



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 13

MEETING DATE: March 15, 2023

SUBJECT: Quarterly Investment Performance Report—
Alternative Assets

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

RECOMMENDATION

Receive and file the Quarterly Investment Performance Review presentation for the periods ending December 31, 2022 for the Absolute Return portfolio, and the periods ending September 30, 2022 for the Private Equity, Private Credit, and Real Assets portfolios, 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 are shown in the table below, and provided within Cliffwater's reports, are lagged a quarter and reflect valuations as of September 30, 2022.

SCERS' alternative asset class returns are as follows:

SCERS ALTERNATIVE ASSETS PERFORMANCE SUMMARY
Quarter Reporting Periods Ending December 31, 2022

SCERS ASSET CLASS	Quarter*	1-Year*	3-Year*	5-Year*	Since Inception *	Since Inception Date*
SCERS Absolute Return	0.2%	-0.4%	4.8%	3.4%	4.1%	Sep-04
HFRI FoF Conservative	2.5%	1.1%	5.0%	4.1%	3.7%	
HFRI FoF Composite + 1%	2.7%	-3.7%	4.9%	4.2%	4.3%	
SCERS Private Equity	-1.9%	-3.8%	22.7%	22.5%	17.3%	Feb-08
Cambridge Private Equity/Venture Capital	-1.8%	1.9%	18.7%	17.6%	14.5%	
SCERS Private Credit	1.4%	4.2%	8.4%	8.1%	8.3%	Oct-11
Credit Suisse Leveraged Loan + 2%	1.7%	-0.6%	4.1%	5.0%	6.3%	
SCERS Real Assets	1.9%	19.6%	11.9%	11.8%	12.3%	Jan-13
(60%) Cambridge Private Infrastructure; (30%) Cambridge Private Energy; (10%) NCREIF Farmland	1.2%	16.2%	10.5%	8.2%	7.9%	
<p>*Note: Periods ending 9/30/22 for Private Equity, Private Credit, and Real Assets Periods ending 12/31/22 for Absolute Return All returns are time-weighted, except Private Equity which is net IRR</p>						

SCERS PORTFOLIO RESULTS

For the reporting quarter ended September 30, 2022:

- SCERS' Private Equity portfolio slightly underperformed against its benchmark, -1.9% versus -1.8%. The relative underperformance was broad based but primarily in SCERS' venture capital strategies, as growth stocks continue to be out of favor.
- SCERS' Private Credit portfolio underperformed against its benchmark return, 1.4% versus 1.7%, as a number of SCERS' direct lending strategies took mark-to-market downgrades with the rising interest rates and public market volatility.
- SCERS' Real Assets portfolio meaningfully outperformed against its benchmark, 1.9% versus 1.2%. SCERS' energy and power strategies continue to benefit from the heightened energy prices during the quarter, with robust returns among the top 5 performers ranging from 8.1%-15.0%.

For the reporting quarter ended December 31, 2022, SCERS' Absolute Return portfolio significantly underperformed the HFRI Fund of Funds Conservative Index return, +0.2% versus +2.5%, with the Diversifying Portfolio underperforming the index (+0.2% versus +2.5%), and the Growth-Oriented portfolio, which is being liquidated, underperforming (+0.5% versus +2.7%). The Diversifying underperformance was impacted by the global currency and interest rate changes in the Macro-Discretionary and Marco-Systematic strategies and the overall weakness in the Event Driven strategies.

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

- Top performing funds:
 - Absolute Return:
 - LMR Multi-Strategy Fund (market neutral): +4.0%
 - Private Equity portfolio:
 - Wayzata Opportunities Fund III (distressed debt): +18.1%
 - Summit Partners Europe Growth Equity Fund II (distressed debt): +14.4%
 - Garrison Opportunity Fund III A (distressed debt): +12.6%
 - Atalaya Special Opportunities Fund V (distressed debt): +10.5%
 - Private Credit portfolio:
 - MCP Private Capital Fund IV (Feeder) (opportunistic lending): +4.9%
 - OrbiMed Royalty & Credit Opportunities III (opportunistic lending): +3.7%
 - Silver Point Specialty Credit Fund II (opportunistic lending): +3.3%
 - Summit Partners Credit Fund IV (direct lending): +3.3%
 - Real Assets portfolio:
 - ArcLight Energy Partners Fund VI (energy and power): +15.0%
 - Carlyle Power Partners II (energy and power): +14.7%
 - EnCap Flatrock Midstream III (energy and power): +12.8%
 - NGP Royalty Partners (energy and power): +12.2%
 - Tailwater Energy Fund IV (energy and power): +8.1%

- Bottom performing funds:
 - Absolute Return portfolio:
 - Eisler Capital Fund (macro discretionary): -11.4%
 - Graham Global Investment Fund II (macro systematic): -5.0%
 - PSquared US Feeder Fund (event driven): -1.2%
 - Private Equity portfolio:
 - Trinity Ventures XII (venture capital): -25.1%
 - Trinity Ventures XI (venture capital): -20.7%
 - Marlin Equity IV (buyout): -11.1%
 - RRJ Capital Master Fund II (buyout): -10.9%

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- Private Credit portfolio:
 - Athyrium Opportunities Fund III (opportunistic): -3.5%
 - Athyrium Opportunities Fund II (opportunistic): -1.2%
 - Summit Partners Credit Fund II (direct lending): -1.0%
 - Real Assets portfolio:
 - Meridiam Infrastructure North America Fund III (infrastructure): -5.2%
 - Meridiam Sustainable Infrastructure Europe IV (infrastructure): -5.2%
 - EQT Infrastructure IV (infrastructure): -4.2%
 - EnCap Energy Capital Fund X (energy and power): -3.2%

NEW INVESTMENTS

During the quarter ended December 31, 2022, SCERS made the following new investments:

- Brookfield Infrastructure Debt Fund III (Private Credit – Direct Lending): \$40 million
- Silver Point Specialty Credit Fund III, LP (Private Credit – Opportunistic): \$40 million
- Tudor BVI Global Fund Ltd (Absolute Return – Diversifying): \$50 million
- Khosla Ventures VIII (Private Equity – Venture Capital): \$30 million

After the quarter, SCERS made the following new investments:

- Accel-KKR Capital Partners VII (Private Equity – Buyout): \$30 million

ATTACHMENTS

- Board Order
- Quarterly Performance Review for Alternative Assets for the Quarter ended December 31, 2022.

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
March 15, 2023

AGENDA ITEM:

Quarterly Investment Performance Report—Alternative Assets

THE BOARD OF RETIREMENT hereby approves Staff's recommendation to receive and file the Quarterly Investment Performance Review presentation for the periods ending December 31, 2022 for the Absolute Return portfolio, and the periods ending September 30, 2022 for the Private Equity, Private Credit, and Real Assets portfolios, as presented by Cliffwater.

I HEREBY CERTIFY that the above order was passed and adopted on March 15, 2023 by the following vote of the Board of Retirement, to wit:

AYES:

NOES:

ABSENT:

ABSTAIN:

ALTERNATES:
(Present but not voting)

Keith DeVore
Board President

Eric Stern
Chief Executive Officer and
Board Secretary



INVESTMENT ADVISORY SERVICES

Los Angeles • New York

Sacramento County Employees' Retirement System Quarterly Performance Review

March 15, 2023

Absolute Return Portfolio Performance Summary – as of December 31, 2022

Diversifying Strategies

- The Diversifying Portfolio returned 0.21% in Q4 and 0.81% for the one-year period ending December 31, 2022
 - Trailed the HFRI Conservative FoF Index benchmark by 226 bps in Q4 and 30 bps for the one-year period
 - Underperformed the T-bills + 2% long term objective by 22 bps (annualized) over the trailing 5-year period
- Eisler (-11.45%) and Graham Tactical Trend (-4.99%) were the biggest detractors in Q4
 - LMR (+4.05%), Grosvenor (+1.89%), Davidson Kempner (+1.78%), and BlackRock Event (+1.68%) performed the best in Q4
- Eisler (-19.27%), Sculptor (-11.60%), and Laurion (-7.24%) suffered the largest declines over the one-year period
 - Graham Tactical Trend (+33.31%), LMR (+8.48%), and MW Global Opps (+5.32%) led performance for the one-year period

Growth Oriented Strategies

- The Growth Oriented Portfolio returned 0.52% in Q4 and -11.04% for the one-year period ending December 31, 2022
 - Trailed the HFRI FoF Index + 1% benchmark by 220 bps in Q4 and 739 bps for the one-year period
- The portfolio was significantly downsized in Q1 '22 following the 2021 decision to eliminate the Growth Oriented Portfolio
 - The only investments in the portfolio are the remaining holdings of the Grosvenor Growth portfolio
 - Grosvenor Growth will continue to wind-down as that portfolio's liquidity allows
 - The portfolio market value totaled \$8.7 million at December 31, 2022

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 3.42% compared to the ACWI standard deviation of 14.16% since December 2011 (24% ratio)
 - Portfolio equity beta of 0.12 with an equity correlation of 0.48
- The Growth Oriented portfolio is being eliminated in connection with the 2021 asset liability study

Diversifying Absolute Return Portfolio Performance – as of December 31, 2022

Fund	Market Value	Actual %	Returns								Std Dev	Sharpe Ratio	Incep Date
			Dec	QTD	YTD	FYTD	1 Year	3 Year	5 Year	Incep			
Diversifying Portfolio													
Market Neutral													
Aristeia Partners, L.P.	49,121,218	5.6%	0.26%	-0.82%	0.90%	1.40%	0.90%	-	-	4.48%	4.91%	0.63	Jan-21
Laurion Capital, Ltd.	57,825,833	6.6%	-0.58%	0.70%	-7.24%	-0.48%	-7.24%	12.50%	9.59%	7.80%	9.92%	0.69	Mar-14
LMR Multi-Strategy Fund	53,936,780	6.2%	2.06%	4.05%	8.48%	5.26%	8.48%	5.53%	-	5.89%	15.42%	0.38	Nov-19
Two Sigma Risk Premia Enhanced Fund, LP	47,629,097	5.5%	0.44%	0.31%	-2.98%	-3.50%	-2.98%	1.76%	-	1.72%	10.48%	0.10	Sep-19
Market Neutral - HF Total	208,512,929	23.9%	0.53%	1.09%	-0.62%	0.66%	-0.62%	5.19%	5.11%	5.29%	5.88%	0.70	Mar-14
Event Driven													
BlackRock Event Driven Equity Fund (BILPX)	53,727,777	6.2%	0.03%	1.68%	0.18%	2.14%	0.18%	-	-	4.06%	5.40%	0.56	Mar-20
Davidson Kempner Institutional Partners LP	58,336,261	6.7%	0.91%	1.78%	-0.63%	2.15%	-0.63%	5.35%	-	5.23%	5.01%	0.77	May-19
Elliott International Limited - Class A & B	77,948,183	8.9%	0.70%	-0.91%	5.04%	0.11%	5.04%	10.53%	8.02%	8.04%	3.32%	1.99	Apr-12
PSquared US Feeder Fund LP	54,509,198	6.2%	0.59%	-1.20%	3.61%	1.73%	3.61%	-	-	3.72%	5.03%	0.52	Aug-20
Event Driven - HF Total	244,521,419	28.0%	0.58%	0.22%	2.24%	1.39%	2.24%	6.52%	5.56%	6.89%	3.30%	1.70	Apr-12
Equity Long/Short													
Marshall Wace Funds LP - MW Global Opportunities (US) Fund	55,135,955	6.3%	0.71%	0.02%	5.32%	4.11%	5.32%	5.33%	-	5.64%	7.87%	0.56	Jan-19
Equity Long/Short - HF Total	55,135,955	6.3%	0.71%	0.02%	5.32%	4.11%	5.32%	5.33%	5.64%	5.64%	7.87%	0.56	Apr-12
Macro-Discretionary													
Eisler Capital Fund LP - Class A	26,056,180	3.0%	-0.63%	-11.45%	-19.27%	-16.25%	-19.27%	-	-	-16.27%	6.49%	-2.81	Jul-21
Macro-Discretionary - HF Total	26,056,180	3.0%	-0.63%	-11.45%	-19.27%	-16.25%	-19.27%	-16.27%	-3.03%	-1.75%	5.05%	-0.52	May-12
Macro-Systematic													
Graham Global Investment Fund II SPC Ltd. - Tactical Trend Segregated Por	49,737,382	5.7%	-2.64%	-4.99%	33.31%	-2.95%	33.31%	11.62%	7.10%	6.12%	13.19%	0.40	Feb-17
Macro-Systematic - HF Total	49,737,382	5.7%	-2.64%	-4.99%	33.31%	-2.95%	33.31%	8.43%	5.43%	5.05%	11.30%	0.36	Jan-17
Multi-Strategy													
Sculptor Domestic Partners II, L.P.	58,374,554	6.7%	0.48%	1.49%	-11.60%	0.41%	-11.60%	3.35%	4.53%	6.24%	6.83%	0.77	Jan-12
Multi-Strategy - HF Total	58,374,554	6.7%	0.48%	1.49%	-11.60%	0.41%	-11.60%	1.04%	-1.22%	3.42%	6.61%	0.39	May-13
Fund of Funds													
Grosvenor SC Absolute Return Fund LLC (Diversifying)	221,869,104	25.4%	1.24%	1.89%	1.03%	1.41%	1.03%	4.60%	3.39%	2.49%	3.63%	0.41	Dec-11
Fund of Funds - HF Total	221,869,104	25.4%	1.24%	1.89%	1.03%	1.41%	1.03%	4.61%	3.29%	2.38%	3.48%	0.40	Dec-11
Diversifying Portfolio Total	864,207,524	99.0%	0.51%	0.21%	0.81%	0.39%	0.81%	4.47%	3.04%	3.31%	3.42%	0.66	Dec-11
HFRI FOF: Conservative Index			1.28%	2.47%	1.11%	2.71%	1.11%	5.03%	4.07%	3.72%	3.38%	0.79	Dec-11
3 Month T-Bills+2%			0.52%	1.33%	3.46%	2.29%	3.46%	2.72%	3.26%	2.70%	0.27%	-	Dec-11

Growth Oriented Absolute Return Portfolio Performance – as of December 31, 2022

Fund	Market Value	Actual %	Returns								Std Dev	Sharpe Ratio	Incep Date
			Dec	QTD	YTD	FYTD	1 Year	3 Year	5 Year	Incep			
Growth-Oriented Portfolio													
Fund of Funds													
Grosvenor SC Absolute Return Fund LLC (Growth)	8,749,664	1.0%	0.03%	0.52%	-6.24%	0.77%	-6.24%	1.72%	2.13%	4.61%	6.50%	0.57	Dec-11
Fund of Funds - HF Total	8,749,664	1.0%	0.03%	0.52%	-6.24%	0.77%	-6.24%	1.72%	2.12%	4.05%	6.77%	0.38	Sep-04
Growth-Oriented Portfolio Total	8,749,664	1.0%	0.03%	0.52%	-11.04%	0.77%	-11.04%	4.02%	3.39%	4.62%	7.88%	0.41	Sep-04
HFRI FoF Composite + 1%			1.02%	2.72%	-3.65%	2.60%	-3.65%	4.93%	4.15%	4.26%	5.35%	0.50	Sep-04
3 Month T-Bills+5%			0.76%	2.05%	6.48%	3.75%	6.48%	5.73%	6.27%	6.29%	0.46%	-	Sep-04
Market Indices													
Libor3Month			0.40%	1.16%	2.55%	1.96%	2.55%	1.10%	1.59%	1.64%	0.48%	-	Sep-04
Bloomberg US Aggregate Bond Index			-0.45%	1.87%	-13.01%	-2.97%	-13.01%	-2.71%	0.03%	2.99%	3.78%	0.37	Sep-04
Bloomberg US High Yield Bond Index			-0.62%	4.17%	-11.19%	3.50%	-11.19%	0.05%	2.31%	6.21%	9.36%	0.51	Sep-04
S&P 500 TR			-5.76%	7.56%	-18.11%	2.31%	-18.11%	7.66%	9.43%	9.19%	15.11%	0.55	Sep-04
MSCI AC World Index Free - Net			-3.94%	9.76%	-18.36%	2.28%	-18.36%	4.00%	5.23%	7.04%	15.90%	0.41	Sep-04
MSCI EAFE - Net			0.08%	17.34%	-14.45%	6.36%	-14.45%	0.87%	1.54%	5.05%	17.00%	0.28	Sep-04
MSCI EMF (Emerging Markets Free) - Net			-1.41%	9.70%	-20.09%	-2.99%	-20.09%	-2.69%	-1.40%	6.85%	21.19%	0.34	Sep-04

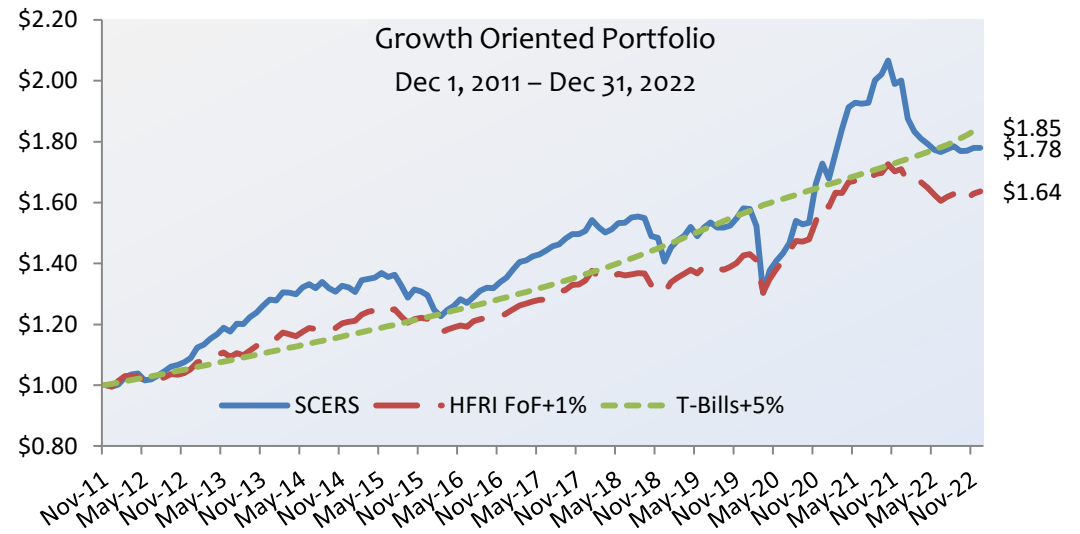
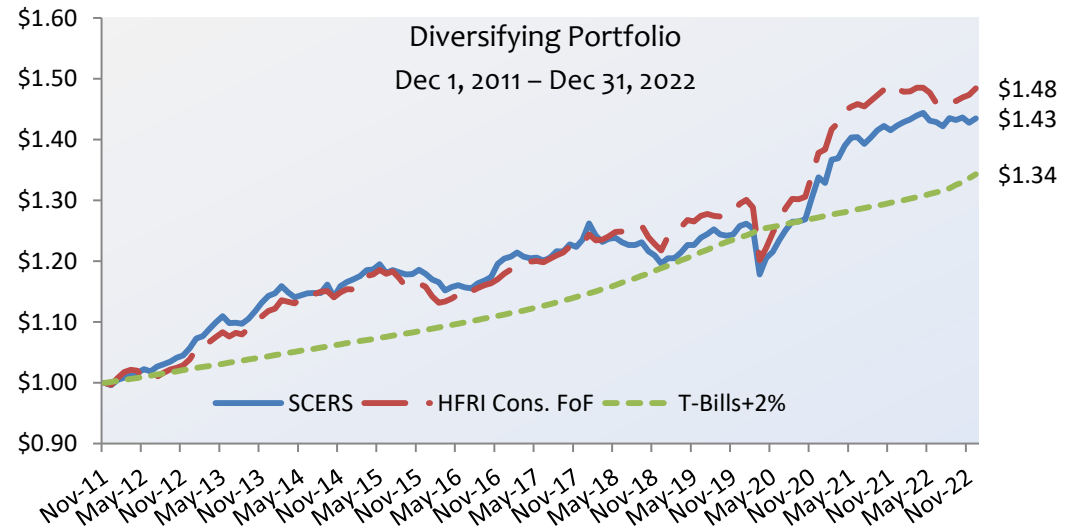
Absolute Return Portfolios Cumulative Performance – December 2011 to December 2022

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

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

Showing cumulative performance (growth of \$1) for each portfolio since the initial restructuring of the Absolute Return portfolio in December 2011

- The prior exposure of the Absolute Return portfolio was only Equity Long/Short fund of funds investments



Private Equity Portfolio – as of September 30, 2022

The Private Equity portfolio's net IRR since inception is 17.30%, versus the Cambridge Associates benchmark IRR of 14.46%

- The long-term Policy objective (Russell 3000 + 3%) has a 14.19% IRR over this period

The portfolio returned -1.9% in Q3 as equity markets continued falling with rising inflationary & economic concerns (ACWI -6.8%)

- The largest declines came from some of the portfolio's Buyout funds and Trinity Ventures XI & XII (Venture Capital)
 - Trinity XI & XII, Marlin IV, RRJ III, Linden III, TSG 7A, and Thoma Bravo XI reported the largest declines in Q3
 - However, nearly half of the portfolio's funds did report positive returns for the quarter
- Distributions remained relatively strong, despite declining slightly from Q2
 - \$67.7 million in distributions, led by Linden IV, Garrison III, Thoma Bravo XI & XII, RCP Direct III, and Waterland V

Despite the 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 VC IV (42.9%), Waterland V (40.5%), Spectrum VII (39.9%), AKKR IV (39.0%), Trinity Ventures XII (34.8%), Marlin Heritage Europe (34.1%), and Marlin Heritage (31.9%) are leading performance among SCERS' more mature funds

The legacy fund of funds, comprising 4.9% of the Private Equity portfolio, were mostly down 1 – 4% during the quarter

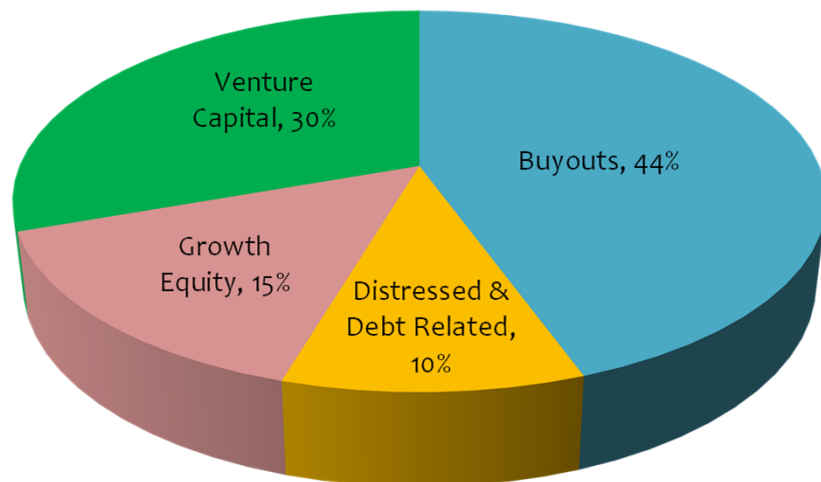
- HarbourVest International VI, however, reported a gain of 4.5% during Q3
- The legacy fund of funds distributed \$3.9 million during the quarter

Changes during the quarter

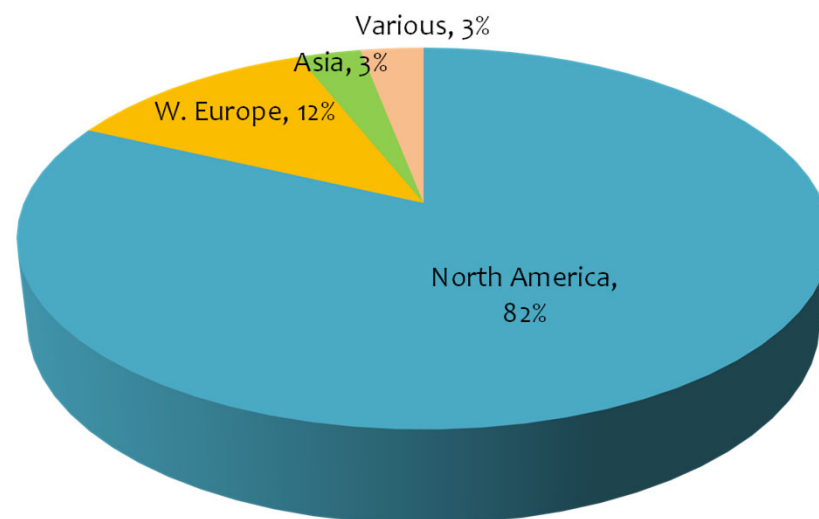
- SCERS committed \$25 million to Spectrum Equity X (Growth Equity re-up) & \$30 million to TSG9 (Buyout re-up) during Q3
 - SCERS also committed \$100 million to a co-investment fund in Q4 2022
- \$55.5 million in new contributions, \$67.7 million in distributions
- Total portfolio gain decreased by \$33.0 million while the total portfolio IRR decreased by 0.68%

Private Equity Portfolio Exposures as of September 30, 2022

Private Equity Portfolio Strategy Exposure*



Private Equity Portfolio Geographic Exposure*



Portfolio Strategy Totals	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI	TVPI Bench.
Buyout	865,928	299,017	681,785	65%	585,636	628,678	1,214,315	532,529	22.18%		1.78x	
Distressed Debt	330,000	104,336	280,081	68%	214,056	145,022	359,079	78,998	8.67%		1.28x	
Fund of Funds	306,538	34,628	289,984	89%	358,495	154,015	512,510	222,526	12.08%		1.77x	
Growth Equity	298,643	152,938	230,175	49%	239,139	241,161	480,301	250,125	32.23%		2.09x	
Opportunistic Credit	50,000	41,325	11,634	17%	2,954	9,387	12,342	707	6.18%		1.06x	
Venture Capital	450,000	145,202	304,816	68%	144,670	467,241	611,911	307,095	19.52%		2.01x	
Portfolio Total :	2,301,109	777,446	1,798,476	66%	1,544,951	1,645,505	3,190,456	1,391,980	17.30%	14.46%	1.77x	

* Exposures are based on the market values of investments as of 9/30/22.

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

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI	TVPI Bench.
Vintage Year 2006													
HarbourVest Partners VIII - Buyout Fund L.P.	Fund of Funds	37,500	1,125	36,375	97%	62,772	3,500	66,273	29,898	10.98%	7.63%	1.82x	1.71x
HarbourVest Partners VIII - Mezzanine and Distressed Debt Fund L.P.	Fund of Funds	5,000	200	4,800	96%	6,272	288	6,560	1,760	6.96%	7.63%	1.37x	1.71x
HarbourVest Partners VIII - Venture Fund L.P.	Fund of Funds	7,500	150	7,350	98%	13,176	2,902	16,078	8,728	11.47%	7.63%	2.19x	1.71x
Vintage Year 2006 Total		50,000	1,475	48,525	97%	82,220	6,690	88,910	40,385	10.78%	7.13%	1.83x	1.49x
Vintage Year 2008													
Abbott Capital Private Equity Fund VI, L.P.	Fund of Funds	75,000	375	74,625	100%	113,776	30,831	144,607	69,982	13.09%	13.18%	1.94x	2.16x
Goldman Sachs Private Equity Partners X, L.P.	Fund of Funds	75,000	13,447	69,108	82%	103,234	20,692	123,926	54,818	11.47%	13.18%	1.79x	2.16x
HarbourVest International Private Equity Partners VI-Partnership Fund L.P.	Fund of Funds	31,538	1,577	37,980	95%	47,436	22,236	69,672	31,692	11.21%	7.37%	1.83x	1.53x
Vintage Year 2008 Total		181,538	15,398	181,714	92%	264,447	73,759	338,206	156,492	12.06%	8.55%	1.86x	1.53x
Vintage Year 2011													
Waterland Private Equity Fund V C.V.	Buyout	15,671	2,568	16,235	84%	47,236	1,279	48,514	32,280	35.11%	10.91%	2.99x	1.59x
Khosla Ventures IV, L.P.	Venture Capital	10,000	190	9,810	98%	27,958	16,193	44,151	34,341	24.74%	17.08%	4.50x	2.77x
Vintage Year 2011 Total		25,671	2,758	26,045	89%	75,193	17,472	92,665	66,620	29.61%	12.65%	3.56x	1.86x
Vintage Year 2012													
Garrison Opportunity Fund III A LLC	Distressed Debt	20,000	0	20,000	100%	23,321	2,368	25,689	5,689	3.75%	15.72%	1.28x	1.67x
Summit Partners Venture Capital III-A, LP	Growth Equity	16,350	1,849	19,764	89%	38,234	3,177	41,411	21,647	17.56%	14.24%	2.10x	2.05x
New Enterprise Associates 14, L.P.	Venture Capital	25,000	875	24,125	97%	25,788	40,371	66,158	42,033	16.79%	16.97%	2.74x	2.48x
Vintage Year 2012 Total		61,350	2,724	63,889	96%	87,343	45,915	133,258	69,369	13.01%	13.11%	2.09x	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%	17.16%	3.58x	2.07x
H.I.G. Capital Partners V, L.P.	Buyout	14,000	431	13,569	97%	16,907	13,561	30,469	16,900	23.68%	17.16%	2.25x	2.07x
Marlin Equity IV, L.P.	Buyout	20,000	0	20,081	100%	17,841	10,230	28,071	7,991	8.00%	17.16%	1.40x	2.07x
RRJ Capital Master Fund II, L.P.	Buyout	35,000	3,824	35,989	89%	43,499	7,069	50,568	14,579	9.42%	11.77%	1.41x	1.64x

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 September 30, 2022 (continued)

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI	TVPI Bench.
Atalaya Special Opportunities Fund V, L.P.	Distressed Debt	25,000	1,117	24,875	96%	30,833	1,143	31,976	7,101	7.83%	8.27%	1.29x	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	3,973	32,935	8,336	7.69%	4.75%	1.34x	1.26x
Wayzata Opportunities Fund III, L.P.	Distressed Debt	30,000	25,318	14,718	16%	10,063	4,639	14,702	-16	-0.03%	8.27%	1.00x	1.37x
Trinity Ventures XI, L.P.	Venture Capital	25,000	375	24,625	99%	4,835	50,030	54,865	30,240	13.19%	17.28%	2.23x	2.52x
Vintage Year 2013 Total		194,000	36,776	173,965	81%	208,389	90,645	299,035	125,069	13.05%	13.56%	1.72x	1.76x
Vintage Year 2014													
Dyal Capital Partners II	Buyout	35,000	9,007	35,224	74%	15,009	35,807	50,816	15,593	9.80%	19.49%	1.44x	2.00x
H.I.G. Europe Capital Partners II, L.P.	Buyout	13,712	2,987	15,054	78%	11,627	9,187	20,814	5,760	10.37%	14.93%	1.38x	1.72x
Marlin Heritage Fund	Buyout	10,000	2,205	10,519	78%	19,181	5,957	25,138	14,619	31.85%	19.49%	2.39x	2.00x
Thoma Bravo XI	Buyout	30,000	3,203	32,531	89%	67,079	33,788	100,866	68,335	26.55%	19.49%	3.10x	2.00x
TPG Opportunities Partners III	Distressed Debt	40,000	11,556	50,361	71%	52,170	10,098	62,268	11,907	9.47%	9.12%	1.24x	1.44x
Spectrum Equity Investors VII, L.P.	Growth Equity	25,000	1,612	23,388	94%	56,845	40,340	97,184	73,796	39.88%	21.42%	4.16x	2.23x
Khosla Ventures V	Venture Capital	20,000	700	19,300	97%	24,817	40,699	65,516	46,216	25.04%	20.54%	3.39x	2.70x
Vintage Year 2014 Total		173,712	31,270	186,376	82%	246,727	175,875	422,602	236,226	23.44%	17.15%	2.27x	2.05x
Vintage Year 2015													
* WPEF VI Overflow Fund C.V.	Buyout	5,877	5,868	10	0%	0	0	0	-10	0.00%	15.65%	0.00x	1.64x
RRJ Capital Master Fund III, LP	Buyout	40,000	2,699	40,762	93%	36,439	8,972	45,412	4,650	5.83%	15.65%	1.11x	1.64x
WPEF VI Feeder, L.P.	Buyout	23,507	14,821	24,125	37%	30,972	17,291	48,263	24,138	23.10%	15.65%	2.00x	1.64x
Accel-KKR Growth Capital Partners II	Growth Equity	15,000	220	16,148	99%	24,284	11,672	35,955	19,807	30.82%	20.88%	2.23x	2.21x
Summit Partners Venture Capital Fund IV-A, L.P.	Growth Equity	35,000	33,570	40,342	4%	38,912	52,841	91,754	51,412	42.87%	20.88%	2.27x	2.21x
New Enterprise Associates 15, L.P.	Venture Capital	35,000	1,925	33,079	95%	27,335	35,711	63,046	29,967	13.87%	19.87%	1.91x	2.32x
Vintage Year 2015 Total		154,384	59,103	154,466	62%	157,942	126,488	284,430	129,964	21.38%	17.39%	1.84x	1.96x
Vintage Year 2016													
Accel-KKR Capital Partners V, L.P.	Buyout	25,000	0	25,271	100%	19,180	29,747	48,927	23,656	31.24%	20.90%	1.94x	1.91x
Dyal III Pension Investors LP	Buyout	35,000	21,710	22,833	38%	20,142	27,494	47,635	24,802	23.74%	20.90%	2.09x	1.91x
Linden Capital Partners III	Buyout	35,000	2,157	39,843	94%	64,427	36,946	101,372	61,529	31.83%	20.90%	2.54x	1.91x

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 September 30, 2022 (continued)

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI	TVPI Bench.
Marlin Heritage Europe, L.P.	Buyout	12,733	1,404	13,223	89%	7,902	25,543	33,445	20,222	29.19%	12.74%	2.53x	1.54x
Thoma Bravo Fund XII, L.P.	Buyout	30,000	7,381	40,884	75%	33,921	37,934	71,855	30,971	16.64%	20.90%	1.76x	1.91x
TSG7 A L.P.	Buyout	16,000	3,108	12,892	81%	11,431	19,098	30,529	17,637	21.64%	20.90%	2.37x	1.91x
TSG7 B L.P.	Buyout	4,000	141	4,033	96%	1,510	4,477	5,987	1,954	14.56%	20.90%	1.48x	1.91x
Atalaya Special Opportunities Fund VI, L.P.	Distressed Debt	25,000	2,454	28,940	90%	38,531	3,885	42,416	13,476	13.78%	8.71%	1.47x	1.23x
Trinity Ventures XII, L.P.	Venture Capital	30,000	4,275	25,725	86%	27,145	60,580	87,725	62,000	34.76%	24.31%	3.41x	2.32x
Vintage Year 2016 Total		212,733	42,630	213,644	80%	224,188	245,702	469,890	256,246	25.23%	17.80%	2.20x	1.82x
Vintage Year 2017													
Marlin Heritage II	Buyout	10,000	9	10,228	100%	2,117	14,126	16,243	6,015	16.77%	24.77%	1.59x	1.99x
Summit Partners Europe Growth Equity Fund II, SCSP	Growth Equity	29,384	29,384	37,508	0%	58,077	36,801	94,878	57,371	78.62%	10.66%	2.53x	1.29x
New Enterprise Associates 16, L.P.	Venture Capital	35,000	3,150	31,850	91%	4,566	39,352	43,918	12,068	10.49%	29.19%	1.38x	2.26x
Vintage Year 2017 Total		74,384	32,543	79,586	56%	64,760	90,280	155,040	75,454	32.11%	22.20%	1.95x	1.85x
Vintage Year 2018													
Linden Capital Partners IV LP	Buyout	44,330	4,346	44,292	90%	18,712	45,370	64,082	19,790	24.41%	20.96%	1.45x	1.58x
Marlin Equity V	Buyout	25,000	2,073	23,073	92%	8,114	29,133	37,247	14,174	25.30%	20.96%	1.61x	1.58x
TSG8 L.P.	Buyout	45,000	12,870	32,244	71%	319	30,073	30,392	-1,852	-4.00%	20.96%	0.94x	1.58x
Davidson Kempner Long-Term Distressed Opportunities Fund IV LP	Distressed Debt	35,000	2,400	33,198	93%	13,097	42,045	55,142	21,945	16.80%	18.68%	1.66x	1.41x
TSSP Opportunities Partners IV (A), L.P.	Distressed Debt	35,000	8,452	40,762	76%	16,805	30,938	47,743	6,981	12.81%	18.68%	1.17x	1.41x
RCP Fund XIII	Fund of Funds	50,000	15,016	37,484	70%	4,495	44,157	48,651	11,167	19.29%	25.40%	1.30x	1.66x
RCPDirect III	Fund of Funds	25,000	2,739	22,261	89%	7,333	29,409	36,742	14,482	25.57%	17.82%	1.65x	1.47x
Accel-KKR Growth Capital Partners III	Growth Equity	33,320	4,736	28,584	86%	2,036	31,889	33,925	5,341	11.24%	23.38%	1.19x	1.69x
Spectrum Equity VIII, L.P.	Growth Equity	25,000	2,500	22,500	90%	20,752	26,276	47,028	24,528	36.58%	23.38%	2.09x	1.69x
Khosla Ventures VI, L.P.	Venture Capital	35,000	1,750	33,250	95%	0	60,263	60,263	27,013	26.26%	30.42%	1.81x	1.96x
Vintage Year 2018 Total		352,650	56,882	317,647	84%	91,662	369,553	461,215	143,568	20.70%	22.16%	1.45x	1.62x
Vintage Year 2019													
Cortec Group Fund VII, L.P.	Buyout	30,000	10,400	26,074	65%	6,478	29,227	35,705	9,631	25.33%	23.05%	1.37x	1.38x

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 September 30, 2022 (continued)

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI	TVPI Bench.
Gridiron Capital Fund IV, L.P.	Buyout	30,000	2,909	30,034	90%	3,059	49,716	52,775	22,740	45.87%	23.05%	1.76x	1.38x
Thoma Bravo Fund XIII, LP	Buyout	45,000	3,743	54,899	92%	27,084	62,970	90,054	35,156	32.06%	23.05%	1.64x	1.38x
New Enterprise Associates 17, L.P.	Venture Capital	25,000	7,000	18,014	72%	2,227	19,770	21,997	3,983	12.55%	27.41%	1.22x	1.53x
Threshold Ventures III, L.P.	Venture Capital	20,000	4,440	15,560	78%	0	27,205	27,205	11,645	35.61%	27.41%	1.75x	1.53x
Vintage Year 2019 Total		150,000	28,491	144,581	81%	38,848	188,887	227,736	83,154	31.64%	22.38%	1.58x	1.43x
Vintage Year 2020													
Accel-KKR Capital Partners VI, LP	Buyout	30,000	17,327	12,673	42%	0	12,673	12,673	0	N/M	N/M	1.00x	1.28x
Wynchurch Capital Partners V	Buyout	20,000	10,403	9,597	48%	0	12,491	12,491	2,894	28.55%	23.54%	1.30x	1.28x
Davidson Kempner Long-Term Distressed Opportunities Fund V LP	Distressed Debt	30,000	3,904	26,367	87%	274	29,663	29,937	3,570	10.23%	12.04%	1.14x	1.19x
Spectrum Equity IX-A, L.P.	Growth Equity	25,000	7,875	17,125	69%	0	15,766	15,766	-1,359	-9.25%	16.74%	0.92x	1.23x
Summit Partners Europe Growth Equity Fund III, SCSp	Growth Equity	19,589	8,849	12,158	55%	0	10,711	10,711	-1,447	N/M	N/M	0.88x	1.02x
Summit Partners Venture Capital Fund V-A, L.P.	Growth Equity	20,000	11,790	8,210	41%	0	7,897	7,897	-313	N/M	N/M	0.96x	1.23x
Shamrock Capital Content Fund II, L.P.	Opportunistic Credit	20,000	11,325	11,634	43%	2,954	9,387	12,342	707	6.18%	12.68%	1.06x	1.16x
Canvas Ventures 3, L.P.	Venture Capital	20,000	10,347	9,653	48%	0	12,036	12,036	2,383	N/M	N/M	1.25x	1.24x
OrbiMed Private Investments VIII, LP	Venture Capital	15,000	7,313	7,688	51%	0	8,189	8,189	501	N/M	N/M	1.07x	1.24x
Vintage Year 2020 Total		199,589	89,133	115,105	55%	3,228	118,813	122,041	6,935	5.94%	14.93%	1.06x	1.21x
Vintage Year 2021													
Linden Capital Partners V LP	Buyout	30,000	23,139	6,861	23%	0	6,644	6,644	-217	N/M	N/M	0.97x	1.05x
Shamrock Capital Growth Fund V, L.P.	Buyout	20,000	13,898	6,102	31%	3	5,321	5,324	-778	N/M	N/M	0.87x	1.05x
Strategic Value Special Situations Fund V, L.P.	Distressed Debt	30,000	20,250	9,750	33%	0	10,197	10,197	447	N/M	N/M	1.05x	1.11x
CRV Select Fund I, LP	Venture Capital	20,000	2,500	17,500	88%	0	19,362	19,362	1,862	N/M	N/M	1.11x	0.99x
CRV XVIII, LP	Venture Capital	20,000	4,150	15,850	79%	0	18,549	18,549	2,699	N/M	N/M	1.17x	0.99x
Khosla Ventures VII, L.P.	Venture Capital	20,000	8,400	11,600	58%	0	12,473	12,473	873	N/M	N/M	1.08x	0.99x
Vintage Year 2021 Total		140,000	72,338	67,662	48%	3	72,547	72,550	4,887	N/M	N/M	1.07x	0.99x

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 September 30, 2022 (continued)

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI	TVPI Bench.
Vintage Year 2022													
Gridiron Capital Fund V, L.P.	Buyout	30,000	30,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Marlin Heritage III, L.P.	Buyout	30,000	30,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Oaktree Power Opportunities Fund VI	Buyout	30,000	22,978	7,122	23%	0	6,582	6,582	-540	N/M	N/M	0.92x	0.93x
SHCOF II, L.P.	Buyout	1,098	1,098	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Sixth Street Opportunities Partners V (A), L.P.	Distressed Debt	30,000	23,485	6,511	22%	0	6,074	6,074	-438	N/M	N/M	0.93x	N/A
Accel-KKR Growth Capital Partners IV	Growth Equity	30,000	25,552	4,448	15%	0	3,791	3,791	-656	N/M	N/M	0.85x	0.89x
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	30,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
CRV Select Fund II, LP	Venture Capital	22,500	17,944	4,556	20%	0	4,437	4,437	-119	N/M	N/M	0.97x	0.90x
CRV XIX, LP	Venture Capital	22,500	20,081	2,419	11%	0	2,119	2,119	-299	N/M	N/M	0.88x	0.90x
OrbiMed Private Investments IX, LP	Venture Capital	25,000	25,000	0	0%	0	-124	-124	-124	N/M	N/M	N/A	N/A
Threshold Ventures IV, L.P.	Venture Capital	25,000	24,788	213	1%	0	28	28	-185	N/M	N/M	0.13x	0.90x
Vintage Year 2022 Total		301,098	275,925	25,269	8%	0	22,907	22,907	-2,362	N/M	N/M	0.91x	0.90x
Vintage Year 2023													
TSG9 L.P.	Buyout	30,000	30,000	0	0%	0	-28	-28	-28	N/M	N/M	N/A	N/A
Vintage Year 2023 Total		30,000	30,000	0	0%	0	-28	-28	-28	N/M	N/M	N/A	N/A
Portfolio Total :		2,301,109	777,446	1,798,476	66%	1,544,951	1,645,505	3,190,456	1,391,980	17.30%	14.46%	1.77x	

¹Benchmarks:

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

Private Credit Portfolio – as of September 30, 2022

The Private Credit portfolio's net IRR since inception is 8.27%, versus the benchmark return of 6.27%

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

The Private Credit funds reported a modest gain during the quarter, following a slight decline in Q2

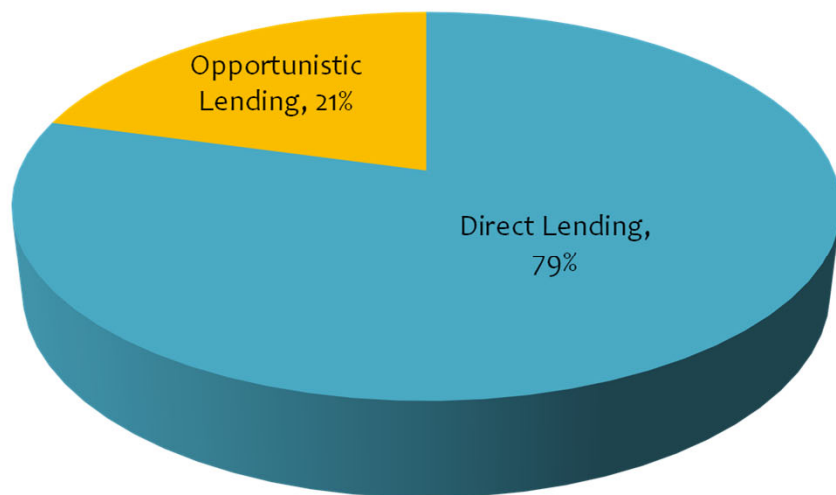
- The portfolio returned 1.4% in Q3 and 4.2% for the trailing 1-year period ending September 30, 2022
 - Performance dispersion narrowed during the quarter, with fund returns ranging from +4.9% to -3.6% for the quarter
 - The healthcare-focused Athyrium funds reported the largest declines in Q3
- Longer term performance remains steady despite modest sell-offs in Q1 2020 and during the first half of 2022
 - 8.4% net IRR for the 3-year period and 8.1% net IRR for the 5-year period

Changes during the quarter

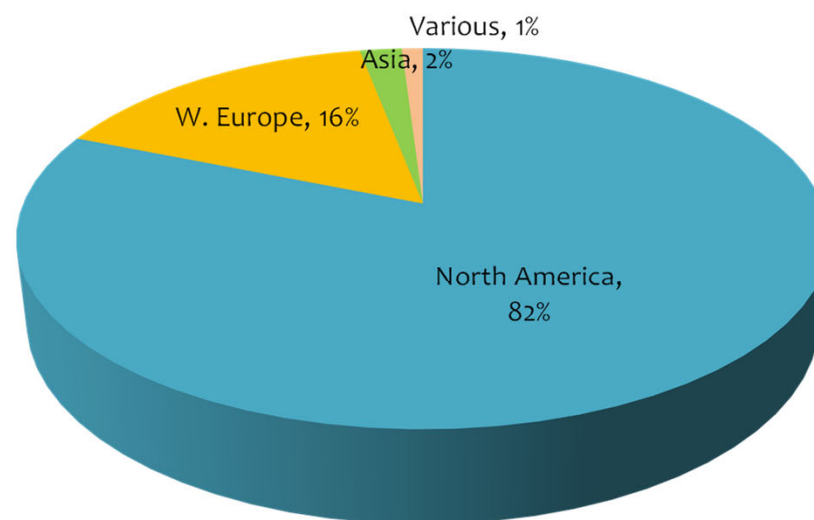
- SCERS made no new commitments to Private Credit funds during Q3
 - SCERS committed \$80 million in total to two Direct Lending funds in Q4 2022
- \$43.1 million in new contributions, \$13.8 million in distributions
- Total portfolio gain increased by \$4.9 million while the total portfolio IRR declined by 0.17%

Private Credit Portfolio Exposures as of September 30, 2022

Private Credit Portfolio Strategy Exposure*



Private Credit Portfolio Geographic Exposure*



Portfolio Strategy Totals	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI	TVPI Bench.
Direct Lending	480,951	159,832	407,617	67%	194,672	285,512	480,185	72,567	8.25%		1.18x	
Opportunistic Lending	192,000	90,080	139,801	53%	81,808	77,910	159,718	19,918	8.37%		1.14x	
Portfolio Total :	672,951	249,913	547,418	63%	276,481	363,422	639,903	92,485	8.27%	6.27%	1.17x	

* Exposures are based on the market values of investments as of 9/30/22.

Private Credit Portfolio Details – as of September 30, 2022

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI	TVPI Bench.
Vintage Year 2011													
Summit Partners Credit Fund, LP	Direct Lending	20,000	2,125	20,697	89%	26,391	404	26,795	6,099	8.83%	N/A	1.29x	N/A
Vintage Year 2011 Total		20,000	2,125	20,697	89%	26,391	404	26,795	6,099	8.83%	12.65%	1.29x	1.86x
Vintage Year 2014													
Summit Partners Credit Fund II, L.P.	Direct Lending	35,000	3,040	49,057	91%	45,329	13,244	58,573	9,515	6.50%	2.89%	1.19x	N/A
Vintage Year 2014 Total		35,000	3,040	49,057	91%	45,329	13,244	58,573	9,515	6.50%	17.15%	1.19x	2.05x
Vintage Year 2015													
Athyrium Opportunities Fund II	Opportunistic Lending	32,000	2,337	43,149	93%	41,908	9,917	51,825	8,676	8.11%	9.55%	1.20x	1.47x
Vintage Year 2015 Total		32,000	2,337	43,149	93%	41,908	9,917	51,825	8,676	8.11%	17.39%	1.20x	1.96x
Vintage Year 2017													
Athyrium Opportunities Fund III	Opportunistic Lending	25,000	5,553	28,793	78%	18,421	11,077	29,498	705	1.15%	11.71%	1.02x	1.31x
Vintage Year 2017 Total		25,000	5,553	28,793	78%	18,421	11,077	29,498	705	1.15%	22.20%	1.02x	1.85x
Vintage Year 2018													
Benefit Street Partners Senior Secured Opportunities Fund L.P.	Direct Lending	50,000	16,080	50,953	68%	32,159	28,976	61,135	10,182	5.56%	1.25%	1.20x	N/A
Summit Partners Credit Fund III, L.P.	Direct Lending	50,000	30,006	59,182	40%	50,409	24,545	74,953	15,771	16.86%	1.25%	1.27x	N/A
TCP Direct Lending Fund VIII-S, LLC	Direct Lending	125,000	9,071	115,929	93%	26,496	112,372	138,868	22,939	8.07%	1.25%	1.20x	N/A
Vintage Year 2018 Total		225,000	55,157	226,064	75%	109,064	165,892	274,956	48,892	8.65%	22.16%	1.22x	1.62x
Vintage Year 2019													
BSP Levered US SOF II (Senior Secured Opportunities) Fund L.P.	Direct Lending	50,000	20,435	30,624	59%	3,579	31,256	34,835	4,211	11.22%	2.20%	1.14x	N/A
OrbiMed Royalty & Credit Opportunities III, LP	Opportunistic Lending	35,000	20,591	29,393	41%	16,335	19,100	35,436	6,043	25.66%	15.66%	1.21x	1.26x
Vintage Year 2019 Total		85,000	41,026	60,017	52%	19,915	50,356	70,270	10,253	16.98%	22.38%	1.17x	1.43x
Vintage Year 2020													
MCP Private Capital Fund IV (Feeder)	Direct Lending	30,951	13,919	19,412	55%	249	18,789	19,038	-374	-1.93%	-1.79%	0.98x	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 September 30, 2022 (continued)

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI	TVPI Bench.
Silver Point Specialty Credit Fund II, L.P.	Opportunistic Lending	40,000	7,536	32,325	81%	4,938	31,799	36,737	4,412	11.59%	12.68%	1.14x	1.16x
Vintage Year 2020 Total		70,951	21,455	51,736	70%	5,187	50,588	55,775	4,038	7.03%	14.93%	1.08x	1.21x
Vintage Year 2021													
Ares Capital Europe V	Direct Lending	40,000	17,092	22,908	57%	813	24,192	25,005	2,097	N/M	N/M	1.09x	N/A
IFM USIDF (Offshore) B Feeder	Direct Lending	40,000	17,165	29,756	57%	9,248	22,187	31,435	1,679	N/M	N/M	1.06x	N/A
Summit Partners Credit Fund IV, L.P.	Direct Lending	40,000	30,900	9,100	23%	0	9,548	9,548	448	N/M	N/M	1.05x	N/A
Shamrock Capital Debt Opportunities Fund I, L.P.	Opportunistic Lending	20,000	18,064	2,142	10%	205	1,937	2,143	1	N/M	N/M	1.00x	1.09x
Vintage Year 2021 Total		140,000	83,220	63,906	41%	10,266	57,864	68,131	4,225	N/M	N/M	1.07x	0.99x
Vintage Year 2022													
OrbiMed Royalty & Credit Opportunities IV, LP	Opportunistic Lending	40,000	36,000	4,000	10%	0	4,080	4,080	80	N/M	N/M	1.02x	1.01x
Vintage Year 2022 Total		40,000	36,000	4,000	10%	0	4,080	4,080	80	N/M	N/M	1.02x	0.90x
Portfolio Total :		672,951	249,913	547,418	63%	276,481	363,422	639,903	92,485	8.27%	6.27%	1.17x	

¹Benchmarks:

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

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

Real Assets Portfolio – as of September 30, 2022

The Real Assets portfolio's net IRR since inception is 12.35%, versus the blended benchmark return of 7.86%

- The Real Assets portfolio includes private Infrastructure, Energy and Power, and Agriculture, Timber and Other
- Real Assets is part of the broader Real Return asset category

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

- Since inception net IRRs of 11.2% for Infrastructure and 14.4% for Energy and Power
- Performance of the Energy and Power partnerships was materially impacted by significant markdowns in Q1 2020
 - However, most of the Energy and Power (particularly upstream energy) partnerships have rebounded sharply since Q3 2020
- Infrastructure partnerships saw smaller declines in Q1 2020 and have maintained good performance since inception

The Real Assets portfolio generated a 1.9% net return in Q3

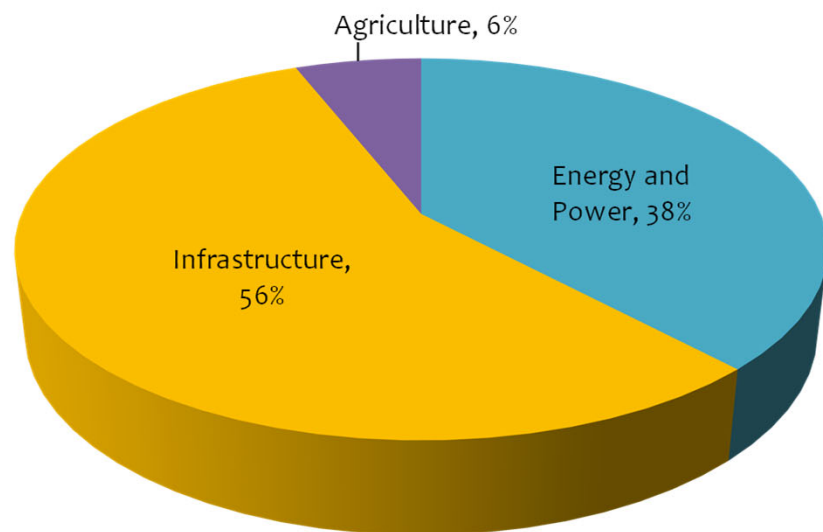
- The portfolio's Energy and Power funds led performance during the quarter
 - Many of the Energy and Power funds reported returns between 3% and 15% in Q3 despite falling oil prices
- The Infrastructure funds also reported generally solid performance during the quarter
 - Funds were mostly flat to +4% in Q3, though a few funds reported negative Q3 returns (EQT, Meridiam, and Pantheon funds)
- Energy funds ArcLight VI, Carlyle Power II, EnCap Flatrock III, and NGP Royalty each gained more than 10% in Q3

Changes during the quarter

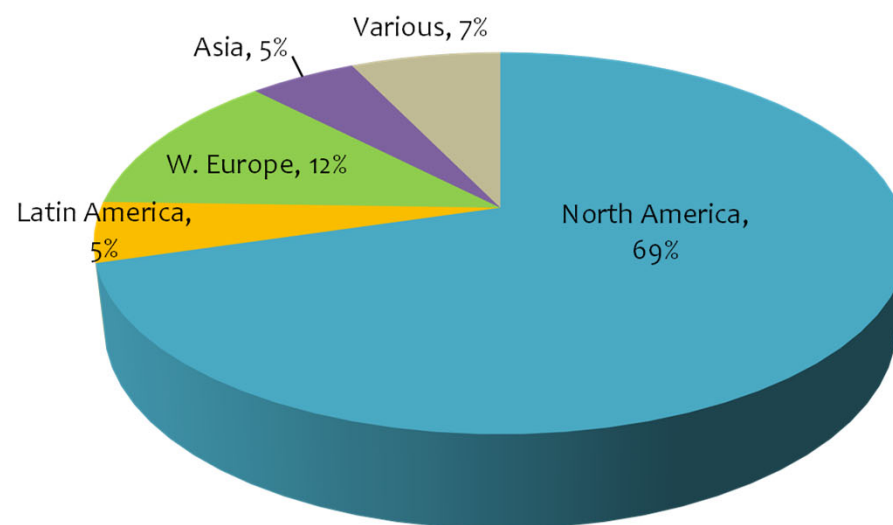
- SCERS committed \$150 million in total to two Infrastructure funds (Brookfield Super Core & Ridgewood Water II) in Q3
- \$128.2 million in new contributions, \$44.4 million in distributions
 - A majority (\$100 million) of the Q3 contributions was to fund the investment in the open-end Brookfield Super Core fund
- Portfolio IRR decreased by 0.26% while the total portfolio gain increased by \$19.3 million

Real Assets Portfolio Exposures as of September 30, 2022

Real Assets Portfolio Strategy Exposure*



Real Assets 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
Portfolio Strategy Totals											
Agriculture	65,000	15,962	57,016	75%	9,050	53,981	63,031	6,015	4.44%		1.11x
Energy and Power	412,500	72,559	398,197	82%	268,909	336,117	605,026	206,829	14.39%		1.52x
Infrastructure	864,231	282,070	610,933	67%	167,163	624,255	791,419	180,486	11.21%		1.30x
Real Asset Debt	100,000	84,789	36,169	15%	45,101	0	45,101	8,932	10.27%		1.25x
Portfolio Total :	1,441,731	455,380	1,102,315	68%	490,223	1,014,353	1,504,576	402,261	12.35%	7.86%	1.36x

* Exposures are based on the market values of investments as of 9/30/22.

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

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI
Vintage Year 2013												
EnCap Energy Capital Fund IX, L.P.	Energy and Power	33,000	1,284	37,997	96%	38,825	14,267	53,092	15,094	9.90%	2.60%	1.40x
Vintage Year 2013 Total		33,000	1,284	37,997	96%	38,825	14,267	53,092	15,094	9.90%		1.40x
Vintage Year 2014												
Carlyle Power Partners II, L.P.	Energy and Power	40,000	6,919	46,003	83%	19,282	46,598	65,880	19,877	11.08%	9.09%	1.43x
EnCap Flatrock Midstream III	Energy and Power	20,000	823	23,629	96%	16,007	15,351	31,357	7,729	10.00%	9.09%	1.33x
Global Energy & Power Infrastructure Fund II	Energy and Power	35,000	842	38,706	98%	37,660	12,903	50,563	11,858	14.60%	9.09%	1.31x
Quantum Energy Partners VI, LP	Energy and Power	35,000	8,066	33,066	77%	30,445	55,565	86,009	52,943	29.39%	9.09%	2.60x
Pantheon SCERS SIRF MM, LLC	Infrastructure	100,000	26,968	77,332	73%	71,300	50,163	121,463	44,132	11.32%	11.26%	1.57x
Wastewater Opportunity Fund	Infrastructure	25,000	1,037	25,907	96%	9,371	19,807	29,178	3,271	3.55%	11.26%	1.13x
Vintage Year 2014 Total		255,000	44,655	244,642	82%	184,065	200,387	384,451	139,809	13.88%		1.57x
Vintage Year 2015												
ArcLight Energy Partners Fund VI	Energy and Power	40,000	5,604	42,665	86%	29,513	21,278	50,791	8,126	4.46%	9.96%	1.19x
EnCap Energy Capital Fund X, L.P.	Energy and Power	40,000	2,096	40,716	95%	33,302	40,196	73,497	32,782	15.71%	9.96%	1.81x
* 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	92,488	119,550	49%	107,915	61,474	169,389	49,839	10.30%		1.42x
Vintage Year 2016												
ACM Fund II, LLC	Agriculture	25,000	1,440	27,707	94%	4,581	17,115	21,697	-6,010	-7.41%	N/A	0.78x
Brookfield Infrastructure Fund III, L.P.	Infrastructure	40,000	5,809	36,512	85%	15,586	37,305	52,892	16,379	11.15%	10.05%	1.45x
IFM Global Infrastructure Fund	Infrastructure	125,053	0	125,053	100%	44,386	151,353	195,740	70,687	12.07%	10.05%	1.57x
Vintage Year 2016 Total		190,053	7,249	189,272	96%	64,554	205,773	270,328	81,056	9.96%		1.43x
Vintage Year 2017												
Quantum Energy Partners VII, LP	Energy and Power	40,000	9,279	35,292	77%	19,452	40,046	59,498	24,207	20.68%	12.28%	1.69x
Meridiam Infrastructure North America Fund III	Infrastructure	50,000	28,677	21,323	43%	1	27,864	27,864	6,541	24.73%	9.49%	1.31x
Vintage Year 2017 Total		90,000	37,955	56,615	58%	19,453	67,910	87,363	30,748	21.35%		1.54x

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 September 30, 2022 (continued)

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI
Paine Schwartz Food Chain Fund V, LP	Agriculture	40,000	14,522	29,310	64%	4,469	36,866	41,334	12,025	31.01%	N/A	1.41x
EnCap Flatrock Midstream IV, L.P.	Energy and Power	22,500	6,478	16,612	71%	5,742	13,769	19,511	2,898	8.61%	8.23%	1.17x
Tailwater Energy Fund III, LP	Energy and Power	32,000	1,445	32,610	95%	11,391	25,546	36,937	4,327	4.04%	8.23%	1.13x
ISQ Global Infrastructure Fund II	Infrastructure	50,000	9,747	50,442	81%	10,930	56,034	66,964	16,522	13.96%	11.55%	1.33x
Vintage Year 2018 Total		144,500	32,192	128,974	78%	32,532	132,214	164,747	35,773	11.69%		1.28x
Vintage Year 2019												
Tailwater Energy Fund IV, LP	Energy and Power	35,000	18,192	22,482	48%	11,358	19,466	30,824	8,342	19.07%	24.07%	1.37x
Brookfield Infrastructure Fund IV	Infrastructure	40,000	8,502	32,872	79%	4,807	35,759	40,566	7,694	12.42%	8.46%	1.23x
EQT Infrastructure IV (No.2) USD SCSp	Infrastructure	35,000	7,899	31,848	77%	6,092	32,320	38,412	6,564	9.91%	8.46%	1.21x
Vintage Year 2019 Total		110,000	34,593	87,201	69%	22,257	87,545	109,802	22,601	13.11%		1.26x
Vintage Year 2020												
NGP Royalty Partners, L.P.	Energy and Power	40,000	11,532	28,420	71%	15,933	31,134	47,066	18,647	71.08%	26.47%	1.66x
Vintage Year 2020 Total		40,000	11,532	28,420	71%	15,933	31,134	47,066	18,647	71.08%		1.66x
Vintage Year 2021												
DigitalBridge Partners II, LP	Infrastructure	35,000	14,272	23,956	59%	3,333	21,820	25,153	1,197	N/M	N/M	1.05x
Harrison Street Social Infrastructure Fund, L.P.	Infrastructure	75,000	0	75,000	100%	1,357	82,253	83,610	8,610	N/M	N/M	1.11x
ISQ Global Infrastructure Fund III (UST), L.P.	Infrastructure	50,000	44,574	5,420	11%	0	4,901	4,901	-519	N/M	N/M	0.90x
Meridiam Sustainable Infrastructure Europe IV	Infrastructure	39,178	34,586	5,268	12%	0	3,632	3,632	-1,636	N/M	N/M	0.69x
Vintage Year 2021 Total		199,178	93,432	109,644	53%	4,690	112,607	117,296	7,653	N/M		1.07x
Vintage Year 2022												
Brookfield Super-Core Infrastructure Partners	Infrastructure	100,000	0	100,000	100%	0	101,043	101,043	1,043	N/M	N/M	1.01x
NGP Royalty Partners II	Infrastructure	50,000	50,000	0	0%	0	0	0	0	N/M	N/M	N/A
Ridgewood Water & Strategic Infrastructure Fund II	Infrastructure	50,000	50,000	0	0%	0	0	0	0	N/M	N/M	N/A
Vintage Year 2022 Total		200,000	100,000	100,000	50%	0	101,043	101,043	1,043	N/M		1.01x
Portfolio Total :		1,441,731	455,380	1,102,315	68%	490,223	1,014,353	1,504,576	402,261	12.35%	7.86%	1.36x

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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