



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 22

MEETING DATE: December 7, 2022

SUBJECT: Quarterly Investment Performance Report—
Alternative Assets

SUBMITTED FOR: ___ Consent ___ Deliberation and Action X Receive and File

RECOMMENDATION

Staff recommends the Board receive and file the Cliffwater Quarterly Performance Review presentation for the period ending September 30, 2022 for the Absolute Return portfolio, and the period ending June 30, 2022 for the Private Equity, Private Credit, and Real Assets 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, 2022.

SCERS' alternative asset class returns are as follows:

SCERS ALTERNATIVE ASSETS PERFORMANCE SUMMARY
Quarter Reporting Periods Ending September 30, 2022

SCERS ASSET CLASS	Quarter*	1-Year*	3-Year*	5-Year*	Since Inception*	Since Inception Date*
SCERS Absolute Return	0.2%	-0.3%	5.4%	3.7%	4.2%	Sep-04
HFRI FoF Conservative	0.2%	-0.7%	4.7%	3.8%	3.6%	
HFRI FoF Composite + 1%	1.0%	-4.5%	5.5%	4.3%	4.2%	
SCERS Private Equity	-4.2%	6.0%	24.2%	24.2%	18.0%	Feb-08
Cambridge Private Equity/Venture Capital	-5.4%	4.1%	20.7%	18.6%	14.9%	
SCERS Private Credit	-0.5%	5.4%	8.6%	8.2%	8.4%	Oct-11
Credit Suisse Leveraged Loan + 2%	-3.4%	-0.7%	4.0%	5.0%	6.3%	
SCERS Real Assets	4.2%	23.8%	11.8%	11.8%	12.6%	Jan-13
(60%) Cambridge Private Infrastructure; (30%) Cambridge Private Energy; (10%) NCREIF Farmland	2.1%	18.2%	9.8%	8.6%	7.9%	
<p>*Note: Periods ending 6/30/22 for Private Equity, Private Credit, Real Assets, and Opportunities Periods ending 9/30/22 for Absolute Return All returns are time-weighted, except Private Equity which is net IRR</p>						

SCERS PORTFOLIO RESULTS

For the reporting quarter ended June 30, 2022:

- SCERS' Private Equity portfolio outperformed on a relative against its benchmark, -4.18% versus -5.41%. The relative underperformance was broad based but primarily in SCERS' underlying public markets exposure which pulled back significantly from the buyout, venture capital and buyout portfolios.
- Although SCERS' Private Credit portfolio outperformed on a relative basis against its benchmark return, -0.51% versus -3.35%, the absolute return was underwhelming as a number of SCERS' opportunistic strategies were impacted by rising interest rates and declining public market values.
- SCERS' Real Assets portfolio generated a strong absolute return and outperformed on a relative basis the benchmark on a relative basis of 4.24% versus 2.11% but under performed against the benchmark return of 6.3%. SCERS' energy and power strategies benefited from high energy prices during the quarter.

For the reporting quarter ended September 30, 2022, SCERS' Absolute Return portfolio performed in line with the HFRI Fund of Funds Conservative Index return, -0.24% versus -0.61%, with the Diversifying Portfolio performing in line with the index (-0.23% versus -0.53%), while the Growth-Oriented portfolio, which is being liquidated, slightly underperformed (-0.74% versus -0.51%).

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

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- Top performing funds:
 - Absolute Return:
 - Marshall Wace Global Opportunities Fund (equity long/short): +4.09%
 - PSquared US Feeder Fund (event driven): +2.96%
 - Artesia Partners (market neutral): +2.24%
 - Private Equity portfolio:
 - Waterland Private Equity Fund V (buyout): 36.92%
 - Gridiron Capital Fund IV (buyout): 23.26%
 - Wynnchurch Capital Partners V (buyout): 12.03%
 - Private Credit portfolio:
 - Summit Partners Credit Fund III (direct lending): 6.71%
 - OrbiMed Royalty & Credit Opportunities III (opportunistic): 5.15%
 - MCP Private Capital Fund IV (direct lending): 3.41%
 - Real Assets portfolio:
 - Quantum Energy Partners VI (energy and power): 26.49%
 - NGP Royalty Partners (energy and power): 13.85%
 - Quantum Energy Partners VII (energy and power): 11.24%
 - EnCap Energy Capital Fund X (energy and power): 10.21%
 - Bottom performing funds:
 - Absolute Return portfolio:
 - Laurion Capital (market neutral): -1.18%
 - Two Sigma Risk Premia Enhanced Fund (market neutral): -3.80%
 - Eisler Capital Fund (macro discretionary): -4.59%
 - Private Equity portfolio:
 - TSG7 A (buyout): -18.19%
 - Khosla Ventures IV(venture): -19.81%
 - New Enterprise Associates 14 (venture): -27.89%

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- Private Credit portfolio:
 - Silver Point Specialty Credit Fund II (opportunistic): -2.72%
 - Athyrium Opportunities Fund II (opportunistic): -6.33%
 - Athyrium Opportunities Fund III (opportunistic): -9.46%
 - Real Assets portfolio:
 - EQT Infrastructure IV (infrastructure): -1.55%
 - Wastewater Opportunity Fund (infrastructure): -2.83%
 - ACM Fund II (agriculture): -3.69%

NEW INVESTMENTS

During the quarter ended September 30, 2022, SCERS made the following new investments:

- Golden Capital Co-investments, LP (Private Equity – buyout): \$100 million

After the quarter, SCERS made the following new investments:

- Brookfield Infrastructure Debt III

ATTACHMENT

- Board Order
- Cliffwater's Quarterly Performance Review for Alternative Assets for the Quarter ended September 30, 2022.

Prepared by:

/S/

JR Pearce
Senior Investment Officer

/S/

Jim Donohue
Deputy Chief Investment Officer

Reviewed by:

/S/

Steve Davis
Chief Investment Officer

/S/

Eric Stern
Chief Executive Officer



Retirement Board Order

Sacramento County Employees' Retirement System

**Before the Board of Retirement
December 7, 2022**

AGENDA ITEM:

Quarterly Investment Performance Report—Alternative Assets

THE BOARD OF RETIREMENT hereby accepts the recommendation of Staff to receive and file the Cliffwater Quarterly Investment Performance Report – Alternative Assets.

I HEREBY CERTIFY that the above order was passed and adopted on December 7, 2022 by the following vote of the Board of Retirement, to wit:

AYES:

NOES:

ABSENT:

ABSTAIN:

ALTERNATES:

(Present but not voting)

Keith DeVore
Board President

Eric Stern
Chief Executive Officer and
Board Secretary



INVESTMENT ADVISORY SERVICES

Los Angeles • New York

Sacramento County Employees' Retirement System Quarterly Performance Review

December 7, 2022

Absolute Return Portfolio Performance Summary – as of September 30, 2022

Diversifying Strategies

- The Diversifying Portfolio returned 0.23% in Q3 and 1.22% for the one-year period ending September 30, 2022
 - Outperformed the HFRI Conservative FoF Index benchmark by 7 bps in Q3 and 194 bps for the one-year period
 - Outperformed the T-bills + 2% long term objective by 18 bps (annualized) over the trailing 5-year period
- MW Global Opps led performance in Q3 (+4.09%), followed by PSquared (+2.96%) and Aristeia (+2.24%)
 - Eisler (-4.59%) and Two Sigma (-3.80%) were the biggest detractors in Q3
- Graham Tactical Trend (+38.44%), Elliott (+10.30%), and PSquared (+6.90%) led performance for the one-year period
 - Sculptor (-14.65%) and Laurion (-11.53%) suffered the largest declines over this period

Growth Oriented Strategies

- The Growth Oriented Portfolio returned 0.27% in Q3 and -12.38% for the one-year period ending September 30, 2022
 - Trailed the HFRI FoF Index + 1% benchmark by 68 bps in Q3 and 788 bps for the one-year period
- The portfolio was significantly downsized in Q1 '22 following the 2021 decision to eliminate the Growth Oriented Portfolio
 - The only investments in the portfolio are the remaining holdings of the Grosvenor Growth portfolio
 - Grosvenor Growth will continue to wind-down as that portfolio's liquidity allows
 - The portfolio market value totaled \$12.7 million at September 30, 2022

Portfolio risk and market sensitivity are near expectations for the Diversifying portfolio

- Diversifying Portfolio
 - Target standard deviation < 25% of global equities, with an equity beta < 0.2 and equity correlation < 0.5
 - Standard deviation of 3.45% compared to the ACWI standard deviation of 14.00% since December 2011 (25% ratio)
 - Portfolio equity beta of 0.13 with an equity correlation of 0.51
- The Growth Oriented portfolio is being eliminated in connection with the 2021 asset liability study

Diversifying Absolute Return Portfolio Performance – as of September 30, 2022

Fund	Market Value	Actual %	Returns								Std Dev	Sharpe Ratio	Incep Date
			Sep	QTD	YTD	FYTD	1 Year	3 Year	5 Year	Incep			
Diversifying Portfolio													
Market Neutral													
Aristeia Partners, L.P.	49,528,352	5.6%	0.67%	2.24%	1.74%	2.24%	3.45%	-	-	5.63%	5.16%	0.92	Jan-21
Laurion Capital, Ltd.	57,415,500	6.5%	-0.88%	-1.18%	-7.90%	-1.18%	-11.53%	12.40%	10.20%	7.95%	10.05%	0.70	Mar-14
LMR Fund Limited	51,792,374	5.9%	0.50%	1.07%	4.17%	1.07%	6.05%	-	-	4.94%	16.05%	0.34	Nov-19
Two Sigma Risk Premia Enhanced Fund, LP	47,480,867	5.4%	0.07%	-3.80%	-3.28%	-3.80%	5.70%	1.80%	-	1.76%	10.40%	0.13	Sep-19
Market Neutral - HF Total	206,217,093	23.3%	0.05%	-0.45%	-1.72%	-0.45%	-0.15%	4.99%	5.62%	5.31%	5.94%	0.71	Mar-14
Event Driven													
BlackRock Event Driven Equity Fund (BILPX)	52,842,629	6.0%	-1.22%	0.46%	-1.47%	0.46%	-0.87%	-	-	3.79%	5.61%	0.55	Mar-20
Davidson Kempner Institutional Partners LP	57,303,752	6.5%	-0.96%	0.34%	-2.39%	0.34%	-2.24%	5.36%	-	5.08%	5.18%	0.77	May-19
Elliott International Limited - Class A & B	78,632,306	8.9%	1.10%	0.99%	5.96%	0.99%	10.30%	11.22%	8.66%	8.33%	3.29%	2.13	Apr-12
PSquared US Feeder Fund LP	55,172,254	6.2%	0.48%	2.96%	4.87%	2.96%	6.90%	-	-	4.75%	5.16%	0.79	Aug-20
Event Driven - HF Total	243,950,940	27.6%	-0.03%	1.16%	2.01%	1.16%	3.89%	6.90%	5.95%	7.04%	3.32%	1.76	Apr-12
Equity Long/Short													
Marshall Wace Funds LP - MW Global Opportunities (US) Fund	55,125,841	6.2%	0.77%	4.09%	5.30%	4.09%	2.31%	6.56%	-	6.02%	8.10%	0.62	Jan-19
Equity Long/Short - HF Total	55,125,841	6.2%	0.77%	4.09%	5.30%	4.09%	2.31%	6.56%	6.02%	6.02%	8.10%	0.62	Apr-12
Macro-Discretionary													
Eisler Capital Fund LP - Class A	39,280,755	4.4%	-2.17%	-4.59%	-8.02%	-4.59%	-9.80%	-	-	-10.30%	3.93%	-2.92	Jul-21
Macro-Discretionary - HF Total	39,280,755	4.4%	-2.17%	-4.59%	-8.02%	-4.59%	-9.80%	-10.30%	-0.63%	-0.55%	4.44%	-0.32	May-12
Macro-Systematic													
Graham Global Investment Fund II SPC Ltd. - Tactical Trend Segregated Por	52,348,437	5.9%	3.17%	2.15%	40.31%	2.15%	38.44%	13.24%	10.17%	7.36%	13.03%	0.50	Feb-17
Macro-Systematic - HF Total	52,348,437	5.9%	3.17%	2.15%	40.31%	2.15%	38.44%	9.67%	8.22%	6.22%	11.03%	0.48	Jan-17
Multi-Strategy													
Sculptor Domestic Partners II, L.P.	57,497,775	6.5%	-3.86%	-1.09%	-12.93%	-1.09%	-14.65%	4.72%	4.48%	6.24%	6.91%	0.77	Jan-12
Multi-Strategy - HF Total	57,497,775	6.5%	-3.86%	-1.09%	-12.93%	-1.09%	-14.65%	1.14%	-1.30%	3.36%	6.69%	0.38	May-13
Fund of Funds													
Grosvenor SC Absolute Return Fund LLC (Diversifying)	218,033,501	24.6%	-0.40%	-0.34%	-0.71%	-0.34%	0.01%	4.52%	2.72%	2.39%	3.65%	0.40	Dec-11
Fund of Funds - HF Total	218,033,501	24.6%	-0.40%	-0.29%	-0.67%	-0.29%	0.05%	4.59%	2.66%	2.27%	3.50%	0.39	Dec-11
Diversifying Portfolio Total	872,454,343	98.6%	-0.23%	0.23%	0.64%	0.23%	1.22%	4.81%	3.33%	3.37%	3.45%	0.70	Dec-11
HFRI FOF: Conservative Index			-0.53%	0.16%	-1.40%	15.32%	-0.72%	4.71%	3.79%	3.57%	3.41%	0.76	Dec-11
3 Month T-Bills+2%			0.41%	0.95%	2.09%	5.30%	2.62%	2.59%	3.15%	2.64%	0.25%	-	Dec-11

Growth Oriented Absolute Return Portfolio Performance – as of September 30, 2022

Fund	Market Value	Actual %	Returns								Std Dev	Sharpe Ratio	Incep Date
			Sep	QTD	YTD	FYTD	1 Year	3 Year	5 Year	Incep			
Growth-Oriented Portfolio													
Fund of Funds													
Grosvenor SC Absolute Return Fund LLC (Growth)	12,707,477	1.4%	-0.74%	0.27%	-6.71%	0.27%	-6.71%	2.78%	2.52%	4.67%	6.57%	0.58	Dec-11
Fund of Funds - HF Total	12,707,477	1.4%	-0.74%	0.27%	-6.71%	0.27%	-6.71%	2.78%	2.46%	4.08%	6.81%	0.39	Sep-04
Growth-Oriented Portfolio Total	12,707,477	1.4%	-0.74%	0.27%	-11.47%	0.27%	-12.38%	5.27%	3.62%	4.66%	7.93%	0.41	Sep-04
HFRI FoF Composite + 1%			-0.51%	0.95%	-5.20%	15.02%	-4.50%	5.53%	4.30%	4.23%	5.37%	0.50	Sep-04
3 Month T-Bills+5%			0.65%	1.66%	4.34%	12.39%	5.64%	5.60%	6.15%	6.26%	0.46%	-	Sep-04
Market Indices													
Libor3Month			0.30%	0.80%	1.37%	1.66%	1.42%	0.87%	1.43%	1.60%	0.47%	-	Sep-04
Bloomberg US Aggregate Bond Index			-4.32%	-4.75%	-14.61%	-14.84%	-14.60%	-3.26%	-0.27%	2.93%	3.70%	0.37	Sep-04
Bloomberg US High Yield Bond Index			-3.97%	-0.65%	-14.75%	-0.07%	-14.14%	-0.45%	1.57%	6.06%	9.40%	0.50	Sep-04
S&P 500 TR			-9.21%	-4.88%	-23.87%	19.70%	-15.47%	8.16%	9.24%	8.89%	15.00%	0.54	Sep-04
MSCI AC World Index Free - Net			-9.57%	-6.82%	-25.63%	9.33%	-20.66%	3.75%	4.44%	6.59%	15.84%	0.38	Sep-04
MSCI EAFE - Net			-9.35%	-9.36%	-27.09%	-1.35%	-25.13%	-1.83%	-0.84%	4.20%	16.89%	0.24	Sep-04
MSCI EMF (Emerging Markets Free) - Net			-11.72%	-11.57%	-27.16%	-6.91%	-28.11%	-2.07%	-1.81%	6.40%	21.05%	0.33	Sep-04

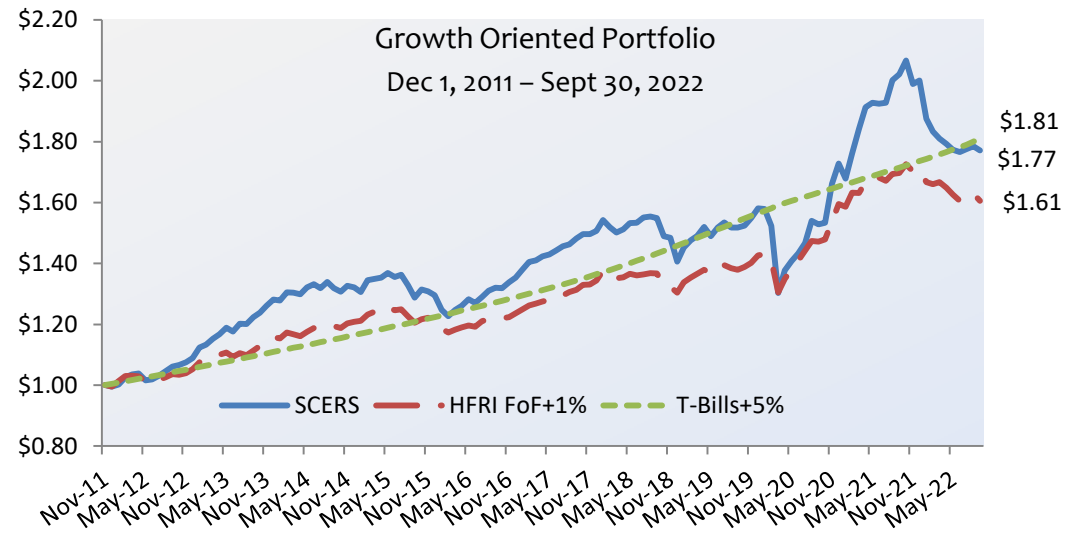
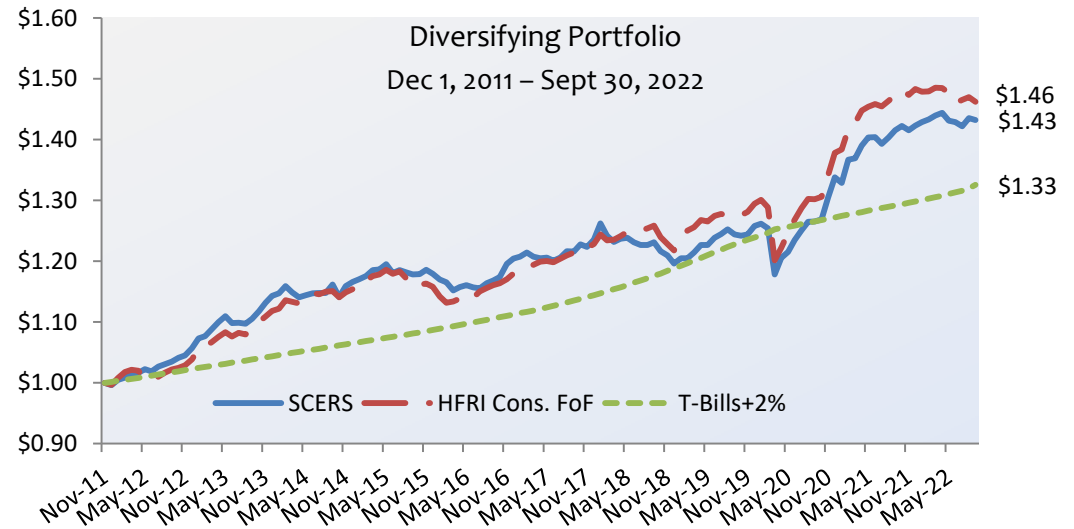
Absolute Return Portfolios Cumulative Performance – December 2011 to Sept. 2022

The Diversifying portfolio is above its T-bills + 2% long term objective though trails the HFRI Fund of Funds Conservative Index over this period

Despite sharp declines in Q1 2020 and 2022, the Growth Oriented portfolio continued to meet the T-bills + 5% long term objective and remained ahead of the Fund of Funds Index + 1% benchmark into the portfolio's wind-down

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, 2022

The Private Equity portfolio's net IRR since inception is 18.00%, versus the Cambridge Associates benchmark IRR of 14.91%

- The long-term Policy objective (Russell 3000 + 3%) has a 14.92% IRR over this period

The portfolio returned -4.2% in Q2 as equity markets fell sharply on heightened geopolitical & economic concerns (ACWI -15.7%)

- The largest declines came from some of the portfolio's Venture Capital and other Technology-focused funds
 - The NEA funds, Khosla Ventures IV, TSG 7A, Spectrum VII, and Marlin Heritage reported the largest declines in Q2
 - However, several of the portfolio's funds did report positive returns for the quarter
- Distributions remained relatively strong, increasing slightly from Q1
 - \$71.2 million in distributions, led by AKKR IV, Summit Europe II, Thoma Bravo XII, Marlin Heritage Europe, and NEA 15

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

- Double-digit net IRRs for all vintage years prior to 2020, with most vintage years exceeding peer universes
- Summit VC IV (43.7%), Trinity Ventures XII (42.2%), Spectrum VII (41.1%), AKKR IV (39.0%), Waterland V (35.2%), Linden III (34.9%), AKKR V (32.8%), and Marlin Heritage (32.4%) are leading performance among SCERS' more mature funds

The legacy fund of funds, comprising 5.1% of the Private Equity portfolio, were down 3 – 14% during the quarter

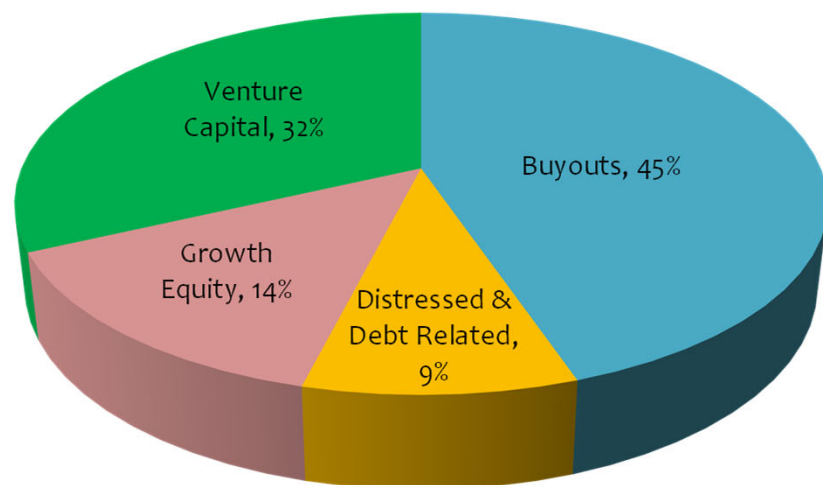
- The legacy fund of funds distributed \$1.6 million during the quarter

Changes during the quarter

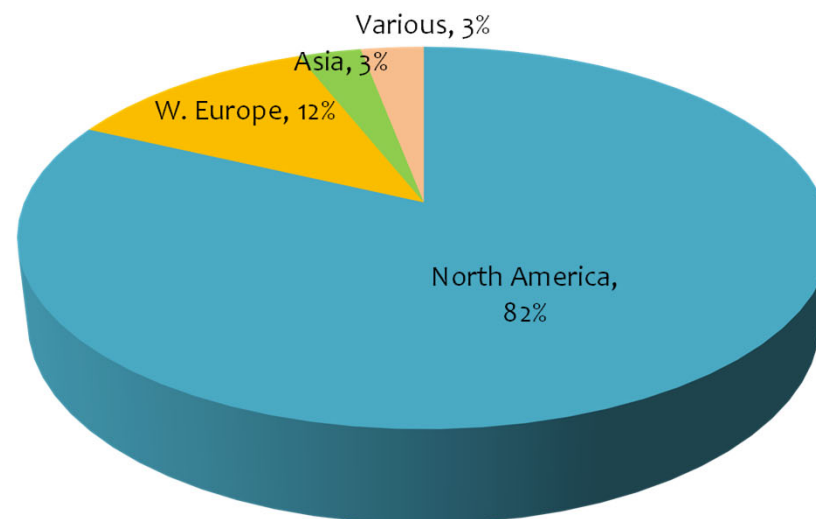
- SCERS committed \$107.5 million in total across four funds (all re-ups, included Buyout, VC, and Credit) during Q2
 - SCERS also committed \$35 million to a Growth Equity fund (re-up) in Q3 2022
- \$53.0 million in new contributions, \$71.2 million in distributions
- Total portfolio gain decreased by \$73.7 million while the total portfolio IRR decreased by 0.96%

Private Equity Portfolio Exposures as of June 30, 2022

Private Equity Portfolio Strategy Exposure*



Private Equity Portfolio Geographic Exposure*



Portfolio Strategy Totals	(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.
Buyout	839,625	303,642	644,578	64%	546,382	645,967	1,192,349	547,770	23.36%		1.85x	
Distressed Debt	330,000	105,812	278,344	68%	199,817	152,177	351,994	73,650	8.49%		1.26x	
Fund of Funds	308,653	38,562	283,561	88%	346,536	158,596	505,132	221,571	12.18%		1.78x	
Growth Equity	276,927	137,315	223,458	50%	236,145	236,409	472,554	249,096	33.10%		2.11x	
Opportunistic Credit	50,000	43,381	9,375	13%	2,750	7,083	9,834	459	N/M		1.05x	
Venture Capital	450,000	151,318	298,701	66%	143,359	491,459	634,817	336,117	21.47%		2.13x	
Portfolio Total :	2,255,206	780,030	1,738,017	65%	1,474,988	1,691,691	3,166,680	1,428,662	18.00%	14.91%	1.82x	

* Exposures are based on the market values of investments as of 6/30/22.

Private Equity Portfolio Performance Details – as of June 30, 2022

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%	61,272	5,082	66,354	29,979	11.01%	7.98%	1.82x	1.63x
HarbourVest Partners VIII - Mezzanine and Distressed Debt Fund L.P.	Fund of Funds	5,000	200	4,800	96%	6,272	300	6,572	1,772	6.99%	7.98%	1.37x	1.63x
HarbourVest Partners VIII - Venture Fund L.P.	Fund of Funds	7,500	150	7,350	98%	13,176	2,964	16,140	8,790	11.56%	7.98%	2.20x	1.63x
Vintage Year 2006 Total		50,000	1,475	48,525	97%	80,720	8,346	89,065	40,540	10.82%	7.22%	1.84x	1.49x
Vintage Year 2008													
Abbott Capital Private Equity Fund VI, L.P.	Fund of Funds	75,000	375	74,625	100%	113,776	31,424	145,200	70,575	13.24%	13.76%	1.95x	2.19x
Goldman Sachs Private Equity Partners X, L.P.	Fund of Funds	75,000	13,433	69,027	82%	102,497	21,429	123,926	54,899	11.54%	13.76%	1.80x	2.19x
HarbourVest International Private Equity Partners VI-Partnership Fund L.P.	Fund of Funds	33,653	1,683	37,980	95%	45,802	24,367	70,170	32,190	11.46%	1.03%	1.85x	1.04x
Vintage Year 2008 Total		183,653	15,491	181,632	92%	262,075	77,221	339,296	157,664	12.20%	8.61%	1.87x	1.53x
Vintage Year 2011													
Waterland Private Equity Fund V C.V.	Buyout	16,722	2,741	16,235	84%	43,025	5,592	48,617	32,382	35.18%	10.90%	2.99x	1.61x
Khosla Ventures IV, L.P.	Venture Capital	10,000	190	9,810	98%	27,487	16,734	44,220	34,410	25.02%	17.33%	4.51x	2.75x
Vintage Year 2011 Total		26,722	2,931	26,045	89%	70,512	22,325	92,837	66,793	29.79%	12.91%	3.56x	1.87x
Vintage Year 2012													
Garrison Opportunity Fund III A LLC	Distressed Debt	20,000	0	20,000	100%	14,092	10,386	24,478	4,478	3.10%	15.78%	1.22x	1.67x
Summit Partners Venture Capital III-A, LP	Growth Equity	16,350	1,849	19,764	89%	38,234	3,024	41,258	21,494	17.55%	14.29%	2.09x	2.05x
New Enterprise Associates 14, L.P.	Venture Capital	25,000	875	24,125	97%	25,788	39,874	65,662	41,537	17.02%	17.62%	2.72x	2.67x
Vintage Year 2012 Total		61,350	2,724	63,889	96%	78,113	53,284	131,398	67,509	12.99%	13.39%	2.06x	1.82x
Vintage Year 2013													
Accel-KKR Capital Partners IV, L.P.	Buyout	15,000	311	15,509	98%	55,448	0	55,448	39,939	38.96%	17.39%	3.58x	1.94x
H.I.G. Capital Partners V, L.P.	Buyout	14,000	431	13,569	97%	16,663	12,895	29,557	15,988	23.51%	17.39%	2.18x	1.94x
Marlin Equity IV, L.P.	Buyout	20,000	0	20,081	100%	17,841	11,506	29,347	9,266	9.13%	17.39%	1.46x	1.94x
RRJ Capital Master Fund II, L.P.	Buyout	35,000	3,824	35,989	89%	43,499	7,933	51,432	15,443	9.86%	12.17%	1.43x	1.68x

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 June 30, 2022 (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 V, L.P.	Distressed Debt	25,000	1,117	24,875	96%	30,435	1,393	31,828	6,953	7.73%	8.59%	1.28x	1.37x
H.I.G. Bayside Loan Opportunity Fund III (Europe-US\$), L.P.	Distressed Debt	30,000	5,400	24,600	82%	28,963	4,292	33,255	8,655	7.94%	2.86%	1.35x	1.11x
Wayzata Opportunities Fund III, L.P.	Distressed Debt	30,000	25,318	14,718	16%	10,063	3,926	13,990	-728	-1.26%	8.59%	0.95x	1.37x
Trinity Ventures XI, L.P.	Venture Capital	25,000	375	24,625	99%	4,835	63,070	67,905	43,280	17.25%	17.47%	2.76x	2.47x
Vintage Year 2013 Total		194,000	36,776	173,965	81%	207,747	105,015	312,761	138,796	14.11%	14.16%	1.80x	1.77x
Vintage Year 2014													
Dyal Capital Partners II	Buyout	35,000	8,725	34,620	75%	12,289	35,256	47,545	12,925	8.81%	19.61%	1.37x	2.00x
H.I.G. Europe Capital Partners II, L.P.	Buyout	14,632	3,187	15,054	78%	11,627	9,460	21,087	6,033	11.13%	15.85%	1.40x	1.78x
Marlin Heritage Fund	Buyout	10,000	2,205	10,519	78%	19,181	6,254	25,435	14,916	32.40%	19.61%	2.42x	2.00x
Thoma Bravo XI	Buyout	30,000	3,203	32,531	89%	62,650	41,385	104,034	71,503	27.42%	19.61%	3.20x	2.00x
TPG Opportunities Partners III	Distressed Debt	40,000	11,819	50,098	70%	51,495	10,553	62,047	11,949	9.64%	9.44%	1.24x	1.42x
Spectrum Equity Investors VII, L.P.	Growth Equity	25,000	1,622	23,378	94%	55,886	44,108	99,994	76,616	41.09%	21.89%	4.28x	2.26x
Khosla Ventures V	Venture Capital	20,000	700	19,300	97%	24,221	40,751	64,972	45,672	25.59%	20.94%	3.37x	2.71x
Vintage Year 2014 Total		174,632	31,461	185,500	82%	237,349	187,765	425,114	239,613	24.12%	18.42%	2.29x	2.08x
Vintage Year 2015													
* WPEF VI Overflow Fund C.V.	Buyout	6,271	6,262	10	0%	0	0	0	-10	0.00%	17.14%	0.00x	1.68x
RRJ Capital Master Fund III, LP	Buyout	40,000	4,285	39,176	89%	35,698	7,815	43,513	4,337	5.62%	17.14%	1.11x	1.68x
WPEF VI Feeder, L.P.	Buyout	25,083	15,815	24,125	37%	30,972	19,705	50,677	26,552	25.08%	17.14%	2.10x	1.68x
Accel-KKR Growth Capital Partners II	Growth Equity	15,000	220	16,148	99%	24,284	11,831	36,115	19,966	31.56%	22.83%	2.24x	2.32x
Summit Partners Venture Capital Fund IV-A, L.P.	Growth Equity	35,000	33,808	40,104	3%	38,912	50,091	89,003	48,899	43.71%	22.83%	2.22x	2.32x
New Enterprise Associates 15, L.P.	Venture Capital	35,000	1,925	33,079	95%	27,335	37,403	64,738	31,659	14.83%	20.95%	1.96x	2.36x
Vintage Year 2015 Total		156,354	62,315	152,642	60%	157,201	126,845	284,046	131,404	22.17%	17.40%	1.86x	1.96x
Vintage Year 2016													
Accel-KKR Capital Partners V, L.P.	Buyout	25,000	204	24,796	99%	19,180	28,986	48,166	23,370	32.76%	21.26%	1.94x	1.87x
Dyal III Pension Investors LP	Buyout	35,000	21,793	22,721	38%	19,529	26,193	45,722	23,002	23.52%	21.26%	2.01x	1.87x
Linden Capital Partners III	Buyout	35,000	2,157	39,843	94%	61,228	49,911	111,139	71,296	34.94%	21.26%	2.79x	1.87x

¹Benchmarks:

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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, 2022 (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.
Marlin Heritage Europe, L.P.	Buyout	13,587	1,498	13,223	89%	7,902	26,021	33,923	20,700	31.44%	14.39%	2.57x	1.59x
Thoma Bravo Fund XII, L.P.	Buyout	30,000	7,578	40,687	75%	26,998	43,543	70,541	29,854	16.85%	21.26%	1.73x	1.87x
TSG7 A L.P.	Buyout	16,000	3,182	12,818	80%	9,043	23,379	32,422	19,605	24.23%	21.26%	2.53x	1.87x
TSG7 B L.P.	Buyout	4,000	158	4,016	96%	1,510	4,366	5,877	1,860	14.93%	21.26%	1.46x	1.87x
Atalaya Special Opportunities Fund VI, L.P.	Distressed Debt	25,000	2,454	28,940	90%	38,531	3,765	42,297	13,356	13.78%	8.73%	1.46x	1.24x
Trinity Ventures XII, L.P.	Venture Capital	30,000	4,275	25,725	86%	26,900	80,883	107,783	82,058	42.17%	26.16%	4.19x	2.35x
Vintage Year 2016 Total		213,587	43,299	212,769	80%	210,821	287,049	497,870	285,102	27.84%	19.12%	2.34x	1.84x
Vintage Year 2017													
Marlin Heritage II	Buyout	10,000	-237	10,237	102%	2,117	13,989	16,106	5,869	17.75%	27.03%	1.57x	1.94x
Summit Partners Europe Growth Equity Fund II, SCSP	Growth Equity	31,354	31,354	37,508	0%	58,077	33,613	91,690	54,182	79.99%	13.21%	2.44x	1.36x
New Enterprise Associates 16, L.P.	Venture Capital	35,000	3,150	31,850	91%	4,566	40,019	44,585	12,735	11.83%	30.92%	1.40x	2.30x
Vintage Year 2017 Total		76,354	34,267	79,595	55%	64,760	87,621	152,381	72,786	33.22%	23.41%	1.91x	1.85x
Vintage Year 2018													
Linden Capital Partners IV LP	Buyout	44,330	7,532	40,858	83%	7,749	51,952	59,701	18,843	26.56%	22.61%	1.46x	1.59x
Marlin Equity V	Buyout	25,000	2,073	23,073	92%	8,114	29,195	37,310	14,236	27.81%	22.61%	1.62x	1.59x
TSG8 L.P.	Buyout	45,000	16,738	28,315	63%	132	27,247	27,379	-936	-2.42%	22.61%	0.97x	1.59x
Davidson Kempner Long-Term Distressed Opportunities Fund IV LP	Distressed Debt	35,000	2,400	33,198	93%	9,250	41,921	51,172	17,974	15.20%	19.78%	1.54x	1.40x
TSSP Opportunities Partners IV (A), L.P.	Distressed Debt	35,000	8,278	40,671	76%	16,714	30,466	47,180	6,509	13.69%	19.78%	1.16x	1.40x
RCP Fund XIII	Fund of Funds	50,000	17,607	32,393	65%	1,904	40,513	42,417	10,024	20.71%	27.72%	1.31x	1.72x
RCPDirect III	Fund of Funds	25,000	3,989	21,011	84%	1,837	32,516	34,353	13,343	26.57%	7.48%	1.64x	1.21x
Accel-KKR Growth Capital Partners III	Growth Equity	33,320	4,736	28,584	86%	0	32,242	32,242	3,658	8.82%	23.64%	1.13x	1.69x
Spectrum Equity VIII, L.P.	Growth Equity	25,000	2,500	22,500	90%	20,752	27,879	48,631	26,131	40.51%	23.64%	2.16x	1.69x
Khosla Ventures VI, L.P.	Venture Capital	35,000	1,750	33,250	95%	0	54,433	54,433	21,183	24.04%	33.21%	1.64x	2.01x
Vintage Year 2018 Total		352,650	67,603	303,853	81%	66,453	368,364	434,817	130,964	21.33%	24.60%	1.43x	1.64x
Vintage Year 2019													
Cortec Group Fund VII, L.P.	Buyout	30,000	10,610	25,865	65%	6,478	29,133	35,612	9,747	30.07%	24.00%	1.38x	1.36x

¹Benchmarks:

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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, 2022 (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.
Gridiron Capital Fund IV, L.P.	Buyout	30,000	6,021	25,416	80%	1,493	44,984	46,477	21,061	51.41%	24.00%	1.83x	1.36x
Thoma Bravo Fund XIII, LP	Buyout	45,000	6,422	52,219	86%	26,012	64,082	90,095	37,876	37.37%	24.00%	1.73x	1.36x
New Enterprise Associates 17, L.P.	Venture Capital	25,000	7,500	17,514	70%	2,227	19,357	21,584	4,070	14.80%	30.05%	1.23x	1.55x
Threshold Ventures III, L.P.	Venture Capital	20,000	4,700	15,300	77%	0	28,724	28,724	13,424	47.29%	30.05%	1.88x	1.55x
Vintage Year 2019 Total		150,000	35,253	136,313	76%	36,211	186,280	222,491	86,178	37.18%	27.29%	1.63x	1.45x
Vintage Year 2020													
Accel-KKR Capital Partners VI, LP	Buyout	30,000	17,327	12,673	42%	0	12,673	12,673	0	N/M	N/M	1.00x	1.30x
Wynnchurch Capital Partners V	Buyout	20,000	11,870	8,130	41%	0	11,054	11,054	2,924	38.12%	27.02%	1.36x	1.30x
Davidson Kempner Long-Term Distressed Opportunities Fund V LP	Distressed Debt	30,000	3,904	26,367	87%	274	29,900	30,174	3,807	13.61%	13.47%	1.14x	1.19x
Spectrum Equity IX-A, L.P.	Growth Equity	25,000	9,438	15,563	62%	0	14,695	14,695	-867	N/M	N/M	0.94x	1.18x
Summit Partners Europe Growth Equity Fund III, SCSp	Growth Equity	20,903	11,287	10,411	46%	0	10,063	10,063	-348	N/M	N/M	0.97x	1.08x
Summit Partners Venture Capital Fund V-A, L.P.	Growth Equity	20,000	12,183	7,817	39%	0	7,658	7,658	-160	N/M	N/M	0.98x	1.18x
Shamrock Capital Content Fund II, L.P.	Opportunistic Credit	20,000	13,381	9,375	33%	2,750	7,083	9,834	459	N/M	N/M	1.05x	1.20x
Canvas Ventures 3, L.P.	Venture Capital	20,000	11,363	8,637	43%	0	9,891	9,891	1,253	N/M	N/M	1.15x	1.27x
OrbiMed Private Investments VIII, LP	Venture Capital	15,000	8,513	6,488	43%	0	6,554	6,554	67	N/M	N/M	1.01x	1.27x
Vintage Year 2020 Total		200,903	99,264	105,460	51%	3,024	109,571	112,595	7,134	8.02%	20.21%	1.07x	1.22x
Vintage Year 2021													
Linden Capital Partners V LP	Buyout	30,000	30,000	0	0%	0	-166	-166	-166	N/M	N/M	N/A	N/A
Marlin Heritage III, L.P.	Buyout	30,000	30,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Shamrock Capital Growth Fund V, L.P.	Buyout	20,000	17,729	2,271	11%	3	1,624	1,627	-644	N/M	N/M	0.72x	1.03x
Strategic Value Special Situations Fund V, L.P.	Distressed Debt	30,000	20,250	9,750	33%	0	10,749	10,749	999	N/M	N/M	1.10x	1.11x
CRV Select Fund I, LP	Venture Capital	20,000	2,500	17,500	88%	0	19,104	19,104	1,604	N/M	N/M	1.09x	1.00x
CRV XVIII, LP	Venture Capital	20,000	4,400	15,600	78%	0	18,580	18,580	2,980	N/M	N/M	1.19x	1.00x
Khosla Ventures VII, L.P.	Venture Capital	20,000	9,840	10,160	51%	0	10,951	10,951	791	N/M	N/M	1.08x	1.00x

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 June 30, 2022 (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 Total		170,000	114,719	55,281	33%	3	60,842	60,845	5,563	N/M	N/M	1.10x	1.00x
Vintage Year 2022													
Gridiron Capital Fund V, L.P.	Buyout	30,000	30,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Oaktree Power Opportunities Fund VI	Buyout	30,000	30,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Sixth Street Opportunities Partners V (A), L.P.	Distressed Debt	30,000	24,873	5,127	17%	0	4,826	4,826	-301	N/M	N/M	0.94x	N/A
Accel-KKR Growth Capital Partners IV	Growth Equity	30,000	28,318	1,682	6%	0	1,206	1,206	-476	N/M	N/M	0.72x	0.81x
Shamrock Capital Content Fund III, L.P.	Opportunistic Credit	30,000	30,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
CRV Select Fund II, LP	Venture Capital	22,500	18,788	3,713	17%	0	3,262	3,262	-450	N/M	N/M	0.88x	0.93x
CRV XIX, LP	Venture Capital	22,500	20,475	2,025	9%	0	1,869	1,869	-156	N/M	N/M	0.92x	0.93x
OrbiMed Private Investments IX, LP	Venture Capital	25,000	25,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Threshold Ventures IV, L.P.	Venture Capital	25,000	25,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Vintage Year 2022 Total		245,000	232,454	12,546	5%	0	11,163	11,163	-1,383	N/M	N/M	0.89x	0.93x
Portfolio Total :		2,255,206	780,030	1,738,017	65%	1,474,988	1,691,691	3,166,680	1,428,662	18.00%	14.91%	1.82x	

¹Benchmarks:

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

Private Credit Portfolio – as of June 30, 2022

The Private Credit portfolio's net IRR since inception is 8.44%, versus the benchmark return of 6.26%

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

The Private Credit funds reported a slight decline during the quarter as market volatility increased

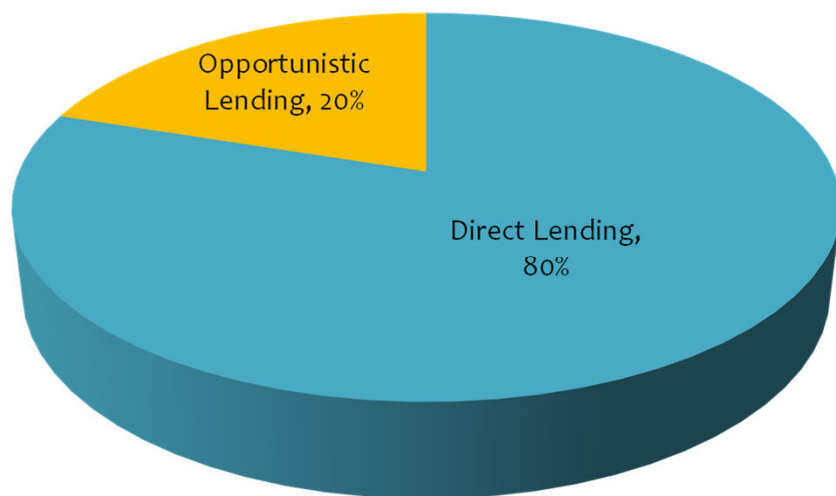
- The portfolio returned -0.5% in Q2 and 5.4% for the trailing 1-year period ending June 30, 2022
 - Performance dispersion also increased during the quarter, with fund returns ranging from +6.7% to -9.5% for the quarter
 - The healthcare-focused Athyrium funds reported the largest declines in Q2
- Longer term performance remains steady despite modest sell-offs in Q1 2020 and during the first half of 2022
 - 8.7% net IRR for the 3-year period and 8.2% net IRR for the 5-year period

Changes during the quarter

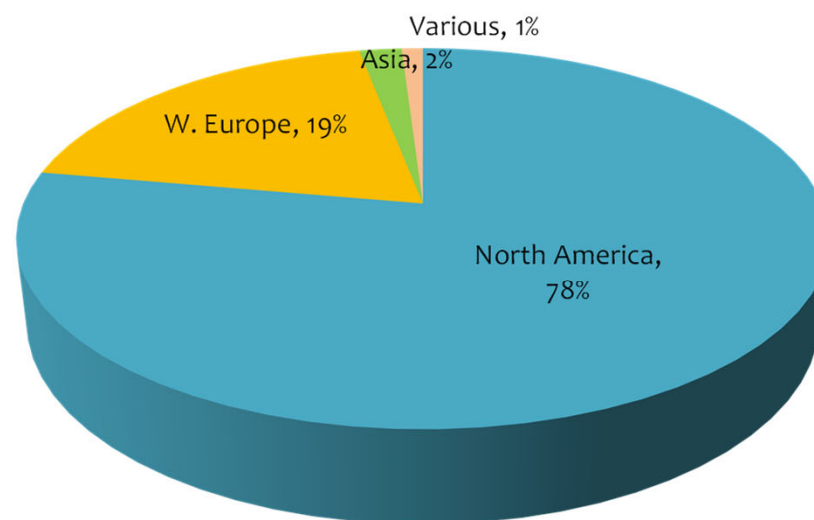
- SCERS committed \$40 million to OrbiMed Royalty & Credit Opportunities IV (Opportunistic Lending, re-up) during Q2
- \$30.0 million in new contributions, \$15.4 million in distributions
- Total portfolio gain decreased by \$1.7 million while the total portfolio IRR declined by 0.71%

Private Credit Portfolio Exposures as of June 30, 2022

Private Credit Portfolio Strategy Exposure*



Private Credit Portfolio Geographic Exposure*



Portfolio Strategy Totals	(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.
Direct Lending	483,026	188,853	376,858	61%	182,229	263,525	445,754	68,896	8.44%		1.18x	
Opportunistic Lending	192,000	102,303	127,439	47%	80,448	65,728	146,177	18,737	8.47%		1.15x	
Portfolio Total :	675,026	291,155	504,297	57%	262,677	329,253	591,930	87,633	8.44%	6.26%	1.17x	

* Exposures are based on the market values of investments as of 6/30/22.

Private Credit Portfolio Details – as of June 30, 2022

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%	26,391	404	26,795	6,098	8.84%	N/A	1.29x	N/A
Vintage Year 2011 Total		20,000	2,125	20,697	89%	26,391	404	26,795	6,098	8.84%	12.91%	1.29x	1.87x
Vintage Year 2014													
Summit Partners Credit Fund II, L.P.	Direct Lending	35,000	3,040	49,057	91%	44,478	14,237	58,714	9,657	6.71%	3.05%	1.20x	N/A
Vintage Year 2014 Total		35,000	3,040	49,057	91%	44,478	14,237	58,714	9,657	6.71%	18.42%	1.20x	2.08x
Vintage Year 2015													
Athyrium Opportunities Fund II	Opportunistic Lending	32,000	2,579	42,849	92%	41,823	9,820	51,643	8,794	8.33%	9.40%	1.21x	1.41x
Vintage Year 2015 Total		32,000	2,579	42,849	92%	41,823	9,820	51,643	8,794	8.33%	17.40%	1.21x	1.96x
Vintage Year 2017													
Athyrium Opportunities Fund III	Opportunistic Lending	25,000	6,570	27,736	74%	18,166	10,680	28,846	1,110	1.88%	12.01%	1.04x	1.31x
Vintage Year 2017 Total		25,000	6,570	27,736	74%	18,166	10,680	28,846	1,110	1.88%	23.41%	1.04x	1.85x
Vintage Year 2018													
Benefit Street Partners Senior Secured Opportunities Fund L.P.	Direct Lending	50,000	14,052	50,953	72%	31,622	29,267	60,889	9,937	5.64%	1.47%	1.20x	N/A
Summit Partners Credit Fund III, L.P.	Direct Lending	50,000	31,787	57,401	36%	44,397	28,362	72,759	15,358	17.46%	1.47%	1.27x	N/A
TCP Direct Lending Fund VIII-S, LLC	Direct Lending	125,000	25,070	99,930	80%	23,747	97,381	121,128	21,198	8.20%	1.47%	1.21x	N/A
Vintage Year 2018 Total		225,000	70,909	208,284	68%	99,766	155,010	254,776	46,492	8.82%	24.60%	1.22x	1.64x
Vintage Year 2019													
BSP Levered US SOF II (Senior Secured Opportunities) Fund L.P.	Direct Lending	50,000	22,740	28,160	55%	2,876	28,695	31,572	3,412	11.31%	2.56%	1.12x	N/A
OrbiMed Royalty & Credit Opportunities III, LP	Opportunistic Lending	35,000	27,591	22,393	21%	16,335	11,527	27,863	5,470	27.00%	19.88%	1.24x	1.30x
Vintage Year 2019 Total		85,000	50,330	50,553	41%	19,212	40,222	59,434	8,882	17.83%	27.29%	1.18x	1.45x
Vintage Year 2020													
MCP Private Capital Fund IV (Feeder)	Direct Lending	33,026	18,344	16,051	44%	249	15,700	15,949	-102	-0.68%	-1.70%	0.99x	N/A

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 June 30, 2022 (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.
Silver Point Specialty Credit Fund II, L.P.	Opportunistic Lending	40,000	7,536	32,325	81%	3,960	31,755	35,716	3,391	N/M	N/M	1.10x	1.20x
Vintage Year 2020 Total		73,026	25,880	48,376	65%	4,209	47,455	51,664	3,289	7.23%	20.21%	1.07x	1.22x
Vintage Year 2021													
Ares Capital Europe V	Direct Lending	40,000	20,839	19,161	48%	529	20,424	20,954	1,793	N/M	N/M	1.09x	N/A
IFM USIDF (Offshore) B Feeder	Direct Lending	40,000	17,165	29,140	57%	7,940	22,525	30,465	1,325	N/M	N/M	1.05x	N/A
Summit Partners Credit Fund IV, L.P.	Direct Lending	40,000	33,692	6,308	16%	0	6,529	6,529	221	N/M	N/M	1.04x	N/A
Shamrock Capital Debt Opportunities Fund I, L.P.	Opportunistic Lending	20,000	18,027	2,136	10%	164	1,946	2,109	-27	N/M	N/M	0.99x	1.08x
Vintage Year 2021 Total		140,000	89,723	56,745	36%	8,633	51,424	60,057	3,312	N/M	N/M	1.06x	1.00x
Vintage Year 2022													
OrbiMed Royalty & Credit Opportunities IV, LP	Opportunistic Lending	40,000	40,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Vintage Year 2022 Total		40,000	40,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Portfolio Total :		675,026	291,155	504,297	57%	262,677	329,253	591,930	87,633	8.44%	6.26%	1.17x	

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 June 30, 2022

The Real Assets portfolio's net IRR since inception is 12.61%, versus the blended benchmark return of 7.94%

- The Real Assets portfolio includes private Infrastructure, Energy and Power, 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 and Power partnerships

- Performance of the Energy and Power partnerships was materially impacted by significant markdowns in Q1 2020
 - However, most of the Energy and Power (particularly upstream energy) partnerships have rebounded sharply since Q3 2020
- Infrastructure partnerships saw smaller declines in Q1 2020 and have maintained good performance since inception
- Since inception net IRRs of 12.1% for Infrastructure and 14.1% for Energy and Power

The Real Assets portfolio generated a 4.2% net return in Q2

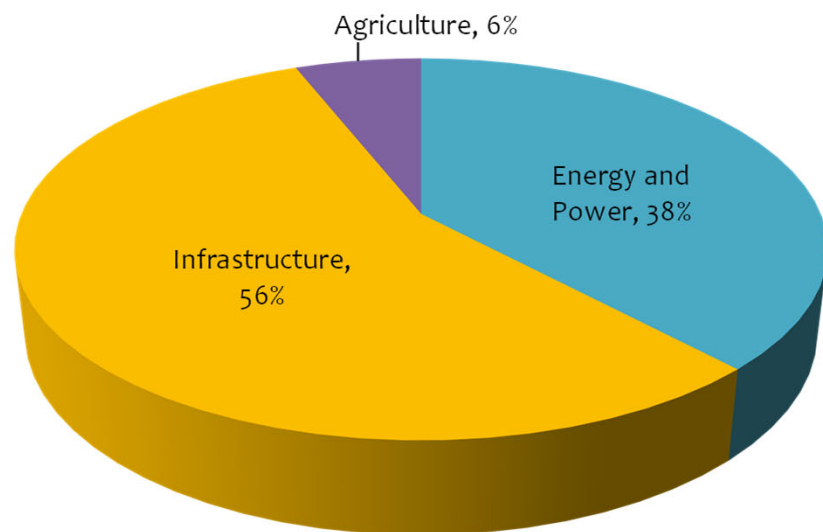
- The portfolio's Energy and Power funds led performance during the quarter
 - Most of the Energy and Power funds reported returns between 2% and 12% in Q2 on continued oil price strength
- The Infrastructure funds also reported solid performance during the quarter, generally returning 1% to 3% in Q2
- Energy funds Quantum VI & VII, NGP Royalty, and EnCap X each gained more than 10% in Q2

Changes during the quarter

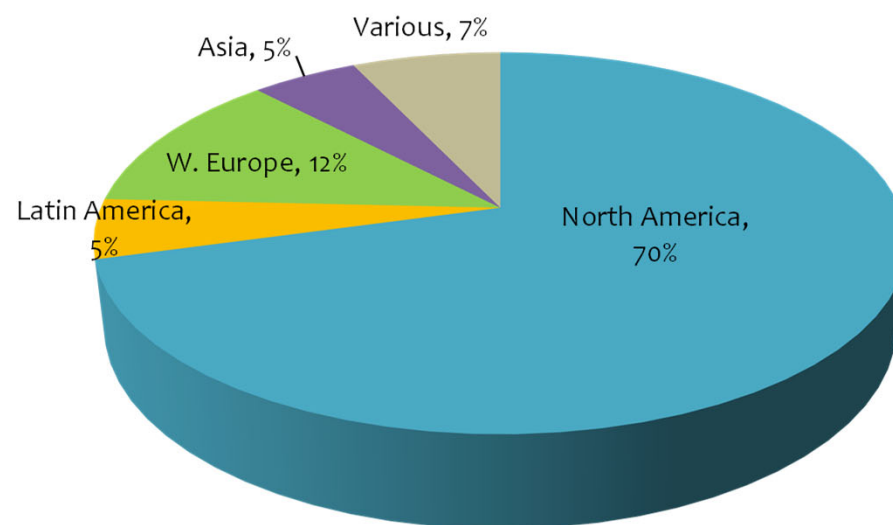
- SCERS committed \$50 million to NGP Royalty Partners II (energy-related royalties, re-up) during Q2
 - SCERS also committed \$150 million in total to two Infrastructure funds in Q3 2022
- \$22.1 million in new contributions, \$34.8 million in distributions
- Portfolio IRR increased by 0.29% while the total portfolio gain increased by \$37.3 million

Real Assets Portfolio Exposures as of June 30, 2022

Real Assets Portfolio Strategy Exposure*



Real Assets Portfolio Geographic Exposure*



Portfolio Strategy Totals	(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
Agriculture	65,000	15,182	55,886	77%	7,047	53,114	60,161	4,275	3.54%		1.08x
Energy and Power	412,500	78,102	386,430	81%	229,197	347,265	576,462	190,031	14.12%		1.49x
Infrastructure	716,858	249,161	495,608	65%	164,467	510,895	675,362	179,754	12.07%		1.36x
Real Asset Debt	100,000	84,789	36,169	15%	45,101	0	45,101	8,932	10.27%		1.25x
Portfolio Total :	1,294,358	427,234	974,093	67%	445,812	911,273	1,357,085	382,992	12.61%	7.94%	1.39x

* Exposures are based on the market values of investments as of 6/30/22.

Real Assets Portfolio Performance Details – as of June 30, 2022

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 and Power	33,000	1,327	37,954	96%	37,110	15,872	52,982	15,028	10.04%	3.25%	1.40x
Vintage Year 2013 Total		33,000	1,327	37,954	96%	37,110	15,872	52,982	15,028	10.04%		1.40x
Vintage Year 2014												
Carlyle Power Partners II, L.P.	Energy and Power	40,000	6,919	45,671	83%	19,192	40,374	59,566	13,895	8.70%	8.54%	1.30x
EnCap Flatrock Midstream III	Energy and Power	20,000	871	23,580	96%	15,298	14,234	29,532	5,952	8.39%	8.54%	1.25x
Global Energy & Power Infrastructure Fund II	Energy and Power	35,000	842	38,635	98%	36,792	13,692	50,484	11,848	14.99%	8.54%	1.31x
Quantum Energy Partners VI, LP	Energy and Power	35,000	8,066	33,066	77%	28,293	57,788	86,080	53,014	30.56%	8.54%	2.60x
Pantheon SCERS SIRF MM, LLC	Infrastructure	100,000	26,968	77,332	73%	71,300	51,661	122,961	45,630	11.86%	11.47%	1.59x
Wastewater Opportunity Fund	Infrastructure	25,000	1,205	25,739	95%	9,371	19,739	29,110	3,371	3.84%	11.47%	1.13x
Vintage Year 2014 Total		255,000	44,872	244,023	82%	180,244	197,489	377,733	133,710	13.91%		1.55x
Vintage Year 2015												
ArcLight Energy Partners Fund VI	Energy and Power	40,000	5,604	42,665	86%	23,064	24,133	47,197	4,532	2.71%	9.45%	1.11x
EnCap Energy Capital Fund X, L.P.	Energy and Power	40,000	2,053	40,624	95%	29,558	45,204	74,762	34,138	16.74%	9.45%	1.84x
* Atalaya Real Assets SMA	Real Asset Debt	100,000	84,789	36,169	15%	45,101	0	45,101	8,932	10.27%	N/A	1.25x
Vintage Year 2015 Total		180,000	92,446	119,458	49%	97,723	69,338	167,060	47,602	10.21%		1.40x
Vintage Year 2016												
ACM Fund II, LLC	Agriculture	25,000	1,440	27,707	94%	4,581	16,978	21,559	-6,147	-8.12%	N/A	0.78x
Brookfield Infrastructure Fund III, L.P.	Infrastructure	40,000	6,211	35,961	84%	14,825	37,360	52,185	16,224	11.64%	10.30%	1.45x
IFM Global Infrastructure Fund	Infrastructure	125,053	0	125,053	100%	43,955	151,509	195,464	70,411	12.65%	10.30%	1.56x
Vintage Year 2016 Total		190,053	7,651	188,721	96%	63,361	205,847	269,208	80,487	10.43%		1.43x
Vintage Year 2017												
Quantum Energy Partners VII, LP	Energy and Power	40,000	11,768	32,799	71%	18,196	38,795	56,990	24,192	21.96%	12.99%	1.74x
Meridiam Infrastructure North America Fund III	Infrastructure	50,000	36,113	13,887	28%	1	21,779	21,780	7,893	34.28%	10.30%	1.57x
Vintage Year 2017 Total		90,000	47,881	46,686	47%	18,196	60,574	78,770	32,084	23.89%		1.69x

¹Benchmarks:

Real Assets Portfolio: 60% Cambridge Infrastructure, 30% Cambridge Energy, 10% NCREIF Farmland

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

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

Real Assets Portfolio Performance Details – as of June 30, 2022 (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
Paine Schwartz Food Chain Fund V, LP	Agriculture	40,000	13,742	28,180	66%	2,466	36,136	38,602	10,422	33.50%	N/A	1.37x
EnCap Flatrock Midstream IV, L.P.	Energy and Power	22,500	10,894	12,196	52%	5,492	9,168	14,660	2,464	8.01%	8.49%	1.20x
Tailwater Energy Fund III, LP	Energy and Power	32,000	1,689	32,365	95%	2,652	33,012	35,664	3,298	3.32%	8.49%	1.10x
ISQ Global Infrastructure Fund II	Infrastructure	50,000	12,107	47,665	76%	10,513	52,867	63,380	15,715	14.74%	11.44%	1.33x
Vintage Year 2018 Total		144,500	38,433	120,406	73%	21,123	131,183	152,306	31,900	11.60%		1.26x
Vintage Year 2019												
Tailwater Energy Fund IV, LP	Energy and Power	35,000	14,176	20,814	59%	0	27,089	27,089	6,275	16.90%	27.06%	1.30x
Brookfield Infrastructure Fund IV	Infrastructure	40,000	10,752	30,617	73%	4,499	33,427	37,925	7,308	13.49%	8.99%	1.24x
EQT Infrastructure IV (No.2) USD SCSp	Infrastructure	35,000	8,562	31,201	76%	6,092	33,077	39,170	7,968	13.29%	8.99%	1.26x
Vintage Year 2019 Total		110,000	33,490	82,633	70%	10,591	93,593	104,184	21,551	14.23%		1.26x
Vintage Year 2020												
NGP Royalty Partners, L.P.	Energy and Power	40,000	13,892	26,060	65%	13,552	27,903	41,455	15,395	N/M	N/M	1.59x
Vintage Year 2020 Total		40,000	13,892	26,060	65%	13,552	27,903	41,455	15,395	N/M		1.59x
Vintage Year 2021												
DigitalBridge Partners II, LP	Infrastructure	35,000	14,272	23,956	59%	3,333	21,446	24,778	823	N/M	N/M	1.03x
Harrison Street Social Infrastructure Fund, L.P.	Infrastructure	75,000	0	75,000	100%	579	80,673	81,251	6,251	N/M	N/M	1.08x
ISQ Global Infrastructure Fund III (UST), L.P.	Infrastructure	50,000	46,066	3,927	8%	0	3,268	3,268	-659	N/M	N/M	0.83x
Meridiam Sustainable Infrastructure Europe IV	Infrastructure	41,806	36,905	5,268	12%	0	4,088	4,088	-1,181	N/M	N/M	0.78x
Vintage Year 2021 Total		201,806	97,244	108,151	52%	3,911	109,475	113,386	5,234	N/M		1.05x
Vintage Year 2022												
NGP Royalty Partners II	Infrastructure	50,000	50,000	0	0%	0	0	0	0	N/M	N/M	N/A
Vintage Year 2022 Total		50,000	50,000	0	0%	0	0	0	0	N/M		N/A
Portfolio Total :		1,294,358	427,234	974,093	67%	445,812	911,273	1,357,085	382,992	12.61%	7.94%	1.39x

¹Benchmarks:

Real Assets Portfolio: 60% Cambridge Infrastructure, 30% Cambridge Energy, 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.

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