



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 20

MEETING DATE: December 6, 2023

SUBJECT: Quarterly Investment Performance Report—
Alternative Assets

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

RECOMMENDATION

Receive and file the performance report for the periods ending September 30, 2023 for the Absolute Return portfolio, and the periods ending June 30, 2023 for the Private Equity, Private Credit, and Real Assets, as presented by Cliffwater.

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, 2023.

SCERS' alternative asset class returns, net of fees, are as follows:

SCERS ALTERNATIVE ASSETS PERFORMANCE SUMMARY
Quarter Reporting Periods Ending September 30, 2023

SCERS ASSET CLASS	Quarter*	1-Year*	3-Year*	5-Year*	Since Inception*	Since Inception Date*
SCERS Absolute Return	2.3%	4.8%	6.5%	4.2%	4.2%	Sep-04
HFRI FoF Conservative	1.8%	5.3%	5.8%	4.1%	3.7%	
HFRI FoF Composite + 1%	0.7%	5.4%	4.7%	4.3%	4.2%	
SCERS Private Equity	1.6%	0.3%	21.4%	19.4%	16.3%	Feb-08
Cambridge Private Equity/Venture Capital	1.6%	2.6%	20.1%	15.5%	14.1%	
SCERS Private Credit	2.9%	10.3%	10.8%	8.9%	8.8%	Oct-11
Credit Suisse Leveraged Loan + 2%	3.6%	12.1%	8.2%	6.0%	6.7%	
SCERS Real Assets	1.3%	6.6%	16.3%	10.5%	11.5%	Jan-13
(60%) Cambridge Private Infrastructure; (30%) Cambridge Private Energy; (10%) NCREIF Farmland	1.5%	7.8%	15.3%	8.1%	7.9%	
*Note: Periods ending 6/30/23 for Private Equity, Private Credit, and Real Assets Periods ending 9/30/23 for Absolute Return All returns are net IRR except Absoulte Return which is time-weighted						

SCERS PORTFOLIO RESULTS

For the reporting quarter ended June 30, 2023:

- SCERS' Private Equity portfolio in line with its benchmark, 1.62% versus 1.63%. The underlying performance was due to unrealized valuation across the portfolio.
- SCERS' Private Credit portfolio slightly underperformed against its benchmark return, 2.87% versus 3.62%, but on a relative basis, performed strongly compared to other asset classes.
- SCERS' Real Assets portfolio underperformed against its benchmark, 1.26% versus 1.47%. SCERS' performance in its energy and power strategies continues to be impacted by the volatility in oil and gas prices.

For the reporting quarter ended September 30, 2023, SCERS' Absolute Return portfolio outperformed the HFRI Fund of Funds Conservative Index return, +2.3% versus +1.8%, with the Diversifying Portfolio outperforming the index (+2.3% versus +1.8%), and the Growth-Oriented portfolio, which is being liquidated, underperforming (+0.4% versus +0.7%). The Diversifying Portfolio outperformance was due primarily to the Market Neutral (+2.4%) and Event Drive strategies (+2.3%).

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

- Top performing funds:
 - Absolute Return:
 - PSquared U.S. Feeder Fund (event drive): +4.8%
 - Graham Global Investment Fund II (macro-systematic): +3.8%
 - LMR Multi-Strategy Fund (market neutral): +3.0%
 - Private Equity portfolio:
 - Gridiron Capital Fund V (Buyout): +39.7%
 - OrbiMed Private Investments IX (Venture): +34.2%
 - Summit Partners Europe Growth Equity Fund III(Growth): +21.9%
 - Summit Partners Europe Growth Equity Fund II (Growth): +17.8%
 - Oaktree Power Opportunities Fund VI (Buyout): +13.5%
 - Private Credit portfolio:
 - IFM USIDF: +8.9%
 - MCP Private Capital Fund IV: +6.4%
 - Silver Point Specialty Credit Fund III: +4.7%
 - Athyrium Opportunities Fund III: +3.9%
 - BSP Levered US SOF II: +3.3%
 - Summit Partners Credit Fund IV: +3.2%
 - Real Assets portfolio:
 - Ridgewood Water & Strategic Infrastructure Fund II (Infrastructure): +10.0%
 - NGP Royalty Partners (Energy and Power): +6.1%
 - EnCap Energy Capital Fund X, (Energy and Power): +4.6%
 - Brookfield Infrastructure Fund IV (Infrastructure): +4.5%
 - Brookfield Infrastructure Fund III, L.P.(Infrastructure): +3.7%
- Bottom performing funds:
 - Absolute Return portfolio:
 - Sculptor Domestic Partners II (multi-strategy): +0.0%

-
- Grosvenor SC Absolute Return Growth (fund-of-funds): +0.4%
 - Davidson Kempner Institutional Partners (event driven): +1.4%

 - Private Equity portfolio:
 - Goldman Sachs Private Equity Partners X, L.P. (Fund-of-Funds): -40.1% (reflects discount associated with a secondary sale transaction)
 - TSG9 L.P. (Buyout): -20.8%
 - RRJ Capital Master Fund III, LP (Buyout): -17.2%
 - Linden Capital Partners III (Buyout): -16.5%
 - Threshold Ventures III, L.P. (Venture Capital): -11.2%

 - Private Credit portfolio:
 - Summit Partners Credit Fund (Direct Lending): -27.8%
 - Summit Partners Credit Fund II (Direct Lending): - 7.4%
 - Summit Partners Credit Fund III (Direct Lending): -2.4%
 - OrbiMed Royalty & Credit Opportunities IV (Opportunistic Lending): +1.5%
 - Shamrock Capital Debt Opportunities Fund I (Opportunistic Lending): +1.7%%

 - Real Assets portfolio:
 - NGP Royalty Partners II (Energy and Power): -5.7%
 - Quantum Energy Partners VI (Energy and Power): -3.8%
 - Tailwater Energy Fund III (Energy and Power): -3.8%
 - Global Energy & Power Infrastructure Fund II (Infrastructure): -2.5%
 - Meridiam Sustainable Infrastructure Europe IV (Energy and Power) -2.1%
 - ArcLight Energy Partners Fund VI (Energy and Power) -1.6%

NEW INVESTMENTS

During the quarter ended September 30, 2023, SCERS made the following new investments:

- CVC Capital Partners IX (Private Equity – Buyout): €30 million commitment
- Meridiam Infrastructure North America IV (Real Assets – Infrastructure): \$50 million commitment

ATTACHMENT

- Board Order
- Cliffwater's Quarterly Performance Review for Alternative Assets for the Quarter ended September 30, 2023.

Prepared by:

/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 6, 2023

AGENDA ITEM:

Quarterly Investment Performance Report—Alternative Assets

THE BOARD OF RETIREMENT hereby accepts the recommendation of staff to receive and file the performance report for the periods ending September 30, 2023 for the Absolute Return portfolio, and the periods ending June 30, 2023 for the Private Equity, Private Credit, and Real Assets, as presented by Cliffwater.

I HEREBY CERTIFY that the above order was passed and adopted on December 6, 2023 by the following vote of the Board of Retirement, to wit:

AYES:

NOES:

ABSENT:

ABSTAIN:

ALTERNATES:

(Present but not voting)

James Diepenbrock
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 6, 2023

Absolute Return Portfolio Performance Summary – as of September 30, 2023

Diversifying Strategies

- The Diversifying Portfolio returned 2.29% in Q3 and 4.62% for the CYTD period ending September 30, 2023
 - Outperformed the HFRI Conservative FoF Index benchmark by 53 bps in Q3 and 84 bps for the CYTD period
 - Also above the T-bills + 2% long term objective by 35 bps (annualized) over the trailing 5-year period
- Psquared (+4.76%), Graham Tactical Trend (+3.80%), and LMR (+3.05%) led performance in Q3
 - All of the Diversifying Portfolio funds produced positive returns during Q3
- MW Global Opps (+6.54%), Aristeia (+6.14%), and Elliott (4.98%) provided the best performance over the CYTD period
 - All of the Diversifying Portfolio funds produced positive returns over the CYTD period

Growth Oriented Strategies

- 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 \$7.8 million at September 30, 2023
- The Growth Oriented Portfolio returned 0.44% in Q3 and 1.00% for the CYTD period ending September 30, 2023

Portfolio risk and market sensitivity are at 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 3.33% compared to the ACWI standard deviation of 14.11% since December 2011 (24% ratio)
 - Portfolio equity beta of 0.11 with an equity correlation of 0.47
- The Growth Oriented portfolio has essentially been eliminated

Diversifying Absolute Return Portfolio Performance – as of September 30, 2023

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.	52,146,623	6.3%	0.53%	2.07%	6.14%	2.07%	5.29%	-	-	5.51%	4.30%	0.70	Jan-21
Laurion Capital, Ltd.	60,635,113	7.4%	0.40%	2.04%	4.78%	2.04%	5.60%	7.57%	9.21%	7.70%	9.66%	0.66	Mar-14
LMR Multi-Strategy Fund	56,081,424	6.8%	1.82%	3.05%	4.01%	3.05%	8.18%	11.14%	-	5.78%	13.87%	0.35	Nov-19
Market Neutral - HF Total	168,863,160	20.5%	0.91%	2.38%	5.31%	2.38%	6.47%	8.52%	4.84%	5.43%	5.68%	0.69	Mar-14
Event Driven													
BlackRock Event Driven Equity Fund (BILPX)	54,616,758	6.6%	-0.30%	1.55%	1.65%	1.55%	3.36%	3.54%	-	3.67%	5.17%	0.34	Mar-20
Davidson Kempner Institutional Partners LP	60,458,934	7.3%	0.44%	1.37%	3.58%	1.37%	5.48%	4.99%	-	5.17%	4.65%	0.67	May-19
Elliott International Limited - Class A & B	81,841,047	9.9%	0.70%	1.91%	4.98%	1.91%	4.04%	9.14%	8.59%	7.96%	3.23%	1.93	Apr-12
PSquared US Feeder Fund LP	55,029,218	6.7%	0.44%	4.76%	0.95%	4.76%	-0.26%	3.34%	-	3.14%	5.50%	0.20	Aug-20
Event Driven - HF Total	251,945,957	30.6%	0.36%	2.31%	3.02%	2.31%	3.26%	5.56%	5.71%	6.71%	3.26%	1.56	Apr-12
Equity Long/Short													
Marshall Wace Funds LP - MW Global Opportunities (US) Fund	58,741,817	7.1%	0.13%	2.32%	6.54%	2.32%	6.56%	4.65%	-	6.13%	7.76%	0.55	Jan-19
Equity Long/Short - HF Total	58,741,817	7.1%	0.13%	2.32%	6.54%	2.32%	6.56%	4.65%	6.13%	6.13%	7.76%	0.55	Apr-12
Macro-Discretionary													
Tudor BVI Global Fund LP	50,904,645	6.2%	0.92%	1.82%	1.81%	1.82%	-	-	-	1.81%	2.98%	-	Jan-23
Macro-Discretionary - HF Total	50,904,645	6.2%	0.92%	1.82%	1.81%	1.82%	-8.90%	-10.04%	-4.34%	-1.39%	4.94%	-0.52	May-12
Macro-Systematic													
Graham Global Investment Fund II SPC Ltd. - Tactical Trend	51,647,123	6.3%	3.59%	3.80%	3.84%	3.80%	-1.34%	15.45%	8.45%	6.01%	13.28%	0.36	Feb-17
Macro-Systematic - HF Total	51,647,123	6.3%	3.59%	3.80%	3.84%	3.80%	-1.34%	14.85%	6.30%	5.07%	11.63%	0.32	Jan-17
Multi-Strategy													
Sculptor Domestic Partners II, L.P.	1,223,787	0.1%	0.00%	0.00%	4.81%	0.00%	6.38%	1.07%	4.88%	6.25%	6.69%	0.74	Jan-12
Multi-Strategy - HF Total	1,223,787	0.1%	0.00%	0.00%	4.81%	0.00%	6.38%	1.07%	0.92%	3.62%	6.49%	0.38	May-13
Fund of Funds													
Grosvenor SC Absolute Return Fund LLC (Diversifying)	232,699,993	28.2%	0.10%	1.99%	4.90%	1.99%	6.86%	4.83%	4.37%	2.75%	3.54%	0.42	Dec-11
Fund of Funds - HF Total	232,699,993	28.2%	0.10%	1.99%	4.90%	1.99%	6.86%	4.81%	4.43%	2.64%	3.40%	0.40	Dec-11
Diversifying Portfolio Total													
HFRI FOF: Conservative Index			0.71%	1.76%	3.78%	1.76%	5.28%	5.76%	4.13%	3.72%	3.28%	0.73	Dec-11
3 Month T-Bills+2%			0.56%	1.73%	5.01%	1.73%	6.41%	3.68%	3.70%	2.95%	0.38%	-	Dec-11

Growth Oriented Absolute Return Portfolio Performance – as of September 30, 2023

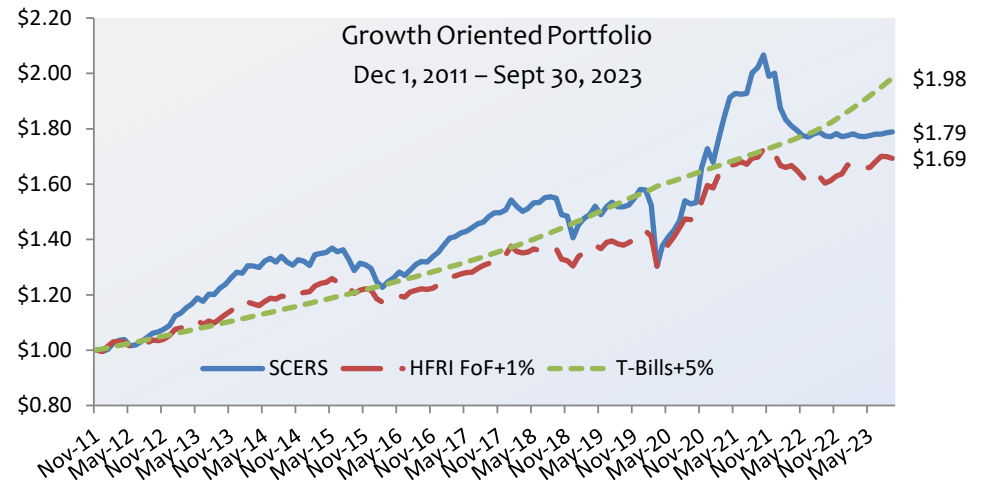
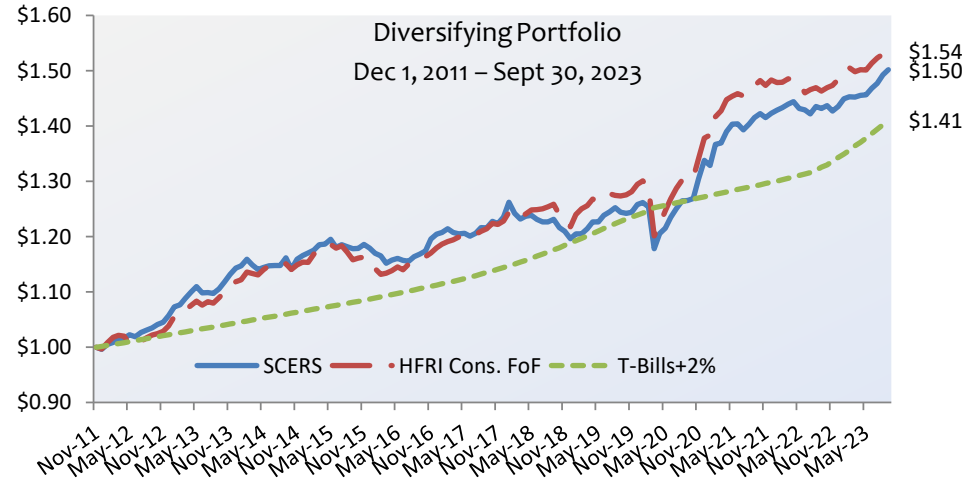
Fund	Market Value	Actual %	Returns								Std Dev	Sharpe Ratio	Incep Date
			Sep	QTD	YTD	FYTD	1 Year	3 Year	5 Year	Incep			
Growth-Oriented Portfolio													
Fund of Funds													
Grosvenor SC Absolute Return Fund LLC (Growth)	7,772,946	0.9%	0.25%	0.44%	1.00%	0.44%	0.84%	1.71%	1.45%	4.34%	6.31%	0.50	Dec-11
Fund of Funds - HF Total	7,772,946	0.9%	0.25%	0.44%	1.00%	0.44%	0.84%	1.71%	1.45%	3.91%	6.64%	0.34	Sep-04
Growth-Oriented Portfolio Total	7,772,946	0.9%	0.25%	0.44%	1.00%	0.44%	0.84%	5.33%	2.89%	4.45%	7.73%	0.37	Sep-04
HFRI FoF Composite + 1%			-0.29%	0.69%	3.30%	0.69%	5.39%	4.71%	4.34%	4.23%	5.27%	0.48	Sep-04
3 Month T-Bills+5%			0.80%	2.43%	7.21%	2.43%	9.41%	6.69%	6.71%	6.43%	0.49%	-	Sep-04
Market Indices													
SOFR 90 Day			0.42%	1.28%	3.55%	1.28%	4.35%	1.63%	1.63%	-	-	-	Sep-04
Bloomberg US Aggregate Bond Index			-2.54%	-3.23%	-1.21%	-3.23%	0.64%	-5.21%	0.11%	2.81%	3.93%	0.27	Sep-04
Bloomberg US High Yield Bond Index			-1.18%	0.46%	5.86%	0.46%	10.28%	1.76%	2.96%	6.27%	9.24%	0.51	Sep-04
S&P 500 TR			-4.77%	-3.27%	13.07%	-3.27%	21.62%	10.15%	9.92%	9.52%	15.03%	0.56	Sep-04
MSCI AC World Index Free - Net			-4.14%	-3.40%	10.06%	-3.40%	20.80%	6.89%	6.46%	7.30%	15.81%	0.41	Sep-04
MSCI EAFE - Net			-3.42%	-4.11%	7.08%	-4.11%	25.65%	5.75%	3.24%	5.23%	16.90%	0.28	Sep-04
MSCI EMF (Emerging Markets Free) - Net			-2.62%	-2.93%	1.82%	-2.93%	11.70%	-1.73%	0.55%	6.68%	21.04%	0.33	Sep-04

Absolute Return Portfolios Cumulative Performance – Dec. 2011 to Sept. 2023

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

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



Private Equity Portfolio – as of June 30, 2023

The Private Equity portfolio's net IRR since inception is 16.33%, versus the Cambridge Associates benchmark IRR of 14.05%

- The long-term Policy objective (Russell 3000 + 3%) has a 15.50% IRR over this period

The portfolio returned 1.6% in Q2 while public equity markets rallied sharply during the quarter (ACWI +6.2%)

- Although many of the funds showed strong gains during the quarter, performance was mixed across funds and strategies
 - Performance was also negatively impacted by the completion of the first tranche of the legacy fund of fund secondary sales, though the overall impact was muted given the relatively small remaining size of these positions
 - Gridiron V, OrbiMed VIII & IX, Summit Europe II & III, Oaktree Power VI, and Thoma Bravo XI reported the largest gains in Q2
- Distributions slowed again during the quarter, reflecting a general slowdown in private equity exits since mid-2022
 - \$20.5 million in distributions, excluding \$5.4 million in proceeds from the completion of the first tranche of the secondary sales
 - Thoma Bravo XI, NEA 15, Davidson Kempner LT Distressed IV, and AKKR Growth II provided the largest distributions in Q2

Despite a recent performance slowdown, longer-term performance remains quite strong across most of the funds

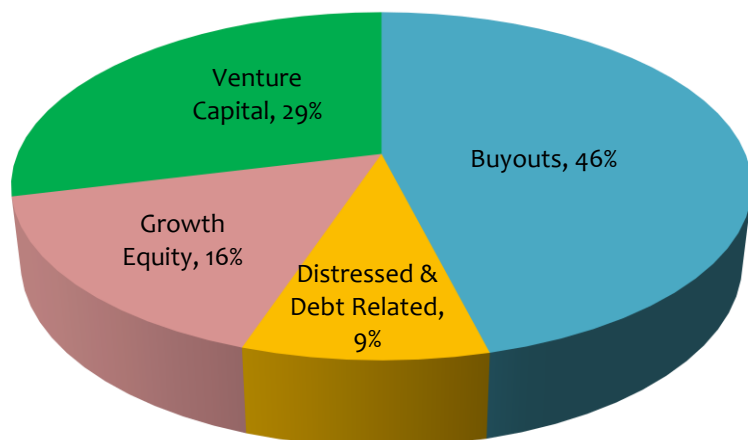
- Double-digit net IRRs for all vintage years prior to 2020, with most vintage years exceeding peer universes
- Summit Europe II (75.4%), AKKR IV (39.0%), Spectrum VII (38.3%), Summit VC IV (38.1%), Waterland V (35.0%), Spectrum VIII (31.9%), and Marlin Heritage (30.4%) are leading performance among SCERS' more mature funds

Changes during the quarter

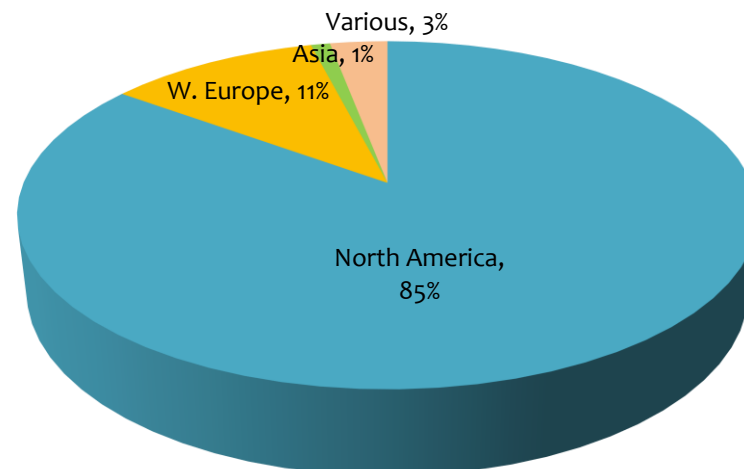
- SCERS committed €30 million to CVC Capital Partners IX (non-US buyout) during Q2
 - SCERS also committed €32 million to a non-US distressed fund in Q3 2023
- \$33.9 million in new contributions, \$25.9 million in distributions
- Total portfolio gain increased by \$26.5 million while the total portfolio IRR decreased by 0.22%

Private Equity Portfolio Exposures as of June 30, 2023

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 Bench.
Buyout	1,070,706	442,540	739,529	59%	639,547	681,072	1,320,619	581,090	21.15%		1.79x
Distressed Debt	330,000	94,009	293,709	72%	251,828	131,624	383,453	89,743	8.81%		1.31x
Fund of Funds	310,131	10,125	298,167	97%	384,085	125,927	510,012	211,845	11.48%		1.71x
Growth Equity	304,221	98,334	247,321	68%	250,338	265,633	515,970	268,650	30.54%		2.09x
Opportunistic Credit	50,000	37,525	16,554	25%	4,073	13,659	17,732	1,178	5.76%		1.07x
Venture Capital	480,000	158,203	322,088	67%	155,732	443,938	599,670	277,581	16.28%		1.86x
Portfolio Total :	2,545,058	840,736	1,917,368	67%	1,685,603	1,661,852	3,347,456	1,430,088	16.33%	14.05%	1.75x

* Exposures are based on the market values of investments as of 6/30/23.

Private Equity Portfolio Performance Details – as of June 30, 2023

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	0	36,375	100%	64,035	662	64,697	28,322	10.72%	7.81%	1.78x	1.75x
* HarbourVest Partners VIII - Mezzanine and Distressed Debt Fund L.P.	Fund of Funds	5,000	0	4,800	100%	6,365	93	6,458	1,658	6.71%	7.81%	1.35x	1.75x
HarbourVest Partners VIII - Venture Fund L.P.	Fund of Funds	7,500	150	7,350	98%	13,649	2,217	15,866	8,516	11.24%	7.81%	2.16x	1.75x
Vintage Year 2006 Total		50,000	150	48,525	100%	84,048	2,972	87,020	38,495	10.52%	7.32%	1.79x	1.50x
Vintage Year 2008													
* Goldman Sachs Private Equity Partners X, L.P.	Fund of Funds	75,000	0	69,136	100%	110,473	5,413	115,886	46,750	10.53%	13.04%	1.68x	2.62x
* HarbourVest International Private Equity Partners VI-Partnership Fund L.P.	Fund of Funds	35,131	0	37,980	100%	55,859	6,308	62,167	24,187	9.28%	7.82%	1.64x	1.48x
Abbott Capital Private Equity Fund VI, L.P.	Fund of Funds	75,000	375	74,625	100%	117,144	27,447	144,591	69,966	12.85%	13.04%	1.94x	2.62x
Vintage Year 2008 Total		185,131	375	181,741	100%	283,476	39,168	322,644	140,903	11.26%	8.84%	1.78x	1.54x
Vintage Year 2011													
Waterland Private Equity Fund V C.V.	Buyout	17,456	2,861	16,235	84%	47,330	1,040	48,370	32,135	35.04%	10.69%	2.98x	1.61x
Khosla Ventures IV, L.P.	Venture Capital	10,000	190	9,810	98%	27,958	15,067	43,025	33,215	23.80%	15.66%	4.39x	2.64x
Vintage Year 2011 Total		27,456	3,051	26,045	89%	75,287	16,107	91,394	65,350	29.11%	12.18%	3.51x	1.87x
Vintage Year 2012													
Garrison Opportunity Fund III A LLC	Distressed Debt	20,000	0	20,000	100%	23,548	2,025	25,574	5,574	3.65%	15.50%	1.28x	1.67x
Summit Partners Venture Capital III-A, LP	Growth Equity	16,350	1,849	19,764	89%	38,234	3,609	41,843	22,079	17.56%	13.32%	2.12x	2.06x
New Enterprise Associates 14, L.P.	Venture Capital	25,000	500	24,500	98%	27,816	36,100	63,916	39,416	15.37%	15.58%	2.61x	2.36x
Vintage Year 2012 Total		61,350	2,349	64,264	96%	89,598	41,734	131,333	67,069	12.36%	12.46%	2.04x	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%	16.64%	3.58x	2.02x
H.I.G. Capital Partners V, L.P.	Buyout	14,000	209	13,860	99%	21,195	10,915	32,109	18,249	23.34%	16.64%	2.32x	2.02x
Marlin Equity IV, L.P.	Buyout	20,000	0	20,081	100%	17,841	10,298	28,139	8,059	7.63%	16.64%	1.40x	2.02x
RRJ Capital Master Fund II, L.P.	Buyout	35,000	3,758	36,072	89%	43,961	5,688	49,649	13,577	8.83%	11.78%	1.38x	1.72x

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, 2023 (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%	31,171	708	31,878	7,003	7.72%	8.18%	1.28x	1.38x
H.I.G. Bayside Loan Opportunity Fund III (Europe-US\$), L.P.	Distressed Debt	30,000	5,400	24,600	82%	28,963	3,812	32,775	8,175	7.45%	4.57%	1.33x	1.25x
Wayzata Opportunities Fund III, L.P.	Distressed Debt	30,000	26,593	14,718	11%	11,338	3,861	15,199	481	0.72%	8.18%	1.03x	1.38x
Trinity Ventures XI, L.P.	Venture Capital	25,000	375	24,625	99%	7,189	44,481	51,671	27,046	11.11%	16.18%	2.10x	2.49x
Vintage Year 2013 Total		194,000	37,763	174,339	81%	217,105	79,763	296,868	122,529	12.44%	13.05%	1.70x	1.80x
Vintage Year 2014													
Dyal Capital Partners II	Buyout	35,000	8,906	35,449	75%	16,069	37,244	53,312	17,864	9.68%	18.52%	1.50x	2.08x
H.I.G. Europe Capital Partners II, L.P.	Buyout	15,274	3,327	15,054	78%	11,627	10,971	22,598	7,544	11.67%	14.78%	1.50x	1.76x
Marlin Heritage Fund	Buyout	10,000	2,205	10,519	78%	20,295	3,645	23,940	13,422	30.37%	18.52%	2.28x	2.08x
Thoma Bravo XI	Buyout	30,000	3,203	32,591	89%	75,257	35,567	110,824	78,233	27.03%	18.52%	3.40x	2.08x
TPG Opportunities Partners III	Distressed Debt	40,000	11,230	50,687	72%	54,871	7,316	62,187	11,501	8.91%	8.39%	1.23x	1.37x
Spectrum Equity Investors VII, L.P.	Growth Equity	25,000	1,625	23,388	94%	59,032	38,543	97,575	74,187	38.29%	20.64%	4.17x	2.22x
Khosla Ventures V	Venture Capital	20,000	700	19,300	97%	25,476	40,031	65,506	46,206	23.19%	17.33%	3.39x	2.49x
Vintage Year 2014 Total		175,274	31,196	186,988	82%	262,626	173,317	435,943	248,956	22.74%	15.41%	2.33x	2.05x
Vintage Year 2015													
* WPEF VI Overflow Fund C.V.	Buyout	6,546	6,536	10	0%	0	0	0	-10	0.00%	15.65%	0.00x	1.78x
RRJ Capital Master Fund III, LP	Buyout	40,000	2,648	40,813	93%	36,562	8,261	44,823	4,010	4.82%	15.65%	1.10x	1.78x
WPEF VI Feeder, L.P.	Buyout	26,185	15,235	25,343	42%	30,972	22,002	52,973	27,630	23.31%	15.65%	2.09x	1.78x
Accel-KKR Growth Capital Partners II	Growth Equity	15,000	188	16,384	99%	26,808	10,000	36,808	20,424	29.76%	19.76%	2.25x	2.20x
Summit Partners Venture Capital Fund IV-A, L.P.	Growth Equity	35,000	11,496	41,004	67%	38,912	53,277	92,189	51,186	38.11%	19.76%	2.25x	2.20x
New Enterprise Associates 15, L.P.	Venture Capital	35,000	1,925	33,079	95%	32,072	29,322	61,394	28,314	12.40%	16.45%	1.86x	2.22x
Vintage Year 2015 Total		157,731	38,029	156,633	76%	165,325	122,862	288,187	131,554	19.90%	15.59%	1.84x	1.95x
Vintage Year 2016													
Accel-KKR Capital Partners V, L.P.	Buyout	25,000	0	25,463	100%	19,743	31,331	51,074	25,611	28.34%	21.01%	2.01x	2.04x
Blue Owl GP Stakes III Pension Investors L P	Buyout	35,000	21,614	22,929	38%	21,932	29,232	51,163	28,235	23.17%	21.01%	2.23x	2.04x
Linden Capital Partners III	Buyout	35,000	2,157	39,843	94%	64,427	31,992	96,419	56,575	29.08%	21.01%	2.42x	2.04x

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, 2023 (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	14,183	288	14,432	98%	16,130	22,119	38,249	23,816	28.75%	13.72%	2.65x	1.68x
Thoma Bravo Fund XII, L.P.	Buyout	30,000	7,381	40,884	75%	42,132	32,445	74,577	33,693	16.33%	21.01%	1.82x	2.04x
TSG7 A L.P.	Buyout	16,000	2,960	13,109	81%	12,797	17,446	30,243	17,134	19.24%	21.01%	2.31x	2.04x
TSG7 B L.P.	Buyout	4,000	60	4,114	99%	1,552	4,234	5,787	1,673	10.81%	21.01%	1.41x	2.04x
Atalaya Special Opportunities Fund VI, L.P.	Distressed Debt	25,000	2,454	28,940	90%	40,661	1,702	42,363	13,423	13.60%	8.77%	1.46x	1.36x
Trinity Ventures XII, L.P.	Venture Capital	30,000	4,275	25,725	86%	27,145	49,553	76,698	50,973	27.90%	18.82%	2.98x	2.18x
Vintage Year 2016 Total		214,183	41,189	215,440	81%	246,518	220,055	466,573	251,133	22.92%	15.48%	2.17x	1.83x
Vintage Year 2017													
Marlin Heritage II	Buyout	10,000	9	10,292	100%	2,117	12,938	15,055	4,763	11.34%	23.37%	1.46x	2.03x
Summit Partners Europe Growth Equity Fund II, SCSP	Growth Equity	32,731	11,194	37,708	66%	58,569	48,323	106,892	69,183	75.44%	12.62%	2.83x	1.46x
New Enterprise Associates 16, L.P.	Venture Capital	35,000	3,150	31,850	91%	5,538	38,722	44,260	12,410	8.87%	23.16%	1.39x	2.13x
Vintage Year 2017 Total		77,731	14,353	79,850	82%	66,224	99,983	166,207	86,357	30.02%	19.65%	2.08x	1.85x
Vintage Year 2018													
Linden Capital Partners IV LP	Buyout	44,330	3,923	44,725	91%	18,788	49,250	68,038	23,313	21.16%	20.07%	1.52x	1.62x
Marlin Equity V	Buyout	25,000	964	24,183	96%	8,569	32,303	40,872	16,689	22.51%	20.07%	1.69x	1.62x
TSG8 L.P.	Buyout	45,000	10,241	34,872	77%	319	35,297	35,616	744	1.02%	20.07%	1.02x	1.62x
Davidson Kempner Long-Term Distressed Opportunities Fund IV LP	Distressed Debt	35,000	2,400	33,198	93%	38,376	22,623	60,999	27,802	17.69%	13.73%	1.84x	1.44x
TSSP Opportunities Partners IV (A), L.P.	Distressed Debt	35,000	5,101	44,421	85%	20,931	32,483	53,415	8,993	11.78%	13.73%	1.20x	1.44x
RCP Fund XIII	Fund of Funds	50,000	7,598	44,902	85%	7,413	52,866	60,278	15,376	17.13%	21.19%	1.34x	1.59x
RCPDirect III	Fund of Funds	25,000	2,002	22,998	92%	9,149	30,921	40,070	17,071	22.76%	N/A	1.74x	N/A
Accel-KKR Growth Capital Partners III	Growth Equity	33,320	4,619	28,701	86%	5,394	30,495	35,889	7,188	10.36%	19.13%	1.25x	1.68x
Spectrum Equity VIII, L.P.	Growth Equity	25,000	2,500	22,500	90%	22,500	24,729	47,229	24,729	31.92%	19.13%	2.10x	1.68x
Khosla Ventures VI, L.P.	Venture Capital	35,000	1,750	33,250	95%	0	60,523	60,523	27,273	20.11%	19.95%	1.82x	1.83x
Vintage Year 2018 Total		352,650	41,099	333,750	88%	131,439	371,489	502,928	169,178	18.25%	18.58%	1.51x	1.61x
Vintage Year 2019													
Cortec Group Fund VII, L.P.	Buyout	30,000	3,677	33,644	88%	23,070	26,329	49,399	15,755	26.51%	19.68%	1.47x	1.48x

¹Benchmarks:

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

Private Equity Portfolio Performance Details – as of June 30, 2023 (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	2,180	30,764	93%	4,044	52,170	56,215	25,451	32.84%	19.68%	1.83x	1.48x
Thoma Bravo Fund XIII, LP	Buyout	45,000	3,743	54,899	92%	27,084	71,784	98,868	43,969	29.42%	19.68%	1.80x	1.48x
New Enterprise Associates 17, L.P.	Venture Capital	25,000	5,375	19,639	79%	2,227	20,332	22,559	2,920	6.57%	14.93%	1.15x	1.39x
Threshold Ventures III, L.P.	Venture Capital	20,000	3,280	16,720	84%	0	23,017	23,017	6,297	14.20%	14.93%	1.38x	1.39x
Vintage Year 2019 Total		150,000	18,254	155,665	88%	56,425	193,632	250,057	94,392	25.23%	16.34%	1.61x	1.39x
Vintage Year 2020													
Accel-KKR Capital Partners VI, LP	Buyout	30,000	12,643	17,357	58%	0	17,357	17,357	0	0.00%	17.59%	1.00x	1.31x
Wynnchurch Capital Partners V	Buyout	20,000	6,039	14,116	70%	269	16,833	17,102	2,986	15.19%	17.59%	1.21x	1.31x
Davidson Kempner Long-Term Distressed Opportunities Fund V LP	Distressed Debt	30,000	3,083	27,670	90%	756	31,658	32,414	4,745	8.39%	11.66%	1.17x	1.20x
Spectrum Equity IX-A, L.P.	Growth Equity	25,000	2,688	22,313	89%	0	20,199	20,199	-2,114	-7.28%	13.31%	0.91x	1.23x
Summit Partners Europe Growth Equity Fund III, SCSp	Growth Equity	21,821	6,511	15,335	70%	0	17,317	17,317	1,982	9.55%	4.82%	1.13x	1.09x
Summit Partners Venture Capital Fund V-A, L.P.	Growth Equity	20,000	9,791	11,097	51%	888	10,511	11,399	302	2.08%	13.31%	1.03x	1.23x
Shamrock Capital Content Fund II, L.P.	Opportunistic Credit	20,000	8,002	16,077	60%	4,073	13,659	17,732	1,656	8.05%	11.25%	1.10x	1.20x
Canvas Ventures 3, L.P.	Venture Capital	20,000	7,976	12,024	60%	0	13,344	13,344	1,320	6.89%	10.90%	1.11x	1.19x
OrbiMed Private Investments VIII, LP	Venture Capital	15,000	6,648	8,625	56%	312	9,761	10,072	1,447	9.45%	10.90%	1.17x	1.19x
Vintage Year 2020 Total		201,821	63,381	144,613	69%	6,298	150,638	156,937	12,324	5.69%	12.24%	1.09x	1.23x
Vintage Year 2021													
Linden Capital Partners V LP	Buyout	30,000	19,486	10,514	35%	0	11,183	11,183	669	N/M	N/M	1.06x	1.11x
Shamrock Capital Growth Fund V, L.P.	Buyout	20,000	10,295	9,705	49%	20	8,723	8,743	-963	N/M	N/M	0.90x	1.11x
Strategic Value Special Situations Fund V, L.P.	Distressed Debt	30,000	15,000	15,023	50%	0	17,408	17,408	2,385	N/M	N/M	1.16x	1.14x
CRV Select Fund I, LP	Venture Capital	20,000	2,250	17,750	89%	0	17,645	17,645	-105	-0.31%	-1.49%	0.99x	0.98x
CRV XVIII, LP	Venture Capital	20,000	3,850	16,150	81%	0	17,190	17,190	1,040	3.51%	-1.49%	1.06x	0.98x
Khosla Ventures VII, L.P.	Venture Capital	20,000	6,040	13,960	70%	0	15,924	15,924	1,964	9.57%	-1.49%	1.14x	0.98x
Vintage Year 2021 Total		140,000	56,920	83,103	59%	20	88,072	88,092	4,990	4.19%	0.47%	1.06x	1.01x

¹Benchmarks:

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

Private Equity Portfolio Performance Details – as of June 30, 2023 (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 2022													
Golden Capital Co-Investments, L.P.	Buyout	100,000	92,560	7,440	7%	0	7,103	7,103	-337	N/M	N/M	0.95x	1.00x
Gridiron Capital Fund V, L.P.	Buyout	30,000	25,653	4,347	14%	0	5,065	5,065	717	N/M	N/M	1.16x	1.00x
Marlin Heritage III, L.P.	Buyout	30,000	25,993	4,007	13%	0	3,671	3,671	-336	N/M	N/M	0.92x	1.00x
Oaktree Power Opportunities Fund VI	Buyout	30,000	18,284	11,816	39%	0	13,034	13,034	1,217	N/M	N/M	1.10x	1.00x
Sixth Street Opportunities Partners V (A), L.P.	Distressed Debt	30,000	21,630	9,578	28%	1,212	8,028	9,240	-338	N/M	N/M	0.96x	N/A
Accel-KKR Growth Capital Partners IV	Growth Equity	30,000	20,873	9,127	30%	0	8,630	8,630	-497	N/M	N/M	0.95x	0.92x
Spectrum Equity X-A, L.P.	Growth Equity	25,000	25,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Shamrock Capital Content Fund III, L.P.	Opportunistic Credit	30,000	29,523	477	2%	0	0	0	-477	N/M	N/M	0.00x	1.06x
CRV Select Fund II, LP	Venture Capital	22,500	17,213	5,288	24%	0	4,743	4,743	-545	N/M	N/M	0.90x	0.89x
CRV XIX, LP	Venture Capital	22,500	17,831	4,669	21%	0	3,929	3,929	-740	N/M	N/M	0.84x	0.89x
OrbiMed Private Investments IX, LP	Venture Capital	25,000	23,750	1,250	5%	0	1,074	1,074	-176	N/M	N/M	0.86x	0.89x
Threshold Ventures IV, L.P.	Venture Capital	25,000	21,125	3,875	16%	0	3,207	3,207	-668	N/M	N/M	0.83x	0.89x
Vintage Year 2022 Total		400,000	339,433	61,875	15%	1,212	58,485	59,697	-2,179	N/M	N/M	0.96x	0.91x
Vintage Year 2023													
Accel-KKR Capital Partners VII, LP	Buyout	35,000	35,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Cortec Group Fund VIII, L.P.	Buyout	30,000	26,970	3,030	10%	0	2,778	2,778	-252	N/M	N/M	0.92x	N/A
CVC Capital Partners IX	Buyout	32,731	32,731	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
TSG9 L.P.	Buyout	30,000	28,493	1,507	5%	0	822	822	-685	N/M	N/M	0.55x	N/A
Khosla Ventures VIII	Venture Capital	30,000	30,000	0	0%	0	-26	-26	-26	N/M	N/M	N/A	N/A
Vintage Year 2023 Total		157,731	153,194	4,537	3%	0	3,574	3,574	-963	N/M	N/M	0.79x	0.88x
Portfolio Total :		2,545,058	840,736	1,917,368	67%	1,685,603	1,661,852	3,347,456	1,430,088	16.33%	14.05%	1.75x	

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Private Credit Portfolio – as of June 30, 2023

The Private Credit portfolio's net IRR since inception is 8.84%, versus the benchmark return of 6.74%

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

The Private Credit funds reported another solid gain during the quarter, following muted performance in the first half of 2022

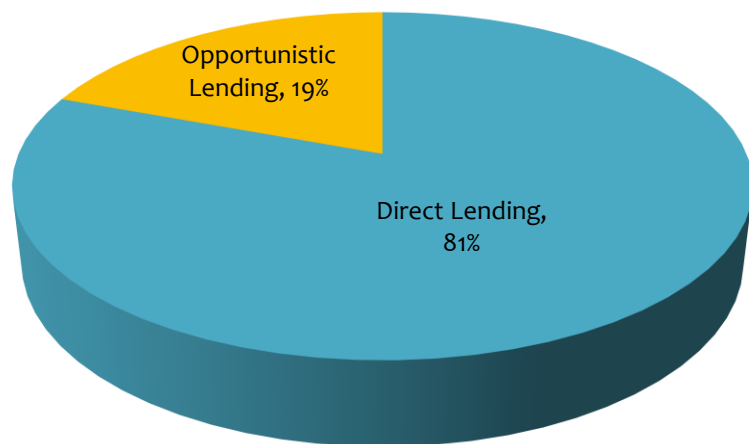
- The portfolio returned 2.9% in Q2 and 10.3% for the trailing 1-year period ending June 30, 2023
 - Most of the funds generated returns between 2% to 4% for the quarter
 - IFM USIDF, MCP IV, and Silver Point Specialty Credit III led performance in Q2
 - However, several of the Summit Credit funds recorded markdowns in their portfolios during Q2
- Longer term performance remains steady despite modest sell-offs in Q1 2020 and during the first half of 2022
 - 10.8% net IRR for the 3-year period and 8.9% net IRR for the 5-year period

Changes during the quarter

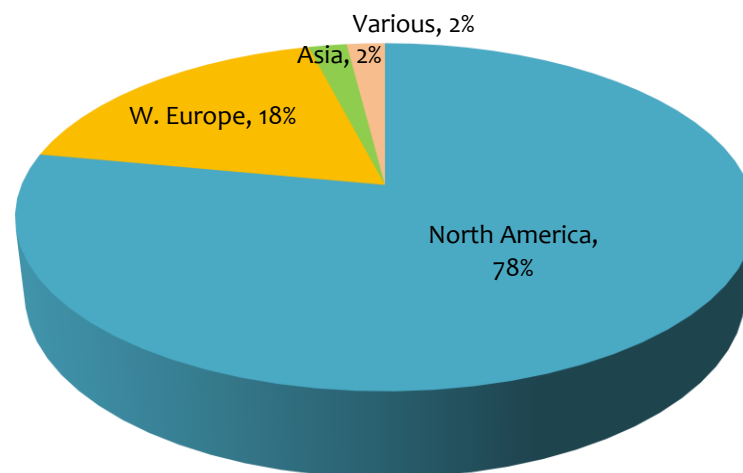
- SCERS increased its commitment to IFM USIDF (infrastructure debt) by \$35 million in Q2
- \$25.9 million in new contributions, \$27.1 million in distributions
- Total portfolio gain increased by \$11.6 million while the total portfolio IRR increased by 0.19%

Private Credit Portfolio Exposures as of June 30, 2023

Private Credit Portfolio Strategy Exposure*



Private Credit Portfolio Geographic Exposure*



	(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.
Portfolio Strategy Totals												
Direct Lending	599,476	214,719	474,203	64%	235,901	336,690	572,591	98,388	8.79%		1.21x	
Opportunistic Lending	192,000	78,373	152,712	59%	98,828	80,864	179,692	26,980	9.03%		1.18x	
Portfolio Total :	791,476	293,093	626,915	63%	334,729	417,554	752,283	125,368	8.84%	6.74%	1.20x	

* Exposures are based on the market values of investments as of 6/30/23.

Private Credit Portfolio Details – as of June 30, 2023

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%	26,586	237	26,823	6,126	8.83%	N/A	1.30x	N/A
Vintage Year 2011 Total		20,000	2,125	20,697	89%	26,586	237	26,823	6,126	8.83%	12.18%	1.30x	1.87x
Vintage Year 2014													
Summit Partners Credit Fund II, L.P.	Direct Lending	35,000	2,876	49,221	92%	47,565	10,601	58,166	8,945	5.91%	3.97%	1.18x	N/A
Vintage Year 2014 Total		35,000	2,876	49,221	92%	47,565	10,601	58,166	8,945	5.91%	15.41%	1.18x	2.05x
Vintage Year 2015													
Athyrium Opportunities Fund II	Opportunistic Lending	32,000	2,231	43,407	93%	46,805	6,696	53,500	10,093	8.69%	9.56%	1.23x	1.51x
Vintage Year 2015 Total		32,000	2,231	43,407	93%	46,805	6,696	53,500	10,093	8.69%	15.59%	1.23x	1.95x
Vintage Year 2017													
Athyrium Opportunities Fund III	Opportunistic Lending	25,000	5,456	29,362	78%	23,533	7,492	31,026	1,664	2.36%	10.74%	1.06x	1.35x
Vintage Year 2017 Total		25,000	5,456	29,362	78%	23,533	7,492	31,026	1,664	2.36%	19.65%	1.06x	1.85x
Vintage Year 2018													
Benefit Street Partners Senior Secured Opportunities Fund L.P.	Direct Lending	50,000	17,940	50,953	64%	35,879	27,241	63,120	12,168	5.93%	4.15%	1.24x	N/A
Summit Partners Credit Fund III, L.P.	Direct Lending	50,000	29,528	59,660	41%	58,432	16,490	74,922	15,262	14.63%	4.15%	1.26x	N/A
TCP Direct Lending Fund VIII-S, LLC	Direct Lending	125,000	4,072	120,928	97%	36,345	113,668	150,013	29,084	7.96%	4.15%	1.24x	N/A
Vintage Year 2018 Total		225,000	51,539	231,541	77%	130,656	157,399	288,055	56,514	8.33%	18.58%	1.24x	1.61x
Vintage Year 2019													
BSP Levered US SOF II (Senior Secured Opportunities) Fund L.P.	Direct Lending	50,000	16,087	35,552	68%	7,086	35,570	42,656	7,104	11.63%	5.00%	1.20x	N/A
OrbiMed Royalty & Credit Opportunities II I, LP	Opportunistic Lending	35,000	20,163	30,093	42%	19,977	17,589	37,565	7,472	21.28%	12.95%	1.25x	1.29x
Vintage Year 2019 Total		85,000	36,250	65,645	57%	27,063	53,159	80,221	14,576	15.25%	16.34%	1.22x	1.39x
Vintage Year 2020													
MCP Private Capital Fund IV (Feeder) SC	Direct Lending	34,476	11,556	23,275	66%	2,121	25,866	27,987	4,712	12.77%	3.98%	1.20x	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, 2023 (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%	7,980	31,467	39,448	7,123	11.79%	11.25%	1.22x	1.20x
Vintage Year 2020 Total		74,476	19,092	55,600	74%	10,101	57,334	67,435	11,835	12.16%	12.24%	1.21x	1.23x
Vintage Year 2021													
Ares Capital Europe V	Direct Lending	40,000	9,954	30,046	75%	2,272	32,136	34,409	4,363	11.61%	N/A	1.15x	N/A
IFM USIDF (Offshore) B Feeder	Direct Lending	75,000	35,000	46,921	53%	16,633	38,556	55,188	8,268	18.29%	4.32%	1.18x	N/A
Summit Partners Credit Fund IV, L.P.	Direct Lending	40,000	27,803	14,670	30%	2,473	14,193	16,666	1,996	N/M	N/M	1.14x	N/A
Shamrock Capital Debt Opportunities Fund I, L.P.	Opportunistic Lending	20,000	10,987	9,547	45%	533	9,151	9,684	137	N/M	N/M	1.01x	1.13x
Vintage Year 2021 Total		175,000	83,745	101,183	52%	21,911	94,035	115,947	14,764	14.69%	0.47%	1.15x	1.01x
Vintage Year 2022													
OrbiMed Royalty & Credit Opportunities I V, LP	Opportunistic Lending	40,000	32,000	7,979	20%	0	8,469	8,469	491	N/M	N/M	1.06x	1.06x
Vintage Year 2022 Total		40,000	32,000	7,979	20%	0	8,469	8,469	491	N/M	N/M	1.06x	0.91x
Vintage Year 2023													
Brookfield Infrastructure Debt Fund III	Direct Lending	40,000	23,871	16,189	40%	510	15,974	16,483	294	N/M	N/M	1.02x	N/A
Silver Point Specialty Credit Fund III, L.P.	Direct Lending	40,000	33,908	6,092	15%	0	6,157	6,157	65	N/M	N/M	1.01x	N/A
Vintage Year 2023 Total		80,000	57,778	22,281	28%	510	22,131	22,641	359	N/M	N/M	1.02x	0.88x
Portfolio Total :		791,476	293,093	626,915	63%	334,729	417,554	752,283	125,368	8.84%	6.74%	1.20x	

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, 2023

The Real Assets portfolio's net IRR since inception is 11.47%, versus the blended benchmark return of 7.92%

- The Real Assets portfolio includes private Infrastructure, Energy and Power, and Agriculture, Timber and Other

The Real Assets portfolio is primarily Infrastructure and Energy and Power partnerships

- Since inception net IRRs of 10.9% for Infrastructure and 13.0% for Energy and Power
- Performance of the Energy and Power partnerships has been somewhat volatile, most recently being 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

The Real Assets portfolio generated a 1.3% net return in Q2

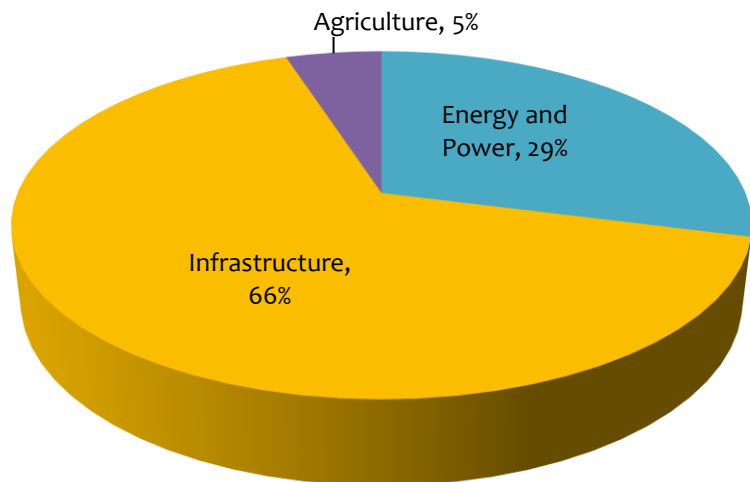
- The portfolio's Infrastructure funds generally led performance during the quarter
 - Most of the Infrastructure funds reported returns between 0.5% and 4.5% in Q2
- The Energy and Power funds reported mixed performance in Q2 as oil prices and broader energy markets weakened
 - Returns ranged from -5% to +6% during the quarter

Changes during the quarter

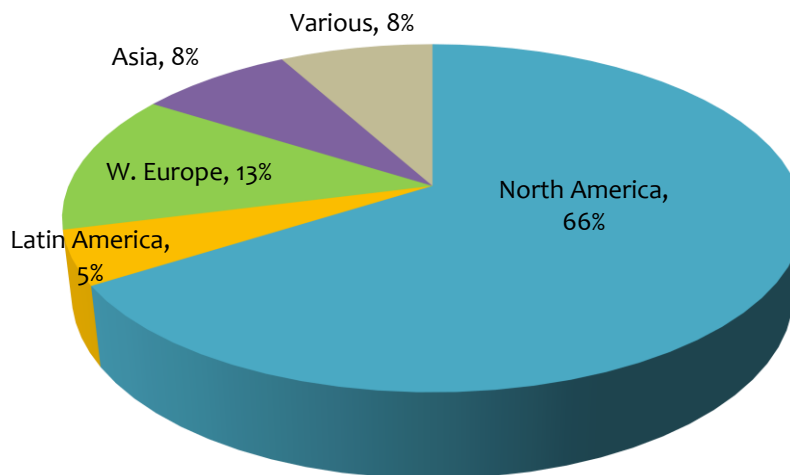
- SCERS committed \$90 million in total to two funds (Infrastructure and Energy and Power funds) in Q2
 - SCERS also increased its commitment to NGP Royalty Partners II (Energy and Power) by \$25 million during the quarter
- \$34.3 million in new contributions, \$49.0 million in distributions
- Portfolio IRR decreased by 0.32% while the total portfolio gain increased by \$13.2 million

Real Assets Portfolio Exposures as of June 30, 2023

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	10,626	62,353	84%	16,330	51,971	68,300	5,948	3.43%		1.10x
Energy and Power	527,500	153,454	434,200	71%	333,006	309,275	642,282	208,081	12.99%		1.48x
Infrastructure	893,694	238,547	691,904	73%	225,358	693,081	918,439	226,535	10.93%		1.33x
Real Asset Debt	100,000	84,789	36,169	15%	45,101	0	45,101	8,932	10.27%		1.25x
Portfolio Total :	1,586,194	487,415	1,224,626	69%	619,795	1,054,327	1,674,122	449,496	11.47%	7.92%	1.37x

* Exposures are based on the market values of investments as of 6/30/23.

Real Assets Portfolio Performance Details – as of June 30, 2023

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	1,284	37,997	96%	44,217	11,045	55,262	17,265	10.39%	2.92%	1.45x
Vintage Year 2013 Total		33,000	1,284	37,997	96%	44,217	11,045	55,262	17,265	10.39%		1.45x
Vintage Year 2014												
Carlyle Power Partners II, L.P.	Energy and Power	40,000	5,828	47,428	85%	23,135	45,586	68,721	21,293	10.25%	9.54%	1.45x
EnCap Flatrock Midstream III	Energy and Power	20,000	728	23,724	96%	19,381	13,620	33,001	9,277	10.41%	9.54%	1.39x
Global Energy & Power Infrastructure Fund II	Energy and Power	35,000	1,044	38,939	97%	38,136	11,505	49,641	10,702	12.69%	9.54%	1.27x
Quantum Energy Partners VI, LP	Energy and Power	35,000	7,748	33,415	78%	34,872	39,539	74,411	40,996	23.30%	9.54%	2.23x
Pantheon SCERS SIRF MM, LLC	Infrastructure	100,000	25,768	78,532	74%	87,000	36,732	123,732	45,201	10.89%	8.81%	1.58x
Wastewater Opportunity Fund	Infrastructure	25,000	522	26,423	98%	21,967	8,578	30,545	4,122	4.03%	8.81%	1.16x
Vintage Year 2014 Total		255,000	41,638	248,461	84%	224,491	155,560	380,051	131,590	12.21%		1.53x
Vintage Year 2015												
ArcLight Energy Partners Fund VI	Energy and Power	40,000	5,604	42,665	86%	33,961	16,134	50,095	7,430	3.86%	9.53%	1.17x
EnCap Energy Capital Fund X, L.P.	Energy and Power	40,000	1,774	41,463	96%	48,570	28,948	77,518	36,055	15.47%	9.53%	1.87x
* 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	92,167	120,297	49%	127,632	45,082	172,714	52,417	10.08%		1.44x
Vintage Year 2016												
ACM Fund II, LLC	Agriculture	25,000	1,094	28,052	96%	4,581	14,148	18,730	-9,322	-10.55%	6.43%	0.67x
Brookfield Infrastructure Fund III, L.P.	Infrastructure	40,000	4,762	41,505	88%	20,568	42,318	62,886	21,381	11.96%	N/A	1.52x
IFM Global Infrastructure Fund	Infrastructure	125,053	0	125,053	100%	45,757	164,123	209,880	84,827	12.15%	N/A	1.68x
Vintage Year 2016 Total		190,053	5,856	194,610	97%	70,906	220,589	291,495	96,885	10.02%		1.50x
Vintage Year 2017												
Quantum Energy Partners VII, LP	Energy and Power	40,000	5,893	39,284	85%	24,125	39,240	63,366	24,082	17.61%	13.91%	1.61x
Meridiam Infrastructure North America Fund III	Infrastructure	50,000	17,691	32,309	65%	1	38,829	38,830	6,521	13.61%	8.35%	1.20x
Vintage Year 2017 Total		90,000	23,584	71,592	74%	24,126	78,069	102,196	30,603	16.70%		1.43x

¹ Benchmarks:

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, 2023 (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	9,531	34,300	76%	11,748	37,823	49,571	15,270	24.24%	6.35%	1.45x
EnCap Flatrock Midstream IV, L.P.	Energy and Power	22,500	4,810	18,344	79%	7,691	14,161	21,852	3,508	7.99%	9.93%	1.19x
Tailwater Energy Fund III, LP	Energy and Power	32,000	1,250	32,805	96%	16,013	21,056	37,069	4,264	3.43%	9.93%	1.13x
ISQ Global Infrastructure Fund II	Infrastructure	50,000	7,883	54,909	84%	23,127	52,554	75,680	20,772	13.35%	10.18%	1.38x
Vintage Year 2018 Total		144,500	23,475	140,358	84%	58,579	125,593	184,172	43,814	11.02%		1.31x
Vintage Year 2019												
Tailwater Energy Fund IV, LP	Energy and Power	35,000	14,574	26,100	58%	13,875	24,076	37,951	11,850	20.14%	18.74%	1.45x
Brookfield Infrastructure Fund IV	Infrastructure	40,000	4,188	38,583	90%	10,429	40,257	50,686	12,104	13.41%	6.17%	1.31x
EQT Infrastructure IV (No.2) USD SCSp	Infrastructure	35,000	6,273	33,577	82%	6,210	36,887	43,097	9,520	10.43%	6.17%	1.28x
Vintage Year 2019 Total		110,000	25,034	98,260	77%	30,515	101,220	131,735	33,474	13.90%		1.34x
Vintage Year 2020												
NGP Royalty Partners, L.P.	Energy and Power	40,000	1,150	38,802	97%	29,015	31,803	60,818	22,016	54.30%	20.38%	1.57x
Vintage Year 2020 Total		40,000	1,150	38,802	97%	29,015	31,803	60,818	22,016	54.30%		1.57x
Vintage Year 2021												
DigitalBridge Partners II, LP	Infrastructure	35,000	2,820	35,929	92%	3,853	35,242	39,095	3,166	7.30%	12.49%	1.09x
Harrison Street Social Infrastructure Fund, L.P.	Infrastructure	100,000	0	100,000	100%	3,431	109,292	112,724	12,724	8.86%	12.49%	1.13x
ISQ Global Infrastructure Fund III (UST), L.P.	Infrastructure	50,000	35,870	14,124	28%	0	14,818	14,818	695	N/M	N/M	1.05x
Meridiam Sustainable Infrastructure Europe IV	Infrastructure	43,641	37,144	6,589	15%	191	5,331	5,523	-1,066	N/M	N/M	0.84x
Vintage Year 2021 Total		228,641	75,834	156,641	67%	7,476	164,684	172,160	15,519	7.58%		1.10x
Vintage Year 2022												
NGP Royalty Partners II	Energy and Power	75,000	61,767	13,233	18%	14	12,562	12,576	-657	N/M	N/M	0.95x
Brookfield Super-Core Infrastructure Partners	Infrastructure	100,000	0	100,000	100%	2,824	104,734	107,557	7,557	N/M	N/M	1.08x
Ridgewood Water & Strategic Infrastructure Fund II	Infrastructure	50,000	45,626	4,374	9%	0	3,386	3,386	-988	N/M	N/M	0.77x
Vintage Year 2022 Total		225,000	107,393	117,607	52%	2,838	120,681	123,519	5,912	N/M		1.05x

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, 2023 (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
Vintage Year 2023												
Ara Fund III Feeder, LP	Energy and Power	40,000	40,000	0	0%	0	0	0	0	N/M	N/M	N/A
Meridiam Infrastructure North America Fund IV (Domestic), LP	Infrastructure	50,000	50,000	0	0%	0	0	0	0	N/M	N/M	N/A
Vintage Year 2023 Total		90,000	90,000	0	0%	0	0	0	0	N/M		N/A
Portfolio Total :		1,586,194	487,415	1,224,626	69%	619,795	1,054,327	1,674,122	449,496	11.47%	7.92%	1.37x

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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