



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 15

MEETING DATE: September 20, 2023

SUBJECT: Quarterly Investment Performance Report
Alternative Assets

SUBMITTED FOR: Consent Deliberation and Action Receive and File

RECOMMENDATION

Receive and file the performance report for the periods ending June 30, 2023 for the Absolute Return portfolio, and the periods ending March 31, 2023 for the Private Equity, Private Credit, Real Assets, and Opportunities portfolios, as presented by Cliffwater, LLC.

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 March 31, 2023.

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

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

SCERS ASSET CLASS	Quarter*	1-Year*	3-Year*	5-Year*	Since Inception *	Since Inception Date*
SCERS Absolute Return	1.1%	2.7%	6.9%	3.8%	4.1%	Sep-04
HFRI FoF Conservative	0.2%	2.8%	5.8%	3.8%	3.6%	
HFRI FoF Composite + 1%	1.7%	4.7%	6.0%	4.3%	4.3%	
SCERS Private Equity	0.9%	-5.4%	24.4%	20.4%	16.6%	Feb-08
Cambridge Private Equity/Venture Capital	2.1%	-4.5%	23.3%	16.2%	14.2%	
SCERS Private Credit	3.4%	6.9%	11.6%	8.6%	8.7%	Oct-11
Credit Suisse Leveraged Loan + 2%	3.6%	4.1%	10.4%	5.5%	6.6%	
SCERS Real Assets	1.1%	9.5%	17.0%	10.8%	11.8%	Jan-13
(60%) Cambridge Private Infrastructure; (30%) Cambridge Private Energy; (10%) NCREIF Farmland	1.4%	8.5%	15.9%	8.1%	8.0%	
<p>*Note: Periods ending 3/31/23 for Private Equity, Private Credit, and Real Assets Periods ending 6/30/23 for Absolute Return All returns are net IRR except Absoulte Return which is time-weighted</p>						

SCERS PORTFOLIO RESULTS

For the reporting quarter ended March 31, 2023:

- SCERS' Private Equity portfolio underperformed against its benchmark, 0.9% versus 2.1%. The underperformance was due to valuation declines within several of SCERS' venture capital strategies, reflecting the subdued public markets.
- SCERS' Private Credit portfolio slightly underperformed against its benchmark return, 3.4% versus 3.6%, but on a relative basis performed strongly compared to other asset classes.
- SCERS' Real Assets portfolio underperformed against its benchmark, 1.1% versus 1.4% due to SCERS' energy and power strategies being impacted by the volatility in oil and gas prices.

For the reporting quarter ended June 30, 2023, SCERS' Absolute Return portfolio outperformed the HFRI Fund of Funds Conservative Index return, +1.1% versus +0.2%, with the Diversifying Portfolio outperforming the index (+1.1% versus +0.2%), and the Growth-Oriented portfolio, which is being liquidated, underperforming (+0.4% versus +1.7%). The Diversifying Portfolio relative outperformance was due primarily to the Fund-of-Funds strategy (+2.2% versus +0.2%).

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:
 - Graham Global Investment Fund II (macro systematic): +7.0%
 - Grosvenor SC Absolute Return Fund (fund-of-funds): +2.2%
 - Private Equity portfolio:
 - Linden Capital Partners III (buyout): +21.3%
 - Summit Partners Venture Capital III-A (growth equity): +19.5%
 - Dyal III Pension Investors (buyout): +11.7%
 - Thoma Bravo XI (buyout): +11.1%
 - Dyal Capital Partners II (buyout): +8.7%
 - Private Credit portfolio:
 - Athyrium Opportunities Fund II (opportunistic lending): +11.2%
 - Athyrium Opportunities Fund III (opportunistic lending): +7.2%
 - Summit Partners Credit Fund II (direct lending): +6.3%
 - Summit Partners Credit Fund IV (direct lending): +5.2%
 - Real Assets portfolio:
 - Meridiam Sustainable Infrastructure Europe IV (infrastructure): +8.1%
 - EQT Infrastructure Fund IV (infrastructure): +3.5%
 - EnCap Energy Capital Fund IX (energy and power): +3.2%
 - Brookfield Infrastructure Fund III (infrastructure): +3.1%
 - Bottom performing funds:
 - Absolute Return portfolio:
 - PSquared US Feeder Fund (event driven): -2.4%
 - Laurion Capital (market neutral): -1.0%
 - BlackRock Event Driven Equity Fund (event driven): -0.6%
 - Private Equity portfolio:
 - HarbourVest Partners VIII (fund-of-funds): -49.7%
 - HarbourVest International Private Equity Partners VI (fund-of-funds): -38.7%
 - The large negative return for both HarbourVest funds are due to the secondary sale discount

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- TSG9 (buyout): -26.6% (j-curve effect)
 - Atalaya Special Opportunities Fund V (distressed debt): -18.6%
 - Threshold Ventures IV (venture capital): -13.5%

 - Private Credit portfolio:
 - Silver Point Specialty Credit Fund III (direct lending): -3.6%
 - MCP Private Credit Fund IV (direct lending): +0.2%
 - Brookfield Infrastructure Debt Fund III (direct lending): +0.3%

 - Real Assets portfolio:
 - NGP Royalty Partners II (energy and power): -9.1%
 - ArcLight Energy Partners Fund VI (energy and power): -7.4%
 - NGP Royalty Partners (energy and power): -4.3% (j-curve effect)
 - BlackRock Global Energy & Power Infrastructure Fund II (energy and power): -4.0%

NEW INVESTMENTS

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

- IFM U.S. Infrastructure Debt Fund (Real Assets – Infrastructure): \$35 million additional commitment
- Ara Partners Fund II (Real Assets – Other): \$40 million commitment

ATTACHMENTS

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

Prepared by:

/S/

JR Pearce
Senior 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
September 20, 2023

AGENDA ITEM:

Quarterly Investment Performance Report—Alternative Assets

THE BOARD OF RETIREMENT hereby approves Staff's recommendation to receive and file the performance report for the periods ending June 30, 2023 for the Absolute Return portfolio, and the periods ending March 31, 2023 for the Private Equity, Private Credit, Real Assets, and Opportunities portfolios, as presented by Cliffwater, LLC.

I HEREBY CERTIFY that the above order was passed and adopted on September 20, 2023 by the following vote of the Board of Retirement, to wit:

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

September 20, 2023

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

Diversifying Strategies

- The Diversifying Portfolio returned 1.11% in Q2 and 2.74% for the one-year period ending June 30, 2023
 - Outperformed the HFRI Conservative FoF Index benchmark by 87 bps in Q2 through trailed by 10 bps for the one-year period
 - Slightly above the T-bills + 2% long term objective by 4 bps (annualized) over the trailing 5-year period
- Graham Tactical Trend (+7.00%), Grosvenor (+2.18%), and MW Global Opps (+1.49%) led performance in Q2
 - PSquared (-2.38%), Laurion (-0.98%), and BlackRock Event (-0.62%) lagged during Q2
- MW Global Opps (+8.42%), LMR (+6.24%), and Aristeia (+5.45%) provided the best performance over the one-year period
 - Graham Tactical Trend (-2.91%) and PSquared (-1.97%) reported negative returns for the one-year period
 - Although SCERS fully redeemed from Eisler during the period, Eisler also had a negative impact on performance during the trailing one-year 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 \$8.7 million at June 30, 2023
- The Growth Oriented Portfolio returned 0.43% in Q2 and 0.63% for the one-year period ending June 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 3.36% compared to the ACWI standard deviation of 14.12% since December 2011 (24% ratio)
 - Portfolio equity beta of 0.11 with an equity correlation of 0.48
- The Growth Oriented portfolio has essentially been eliminated

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

Fund	Market Value	Actual %	Returns								Std Dev	Sharpe Ratio	Incep Date
			Jun	QTD	YTD	FYTD	1 Year	3 Year	5 Year	Incep			
Diversifying Portfolio													
Market Neutral													
Aristeia Partners, L.P.	51,080,974	6.3%	-0.08%	1.33%	3.97%	5.45%	5.45%	-	-	5.20%	4.43%	0.69	Jan-21
Laurion Capital, Ltd.	59,385,953	7.4%	-1.32%	-0.98%	2.62%	2.21%	2.21%	5.84%	8.77%	7.68%	9.79%	0.66	Mar-14
LMR Multi-Strategy Fund	54,442,545	6.7%	0.67%	0.28%	0.97%	6.24%	6.24%	11.97%	-	5.33%	14.33%	0.33	Nov-19
Market Neutral - HF Total	164,909,472	20.4%	-0.29%	0.14%	2.84%	3.54%	3.54%	7.86%	4.37%	5.32%	5.74%	0.68	Mar-14
Event Driven													
BlackRock Event Driven Equity Fund (BILPX)	53,783,339	6.7%	1.68%	-0.62%	0.10%	2.25%	2.25%	3.72%	-	3.47%	5.32%	0.35	Mar-20
Davidson Kempner Institutional Partners LP	59,618,427	7.4%	0.93%	0.94%	2.14%	4.40%	4.40%	6.00%	-	5.14%	4.79%	0.69	May-19
Elliott International Limited - Class A & B	80,258,236	9.9%	0.90%	0.90%	2.95%	3.08%	3.08%	9.51%	8.00%	7.95%	3.26%	1.94	Apr-12
PSquared US Feeder Fund LP	52,529,222	6.5%	2.17%	-2.38%	-3.63%	-1.97%	-1.97%	-	-	1.78%	5.27%	0.01	Aug-20
Event Driven - HF Total	246,189,224	30.5%	1.35%	-0.14%	0.66%	2.09%	2.09%	5.70%	5.07%	6.64%	3.29%	1.56	Apr-12
Equity Long/Short													
Marshall Wace Funds LP - MW Global Opportunities (US) Fund	57,417,106	7.1%	-1.37%	1.49%	4.14%	8.42%	8.42%	5.40%	-	5.95%	7.96%	0.54	Jan-19
Equity Long/Short - HF Total	57,417,106	7.1%	-1.37%	1.49%	4.14%	8.42%	8.42%	5.40%	5.95%	5.95%	7.96%	0.54	Apr-12
Macro-Discretionary													
Tudor BVI Global Fund LP	50,002,709	6.2%	0.42%	-0.18%	0.01%	-	-	-	-	0.01%	3.42%	-	Jan-23
Macro-Discretionary - HF Total	50,002,709	6.2%	0.42%	-0.18%	0.01%	-15.37%	-15.37%	-12.01%	-4.37%	-1.58%	4.98%	-0.53	May-12
Macro-Systematic													
Graham Global Investment Fund II SPC Ltd. - Tactical Trend	49,755,048	6.2%	3.35%	7.00%	0.03%	-2.91%	-2.91%	15.21%	8.83%	5.64%	13.48%	0.34	Feb-17
Macro-Systematic - HF Total	49,755,048	6.2%	3.35%	7.00%	0.03%	-2.91%	-2.91%	13.07%	6.17%	4.66%	11.78%	0.29	Jan-17
Multi-Strategy													
Sculptor Domestic Partners II, L.P.	1,223,787	0.2%	0.00%	0.00%	4.81%	5.26%	5.26%	3.03%	4.65%	6.39%	6.76%	0.77	Jan-12
Multi-Strategy - HF Total	1,223,787	0.2%	0.00%	0.00%	4.81%	5.26%	5.26%	3.03%	0.58%	3.70%	6.55%	0.40	May-13
Fund of Funds													
Grosvenor SC Absolute Return Fund LLC (Diversifying)	228,477,884	28.3%	1.16%	2.18%	3.00%	4.43%	4.43%	5.46%	4.03%	2.64%	3.57%	0.41	Dec-11
Fund of Funds - HF Total	228,477,884	28.3%	1.16%	2.18%	3.00%	4.43%	4.43%	5.40%	4.02%	2.53%	3.42%	0.40	Dec-11
Diversifying Portfolio Total	797,975,230	98.9%	0.81%	1.11%	2.30%	2.74%	2.74%	5.95%	3.59%	3.37%	3.36%	0.64	Dec-11
HFRI FOF: Conservative Index			0.07%	0.24%	1.16%	2.84%	2.84%	5.79%	3.76%	3.57%	3.31%	0.70	Dec-11
3 Month T-Bills+2%			0.61%	1.64%	3.23%	5.59%	5.59%	3.27%	3.55%	2.86%	0.35%	-	Dec-11

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

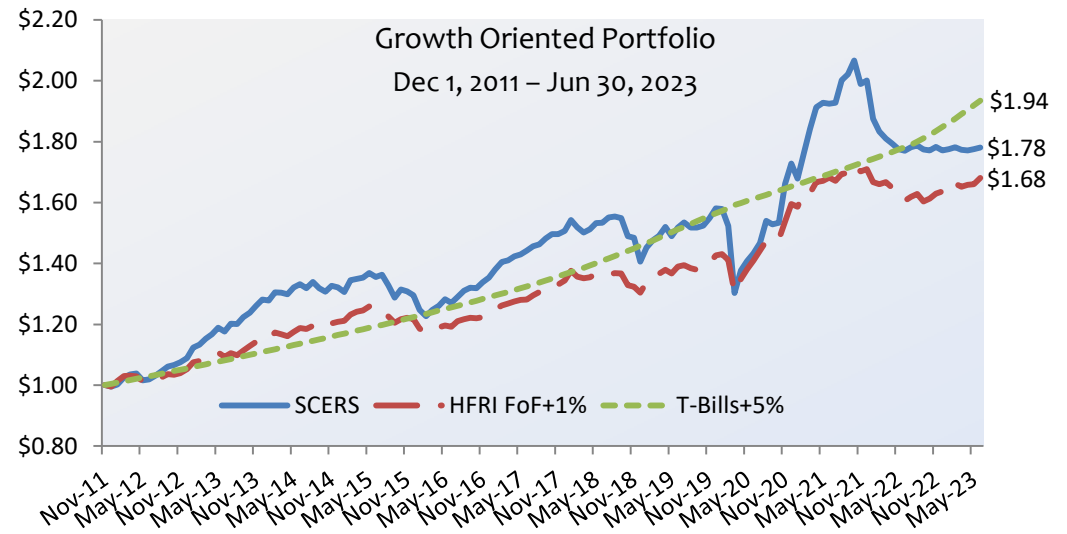
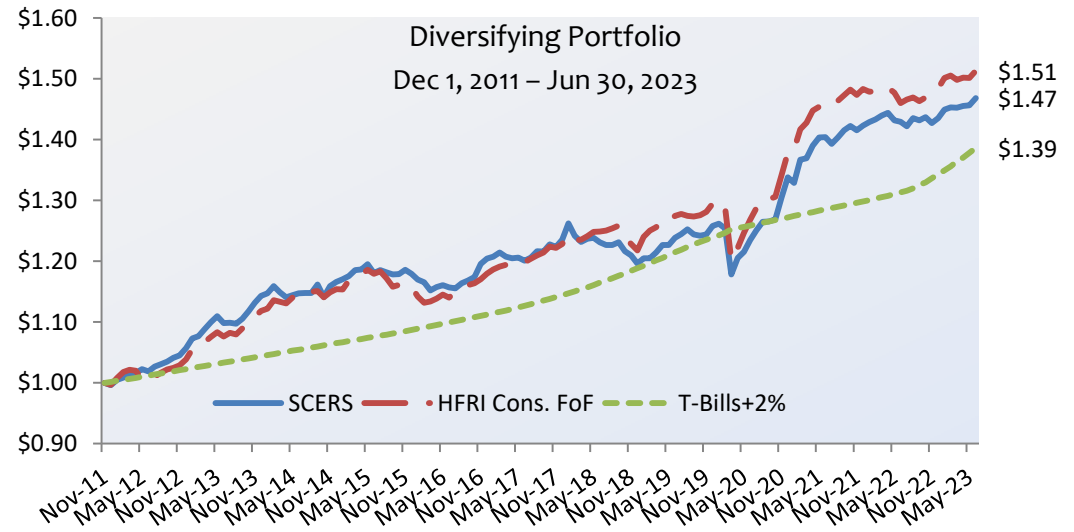
Fund	Market Value	Actual %	Returns								Std Dev	Sharpe Ratio	Incep Date
			Jun	QTD	YTD	FYTD	1 Year	3 Year	5 Year	Incep			
Growth-Oriented Portfolio													
Fund of Funds													
Grosvenor SC Absolute Return Fund LLC (Growth)	8,737,921	1.1%	0.29%	0.43%	0.54%	0.63%	0.63%	3.32%	1.50%	4.39%	6.38%	0.52	Dec-11
Fund of Funds - HF Total	8,737,921	1.1%	0.29%	0.43%	0.54%	0.63%	0.63%	3.32%	1.50%	3.94%	6.69%	0.35	Sep-04
Growth-Oriented Portfolio Total	8,737,921	1.1%	0.29%	0.43%	0.54%	0.63%	0.63%	7.44%	2.99%	4.49%	7.78%	0.38	Sep-04
HFRI FoF Composite + 1%			1.23%	1.73%	2.72%	4.67%	4.67%	6.04%	4.32%	4.26%	5.30%	0.49	Sep-04
3 Month T-Bills+5%			0.84%	2.35%	4.67%	8.59%	8.59%	6.28%	6.56%	6.38%	0.48%	-	Sep-04
Market Indices													
Libor3Month			0.44%	1.33%	2.56%	4.57%	4.57%	1.79%	1.88%	1.73%	0.50%	-	Sep-04
Bloomberg US Aggregate Bond Index			-0.36%	-0.84%	2.09%	-0.94%	-0.94%	-3.96%	0.77%	3.03%	3.89%	0.34	Sep-04
Bloomberg US High Yield Bond Index			1.67%	1.75%	5.38%	9.06%	9.06%	3.13%	3.35%	6.33%	9.29%	0.52	Sep-04
S&P 500 TR			6.61%	8.74%	16.89%	19.59%	19.59%	14.60%	12.31%	9.85%	15.05%	0.59	Sep-04
MSCI AC World Index Free - Net			5.81%	6.18%	13.93%	16.53%	16.53%	10.99%	8.10%	7.59%	15.84%	0.43	Sep-04
MSCI EAFE - Net			4.55%	2.95%	11.67%	18.77%	18.77%	8.93%	4.39%	5.53%	16.95%	0.30	Sep-04
MSCI EMF (Emerging Markets Free) - Net			3.80%	0.90%	4.89%	1.75%	1.75%	2.32%	0.93%	6.94%	21.06%	0.34	Sep-04

Absolute Return Portfolios Cumulative Performance – December 2011 to June 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 March 31, 2023

The Private Equity portfolio's net IRR since inception is 16.55%, versus the Cambridge Associates benchmark IRR of 14.18%

- The long-term Policy objective (Russell 3000 + 3%) has a 15.01% IRR over this period

The portfolio returned 0.9% in Q1 while public equity markets continued to rally during the quarter (ACWI +7.3%)

- Although many of the funds showed strong gains during the quarter, performance was generally held back by the portfolio's Venture Capital funds
 - Performance was also negatively impacted by 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
 - Linden III, Summit VC III, Dyal II & III, and Thoma Bravo XI reported the largest gains in Q1
- Distributions picked up during the quarter, driven by outsized distributions from Davidson Kempner Long-Term Distressed Opportunities IV and Cortec VII
 - \$64.9 million in distributions, excluding \$7.0 million in proceeds from the first tranche of the secondary sales
 - The Davidson Kempner and Cortec distributions totaled \$38.9 million in Q1

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 (75.0%), Summit VC IV (39.4%), AKKR IV (39.0%), Spectrum VII (38.6%), Waterland V (35.1%), Linden III (31.0%), and Marlin Heritage (30.8%) are leading performance among SCERS' more mature funds

The legacy fund of funds comprised only 3.3% of the Private Equity portfolio at March 31, 2023

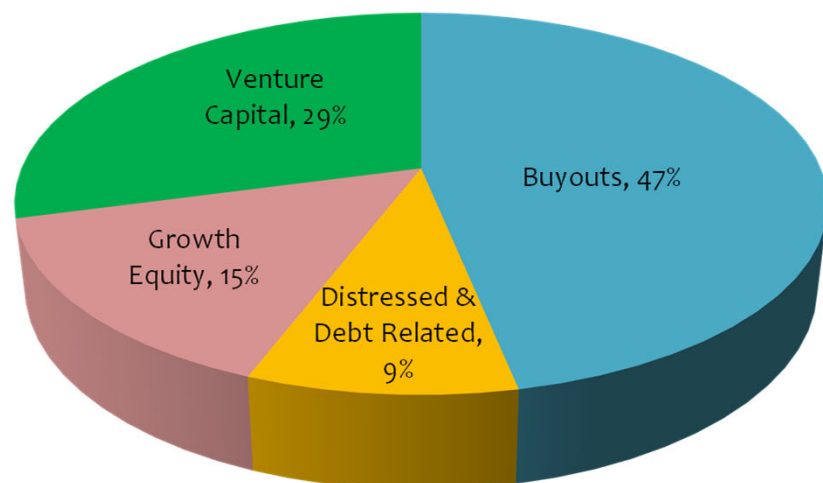
- The legacy fund of funds distributed \$3.1 million during the quarter, not including the \$7.0 million in proceeds received from the secondary sales

Changes during the quarter

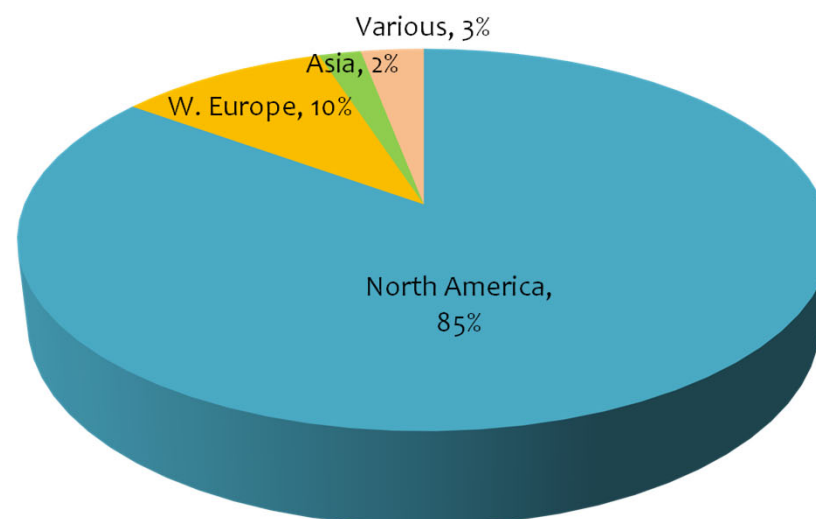
- SCERS committed \$95 million in total to three funds (one VC and two buyout funds) during Q1 (all re-ups)
 - SCERS also committed €30 million to a non-US buyout fund in Q2 2023
- \$31.1 million in new contributions, \$71.9 million in distributions
- Total portfolio gain increased by \$14.9 million while the total portfolio IRR decreased by 0.30%

Private Equity Portfolio Exposures as of March 31, 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	TVPI Bench.
Buyout	1,037,659	427,342	721,406	59%	631,397	663,742	1,295,138	573,732	21.67%		1.80x	
Distressed Debt	330,000	93,642	293,054	72%	248,036	131,845	379,881	86,827	8.80%		1.30x	
Fund of Funds	309,992	26,881	294,868	91%	377,373	133,956	511,330	216,462	11.70%		1.73x	
Growth Equity	304,005	103,365	241,283	66%	247,583	248,804	496,387	255,104	30.71%		2.06x	
Opportunistic Credit	50,000	37,521	16,117	25%	3,633	13,417	17,050	933	5.43%		1.06x	
Venture Capital	480,000	163,293	316,726	66%	151,674	435,552	587,226	270,500	16.65%		1.85x	
Portfolio Total :	2,511,655	852,044	1,883,454	66%	1,659,696	1,627,316	3,287,012	1,403,558	16.55%	14.18%	1.75x	

* Exposures are based on the market values of investments as of 3/31/23.

Private Equity Portfolio Performance Details – as of March 31, 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%	7.60%	1.78x	1.70x
* 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%	7.60%	1.35x	1.70x
HarbourVest Partners VIII - Venture Fund L.P.	Fund of Funds	7,500	150	7,350	98%	13,649	2,217	15,866	8,516	11.27%	7.60%	2.16x	1.70x
Vintage Year 2006 Total		50,000	150	48,525	100%	84,048	2,972	87,020	38,495	10.53%	7.30%	1.79x	1.51x
Vintage Year 2008													
* HarbourVest International Private Equity Partners VI-Partnership Fund L.P.	Fund of Funds	34,992	0	37,980	100%	55,859	6,283	62,142	24,162	9.31%	8.83%	1.64x	1.66x
Abbott Capital Private Equity Fund VI, L.P.	Fund of Funds	75,000	375	74,625	100%	117,144	26,799	143,943	69,318	12.86%	13.09%	1.93x	2.48x
Goldman Sachs Private Equity Partners X, L.P.	Fund of Funds	75,000	13,458	69,136	82%	105,060	18,146	123,206	54,070	11.30%	13.09%	1.78x	2.48x
Vintage Year 2008 Total		184,992	13,833	181,741	93%	278,063	51,228	329,291	147,549	11.57%	8.77%	1.81x	1.51x
Vintage Year 2011													
Waterland Private Equity Fund V C.V.	Buyout	17,387	2,850	16,235	84%	47,236	1,144	48,380	32,145	35.06%	10.94%	2.98x	1.62x
Khosla Ventures IV, L.P.	Venture Capital	10,000	190	9,810	98%	27,958	14,760	42,718	32,908	23.92%	16.18%	4.35x	2.64x
Vintage Year 2011 Total		27,387	3,040	26,045	89%	75,193	15,904	91,098	65,053	29.18%	12.23%	3.50x	1.86x
Vintage Year 2012													
Garrison Opportunity Fund III A LLC	Distressed Debt	20,000	0	20,000	100%	23,548	2,071	25,619	5,619	3.69%	15.59%	1.28x	1.67x
Summit Partners Venture Capital III-A, LP	Growth Equity	16,350	1,849	19,764	89%	38,234	3,667	41,901	22,137	17.63%	13.14%	2.12x	2.03x
New Enterprise Associates 14, L.P.	Venture Capital	25,000	875	24,125	97%	27,816	34,962	62,778	38,653	15.48%	15.73%	2.60x	2.37x
Vintage Year 2012 Total		61,350	2,724	63,889	96%	89,598	40,700	130,298	66,409	12.42%	12.31%	2.04x	1.81x
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%	16.88%	3.58x	2.01x
H.I.G. Capital Partners V, L.P.	Buyout	14,000	348	13,722	98%	21,195	10,347	31,542	17,820	23.43%	16.88%	2.30x	2.01x
Marlin Equity IV, L.P.	Buyout	20,000	0	20,081	100%	17,841	10,630	28,471	8,391	8.00%	16.88%	1.42x	2.01x
RRJ Capital Master Fund II, L.P.	Buyout	35,000	3,758	36,072	89%	43,961	5,205	49,166	13,094	8.68%	12.68%	1.36x	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 March 31, 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	676	31,847	6,972	7.71%	8.27%	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	3,933	32,895	8,296	7.57%	4.57%	1.34x	1.25x
Wayzata Opportunities Fund III, L.P.	Distressed Debt	30,000	26,129	14,718	13%	10,875	4,419	15,294	576	0.86%	8.27%	1.04x	1.37x
Trinity Ventures XI, L.P.	Venture Capital	25,000	375	24,625	99%	7,189	43,965	51,154	26,529	11.30%	16.87%	2.08x	2.51x
Vintage Year 2013 Total		194,000	37,438	174,201	81%	216,642	79,174	295,816	121,615	12.52%	13.38%	1.70x	1.78x
Vintage Year 2014													
Dyal Capital Partners II	Buyout	35,000	8,906	35,449	75%	15,697	37,615	53,312	17,864	10.06%	18.71%	1.50x	2.05x
H.I.G. Europe Capital Partners II, L.P.	Buyout	15,214	3,314	15,054	78%	11,627	10,277	21,904	6,850	11.17%	15.34%	1.46x	1.79x
Marlin Heritage Fund	Buyout	10,000	2,205	10,519	78%	20,295	4,076	24,371	13,853	30.84%	18.71%	2.32x	2.05x
Thoma Bravo XI	Buyout	30,000	3,203	32,591	89%	70,572	36,347	106,919	74,327	26.80%	18.71%	3.28x	2.05x
TPG Opportunities Partners III	Distressed Debt	40,000	11,270	50,647	72%	54,519	7,607	62,126	11,479	8.99%	8.48%	1.23x	1.43x
Spectrum Equity Investors VII, L.P.	Growth Equity	25,000	1,625	23,388	94%	58,473	37,849	96,322	72,934	38.59%	19.24%	4.12x	2.12x
Khosla Ventures V	Venture Capital	20,000	700	19,300	97%	25,133	38,960	64,093	44,793	23.37%	18.47%	3.32x	2.53x
Vintage Year 2014 Total		175,214	31,222	186,948	82%	256,317	172,730	429,048	242,100	22.84%	16.25%	2.30x	2.03x
Vintage Year 2015													
* WPEF VI Overflow Fund C.V.	Buyout	6,520	6,510	10	0%	0	0	0	-10	0.00%	15.94%	0.00x	1.77x
RRJ Capital Master Fund III, LP	Buyout	40,000	2,648	40,813	93%	36,562	9,980	46,542	5,729	6.62%	15.94%	1.14x	1.77x
WPEF VI Feeder, L.P.	Buyout	26,081	15,376	25,158	41%	30,972	21,928	52,900	27,742	23.91%	15.94%	2.10x	1.77x
Accel-KKR Growth Capital Partners II	Growth Equity	15,000	188	16,181	99%	25,500	11,000	36,500	20,319	30.10%	19.62%	2.26x	2.17x
Summit Partners Venture Capital Fund IV-A, L.P.	Growth Equity	35,000	11,650	40,850	67%	38,912	52,640	91,553	50,703	39.39%	19.62%	2.24x	2.17x
New Enterprise Associates 15, L.P.	Venture Capital	35,000	1,925	33,079	95%	29,640	31,515	61,156	28,076	12.61%	17.05%	1.85x	2.20x
Vintage Year 2015 Total		157,601	38,297	156,091	76%	161,586	127,064	288,650	132,559	20.49%	16.22%	1.85x	1.96x
Vintage Year 2016													
Accel-KKR Capital Partners V, L.P.	Buyout	25,000	0	25,271	100%	19,743	30,474	50,216	24,945	29.22%	22.05%	1.99x	1.97x
Dyal III Pension Investors LP	Buyout	35,000	21,644	22,899	38%	20,653	30,480	51,133	28,235	23.93%	22.05%	2.23x	1.97x
Linden Capital Partners III	Buyout	35,000	2,157	39,843	94%	64,427	38,326	102,752	62,909	30.97%	22.05%	2.58x	1.97x

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 March 31, 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	14,127	287	14,432	98%	16,130	21,283	37,413	22,981	29.17%	13.58%	2.59x	1.67x
Thoma Bravo Fund XII, L.P.	Buyout	30,000	7,381	40,884	75%	42,132	31,436	73,568	32,684	16.39%	22.05%	1.80x	1.97x
TSG7 A L.P.	Buyout	16,000	2,960	13,040	81%	12,339	19,111	31,449	18,410	20.78%	22.05%	2.41x	1.97x
TSG7 B L.P.	Buyout	4,000	98	4,076	98%	1,525	4,378	5,903	1,827	12.26%	22.05%	1.45x	1.97x
Atalaya Special Opportunities Fund VI, L.P.	Distressed Debt	25,000	2,454	28,940	90%	40,160	2,305	42,465	13,524	13.70%	8.72%	1.47x	1.31x
Trinity Ventures XII, L.P.	Venture Capital	30,000	4,275	25,725	86%	27,145	46,926	74,071	48,346	28.00%	20.66%	2.88x	2.11x
Vintage Year 2016 Total		214,127	41,256	215,111	81%	244,253	224,720	468,972	253,862	23.68%	16.15%	2.18x	1.83x
Vintage Year 2017													
Marlin Heritage II	Buyout	10,000	9	10,228	100%	2,117	13,654	15,771	5,543	13.68%	23.21%	1.54x	1.93x
Summit Partners Europe Growth Equity Fund II, SCSP	Growth Equity	32,601	11,149	37,708	66%	58,569	41,034	99,603	61,894	74.97%	13.06%	2.64x	1.44x
New Enterprise Associates 16, L.P.	Venture Capital	35,000	3,150	31,850	91%	4,566	38,156	42,722	10,872	8.40%	24.08%	1.34x	2.13x
Vintage Year 2017 Total		77,601	14,309	79,787	82%	65,252	92,844	158,096	78,309	29.61%	20.22%	1.98x	1.81x
Vintage Year 2018													
Linden Capital Partners IV LP	Buyout	44,330	3,923	44,725	91%	18,788	48,280	67,068	22,343	22.25%	21.38%	1.50x	1.61x
Marlin Equity V	Buyout	25,000	1,185	23,961	95%	8,524	31,412	39,935	15,974	23.47%	21.38%	1.67x	1.61x
TSG8 L.P.	Buyout	45,000	10,646	34,468	76%	319	34,342	34,661	193	0.30%	21.38%	1.01x	1.61x
Davidson Kempner Long-Term Distressed Opportunities Fund IV LP	Distressed Debt	35,000	2,400	33,198	93%	36,798	23,610	60,408	27,210	17.87%	14.38%	1.82x	1.41x
TSSP Opportunities Partners IV (A), L.P.	Distressed Debt	35,000	5,510	43,983	84%	20,493	31,393	51,886	7,903	11.52%	14.38%	1.18x	1.41x
RCP Fund XIII	Fund of Funds	50,000	10,897	41,603	78%	6,114	49,105	55,218	13,615	17.41%	21.53%	1.33x	1.49x
RCPDirect III	Fund of Funds	25,000	2,002	22,998	92%	9,149	30,652	39,801	16,802	24.22%	16.23%	1.73x	1.50x
Accel-KKR Growth Capital Partners III	Growth Equity	33,320	4,619	28,701	86%	5,394	30,003	35,397	6,696	10.73%	20.00%	1.23x	1.66x
Spectrum Equity VIII, L.P.	Growth Equity	25,000	2,500	22,500	90%	22,500	24,275	46,775	24,275	32.97%	20.00%	2.08x	1.66x
Khosla Ventures VI, L.P.	Venture Capital	35,000	1,750	33,250	95%	0	59,563	59,563	26,313	21.25%	21.80%	1.79x	1.82x
Vintage Year 2018 Total		352,650	45,432	329,387	87%	128,078	362,634	490,712	161,325	18.97%	19.43%	1.49x	1.61x
Vintage Year 2019													
Cortec Group Fund VII, L.P.	Buyout	30,000	3,766	33,500	87%	23,015	25,345	48,361	14,860	27.44%	20.83%	1.44x	1.47x

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 March 31, 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	2,909	30,034	90%	3,059	51,872	54,931	24,897	36.55%	20.83%	1.83x	1.47x
Thoma Bravo Fund XIII, LP	Buyout	45,000	3,743	54,899	92%	27,084	67,698	94,782	39,883	29.63%	20.83%	1.73x	1.47x
New Enterprise Associates 17, L.P.	Venture Capital	25,000	5,375	19,639	79%	2,227	20,490	22,717	3,079	7.71%	18.11%	1.16x	1.43x
Threshold Ventures III, L.P.	Venture Capital	20,000	3,420	16,580	83%	0	25,752	25,752	9,172	22.16%	18.11%	1.55x	1.43x
Vintage Year 2019 Total		150,000	19,212	154,652	87%	55,386	191,158	246,543	91,891	27.17%	18.40%	1.59x	1.41x
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%	17.36%	1.00x	1.26x
Wynnchurch Capital Partners V	Buyout	20,000	7,322	12,718	63%	135	15,795	15,930	3,212	19.88%	17.36%	1.25x	1.26x
Davidson Kempner Long-Term Distressed Opportunities Fund V LP	Distressed Debt	30,000	3,083	27,670	90%	756	31,155	31,912	4,242	8.64%	12.91%	1.15x	1.20x
Spectrum Equity IX-A, L.P.	Growth Equity	25,000	4,563	20,438	82%	0	18,286	18,286	-2,151	-8.99%	12.43%	0.89x	1.24x
Summit Partners Europe Growth Equity Fund III, SCSps	Growth Equity	21,734	8,430	13,545	61%	0	12,621	12,621	-925	-5.68%	3.58%	0.93x	1.06x
Summit Partners Venture Capital Fund V-A, L.P.	Growth Equity	20,000	9,274	10,726	54%	0	10,518	10,518	-208	N/M	N/M	0.98x	1.24x
Shamrock Capital Content Fund II, L.P.	Opportunistic Credit	20,000	7,834	15,805	61%	3,633	13,414	17,047	1,242	7.19%	11.90%	1.08x	1.20x
Canvas Ventures 3, L.P.	Venture Capital	20,000	7,976	12,024	60%	0	13,332	13,332	1,308	8.16%	12.80%	1.11x	1.20x
OrbiMed Private Investments VIII, LP	Venture Capital	15,000	7,313	7,688	51%	0	8,179	8,179	491	3.87%	12.80%	1.06x	1.20x
Vintage Year 2020 Total		201,734	68,438	137,969	66%	4,525	140,657	145,182	7,212	4.02%	13.61%	1.05x	1.22x
Vintage Year 2021													
Linden Capital Partners V LP	Buyout	30,000	22,502	7,498	25%	0	7,630	7,630	132	N/M	N/M	1.02x	1.09x
Shamrock Capital Growth Fund V, L.P.	Buyout	20,000	10,508	9,492	47%	3	8,450	8,453	-1,039	N/M	N/M	0.89x	1.09x
Strategic Value Special Situations Fund V, L.P.	Distressed Debt	30,000	15,000	15,023	50%	0	16,610	16,610	1,587	N/M	N/M	1.11x	1.13x
CRV Select Fund I, LP	Venture Capital	20,000	2,250	17,750	89%	0	17,020	17,020	-730	N/M	N/M	0.96x	0.98x
CRV XVIII, LP	Venture Capital	20,000	3,850	16,150	81%	0	17,558	17,558	1,408	5.50%	-1.43%	1.09x	0.98x
Khosla Ventures VII, L.P.	Venture Capital	20,000	7,000	13,000	65%	0	14,657	14,657	1,657	9.78%	-1.43%	1.13x	0.98x
Vintage Year 2021 Total		140,000	61,110	78,913	56%	3	81,926	81,929	3,015	3.07%	0.14%	1.04x	1.00x

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 March 31, 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	7,152	7,152	-288	N/M	N/M	0.96x	0.99x
Gridiron Capital Fund V, L.P.	Buyout	30,000	25,653	4,347	14%	0	3,626	3,626	-721	N/M	N/M	0.83x	0.99x
Marlin Heritage III, L.P.	Buyout	30,000	29,389	611	2%	0	268	268	-343	N/M	N/M	0.44x	0.99x
Oaktree Power Opportunities Fund VI	Buyout	30,000	22,978	7,122	23%	0	6,945	6,945	-178	N/M	N/M	0.98x	0.99x
Sixth Street Opportunities Partners V (A), L.P.	Distressed Debt	30,000	21,278	9,401	29%	753	8,068	8,821	-580	N/M	N/M	0.94x	N/A
Accel-KKR Growth Capital Partners IV	Growth Equity	30,000	22,517	7,483	25%	0	6,912	6,912	-571	N/M	N/M	0.92x	0.86x
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	29,687	313	1%	0	3	3	-309	N/M	N/M	0.01x	1.05x
CRV Select Fund II, LP	Venture Capital	22,500	17,213	5,288	24%	0	4,467	4,467	-820	N/M	N/M	0.84x	0.88x
CRV XIX, LP	Venture Capital	22,500	19,631	2,869	13%	0	2,275	2,275	-594	N/M	N/M	0.79x	0.88x
OrbiMed Private Investments IX, LP	Venture Capital	25,000	23,750	1,250	5%	0	800	800	-450	N/M	N/M	0.64x	0.88x
Threshold Ventures IV, L.P.	Venture Capital	25,000	22,275	2,725	11%	0	2,213	2,213	-512	N/M	N/M	0.81x	0.88x
Vintage Year 2022 Total		400,000	351,930	48,849	12%	753	42,729	43,482	-5,367	N/M	N/M	0.89x	0.90x
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	30,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
TSG9 L.P.	Buyout	30,000	28,653	1,347	4%	0	877	877	-470	N/M	N/M	0.65x	N/A
Khosla Ventures VIII	Venture Capital	30,000	30,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Vintage Year 2023 Total		125,000	123,653	1,347	1%	0	877	877	-470	N/M	N/M	0.65x	0.85x
Portfolio Total :		2,511,655	852,044	1,883,454	66%	1,659,696	1,627,316	3,287,012	1,403,558	16.55%	14.18%	1.75x	

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

Private Credit Portfolio – as of March 31, 2023

The Private Credit portfolio's net IRR since inception is 8.65%, versus the benchmark return of 6.57%

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

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

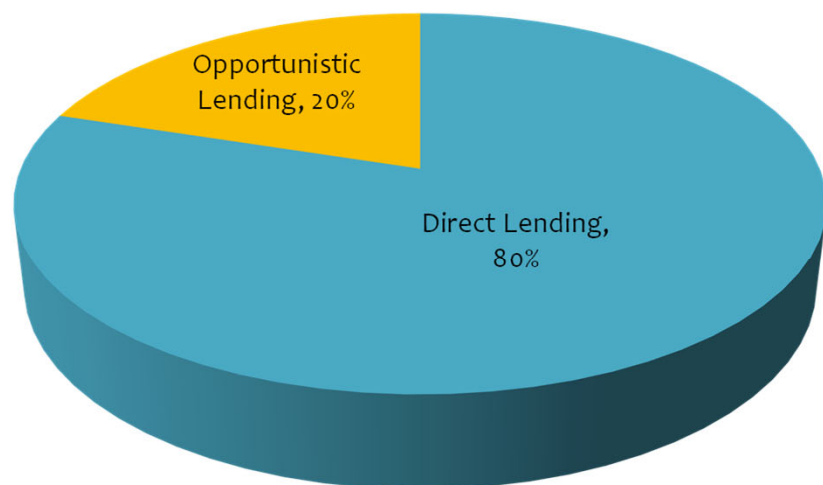
- The portfolio returned 3.4% in Q1 and 6.9% for the trailing 1-year period ending March 31, 2023
 - Most of the funds generated returns between 2% to 6% for the quarter
 - The Athyrium funds bounced back strongly and led performance with gains of 11.2% (Athyrium II) and 7.2% (Athyrium III) in Q1
- Longer term performance remains steady despite modest sell-offs in Q1 2020 and during the first half of 2022
 - 11.6% net IRR for the 3-year period and 8.6% net IRR for the 5-year period

Changes during the quarter

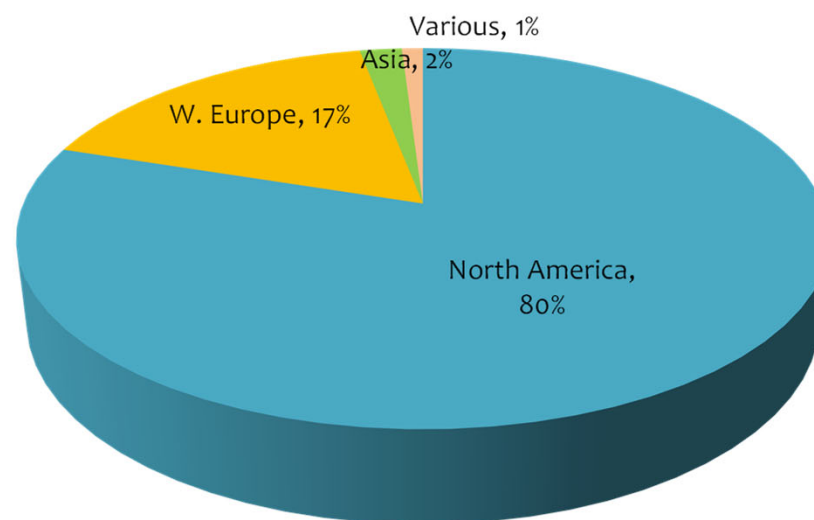
- SCERS made no new commitments to Private Credit funds in Q1
 - SCERS increased its commitment to the IFM infrastructure debt fund by \$35 million in Q2 2023
- \$26.6 million in new contributions, \$16.0 million in distributions
- Total portfolio gain increased by \$13.0 million while the total portfolio IRR increased by 0.34%

Private Credit Portfolio Exposures as of March 31, 2023

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	564,340	194,703	455,627	65%	219,048	325,350	544,399	88,772	8.58%		1.19x	
Opportunistic Lending	192,000	85,105	145,385	56%	88,584	81,807	170,391	25,007	8.95%		1.17x	
Portfolio Total :	756,340	279,808	601,012	63%	307,632	407,158	714,790	113,778	8.65%	6.57%	1.19x	

* Exposures are based on the market values of investments as of 3/31/23.

Private Credit Portfolio Details – as of March 31, 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	328	26,914	6,217	8.91%	N/A	1.30x	N/A
Vintage Year 2011 Total		20,000	2,125	20,697	89%	26,586	328	26,914	6,217	8.91%	12.23%	1.30x	1.86x
Vintage Year 2014													
Summit Partners Credit Fund II, L.P.	Direct Lending	35,000	2,922	49,175	92%	47,178	11,796	58,974	9,799	6.45%	3.73%	1.20x	N/A
Vintage Year 2014 Total		35,000	2,922	49,175	92%	47,178	11,796	58,974	9,799	6.45%	16.25%	1.20x	2.03x
Vintage Year 2015													
Athyrium Opportunities Fund II	Opportunistic Lending	32,000	2,231	43,339	93%	43,359	9,892	53,250	9,911	8.67%	9.77%	1.23x	1.49x
Vintage Year 2015 Total		32,000	2,231	43,339	93%	43,359	9,892	53,250	9,911	8.67%	16.22%	1.23x	1.96x
Vintage Year 2017													
Athyrium Opportunities Fund III	Opportunistic Lending	25,000	5,456	28,987	78%	19,254	11,086	30,340	1,353	2.00%	11.62%	1.05x	1.37x
Vintage Year 2017 Total		25,000	5,456	28,987	78%	19,254	11,086	30,340	1,353	2.00%	20.22%	1.05x	1.81x
Vintage Year 2018													
Benefit Street Partners Senior Secured Opportunities Fund L.P.	Direct Lending	50,000	17,124	50,953	66%	34,248	28,241	62,488	11,536	5.82%	3.74%	1.23x	N/A
Summit Partners Credit Fund III, L.P.	Direct Lending	50,000	29,900	59,287	40%	57,895	17,070	74,965	15,678	15.39%	3.74%	1.26x	N/A
TCP Direct Lending Fund VIII-S, LLC	Direct Lending	125,000	9,071	115,929	93%	32,745	109,369	142,114	26,185	7.78%	3.74%	1.23x	N/A
Vintage Year 2018 Total		225,000	56,096	226,169	75%	124,888	154,679	279,568	53,399	8.34%	19.43%	1.24x	1.61x
Vintage Year 2019													
BSP Levered US SOF II (Senior Secured Opportunities) Fund L.P.	Direct Lending	50,000	18,340	33,088	63%	5,785	33,311	39,095	6,007	11.36%	4.53%	1.18x	N/A
OrbiMed Royalty & Credit Opportunities II I, LP	Opportunistic Lending	35,000	20,163	30,093	42%	18,631	18,474	37,105	7,012	22.35%	14.51%	1.23x	1.27x
Vintage Year 2019 Total		85,000	38,503	63,181	55%	24,415	51,785	76,200	13,019	15.57%	18.40%	1.21x	1.41x
Vintage Year 2020													
MCP Private Capital Fund IV (Feeder) SC	Direct Lending	34,340	13,915	20,858	59%	246	23,698	23,944	3,086	10.17%	3.30%	1.15x	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 March 31, 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%	6,981	31,643	38,624	6,299	11.88%	11.90%	1.19x	1.20x
Vintage Year 2020 Total		74,340	21,451	53,182	71%	7,227	55,341	62,568	9,385	11.26%	13.61%	1.18x	1.22x
Vintage Year 2021													
Ares Capital Europe V	Direct Lending	40,000	9,954	30,046	75%	1,668	32,069	33,737	3,691	N/M	N/M	1.12x	N/A
IFM USIDF (Offshore) B Feeder	Direct Lending	40,000	0	46,921	100%	12,402	39,572	51,974	5,054	N/M	N/M	1.11x	N/A
Summit Partners Credit Fund IV, L.P.	Direct Lending	40,000	25,749	14,251	36%	0	15,798	15,798	1,547	N/M	N/M	1.11x	N/A
Shamrock Capital Debt Opportunities Fund I, L.P.	Opportunistic Lending	20,000	15,718	4,641	21%	359	4,331	4,690	49	N/M	N/M	1.01x	1.11x
Vintage Year 2021 Total		140,000	51,422	95,858	63%	14,430	91,770	106,199	10,341	N/M	N/M	1.11x	1.00x
Vintage Year 2022													
OrbiMed Royalty & Credit Opportunities I V, LP	Opportunistic Lending	40,000	34,000	6,000	15%	0	6,383	6,383	383	N/M	N/M	1.06x	1.05x
Vintage Year 2022 Total		40,000	34,000	6,000	15%	0	6,383	6,383	383	N/M	N/M	1.06x	0.90x
Vintage Year 2023													
Brookfield Infrastructure Debt Fund III	Direct Lending	40,000	27,578	12,447	31%	295	12,195	12,490	43	N/M	N/M	1.00x	N/A
Silver Point Specialty Credit Fund III, L.P.	Direct Lending	40,000	38,024	1,976	5%	0	1,904	1,904	-71	N/M	N/M	0.96x	N/A
Vintage Year 2023 Total		80,000	65,602	14,423	18%	295	14,099	14,395	-29	N/M	N/M	1.00x	0.85x
Portfolio Total :		756,340	279,808	601,012	63%	307,632	407,158	714,790	113,778	8.65%	6.57%	1.19x	

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 March 31, 2023

The Real Assets portfolio's net IRR since inception is 11.78%, versus the blended benchmark return of 7.97%

- 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 11.1% for Infrastructure and 13.4% 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 1.1% net return in Q1

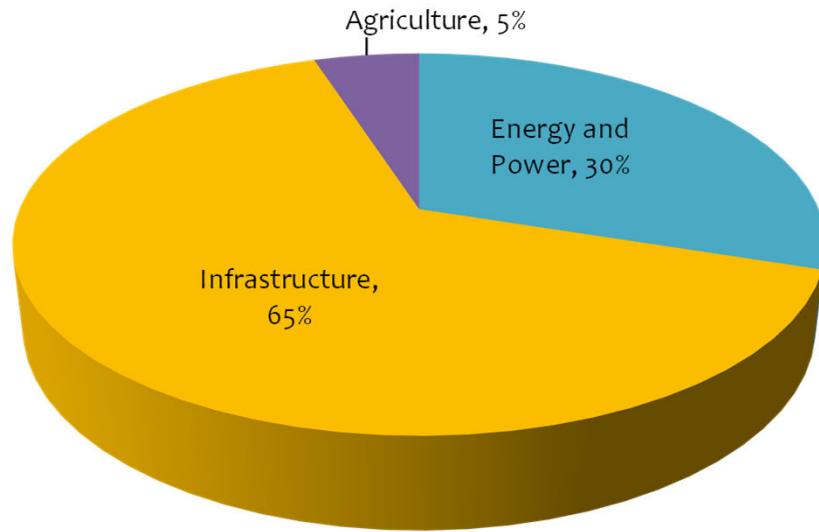
- The portfolio's Infrastructure funds generally led performance during the quarter
 - Most of the Infrastructure funds reported returns between 1% and 4% in Q1
- The Energy and Power funds generally declined during the quarter as oil prices and broader energy markets weakened
 - Most funds reported modest declines of 1% to 2% in Q1

Changes during the quarter

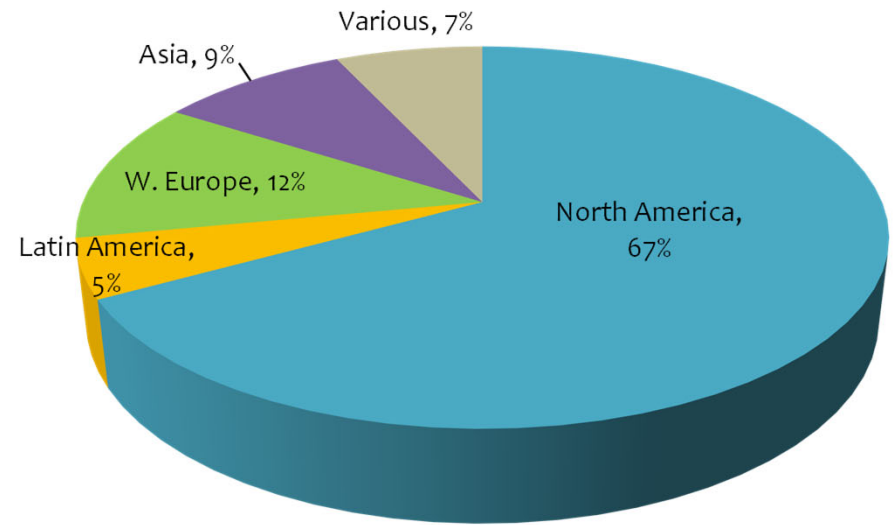
- SCERS made no new commitments to Real Assets funds in Q1
 - SCERS committed \$90 million in total to two funds (Infrastructure and Energy and Power funds), and increased its commitment to NGP Royalty Partners II (Energy and Power) by \$25 million, in Q2 2023
- \$46.6 million in new contributions, \$28.0 million in distributions
- Portfolio IRR decreased by 0.37% while the total portfolio gain increased by \$11.9 million

Real Assets Portfolio Exposures as of March 31, 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	11,667	61,311	82%	9,145	58,028	67,173	5,862	3.64%		1.10x
Energy and Power	462,500	107,802	414,163	77%	303,529	318,289	621,818	207,655	13.41%		1.50x
Infrastructure	843,521	198,539	678,698	76%	213,057	678,983	892,039	213,341	11.13%		1.31x
Real Asset Debt	100,000	84,789	36,169	15%	45,101	0	45,101	8,932	10.27%		1.25x
Portfolio Total :	1,471,021	402,796	1,190,341	73%	570,832	1,055,299	1,626,131	435,790	11.78%	7.97%	1.37x

* Exposures are based on the market values of investments as of 3/31/23.

Real Assets Portfolio Performance Details – as of March 31, 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%	40,337	14,644	54,981	16,983	10.42%	2.71%	1.45x
Vintage Year 2013 Total		33,000	1,284	37,997	96%	40,337	14,644	54,981	16,983	10.42%		1.45x
Vintage Year 2014												
Carlyle Power Partners II, L.P.	Energy and Power	40,000	6,919	46,337	83%	21,057	46,072	67,129	20,792	10.49%	9.96%	1.45x
EnCap Flatrock Midstream III	Energy and Power	20,000	728	23,724	96%	16,978	16,009	32,987	9,263	10.72%	9.96%	1.39x
Global Energy & Power Infrastructure Fund II	Energy and Power	35,000	1,044	38,859	97%	38,107	11,744	49,852	10,993	13.21%	9.96%	1.28x
Quantum Energy Partners VI, LP	Energy and Power	35,000	7,748	33,415	78%	34,151	41,836	75,986	42,572	24.48%	9.96%	2.27x
Pantheon SCERS SIRF MM, LLC	Infrastructure	100,000	26,268	78,032	74%	87,000	35,749	122,749	44,717	10.96%	10.89%	1.57x
Wastewater Opportunity Fund	Infrastructure	25,000	522	26,423	98%	21,538	8,961	30,499	4,076	4.07%	10.89%	1.15x
Vintage Year 2014 Total		255,000	43,229	246,789	83%	218,830	160,372	379,202	132,413	12.57%		1.54x
Vintage Year 2015												
ArcLight Energy Partners Fund VI	Energy and Power	40,000	5,604	42,665	86%	33,961	16,396	50,358	7,692	4.05%	9.65%	1.18x
EnCap Energy Capital Fund X, L.P.	Energy and Power	40,000	1,707	41,105	96%	37,070	38,591	75,661	34,556	15.38%	9.65%	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	92,099	119,939	49%	116,132	54,988	171,119	51,180	10.07%		1.43x
Vintage Year 2016												
ACM Fund II, LLC	Agriculture	25,000	1,094	28,052	96%	4,581	14,325	18,906	-9,146	-10.88%	6.54%	0.67x
Brookfield Infrastructure Fund III, L.P.	Infrastructure	40,000	4,762	40,800	88%	18,048	42,576	60,625	19,825	11.81%	11.73%	1.49x
IFM Global Infrastructure Fund	Infrastructure	125,053	0	125,053	100%	45,757	160,722	206,478	81,425	12.29%	11.73%	1.65x
Vintage Year 2016 Total		190,053	5,856	193,905	97%	68,386	217,623	286,009	92,104	10.06%		1.47x
Vintage Year 2017												
Quantum Energy Partners VII, LP	Energy and Power	40,000	7,106	37,952	82%	23,381	39,259	62,639	24,687	18.85%	14.69%	1.65x
Meridiam Infrastructure North America Fund III	Infrastructure	50,000	19,013	30,987	62%	1	37,823	37,823	6,836	17.04%	8.58%	1.22x
Vintage Year 2017 Total		90,000	26,118	68,940	71%	23,382	77,081	100,463	31,523	18.48%		1.46x

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 March 31, 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	10,573	33,259	74%	4,564	43,703	48,267	15,008	26.95%	6.50%	1.45x
EnCap Flatrock Midstream IV, L.P.	Energy and Power	22,500	4,804	18,286	79%	5,859	15,677	21,536	3,250	8.04%	10.92%	1.18x
Tailwater Energy Fund III, LP	Energy and Power	32,000	1,250	32,805	96%	11,880	26,134	38,014	5,209	4.33%	10.92%	1.16x
ISQ Global Infrastructure Fund II	Infrastructure	50,000	8,511	52,466	83%	18,438	53,793	72,231	19,765	13.73%	10.06%	1.38x
Vintage Year 2018 Total		144,500	25,138	136,816	83%	40,741	139,306	180,047	43,231	11.67%		1.32x
Vintage Year 2019												
Tailwater Energy Fund IV, LP	Energy and Power	35,000	14,600	26,074	58%	13,848	23,882	37,731	11,657	21.53%	20.86%	1.45x
Brookfield Infrastructure Fund IV	Infrastructure	40,000	4,119	38,169	90%	7,771	40,667	48,438	10,269	12.83%	8.73%	1.27x
EQT Infrastructure IV (No.2) USD SCSp	Infrastructure	35,000	6,722	33,128	81%	6,210	36,114	42,325	9,197	11.05%	8.73%	1.28x
Vintage Year 2019 Total		110,000	25,441	97,371	77%	27,830	100,664	128,494	31,123	14.29%		1.32x
Vintage Year 2020												
NGP Royalty Partners, L.P.	Energy and Power	40,000	6,853	33,099	83%	26,900	26,477	53,377	20,278	57.28%	19.80%	1.61x
Vintage Year 2020 Total		40,000	6,853	33,099	83%	26,900	26,477	53,377	20,278	57.28%		1.61x
Vintage Year 2021												
DigitalBridge Partners II, LP	Infrastructure	35,000	4,104	34,581	88%	3,789	33,298	37,088	2,507	N/M	N/M	1.07x
Harrison Street Social Infrastructure Fund, L.P.	Infrastructure	100,000	0	100,000	100%	2,530	108,879	111,409	11,409	N/M	N/M	1.11x
ISQ Global Infrastructure Fund III (UST), L.P.	Infrastructure	50,000	38,548	11,446	23%	0	11,936	11,936	490	N/M	N/M	1.04x
Meridiam Sustainable Infrastructure Europe IV	Infrastructure	43,468	36,997	6,589	15%	0	5,640	5,640	-949	N/M	N/M	0.86x
Vintage Year 2021 Total		228,468	79,649	152,615	65%	6,320	159,753	166,072	13,457	N/M		1.09x
Vintage Year 2022												
NGP Royalty Partners II	Energy and Power	50,000	48,155	1,845	4%	0	1,567	1,567	-278	N/M	N/M	0.85x
Brookfield Super-Core Infrastructure Partners	Infrastructure	100,000	0	100,000	100%	1,975	102,892	104,866	4,866	N/M	N/M	1.05x
Ridgewood Water & Strategic Infrastructure Fund II	Infrastructure	50,000	48,975	1,025	2%	0	-67	-67	-1,092	N/M	N/M	-0.06x
Vintage Year 2022 Total		200,000	97,130	102,870	51%	1,975	104,392	106,367	3,497	N/M		1.03x
Portfolio Total :		1,471,021	402,796	1,190,341	73%	570,832	1,055,299	1,626,131	435,790	11.78%	7.97%	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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