>9,275</b>         | <b>9.54%</b>  |               | <b>1.25x</b> |
| <b>Vintage Year 2014</b>                       |                 |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| Carlyle Power Partners II, L.P.                | Energy          | 40,000                   | 22,711            | 24,791                   | 43%        | 7,344                    | 20,956               | 28,300                  | 3,509                | 5.92%         | 8.15%         | 1.14x        |
| EnCap Flatrock Midstream III                   | Energy          | 20,000                   | 2,960             | 21,279                   | 85%        | 9,210                    | 16,988               | 26,198                  | 4,919                | 15.94%        | 8.15%         | 1.23x        |
| Global Energy & Power Infrastructure Fund II   | Energy          | 35,000                   | 4,363             | 34,146                   | 88%        | 19,390                   | 29,172               | 48,562                  | 14,416               | 31.21%        | 8.15%         | 1.42x        |
| Quantum Energy Partners VI, LP                 | Energy          | 35,000                   | 10,431            | 30,409                   | 70%        | 18,034                   | 35,391               | 53,425                  | 23,017               | 34.62%        | 8.15%         | 1.76x        |
| Pantheon SCERS SIRF MM, LLC                    | Infrastructure  | 100,000                  | 33,968            | 70,332                   | 66%        | 12,100                   | 88,420               | 100,520                 | 30,188               | 14.51%        | 10.72%        | 1.43x        |
| Wastewater Opportunity Fund                    | Infrastructure  | 25,000                   | 4,353             | 20,654                   | 83%        | 1,998                    | 17,972               | 19,970                  | -684                 | -2.37%        | 10.72%        | 0.97x        |
| <b>Vintage Year 2014 Total</b>                 |                 | <b>255,000</b>           | <b>78,786</b>     | <b>201,611</b>           | <b>69%</b> | <b>68,076</b>            | <b>208,899</b>       | <b>276,975</b>          | <b>75,364</b>        | <b>17.10%</b> |               | <b>1.37x</b> |
| <b>Vintage Year 2015</b>                       |                 |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| ArcLight Energy Partners Fund VI               | Energy          | 40,000                   | 5,563             | 42,665                   | 86%        | 15,767                   | 36,753               | 52,520                  | 9,855                | 10.01%        | 9.96%         | 1.23x        |
| EnCap Energy Capital Fund X, L.P.              | Energy          | 40,000                   | 7,383             | 35,158                   | 82%        | 6,562                    | 35,563               | 42,125                  | 6,967                | 9.31%         | 9.96%         | 1.20x        |
| Atalaya Real Assets SMA                        | Real Asset Debt | 100,000                  | 84,789            | 36,169                   | 15%        | 25,769                   | 17,488               | 43,258                  | 7,089                | 10.82%        | N/A           | 1.20x        |
| <b>Vintage Year 2015 Total</b>                 |                 | <b>180,000</b>           | <b>97,735</b>     | <b>113,992</b>           | <b>46%</b> | <b>48,098</b>            | <b>89,804</b>        | <b>137,902</b>          | <b>23,910</b>        | <b>10.02%</b> |               | <b>1.21x</b> |
| <b>Vintage Year 2016</b>                       |                 |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| ACM Fund II, LLC                               | Agriculture     | 25,000                   | 6,528             | 22,618                   | 74%        | 4,513                    | 16,512               | 21,025                  | -1,594               | -5.67%        | 6.37%         | 0.93x        |
| Brookfield Infrastructure Fund III, L.P.       | Infrastructure  | 40,000                   | 9,570             | 30,419                   | 76%        | 4,935                    | 32,012               | 36,948                  | 6,529                | 12.82%        | N/A           | 1.21x        |
| IFM Global Infrastructure Fund                 | Infrastructure  | 125,053                  | 18,750            | 106,303                  | 85%        | 32,529                   | 105,894              | 138,423                 | 32,121               | 15.15%        | N/A           | 1.30x        |
| <b>Vintage Year 2016 Total</b>                 |                 | <b>190,053</b>           | <b>34,848</b>     | <b>159,340</b>           | <b>82%</b> | <b>41,978</b>            | <b>154,419</b>       | <b>196,396</b>          | <b>37,056</b>        | <b>12.74%</b> |               | <b>1.23x</b> |
| <b>Vintage Year 2017</b>                       |                 |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| Quantum Energy Partners VII, LP                | Energy          | 40,000                   | 22,054            | 20,304                   | 45%        | 2,415                    | 18,358               | 20,773                  | 469                  | 1.99%         | 2.37%         | 1.02x        |
| Meridiam Infrastructure North America Fund III | Infrastructure  | 50,000                   | 47,961            | 2,039                    | 4%         | 1                        | 502                  | 503                     | -1,537               | -83.58%       | N/A           | 0.25x        |
| <b>Vintage Year 2017 Total</b>                 |                 | <b>90,000</b>            | <b>70,014</b>     | <b>22,344</b>            | <b>22%</b> | <b>2,416</b>             | <b>18,860</b>        | <b>21,276</b>           | <b>-1,068</b>        | <b>-4.20%</b> |               | <b>0.95x</b> |
| <b>Vintage Year 2018</b>                       |                 |                          |                   |                          |            |                          |                      |                         |                      |               |               |              |
| Paine Schwartz Food Chain Fund V, LP           | Agriculture     | 40,000                   | 40,000            | 0                        | 0%         | 0                        | -632                 | -632                    | -632                 | N/M           | N/M           | N/A          |

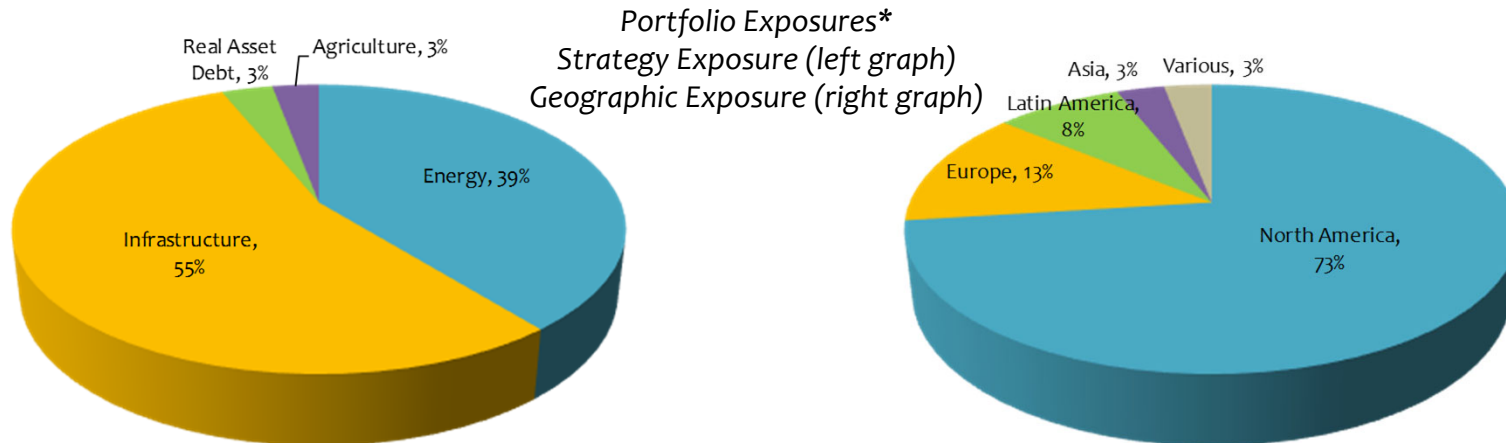
<sup>1</sup>Benchmarks:

Real Assets Portfolio: 45% Cambridge Infrastructure, 35% Cambridge Energy, 10% NCREIF Timberland, 10% NCREIF Farmland  
 Energy Investments: Cambridge Associates median return for the respective vintage years.  
 Infrastructure Investments: Cambridge Associates median return for the respective vintage years.



# Real Assets Portfolio Performance Details – as of September 30, 2019 (continued)

| Partnership Name                      | Strategy       | (A)<br>Committ.<br>Amount | Unfund.<br>Amount | (B)<br>Cumulat.<br>Cont. | %<br>Drawn | (C)<br>Cumulat.<br>Dist. | (D)<br>Fair<br>Value | (C+D)<br>Total<br>Value | (C+D-B)<br>Gain/Loss | Net<br>IRR    | IRR<br>Bench. | TVPI         |
|---------------------------------------|----------------|---------------------------|-------------------|--------------------------|------------|--------------------------|----------------------|-------------------------|----------------------|---------------|---------------|--------------|
| EnCap Flatrock Midstream IV, L.P.     | Energy         | 22,500                    | 16,254            | 6,831                    | 28%        | 588                      | 7,369                | 7,956                   | 1,125                | N/M           | N/M           | 1.16x        |
| Tailwater Energy Fund III, LP         | Energy         | 32,000                    | 9,772             | 24,283                   | 69%        | 1,662                    | 23,018               | 24,679                  | 396                  | N/M           | N/M           | 1.02x        |
| ISQ Global Infrastructure Fund II     | Infrastructure | 50,000                    | 33,434            | 19,488                   | 33%        | 2,922                    | 18,552               | 21,475                  | 1,987                | N/M           | N/M           | 1.10x        |
| <b>Vintage Year 2018 Total</b>        |                | <b>144,500</b>            | <b>99,460</b>     | <b>50,602</b>            | <b>31%</b> | <b>5,172</b>             | <b>48,307</b>        | <b>53,479</b>           | <b>2,876</b>         | <b>N/M</b>    | <b>N/M</b>    | <b>1.06x</b> |
| <b>Vintage Year 2019</b>              |                |                           |                   |                          |            |                          |                      |                         |                      |               |               |              |
| Brookfield Infrastructure Fund IV     | Infrastructure | 40,000                    | 35,112            | 4,888                    | 12%        | 0                        | 4,861                | 4,861                   | -27                  | N/M           | N/M           | 0.99x        |
| EQT Infrastructure IV (No.2) USD SCSp | Infrastructure | 35,000                    | 30,836            | 4,186                    | 12%        | 48                       | 3,478                | 3,526                   | -661                 | N/M           | N/M           | 0.84x        |
| <b>Vintage Year 2019 Total</b>        |                | <b>75,000</b>             | <b>65,948</b>     | <b>9,075</b>             | <b>12%</b> | <b>48</b>                | <b>8,339</b>         | <b>8,387</b>            | <b>-688</b>          | <b>N/M</b>    | <b>N/M</b>    | <b>0.92x</b> |
| <b>Portfolio Total :</b>              |                | <b>967,553</b>            | <b>449,026</b>    | <b>594,003</b>           | <b>54%</b> | <b>193,771</b>           | <b>546,958</b>       | <b>740,729</b>          | <b>146,727</b>       | <b>12.98%</b> | <b>6.62%</b>  | <b>1.25x</b> |
| <b>Portfolio Strategy Totals</b>      |                |                           |                   |                          |            |                          |                      |                         |                      |               |               |              |
| Agriculture                           |                | 65,000                    | 46,528            | 22,618                   | 28%        | 4,513                    | 15,880               | 20,393                  | -2,226               | -8.04%        |               | 0.90x        |
| Energy                                |                | 337,500                   | 103,725           | 276,905                  | 69%        | 108,955                  | 241,899              | 350,853                 | 73,948               | 14.01%        |               | 1.27x        |
| Infrastructure                        |                | 465,053                   | 213,984           | 258,310                  | 54%        | 54,534                   | 271,692              | 326,226                 | 67,915               | 13.27%        |               | 1.26x        |
| Real Asset Debt                       |                | 100,000                   | 84,789            | 36,169                   | 15%        | 25,769                   | 17,488               | 43,258                  | 7,089                | 10.82%        |               | 1.20x        |



\* Exposures are based on the market values of investments as of 9/30/19

<sup>1</sup>Benchmarks:

Real Assets Portfolio: 45% Cambridge Infrastructure, 35% Cambridge Energy, 10% NCREIF Timberland, 10% NCREIF Farmland

Energy Investments: Cambridge Associates median return for the respective vintage years.

Infrastructure Investments: Cambridge Associates median return for the respective vintage years.

## Opportunities Portfolio – as of September 30, 2019

### The Opportunities portfolio's net IRR since inception is 18.37%

- The long-term benchmark is SCERS' 7.00% total portfolio actuarial return objective
- Also tracking the portfolio's 3 year IRR versus an intermediate-term benchmark
  - 5.68% portfolio IRR v 8.34% IRR for the SCERS' total portfolio policy weighted benchmark over the last 3 years
- The portfolio only includes legacy distressed debt funds (fully liquidated) and one post-2009 distressed fund (Atalaya V)
  - The 3 year comparison, for example, reflects only the performance of Atalaya V

### The legacy distressed funds performed very well, the current fund is performing at expectations

- SCERS' earlier vintage distressed debt funds are liquidated and have distributed significant capital back to SCERS
  - Stone Tower, MetWest TALF, and PIMCO have distributed \$129.3 million
- Atalaya SOF V, a vintage 2013 fund, has produced a 7.99% net IRR since inception

### Changes during the quarter

- SCERS made no new commitments categorized as Opportunities funds during Q3 2019
- No new contributions, \$0.9 million in distributions
- Portfolio IRR decreased 0.02%, total portfolio gain increased slightly

### As mentioned, the Opportunities portfolio only includes certain distressed debt fund(s)

- SCERS has additional distressed debt investments within its Private Equity portfolio
- Categorizations were made at the time of each investment

## Opportunities Portfolio Performance Details – as of September 30, 2019

| Partnership Name                                 | Strategy        | (A)<br>Commit.<br>Amount | Unfund.<br>Amount | (B)<br>Cumulat.<br>Cont. | %<br>Drawn  | (C)<br>Cumulat.<br>Dist. | (D)<br>Fair<br>Value | (C+D)<br>Total<br>Value | (C+D-B)<br>Gain/Loss | Net<br>IRR    | IRR<br>Bench. | TVPI         |
|--|-----------------|--------------------------|-------------------|--------------------------|-------------|--------------------------|----------------------|-------------------------|----------------------|---------------|---------------|--------------|
| <b>Vintage Year 2007</b>                         |                 |                          |                   |                          |             |                          |                      |                         |                      |               |               |              |
| * PIMCO Distressed Mortgage Fund, LP             | Distressed Debt | 18,000                   | 0                 | 18,000                   | 100%        | 25,384                   | 0                    | 25,384                  | 7,384                | 8.96%         | 9.89%         | 1.41x        |
| <b>Vintage Year 2007 Total</b>                   |                 | <b>18,000</b>            | <b>0</b>          | <b>18,000</b>            | <b>100%</b> | <b>25,384</b>            | <b>0</b>             | <b>25,384</b>           | <b>7,384</b>         | <b>8.96%</b>  |               | <b>1.41x</b> |
| <b>Vintage Year 2008</b>                         |                 |                          |                   |                          |             |                          |                      |                         |                      |               |               |              |
| * PIMCO Distressed Mortgage Fund II, L.P.        | Distressed Debt | 12,000                   | 0                 | 12,000                   | 100%        | 35,277                   | 0                    | 35,277                  | 23,277               | 34.39%        | 12.23%        | 2.94x        |
| <b>Vintage Year 2008 Total</b>                   |                 | <b>12,000</b>            | <b>0</b>          | <b>12,000</b>            | <b>100%</b> | <b>35,277</b>            | <b>0</b>             | <b>35,277</b>           | <b>23,277</b>        | <b>34.39%</b> |               | <b>2.94x</b> |
| <b>Vintage Year 2009</b>                         |                 |                          |                   |                          |             |                          |                      |                         |                      |               |               |              |
| * MetWest Enhanced TALF Strategy Fund LP         | Distressed Debt | 20,000                   | 0                 | 20,000                   | 100%        | 25,304                   | 0                    | 25,304                  | 5,304                | 11.21%        | 14.87%        | 1.27x        |
| * Stone Tower Structured Credit Recovery Fund LP | Distressed Debt | 25,000                   | 0                 | 25,248                   | 100%        | 43,383                   | 0                    | 43,383                  | 18,135               | 25.30%        | 14.87%        | 1.72x        |
| <b>Vintage Year 2009 Total</b>                   |                 | <b>45,000</b>            | <b>0</b>          | <b>45,248</b>            | <b>100%</b> | <b>68,687</b>            | <b>0</b>             | <b>68,687</b>           | <b>23,439</b>        | <b>19.71%</b> |               | <b>1.52x</b> |
| <b>Vintage Year 2013</b>                         |                 |                          |                   |                          |             |                          |                      |                         |                      |               |               |              |
| Atalaya Special Opportunities Fund V, L.P.       | Distressed Debt | 25,000                   | 1,117             | 24,875                   | 96%         | 23,824                   | 7,240                | 31,064                  | 6,189                | 7.99%         | 8.55%         | 1.25x        |
| <b>Vintage Year 2013 Total</b>                   |                 | <b>25,000</b>            | <b>1,117</b>      | <b>24,875</b>            | <b>96%</b>  | <b>23,824</b>            | <b>7,240</b>         | <b>31,064</b>           | <b>6,189</b>         | <b>7.99%</b>  |               | <b>1.25x</b> |
| <b>Portfolio Total :</b>                         |                 | <b>100,000</b>           | <b>1,117</b>      | <b>100,123</b>           | <b>99%</b>  | <b>153,172</b>           | <b>7,240</b>         | <b>160,412</b>          | <b>60,290</b>        | <b>18.37%</b> | <b>7.00%</b>  | <b>1.60x</b> |

\* Liquidated partnership

<sup>1</sup> Benchmarks:

Opportunities Investments: Cambridge Associates median return for the respective strategies and vintage years  
Opportunities Portfolio: 7.00% actuarial return objective

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