



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 15

MEETING DATE: June 16, 2021

SUBJECT: Quarterly Investment Performance Report
Alternative Assets

SUBMITTED FOR: Consent Deliberation and Action Receive and File

RECOMMENDATION

Staff recommends the Board receive and file the Cliffwater Quarterly Performance Review presentation for the period ending March 31, 2021 for the Absolute Return portfolio, and the period ending December 31, 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 December 31, 2020.

SCERS' alternative asset class period returns are as follows:

SCERS ALTERNATIVE ASSETS PERFORMANCE SUMMARY
Quarter Reporting Periods Ending March 31, 2021

SCERS ASSET CLASS	Quarter*	1-Year*	3-Year*	5-Year*	Since Inception*	Since Inception Date*
SCERS Absolute Return	3.1%	20.8%	4.2%	5.0%	4.3%	Sep-04
HFRI FoF Conservative	3.7%	19.0%	5.0%	4.7%	3.9%	
HFRI FoF Composite + 1%	2.7%	25.6%	6.6%	6.7%	4.7%	
SCERS Private Equity	13.1%	30.1%	24.5%	21.3%	17.1%	Feb-08
Cambridge Private Equity/Venture Capital	15.4%	28.0%	17.8%	17.0%	14.2%	
SCERS Private Credit	7.5%	12.5%	9.4%	9.8%	9.4%	Oct-11
Credit Suisse Leveraged Loan + 2%	5.6%	4.8%	6.0%	7.2%	7.0%	
SCERS Real Assets	7.0%	-1.3%	4.7%	7.7%	8.0%	Jan-13
(45%) Cambridge Private Infrastructure; (35%) Cambridge Private Energy; (20%) NCREIF Agriculture/Timber	5.4%	0.2%	2.4%	6.3%	5.6%	
SCERS Opportunities	13.9%	9.8%	7.2%	6.7%	18.3%	Jan-08
SCERS Portfolio Actuarial Rate of Return	1.8%	6.8%	6.8%	6.8%	6.8%	
*Note: Periods ending 12/31/20 for Private Equity, Private Credit, Real Assets, and Opportunities Periods ending 3/31/21 for Absolute Return All returns are net IRR, except Absolute Return which is time-weighted						

SCERS PORTFOLIO RESULTS

For the reporting quarter ended December 31, 2020, SCERS' Private Equity portfolio underperformed its benchmark return, 13.1% versus 15.4%; however, on an absolute basis the quarter return was outstanding compared to the other asset classes. The robust demand for initial public offerings (IPO) and special purpose acquisition corporations (SPAC) have benefited private equity and venture capital firms both in valuation gains and prices achieved on exited investments.

After the difficult energy market brought on by the pandemic, SCERS' Real Assets portfolio has rebounded, in particular, SCERS' energy strategies are significantly outperforming. However, some of the infrastructure investments suffered from their transportation and airport investments caused by the pandemic reducing demand. Overall, SCERS' Real Assets portfolio significantly outperformed against its benchmark return, 7.0% versus 5.4%, primarily due to the rebound in the energy sector, with oil reaching \$65 per barrel.

For the reporting quarter ended March 31, 2020, SCERS' Absolute Return portfolio underperformed against its benchmark return, 3.1% versus 3.7%. The portfolio performance lagged due to the meaningful underperformance of SCERS' Diversifying-Oriented portfolio, in particular the Event Driven strategies (2.6%) and the Equity Long/Short strategy (-7.4%). In contrast, SCERS' Growth Absolute Return portfolio outperformed against its benchmark, 5.8%

return versus 2.7%, due to the strong performance of the Event Driven (11.4%) and Equity Long/Short (16.0%) strategies.

Below are notable top and bottom performing funds among SCERS' alternative assets managers for the quarter reporting period:

- Top performing funds:
 - Absolute Return:
 - Laurion Capital (market neutral): +16.5%
 - Lakewood Capital Partners (equity long/short): +16.0%
 - Third Point Partners Qualified (event driven): +11.4%
 - Private Equity portfolio:
 - Khosla Ventures IV (venture capital): +73.1%
 - Spectrum Equity Investors VIII (venture capital): +41.6%
 - Wynnchurch Capital Partners V (buyout): +36.4%
 - Private Credit portfolio:
 - OrbiMed Royalty & Credit Opportunities III (opportunistic): +69.8%
 - Summit Partners Credit Fund (direct lending): +9.8%
 - Silver Point Specialty Credit Fund II (opportunistic): +8.4%
 - Real Assets portfolio:
 - Quantum Energy Partners VII (energy-diversified): +49.8%
 - EnCap Energy Capital Fund IX (energy-upstream): +31.3%
 - EnCap Energy Capital Fund X (energy-upstream): +19.0%
- Bottom performing funds:
 - Absolute Return portfolio:
 - Marshall Wace Funds (equity long/short): -7.3%
 - Two Sigma Risk Premia Enhance Fund (market neutral): -2.0%
 - Grosvenor SCARF (growth fund-of-funds): -1.9%
 - Grosvenor SCARF (diversifying fund-of-funds): -0.9%
 - Private Equity portfolio:
 - Wayzata Opportunities Fund III (distressed debt): -12.6%

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- Spectrum Equity VII (venture capital): -10.5%
 - Threshold Ventures III (venture capital): -1.0%

 - Private Credit portfolio:
 - MCP Private Capital Fund IV (direct lending): -3.4%
 - Summit Partners Credit Fund II (direct lending): +1.6%
 - TCP Direct Lending Fund VIII-S (direct lending): +3.9%

 - Real Assets portfolio:
 - Meridiam Infrastructure North America Fund III (infrastructure): -22.1%
 - Tailwater Energy Fund IV (energy-midstream): -5.6%
 - Tailwater Energy Fund III (energy-midstream): -5.0%

NEW INVESTMENTS

During the quarter ended March 31, 2021, SCERS made the following new investments:

- Digital Colony Partners II (infrastructure-digital): \$40 million
- Shamrock Capital Growth Fund V (private equity-growth): \$20 million
- Ares Capital Europe Fund V (private credit-direct lending): \$40 million
- Meridiam Sustainable Infrastructure Europe IV (infrastructure-PPP): \$50 million

After the quarter, SCERS made the following new investments:

- CRV Select (venture capital): \$20 million
- Linden Capital Partners V (private equity-buyout): \$30 million

ATTACHMENT

Cliffwater's Quarterly Performance Review for Alternative Assets

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INVESTMENT ADVISORY SERVICES

Los Angeles • New York

Sacramento County Employees' Retirement System Quarterly Performance Review

June 16, 2021



Executive Summary

Absolute Return Portfolio Performance Summary – as of March 31, 2021

Growth Oriented Strategies

- The Growth Oriented Portfolio returned 5.84% in Q1 and 25.45% for the fiscal YTD period ending March 31, 2021
 - Outperformed the HFRI FoF Index + 1% benchmark by 315 bps in Q1 and 920 bps for the fiscal YTD period
 - Outperformed the T-bills + 5% long term objective by 232 bps (annualized) over the 5-year period ending March 31, 2021
 - Outperformed the HFRI FoF Index + 1% benchmark by 177 bps (annualized) over the 5-year period
- All direct funds generated positive returns in Q1, led by Lakewood (+16.01%); the Grosvenor portfolio returned -1.38%
- All funds generated positive returns for the fiscal YTD, led by Third Point (+45.71%) and Lakewood (+38.99%)

Diversifying Strategies

- The Diversifying Portfolio returned 2.11% in Q1 and 10.31% for the fiscal YTD period ending March 31, 2021
 - Underperformed the HFRI Conservative FoF Index benchmark by 160 bps in Q1 and 239 bps for the fiscal YTD period
 - Underperformed the T-bills + 2% long term objective by 38 bps (annualized) over the trailing 5-year period
- Laurion led performance in Q1 (+16.49%), followed by LMR (+6.84%)
 - MW Global Opps (-7.35%), Two Sigma (-2.05%), and Grosvenor (-0.95%) were the biggest detractors
- All funds generated positive returns for the fiscal YTD, with returns ranging from 1.04% (Two Sigma) to 24.45% (Laurion)

Elevated volatility over the past several quarters has moved 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 7.82% compared to the ACWI standard deviation of 13.35% since December 2011 (59% ratio)
 - Portfolio equity beta of 0.50 with an equity correlation of 0.85
- Diversifying Portfolio
 - Target standard deviation < 25% of global equities, with an equity beta < 0.1 and equity correlation < 0.1
 - Standard deviation of 3.50% compared to the ACWI standard deviation of 13.35% since December 2011 (26% ratio)
 - Portfolio equity beta of 0.13 with an equity correlation of 0.49

Growth Oriented Absolute Return Portfolio Performance – as of March 31, 2021

Fund	Market Value	Actual %	Returns								Std Dev	Sharpe Ratio	Incep Date
			Mar	QTD	YTD	FYTD	1 Year	3 Year	5 Year	Incep			
Growth-Oriented Portfolio													
Event Driven													
Third Point Partners Qualified L.P.	70,442,749	6.8%	6.60%	11.42%	11.42%	45.71%	62.40%	12.80%	12.83%	11.59%	10.29%	1.02	May-12
Event Driven - HF Total	70,442,749	6.8%	6.60%	11.42%	11.42%	45.71%	62.40%	12.82%	11.66%	10.11%	10.36%	0.89	May-12
Equity Long/Short													
Lakewood Capital Partners, LP	51,958,802	5.0%	11.46%	16.01%	16.01%	38.99%	53.82%	5.76%	6.79%	6.31%	15.33%	0.41	Jul-13
Equity Long/Short - HF Total	51,958,802	5.0%	11.46%	16.01%	16.01%	38.99%	53.82%	5.76%	6.79%	6.31%	15.33%	0.41	Jul-13
Multi-Strategy													
Sculptor Domestic Partners II, L.P.	65,026,654	6.3%	-0.22%	3.44%	3.44%	16.21%	31.77%	10.79%	10.89%	8.72%	6.61%	1.16	Jan-12
Multi-Strategy - HF Total	65,026,654	6.3%	-0.22%	3.44%	3.44%	16.21%	31.77%	10.79%	10.89%	8.72%	6.61%	1.16	Jan-12
Fund of Funds													
Grosvenor SC Absolute Return Fund LLC (Growth)	89,866,215	8.7%	-0.43%	-1.38%	-1.38%	13.19%	23.83%	4.12%	6.71%	5.77%	6.78%	0.72	Dec-11
Fund of Funds - HF Total	89,866,215	8.7%	-0.43%	-1.38%	-1.38%	13.19%	23.83%	4.11%	6.47%	4.64%	6.95%	0.45	Sep-04
Growth-Oriented Portfolio Total	277,294,420	26.9%	3.42%	5.84%	5.84%	25.45%	38.93%	7.61%	8.51%	5.48%	7.59%	0.52	Sep-04
HFRI FoF Composite + 1%			0.50%	2.69%	2.69%	16.25%	25.56%	6.64%	6.74%	4.69%	5.46%	0.57	Sep-04
3 Month T-Bills+5%			0.42%	1.26%	1.26%	3.83%	5.12%	6.49%	6.19%	6.34%	0.47%	-	Sep-04
Market Indices													
Libor3Month			0.02%	0.05%	0.05%	0.17%	0.27%	1.60%	1.44%	1.65%	0.48%	-	Sep-04
Bloomberg Barclays US Aggregate Bond Index			-1.25%	-3.37%	-3.37%	-2.12%	0.71%	4.66%	3.11%	4.07%	3.21%	0.74	Sep-04
Bloomberg Barclays US High Yield Bond Index			0.15%	0.85%	0.85%	12.29%	23.72%	6.84%	8.06%	7.37%	9.34%	0.63	Sep-04
S&P 500 TR			4.38%	6.17%	6.17%	29.71%	56.35%	16.78%	16.30%	10.26%	14.58%	0.63	Sep-04
MSCI AC World Index Free - Net			2.67%	4.57%	4.57%	29.68%	54.60%	12.07%	13.21%	8.32%	15.70%	0.48	Sep-04
MSCI EAFE - Net			2.30%	3.48%	3.48%	25.84%	44.57%	6.02%	8.85%	6.13%	16.92%	0.34	Sep-04
MSCI EMF (Emerging Markets Free) - Net			-1.51%	2.29%	2.29%	34.13%	58.39%	6.48%	12.07%	9.39%	21.42%	0.45	Sep-04

Diversifying Absolute Return Portfolio Performance – as of March 31, 2021

Fund	Market Value	Actual %	Returns								Std Dev	Sharpe Ratio	Incep Date
			Mar	QTD	YTD	FYTD	1 Year	3 Year	5 Year	Incep			
Diversifying Portfolio													
Market Neutral													
Aristeia Partners, L.P.	46,852,808	4.5%	-2.95%	4.12%	4.12%	-	-	-	-	4.12%	-	-	Jan-21
Laurion Capital, Ltd.	73,277,561	7.1%	6.28%	16.49%	16.49%	24.45%	33.07%	17.60%	12.83%	11.00%	8.57%	1.13	Mar-14
LMR Fund Limited	46,194,260	4.5%	0.42%	6.84%	6.84%	19.11%	34.86%	-	-	1.87%	23.16%	0.18	Nov-19
KLS Diversified Fund LP	38,475,165	3.7%	-0.23%	3.53%	3.53%	12.36%	14.96%	-	-	-1.71%	13.42%	-0.15	Jan-19
Two Sigma Risk Premia Enhanced Fund, LP	39,312,942	3.8%	-2.71%	-2.05%	-2.05%	1.04%	-0.80%	-	-	-8.18%	9.74%	-0.91	Sep-19
Market Neutral - HF Total	244,112,736	23.6%	0.79%	6.86%	6.86%	14.76%	20.69%	4.84%	5.31%	5.72%	6.26%	0.74	Mar-14
Event Driven													
BlackRock Event Driven Equity Fund (BILPX)	48,172,351	4.7%	0.50%	0.70%	0.70%	9.97%	16.30%	-	-	9.58%	7.77%	1.16	Mar-20
Davidson Kempner Institutional Partners LP	52,034,956	5.0%	0.68%	3.71%	3.71%	13.64%	21.37%	-	-	8.81%	6.36%	1.17	May-19
Elliott International Limited - Class A & B	67,151,053	6.5%	1.00%	3.23%	3.23%	9.88%	13.71%	7.59%	8.59%	7.88%	3.29%	2.02	Apr-12
PSquared US Feeder Fund LP	45,559,249	4.4%	-0.19%	-0.77%	-0.77%	-	-	-	-	1.24%	4.73%	-	Aug-20
Event Driven - HF Total	212,917,610	20.6%	0.76%	2.62%	2.62%	11.10%	16.82%	6.87%	8.15%	7.64%	3.49%	1.84	Apr-12
Equity Long/Short													
Marshall Wace Funds LP - MW Global Opportunities (US) Fund	46,855,887	4.5%	-4.86%	-7.35%	-7.35%	5.75%	9.14%	-	-	7.28%	9.00%	0.68	Jan-19
Equity Long/Short - HF Total	46,855,887	4.5%	-4.86%	-7.35%	-7.35%	5.75%	9.14%	7.28%	7.28%	7.28%	9.00%	0.68	Apr-12
Macro-Systematic													
Graham Global Investment Fund II SPC Ltd. - Tactical Trend Segregated	38,099,328	3.7%	1.91%	4.72%	4.72%	17.09%	14.55%	4.57%	-	2.06%	12.59%	0.10	Feb-17
Macro-Systematic - HF Total	38,099,328	3.7%	1.91%	4.72%	4.72%	10.71%	5.46%	1.26%	-	0.69%	9.58%	-0.04	Jan-17
Fund of Funds													
Grosvenor SC Absolute Return Fund LLC (Diversifying)	211,695,111	20.5%	-0.37%	-0.95%	-0.95%	8.66%	14.82%	4.11%	2.87%	2.45%	3.82%	0.41	Dec-11
Grosvenor SC Absolute Return Fund LLC Series B	1,563,033	0.2%	-0.10%	1.36%	1.36%	6.83%	13.43%	3.47%	1.49%	1.70%	3.38%	0.22	Feb-13
Fund of Funds - HF Total	213,258,144	20.7%	-0.37%	-0.93%	-0.93%	8.51%	14.74%	3.91%	2.37%	2.31%	3.65%	0.39	Dec-11
Diversifying Portfolio Total	755,243,704	73.1%	0.08%	2.11%	2.11%	10.31%	14.88%	2.98%	2.81%	2.59%	3.50%	0.48	Dec-11
HFRI FOF: Conservative Index			0.80%	3.71%	3.71%	12.70%	18.98%	4.98%	4.74%	3.90%	3.57%	0.82	Dec-11
3 Month T-Bills+2%			0.17%	0.52%	0.52%	1.59%	2.12%	3.49%	3.19%	2.67%	0.25%	-	Dec-11

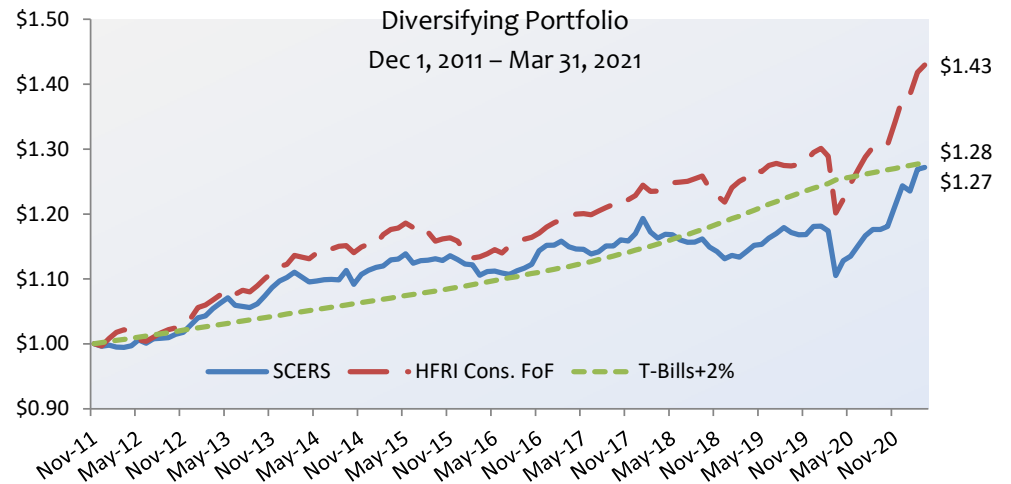
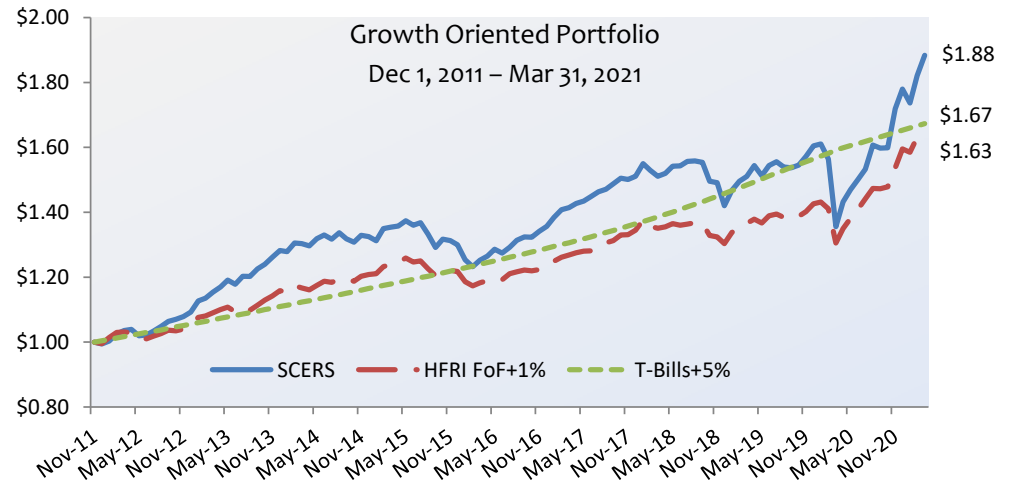
Absolute Return Portfolios Cumulative Performance – December 2011 to March 2021

Despite the sharp downturn in Q1 2020, the Growth Oriented portfolio is again exceeding the T-bills + 5% long term objective; the portfolio remains ahead of the Fund of Funds Index + 1% benchmark

The Diversifying portfolio is at its T-bills + 2% long term objective though continues to trail 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 December 31, 2020

The Private Equity portfolio's net IRR since inception is 17.10%, versus the Cambridge Associates benchmark IRR of 14.18%

- The long-term Policy objective (Russell 3000 + 3%) has a 17.13% IRR over this period

The private equity portfolio gained 13.1% in Q4 as financial markets continued to rally through year-end

- Gains were once again broad-based and many funds generated returns of more than 20% for the quarter
 - Khosla Ventures IV & V, Spectrum VIII, HIG Europe II, Cortec VII, and Trinity Ventures XI reported the largest gains
- Distributions continued at a strong pace, following a slowdown in Q2 2020
 - \$87.0 million in distributions, led by Linden III, Summit VC III, Abbott Capital VI, and Spectrum VII

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

- Double-digit net IRRs for all vintage years prior to 2019, with almost all vintage years exceeding peer universes
- Spectrum VII (47.2%), Summit VC IV (41.4%), Linden III (36.6%), Waterland V (35.8%), Marlin Heritage (35.6%), and Accel-KKR IV (35.3%) are leading performance among SCERS' more mature funds

The legacy fund of funds also generally reported material gains during the quarter

- HarbourVest VIII – Venture, Goldman Sachs X, and Abbott Capital VI each generated double-digit gains in Q4
 - The legacy fund of funds also distributed \$12.5 million during the quarter
- The legacy fund of funds comprise 8.9% of the current fair value of the Private Equity portfolio

Changes during the quarter

- SCERS committed \$20 million each to Khosla Ventures VII and Canvas Ventures III (both venture capital) during Q4
 - Khosla Ventures was a re-up with an existing SCERS manager; Canvas is a new manager relationship for SCERS
- \$59.4 million in new contributions, \$87.0 million in distributions
- Total portfolio gain increased by \$154.3 million while the total portfolio IRR increased by 1.24%

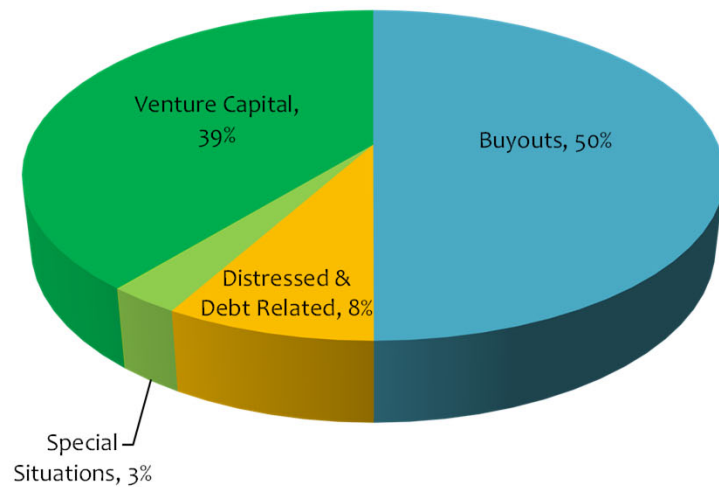
Private Equity Portfolio Characteristics as of December 31, 2020

The SCERS Private Equity portfolio is diversified by strategy and geography

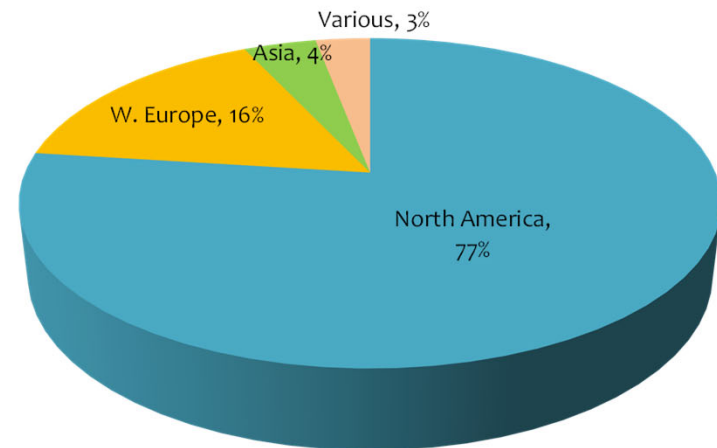
- Investments remain focused in North America, with meaningful exposure to Europe

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 12/31/20.

Private Equity Portfolio Performance Details – as of December 31, 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	TVPI Bench.
Vintage Year 2006													
HarbourVest Partners VIII - Buyout Fund L.P.	Fund of Funds	37,500	1,125	36,375	97%	57,514	6,943	64,456	28,081	10.84%	7.68%	1.77x	1.72x
HarbourVest Partners VIII - Mezzanine and Distressed Debt Fund L.P.	Fund of Funds	5,000	200	4,800	96%	6,095	391	6,486	1,686	6.88%	7.68%	1.35x	1.72x
HarbourVest Partners VIII - Venture Fund L.P.	Fund of Funds	7,500	150	7,350	98%	11,520	4,064	15,584	8,234	11.56%	7.68%	2.12x	1.72x
Vintage Year 2006 Total		50,000	1,475	48,525	97%	75,128	11,398	86,526	38,001	10.69%	7.12%	1.78x	1.48x
Vintage Year 2008													
Abbott Capital Private Equity Fund VI, L.P.	Fund of Funds	75,000	375	74,625	100%	92,910	43,406	136,316	61,691	13.03%	14.84%	1.83x	2.34x
Goldman Sachs Private Equity Partners X, L.P.	Fund of Funds	75,000	13,234	68,958	82%	93,427	25,389	118,816	49,858	11.43%	14.84%	1.72x	2.34x
HarbourVest International Private Equity Partners VI-Partnership Fund L.P.	Fund of Funds	39,507	1,975	37,980	95%	31,237	37,048	68,284	30,304	12.28%	10.65%	1.80x	1.88x
Vintage Year 2008 Total		189,507	15,584	181,563	92%	217,573	105,842	323,415	141,853	12.22%	8.72%	1.78x	1.52x
Vintage Year 2011													
Waterland Private Equity Fund V C.V.	Buyout	19,631	3,396	16,071	83%	30,070	15,445	45,515	29,445	35.75%	11.22%	2.83x	1.50x
Khosla Ventures IV, L.P.	Venture Capital	10,000	190	9,810	98%	15,503	25,019	40,522	30,712	25.99%	19.05%	4.13x	2.58x
Vintage Year 2011 Total		29,631	3,586	25,881	88%	45,573	40,465	86,038	60,157	30.64%	12.85%	3.32x	1.80x
Vintage Year 2012													
Garrison Opportunity Fund III A LLC	Distressed Debt	20,000	0	20,000	100%	8,876	10,361	19,237	-763	-0.69%	14.67%	0.96x	1.61x
New Enterprise Associates 14, L.P.	Venture Capital	25,000	875	24,125	97%	25,210	35,394	60,604	36,479	18.04%	17.44%	2.51x	2.25x
Summit Partners Venture Capital III-A, LP	Venture Capital	16,350	1,913	19,692	88%	37,266	3,721	40,987	21,295	17.81%	17.44%	2.08x	2.25x
Vintage Year 2012 Total		61,350	2,788	63,817	95%	71,351	49,476	120,828	57,011	12.82%	13.28%	1.89x	1.73x
Vintage Year 2013													
Accel-KKR Capital Partners IV, L.P.	Buyout	15,000	318	15,381	98%	25,714	14,626	40,340	24,959	35.31%	14.67%	2.62x	1.73x
H.I.G. Capital Partners V, L.P.	Buyout	14,000	1,255	12,745	91%	4,890	17,807	22,698	9,953	22.00%	14.67%	1.78x	1.73x
Marlin Equity IV, L.P.	Buyout	20,000	94	19,906	100%	10,742	16,049	26,791	6,885	8.39%	14.67%	1.35x	1.73x
RRJ Capital Master Fund II, L.P.	Buyout	35,000	3,917	35,896	89%	35,448	14,305	49,752	13,856	9.90%	15.03%	1.39x	1.55x
H.I.G. Bayside Loan Opportunity Fund III (Europe-US\$), L.P.	Distressed Debt	30,000	5,769	24,231	81%	25,048	7,221	32,269	8,038	7.94%	4.77%	1.33x	1.23x
Wayzata Opportunities Fund III, L.P.	Distressed Debt	30,000	24,103	14,718	20%	8,849	4,530	13,379	-1,339	-2.78%	8.42%	0.91x	1.30x

¹Benchmarks:

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 December 31, 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	TVPI Bench.
Trinity Ventures XI, L.P.	Venture Capital	25,000	1,500	23,500	94%	4,835	45,165	50,000	26,500	15.83%	15.94%	2.13x	2.03x
Vintage Year 2013 Total		169,000	36,957	146,376	78%	115,526	119,702	235,228	88,852	13.20%	13.52%	1.61x	1.63x
Vintage Year 2014													
Dyal Capital Partners II	Buyout	35,000	7,713	30,525	78%	5,517	24,505	30,023	-502	-0.60%	16.70%	0.98x	1.70x
H.I.G. Europe Capital Partners II, L.P.	Buyout	17,177	3,130	13,378	82%	2,818	15,692	18,511	5,133	13.70%	15.46%	1.38x	1.63x
Marlin Heritage Fund	Buyout	10,000	2,226	10,497	78%	15,749	9,516	25,266	14,769	35.55%	16.70%	2.41x	1.70x
Thoma Bravo XI	Buyout	30,000	3,203	32,531	89%	57,623	49,909	107,532	75,000	31.31%	16.70%	3.31x	1.70x
TPG Opportunities Partners III	Distressed Debt	40,000	13,014	48,903	67%	42,041	15,330	57,371	8,468	8.39%	7.47%	1.17x	1.17x
Khosla Ventures V	Venture Capital	20,000	700	19,300	97%	1,013	33,111	34,124	14,824	15.25%	19.58%	1.77x	2.15x
Spectrum Equity Investors VII, L.P.	Venture Capital	25,000	1,625	23,375	94%	37,144	60,077	97,221	73,846	47.19%	19.58%	4.16x	2.15x
Vintage Year 2014 Total		177,177	31,612	178,508	82%	161,906	208,140	370,046	191,538	25.24%	16.58%	2.07x	1.80x
Vintage Year 2015													
* WPEF VI Overflow Fund C.V.	Buyout	7,362	7,351	10	0%	0	0	0	-10	0.00%	13.86%	0.00x	1.50x
RRJ Capital Master Fund III, LP	Buyout	40,000	7,248	36,121	82%	32,816	11,120	43,936	7,815	10.65%	13.86%	1.22x	1.50x
WPEF VI Feeder, L.P.	Buyout	29,447	10,531	20,309	64%	6,092	35,992	42,085	21,776	28.31%	13.86%	2.07x	1.50x
Accel-KKR Growth Capital Partners II	Mezzanine	15,000	880	14,120	94%	9,537	10,522	20,059	5,939	17.06%	8.77%	1.42x	1.27x
New Enterprise Associates 15, L.P.	Venture Capital	35,000	1,925	33,079	95%	8,074	65,970	74,043	40,964	23.22%	17.88%	2.24x	1.75x
Summit Partners Venture Capital Fund IV-A, L.P.	Venture Capital	35,000	25,211	29,839	28%	20,050	34,934	54,984	25,145	41.39%	17.88%	1.84x	1.75x
Vintage Year 2015 Total		161,808	53,147	133,478	67%	76,569	158,538	235,107	101,630	23.82%	15.79%	1.76x	1.60x
Vintage Year 2016													
Accel-KKR Capital Partners V, L.P.	Buyout	25,000	5,121	19,879	80%	7,343	18,892	26,235	6,357	19.69%	14.75%	1.32x	1.50x
Dyal III Pension Investors LP	Buyout	35,000	20,895	22,721	40%	14,964	24,635	39,599	16,878	25.40%	14.75%	1.74x	1.50x
Linden Capital Partners III	Buyout	35,000	4,490	37,510	87%	45,992	47,114	93,106	55,596	36.64%	14.75%	2.48x	1.50x
Marlin Heritage Europe, L.P.	Buyout	15,950	2,025	12,978	87%	0	21,956	21,956	8,978	29.66%	14.26%	1.69x	1.43x
Thoma Bravo Fund XII, L.P.	Buyout	30,000	7,030	37,383	77%	14,415	44,685	59,100	21,717	18.81%	14.75%	1.58x	1.50x
TSG7 A L.P.	Buyout	16,000	3,692	12,308	77%	297	19,030	19,327	7,019	15.95%	14.75%	1.57x	1.50x
TSG7 B L.P.	Buyout	4,000	487	3,686	88%	832	3,212	4,044	358	5.77%	14.75%	1.10x	1.50x

¹Benchmarks:

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 December 31, 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	TVPI Bench.
Atalaya Special Opportunities Fund VI, L.P.	Distressed Debt	25,000	2,454	28,940	90%	26,586	15,055	41,640	12,700	14.59%	9.03%	1.44x	1.20x
Trinity Ventures XII, L.P.	Venture Capital	30,000	5,025	24,975	83%	0	53,016	53,016	28,041	30.48%	20.98%	2.12x	1.61x
Vintage Year 2016 Total		215,950	51,220	200,380	76%	110,428	247,595	358,023	157,643	25.08%	15.61%	1.79x	1.49x
Vintage Year 2017													
Marlin Heritage II	Buyout	10,000	1,764	8,236	82%	0	10,268	10,268	2,032	12.53%	22.23%	1.25x	1.46x
Summit Partners Europe Growth Equity Fund II, SCSP	Buyout	36,808	21,342	28,698	42%	23,120	24,416	47,535	18,837	78.32%	20.56%	1.66x	1.36x
New Enterprise Associates 16, L.P.	Venture Capital	35,000	7,263	27,738	79%	1,062	38,790	39,852	12,114	20.57%	20.41%	1.44x	1.47x
Vintage Year 2017 Total		81,808	30,369	64,672	63%	24,181	73,474	97,655	32,984	32.64%	18.10%	1.51x	1.37x
Vintage Year 2018													
Linden Capital Partners IV LP	Buyout	44,330	20,265	26,621	54%	4,246	25,526	29,772	3,151	15.53%	13.58%	1.12x	1.18x
Marlin Equity V	Buyout	25,000	13,741	12,799	45%	1,916	16,907	18,822	6,023	26.42%	13.58%	1.47x	1.18x
TSG8 L.P.	Buyout	45,000	35,734	9,266	21%	0	6,517	6,517	-2,749	N/M	N/M	0.70x	1.18x
Davidson Kempner Long-Term Distressed Opportunities Fund IV LP	Distressed Debt	35,000	5,497	30,100	84%	597	33,596	34,193	4,093	7.33%	N/A	1.14x	N/A
TSSP Opportunities Partners IV (A), L.P.	Distressed Debt	35,000	22,173	17,757	37%	5,857	15,748	21,605	3,849	N/M	N/M	1.22x	N/A
RCP Fund XIII	Fund of Funds	50,000	34,500	15,500	31%	0	16,179	16,179	679	6.09%	N/A	1.04x	N/A
RCPDirect III	Fund of Funds	25,000	9,864	15,136	61%	386	17,821	18,208	3,071	20.50%	N/A	1.20x	N/A
Accel-KKR Growth Capital Partners III	Mezzanine	33,320	22,928	10,392	31%	0	10,392	10,392	0	N/M	N/M	1.00x	N/A
Khosla Ventures VI, L.P.	Venture Capital	35,000	11,515	23,485	67%	0	25,790	25,790	2,305	7.97%	25.44%	1.10x	1.34x
Spectrum Equity VIII, L.P.	Venture Capital	25,000	2,500	22,500	90%	0	30,361	30,361	7,861	25.32%	25.44%	1.35x	1.34x
Vintage Year 2018 Total		352,650	178,717	183,556	49%	13,002	198,837	211,839	28,283	13.09%	17.32%	1.15x	1.25x
Vintage Year 2019													
Cortec Group Fund VII, L.P.	Buyout	30,000	22,004	10,848	27%	2,856	11,911	14,766	3,918	N/M	N/M	1.36x	1.13x
Gridiron Capital Fund IV, L.P.	Buyout	30,000	15,091	14,852	50%	0	16,601	16,601	1,749	N/M	N/M	1.12x	1.13x
Thoma Bravo Fund XIII, LP	Buyout	45,000	21,862	36,705	51%	23,173	43,620	66,793	30,088	N/M	N/M	1.82x	1.13x
New Enterprise Associates 17, L.P.	Venture Capital	25,000	16,250	8,764	35%	0	10,464	10,464	1,700	N/M	N/M	1.19x	1.14x
Threshold Ventures III, L.P.	Venture Capital	20,000	13,150	6,850	34%	0	6,165	6,165	-685	N/M	N/M	0.90x	1.14x
Vintage Year 2019 Total		150,000	88,357	78,019	41%	26,029	88,760	114,789	36,771	N/M	N/M	1.47x	1.13x

¹Benchmarks:

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 December 31, 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	TVPI Bench.
Vintage Year 2020													
AcceI-KKR Capital Partners VI, LP	Buyout	30,000	30,000	0	0%	0	-325	-325	-325	N/M	N/M	N/A	N/A
Summit Partners Europe Growth Equity Fund III, SCSp	Buyout	24,539	24,539	0	0%	0	-184	-184	-184	N/M	N/M	N/A	N/A
Wynnchurch Capital Partners V	Buyout	20,000	17,459	2,541	13%	0	2,415	2,415	-126	N/M	N/M	0.95x	N/A
Davidson Kempner Long-Term Distressed Opportunities Fund V LP	Distressed Debt	30,000	25,177	5,080	16%	257	5,738	5,995	915	N/M	N/M	1.18x	N/A
Shamrock Capital Content Fund II, L.P.	Opportunistic Credit	20,000	18,090	1,916	10%	0	1,444	1,444	-472	N/M	N/M	0.75x	N/A
Canvas Ventures 3, L.P.	Venture Capital	20,000	19,051	949	5%	0	890	890	-59	N/M	N/M	0.94x	N/A
OrbiMed Private Investments VIII, LP	Venture Capital	15,000	14,250	750	5%	0	642	642	-108	N/M	N/M	0.86x	N/A
Spectrum Equity IX-A, L.P.	Venture Capital	25,000	23,500	1,500	6%	0	1,389	1,389	-111	N/M	N/M	0.93x	N/A
Summit Partners Venture Capital Fund V-A, L.P.	Venture Capital	20,000	20,000	0	0%	0	-59	-59	-59	N/M	N/M	N/A	N/A
Vintage Year 2020 Total		204,539	192,065	12,737	6%	257	11,950	12,207	-529	N/M	N/M	0.96x	0.98x
Vintage Year 2021													
CRV XVIII, LP	Venture Capital	20,000	20,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Khosla Ventures VII, L.P.	Venture Capital	20,000	20,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Vintage Year 2021 Total		40,000	40,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Portfolio Total :		1,883,421	725,876	1,317,511	61%	937,525	1,314,178	2,251,703	934,191	17.10%	14.18%	1.71x	
Portfolio Strategy Totals													
Buyout		774,244	317,925	540,400	59%	366,633	562,164	928,796	388,396	24.24%		1.72x	
Distressed Debt		245,000	98,188	189,729	60%	118,111	107,578	225,689	35,961	6.57%		1.19x	
Fund of Funds		314,507	61,423	260,724	80%	293,088	151,240	444,328	183,604	11.82%		1.70x	
Mezzanine		48,320	23,808	24,512	51%	9,537	20,914	30,451	5,939	14.16%		1.24x	
Opportunistic Credit		20,000	18,090	1,916	10%	0	1,444	1,444	-472	N/M		0.75x	
Venture Capital		481,350	206,443	300,231	57%	150,156	470,838	620,994	320,763	23.69%		2.07x	
Portfolio Total :		1,883,421	725,876	1,317,511	61%	937,525	1,314,178	2,251,703	934,191	17.10%	14.18%	1.71x	

¹Benchmarks:

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 December 31, 2020

The Private Credit portfolio's net IRR since inception is 9.37%, versus the benchmark return of 6.97%

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

The Private Credit funds reported another quarter of material gains, following the downturn experienced in Q1

- The portfolio returned 7.5% in Q4 and 12.5% for the trailing 1-year period ending December 31, 2020
 - Most of the funds were up between 3% and 10% during Q4, with OrbiMed Royalty III generating an even larger outsized gain
- Longer term performance has also recovered from the Q1 2020 sell-off
 - 9.4% net IRR for the 3-year period and 9.8% net IRR for the 5-year period
 - The portfolio is now generating annualized returns of 9% - 10% over multi-year periods

Changes during the quarter

- SCERS made no new commitments to Private Credit funds in Q4 2020
- \$21.7 million in new contributions, \$17.0 million in distributions
- Total portfolio gain increased by \$16.6 million while the total portfolio IRR increased by 1.67%

Private Credit Portfolio Details – as of December 31, 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	TVPI Bench.
Vintage Year 2011													
Summit Partners Credit Fund, LP	Direct Lending	20,000	2,125	20,697	89%	26,198	561	26,759	6,063	8.85%	N/A	1.29x	N/A
Vintage Year 2011 Total		20,000	2,125	20,697	89%	26,198	561	26,759	6,063	8.85%	12.85%	1.29x	1.80x
Vintage Year 2014													
Summit Partners Credit Fund II, L.P.	Direct Lending	35,000	3,840	48,257	89%	31,298	23,774	55,071	6,815	5.94%	3.85%	1.14x	N/A
Vintage Year 2014 Total		35,000	3,840	48,257	89%	31,298	23,774	55,071	6,815	5.94%	16.58%	1.14x	1.80x
Vintage Year 2015													
Athyrium Opportunities Fund II	Opportunistic Credit	32,000	3,291	41,721	90%	33,754	17,432	51,186	9,465	10.14%	8.77%	1.23x	1.27x
Vintage Year 2015 Total		32,000	3,291	41,721	90%	33,754	17,432	51,186	9,465	10.14%	15.79%	1.23x	1.60x
Vintage Year 2017													
Athyrium Opportunities Fund III	Opportunistic Credit	25,000	5,200	25,761	79%	8,409	20,858	29,267	3,505	8.74%	8.91%	1.14x	1.17x
Vintage Year 2017 Total		25,000	5,200	25,761	79%	8,409	20,858	29,267	3,505	8.74%	18.10%	1.14x	1.37x
Vintage Year 2018													
Benefit Street Partners Senior Secured Opportunities Fund L.P.	Direct Lending	50,000	6,406	50,953	87%	11,790	45,196	56,986	6,034	4.92%	4.02%	1.12x	N/A
Summit Partners Credit Fund III, L.P.	Direct Lending	50,000	37,008	36,100	26%	23,108	19,996	43,104	7,004	16.19%	4.02%	1.19x	N/A
TCP Direct Lending Fund VIII-S, LLC	Direct Lending	100,000	28,567	71,433	71%	11,899	70,887	82,785	11,352	8.26%	4.02%	1.16x	N/A
Vintage Year 2018 Total		200,000	71,981	158,486	64%	46,797	136,078	182,875	24,390	8.00%	17.32%	1.15x	1.25x
Vintage Year 2019													
BSP Levered US SOF II (Senior Secured Opportunities) Fund L.P.	Direct Lending	50,000	41,614	8,376	17%	0	9,355	9,355	980	N/M	N/M	1.12x	N/A
OrbiMed Royalty & Credit Opportunities III, LP	Opportunistic Credit	35,000	26,154	11,193	25%	2,354	17,269	19,623	8,430	N/M	N/M	1.75x	1.11x
Vintage Year 2019 Total		85,000	67,768	19,569	20%	2,354	26,624	28,978	9,410	N/M	N/M	1.48x	1.13x
Vintage Year 2020													
MCP Private Capital Fund IV (Feeder) SCSp	Direct Lending	38,771	36,306	2,215	6%	0	2,139	2,139	-76	N/M	N/M	0.97x	N/A
Silver Point Specialty Credit Fund II, L.P.	Opportunistic Credit	40,000	28,163	11,926	30%	1,539	11,681	13,220	1,294	N/M	N/M	1.11x	N/A
Vintage Year 2020 Total		78,771	64,469	14,141	18%	1,539	13,820	15,359	1,218	N/M	N/M	1.09x	0.98x

¹Benchmarks:

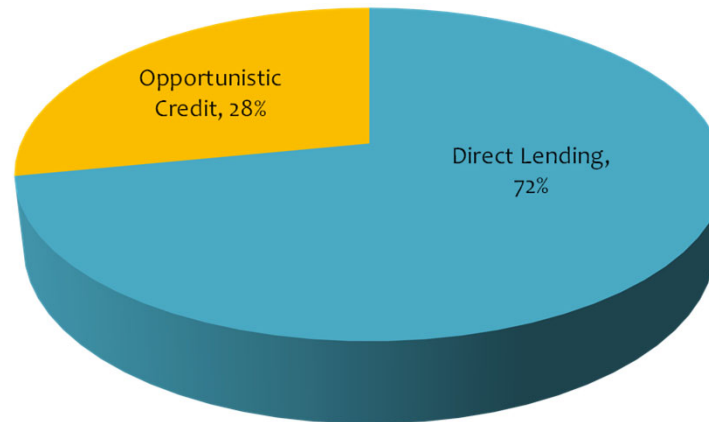
Private Credit Investments: Cambridge Associates median return for the respective debt strategies and vintage years

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

Private Credit Portfolio Details – as of December 31, 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	TVPI Bench.
Vintage Year 2021													
IFM USIDF (Offshore) B Feeder	Direct Lending	40,000	40,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Vintage Year 2021 Total		40,000	40,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Portfolio Total :		515,771	258,675	328,631	50%	150,350	239,147	389,496	60,865	9.37%	6.97%	1.19x	
Portfolio Strategy Totals													
Direct Lending		383,771	195,867	238,029	49%	104,293	171,907	276,200	38,171	7.73%		1.16x	
Opportunistic Credit		132,000	62,808	90,602	52%	46,056	67,240	113,296	22,695	14.57%		1.25x	
Portfolio Total :		515,771	258,675	328,631	50%	150,350	239,147	389,496	60,865	9.37%	6.97%	1.19x	

Market Value Strategy Exposure*



* Exposures are based on the market values of investments as of 12/31/20.

¹Benchmarks:

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 December 31, 2020

The Real Assets portfolio's net IRR since inception is 8.00%, versus the blended benchmark return of 5.56%

- 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
 - However, several of the upstream (exploration and production) Energy partnerships rebounded sharply in Q4
- Infrastructure partnerships saw smaller declines in Q1 and have maintained good performance since inception
 - Since inception net IRRs of 10.4% for Infrastructure and 6.2% for Energy
- The Real Asset Debt separate account has also performed well with a 10.3% since inception net IRR
 - That separate account market value remains small at \$18.1 million, with no new investment activity

The Real Assets portfolio generated a 7.0% net return in Q4

- The portfolio's midstream and diversified Energy funds held back performance during the quarter
 - The portfolio's upstream Energy funds returned between 18% and 50% during Q4
- The Infrastructure funds generally reported solid gains during the quarter, led by Wastewater and ISQ II

Changes during the quarter

- SCERS committed \$50 million to ISQ III (global infrastructure), a re-up with an existing SCERS manager, during Q4
 - SCERS committed \$35 million to a global digital infrastructure fund in Q1 2021
- \$14.0 million in new contributions, \$12.6 million in distributions
- Portfolio IRR increased by 1.62% while the total portfolio gain increased by \$40.2 million

Real Assets Portfolio Performance Details – as of December 31, 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
Vintage Year 2013												
EnCap Energy Capital Fund IX, L.P.	Energy	33,000	1,653	37,625	95%	28,903	11,240	40,142	2,517	2.62%	2.52%	1.07x
Vintage Year 2013 Total		33,000	1,653	37,625	95%	28,903	11,240	40,142	2,517	2.62%		1.07x
Vintage Year 2014												
Carlyle Power Partners II, L.P.	Energy	40,000	13,873	34,083	65%	8,328	29,758	38,086	4,003	4.32%	4.47%	1.12x
EnCap Flatrock Midstream III	Energy	20,000	1,071	23,168	95%	9,909	16,226	26,135	2,966	6.38%	4.47%	1.13x
Global Energy & Power Infrastructure Fund II	Energy	35,000	1,581	37,174	95%	29,676	20,948	50,624	13,450	21.01%	4.47%	1.36x
Quantum Energy Partners VI, LP	Energy	35,000	8,283	32,647	76%	21,236	33,645	54,880	22,233	23.91%	4.47%	1.68x
Pantheon SCERS SIRF MM, LLC	Infrastructure	100,000	33,968	70,332	66%	33,400	67,713	101,113	30,781	10.77%	8.12%	1.44x
Wastewater Opportunity Fund	Infrastructure	25,000	0	25,007	100%	1,998	22,357	24,355	-652	-1.18%	8.12%	0.97x
Vintage Year 2014 Total		255,000	58,777	222,411	77%	104,546	190,646	295,192	72,781	11.46%		1.33x
Vintage Year 2015												
ArcLight Energy Partners Fund VI	Energy	40,000	5,604	42,665	86%	17,220	24,946	42,166	-499	-0.42%	1.86%	0.99x
EnCap Energy Capital Fund X, L.P.	Energy	40,000	5,299	37,379	87%	8,161	30,418	38,579	1,200	1.13%	1.86%	1.03x
Atalaya Real Assets SMA	Real Asset Debt	100,000	84,789	36,169	15%	26,888	18,114	45,002	8,833	10.28%	N/A	1.24x
Vintage Year 2015 Total		180,000	95,691	116,213	47%	52,269	73,477	125,747	9,534	3.08%		1.08x
Vintage Year 2016												
ACM Fund II, LLC	Agriculture	25,000	3,564	25,582	86%	4,581	16,614	21,195	-4,387	-9.02%	5.58%	0.83x
Brookfield Infrastructure Fund III, L.P.	Infrastructure	40,000	8,365	33,142	79%	10,294	32,431	42,725	9,583	10.86%	N/A	1.29x
IFM Global Infrastructure Fund	Infrastructure	125,053	0	125,053	100%	34,893	132,346	167,239	42,186	11.94%	N/A	1.34x
Vintage Year 2016 Total		190,053	11,929	183,777	94%	49,769	181,390	231,159	47,382	9.68%		1.26x
Vintage Year 2017												
Quantum Energy Partners VII, LP	Energy	40,000	17,532	25,239	56%	2,837	28,502	31,339	6,100	11.48%	1.03%	1.24x
Meridiam Infrastructure North America Fund III	Infrastructure	50,000	45,496	4,504	9%	1	2,209	2,210	-2,294	-57.79%	N/A	0.49x
Vintage Year 2017 Total		90,000	63,028	29,743	30%	2,838	30,711	33,549	3,806	6.65%		1.13x
Vintage Year 2018												
Paine Schwartz Food Chain Fund V, LP	Agriculture	40,000	33,624	6,523	16%	147	5,575	5,721	-801	N/M	N/M	0.88x

¹Benchmarks:

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 December 31, 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	13,924	9,161	38%	588	9,725	10,313	1,152	6.60%	0.13%	1.13x
Tailwater Energy Fund III, LP	Energy	32,000	7,204	26,850	77%	1,662	20,747	22,409	-4,442	-9.06%	0.13%	0.83x
ISQ Global Infrastructure Fund II	Infrastructure	50,000	20,974	34,223	58%	5,197	36,916	42,113	7,890	17.21%	N/A	1.23x
Vintage Year 2018 Total		144,500	75,727	76,756	48%	7,593	72,963	80,556	3,799	3.24%		1.05x
Vintage Year 2019												
Tailwater Energy Fund IV, LP	Energy	35,000	28,441	6,549	19%	0	4,077	4,077	-2,472	N/M	N/M	0.62x
Brookfield Infrastructure Fund IV	Infrastructure	40,000	20,941	19,277	48%	1,255	19,464	20,719	1,443	N/M	N/M	1.07x
EQT Infrastructure IV (No.2) USD SCSp	Infrastructure	35,000	14,334	21,783	59%	1,164	22,625	23,790	2,007	N/M	N/M	1.09x
Vintage Year 2019 Total		110,000	63,716	47,609	42%	2,419	46,167	48,586	977	N/M		1.02x
Vintage Year 2020												
NGP Royalty Partners, L.P.	Energy	40,000	33,400	6,598	16%	4	6,359	6,363	-235	N/M	N/M	0.96x
Vintage Year 2020 Total		40,000	33,400	6,598	16%	4	6,359	6,363	-235	N/M		0.96x
Vintage Year 2021												
Harrison Street Social Infrastructure Fund, L.P.	Infrastructure	50,000	50,000	0	0%	0	0	0	0	N/M	N/M	N/A
ISQ Global Infrastructure Fund III (UST), L.P.	Infrastructure	50,000	50,000	0	0%	0	-283	-283	-283	N/M	N/M	N/A
Vintage Year 2021 Total		100,000	100,000	0	0%	0	-283	-283	-283	N/M		N/A
Portfolio Total :		1,142,553	503,922	720,733	56%	248,340	612,671	861,011	140,278	8.00%	5.56%	1.19x
Portfolio Strategy Totals												
Agriculture		65,000	37,188	32,105	43%	4,728	22,188	26,916	-5,188	-9.99%		0.84x
Energy		412,500	137,866	319,139	67%	128,522	236,590	365,112	45,973	6.17%		1.14x
Infrastructure		565,053	244,079	333,320	57%	88,202	335,779	423,981	90,661	10.43%		1.27x
Real Asset Debt		100,000	84,789	36,169	15%	26,888	18,114	45,002	8,833	10.28%		1.24x
Portfolio Total :		1,142,553	503,922	720,733	56%	248,340	612,671	861,011	140,278	8.00%	5.56%	1.19x

¹Benchmarks:

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 Characteristics as of December 31, 2020

The SCERS Real Assets portfolio is primarily Infrastructure and Energy

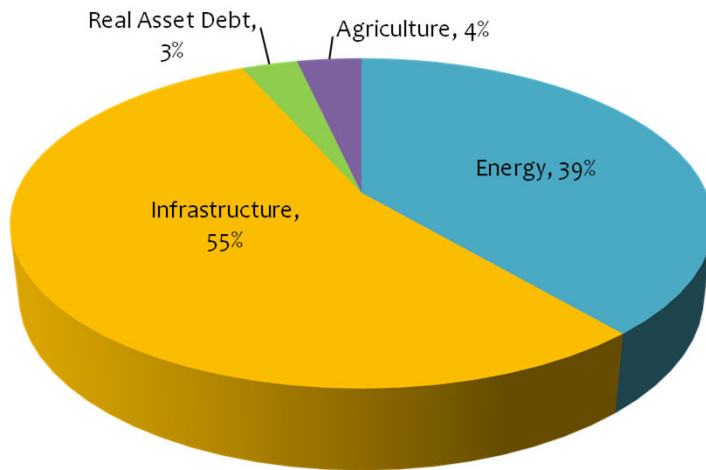
- Other strategies such as Agriculture represent much smaller allocations in the portfolio

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

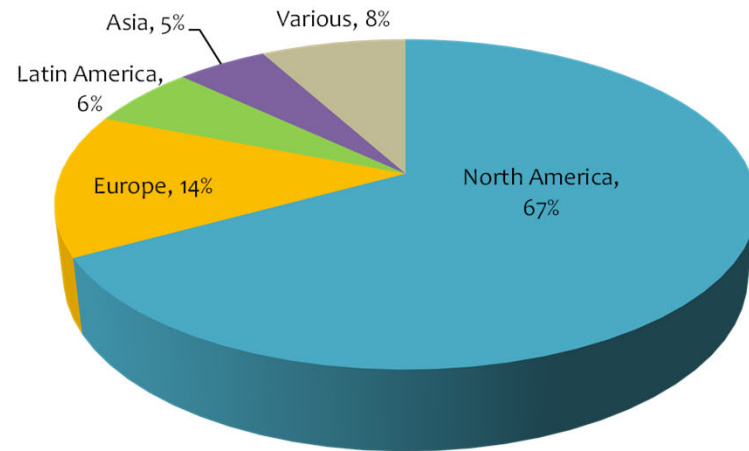
- The portfolio has exposure to Europe, Latin America, and Asia

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 12/31/20.

Opportunities Portfolio – as of December 31, 2020

The Opportunities portfolio's net IRR since inception is 18.32%

- The long-term benchmark is SCERS' 6.75% total portfolio actuarial return objective
- Also tracking the portfolio's 3-year IRR versus an intermediate-term benchmark
 - 7.19% portfolio IRR v 6.38% 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 an 8.09% net IRR since inception

Changes during the quarter

- SCERS made no new commitments categorized as Opportunities funds during Q4 2020
- No new contributions, \$0.5 million in distributions
- Portfolio IRR increased by 0.03%, total portfolio gain increased \$0.8 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 December 31, 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
Vintage Year 2007												
* PIMCO Distressed Mortgage Fund, LP	Distressed Debt	18,000	0	18,000	100%	25,384	0	25,384	7,384	8.96%	10.01%	1.41x
Vintage Year 2007 Total		18,000	0	18,000	100%	25,384	0	25,384	7,384	8.96%		1.41x
Vintage Year 2008												
* PIMCO Distressed Mortgage Fund II, L.P.	Distressed Debt	12,000	0	12,000	100%	35,277	0	35,277	23,277	34.39%	12.22%	2.94x
Vintage Year 2008 Total		12,000	0	12,000	100%	35,277	0	35,277	23,277	34.39%		2.94x
Vintage Year 2009												
* MetWest Enhanced TALF Strategy Fund LP	Distressed Debt	20,000	0	20,000	100%	25,304	0	25,304	5,304	11.21%	14.32%	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%	14.32%	1.72x
Vintage Year 2009 Total		45,000	0	45,248	100%	68,687	0	68,687	23,439	19.71%		1.52x
Vintage Year 2013												
Atalaya Special Opportunities Fund V, L.P.	Distressed Debt	25,000	1,117	24,875	96%	25,688	6,135	31,823	6,948	8.09%	8.42%	1.28x
Vintage Year 2013 Total		25,000	1,117	24,875	96%	25,688	6,135	31,823	6,948	8.09%		1.28x
Portfolio Total :		100,000	1,117	100,123	99%	155,036	6,135	161,171	61,049	18.32%	6.75%	1.61x

* Liquidated partnership

¹ 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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