



# Board of Retirement Regular Meeting

## Sacramento County Employees' Retirement System

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### Agenda Item 22

**MEETING DATE:** December 9, 2020

**SUBJECT:** Quarterly Investment Performance Report  
Alternative Assets

**SUBMITTED FOR:**  Consent  Deliberation and Action  Receive and File

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### **RECOMMENDATION**

Staff recommends the Board receive and file the Cliffwater Quarterly Performance Review presentation for the period ending September 30, 2020 for the Absolute Return portfolio, and the period ending June 30, 2020 for the Private Equity, Private Credit, Real Assets, and Opportunities portfolios.

### **PURPOSE**

This item complies with SCERS' investment policy statement reporting requirements and contributes to the effective management and oversight of investment activities.

### **SCERS ALTERNATIVE ASSETS PORTFOLIO RETURNS**

This memorandum provides a summarized table of SCERS' Alternative Assets period returns, which complements Cliffwater's Quarterly Performance Review, and highlights notable manager performance, along with any recent alternative investments made by SCERS. The returns for the private market asset classes shown in the table below, and provided within Cliffwater's reports, are lagged a quarter and reflect valuations as of June 30, 2020. Therefore, returns for the second quarter reflect the ongoing impact of the pandemic.

SCERS' alternative asset class period returns are as follows:

**SCERS ALTERNATIVE ASSETS PERFORMANCE SUMMARY**  
**Quarter Reporting Periods Ending September 30, 2020**

SCERS ASSET CLASS	Quarter*	1-Year*	3-Year*	5-Year*	Since Inception*	Since Inception Date*
<b>SCERS Absolute Return</b>	<b>3.2%</b>	<b>1.4%</b>	<b>1.2%</b>	<b>2.4%</b>	<b>3.7%</b>	Sep-04
HFRI FoF Conservative	2.4%	2.0%	2.3%	2.3%	3.0%	
HFRI FoF Composite + 1%	4.4%	6.6%	3.9%	4.1%	4.1%	
<b>SCERS Private Equity</b>	<b>9.4%</b>	<b>9.0%</b>	<b>19.2%</b>	<b>16.4%</b>	<b>14.6%</b>	Feb-08
Cambridge Private Equity/Venture Capital	9.9%	6.5%	12.4%	11.8%	12.3%	
<b>SCERS Private Credit</b>	<b>5.4%</b>	<b>3.2%</b>	<b>5.2%</b>	<b>6.2%</b>	<b>6.5%</b>	Oct-11
Credit Suisse Leveraged Loan + 2%	10.2%	-0.3%	4.1%	4.9%	6.3%	
<b>SCERS Real Assets</b>	<b>2.6%</b>	<b>-8.4%</b>	<b>3.3%</b>	<b>6.0%</b>	<b>6.4%</b>	Jan-13
(45%) Cambridge Private Infrastructure; (35%) Cambridge Private Energy; (20%) NCREIF Agriculture/Timber	3.0%	-7.0%	2.0%	4.1%	5.0%	
<b>SCERS Opportunities</b>	<b>-3.7%</b>	<b>-0.8%</b>	<b>3.0%</b>	<b>6.4%</b>	<b>18.3%</b>	Jan-08
SCERS Portfolio Actuarial Rate of Return	1.8%	7.0%	7.0%	7.0%	7.0%	
<p><b>*Note:</b> <i>Periods ending 6/30/20 for Private Equity, Private Credit, Real Assets, and Opportunities</i>  <i>Periods ending 9/30/20 for Absolute Return</i>  <i>All returns are net IRR, except Absolute Return which is time-weighted</i></p>						

## **SCERS PORTFOLIO RESULTS**

For the reporting quarter ended June 30, 2020, on a relative basis, SCERS' Private Equity portfolio underperformed its benchmark return, 9.4% versus 9.9% but on an absolute basis was a standout performer in SCERS' alternative assets portfolio. With the rally in the equity markets over the second quarter, the private equity returns snapped back from the prior quarter's -6.7% result.

SCERS' Real Assets portfolio rebounded during the quarter after suffering from the pandemic market downturn in the first quarter, in particular the energy strategies. Although on a relative basis, the SCERS' Real Assets portfolio underperformed against its benchmark return, 2.6% versus 3.0%, the absolute performance was significantly up from the prior quarter's -12.0% return.

For the reporting quarter ended September 30, 2020, SCERS' Absolute Return portfolio underperformed its benchmark return, 3.2% versus 4.4%. The portfolio performance was hindered by the Diversifying Absolute Return strategies (2.1% versus index of 2.4%) in particular the market neutral and macro-systematic strategies. The Absolute Return Growth Orientated portfolio significantly outperformed its index, 6.3% versus 4.4%, led by the event driven strategy return of 12.0%.

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Below are notable top and bottom performing funds among SCERS' alternative assets managers for the reporting periods identified below:

- Top performing funds:
  - Absolute Return:
    - Third Point Partners Qualified (event driven): +12.0%
    - Sculptor Domestic Partners II (multi-strategy): +5.8%
    - Grosvenor SCARF Growth (fund-of-funds): +5.3%
  - Private Equity portfolio:
    - Thoma Bravo Fund XIII (buyout): +44.4%
    - Thoma Bravo Fund XI (buyout): +34.3%
    - Gridiron Capital Fund IV (buyout): +29.1%
  - Private Credit portfolio:
    - TCP Direct Lending Fund VIII-S (direct lending): +8.8%
    - Athyrium Opportunities Fund II (opportunistic): +8.5%
  - Real Assets portfolio:
    - Quantum Energy Partners VII (energy): +17.2%
    - Quantum Energy Partners VI (energy): +12.1%
    - EnCap Energy Capital Fund IX (energy): +9.9%
- Bottom performing funds:
  - Absolute Return portfolio:
    - Winton Diversified Futures Fund (macro-systematic): -5.0%
    - Laurion Capital (market neutral): -2.8%
    - Two Sigma Risk Premia Enhanced Fund (market neutral): -2.2%
  - Private Equity portfolio:
    - RRJ Capital Master Fund II (growth): -13.2%
    - TSG8 (buyout): -5.2%
    - H.I.G. Bayside Loan Opportunity Fund III (distressed debt): -3.8%
  - Private Credit portfolio:
    - Summit Partners Credit Fund II (direct lending): +0.8%
    - MCP Private Capital Fund IV (direct lending): +1.5%

- Summit Partners Credit Fund I (direct lending): +2.0%
- Real Assets portfolio:
  - Wastewater Opportunity Fund (infrastructure): -17.0%
  - Meridiam Infrastructure North America Fund III (infrastructure): -10.2%
  - ACM Fund II, LLC (agriculture): -4.2%

**NEW INVESTMENTS**

During the quarter ended September 30, 2020, SCERS made the following new investments:

- OrbiMed Private Investments VIII (venture capital): \$15 million

After the quarter, SCERS made the following new investments:

- Canvas 3 (venture capital): \$20 million
- Khosla Ventures Fund VII (venture capital): \$20 million
- ISQ Global Infrastructure Fund III (infrastructure): \$50 million

**ATTACHMENT**

Cliffwater’s Quarterly Performance Review for Alternative Assets

Prepared by:

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Investment Officer

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Chief Executive Officer



INVESTMENT ADVISORY SERVICES

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## Sacramento County Employees' Retirement System Quarterly Performance Review

December 9, 2020



## *Executive Summary*

## Absolute Return Portfolio Performance Summary – as of September 30, 2020

### Growth Oriented Strategies

- The Growth Oriented Portfolio returned 6.33% in Q3 and 3.88% for the 1 year period ending September 30, 2020
  - Outperforming the HFRI FoF Index + 1% benchmark by 197 bps in Q3 though trailing by 275 bps for the 1 year period
  - Trailing the T-bills + 5% long term objective by 187 bps (annualized) over the 5 year period ending September 30, 2020
    - Outperforming the HFRI FoF Index + 1% benchmark by 26 bps (annualized) over the 5 year period
- All funds generated positive returns in Q3, led by Third Point (+11.97%)
- Though most funds generated positive returns over the 1 yr period, led by Sculptor (+18.22%), Lakewood returned -17.41%

### Diversifying Strategies

- The Diversifying Portfolio returned 2.14% in Q3 and 0.37% for the 1 year period ending September 30, 2020
  - Underperforming the HFRI Conservative FoF Index benchmark by 26 bps in Q3 and 159 bps for the 1 year period
  - Underperforming the T-bills + 2% long term objective by 242 bps (annualized) over the trailing 5 year period
- Most funds reported solidly positive returns in Q3, other than Laurion, Two Sigma, and Winton
- Large performance dispersion among funds over the 1 year period, ranging from +20.46 (Laurion) to -20.67% (Winton)

### Elevated volatility across asset classes during Q1 pushed some portfolio characteristics above their targeted values

- Growth Oriented Portfolio
  - Target standard deviation < 50% of global equities, with an equity beta < 0.5 and equity correlation < 0.8
    - Standard deviation of 7.35% compared to the ACWI standard deviation of 13.03% since December 2011 (56% ratio)
    - Portfolio equity beta of 0.48 with an equity correlation of 0.86
- Diversifying Portfolio
  - Target standard deviation < 25% of global equities, with an equity beta < 0.1 and equity correlation < 0.1
    - Standard deviation of 2.99% compared to the ACWI standard deviation of 13.03% since December 2011 (23% ratio)
    - Portfolio equity beta of 0.10 with an equity correlation of 0.42

# Growth Oriented Absolute Return Portfolio Performance – as of September 30, 2020

Fund	Market Value	Actual %	Returns								Std Dev	Sharpe Ratio	Incep Date
			Sep	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.	54,132,356	5.9%	-0.70%	11.97%	4.76%	11.97%	8.78%	4.16%	7.29%	8.86%	9.71%	0.82	May-12
Event Driven - HF Total	54,132,356	5.9%	-0.70%	11.97%	4.76%	11.97%	8.78%	3.28%	5.55%	7.33%	9.75%	0.67	May-12
<b>Equity Long/Short</b>													
Lakewood Capital Partners, LP	38,122,838	4.1%	-3.08%	1.98%	-22.28%	1.98%	-17.41%	-5.68%	1.29%	2.30%	13.54%	0.16	Jul-13
Equity Long/Short - HF Total	38,122,838	4.1%	-3.08%	1.98%	-22.28%	1.98%	-17.41%	-5.68%	1.29%	2.30%	13.54%	0.16	Jul-13
<b>Multi-Strategy</b>													
Sculptor Domestic Partners II, L.P.	59,195,316	6.4%	0.04%	5.79%	11.94%	5.79%	18.22%	8.62%	8.34%	8.08%	6.46%	1.09	Jan-12
Multi-Strategy - HF Total	59,195,316	6.4%	0.04%	5.79%	11.94%	5.79%	18.22%	8.62%	8.34%	8.08%	6.46%	1.09	Jan-12
<b>Fund of Funds</b>													
Grosvenor SC Absolute Return Fund LLC (Growth)	83,579,749	9.1%	-0.05%	5.27%	0.33%	5.27%	4.00%	2.76%	4.07%	5.24%	6.45%	0.67	Dec-11
Fund of Funds - HF Total	83,579,749	9.1%	-0.05%	5.27%	0.33%	5.27%	4.00%	2.65%	3.98%	4.32%	6.78%	0.41	Sep-04
<b>Growth-Oriented Portfolio Total</b>	<b>235,030,259</b>	<b>25.5%</b>	<b>-0.68%</b>	<b>6.33%</b>	<b>-0.51%</b>	<b>6.33%</b>	<b>3.88%</b>	<b>2.37%</b>	<b>4.33%</b>	<b>4.57%</b>	<b>7.31%</b>	<b>0.42</b>	<b>Sep-04</b>
HFRI FoF Composite + 1%			-0.25%	4.36%	3.15%	4.36%	6.63%	3.85%	4.07%	4.14%	5.36%	0.47	Sep-04
3 Month T-Bills+5%			0.42%	1.26%	4.34%	1.26%	6.10%	6.69%	6.20%	6.38%	0.47%	-	Sep-04
<b>Market Indices</b>													
Libor3Month			0.02%	0.06%	0.55%	0.06%	1.02%	1.86%	1.47%	1.70%	0.48%	-	Sep-04
Bloomberg Barclays US Aggregate Bond Index			-0.05%	0.62%	6.79%	0.62%	6.98%	5.25%	4.19%	4.38%	3.18%	0.83	Sep-04
Bloomberg Barclays US High Yield Bond Index			-1.03%	4.60%	0.62%	4.60%	3.25%	4.20%	6.79%	7.14%	9.45%	0.60	Sep-04
S&P 500 TR			-3.80%	8.93%	5.57%	8.93%	15.15%	12.28%	14.15%	9.40%	14.50%	0.58	Sep-04
MSCI AC World Index Free - Net			-3.22%	8.13%	1.37%	8.13%	10.44%	7.12%	10.30%	7.37%	15.61%	0.43	Sep-04
MSCI EAFE - Net			-2.60%	4.80%	-7.09%	4.80%	0.49%	0.62%	5.26%	5.13%	16.69%	0.28	Sep-04
MSCI EMF (Emerging Markets Free) - Net			-1.60%	9.56%	-1.16%	9.56%	10.54%	2.42%	8.97%	8.32%	21.58%	0.40	Sep-04



# Diversifying Absolute Return Portfolio Performance – as of September 30, 2020

Fund	Market Value	Actual %	Returns								Std Dev	Sharpe Ratio	Incep Date
			Sep	QTD	YTD	FYTD	1 Year	3 Year	5 Year	Incep			
<b>Diversifying Portfolio</b>													
<b>Market Neutral</b>													
Laurion Capital, Ltd.	57,251,925	6.2%	-2.35%	-2.77%	19.94%	-2.77%	20.46%	11.31%	8.20%	7.76%	6.34%	1.03	Mar-14
LMR Fund Limited	40,771,163	4.4%	1.77%	5.13%	-11.17%	5.13%	-	-	-	-9.40%	28.53%	-	Nov-19
KLS Diversified Fund LP	35,579,987	3.9%	1.53%	3.91%	-11.57%	3.91%	-11.81%	-	-	-6.47%	14.92%	-0.48	Jan-19
Two Sigma Risk Premia Enhanced Fund, LP	38,042,432	4.1%	-0.37%	-2.23%	-15.83%	-2.23%	-15.46%	-	-	-14.36%	8.36%	-1.93	Sep-19
<b>Market Neutral - HF Total</b>	<b>171,645,507</b>	<b>18.6%</b>	<b>-0.16%</b>	<b>0.49%</b>	<b>-4.14%</b>	<b>0.49%</b>	<b>-3.61%</b>	<b>3.07%</b>	<b>3.32%</b>	<b>4.05%</b>	<b>5.97%</b>	<b>0.50</b>	<b>Mar-14</b>
<b>Event Driven</b>													
Blackrock Event Driven Equity Fund (BILPX)	44,721,362	4.8%	-0.10%	2.09%	-	2.09%	-	-	-	2.51%	9.65%	-	Mar-20
Davidson Kempner Institutional Partners LP	47,789,764	5.2%	1.02%	4.37%	4.72%	4.37%	6.63%	-	-	5.56%	6.90%	0.61	May-19
Elliott International Limited - Class A & B	62,902,214	6.8%	0.70%	2.93%	8.97%	2.93%	10.05%	6.61%	7.63%	7.53%	3.28%	1.92	Apr-12
PSquared US Feeder Fund LP	44,970,383	4.9%	-0.85%	-	-	-	-	-	-	-	-	-	Aug-20
<b>Event Driven - HF Total</b>	<b>200,383,723</b>	<b>21.7%</b>	<b>0.57%</b>	<b>3.23%</b>	<b>6.39%</b>	<b>3.23%</b>	<b>7.77%</b>	<b>5.60%</b>	<b>7.02%</b>	<b>7.17%</b>	<b>3.53%</b>	<b>1.69</b>	<b>Apr-12</b>
<b>Equity Long/Short</b>													
Marshall Wace Funds LP - MW Global Opportunities (US) Fund	46,309,964	5.0%	-0.31%	4.52%	8.65%	4.52%	12.53%	-	-	8.73%	4.87%	1.40	Jan-19
<b>Equity Long/Short - HF Total</b>	<b>46,309,964</b>	<b>5.0%</b>	<b>-0.31%</b>	<b>4.52%</b>	<b>8.65%</b>	<b>4.52%</b>	<b>12.53%</b>	<b>8.73%</b>	<b>8.73%</b>	<b>8.73%</b>	<b>4.87%</b>	<b>1.40</b>	<b>Apr-12</b>
<b>Macro-Systematic</b>													
Graham Global Investment Fund II SPC Ltd. - Tactical Trend Segregated	33,561,888	3.6%	-4.23%	3.14%	-6.15%	3.14%	-6.91%	1.33%	-	-1.14%	12.74%	-0.16	Feb-17
Winton Diversified Futures Fund L.P.	31,200,688	3.4%	-0.20%	-4.96%	-18.65%	-4.96%	-20.67%	-3.52%	-	-3.02%	8.32%	-0.54	Jan-17
<b>Macro-Systematic - HF Total</b>	<b>64,762,576</b>	<b>7.0%</b>	<b>-2.33%</b>	<b>-0.93%</b>	<b>-12.62%</b>	<b>-0.93%</b>	<b>-14.09%</b>	<b>-1.13%</b>	<b>-</b>	<b>-2.16%</b>	<b>9.33%</b>	<b>-0.37</b>	<b>Jan-17</b>
<b>Fund of Funds</b>													
Grosvenor SC Absolute Return Fund LLC (Diversifying)	201,924,397	21.9%	0.69%	3.65%	4.14%	3.65%	5.76%	1.93%	0.76%	2.04%	3.65%	0.31	Dec-11
Grosvenor SC Absolute Return Fund LLC Series B	2,605,311	0.3%	1.02%	2.73%	4.16%	2.73%	6.00%	1.92%	-0.26%	1.29%	3.40%	0.09	Feb-13
<b>Fund of Funds - HF Total</b>	<b>204,529,708</b>	<b>22.2%</b>	<b>0.69%</b>	<b>3.52%</b>	<b>4.23%</b>	<b>3.52%</b>	<b>5.95%</b>	<b>1.83%</b>	<b>0.35%</b>	<b>1.90%</b>	<b>3.46%</b>	<b>0.28</b>	<b>Dec-11</b>
<b>Diversifying Portfolio Total</b>	<b>687,631,477</b>	<b>74.5%</b>	<b>-0.01%</b>	<b>2.14%</b>	<b>-0.41%</b>	<b>2.14%</b>	<b>0.37%</b>	<b>0.72%</b>	<b>0.78%</b>	<b>1.85%</b>	<b>3.28%</b>	<b>0.28</b>	<b>Dec-11</b>
HFRI FOF: Conservative Index			-0.23%	2.40%	0.33%	2.40%	1.96%	2.27%	2.32%	3.00%	3.40%	0.60	Dec-11
3 Month T-Bills+2%			0.18%	0.53%	2.12%	0.53%	3.10%	3.69%	3.20%	2.70%	0.25%	-	Dec-11

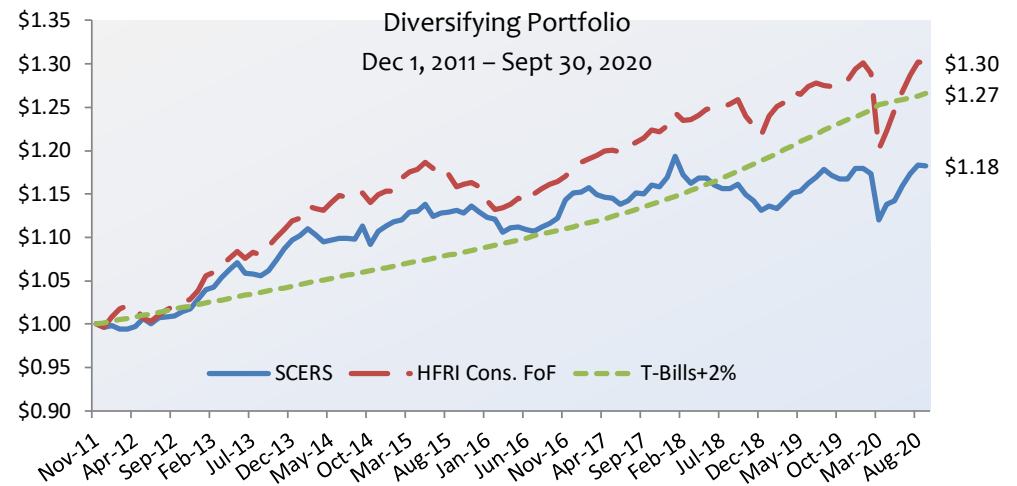
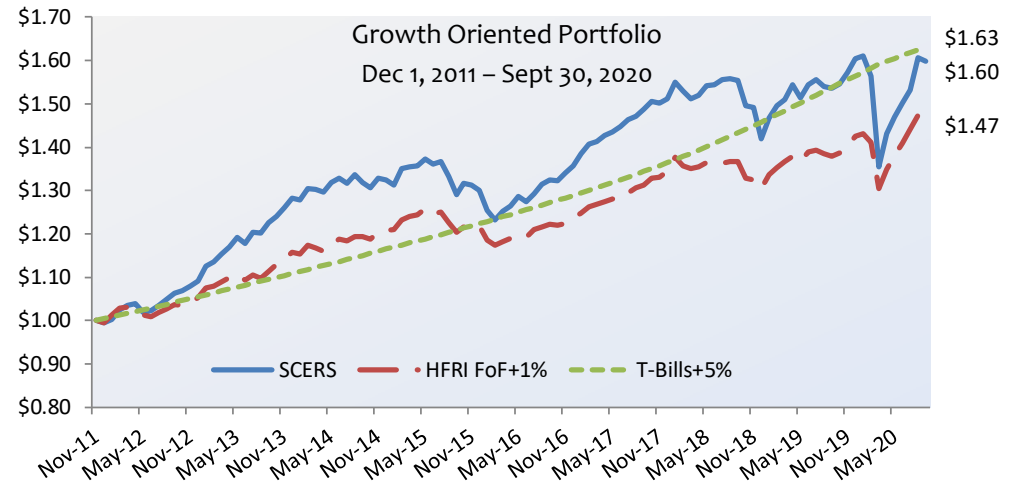
# Absolute Return Portfolios Cumulative Performance – December 2011 to Sept. 2020

Despite the sharp downturn in Q1, the Growth Oriented portfolio is again near the T-bills + 5% long term objective; the portfolio remains ahead of the Fund of Funds Index + 1% benchmark

The Diversifying portfolio is trailing both the T-bills + 2% long term objective and 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 June 30, 2020

The Private Equity portfolio's net IRR since inception is 14.63%, versus the Cambridge Associates benchmark IRR of 12.28%

- The long-term Policy objective (Russell 3000 + 3%) has a 14.66% IRR over this period

The private equity portfolio gained 9.4% in Q2 as financial markets rallied strongly following the pandemic-driven Q1 sell-off

- Gains were broad-based with several funds generating returns of more than 15% in Q2
  - Thoma Bravo XI & XIII, Gridiron IV, Cortec VII, RRJ II, and Summit VC IV reported the largest gains
- Distributions remained modest as transaction activity was slow to resume following the Q1 market turmoil
  - \$27.9 million in distributions, coming mostly from Thoma Bravo XI, Dyal III, and TOP III

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 almost all vintage years exceeding peer universes
- Summit VC IV (39.3%), Spectrum VII (39.1%), Marlin Heritage (35.4%), and Accel-KKR IV (35.2%) are leading performance among SCERS' more mature funds

The legacy fund of funds generally reported solid gains during the quarter

- Aggregate since inception net IRR increased from 10.68% to 11.10% during the quarter
  - The aggregate total value (TVPI) increased from 1.60x to 1.63x
- The legacy fund of funds comprise only 10.5% of the current fair value of the Private Equity portfolio

Changes during the quarter

- SCERS committed \$25 million and \$20 million, respectively, to Spectrum IX and Summit VC V (both venture capital, reups with existing GPs) and \$20 million to Shamrock Capital Content Fund II (opportunistic credit) during Q2
  - SCERS committed \$35 million in total to two venture capital funds in Q3 2020
- \$65.4 million in new contributions, \$27.9 million in distributions
- Total portfolio gain increased by \$91.3 million while the total portfolio IRR increased by 0.90%

## Private Equity Portfolio Characteristics as of June 30, 2020

The SCERS Private Equity portfolio is diversified by strategy and geography

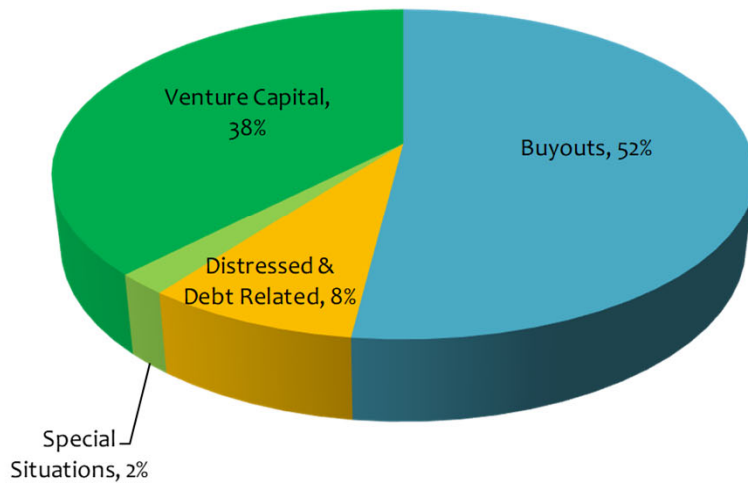
- Investments remain focused in North America, with meaningful exposure to Europe

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

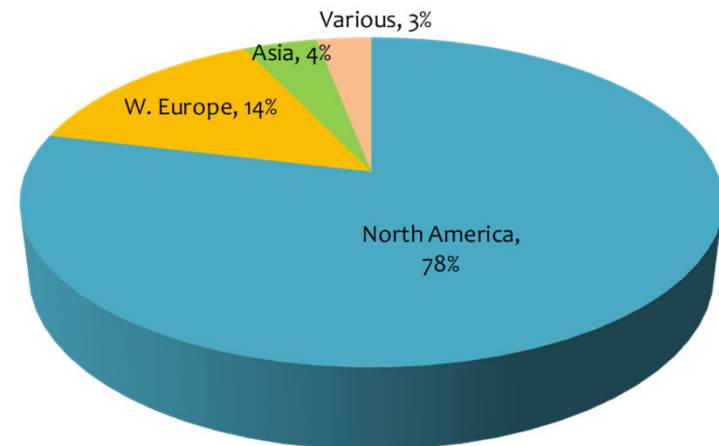
- Represents 10% of the total portfolio's value as of June 30, 2020

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 6/30/20.

## Private Equity Portfolio Performance Details – as of June 30, 2020

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI
<b>Vintage Year 2006</b>												
HarbourVest Partners VIII - Buyout Fund L.P.	Fund of Funds	37,500	1,125	36,375	97%	54,226	8,697	62,923	26,548	10.63%	7.47%	1.73x
HarbourVest Partners VIII - Mezzanine and Distressed Debt Fund L.P.	Fund of Funds	5,000	200	4,800	96%	6,023	481	6,504	1,704	6.97%	7.47%	1.36x
HarbourVest Partners VIII - Venture Fund L.P.	Fund of Funds	7,500	150	7,350	98%	10,890	3,532	14,422	7,072	10.83%	7.47%	1.96x
<b>Vintage Year 2006 Total</b>		<b>50,000</b>	<b>1,475</b>	<b>48,525</b>	<b>97%</b>	<b>71,138</b>	<b>12,711</b>	<b>83,849</b>	<b>35,324</b>	<b>10.39%</b>	<b>6.96%</b>	<b>1.73x</b>
<b>Vintage Year 2008</b>												
Abbott Capital Private Equity Fund VI, L.P.	Fund of Funds	75,000	750	74,250	99%	81,671	44,796	126,467	52,217	12.13%	13.16%	1.70x
Goldman Sachs Private Equity Partners X, L.P.	Fund of Funds	75,000	13,234	68,958	82%	93,427	21,459	114,886	45,928	11.07%	13.16%	1.67x
HarbourVest International Private Equity Partners VI-Partnership Fund L.P.	Fund of Funds	36,170	1,808	37,980	95%	29,457	33,314	62,771	24,791	11.25%	5.42%	1.65x
<b>Vintage Year 2008 Total</b>		<b>186,170</b>	<b>15,792</b>	<b>181,188</b>	<b>92%</b>	<b>204,555</b>	<b>99,569</b>	<b>304,125</b>	<b>122,937</b>	<b>11.52%</b>	<b>8.21%</b>	<b>1.68x</b>
<b>Vintage Year 2011</b>												
Waterland Private Equity Fund V C.V.	Buyout	17,972	3,263	15,934	82%	30,070	11,157	41,227	25,294	34.99%	10.96%	2.59x
Khosla Ventures IV, L.P.	Venture Capital	10,000	190	9,810	98%	15,153	14,140	29,292	19,482	21.51%	15.33%	2.99x
<b>Vintage Year 2011 Total</b>		<b>27,972</b>	<b>3,453</b>	<b>25,744</b>	<b>88%</b>	<b>45,223</b>	<b>25,297</b>	<b>70,520</b>	<b>44,776</b>	<b>28.21%</b>	<b>12.41%</b>	<b>2.74x</b>
<b>Vintage Year 2012</b>												
Garrison Opportunity Fund III A LLC	Distressed Debt	20,000	0	20,000	100%	7,660	11,449	19,110	-890	-0.86%	13.63%	0.96x
New Enterprise Associates 14, L.P.	Venture Capital	25,000	1,125	23,875	96%	23,001	29,585	52,586	28,711	16.35%	14.03%	2.20x
Summit Partners Venture Capital III-A, LP	Venture Capital	16,350	1,649	19,528	90%	20,972	18,799	39,770	20,242	18.09%	14.03%	2.04x
<b>Vintage Year 2012 Total</b>		<b>61,350</b>	<b>2,774</b>	<b>63,403</b>	<b>95%</b>	<b>51,633</b>	<b>59,833</b>	<b>111,467</b>	<b>48,063</b>	<b>11.98%</b>	<b>11.89%</b>	<b>1.76x</b>
<b>Vintage Year 2013</b>												
Accel-KKR Capital Partners IV, L.P.	Buyout	15,000	318	14,682	98%	23,270	13,921	37,190	22,509	35.22%	13.69%	2.53x
H.I.G. Capital Partners V, L.P.	Buyout	14,000	1,636	12,364	88%	4,890	14,041	18,931	6,567	18.56%	13.69%	1.53x
Marlin Equity IV, L.P.	Buyout	20,000	103	19,897	99%	10,243	15,542	25,785	5,887	8.00%	13.69%	1.30x
RRJ Capital Master Fund II, L.P.	Buyout	35,000	3,917	36,010	89%	32,391	12,493	44,884	8,874	7.28%	12.12%	1.25x
H.I.G. Bayside Loan Opportunity Fund III (Europe-US\$), L.P.	Distressed Debt	30,000	5,769	24,231	81%	24,500	7,019	31,519	7,288	7.56%	5.29%	1.30x
Wayzata Opportunities Fund III, L.P.	Distressed Debt	30,000	24,103	14,718	20%	8,849	5,129	13,978	-740	-1.56%	8.19%	0.95x

<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 June 30, 2020 (continued)

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI
Trinity Ventures XI, L.P.	Venture Capital	25,000	2,438	22,563	90%	4,835	32,723	37,559	14,996	11.36%	12.77%	1.66x
<b>Vintage Year 2013 Total</b>		<b>169,000</b>	<b>38,284</b>	<b>144,464</b>	<b>77%</b>	<b>108,978</b>	<b>100,868</b>	<b>209,846</b>	<b>65,382</b>	<b>11.21%</b>	<b>11.24%</b>	<b>1.45x</b>
<b>Vintage Year 2014</b>												
Dyal Capital Partners II	Buyout	35,000	8,628	29,610	75%	5,517	20,090	25,607	-4,002	-6.12%	16.96%	0.86x
H.I.G. Europe Capital Partners II, L.P.	Buyout	15,726	3,817	12,379	76%	2,624	10,566	13,191	811	2.98%	12.60%	1.07x
Marlin Heritage Fund	Buyout	10,000	2,293	10,430	77%	15,749	7,974	23,724	13,294	35.37%	16.96%	2.27x
Thoma Bravo XI	Buyout	30,000	3,203	32,531	89%	49,399	53,807	103,206	70,675	31.99%	16.96%	3.17x
TPG Opportunities Partners III	Distressed Debt	40,000	13,468	48,449	66%	39,538	16,787	56,326	7,876	8.45%	7.50%	1.16x
Khosla Ventures V	Venture Capital	20,000	700	19,300	97%	1,013	25,823	26,836	7,536	10.01%	15.90%	1.39x
Spectrum Equity Investors VII, L.P.	Venture Capital	25,000	1,625	23,375	94%	29,634	37,019	66,653	43,278	39.07%	15.90%	2.85x
<b>Vintage Year 2014 Total</b>		<b>175,726</b>	<b>33,735</b>	<b>176,075</b>	<b>81%</b>	<b>143,476</b>	<b>172,067</b>	<b>315,543</b>	<b>139,468</b>	<b>22.27%</b>	<b>13.53%</b>	<b>1.79x</b>
<b>Vintage Year 2015</b>												
* WPEF VI Overflow Fund C.V.	Buyout	6,740	6,730	10	0%	0	0	0	-10	0.00%	8.77%	0.00x
RRJ Capital Master Fund III, LP	Buyout	40,000	9,633	33,604	76%	29,873	11,058	40,932	7,328	10.82%	8.77%	1.22x
WPEF VI Feeder, L.P.	Buyout	26,959	9,642	20,309	64%	6,092	25,841	31,933	11,625	20.50%	8.77%	1.57x
Accel-KKR Growth Capital Partners II	Mezzanine	15,000	880	14,120	94%	9,537	10,053	19,590	5,469	17.92%	8.07%	1.39x
New Enterprise Associates 15, L.P.	Venture Capital	35,000	2,975	32,029	92%	7,499	45,939	53,438	21,408	16.20%	14.60%	1.67x
Summit Partners Venture Capital Fund IV-A, L.P.	Venture Capital	35,000	26,674	28,376	24%	20,050	26,408	46,458	18,082	39.34%	14.60%	1.64x
<b>Vintage Year 2015 Total</b>		<b>158,698</b>	<b>56,533</b>	<b>128,448</b>	<b>64%</b>	<b>73,051</b>	<b>119,299</b>	<b>192,350</b>	<b>63,902</b>	<b>19.11%</b>	<b>12.24%</b>	<b>1.50x</b>
<b>Vintage Year 2016</b>												
Accel-KKR Capital Partners V, L.P.	Buyout	25,000	9,708	15,292	61%	7,343	13,480	20,824	5,532	21.90%	10.17%	1.36x
Dyal III Pension Investors LP	Buyout	35,000	22,040	21,125	37%	12,017	17,888	29,905	8,780	17.19%	10.17%	1.42x
Linden Capital Partners III	Buyout	35,000	8,057	33,943	77%	25,982	41,390	67,371	33,429	28.86%	10.17%	1.98x
Marlin Heritage Europe, L.P.	Buyout	14,603	3,326	11,434	77%	0	16,303	16,303	4,868	23.61%	5.90%	1.43x
Thoma Bravo Fund XII, L.P.	Buyout	30,000	1,691	36,885	94%	8,578	42,112	50,691	13,805	15.32%	10.17%	1.37x
TSG7 A L.P.	Buyout	16,000	3,881	12,119	76%	178	14,701	14,879	2,760	8.37%	10.17%	1.23x
TSG7 B L.P.	Buyout	4,000	1,113	3,061	72%	288	2,725	3,014	-47	-1.07%	10.17%	0.98x

<sup>1</sup>Benchmarks:

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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 June 30, 2020 (continued)

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI
Atalaya Special Opportunities Fund VI, L.P.	Distressed Debt	25,000	2,454	28,940	90%	21,662	15,812	37,474	8,534	11.41%	7.56%	1.29x
Trinity Ventures XII, L.P.	Venture Capital	30,000	5,625	24,375	81%	0	42,688	42,688	18,313	26.87%	15.00%	1.75x
<b>Vintage Year 2016 Total</b>		<b>214,603</b>	<b>57,896</b>	<b>187,174</b>	<b>73%</b>	<b>76,048</b>	<b>207,100</b>	<b>283,147</b>	<b>95,974</b>	<b>19.77%</b>	<b>10.94%</b>	<b>1.51x</b>
<b>Vintage Year 2017</b>												
Marlin Heritage II	Buyout	10,000	1,894	8,106	81%	0	9,010	9,010	904	8.00%	12.45%	1.11x
Summit Partners Europe Growth Equity Fund II, SCSP	Buyout	33,698	21,441	28,698	36%	16,601	22,937	39,538	10,840	71.13%	7.80%	1.38x
New Enterprise Associates 16, L.P.	Venture Capital	35,000	9,625	25,375	73%	627	29,834	30,461	5,086	12.52%	11.01%	1.20x
<b>Vintage Year 2017 Total</b>		<b>78,698</b>	<b>32,960</b>	<b>62,179</b>	<b>58%</b>	<b>17,228</b>	<b>61,781</b>	<b>79,009</b>	<b>16,830</b>	<b>24.61%</b>	<b>10.23%</b>	<b>1.27x</b>
<b>Vintage Year 2018</b>												
Linden Capital Partners IV LP	Buyout	44,330	32,057	14,266	28%	1,993	11,612	13,604	-661	N/M	N/M	0.95x
Marlin Equity V	Buyout	25,000	14,603	10,544	42%	521	13,069	13,590	3,046	19.90%	1.45%	1.29x
TSG8 L.P.	Buyout	45,000	38,368	6,632	15%	0	3,352	3,352	-3,280	N/M	N/M	0.51x
Davidson Kempner Long-Term Distressed Opportunities Fund IV LP	Distressed Debt	35,000	5,497	30,100	84%	597	31,062	31,660	1,560	3.96%	N/A	1.05x
TSSP Opportunities Partners IV (A), L.P.	Distressed Debt	35,000	22,763	14,311	35%	2,234	12,600	14,834	523	N/M	N/M	1.04x
RCP Fund XIII	Fund of Funds	50,000	39,500	10,500	21%	0	8,737	8,737	-1,763	N/M	N/M	0.83x
RCPDirect III	Fund of Funds	25,000	16,114	8,886	36%	386	9,698	10,085	1,198	N/M	N/M	1.13x
Accel-KKR Growth Capital Partners III	Mezzanine	33,320	24,827	8,493	25%	0	8,045	8,045	-448	N/M	N/M	0.95x
Khosla Ventures VI, L.P.	Venture Capital	35,000	17,920	17,080	49%	0	16,795	16,795	-285	N/M	N/M	0.98x
Spectrum Equity VIII, L.P.	Venture Capital	25,000	3,063	21,938	88%	0	20,317	20,317	-1,620	-9.08%	10.27%	0.93x
<b>Vintage Year 2018 Total</b>		<b>352,650</b>	<b>214,712</b>	<b>142,749</b>	<b>39%</b>	<b>5,732</b>	<b>135,287</b>	<b>141,019</b>	<b>-1,730</b>	<b>-1.32%</b>	<b>5.78%</b>	<b>0.99x</b>
<b>Vintage Year 2019</b>												
Cortec Group Fund VII, L.P.	Buyout	30,000	21,532	10,605	28%	2,137	9,966	12,103	1,498	N/M	N/M	1.14x
Gridiron Capital Fund IV, L.P.	Buyout	30,000	22,279	7,721	26%	0	7,711	7,711	-10	N/M	N/M	1.00x
Thoma Bravo Fund XIII, LP	Buyout	45,000	12,447	32,553	72%	0	49,103	49,103	16,550	N/M	N/M	1.51x
New Enterprise Associates 17, L.P.	Venture Capital	25,000	20,250	4,764	19%	0	4,856	4,856	93	N/M	N/M	1.02x
Threshold Ventures III, L.P.	Venture Capital	20,000	15,000	5,000	25%	0	4,537	4,537	-463	N/M	N/M	0.91x
<b>Vintage Year 2019 Total</b>		<b>150,000</b>	<b>91,508</b>	<b>60,642</b>	<b>39%</b>	<b>2,137</b>	<b>76,173</b>	<b>78,310</b>	<b>17,668</b>	<b>N/M</b>	<b>N/M</b>	<b>1.29x</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 June 30, 2020 (continued)

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI
<b>Vintage Year 2020</b>												
Accel-KKR Capital Partners VI, LP	Buyout	30,000	30,000	0	0%	0	0	0	0	N/M	N/M	N/A
Summit Partners Europe Growth Equity Fund III, SCSp	Buyout	22,466	22,466	0	0%	0	0	0	0	N/M	N/M	N/A
Wynnchurch Capital Partners V	Buyout	20,000	19,478	522	3%	0	434	434	-88	N/M	N/M	0.83x
Davidson Kempner Long-Term Distressed Opportunities Fund V LP	Distressed Debt	30,000	28,520	1,480	5%	0	1,471	1,471	-9	N/M	N/M	0.99x
Shamrock Capital Content Fund II, L.P.	Opportunistic Credit	20,000	20,000	0	0%	0	-249	-249	-249	N/M	N/M	N/A
Spectrum Equity IX-A, L.P.	Venture Capital	25,000	25,000	0	0%	0	0	0	0	N/M	N/M	N/A
Summit Partners Venture Capital Fund V-A, L.P.	Venture Capital	20,000	20,000	0	0%	0	0	0	0	N/M	N/M	N/A
<b>Vintage Year 2020 Total</b>		<b>167,466</b>	<b>165,463</b>	<b>2,002</b>	<b>1%</b>	<b>0</b>	<b>1,656</b>	<b>1,656</b>	<b>-346</b>	<b>N/M</b>	<b>N/M</b>	<b>0.83x</b>
<b>Portfolio Total :</b>		<b>1,792,333</b>	<b>714,587</b>	<b>1,222,593</b>	<b>60%</b>	<b>799,200</b>	<b>1,071,641</b>	<b>1,870,841</b>	<b>648,248</b>	<b>14.63%</b>	<b>12.28%</b>	<b>1.53x</b>
<b>Portfolio Strategy Totals</b>												
Buyout		761,493	339,565	491,265	55%	285,759	472,283	758,042	266,777	21.02%		1.54x
Distressed Debt		245,000	102,575	182,229	58%	105,040	101,331	206,371	24,143	5.07%		1.13x
Fund of Funds		311,170	72,881	249,099	77%	276,080	130,715	406,796	157,696	11.10%		1.63x
Mezzanine		48,320	25,707	22,613	47%	9,537	18,098	27,635	5,022	14.97%		1.22x
Opportunistic Credit		20,000	20,000	0	0%	0	-249	-249	-249	N/M		N/A
Venture Capital		406,350	153,859	277,387	62%	122,784	349,463	472,247	194,859	19.01%		1.70x
<b>Portfolio Total :</b>		<b>1,792,333</b>	<b>714,587</b>	<b>1,222,593</b>	<b>60%</b>	<b>799,200</b>	<b>1,071,641</b>	<b>1,870,841</b>	<b>648,248</b>	<b>14.63%</b>	<b>12.28%</b>	<b>1.53x</b>
<b>Portfolio Geography Totals</b>												
US		1,513,000	622,775	1,002,004	59%	627,591	920,951	1,548,542	546,538	14.68%		1.55x
Non-US		279,333	91,812	220,589	67%	171,609	150,690	322,299	101,710	14.31%		1.46x
<b>Portfolio Total</b>		<b>1,792,333</b>	<b>714,587</b>	<b>1,222,593</b>	<b>60%</b>	<b>799,200</b>	<b>1,071,641</b>	<b>1,870,841</b>	<b>648,248</b>	<b>14.63%</b>	<b>12.28%</b>	<b>1.53x</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 June 30, 2020

The Private Credit portfolio's net IRR since inception is 6.47%, versus the benchmark return of 6.26%

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

The Private Credit funds reported strong gains in Q2 following the downturn experienced in Q1

- The portfolio returned 5.4% in Q2 and 3.2% for the trailing 1 year period ending June 30, 2020
  - Most of the funds were up between 2% and 9% during Q2, reversing much of the Q1 downturn
- Longer term performance is also regaining lost ground following the sizeable sell-off in Q1
  - 5.2% net IRR for the 3 year period and 6.2% net IRR for the 5 year period
  - The portfolio was generating annualized returns of 7% - 8% over multi-year periods prior to the Q1 downturn

Changes during the quarter

- SCERS made no new commitments to Private Credit funds during Q2
  - SCERS committed \$40 million to an opportunistic credit fund in Q3 2020
- \$8.4 million in new contributions, \$14.6 million in distributions
- Total portfolio gain increased by \$11.1 million while the total portfolio IRR increased by 1.57%

## Private Credit Portfolio Details – as of June 30, 2020

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI
<b>Vintage Year 2011</b>												
Summit Partners Credit Fund, LP	Direct Lending	20,000	2,125	20,697	89%	26,198	501	26,699	6,003	8.82%	N/A	1.29x
<b>Vintage Year 2011 Total</b>		<b>20,000</b>	<b>2,125</b>	<b>20,697</b>	<b>89%</b>	<b>26,198</b>	<b>501</b>	<b>26,699</b>	<b>6,003</b>	<b>8.82%</b>	<b>12.41%</b>	<b>1.29x</b>
<b>Vintage Year 2014</b>												
Summit Partners Credit Fund II, L.P.	Direct Lending	35,000	4,715	47,382	87%	30,162	23,950	54,112	6,730	6.46%	2.91%	1.14x
<b>Vintage Year 2014 Total</b>		<b>35,000</b>	<b>4,715</b>	<b>47,382</b>	<b>87%</b>	<b>30,162</b>	<b>23,950</b>	<b>54,112</b>	<b>6,730</b>	<b>6.46%</b>	<b>13.53%</b>	<b>1.14x</b>
<b>Vintage Year 2015</b>												
Athyrium Opportunities Fund II	Opportunistic Credit	32,000	4,313	40,593	87%	32,591	15,569	48,160	7,567	9.10%	8.07%	1.19x
<b>Vintage Year 2015 Total</b>		<b>32,000</b>	<b>4,313</b>	<b>40,593</b>	<b>87%</b>	<b>32,591</b>	<b>15,569</b>	<b>48,160</b>	<b>7,567</b>	<b>9.10%</b>	<b>12.24%</b>	<b>1.19x</b>
<b>Vintage Year 2017</b>												
Athyrium Opportunities Fund III	Opportunistic Credit	25,000	10,727	22,105	57%	7,797	15,848	23,645	1,540	5.00%	7.89%	1.07x
<b>Vintage Year 2017 Total</b>		<b>25,000</b>	<b>10,727</b>	<b>22,105</b>	<b>57%</b>	<b>7,797</b>	<b>15,848</b>	<b>23,645</b>	<b>1,540</b>	<b>5.00%</b>	<b>10.23%</b>	<b>1.07x</b>
<b>Vintage Year 2018</b>												
Benefit Street Partners Senior Secured Opportunities Fund L.P.	Direct Lending	50,000	0	50,953	100%	9,599	43,188	52,788	1,835	1.87%	1.63%	1.04x
Summit Partners Credit Fund III, L.P.	Direct Lending	50,000	27,309	34,984	45%	12,294	26,524	38,818	3,833	N/M	N/M	1.11x
TCP Direct Lending Fund VIII-S, LLC	Direct Lending	100,000	28,567	71,433	71%	8,899	67,418	76,317	4,884	4.81%	1.63%	1.07x
<b>Vintage Year 2018 Total</b>		<b>200,000</b>	<b>55,876</b>	<b>157,370</b>	<b>72%</b>	<b>30,792</b>	<b>137,130</b>	<b>167,922</b>	<b>10,552</b>	<b>4.59%</b>	<b>5.78%</b>	<b>1.07x</b>
<b>Vintage Year 2019</b>												
BSP Levered US SOF II (Senior Secured Opportunities) Fund L.P.	Direct Lending	50,000	46,950	3,050	6%	0	3,564	3,564	515	N/M	N/M	1.17x
OrbiMed Royalty & Credit Opportunities III, LP	Opportunistic Credit	35,000	28,726	6,993	18%	726	6,393	7,119	126	N/M	N/M	1.02x
<b>Vintage Year 2019 Total</b>		<b>85,000</b>	<b>75,676</b>	<b>10,043</b>	<b>11%</b>	<b>726</b>	<b>9,957</b>	<b>10,683</b>	<b>640</b>	<b>N/M</b>	<b>N/M</b>	<b>1.06x</b>
<b>Vintage Year 2020</b>												
IFM USIDF (Offshore) B Feeder	Direct Lending	40,000	40,000	0	0%	0	0	0	0	N/M	N/M	N/A
MCP Private Capital Fund IV (Feeder) SCSp	Direct Lending	35,496	33,239	2,215	6%	0	2,248	2,248	34	N/M	N/M	1.02x
<b>Vintage Year 2020 Total</b>		<b>75,496</b>	<b>73,239</b>	<b>2,215</b>	<b>3%</b>	<b>0</b>	<b>2,248</b>	<b>2,248</b>	<b>34</b>	<b>N/M</b>	<b>N/M</b>	<b>1.02x</b>

<sup>1</sup>Benchmarks:

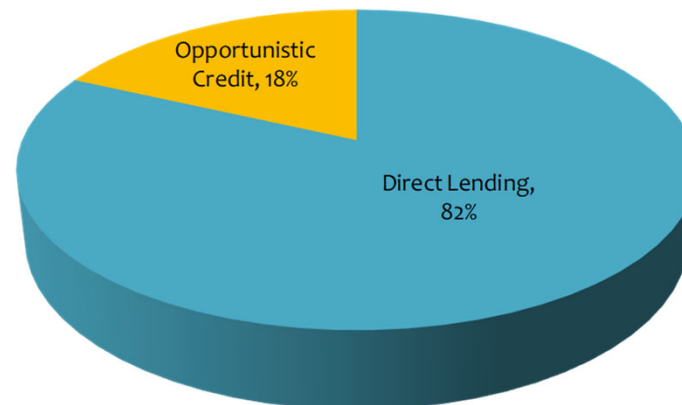
Private Credit Investments: Cambridge Associates median return for the respective debt strategies and vintage years

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

## Private Credit Portfolio Details – as of June 30, 2020 (continued)

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI
<b>Portfolio Strategy Totals</b>												
Direct Lending		380,496	182,906	230,713	52%	87,152	167,394	254,546	23,833	6.02%		1.10x
Opportunistic Credit		92,000	43,765	69,691	52%	41,113	37,811	78,924	9,233	7.99%		1.13x
<b>Portfolio Total :</b>		<b>472,496</b>	<b>226,671</b>	<b>300,404</b>	<b>52%</b>	<b>128,265</b>	<b>205,205</b>	<b>333,470</b>	<b>33,066</b>	<b>6.47%</b>	<b>6.26%</b>	<b>1.11x</b>

Market Value Strategy Exposure\*



\* Exposures are based on the market values of investments as of 6/30/20.

<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 June 30, 2020

The Real Assets portfolio's net IRR since inception is 6.36%, versus the blended benchmark return of 5.01%

- 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 Infrastructure and Energy partnerships

- Recent and longer-term performance of the Energy partnerships was materially impacted by significant Q1 markdowns; Infrastructure partnerships saw smaller declines in Q1 and have maintained good performance since inception
  - Since inception net IRRs of 8.9% for Infrastructure and 4.2% for Energy
- The Real Asset Debt separate account has also performed well with a 10.2% since inception net IRR
  - That separate account market value remains small at \$17.6 million, with very few new investments

The Real Assets portfolio generated a 2.6% net return in Q2

- The portfolio's largest gains came from the Energy funds
  - The Energy funds saw a partial rebound from their downturn in Q1
- The Infrastructure funds generally reported solid gains during the quarter, led by EQT IV

Changes during the quarter

- SCERS made no new commitments to Real Assets funds during Q2
  - SCERS committed \$40 million to an energy-related royalties fund and \$50 million to a social infrastructure fund in Q3 2020
- \$8.8 million in new contributions, \$4.4 million in distributions
- Portfolio IRR increased by 0.39% while the total portfolio gain increased by \$13.9 million

## Real Assets Portfolio Performance Details – as of June 30, 2020

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI
<b>Vintage Year 2013</b>												
EnCap Energy Capital Fund IX, L.P.	Energy	33,000	1,857	37,421	94%	28,609	9,024	37,633	212	0.25%	2.22%	1.01x
<b>Vintage Year 2013 Total</b>		<b>33,000</b>	<b>1,857</b>	<b>37,421</b>	<b>94%</b>	<b>28,609</b>	<b>9,024</b>	<b>37,633</b>	<b>212</b>	<b>0.25%</b>		<b>1.01x</b>
<b>Vintage Year 2014</b>												
Carlyle Power Partners II, L.P.	Energy	40,000	14,139	33,565	65%	7,547	27,541	35,088	1,523	2.02%	2.92%	1.05x
EnCap Flatrock Midstream III	Energy	20,000	1,092	23,147	95%	9,818	16,053	25,871	2,724	6.99%	2.92%	1.12x
Global Energy & Power Infrastructure Fund II	Energy	35,000	2,644	35,993	92%	27,249	22,213	49,463	13,470	23.74%	2.92%	1.37x
Quantum Energy Partners VI, LP	Energy	35,000	9,572	31,268	73%	18,740	29,373	48,113	16,845	22.23%	2.92%	1.54x
Pantheon SCERS SIRF MM, LLC	Infrastructure	100,000	33,968	70,332	66%	28,400	64,468	92,868	22,536	9.19%	6.17%	1.32x
Wastewater Opportunity Fund	Infrastructure	25,000	1,253	23,755	95%	1,998	18,245	20,243	-3,512	-8.49%	6.17%	0.85x
<b>Vintage Year 2014 Total</b>		<b>255,000</b>	<b>62,669</b>	<b>218,059</b>	<b>75%</b>	<b>93,753</b>	<b>177,892</b>	<b>271,645</b>	<b>53,585</b>	<b>10.08%</b>		<b>1.25x</b>
<b>Vintage Year 2015</b>												
ArcLight Energy Partners Fund VI	Energy	40,000	5,604	42,665	86%	17,220	26,561	43,781	1,116	1.03%	1.46%	1.03x
EnCap Energy Capital Fund X, L.P.	Energy	40,000	5,939	36,707	85%	7,896	25,299	33,195	-3,512	-4.11%	1.46%	0.90x
Atalaya Real Assets SMA	Real Asset Debt	100,000	84,789	36,169	15%	26,527	17,552	44,078	7,910	10.23%	N/A	1.22x
<b>Vintage Year 2015 Total</b>		<b>180,000</b>	<b>96,332</b>	<b>115,541</b>	<b>46%</b>	<b>51,643</b>	<b>69,411</b>	<b>121,054</b>	<b>5,513</b>	<b>2.05%</b>		<b>1.05x</b>
<b>Vintage Year 2016</b>												
ACM Fund II, LLC	Agriculture	25,000	4,744	24,402	81%	4,581	16,324	20,905	-3,497	-8.71%	5.62%	0.86x
Brookfield Infrastructure Fund III, L.P.	Infrastructure	40,000	7,322	32,530	82%	8,748	30,610	39,358	6,828	9.52%	N/A	1.21x
IFM Global Infrastructure Fund	Infrastructure	125,053	0	125,053	100%	34,893	125,019	159,912	34,860	11.94%	N/A	1.28x
<b>Vintage Year 2016 Total</b>		<b>190,053</b>	<b>12,066</b>	<b>181,985</b>	<b>94%</b>	<b>48,223</b>	<b>171,953</b>	<b>220,176</b>	<b>38,190</b>	<b>9.47%</b>		<b>1.21x</b>
<b>Vintage Year 2017</b>												
Quantum Energy Partners VII, LP	Energy	40,000	19,610	22,748	51%	2,415	17,354	19,770	-2,978	-8.28%	-6.79%	0.87x
Meridiam Infrastructure North America Fund III	Infrastructure	50,000	47,065	2,935	6%	1	1,034	1,035	-1,901	-61.31%	N/A	0.35x
<b>Vintage Year 2017 Total</b>		<b>90,000</b>	<b>66,674</b>	<b>25,683</b>	<b>26%</b>	<b>2,416</b>	<b>18,388</b>	<b>20,804</b>	<b>-4,879</b>	<b>-12.51%</b>		<b>0.81x</b>
<b>Vintage Year 2018</b>												
Paine Schwartz Food Chain Fund V, LP	Agriculture	40,000	35,531	4,469	11%	0	3,270	3,270	-1,199	N/M	N/M	0.73x

<sup>1</sup>Benchmarks:

Real Assets Portfolio: 45% Cambridge Infrastructure, 35% Cambridge Energy, 10% NCREIF Timberland, 10% NCREIF Farland  
 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 June 30, 2020 (continued)

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI
EnCap Flatrock Midstream IV, L.P.	Energy	22,500	14,867	8,218	34%	588	8,438	9,026	808	6.20%	-1.27%	1.10x
Tailwater Energy Fund III, LP	Energy	32,000	7,486	26,569	77%	1,662	22,561	24,223	-2,346	N/M	N/M	0.91x
ISQ Global Infrastructure Fund II	Infrastructure	50,000	20,018	33,679	60%	3,697	33,242	36,939	3,260	N/M	N/M	1.10x
<b>Vintage Year 2018 Total</b>		<b>144,500</b>	<b>77,901</b>	<b>72,936</b>	<b>46%</b>	<b>5,947</b>	<b>67,511</b>	<b>73,458</b>	<b>522</b>	<b>0.64%</b>		<b>1.01x</b>
<b>Vintage Year 2019</b>												
Tailwater Energy Fund IV, LP	Energy	35,000	28,881	6,109	17%	0	3,809	3,809	-2,300	N/M	N/M	0.62x
Brookfield Infrastructure Fund IV	Infrastructure	40,000	24,009	16,032	40%	511	15,030	15,542	-490	N/M	N/M	0.97x
EQT Infrastructure IV (No.2) USD SCSp	Infrastructure	35,000	14,334	21,494	59%	876	21,241	22,117	623	N/M	N/M	1.03x
<b>Vintage Year 2019 Total</b>		<b>110,000</b>	<b>67,225</b>	<b>43,635</b>	<b>39%</b>	<b>1,388</b>	<b>40,080</b>	<b>41,468</b>	<b>-2,167</b>	<b>N/M</b>		<b>0.95x</b>
<b>Portfolio Total :</b>		<b>1,002,553</b>	<b>384,724</b>	<b>695,260</b>	<b>62%</b>	<b>231,978</b>	<b>554,260</b>	<b>786,238</b>	<b>90,978</b>	<b>6.36%</b>	<b>5.01%</b>	<b>1.13x</b>
<b>Portfolio Strategy Totals</b>												
Agriculture		65,000	40,275	28,871	38%	4,581	19,594	24,175	-4,696	-11.59%		0.84x
Energy		372,500	111,691	304,410	70%	121,745	208,226	329,971	25,562	4.17%		1.08x
Infrastructure		465,053	147,968	325,811	68%	79,125	308,888	388,013	62,203	8.91%		1.19x
Real Asset Debt		100,000	84,789	36,169	15%	26,527	17,552	44,078	7,910	10.23%		1.22x
<b>Portfolio Total :</b>		<b>1,002,553</b>	<b>384,724</b>	<b>695,260</b>	<b>62%</b>	<b>231,978</b>	<b>554,260</b>	<b>786,238</b>	<b>90,978</b>	<b>6.36%</b>	<b>5.01%</b>	<b>1.13x</b>
<b>Portfolio Geography Totals</b>												
US		712,500	319,041	466,472	55%	183,252	329,118	512,370	45,898	4.55%		1.10x
Non-US		290,053	65,683	228,789	77%	48,726	225,142	273,868	45,080	11.02%		1.20x
<b>Portfolio Total</b>		<b>1,002,553</b>	<b>384,724</b>	<b>695,260</b>	<b>62%</b>	<b>231,978</b>	<b>554,260</b>	<b>786,238</b>	<b>90,978</b>	<b>6.36%</b>	<b>5.01%</b>	<b>1.13x</b>

<sup>1</sup>Benchmarks:

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

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 Characteristics as of June 30, 2020

The SCERS Real Assets portfolio is primarily Infrastructure and Energy

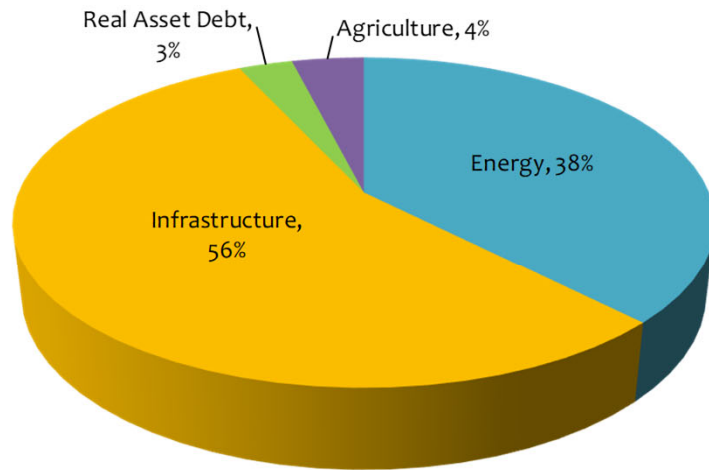
- Other strategies such as Agriculture represent much smaller allocations in the portfolio

The portfolio is focused on North America, though is diversified globally

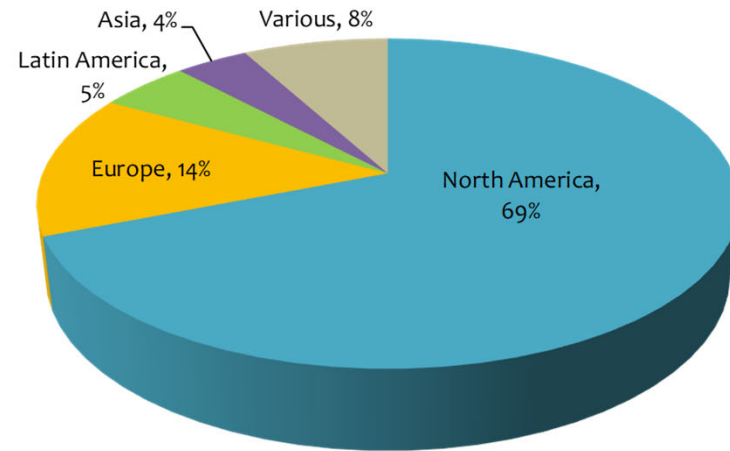
- The portfolio has exposure to Europe, Latin America, and Asia

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 6/30/20.

## Opportunities Portfolio – as of June 30, 2020

### The Opportunities portfolio's net IRR since inception is 18.29%

- 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
  - 2.96% portfolio IRR v 5.61% 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 7.41% net IRR since inception

### Changes during the quarter

- SCERS made no new commitments categorized as Opportunities funds during Q2 2020
- No new contributions, \$0.2 million in distributions
- Portfolio IRR decreased 0.04%, total portfolio gain decreased \$0.2 million

### As mentioned, the Opportunities portfolio only includes certain distressed debt funds

- 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 June 30, 2020

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR 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%	9.83%	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%	12.18%	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%	14.33%	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%	14.33%	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%	24,667	6,190	30,857	5,982	7.41%	8.19%	1.24x
<b>Vintage Year 2013 Total</b>		<b>25,000</b>	<b>1,117</b>	<b>24,875</b>	<b>96%</b>	<b>24,667</b>	<b>6,190</b>	<b>30,857</b>	<b>5,982</b>	<b>7.41%</b>		<b>1.24x</b>
<b>Portfolio Total :</b>		<b>100,000</b>	<b>1,117</b>	<b>100,123</b>	<b>99%</b>	<b>154,015</b>	<b>6,190</b>	<b>160,205</b>	<b>60,082</b>	<b>18.29%</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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