



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 17

MEETING DATE: June 15, 2022

SUBJECT: Quarterly Investment Performance Report -
Alternative Assets

SUBMITTED FOR: Consent Deliberation
and Action Receive
and File

RECOMMENDATION

Staff recommends the Board receive and file the Cliffwater Quarterly Performance Review presentation for the period ending March 31, 2022 for the Absolute Return portfolio, and the period ending December 31, 2021 for the Private Equity, Private Credit, and Real Assets portfolios.

PURPOSE

This item complies with SCERS' investment policy statement reporting requirements and contributes to the effective management and oversight of investment activities.

SCERS ALTERNATIVE ASSETS PORTFOLIO RETURNS

This memorandum provides a summarized table of SCERS' Alternative Assets period returns, which complements Cliffwater's Quarterly Performance Review, and highlights notable manager performance, along with any recent alternative investments made by SCERS. The returns for the private market asset classes shown in the table below, and provided within Cliffwater's reports, are lagged a quarter and reflect valuations as of December 31, 2021.

SCERS' alternative asset class returns are as follows:

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

SCERS ASSET CLASS	Quarter*	1-Year*	3-Year*	5-Year*	Since Inception*	Since Inception Date*
SCERS Absolute Return	0.0%	4.9%	6.4%	4.3%	4.3%	Sep-04
HFRI FoF Conservative	0.4%	4.3%	5.8%	4.5%	3.9%	
HFRI FoF Composite + 1%	-2.4%	2.3%	6.9%	5.6%	4.5%	
SCERS Private Equity	3.9%	44.9%	31.2%	27.4%	19.6%	Feb-08
Cambridge Private Equity/Venture Capital	5.2%	37.7%	26.9%	22.4%	16.1%	
SCERS Private Credit	2.7%	9.9%	10.8%	9.6%	9.6%	Oct-11
Credit Suisse Leveraged Loan + 2%	1.2%	7.4%	7.4%	6.3%	6.9%	
SCERS Real Assets	6.8%	25.0%	9.5%	10.7%	11.6%	Jan-13
(60%) Cambridge Private Infrastructure; (30%) Cambridge Private Energy; (10%) NCREIF Farmland	5.8%	21.4%	7.7%	8.0%	7.5%	
<p>*Note: Periods ending 12/31/21 for Private Equity, Private Credit, Real Assets, and Opportunities Periods ending 3/31/22 for Absolute Return All returns are time-weighted, except Private Equity which is net IRR</p>						

SCERS PORTFOLIO RESULTS

For the reporting quarter ended December 31, 2021:

- SCERS' Private Equity portfolio performed well on an absolute basis but underperformed against its benchmark, 3.9% versus 5.2%. The relative underperformance was driven primarily by SCERS' venture capital strategies as the public markets cooled off on high growth technology stocks.
- SCERS' Private Credit portfolio outperformed against its benchmark return, 2.7% versus 1.2%, due to the performance of the direct lending strategies.
- SCERS' Real Assets portfolio generated an impressive 6.8%, significantly outperforming the benchmark return of 5.8%. SCERS' energy and power strategies are benefiting from the heightened energy prices, with robust returns ranging from 5.8%-18.9% among the top 10 performers.

For the reporting quarter ended March 31, 2022, SCERS' Absolute Return portfolio underperformed against the HFRI Fund of Funds Conservative Index return, 0.0% versus 0.4%, due to the significant underperformance of the Growth-Oriented portfolio (-9.5%), in particular the Event Driven (-11.3%) strategy. SCERS' Diversifying-Oriented Absolute Return portfolio exceeded its benchmark return, 1.1% versus 0.4%, due in part to the performance of the Event Driven strategies (1.5%). The Growth-Oriented portfolio is in the process of being unwound, as it was eliminated from SCERS' revised strategic asset allocation.

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

- Top performing funds:
 - Absolute Return:
 - Graham Global Investment Fund II (macro-systematic): +23.6%
 - Elliott International Limited (event driven): +5.1%
 - Marshall Wace Funds (equity long/short): +3.1%
 - Private Equity portfolio:
 - Summit Partners Europe Growth Equity Fund II (growth equity): +45.6%
 - Summit Partners Venture Capital Fund IV-A (growth equity): +33.9%
 - Accel-KKR Capital Partners IV (buyout): +26.2%
 - Garrison Opportunity Fund III A (distressed debt): +21.2%
 - Private Credit portfolio:
 - IFM U.S. Infrastructure Debt Fund (direct lending): +10.3%
 - Summit Partners Credit Fund II (direct lending): +8.2%
 - Summit Partners Credit Fund III (direct lending): +4.5%
 - Real Assets portfolio:
 - Wastewater Opportunity Fund (infrastructure): +25.0%
 - Paine Schwartz Food Chain Fund V (agriculture): +21.8%
 - EnCap Energy Capital Fund X (energy and power): +18.9%
 - Quantum Energy Partners VII (energy and power): +17.7%
- Bottom performing funds:
 - Absolute Return portfolio:
 - Third Point Partners Qualified (event driven): -11.3%
 - Laurion Capital (market neutral): -7.1%
 - Grosvenor SCARF (fund-of-funds): -4.8%
 - Private Equity portfolio:
 - New Enterprise Associates 15 (venture capital): -18.2%

-
- Spectrum Equity Investors VII (growth equity): -17.6%
 - Thoma Bravo XI (buyout): -11.2%
 - TSG7 B (buyout): -11.1%

 - Private Credit portfolio:
 - Shamrock Capital Debt Opportunities Fund I (opportunistic): -8.0%
 - Athyrium Opportunities Fund II (opportunistic): -2.9%
 - OrbiMed Royalty & Credit Opportunities III (opportunistic): -2.0%

 - Real Assets portfolio:
 - ACM Fund II (agriculture): -1.5%
 - EnCap Flatrock Midstream IV (energy and power): -0.7%
 - Blackrock Global Energy & Power Infrastructure Fund II (energy and power): +0.1%

NEW INVESTMENTS

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

- OrbiMed Private Investment IX (private equity - venture): \$25 million

After the quarter, SCERS made the following new investments:

- NGP Royalty Partners II (real assets – energy): \$50 million

ATTACHMENTS

- Board Order
- Cliffwater's Quarterly Performance Review for Alternative Assets for the Quarter ended March 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
June 15, 2022

AGENDA ITEM:

Quarterly Investment Performance Report – Alternative Assets

THE BOARD OF RETIREMENT hereby accepts the recommendation of staff to receive and file the Cliffwater Quarterly Performance Review presentation for the period ending March 31, 2022 for the Absolute Return portfolio, and the period ending December 31, 2021 for the Private Equity, Private Credit, and Real Assets portfolios.

I HEREBY CERTIFY that the above order was passed and adopted on June 15, 2022 by the following vote of the Board of Retirement, to wit:

AYES:

NOES:

ABSENT:

ABSTAIN:

ALTERNATES (Present but not voting):

Richard B. Fowler II
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

June 15, 2022

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

Growth Oriented Strategies

- The Growth Oriented Portfolio returned -9.51% in Q1 and -1.74% for the one-year period ending March 31, 2022
 - Trailed the HFRI FoF Index + 1% benchmark by 7.07% in Q1 and 3.99% for the one-year period
 - Third Point was the biggest detractor over these periods; the fund's longer-term performance has been very strong
- The portfolio was significantly downsized in Q1 following the 2021 decision to eliminate the Growth Oriented Portfolio
 - The only remaining positions were Third Point and the remaining holdings of the Grosvenor Growth portfolio
 - Third Point was transferred to the Global Equity portfolio as of April 1, 2022
 - Grosvenor Growth will continue to wind-down as that portfolio's liquidity allows

Diversifying Strategies

- The Diversifying Portfolio returned 1.14% in Q1 and 5.10% for the one-year period ending March 31, 2022
 - Outperformed the HFRI Conservative FoF Index benchmark by 78 bps in Q1 and 84 bps for the one-year period
 - Outperformed the T-bills + 2% long term objective by 45 bps (annualized) over the trailing 5-year period
- Graham Tactical Trend led performance in Q1 (+23.57%), followed by Elliott (+5.08%) and MW Global Opps (+3.09%)
 - Laurion (-7.14%) and Sculptor (-2.47%) were the biggest detractors in Q1
- Two Sigma (+27.24%), Graham Tactical Trend (+21.01%), and Elliott (+16.12%) led performance for the one-year period
 - Laurion (-8.30%) and Sculptor (-1.03%) were the only funds to report negative returns over this period

Portfolio risk and market sensitivity are near expectations for the new portfolio structure parameters

- Diversifying Portfolio
 - Target standard deviation < 25% of global equities, with an equity beta < 0.2 and equity correlation < 0.5
 - Standard deviation of 3.49% compared to the ACWI standard deviation of 13.16% since December 2011 (27% ratio)
 - Portfolio equity beta of 0.15 with an equity correlation of 0.56
- The Growth Oriented portfolio is being eliminated in connection with the 2021 asset liability study

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

Fund	Market Value	Actual %	Returns								Std Dev	Sharpe Ratio	Incep Date
			Mar	QTD	YTD	FYTD	1 Year	3 Year	5 Year	Incep			
Growth-Oriented Portfolio													
Event Driven													
Third Point Partners Qualified L.P.	69,469,391	7.1%	-1.30%	-11.33%	-11.33%	-4.98%	-1.37%	13.17%	9.41%	10.20%	10.97%	0.86	May-12
Event Driven - HF Total	69,469,391	7.1%	-1.30%	-11.33%	-11.33%	-4.98%	-1.37%	12.89%	8.28%	8.89%	11.01%	0.75	May-12
Fund of Funds													
Grosvenor SC Absolute Return Fund LLC (Growth)	27,075,571	2.8%	-1.06%	-4.85%	-4.85%	-4.92%	-1.02%	3.64%	3.94%	5.10%	6.69%	0.65	Dec-11
Fund of Funds - HF Total	27,075,571	2.8%	-1.06%	-4.85%	-4.85%	-4.92%	-1.02%	3.64%	3.87%	4.32%	6.89%	0.42	Sep-04
Growth-Oriented Portfolio Total	96,544,962	9.9%	-1.23%	-9.51%	-9.51%	-5.92%	-1.74%	6.69%	5.12%	4.92%	8.02%	0.44	Sep-04
HFRI FoF Composite + 1%			0.66%	-2.44%	-2.44%	18.35%	2.25%	6.88%	5.64%	4.52%	5.40%	0.56	Sep-04
3 Month T-Bills+5%			0.04%	0.87%	0.87%	8.66%	4.65%	5.67%	6.05%	6.24%	0.47%	-	Sep-04
Market Indices													
Libor3Month			0.08%	0.15%	0.15%	0.42%	0.26%	0.85%	1.31%	1.57%	0.48%	-	Sep-04
Bloomberg US Aggregate Bond Index			-2.78%	-5.93%	-5.93%	-6.19%	-4.15%	1.69%	2.15%	3.58%	3.30%	0.61	Sep-04
Bloomberg US High Yield Bond Index			-1.15%	-4.84%	-4.84%	11.55%	-0.66%	4.57%	4.68%	6.90%	9.15%	0.60	Sep-04
S&P 500 TR			3.71%	-4.60%	-4.60%	50.00%	15.65%	18.92%	15.99%	10.56%	14.50%	0.66	Sep-04
MSCI AC World Index Free - Net			2.17%	-5.36%	-5.36%	39.12%	7.28%	13.75%	11.64%	8.26%	15.48%	0.49	Sep-04
MSCI EAFE - Net			0.64%	-5.91%	-5.91%	27.31%	1.16%	7.78%	6.72%	5.85%	16.63%	0.33	Sep-04
MSCI EMF (Emerging Markets Free) - Net			-2.26%	-6.98%	-6.98%	18.89%	-11.37%	4.94%	5.98%	8.09%	21.00%	0.40	Sep-04

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

Fund	Market Value	Actual %	Returns								Std Dev	Sharpe Ratio	Incep Date
			Mar	QTD	YTD	FYTD	1 Year	3 Year	5 Year	Incep			
Diversifying Portfolio													
Market Neutral													
Aristeia Partners, L.P.	48,410,782	5.0%	0.82%	-0.56%	-0.56%	1.73%	3.36%	-	-	6.02%	5.79%	1.00	Jan-21
Laurion Capital, Ltd.	57,885,846	5.9%	-6.50%	-7.14%	-7.14%	-15.38%	-8.30%	13.16%	10.73%	8.57%	10.25%	0.76	Mar-14
LMR Fund Limited	50,830,746	5.2%	-0.16%	2.24%	2.24%	8.28%	9.84%	-	-	5.17%	17.63%	0.36	Nov-19
Two Sigma Risk Premia Enhanced Fund, LP	50,022,200	5.1%	1.24%	1.89%	1.89%	12.79%	27.24%	-	-	4.18%	10.98%	0.37	Sep-19
Market Neutral - HF Total	207,149,575	21.3%	-1.48%	-1.27%	-1.27%	-0.05%	5.19%	5.42%	6.05%	5.71%	6.09%	0.77	Mar-14
Event Driven													
BlackRock Event Driven Equity Fund (BILPX)	53,778,455	5.5%	-0.20%	0.20%	0.20%	-0.53%	1.38%	-	-	5.57%	5.98%	0.88	Mar-20
Davidson Kempner Institutional Partners LP	58,769,670	6.0%	-0.21%	0.10%	0.10%	0.08%	3.26%	-	-	6.89%	5.31%	1.12	May-19
Elliott International Limited - Class A & B	77,975,013	8.0%	1.80%	5.08%	5.08%	12.91%	16.12%	12.35%	9.17%	8.68%	3.26%	2.27	Apr-12
PSquared US Feeder Fund LP	52,200,992	5.4%	-0.37%	-0.78%	-0.78%	2.62%	3.33%	-	-	2.74%	4.44%	0.58	Aug-20
Event Driven - HF Total	242,724,131	24.9%	0.39%	1.48%	1.48%	4.30%	6.64%	7.83%	6.51%	7.35%	3.33%	1.86	Apr-12
Equity Long/Short													
Marshall Wace Funds LP - MW Global Opportunities (US) Fund	53,967,900	5.5%	-0.14%	3.09%	3.09%	4.22%	4.06%	6.46%	-	6.28%	8.40%	0.65	Jan-19
Equity Long/Short - HF Total	53,967,900	5.5%	-0.14%	3.09%	3.09%	4.22%	4.06%	6.46%	6.28%	6.28%	8.40%	0.65	Apr-12
Macro-Discretionary													
Eisler Capital Fund LP - Class A	43,052,683	4.4%	0.16%	0.81%	0.81%	-4.33%	-	-	-	-4.33%	4.11%	-	Jul-21
Macro-Discretionary - HF Total	43,052,683	4.4%	0.16%	0.81%	0.81%	-4.33%	-5.73%	-5.73%	0.75%	0.34%	4.36%	-0.10	May-12
Macro-Systematic													
Graham Global Investment Fund II SPC Ltd. - Tactical Trend Segregated Port	46,103,105	4.7%	9.97%	23.57%	23.57%	19.06%	21.01%	13.40%	6.58%	5.48%	12.91%	0.38	Feb-17
Macro-Systematic - HF Total	46,103,105	4.7%	9.97%	23.57%	23.57%	19.06%	21.01%	8.29%	4.93%	4.28%	10.66%	0.32	Jan-17
Multi-Strategy													
Sculptor Domestic Partners II, L.P.	64,407,052	6.6%	0.73%	-2.47%	-2.47%	-3.19%	-1.03%	9.27%	8.14%	7.74%	6.60%	1.03	Jan-12
Multi-Strategy - HF Total	64,407,052	6.6%	0.73%	-2.47%	-2.47%	-3.19%	-1.03%	4.21%	1.68%	4.68%	6.40%	0.61	May-13
Fund of Funds													
Grosvenor SC Absolute Return Fund LLC (Diversifying)	219,528,741	22.5%	0.65%	-0.03%	-0.03%	2.96%	3.61%	5.92%	2.85%	2.57%	3.72%	0.47	Dec-11
Grosvenor SC Absolute Return Fund LLC Series B	110,821	0.0%	-0.82%	-1.68%	-1.68%	-11.38%	-14.62%	-1.10%	-1.61%	-0.23%	3.98%	-0.27	Feb-13
Fund of Funds - HF Total	219,639,562	22.6%	0.65%	-0.03%	-0.03%	2.95%	3.58%	5.87%	2.69%	2.44%	3.56%	0.45	Dec-11
Diversifying Portfolio Total	877,044,007	90.1%	0.45%	1.14%	1.14%	2.52%	5.10%	5.83%	3.58%	3.59%	3.49%	0.77	Dec-11
HFRI FOF: Conservative Index			0.63%	0.36%	0.36%	17.37%	4.26%	5.83%	4.51%	3.93%	3.44%	0.88	Dec-11
3 Month T-Bills+2%			0.20%	0.54%	0.54%	3.69%	2.06%	2.81%	3.13%	2.61%	0.24%	-	Dec-11

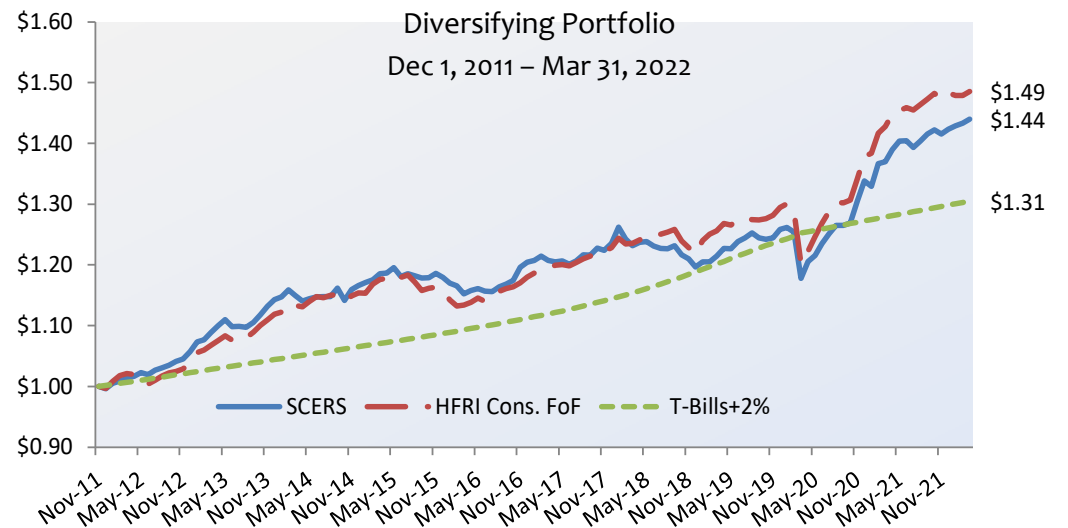
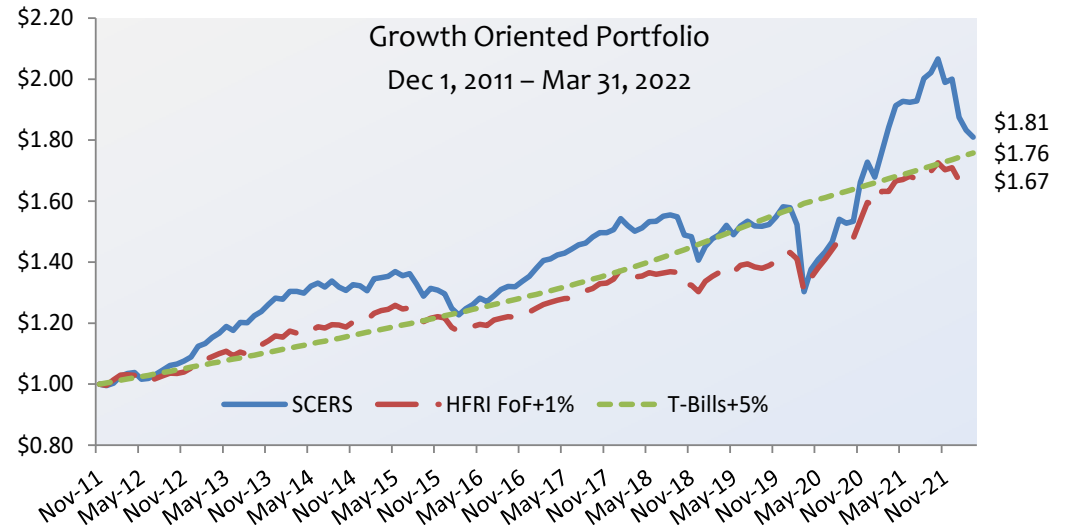
Absolute Return Portfolios Cumulative Performance – December 2011 to March 2022

Despite sharp downturns in Q1 2020 and 2022, the Growth Oriented portfolio continued to exceed the T-bills + 5% long term objective and remained ahead of the Fund of Funds Index + 1% benchmark

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

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

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



Private Equity Portfolio – as of December 31, 2021

The Private Equity portfolio's net IRR since inception is 19.61%, versus the Cambridge Associates benchmark IRR of 16.13%

- The long-term Policy objective (Russell 3000 + 3%) has a 16.52% IRR over this period

The private equity portfolio gained 3.9% in Q4 as global equity markets rebounded (ACWI +6.7%) from a Q3 downturn

- Gains were once again broad-based and many funds generated returns of more than 10% for the quarter
 - However, the portfolio saw some divergence among its growth-oriented funds (Venture Capital, Growth Equity, and some Buyout funds), with negative performing funds partially offsetting some of the larger gains in Q4
 - Summit Europe II and VC IV, AKKR IV, Marlin Heritage Europe, and Khosla Ventures VI reported the largest gains in Q4
- Distributions remained high during the quarter, continuing their strong pace
 - \$99.8 million in distributions, led by Spectrum VII, Waterland V, HIG V, Summit Europe II, and HIG Europe II

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

- Double-digit net IRRs for all vintage years prior to 2020, with all but one vintage year exceeding peer universes
- Summit VC IV (51.9%), Spectrum VII (46.5%), Trinity Ventures XII (46.2%), Waterland V (40.3%), AKKR IV (39.6%), Linden III (38.3%), AKKR V (35.6%), and Marlin Heritage (34.3%) are leading performance among SCERS' more mature funds

The legacy fund of funds, comprising 6.0% of the Private Equity portfolio, reported mixed performance during the quarter

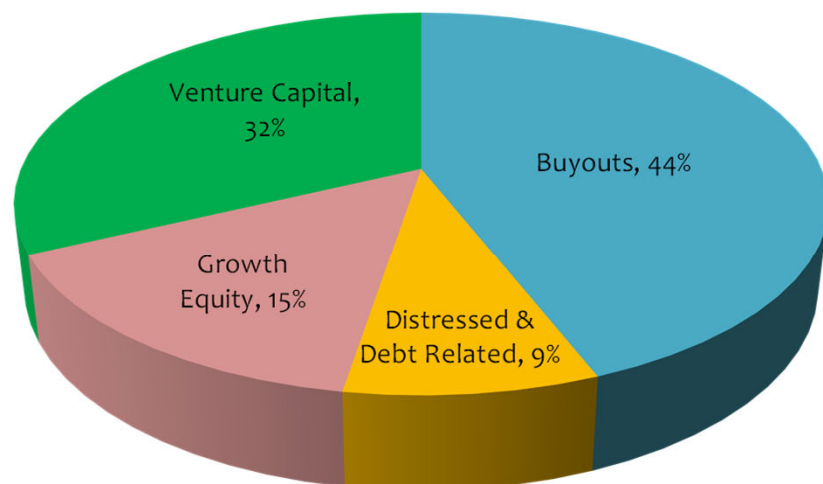
- While the legacy fund of funds were generally flat in Q4, Goldman Sachs X gained 11%
- The legacy fund of funds distributed \$12.2 million during the quarter

Changes during the quarter

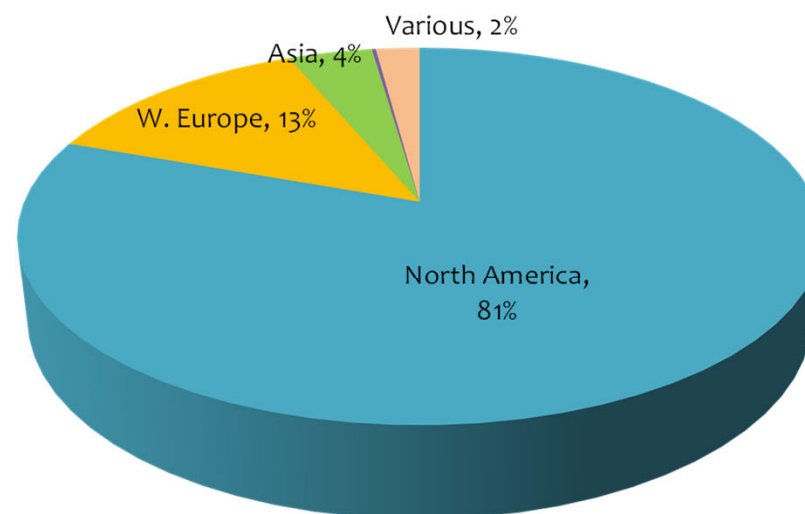
- SCERS committed \$30 million (re-up) to a small buyout fund during Q4
 - SCERS also committed \$77.5 million in total across two VC funds and one Growth Equity fund (all re-ups) in Q1 2022
- \$85.1 million in new contributions, \$99.8 million in distributions
- Total portfolio gain increased by \$66.5 million while the total portfolio IRR decreased by 0.11%

Private Equity Portfolio Exposures as of December 31, 2021

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	786,141	273,812	612,836	65%	484,563	685,233	1,169,796	556,960	25.41%		1.91x	
Distressed Debt	300,000	87,368	265,171	71%	183,865	149,202	333,067	67,896	8.52%		1.26x	
Fund of Funds	311,528	44,727	277,540	86%	331,964	169,894	501,858	224,318	12.52%		1.81x	
Growth Equity	251,390	120,871	201,360	52%	204,325	282,258	486,583	285,223	37.39%		2.42x	
Opportunistic Credit	20,000	14,416	7,784	28%	2,195	5,611	7,806	21	N/M		1.00x	
Venture Capital	355,000	74,360	280,658	79%	125,867	542,331	668,197	387,539	25.43%		2.38x	
Portfolio Total :	2,024,059	615,554	1,645,349	70%	1,332,778	1,834,528	3,167,306	1,521,957	19.61%	16.13%	1.93x	

* Exposures are based on the market values of investments as of 12/31/21.

Private Equity Portfolio Performance Details – as of December 31, 2021

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI	TVPI Bench.
Vintage Year 2006													
HarbourVest Partners VIII - Buyout Fund L.P.	Fund of Funds	37,500	1,125	36,375	97%	61,272	4,869	66,141	29,766	11.02%	7.73%	1.82x	1.75x
HarbourVest Partners VIII - Mezzanine and Distressed Debt Fund L.P.	Fund of Funds	5,000	200	4,800	96%	6,169	395	6,565	1,765	7.00%	7.73%	1.37x	1.75x
HarbourVest Partners VIII - Venture Fund L.P.	Fund of Funds	7,500	150	7,350	98%	12,974	3,912	16,886	9,536	12.10%	7.73%	2.30x	1.75x
Vintage Year 2006 Total		50,000	1,475	48,525	97%	80,415	9,177	89,592	41,067	10.94%	7.42%	1.85x	1.50x
Vintage Year 2008													
Abbott Capital Private Equity Fund VI, L.P.	Fund of Funds	75,000	375	74,625	100%	105,285	43,833	149,118	74,493	13.83%	15.43%	2.00x	2.55x
Goldman Sachs Private Equity Partners X, L.P.	Fund of Funds	75,000	13,433	69,027	82%	100,664	25,395	126,059	57,032	11.89%	15.43%	1.83x	2.55x
HarbourVest International Private Equity Partners VI-Partnership Fund L.P.	Fund of Funds	36,528	1,826	37,980	95%	42,891	31,768	74,659	36,679	12.77%	2.10%	1.97x	1.20x
Vintage Year 2008 Total		186,528	15,635	181,632	92%	248,839	100,996	349,835	168,204	12.83%	8.56%	1.93x	1.52x
Vintage Year 2011													
Waterland Private Equity Fund V C.V.	Buyout	18,150	2,975	16,235	84%	42,776	4,389	47,165	30,930	35.03%	13.96%	2.91x	1.68x
Khosla Ventures IV, L.P.	Venture Capital	10,000	190	9,810	98%	26,920	26,811	53,730	43,920	28.25%	19.29%	5.48x	3.02x
Vintage Year 2011 Total		28,150	3,165	26,045	89%	69,696	31,200	100,896	74,851	31.27%	13.66%	3.87x	1.91x
Vintage Year 2012													
Garrison Opportunity Fund III A LLC	Distressed Debt	20,000	0	20,000	100%	12,786	10,096	22,882	2,882	2.16%	16.21%	1.14x	1.66x
Summit Partners Venture Capital III-A, LP	Growth Equity	16,350	1,849	19,764	89%	37,774	3,715	41,489	21,725	17.75%	15.10%	2.10x	2.08x
New Enterprise Associates 14, L.P.	Venture Capital	25,000	875	24,125	97%	25,788	58,898	84,686	60,561	21.61%	19.66%	3.51x	2.85x
Vintage Year 2012 Total		61,350	2,724	63,889	96%	76,348	72,709	149,057	85,168	15.33%	14.34%	2.33x	1.89x
Vintage Year 2013													
Accel-KKR Capital Partners IV, L.P.	Buyout	15,000	318	15,501	98%	35,781	19,992	55,772	40,272	39.60%	17.61%	3.60x	2.04x
H.I.G. Capital Partners V, L.P.	Buyout	14,000	431	13,569	97%	16,392	13,354	29,746	16,176	24.95%	17.61%	2.19x	2.04x
Marlin Equity IV, L.P.	Buyout	20,000	0	20,070	100%	16,955	12,219	29,174	9,104	9.41%	17.61%	1.45x	2.04x
RRJ Capital Master Fund II, L.P.	Buyout	35,000	3,865	35,948	89%	40,370	13,413	53,784	17,835	11.06%	14.54%	1.50x	1.75x

¹Benchmarks:

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

Vintage Year Comparison: Cambridge Associates Global Private Equity & Venture Capital median return for the respective vintage years

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

Private Equity Portfolio Performance Details – as of December 31, 2021 (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%	28,704	3,289	31,993	7,118	7.92%	8.61%	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	4,204	33,167	8,567	7.99%	3.07%	1.35x	1.12x
Wayzata Opportunities Fund III, L.P.	Distressed Debt	30,000	24,796	14,718	17%	9,541	4,241	13,783	-935	-1.71%	8.61%	0.94x	1.37x
Trinity Ventures XI, L.P.	Venture Capital	25,000	375	24,625	99%	4,835	63,070	67,905	43,280	18.57%	18.96%	2.76x	2.49x
Vintage Year 2013 Total		194,000	36,303	173,906	81%	181,540	133,782	315,322	141,417	14.78%	14.62%	1.81x	1.80x
Vintage Year 2014													
Dyal Capital Partners II	Buyout	35,000	9,081	34,264	74%	10,625	33,556	44,181	9,917	7.79%	19.58%	1.29x	2.05x
H.I.G. Europe Capital Partners II, L.P.	Buyout	15,882	3,459	15,054	78%	11,559	11,122	22,681	7,627	14.44%	18.20%	1.51x	1.79x
Marlin Heritage Fund	Buyout	10,000	2,215	10,508	78%	17,311	9,392	26,702	16,194	34.27%	19.58%	2.54x	2.05x
Thoma Bravo XI	Buyout	30,000	3,203	32,531	89%	61,926	52,522	114,449	81,918	30.09%	19.58%	3.52x	2.05x
TPG Opportunities Partners III	Distressed Debt	40,000	11,930	49,987	70%	49,604	13,632	63,236	13,249	10.77%	9.58%	1.27x	1.33x
Spectrum Equity Investors VII, L.P.	Growth Equity	25,000	1,625	23,375	94%	54,675	64,369	119,044	95,669	46.49%	24.80%	5.09x	2.48x
Khosla Ventures V	Venture Capital	20,000	700	19,300	97%	20,848	56,768	77,617	58,317	31.38%	24.19%	4.02x	3.00x
Vintage Year 2014 Total		175,882	32,213	185,020	82%	226,548	241,362	467,909	282,889	27.65%	19.58%	2.53x	2.17x
Vintage Year 2015													
* WPEF VI Overflow Fund C.V.	Buyout	6,806	6,796	10	0%	0	0	0	-10	0.00%	18.19%	0.00x	1.79x
RRJ Capital Master Fund III, LP	Buyout	40,000	5,592	37,869	86%	35,391	13,147	48,538	10,669	12.21%	18.19%	1.28x	1.79x
WPEF VI Feeder, L.P.	Buyout	27,226	16,129	22,884	41%	26,098	24,938	51,036	28,152	27.56%	18.19%	2.23x	1.79x
Accel-KKR Growth Capital Partners II	Growth Equity	15,000	220	14,780	99%	22,562	12,361	34,924	20,144	33.00%	28.55%	2.36x	2.47x
Summit Partners Venture Capital Fund IV-A, L.P.	Growth Equity	35,000	37,504	36,408	-7%	38,912	56,038	94,950	58,542	51.86%	28.55%	2.61x	2.47x
New Enterprise Associates 15, L.P.	Venture Capital	35,000	1,925	33,079	95%	15,645	59,535	75,181	42,101	19.39%	23.91%	2.27x	2.57x
Vintage Year 2015 Total		159,032	68,166	145,030	57%	138,610	166,019	304,628	159,598	26.68%	20.09%	2.10x	1.97x
Vintage Year 2016													
Accel-KKR Capital Partners V, L.P.	Buyout	25,000	270	24,730	99%	17,779	29,007	46,787	22,057	35.57%	22.88%	1.89x	1.89x
Dyal III Pension Investors LP	Buyout	35,000	21,793	22,721	38%	17,127	26,561	43,688	20,967	23.99%	22.88%	1.92x	1.89x
Linden Capital Partners III	Buyout	35,000	2,157	39,843	94%	60,797	55,857	116,655	76,811	38.29%	22.88%	2.93x	1.89x

¹Benchmarks:

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

Vintage Year Comparison: Cambridge Associates Global Private Equity & Venture Capital median return for the respective vintage years

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

Private Equity Portfolio Performance Details – as of December 31, 2021 (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	14,747	1,734	13,123	88%	0	39,177	39,177	26,054	42.91%	16.96%	2.99x	1.60x
Thoma Bravo Fund XII, L.P.	Buyout	30,000	6,466	40,687	78%	17,154	52,717	69,872	29,185	18.28%	22.88%	1.72x	1.89x
TSG7 A L.P.	Buyout	16,000	3,342	12,658	79%	6,155	30,967	37,123	24,465	31.04%	22.88%	2.93x	1.89x
TSG7 B L.P.	Buyout	4,000	198	3,976	95%	1,498	5,112	6,610	2,634	22.58%	22.88%	1.66x	1.89x
Atalaya Special Opportunities Fund VI, L.P.	Distressed Debt	25,000	2,454	28,940	90%	36,614	6,533	43,147	14,207	14.61%	8.67%	1.49x	1.20x
Trinity Ventures XII, L.P.	Venture Capital	30,000	4,275	25,725	86%	25,510	80,883	106,393	80,668	46.24%	28.76%	4.14x	2.26x
Vintage Year 2016 Total		214,747	42,687	212,403	80%	182,635	326,815	509,451	297,048	31.00%	21.76%	2.40x	1.81x
Vintage Year 2017													
Marlin Heritage II	Buyout	10,000	-78	10,078	101%	2,117	12,690	14,807	4,729	17.56%	27.87%	1.47x	1.92x
Summit Partners Europe Growth Equity Fund II, SCSP	Growth Equity	34,032	24,761	35,796	27%	29,650	58,285	87,935	52,139	89.63%	19.13%	2.46x	1.48x
New Enterprise Associates 16, L.P.	Venture Capital	35,000	5,075	29,925	86%	4,566	44,364	48,929	19,004	19.44%	34.02%	1.64x	2.26x
Vintage Year 2017 Total		79,032	29,758	75,799	62%	36,333	115,339	151,671	75,873	39.45%	25.60%	2.00x	1.86x
Vintage Year 2018													
Linden Capital Partners IV LP	Buyout	44,330	12,010	36,029	73%	7,749	38,761	46,510	10,482	21.25%	24.44%	1.29x	1.56x
Marlin Equity V	Buyout	25,000	4,117	21,030	84%	7,998	25,055	33,054	12,023	29.75%	24.44%	1.57x	1.56x
TSG8 L.P.	Buyout	45,000	22,368	22,685	50%	132	22,393	22,525	-160	-0.59%	24.44%	0.99x	1.56x
Davidson Kempner Long-Term Distressed Opportunities Fund IV LP	Distressed Debt	35,000	2,400	33,198	93%	3,596	42,522	46,119	12,921	13.37%	N/A	1.39x	N/A
TSSP Opportunities Partners IV (A), L.P.	Distressed Debt	35,000	9,972	37,881	72%	13,783	29,664	43,447	5,565	16.41%	N/A	1.15x	N/A
RCP Fund XIII	Fund of Funds	50,000	23,628	26,372	53%	872	33,056	33,928	7,556	23.16%	N/A	1.29x	N/A
RCPDirect III	Fund of Funds	25,000	3,989	21,011	84%	1,837	26,665	28,502	7,492	21.04%	N/A	1.36x	N/A
Accel-KKR Growth Capital Partners III	Growth Equity	33,320	6,873	26,447	79%	0	31,886	31,886	5,439	19.61%	29.01%	1.21x	1.74x
Spectrum Equity VIII, L.P.	Growth Equity	25,000	2,500	22,500	90%	20,752	33,568	54,320	31,820	53.41%	29.01%	2.41x	1.74x
Khosla Ventures VI, L.P.	Venture Capital	35,000	4,270	30,730	88%	0	48,173	48,173	17,443	26.29%	42.11%	1.57x	2.14x
Vintage Year 2018 Total		352,650	92,127	277,883	74%	56,720	331,744	388,463	110,581	23.68%	30.15%	1.40x	1.66x
Vintage Year 2019													
Cortec Group Fund VII, L.P.	Buyout	30,000	10,508	25,693	65%	6,205	27,674	33,879	8,186	38.50%	29.67%	1.32x	1.40x

¹Benchmarks:

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

Vintage Year Comparison: Cambridge Associates Global Private Equity & Venture Capital median return for the respective vintage years

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

Private Equity Portfolio Performance Details – as of December 31, 2021 (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	9,896	21,540	67%	1,493	31,389	32,882	11,342	N/M	N/M	1.53x	1.40x
Thoma Bravo Fund XIII, LP	Buyout	45,000	9,278	49,289	79%	23,173	65,278	88,451	39,162	47.63%	29.67%	1.79x	1.40x
New Enterprise Associates 17, L.P.	Venture Capital	25,000	8,250	16,764	67%	1,754	22,361	24,115	7,351	36.39%	41.09%	1.44x	1.54x
Threshold Ventures III, L.P.	Venture Capital	20,000	5,340	14,660	73%	0	23,015	23,015	8,355	46.90%	41.09%	1.57x	1.54x
Vintage Year 2019 Total		150,000	43,273	127,946	71%	32,627	169,717	202,343	74,397	44.89%	35.40%	1.58x	1.49x
Vintage Year 2020													
Accel-KKR Capital Partners VI, LP	Buyout	30,000	22,524	7,476	25%	0	7,277	7,277	-199	N/M	N/M	0.97x	1.27x
Wynnchurch Capital Partners V	Buyout	20,000	14,104	5,896	29%	0	7,021	7,021	1,125	N/M	N/M	1.19x	1.27x
Davidson Kempner Long-Term Distressed Opportunities Fund V LP	Distressed Debt	30,000	6,799	23,472	77%	274	26,832	27,106	3,634	N/M	N/M	1.15x	N/A
Spectrum Equity IX-A, L.P.	Growth Equity	25,000	15,250	9,750	39%	0	9,371	9,371	-379	N/M	N/M	0.96x	1.29x
Summit Partners Europe Growth Equity Fund III, SCSp	Growth Equity	22,688	15,444	7,385	32%	0	7,474	7,474	89	N/M	N/M	1.01x	N/A
Summit Partners Venture Capital Fund V-A, L.P.	Growth Equity	20,000	14,844	5,156	26%	0	5,192	5,192	36	N/M	N/M	1.01x	1.29x
Shamrock Capital Content Fund II, L.P.	Opportunistic Credit	20,000	14,416	7,784	28%	2,195	5,611	7,806	21	N/M	N/M	1.00x	1.17x
Canvas Ventures 3, L.P.	Venture Capital	20,000	12,745	7,255	36%	0	8,146	8,146	891	N/M	N/M	1.12x	1.34x
OrbiMed Private Investments VIII, LP	Venture Capital	15,000	9,750	5,250	35%	0	5,437	5,437	187	N/M	N/M	1.04x	1.34x
Vintage Year 2020 Total		202,688	125,877	79,423	38%	2,468	82,360	84,828	5,405	N/M	N/M	1.07x	1.26x
Vintage Year 2021													
Linden Capital Partners V LP	Buyout	30,000	30,000	0	0%	0	-306	-306	-306	N/M	N/M	N/A	N/A
Marlin Heritage III, L.P.	Buyout	30,000	30,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Shamrock Capital Growth Fund V, L.P.	Buyout	20,000	19,062	938	5%	0	558	558	-381	N/M	N/M	0.59x	1.02x
Strategic Value Special Situations Fund V, L.P.	Distressed Debt	30,000	22,500	7,500	25%	0	8,189	8,189	689	N/M	N/M	1.09x	N/A
CRV Select Fund I, LP	Venture Capital	20,000	2,500	17,500	88%	0	20,394	20,394	2,894	N/M	N/M	1.17x	0.99x
CRV XVIII, LP	Venture Capital	20,000	4,850	15,150	76%	0	16,538	16,538	1,388	N/M	N/M	1.09x	0.99x
Khosla Ventures VII, L.P.	Venture Capital	20,000	13,240	6,760	34%	0	7,936	7,936	1,176	N/M	N/M	1.17x	0.99x
Vintage Year 2021 Total		170,000	122,152	47,848	28%	0	53,309	53,309	5,461	N/M	N/M	1.11x	0.99x
Portfolio Total :		2,024,059	615,554	1,645,349	70%	1,332,778	1,834,528	3,167,306	1,521,957	19.61%	16.13%	1.93x	

¹Benchmarks:

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

Vintage Year Comparison: Cambridge Associates Global Private Equity & Venture Capital median return for the respective vintage years

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

Private Credit Portfolio – as of December 31, 2021

The Private Credit portfolio's net IRR since inception is 9.61%, versus the benchmark return of 6.93%

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

The Private Credit funds reported another quarter of solid gains, following the recovery from the Q1 2020 downturn

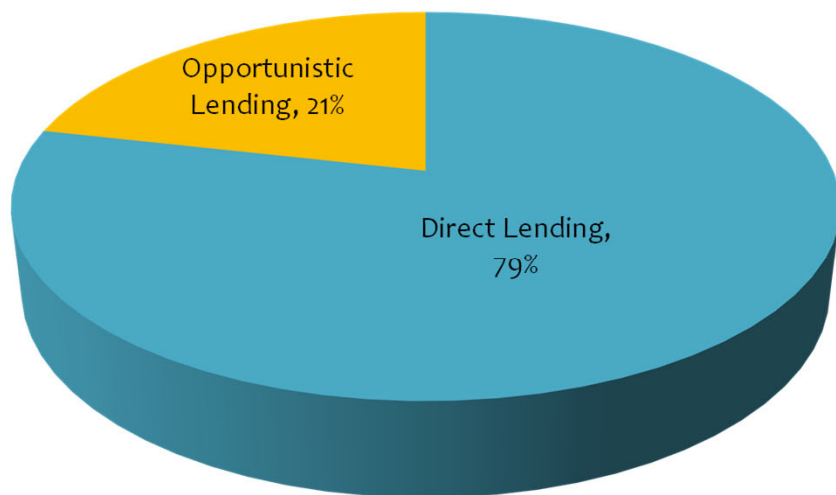
- The portfolio returned 2.8% in Q4 and 10.0% for the trailing 1-year period ending December 31, 2021
 - Most of the funds showed modest gains during Q4
 - However, the healthcare-focused Athyrium funds and OrbiMed Royalty III reported modest declines in Q4
 - Outsized positive performance came from IFM Infrastructure Debt and Summit Credit II and III
- Longer term performance has also recovered from the Q1 2020 sell-off
 - 10.8% net IRR for the 3-year period and 9.7% net IRR for the 5-year period
 - The portfolio continues to generate annualized returns of 9% - 10% over multi-year periods

Changes during the quarter

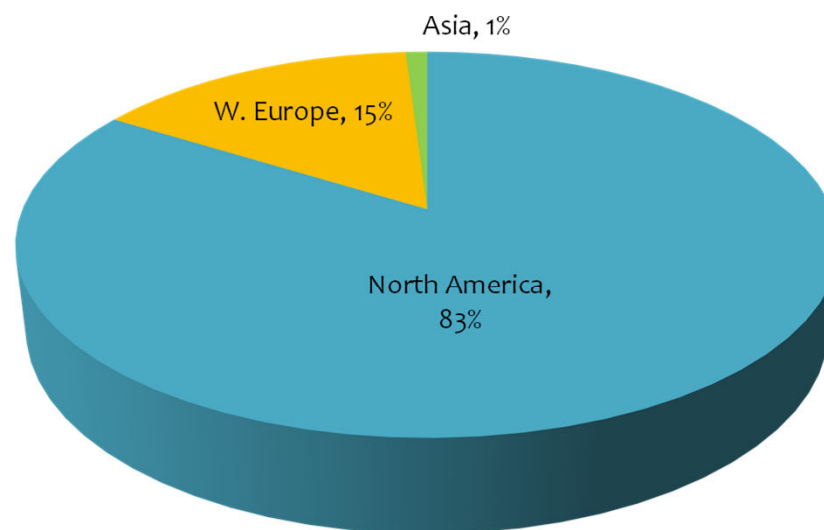
- SCERS committed \$40 million (re-up) to a Direct Lending fund during the quarter
 - SCERS made no new commitments to Private Credit funds in Q1 2022
- \$56.9 million in new contributions, \$22.8 million in distributions
- Total portfolio gain increased by \$8.1 million while the total portfolio IRR increased by 0.12%

Private Credit Portfolio Exposures as of December 31, 2021

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	485,847	212,394	340,855	56%	154,805	251,062	405,867	65,012	9.20%		1.19x	
Opportunistic Lending	152,000	69,619	119,117	54%	74,341	67,049	141,390	22,273	11.01%		1.19x	
Portfolio Total :	637,847	282,013	459,972	56%	229,146	318,111	547,257	87,285	9.61%	6.93%	1.19x	

* Exposures are based on the market values of investments as of 12/31/21.

Private Credit Portfolio Details – as of December 31, 2021

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI	TVPI Bench.
Vintage Year 2011													
Summit Partners Credit Fund, LP	Direct Lending	20,000	2,125	20,697	89%	26,391	404	26,795	6,098	8.85%	N/A	1.29x	N/A
Vintage Year 2011 Total		20,000	2,125	20,697	89%	26,391	404	26,795	6,098	8.85%	13.66%	1.29x	1.91x
Vintage Year 2014													
Summit Partners Credit Fund II, L.P.	Direct Lending	35,000	3,279	48,818	91%	44,139	14,750	58,889	10,071	7.23%	5.68%	1.21x	N/A
Vintage Year 2014 Total		35,000	3,279	48,818	91%	44,139	14,750	58,889	10,071	7.23%	19.58%	1.21x	2.17x
Vintage Year 2015													
Athyrium Opportunities Fund II	Opportunistic Lending	32,000	2,815	42,495	91%	40,748	11,317	52,065	9,570	9.21%	10.54%	1.23x	1.43x
Vintage Year 2015 Total		32,000	2,815	42,495	91%	40,748	11,317	52,065	9,570	9.21%	20.09%	1.23x	1.97x
Vintage Year 2017													
Athyrium Opportunities Fund III	Opportunistic Lending	25,000	6,651	27,556	73%	16,702	14,314	31,016	3,460	6.10%	12.82%	1.13x	1.30x
Vintage Year 2017 Total		25,000	6,651	27,556	73%	16,702	14,314	31,016	3,460	6.10%	25.60%	1.13x	1.86x
Vintage Year 2018													
Benefit Street Partners Senior Secured Opportunities Fund L.P.	Direct Lending	50,000	14,052	50,953	72%	28,105	32,523	60,628	9,675	5.95%	5.99%	1.19x	N/A
Summit Partners Credit Fund III, L.P.	Direct Lending	50,000	24,222	57,401	52%	34,622	35,461	70,083	12,682	17.44%	5.99%	1.22x	N/A
TCP Direct Lending Fund VIII-S, LLC	Direct Lending	125,000	25,070	99,930	80%	18,798	102,481	121,278	21,348	9.92%	5.99%	1.21x	N/A
Vintage Year 2018 Total		225,000	63,344	208,284	72%	81,524	170,465	251,989	43,705	9.62%	30.15%	1.21x	1.66x
Vintage Year 2019													
BSP Levered US SOF II (Senior Secured Opportunities) Fund L.P.	Direct Lending	50,000	27,330	23,232	45%	1,489	24,417	25,906	2,674	14.39%	8.83%	1.12x	N/A
OrbiMed Royalty & Credit Opportunities III, LP	Opportunistic Lending	35,000	28,714	20,643	18%	14,798	11,149	25,947	5,304	33.70%	27.23%	1.26x	1.28x
Vintage Year 2019 Total		85,000	56,044	43,875	34%	16,287	35,566	51,853	7,978	23.52%	35.40%	1.18x	1.49x
Vintage Year 2020													
MCP Private Capital Fund IV (Feeder)	Direct Lending	35,847	23,999	12,149	33%	133	12,282	12,416	267	N/M	N/M	1.02x	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 December 31, 2021 (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	13,529	26,332	66%	2,093	28,258	30,351	4,020	N/M	N/M	1.15x	1.17x
Vintage Year 2020 Total		75,847	37,528	38,481	51%	2,226	40,541	42,767	4,286	N/M	N/M	1.11x	1.26x
Vintage Year 2021													
Ares Capital Europe V	Direct Lending	40,000	27,472	12,521	31%	103	13,481	13,584	1,063	N/M	N/M	1.08x	N/A
IFM USIDF (Offshore) B Feeder	Direct Lending	40,000	31,153	8,847	22%	1,026	9,039	10,065	1,218	N/M	N/M	1.14x	N/A
Summit Partners Credit Fund IV, L.P.	Direct Lending	40,000	33,692	6,308	16%	0	6,225	6,225	-83	N/M	N/M	0.99x	N/A
Shamrock Capital Debt Opportunities Fund I, L.P.	Opportunistic Lending	20,000	17,909	2,091	10%	0	2,011	2,011	-80	N/M	N/M	0.96x	0.97x
Vintage Year 2021 Total		140,000	110,226	29,767	21%	1,128	30,755	31,884	2,117	N/M	N/M	1.07x	0.99x
Portfolio Total :		637,847	282,013	459,972	56%	229,146	318,111	547,257	87,285	9.61%	6.93%	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 December 31, 2021

The Real Assets portfolio's net IRR since inception is 11.63%, versus the blended benchmark return of 7.48%

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

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

- Performance of the Energy and Power partnerships was materially impacted by significant markdowns in Q1 2020
 - However, most of the Energy and Power (particularly upstream energy) partnerships have rebounded sharply since Q3 2020
- Infrastructure partnerships saw smaller declines in Q1 2020 and have maintained good performance since inception
- Since inception net IRRs of 12.2% for Infrastructure and 12.0% for Energy and Power

The Real Assets portfolio generated a 6.8% net return in Q4

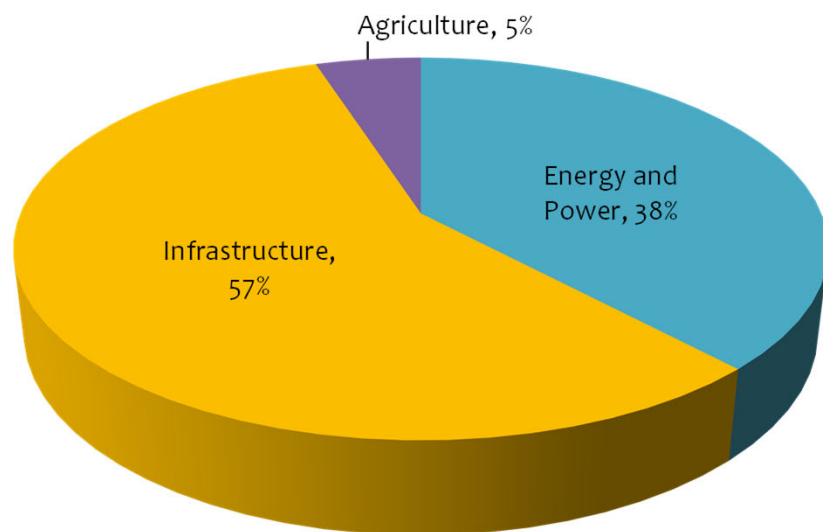
- The portfolio's Energy and Power funds led performance during the quarter
 - Most of the Energy and Power funds reported returns between 5% and 20% in Q4 on continued oil price strength
- The Infrastructure funds also reported good performance during the quarter, generally returning 3% to 5% in Q4
- Paine Schwartz Food Chain V (agriculture) and Wastewater (infrastructure) each gained more than 20% in Q4

Changes during the quarter

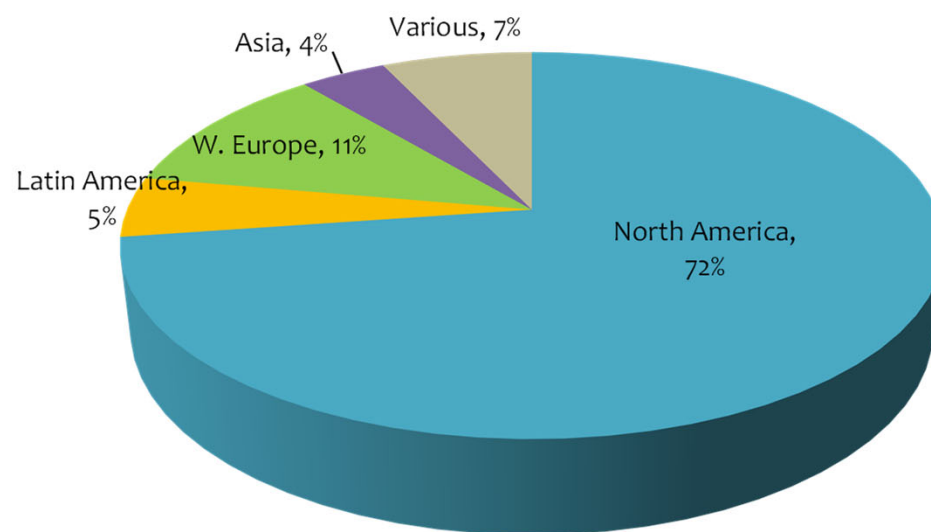
- SCERS made no new commitments to Real Assets funds during the quarter
- \$62.4 million in new contributions, \$73.4 million in distributions
 - A significant portion of the new contributions were made to an open-end infrastructure fund
- Portfolio IRR increased by 1.09% while the total portfolio gain increased by \$54.2 million

Real Assets Portfolio Exposures as of December 31, 2021

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	22,082	48,100	66%	5,893	43,671	49,563	1,463	1.55%		1.03x
Energy and Power	412,500	89,513	374,565	78%	193,369	315,919	509,288	134,722	11.95%		1.36x
Infrastructure	670,429	228,607	465,568	66%	144,918	474,389	619,307	153,739	12.18%		1.33x
Real Asset Debt	100,000	84,789	36,169	15%	45,101	0	45,101	8,932	10.27%		1.25x
Portfolio Total :	1,247,929	424,991	924,403	66%	389,280	833,979	1,223,259	298,857	11.63%	7.48%	1.32x

* Exposures are based on the market values of investments as of 12/31/21.

Real Assets Portfolio Performance Details – as of December 31, 2021

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	1,425	37,856	96%	32,850	15,977	48,827	10,971	8.30%	2.73%	1.29x
Vintage Year 2013 Total		33,000	1,425	37,856	96%	32,850	15,977	48,827	10,971	8.30%		1.29x
Vintage Year 2014												
Carlyle Power Partners II, L.P.	Energy and Power	40,000	6,919	45,671	83%	18,169	37,528	55,697	10,027	7.33%	7.46%	1.22x
EnCap Flatrock Midstream III	Energy and Power	20,000	973	23,478	95%	14,793	13,865	28,658	5,180	8.11%	7.46%	1.22x
Global Energy & Power Infrastructure Fund II	Energy and Power	35,000	1,331	37,887	96%	35,078	15,076	50,153	12,266	16.38%	7.46%	1.32x
Quantum Energy Partners VI, LP	Energy and Power	35,000	7,917	33,066	77%	23,673	49,699	73,372	40,306	28.52%	7.46%	2.22x
Pantheon SCERS SIRF MM, LLC	Infrastructure	100,000	27,668	76,632	72%	59,900	57,448	117,348	40,716	11.48%	9.68%	1.53x
Wastewater Opportunity Fund	Infrastructure	25,000	1,205	25,739	95%	9,371	20,404	29,775	4,035	5.06%	9.68%	1.16x
Vintage Year 2014 Total		255,000	46,014	242,473	82%	160,984	194,020	355,004	112,531	13.19%		1.46x
Vintage Year 2015												
ArcLight Energy Partners Fund VI	Energy and Power	40,000	5,604	42,665	86%	18,944	26,816	45,760	3,095	2.04%	8.67%	1.07x
EnCap Energy Capital Fund X, L.P.	Energy and Power	40,000	2,551	40,127	94%	19,611	39,728	59,339	19,211	11.69%	8.67%	1.48x
* 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	92,943	118,961	48%	83,655	66,544	150,199	31,238	7.71%		1.26x
Vintage Year 2016												
ACM Fund II, LLC	Agriculture	25,000	1,694	27,453	93%	4,581	17,432	22,013	-5,440	-8.13%	N/A	0.80x
Brookfield Infrastructure Fund III, L.P.	Infrastructure	40,000	7,208	34,747	82%	12,815	35,386	48,200	13,453	11.12%	9.70%	1.39x
IFM Global Infrastructure Fund	Infrastructure	125,053	0	125,053	100%	43,616	146,314	189,929	64,876	13.17%	9.70%	1.52x
Vintage Year 2016 Total		190,053	8,902	187,252	95%	61,012	199,131	260,142	72,890	10.72%		1.39x
Vintage Year 2017												
Quantum Energy Partners VII, LP	Energy and Power	40,000	13,463	31,063	66%	11,061	37,355	48,416	17,352	19.57%	8.33%	1.56x
Meridiam Infrastructure North America Fund III	Infrastructure	50,000	41,979	8,021	16%	1	11,746	11,747	3,726	25.56%	8.76%	1.46x
Vintage Year 2017 Total		90,000	55,442	39,085	38%	11,062	49,100	60,163	21,078	20.36%		1.54x

¹Benchmarks:

Real Assets Portfolio: 45% Cambridge Infrastructure, 35% Cambridge Energy, 10% NCREIF Timberland, 10% NCREIF Farmland
 Energy Investments: Cambridge Associates median return for the respective vintage years.
 Infrastructure Investments: Cambridge Associates median return for the respective vintage years.

Real Assets Portfolio Performance Details – as of December 31, 2021 (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	20,388	20,648	49%	1,311	26,239	27,550	6,903	N/M	N/M	1.33x
EnCap Flatrock Midstream IV, L.P.	Energy and Power	22,500	13,424	9,661	40%	5,416	5,930	11,346	1,685	6.39%	7.54%	1.17x
Tailwater Energy Fund III, LP	Energy and Power	32,000	2,265	31,789	93%	2,133	31,659	33,792	2,003	2.43%	7.54%	1.06x
ISQ Global Infrastructure Fund II	Infrastructure	50,000	16,325	43,265	67%	10,083	47,284	57,368	14,103	16.60%	11.87%	1.33x
Vintage Year 2018 Total		144,500	52,402	105,363	64%	18,944	111,112	130,056	24,693	11.35%		1.23x
Vintage Year 2019												
Tailwater Energy Fund IV, LP	Energy and Power	35,000	15,613	19,377	55%	0	24,678	24,678	5,301	20.73%	24.76%	1.27x
Brookfield Infrastructure Fund IV	Infrastructure	40,000	14,479	26,793	64%	3,816	27,701	31,517	4,724	11.92%	10.87%	1.18x
EQT Infrastructure IV (No.2) USD SCSp	Infrastructure	35,000	8,570	31,190	76%	5,162	32,376	37,538	6,348	14.16%	10.87%	1.20x
Vintage Year 2019 Total		110,000	38,662	77,360	65%	8,978	84,755	93,733	16,373	14.85%		1.21x
Vintage Year 2020												
NGP Royalty Partners, L.P.	Energy and Power	40,000	18,028	21,924	55%	11,641	17,608	29,249	7,325	N/M	N/M	1.33x
Vintage Year 2020 Total		40,000	18,028	21,924	55%	11,641	17,608	29,249	7,325	N/M		1.33x
Vintage Year 2021												
Digital Colony Partners II, LP	Infrastructure	35,000	19,208	15,701	45%	0	16,382	16,382	680	N/M	N/M	1.04x
Harrison Street Social Infrastructure Fund, L.P.	Infrastructure	75,000	1,972	73,028	97%	154	75,533	75,687	2,660	N/M	N/M	1.04x
ISQ Global Infrastructure Fund III (UST), L.P.	Infrastructure	50,000	46,073	3,927	8%	0	3,092	3,092	-835	N/M	N/M	0.79x
Meridiam Sustainable Infrastructure Europe IV	Infrastructure	45,376	43,920	1,472	3%	0	725	725	-747	N/M	N/M	0.49x
Vintage Year 2021 Total		205,376	111,173	94,128	46%	154	95,732	95,886	1,757	N/M		1.02x
Portfolio Total :		1,247,929	424,991	924,403	66%	389,280	833,979	1,223,259	298,857	11.63%	7.48%	1.32x

¹Benchmarks:

Real Assets Portfolio: 45% Cambridge Infrastructure, 35% Cambridge Energy, 10% NCREIF Timberland, 10% NCREIF Farmland

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

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

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