



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 18

MEETING DATE: September 16, 2020

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 June 30, 2020 for the Absolute Return portfolio, and the period ending March 31, 2020 for the Private Equity, Private Credit, Real Assets, and Opportunities 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 March 31, 2020. Therefore, returns for the first quarter reflect the impact of the market downturn caused by the pandemic. With the subsequent market recovery during the second quarter, it is expected the private market asset returns will also improve.

SCERS' alternative asset class period returns are as follows:

SCERS ALTERNATIVE ASSETS PERFORMANCE SUMMARY
Quarter Reporting Periods Ending June 30, 2020

SCERS ASSET CLASS	Quarter*	1-Year*	3-Year*	5-Year*	Since Inception*	Since Inception Date*
SCERS Absolute Return	5.7%	-1.6%	0.8%	1.1%	3.6%	Sep-04
HFRI FoF Conservative	4.9%	-1.1%	1.7%	1.3%	2.7%	
HFRI FoF Composite + 1%	7.7%	1.1%	3.1%	2.4%	3.9%	
SCERS Private Equity	-6.7%	6.9%	17.4%	15.4%	13.7%	Feb-08
Cambridge Private Equity/Venture Capital	-8.5%	0.8%	10.6%	11.0%	11.6%	
SCERS Private Credit	-6.1%	-0.9%	2.8%	4.3%	4.9%	Oct-11
Credit Suisse Leveraged Loan + 2%	-12.7%	-7.5%	1.7%	3.2%	5.3%	
SCERS Real Assets	-12.0%	-10.5%	3.0%	5.9%	6.0%	Jan-13
(45%) Cambridge Private Infrastructure; (35%) Cambridge Private Energy; (20%) NCREIF Agriculture/Timber	-9.9%	-9.4%	1.7%	4.1%	4.8%	
SCERS Opportunities	-3.8%	5.8%	3.2%	7.2%	18.3%	Jan-08
SCERS Portfolio Actuarial Rate of Return	1.8%	7.0%	7.0%	7.0%	7.0%	
*Note: Periods ending 3/31/20 for Private Equity, Private Credit, Real Assets, and Opportunities Periods ending 6/30/20 for Absolute Return All returns are net IRR, except Absolute Return which is time-weighted						

SCERS PORTFOLIO RESULTS

For the reporting quarter ended March 31, 2020, on a relative basis, SCERS' Private Equity portfolio outperformed its benchmark return, -6.7% versus -8.5%. Portfolio performance was severely impacted by the market dislocation caused by the pandemic; however, small positive to flat returns were achieved in a number of venture capital strategies blunting some of the negative return. With the rally in the equity markets over the second quarter, the private equity returns are expected to see a rebound.

Similar to the Private Equity portfolio, SCERS' Real Assets portfolio was significantly impacted by the pandemic-driven market downturn, in particular the energy strategies. Unfortunately, SCERS' Real Assets portfolio return of -12.0% meaningfully underperformed the benchmark return of -9.9%.

For the reporting quarter ended June 30, 2020, SCERS' Absolute Return portfolio rebounded from the first quarter market downturn and outperformed its benchmark return, 5.7% versus 4.9%. The portfolio benefited from the Absolute Return growth strategies that took advantage of the market rally, in particular the event driven and multi-strategy managers. The Absolute Return Growth Orientated portfolio significantly outperformed its index, 10.6% versus 7.7%.

Below are notable top and bottom performing funds among SCERS' alternative assets managers for the reporting periods identified below:

- Top performing funds:
 - Absolute Return:
 - Sculptor Domestic Partners II (multi-strategy): +13.1%
 - Third Point Partners Qualified (event driven): +11.2%
 - Lakewood Capital Partners (equity long/short): +10.7%
 - Private Equity portfolio:
 - TSSP Opportunities Partners IV (A) (growth): +24.8%
 - WPEF VI Feeder (buyout): +6.2%
 - Dyal Capital Partners I (buyout): +3.2%
 - Private Credit portfolio:
 - BSP Levered US SOF II (direct lending): +138.2%
 - OrbiMed Royalty & Credit Opportunities III (opportunistic): +4.3%%
 - Real Assets portfolio:
 - ISQ Global Infrastructure Fund II (infrastructure): +1.4%
 - Atalaya Real Assets SMA (asset-backed lending): +1.2%
- Bottom performing funds:
 - Absolute Return portfolio:
 - Winton Diversified Futures Fund (macro-systematic): -7.2%
 - Graham Global Investment Fund II (macro-systematic): -2.2%
 - Two Sigma Risk Premia Enhanced Fund (market neutral): -1.8%
 - Private Equity portfolio:
 - TSG8 (buyout): -36.2%
 - RRJ Capital Master Fund II (growth): -31.5%
 - HarbourVest Partners VIII (fund-of-funds): -20.1%
 - Private Credit portfolio:
 - Summit Partners Credit Fund (direct lending): -20.8%
 - Benefit Street Partners Senior Secured Opportunities Fund (direct lending): -9.4%

-
- TCP Direct Lending Fund VIII-S (direct lending): -8.7%
 - Real Assets portfolio:
 - EnCap Energy Capital Fund IX (energy): -50.9%
 - Paine Schwartz Food Chain Fund V (agriculture): -48.8%
 - Tailwater Energy Fund IV (energy): -35.9%

NEW INVESTMENTS

During the quarter ended June 30, 2020, SCERS made the following new investments:

- Sculptor Real Estate Fund IV (non-core real estate): \$30 million
- NGP Royalty Partners (minerals royalty): \$40 million
- Harrison Street Social Infrastructure Fund (infrastructure): \$50 million
- Silver Point Specialty Credit II (opportunistic lending): \$40 million
- Shamrock Capital Content Fund II (private equity): \$20 million
- CRV XVIII (venture capital): \$20 million
- PSquared Event Opportunity Fund (absolute return): \$45 million

ATTACHMENT

Cliffwater's Quarterly Performance Review for Alternative Assets

Prepared by:

/S/

JR Pearce
Investment Officer

Reviewed by:

/S/

Steve Davis
Chief Investment Officer

/S/

Eric Stern
Chief Executive Officer



INVESTMENT ADVISORY SERVICES

Los Angeles • New York

Sacramento County Employees' Retirement System Quarterly Performance Review

September 16, 2020



Executive Summary

Absolute Return Portfolio Performance Summary – as of June 30, 2020

Growth Oriented Strategies

- The Growth Oriented Portfolio returned 10.59% in Q2 and -2.89% for the 1 year period ending June 30, 2020
 - Outperforming the HFRI FoF Index + 1% benchmark by 294 bps in Q2 though trailing by 398 bps for the 1 year period
 - Underperforming the T-bills + 5% long term objective by 423 bps (annualized) over the trailing 5 year period
 - Only trailing the HFRI FoF Index + 1% benchmark by 45 bps (annualized) over the trailing 5 year period
- All funds generated strong returns during the Q2 recovery, led by Sculptor (+13.12%)
- The funds produced mixed results over the 1 yr period, ranging from Sculptor up 8.61% to Lakewood down -16.47%

Diversifying Strategies

- The Diversifying Portfolio returned 3.96% in Q2 and -1.18% for the 1 year period ending June 30, 2020
 - Underperforming the HFRI Conservative FoF Index benchmark by 95 bps in Q2 and 7 bps for the 1 year period
 - Underperforming the T-bills + 2% long term objective by 275 bps (annualized) over the trailing 5 year period
 - Trailing the HFRI Conservative FoF Index benchmark by 90 bps (annualized) over the trailing 5 year period
- Almost all funds reported solidly positive returns in Q2, other than the Systematic Macro funds and Two Sigma
- Large performance dispersion among funds over the 1 year period, ranging from +21.28 (Laurion) to -16.04% (KLS)

Elevated volatility across asset classes during Q1 pushed some portfolio characteristics above their targeted values

- Growth Oriented Portfolio
 - Target standard deviation < 50% of global equities, with an equity beta < 0.5 and equity correlation < 0.8
 - Standard deviation of 7.27% compared to the ACWI standard deviation of 12.93% since December 2011 (56% ratio)
 - Portfolio equity beta of 0.48 with an equity correlation of 0.85
- Diversifying Portfolio
 - Target standard deviation < 25% of global equities, with an equity beta < 0.1 and equity correlation < 0.1
 - Standard deviation of 3.00% compared to the ACWI standard deviation of 12.93% since December 2011 (23% ratio)
 - Portfolio equity beta of 0.09 with an equity correlation of 0.41

Growth Oriented Absolute Return Portfolio Performance – as of June 30, 2020

Fund	Market Value	Actual %	Returns								Std Dev	Sharpe Ratio	Incep Date
			Jun	QTD	YTD	FYTD	1 Year	3 Year	5 Year	Incep			
Growth-Oriented Portfolio													
Event Driven													
Third Point Partners Qualified L.P.	48,239,066	5.5%	1.90%	11.21%	-6.65%	-3.10%	-3.10%	1.34%	3.00%	7.61%	9.38%	0.72	May-12
Event Driven - HF Total	48,239,066	5.5%	1.90%	11.21%	-6.65%	-3.37%	-3.37%	0.09%	1.37%	6.05%	9.41%	0.56	May-12
Equity Long/Short													
Lakewood Capital Partners, LP	37,383,662	4.2%	0.19%	10.67%	-23.78%	-16.47%	-16.47%	-5.10%	0.39%	2.09%	13.60%	0.14	Jul-13
Equity Long/Short - HF Total	37,383,662	4.2%	0.19%	10.67%	-23.78%	-16.47%	-16.47%	-5.10%	0.39%	2.09%	13.60%	0.14	Jul-13
Multi-Strategy													
Sculptor Domestic Partners II, L.P.	55,823,302	6.3%	3.28%	13.12%	5.56%	8.61%	8.61%	7.35%	5.70%	7.58%	6.41%	1.02	Jan-12
Multi-Strategy - HF Total	55,823,302	6.3%	3.28%	13.12%	5.56%	8.61%	8.61%	7.35%	5.70%	7.58%	6.41%	1.02	Jan-12
Fund of Funds													
Grosvenor SC Absolute Return Fund LLC (Growth)	95,359,064	10.8%	2.07%	9.28%	-4.79%	-2.18%	-2.18%	1.97%	2.06%	4.76%	6.45%	0.60	Dec-11
Fund of Funds - HF Total	95,359,064	10.8%	2.07%	9.28%	-4.79%	-2.18%	-2.18%	1.82%	1.99%	4.04%	6.79%	0.37	Sep-04
Growth-Oriented Portfolio Total	236,805,093	26.8%	2.01%	10.59%	-6.57%	-2.89%	-2.89%	1.16%	1.96%	4.23%	7.26%	0.37	Sep-04
HFRI FoF Composite + 1%			1.65%	7.65%	-1.51%	1.09%	1.09%	3.12%	2.41%	3.90%	5.35%	0.42	Sep-04
3 Month T-Bills+5%			0.41%	1.24%	3.05%	6.63%	6.63%	6.77%	6.19%	6.40%	0.47%	-	Sep-04
Market Indices													
Libor3Month			0.02%	0.10%	0.48%	1.51%	1.51%	1.95%	1.47%	1.72%	0.48%	-	Sep-04
Bloomberg Barclays US Aggregate Bond Index			0.63%	2.90%	6.14%	8.74%	8.74%	5.33%	4.31%	4.41%	3.18%	0.83	Sep-04
Bloomberg Barclays US High Yield Bond Index			0.98%	10.18%	-3.80%	0.03%	0.03%	3.33%	4.79%	6.95%	9.46%	0.58	Sep-04
S&P 500 TR			1.99%	20.54%	-3.08%	7.51%	7.51%	10.73%	10.73%	8.97%	14.43%	0.55	Sep-04
MSCI AC World Index Free - Net			3.20%	19.22%	-6.25%	2.11%	2.11%	6.14%	6.46%	6.96%	15.60%	0.40	Sep-04
MSCI EAFE - Net			3.40%	14.88%	-11.34%	-5.13%	-5.13%	0.81%	2.05%	4.90%	16.76%	0.27	Sep-04
MSCI EMF (Emerging Markets Free) - Net			7.35%	18.08%	-9.78%	-3.39%	-3.39%	1.90%	2.86%	7.83%	21.64%	0.38	Sep-04

Diversifying Absolute Return Portfolio Performance – as of June 30, 2020

Fund	Market Value	Actual %	Returns								Std Dev	Sharpe Ratio	Incep Date
			Jun	QTD	YTD	FYTD	1 Year	3 Year	5 Year	Incep			
Diversifying Portfolio													
Market Neutral													
Laurion Capital, Ltd.	58,851,352	6.7%	2.58%	6.87%	23.29%	21.28%	21.28%	12.47%	9.29%	8.55%	6.31%	1.14	Mar-14
LMR Fund Limited	37,928,396	4.3%	0.00%	10.73%	-17.36%	-	-	-	-	-15.71%	33.25%	-	Nov-19
KLS Diversified Fund LP	34,214,271	3.9%	4.81%	2.23%	-14.96%	-16.04%	-16.04%	-	-	-9.89%	15.92%	-0.68	Jan-19
Two Sigma Risk Premia Enhanced Fund, LP	38,910,050	4.4%	-0.65%	-1.81%	-13.91%	-	-	-	-	-13.53%	9.30%	-	Sep-19
Market Neutral - HF Total	169,904,068	19.2%	1.67%	4.61%	-5.11%	-6.08%	-6.08%	2.84%	3.58%	4.05%	6.05%	0.49	Mar-14
Event Driven													
Blackrock Event Driven Equity Fund (BILPX)	45,187,370	5.1%	0.21%	5.76%	-	-	-	-	-	0.42%	-	-	Mar-20
Elliott International Limited	61,081,519	6.9%	1.60%	3.44%	5.81%	7.94%	7.94%	6.52%	7.06%	7.39%	3.31%	1.85	Apr-12
Davidson Kempner Institutional Partners LP	45,803,348	5.2%	2.92%	6.83%	0.36%	3.04%	3.04%	-	-	2.97%	7.44%	0.21	May-19
Event Driven - HF Total	152,072,237	17.2%	1.58%	5.15%	3.06%	5.38%	5.38%	5.43%	6.40%	6.98%	3.56%	1.62	Apr-12
Equity Long/Short													
Marshall Wace Funds LP - MW Global Opportunities (US) Fund	44,306,505	5.0%	-0.52%	3.20%	3.95%	8.12%	8.12%	-	-	7.05%	4.62%	1.10	Jan-19
Equity Long/Short - HF Total	44,306,505	5.0%	-0.52%	3.20%	3.95%	8.12%	8.12%	7.05%	7.05%	7.05%	4.62%	1.10	Apr-12
Macro-Systematic													
Graham Global Investment Fund II SPC Ltd. - Tactical Trend Segregate	32,541,684	3.7%	-2.58%	-2.16%	-9.00%	-3.46%	-3.46%	-0.27%	-	-2.11%	12.56%	-0.26	Feb-17
Winton Diversified Futures Fund L.P.	32,828,365	3.7%	-3.18%	-7.16%	-14.40%	-12.05%	-12.05%	-1.63%	-	-1.81%	8.43%	-0.39	Jan-17
Macro-Systematic - HF Total	65,370,049	7.4%	-2.88%	-4.74%	-11.80%	-7.97%	-7.97%	-0.96%	-	-2.05%	9.52%	-0.36	Jan-17
Fund of Funds													
Grosvenor SC Absolute Return Fund LLC (Diversifying)	182,788,559	20.7%	2.34%	5.57%	0.39%	2.69%	2.69%	0.93%	-0.33%	1.67%	3.63%	0.20	Dec-11
Grosvenor SC Absolute Return Fund LLC Series B	32,793,622	3.7%	2.57%	6.17%	1.39%	3.52%	3.52%	0.95%	-1.07%	0.97%	3.41%	-0.01	Feb-13
Fund of Funds - HF Total	215,582,181	24.4%	2.38%	5.66%	0.61%	2.79%	2.79%	0.80%	-0.68%	1.54%	3.45%	0.17	Dec-11
Diversifying Portfolio Total	647,235,040	73.2%	1.25%	3.96%	-2.66%	-1.18%	-1.18%	0.32%	0.44%	1.63%	3.29%	0.21	Dec-11
HFRI FOF: Conservative Index			1.09%	4.91%	-2.64%	-1.11%	-1.11%	1.69%	1.34%	2.73%	3.38%	0.52	Dec-11
3 Month T-Bills+2%			0.18%	0.51%	1.58%	3.63%	3.63%	3.77%	3.19%	2.72%	0.26%	-	Dec-11

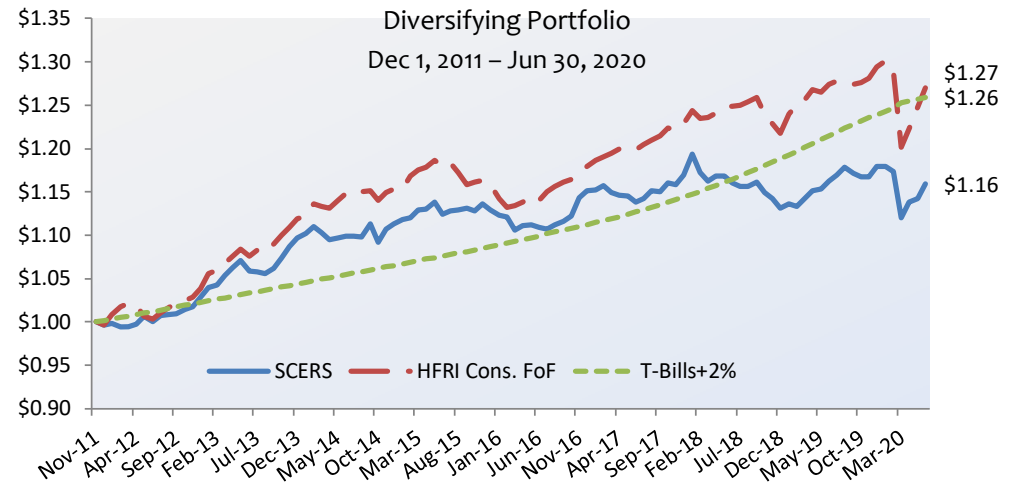
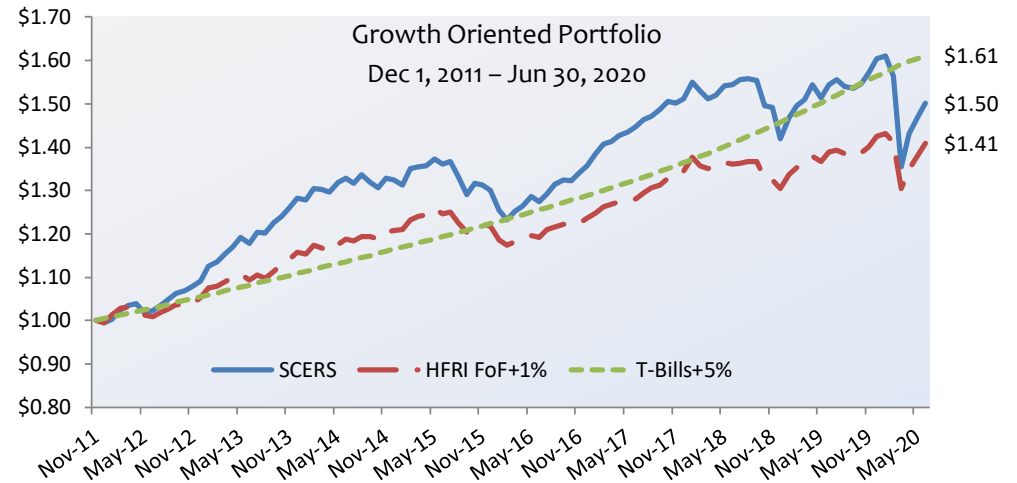
Absolute Return Portfolios Cumulative Performance – December 2011 to June 2020

The sharp downturn in Q1 pushed the Growth Oriented portfolio below the T-bills + 5% long term objective; the portfolio remains ahead of the Fund of Funds Index + 1% benchmark

The Diversifying portfolio is trailing both the T-bills + 2% long term objective and 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 March 31, 2020

The Private Equity portfolio's net IRR since inception is 13.74%, versus the Cambridge Associates benchmark IRR of 11.56%

- The long-term Policy objective (Russell 3000 + 3%) has an 11.90% IRR over this period

The private equity portfolio declined 6.7% during Q1 as financial markets sold off sharply in response to the global pandemic

- Global equities (MSCI ACWI), by comparison, declined 21.4% during Q1
- While most funds showed modest declines in Q1, the most impacted funds were down between 10% and 20% or more
 - The fund of funds and the portfolio's non-U.S funds had the biggest drag on performance
 - Trinity Ventures XI, NEA 14, Linden Capital Partners III, and DK LT Distressed IV also saw material downturns in Q1
- Distributions also slowed considerably as transaction activity declined amid the Q1 market turmoil
 - \$26.4 million in distributions, mostly from the fund of funds and Thoma Bravo XI, RRJ III, TOP III, and Marlin Heritage

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

- Double-digit net IRRs for all vintage years prior to 2018, with several years >20%
- Spectrum VII (39.6%), Summit VC IV (36.3%), Accel-KKR IV (36.0%), and Marlin Heritage (35.7%) are leading performance

The legacy fund of funds declined 8% to 13% during the quarter

- Aggregate since inception net IRR decreased from 11.36% to 10.68% during the quarter
 - The aggregate total value (TVPI) decreased from 1.65x to 1.60x
- The legacy fund of funds comprise only 10.6% of the current fair value of the Private Equity portfolio

Changes during the quarter

- SCERS committed \$20 million to Wynnchurch V (mid-market buyouts) and €20 million to Summit Europe Growth Equity III (European growth equity and buyouts, reup with existing GP) during Q1
 - SCERS committed \$20 million to a venture capital fund (reup with existing GP) in Q2 2020
 - SCERS also committed \$20 million to an opportunistic credit fund in Q2 2020
- \$54.8 million in new contributions, \$26.4 million in distributions
- Total portfolio gain decreased by \$66.5 million while the total portfolio IRR decreased by 1.62%

Private Equity Portfolio Characteristics as of March 31, 2020

The SCERS Private Equity portfolio is diversified by strategy and geography

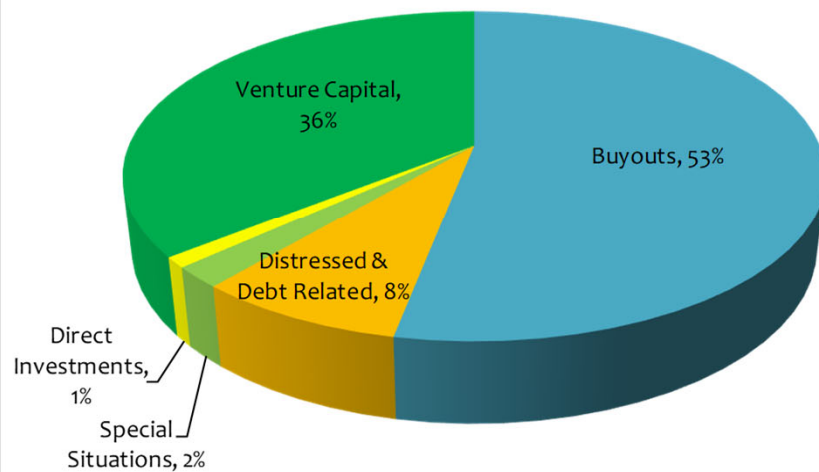
- Investments remain focused in North America, with meaningful exposure to Europe

The legacy fund of funds exposure remains relatively small as a percentage of the total portfolio's value

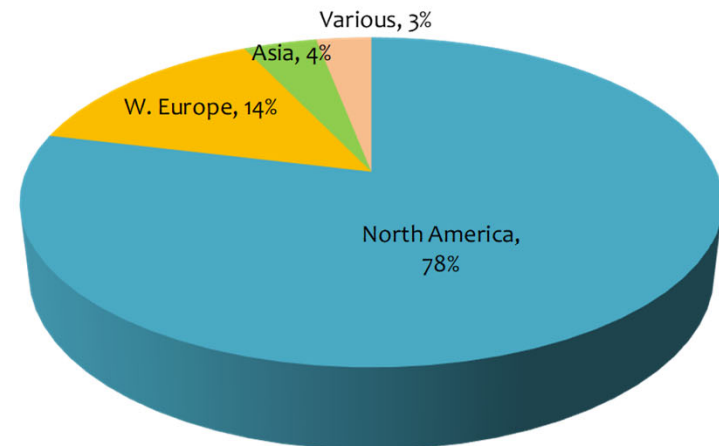
- Represents 11% of the total portfolio's value as of March 31, 2020

Portfolio strategy and geographic allocations, based on fair market value of invested capital, shown below

Market Value Strategy Exposure*



Market Value Geographic Exposure*



* Exposures are based on the market values of investments as of 3/31/20.

Private Equity Portfolio Performance Details – as of March 31, 2020

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 2006												
HarbourVest Partners VIII - Buyout Fund L.P.	Fund of Funds	37,500	1,688	35,813	96%	53,779	7,584	61,363	25,550	10.46%	7.43%	1.71x
HarbourVest Partners VIII - Mezzanine and Distressed Debt Fund L.P.	Fund of Funds	5,000	200	4,800	96%	6,023	473	6,496	1,696	6.96%	7.43%	1.35x
HarbourVest Partners VIII - Venture Fund L.P.	Fund of Funds	7,500	150	7,350	98%	10,530	3,363	13,893	6,543	10.46%	7.43%	1.89x
Vintage Year 2006 Total		50,000	2,038	47,963	96%	70,332	11,420	81,752	33,789	10.19%	6.82%	1.70x
Vintage Year 2008												
Abbott Capital Private Equity Fund VI, L.P.	Fund of Funds	75,000	750	74,250	99%	81,671	39,135	120,806	46,556	11.44%	11.87%	1.63x
Goldman Sachs Private Equity Partners X, L.P.	Fund of Funds	75,000	13,234	68,958	82%	93,427	19,853	113,280	44,322	10.92%	11.87%	1.64x
HarbourVest International Private Equity Partners VI-Partnership Fund L.P.	Fund of Funds	35,326	1,766	37,980	95%	29,457	29,929	59,386	21,406	10.38%	11.87%	1.56x
Vintage Year 2008 Total		185,326	15,750	181,188	92%	204,555	88,917	293,472	112,284	11.02%	8.18%	1.62x
Vintage Year 2011												
Waterland Private Equity Fund V C.V.	Buyout	17,553	3,412	15,729	81%	28,975	10,615	39,590	23,861	34.70%	10.59%	2.52x
Khosla Ventures IV, L.P.	Venture Capital	10,000	190	9,810	98%	14,453	14,409	28,862	19,052	21.67%	15.44%	2.94x
Vintage Year 2011 Total		27,553	3,602	25,539	87%	43,428	25,024	68,452	42,914	28.11%	11.73%	2.68x
Vintage Year 2012												
Garrison Opportunity Fund III A LLC	Distressed Debt	20,000	0	20,000	100%	7,660	11,877	19,537	-463	-0.45%	11.43%	0.98x
New Enterprise Associates 14, L.P.	Venture Capital	25,000	1,125	23,875	96%	22,637	28,091	50,728	26,853	16.05%	14.23%	2.12x
Summit Partners Venture Capital III-A, LP	Venture Capital	16,350	1,796	19,363	89%	20,806	15,997	36,804	17,441	16.90%	14.23%	1.90x
Vintage Year 2012 Total		61,350	2,921	63,238	95%	51,104	55,965	107,069	43,831	11.50%	12.33%	1.69x
Vintage Year 2013												
Accel-KKR Capital Partners IV, L.P.	Buyout	15,000	710	14,290	95%	23,270	13,466	36,736	22,446	35.97%	13.19%	2.57x
H.I.G. Capital Partners V, L.P.	Buyout	14,000	2,761	11,239	80%	3,685	13,850	17,535	6,297	19.27%	13.19%	1.56x
Marlin Equity IV, L.P.	Buyout	20,000	108	19,892	99%	9,877	15,606	25,484	5,592	8.00%	13.19%	1.28x
RRJ Capital Master Fund II, L.P.	Buyout	35,000	3,740	36,010	89%	32,169	10,493	42,662	6,652	5.85%	10.06%	1.18x
H.I.G. Bayside Loan Opportunity Fund III (Europe-US\$), L.P.	Distressed Debt	30,000	5,769	24,231	81%	23,013	8,799	31,812	7,581	7.92%	5.69%	1.31x
Wayzata Opportunities Fund III, L.P.	Distressed Debt	30,000	23,128	14,718	23%	8,849	4,518	13,367	-1,351	-3.04%	8.20%	0.91x

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 March 31, 2020 (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
Trinity Ventures XI, L.P.	Venture Capital	25,000	2,438	22,563	90%	4,835	32,679	37,515	14,952	11.88%	13.60%	1.66x
Vintage Year 2013 Total		169,000	38,655	142,942	77%	105,698	99,413	205,111	62,169	11.13%	11.08%	1.43x
Vintage Year 2014												
Dyal Capital Partners II	Buyout	35,000	9,366	28,871	73%	5,517	18,367	23,885	-4,987	-8.57%	14.50%	0.83x
H.I.G. Europe Capital Partners II, L.P.	Buyout	15,359	3,914	12,191	75%	2,624	8,911	11,536	-656	-2.80%	11.96%	0.95x
Marlin Heritage Fund	Buyout	10,000	2,284	10,430	77%	15,726	7,656	23,382	12,952	35.72%	14.50%	2.24x
Thoma Bravo XI	Buyout	30,000	3,088	32,647	90%	40,360	47,273	87,633	54,987	28.53%	14.50%	2.68x
TPG Opportunities Partners III	Distressed Debt	40,000	14,993	47,710	63%	35,318	19,512	54,830	7,120	8.06%	3.22%	1.15x
Khosla Ventures V	Venture Capital	20,000	700	19,300	97%	1,013	26,050	27,062	7,762	11.03%	15.08%	1.40x
Spectrum Equity Investors VII, L.P.	Venture Capital	25,000	2,375	22,625	91%	29,634	34,392	64,027	41,402	39.62%	15.08%	2.83x
Vintage Year 2014 Total		175,359	36,720	173,774	79%	130,193	162,161	292,354	118,580	20.80%	12.77%	1.68x
Vintage Year 2015												
* WPEF VI Overflow Fund C.V.	Buyout	6,583	6,573	10	0%	0	0	0	-10	0.00%	7.17%	0.00x
RRJ Capital Master Fund III, LP	Buyout	40,000	10,092	32,746	75%	28,712	13,161	41,873	9,126	13.61%	7.17%	1.28x
WPEF VI Feeder, L.P.	Buyout	26,330	10,900	18,957	59%	6,092	21,586	27,679	8,722	17.61%	7.17%	1.46x
Accel-KKR Growth Capital Partners II	Mezzanine	15,000	1,220	13,780	92%	9,537	9,640	19,176	5,396	18.82%	6.84%	1.39x
New Enterprise Associates 15, L.P.	Venture Capital	35,000	3,325	31,679	91%	7,456	44,904	52,360	20,681	16.83%	13.84%	1.65x
Summit Partners Venture Capital Fund IV-A, L.P.	Venture Capital	35,000	32,043	23,007	8%	20,050	17,423	37,473	14,467	36.33%	13.84%	1.63x
Vintage Year 2015 Total		157,913	64,153	120,180	59%	71,847	106,714	178,561	58,382	18.96%	12.31%	1.49x
Vintage Year 2016												
Accel-KKR Capital Partners V, L.P.	Buyout	25,000	10,689	14,311	57%	7,343	12,478	19,821	5,509	24.17%	8.11%	1.38x
Dyal III Pension Investors LP	Buyout	35,000	21,300	19,275	39%	5,755	20,958	26,712	7,437	16.40%	8.11%	1.39x
Linden Capital Partners III	Buyout	35,000	4,613	32,853	87%	25,982	36,552	62,534	29,681	27.96%	8.11%	1.90x
Marlin Heritage Europe, L.P.	Buyout	14,262	3,249	11,434	77%	0	14,930	14,930	3,496	20.79%	2.56%	1.31x
Thoma Bravo Fund XII, L.P.	Buyout	30,000	1,691	36,885	94%	8,578	38,894	47,472	10,587	13.38%	8.11%	1.29x
TSG7 A L.P.	Buyout	16,000	3,984	12,016	75%	171	14,247	14,418	2,402	8.16%	8.11%	1.20x
TSG7 B L.P.	Buyout	4,000	1,737	2,436	57%	287	1,737	2,024	-412	-11.75%	8.11%	0.83x

¹Benchmarks:

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

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

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

Private Equity Portfolio Performance Details – as of March 31, 2020 (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
Atalaya Special Opportunities Fund VI, L.P.	Distressed Debt	25,000	2,454	28,940	90%	20,485	15,717	36,202	7,262	10.38%	5.66%	1.25x
Trinity Ventures XII, L.P.	Venture Capital	30,000	6,825	23,175	77%	0	36,879	36,879	13,704	23.74%	14.30%	1.59x
Vintage Year 2016 Total		214,262	56,542	181,326	74%	68,602	192,391	260,993	79,667	18.42%	9.91%	1.44x
Vintage Year 2017												
Marlin Heritage II	Buyout	10,000	2,025	7,975	80%	0	8,183	8,183	208	2.31%	10.23%	1.03x
Summit Partners Europe Growth Equity Fund II, SCSP	Buyout	32,913	23,815	26,079	28%	16,601	19,277	35,878	9,799	83.23%	3.02%	1.38x
New Enterprise Associates 16, L.P.	Venture Capital	35,000	11,550	23,450	67%	627	24,057	24,684	1,234	3.78%	9.31%	1.05x
Vintage Year 2017 Total		77,913	37,389	57,504	52%	17,228	51,517	68,745	11,240	20.61%	8.24%	1.20x
Vintage Year 2018												
Linden Capital Partners IV LP	Buyout	44,330	32,057	14,266	28%	1,993	10,682	12,675	-1,590	N/M	N/M	0.89x
Marlin Equity V	Buyout	25,000	16,145	9,002	35%	521	10,764	11,286	2,284	18.46%	-1.47%	1.25x
TSG8 L.P.	Buyout	45,000	38,586	6,414	14%	0	3,316	3,316	-3,097	N/M	N/M	0.52x
Davidson Kempner Long-Term Distressed Opportunities Fund IV LP	Distressed Debt	35,000	6,650	28,350	81%	0	27,384	27,384	-966	-3.08%	N/A	0.97x
TSSP Opportunities Partners IV (A), L.P.	Distressed Debt	35,000	29,302	9,046	16%	3,692	7,142	10,834	1,788	N/M	N/M	1.20x
RCP Fund XIII	Fund of Funds	50,000	44,500	5,500	11%	0	3,759	3,759	-1,741	N/M	N/M	0.68x
RCPDirect III	Fund of Funds	25,000	16,114	8,886	36%	386	9,191	9,578	691	N/M	N/M	1.08x
Accel-KKR Growth Capital Partners III	Mezzanine	33,320	27,369	5,951	18%	0	5,411	5,411	-540	N/M	N/M	0.91x
Khosla Ventures VI, L.P.	Venture Capital	35,000	21,770	13,230	38%	0	12,867	12,867	-363	N/M	N/M	0.97x
Spectrum Equity VIII, L.P.	Venture Capital	25,000	6,938	18,063	72%	0	16,571	16,571	-1,491	N/M	N/M	0.92x
Vintage Year 2018 Total		352,650	239,430	118,707	32%	6,592	107,089	113,681	-5,026	-5.10%	-1.08%	0.96x
Vintage Year 2019												
Cortec Group Fund VII, L.P.	Buyout	30,000	23,131	6,869	23%	0	6,541	6,541	-328	N/M	N/M	0.95x
Gridiron Capital Fund IV, L.P.	Buyout	30,000	30,000	0	0%	0	-1,005	-1,005	-1,005	N/M	N/M	N/A
Thoma Bravo Fund XIII, LP	Buyout	45,000	17,482	27,517	61%	0	29,250	29,250	1,733	N/M	N/M	1.06x
New Enterprise Associates 17, L.P.	Venture Capital	25,000	20,625	4,389	18%	0	4,193	4,193	-196	N/M	N/M	0.96x
Threshold Ventures III, L.P.	Venture Capital	20,000	16,400	3,600	18%	0	3,269	3,269	-331	N/M	N/M	0.91x
Vintage Year 2019 Total		150,000	107,639	42,375	28%	0	42,247	42,247	-128	N/M	N/M	1.00x

¹Benchmarks:

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

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

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

Private Equity Portfolio Performance Details – as of March 31, 2020 (continued)

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	IRR Bench.	TVPI
Vintage Year 2020												
Accel-KKR Capital Partners VI, LP	Buyout	30,000	30,000	0	0%	0	0	0	0	N/M	N/M	N/A
Summit Partners Europe Growth Equity Fund III, SCSp	Buyout	21,942	21,942	0	0%	0	0	0	0	N/M	N/M	N/A
Wynnchurch Capital Partners V	Buyout	20,000	20,000	0	0%	0	0	0	0	N/M	N/M	N/A
Davidson Kempner Long-Term Distressed Opportunities Fund V LP	Distressed Debt	30,000	30,000	0	0%	0	0	0	0	N/M	N/M	N/A
Vintage Year 2020 Total		101,942	101,942	0	0%	0	0	0	0	N/M	N/M	N/A
Portfolio Total :		1,723,268	706,779	1,154,736	59%	769,579	942,859	1,712,438	557,702	13.74%	11.56%	1.48x
Portfolio Strategy Totals												
Buyout		758,272	359,394	460,345	53%	264,241	407,788	672,029	211,684	18.92%		1.46x
Distressed Debt		245,000	112,296	172,994	54%	99,016	94,951	193,967	20,972	4.69%		1.12x
Fund of Funds		310,326	78,401	243,537	75%	275,274	113,287	388,560	145,024	10.68%		1.60x
Mezzanine		48,320	28,589	19,731	41%	9,537	15,051	24,588	4,856	16.03%		1.25x
Venture Capital		361,350	128,099	258,128	65%	121,512	311,783	433,295	175,166	18.63%		1.68x
Portfolio Total :		1,723,268	706,779	1,154,736	59%	769,579	942,859	1,712,438	557,702	13.74%	11.56%	1.48x
Portfolio Geography Totals												
US		1,448,000	611,608	939,368	58%	601,935	805,157	1,407,092	467,724	13.77%		1.50x
Non-US		275,268	95,172	215,368	65%	167,644	137,702	305,346	89,978	13.59%		1.42x
Portfolio Total		1,723,268	706,779	1,154,736	59%	769,579	942,859	1,712,438	557,702	13.74%	11.56%	1.48x

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 March 31, 2020

The Private Credit portfolio's net IRR since inception is 4.90%, versus the benchmark return of 5.25%

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

The Private Credit funds saw a downturn in Q1 as credit markets sold off sharply in response to the global pandemic

- The portfolio returned -6.1% in Q1 and -0.9% for the trailing 1 year period ending March 31, 2020
 - Most of the funds were down between 2% and 9% during Q1, roughly in line with the broader market's performance
- Longer term performance was negatively impacted given the sizeable sell-off during the quarter
 - 2.8% net IRR for the 3 year period and 4.3% net IRR for the 5 year period
 - The portfolio was generating annualized returns of 7% - 8% over multi-year periods prior to the Q1 downturn

Changes during the quarter

- SCERS made no new commitments to Private Credit funds during Q1
- \$18.2 million in new contributions, \$6.5 million in distributions
- Portfolio IRR decreased 3.24% while the total portfolio gain decreased by \$12.5 million

Private Credit Portfolio Details – as of March 31, 2020

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 2011												
Summit Partners Credit Fund, LP	Direct Lending	20,000	2,125	20,697	89%	26,198	491	26,689	5,993	8.82%	N/A	1.29x
Vintage Year 2011 Total		20,000	2,125	20,697	89%	26,198	491	26,689	5,993	8.82%	11.73%	1.29x
Vintage Year 2014												
Summit Partners Credit Fund II, L.P.	Direct Lending	35,000	4,888	47,209	86%	27,629	26,120	53,749	6,539	6.63%	1.52%	1.14x
Vintage Year 2014 Total		35,000	4,888	47,209	86%	27,629	26,120	53,749	6,539	6.63%	12.77%	1.14x
Vintage Year 2015												
Athyrium Opportunities Fund II	Opportunistic Credit	32,000	4,561	40,291	86%	32,248	14,389	46,637	6,346	8.15%	6.84%	1.16x
Vintage Year 2015 Total		32,000	4,561	40,291	86%	32,248	14,389	46,637	6,346	8.15%	12.31%	1.16x
Vintage Year 2017												
Athyrium Opportunities Fund III	Opportunistic Credit	25,000	10,927	21,617	56%	7,486	15,006	22,492	875	3.27%	6.70%	1.04x
Vintage Year 2017 Total		25,000	10,927	21,617	56%	7,486	15,006	22,492	875	3.27%	8.24%	1.04x
Vintage Year 2018												
Benefit Street Partners Senior Secured Opportunities Fund L.P.	Direct Lending	50,000	6,449	50,953	87%	8,501	42,574	51,075	122	0.14%	-2.30%	1.00x
Summit Partners Credit Fund III, L.P.	Direct Lending	50,000	24,495	31,518	51%	6,013	28,192	34,205	2,687	N/M	N/M	1.09x
TCP Direct Lending Fund VIII-S, LLC	Direct Lending	100,000	28,567	71,433	71%	5,599	65,079	70,679	-755	-0.90%	-2.30%	0.99x
Vintage Year 2018 Total		200,000	59,510	153,904	70%	20,113	135,846	155,958	2,054	1.07%	-1.08%	1.01x
Vintage Year 2019												
BSP Levered US SOF II (Senior Secured Opportunities) Fund L.P.	Direct Lending	50,000	48,718	1,282	3%	0	1,468	1,468	186	N/M	N/M	1.14x
OrbiMed Royalty & Credit Opportunities III, LP	Opportunistic Credit	35,000	28,000	6,993	20%	0	6,923	6,923	-70	N/M	N/M	0.99x
Vintage Year 2019 Total		85,000	76,718	8,275	10%	0	8,391	8,391	116	N/M	N/M	1.01x
Vintage Year 2020												
MCP Private Capital Fund IV (Feeder) SCSp	Direct Lending	34,668	34,668	0	0%	0	0	0	0	N/M	N/M	N/A
Vintage Year 2020 Total		34,668	34,668	0	0%	0	0	0	0	N/M	N/M	N/A
Portfolio Total :		431,668	193,397	291,993	55%	113,674	200,243	313,917	21,923	4.90%	5.25%	1.08x

¹Benchmarks:

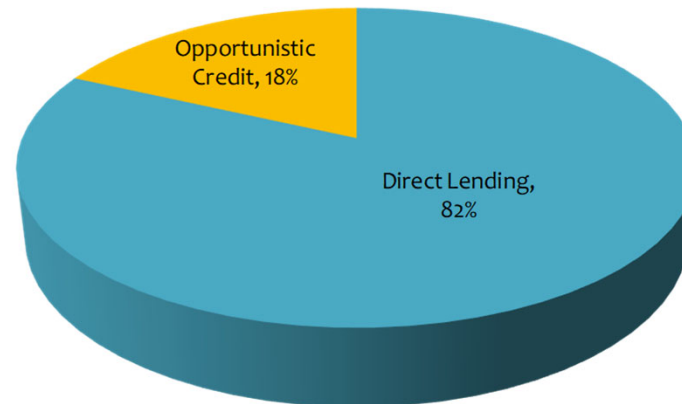
Private Credit Investments: Cambridge Associates median return for the respective debt strategies and vintage years

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

Private Credit Portfolio Details – as of March 31, 2020 (continued)

	(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											
Direct Lending	339,668	149,909	223,092	56%	73,940	163,924	237,864	14,772	4.30%		1.07x
Opportunistic Credit	92,000	43,488	68,902	53%	39,734	36,319	76,053	7,151	6.85%		1.10x
Portfolio Total :	431,668	193,397	291,993	55%	113,674	200,243	313,917	21,923	4.90%	5.25%	1.08x
Portfolio Geography Totals											
US	397,000	158,729	291,993	60%	113,674	200,243	313,917	21,923	4.90%		1.08x
Non-US	34,668	34,668	0	0%	0	0	0	0	N/M		0.00x
Portfolio Total	431,668	193,397	291,993	55%	113,674	200,243	313,917	21,923	4.90%	5.25%	1.08x

Market Value Strategy Exposure*



* Exposures are based on the market values of investments as of 3/31/20.

¹Benchmarks:

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

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

Real Assets Portfolio – as of March 31, 2020

The Real Assets portfolio's net IRR since inception is 5.97%, versus the blended benchmark return of 4.76%

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

- Recent and longer-term performance of the Energy partnerships was materially impacted by significant markdowns during Q1; Infrastructure partnerships saw smaller declines in Q1 and have maintained good performance since inception
 - Since inception net IRRs of 9.8% for Infrastructure and 2.2% for Energy
- The Real Asset Debt separate account has also performed well with a 10.3% since inception net IRR
 - That separate account market value remains small at \$17.2 million, with very few new investments

The Real Assets portfolio declined 12.0% overall during Q1

- The portfolio's largest markdowns came primarily from the Energy funds
 - The Energy funds generally declined between 10% and 35% during the quarter
- The Infrastructure funds were mostly down 4% - 9%

Changes during the quarter

- SCERS made no new commitments to Real Assets funds during Q1
- \$35.6 million in new contributions, \$18.7 million in distributions
- Portfolio IRR declined by 5.90% while the total portfolio gain declined by \$71.5 million

Real Assets Portfolio Performance Details – as of March 31, 2020

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	33,000	2,032	37,245	94%	28,609	8,039	36,648	-597	-0.75%	2.30%	0.98x
Vintage Year 2013 Total		33,000	2,032	37,245	94%	28,609	8,039	36,648	-597	-0.75%		0.98x
Vintage Year 2014												
Carlyle Power Partners II, L.P.	Energy	40,000	14,139	33,565	65%	7,547	26,078	33,625	60	0.09%	5.19%	1.00x
EnCap Flatrock Midstream III	Energy	20,000	1,545	22,694	92%	9,818	15,006	24,824	2,130	6.11%	5.19%	1.09x
Global Energy & Power Infrastructure Fund II	Energy	35,000	2,757	35,672	92%	26,966	22,015	48,981	13,309	25.12%	5.19%	1.37x
Quantum Energy Partners VI, LP	Energy	35,000	9,572	31,268	73%	18,740	26,195	44,936	13,668	20.28%	5.19%	1.44x
Pantheon SCERS SIRF MM, LLC	Infrastructure	100,000	33,968	70,332	66%	26,900	65,968	92,868	22,536	9.73%	7.63%	1.32x
Wastewater Opportunity Fund	Infrastructure	25,000	1,253	23,755	95%	1,998	21,975	23,973	218	0.55%	7.63%	1.01x
Vintage Year 2014 Total		255,000	63,234	217,285	75%	91,969	177,236	269,206	51,921	10.54%		1.24x
Vintage Year 2015												
ArcLight Energy Partners Fund VI	Energy	40,000	5,604	42,665	86%	17,220	25,154	42,374	-292	-0.29%	0.42%	0.99x
EnCap Energy Capital Fund X, L.P.	Energy	40,000	6,388	36,259	84%	7,896	22,723	30,619	-5,640	-7.42%	0.42%	0.84x
Atalaya Real Assets SMA	Real Asset Debt	100,000	84,789	36,169	15%	26,527	17,180	43,707	7,538	10.29%	N/A	1.21x
Vintage Year 2015 Total		180,000	96,780	115,093	46%	51,643	65,056	116,699	1,606	0.65%		1.01x
Vintage Year 2016												
ACM Fund II, LLC	Agriculture	25,000	5,586	23,561	78%	4,581	16,194	20,776	-2,785	-7.71%	5.81%	0.88x
Brookfield Infrastructure Fund III, L.P.	Infrastructure	40,000	7,278	32,711	82%	8,057	30,800	38,857	6,146	9.55%	N/A	1.19x
IFM Global Infrastructure Fund	Infrastructure	125,053	0	125,053	100%	33,389	125,139	158,528	33,475	12.65%	N/A	1.27x
Vintage Year 2016 Total		190,053	12,864	181,324	93%	46,027	172,133	218,160	36,836	10.10%		1.20x
Vintage Year 2017												
Quantum Energy Partners VII, LP	Energy	40,000	20,560	21,797	49%	2,415	13,893	16,308	-5,489	-18.40%	-13.97%	0.75x
Meridiam Infrastructure North America Fund III	Infrastructure	50,000	47,365	2,635	5%	1	846	847	-1,788	-69.46%	N/A	0.32x
Vintage Year 2017 Total		90,000	67,925	24,433	25%	2,416	14,739	17,155	-7,278	-22.48%		0.70x
Vintage Year 2018												
Paine Schwartz Food Chain Fund V, LP	Agriculture	40,000	35,895	4,105	10%	0	3,006	3,006	-1,099	N/M	N/M	0.73x

¹Benchmarks:

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

Real Assets Portfolio Performance Details – as of March 31, 2020 (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
EnCap Flatrock Midstream IV, L.P.	Energy	22,500	14,867	8,218	34%	588	8,035	8,623	405	3.71%	-3.84%	1.05x
Tailwater Energy Fund III, LP	Energy	32,000	7,486	26,569	77%	1,662	21,701	23,362	-3,206	N/M	N/M	0.88x
ISQ Global Infrastructure Fund II	Infrastructure	50,000	20,018	33,679	60%	3,697	32,979	36,677	2,998	N/M	N/M	1.09x
Vintage Year 2018 Total		144,500	78,266	72,571	46%	5,947	65,721	71,668	-904	-1.40%		0.99x
Vintage Year 2019												
Tailwater Energy Fund IV, LP	Energy	35,000	28,545	6,445	18%	0	4,012	4,012	-2,433	N/M	N/M	0.62x
Brookfield Infrastructure Fund IV	Infrastructure	40,000	24,591	15,322	39%	81	14,175	14,256	-1,066	N/M	N/M	0.93x
EQT Infrastructure IV (No.2) USD SCSp	Infrastructure	35,000	19,073	16,755	46%	876	14,858	15,734	-1,021	N/M	N/M	0.94x
Vintage Year 2019 Total		110,000	72,209	38,523	34%	957	33,045	34,003	-4,520	N/M		0.88x
Portfolio Total :		1,002,553	393,310	686,474	61%	227,569	535,969	763,538	77,064	5.97%	4.76%	1.11x
Portfolio Strategy Totals												
Agriculture		65,000	41,481	27,666	36%	4,581	19,200	23,781	-3,884	-10.93%		0.86x
Energy		372,500	113,494	302,398	70%	121,462	192,850	314,312	11,914	2.18%		1.04x
Infrastructure		465,053	153,546	320,242	67%	74,999	306,740	381,739	61,497	9.75%		1.19x
Real Asset Debt		100,000	84,789	36,169	15%	26,527	17,180	43,707	7,538	10.29%		1.21x
Portfolio Total :		1,002,553	393,310	686,474	61%	227,569	535,969	763,538	77,064	5.97%	4.76%	1.11x
Portfolio Geography Totals												
US		712,500	322,349	462,954	55%	181,469	318,018	499,487	36,532	3.96%		1.08x
Non-US		290,053	70,961	223,520	76%	46,101	217,951	264,052	40,532	11.33%		1.18x
Portfolio Total		1,002,553	393,310	686,474	61%	227,569	535,969	763,538	77,064	5.97%	4.76%	1.11x

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 Characteristics as of March 31, 2020

The SCERS Real Assets portfolio is primarily Infrastructure and Energy

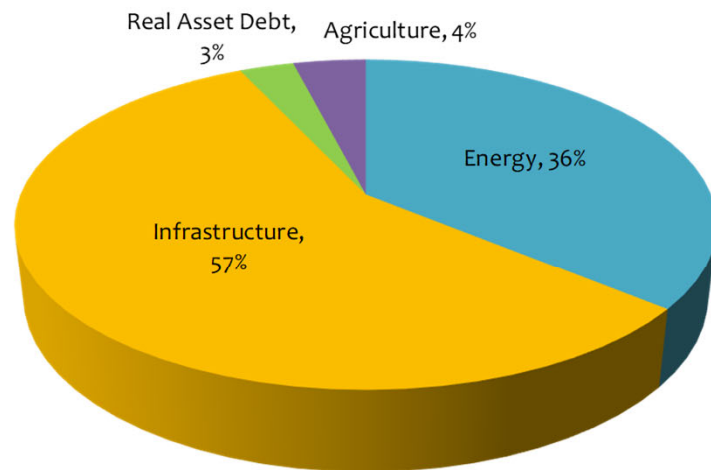
- Other strategies such as Agriculture represent much smaller allocations in the portfolio

The portfolio is focused on North America, though is diversified globally

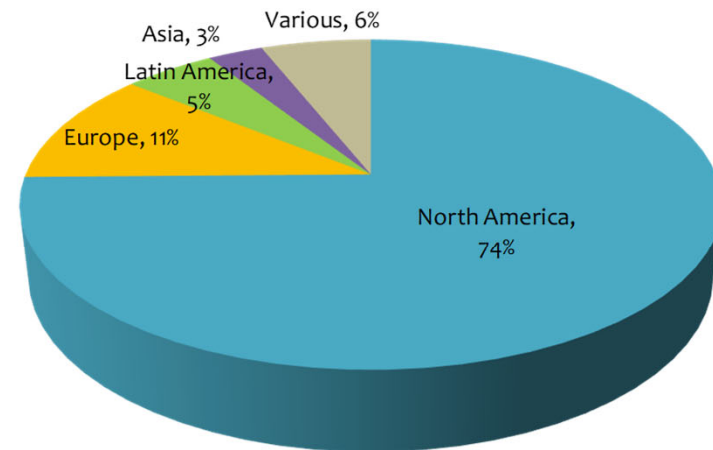
- The portfolio has exposure to Europe, Latin America, and Asia

Portfolio strategy and geographic allocations, based on fair market value of invested capital, shown below

Market Value Strategy Exposure*



Market Value Geographic Exposure*



* Exposures are based on the market values of investments as of 3/31/20.

Opportunities Portfolio – as of March 31, 2020

The Opportunities portfolio's net IRR since inception is 18.31%

- The long-term benchmark is SCERS' 7.00% total portfolio actuarial return objective
- Also tracking the portfolio's 3 year IRR versus an intermediate-term benchmark
 - 3.22% portfolio IRR v 5.51% IRR for the SCERS' total portfolio policy weighted benchmark over the last 3 years
- The portfolio only includes legacy distressed debt funds (fully liquidated) and one post-2009 distressed fund (Atalaya V)
 - The 3 year comparison, for example, reflects only the performance of Atalaya V

The legacy distressed funds performed very well, the current fund is performing at expectations

- SCERS' earlier vintage distressed debt funds are liquidated and have distributed significant capital back to SCERS
 - Stone Tower, MetWest TALF, and PIMCO have distributed \$129.3 million
- Atalaya SOF V, a vintage 2013 fund, has produced a 7.60% net IRR since inception

Changes during the quarter

- SCERS made no new commitments categorized as Opportunities funds during Q1 2020
- No new contributions, \$0.2 million in distributions
- Portfolio IRR decreased 0.05%, total portfolio gain decreased slightly

As mentioned, the Opportunities portfolio only includes certain distressed debt funds

- SCERS has additional distressed debt investments within its Private Equity portfolio
- Categorizations were made at the time of each investment

Opportunities Portfolio Performance Details – as of March 31, 2020

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 2007												
* PIMCO Distressed Mortgage Fund, LP	Distressed Debt	18,000	0	18,000	100%	25,384	0	25,384	7,384	8.96%	9.87%	1.41x
Vintage Year 2007 Total		18,000	0	18,000	100%	25,384	0	25,384	7,384	8.96%		1.41x
Vintage Year 2008												
* PIMCO Distressed Mortgage Fund II, L.P.	Distressed Debt	12,000	0	12,000	100%	35,277	0	35,277	23,277	34.39%	12.16%	2.94x
Vintage Year 2008 Total		12,000	0	12,000	100%	35,277	0	35,277	23,277	34.39%		2.94x
Vintage Year 2009												
* MetWest Enhanced TALF Strategy Fund LP	Distressed Debt	20,000	0	20,000	100%	25,304	0	25,304	5,304	11.21%	14.38%	1.27x
* Stone Tower Structured Credit Recovery Fund LP	Distressed Debt	25,000	0	25,248	100%	43,383	0	43,383	18,135	25.30%	14.38%	1.72x
Vintage Year 2009 Total		45,000	0	45,248	100%	68,687	0	68,687	23,439	19.71%		1.52x
Vintage Year 2013												
Atalaya Special Opportunities Fund V, L.P.	Distressed Debt	25,000	1,117	24,875	96%	24,351	6,587	30,938	6,063	7.60%	8.20%	1.24x
Vintage Year 2013 Total		25,000	1,117	24,875	96%	24,351	6,587	30,938	6,063	7.60%		1.24x
Portfolio Total :		100,000	1,117	100,123	99%	153,699	6,587	160,286	60,163	18.31%	7.00%	1.60x

* Liquidated partnership

¹ Benchmarks:

Opportunities Investments: Cambridge Associates median return for the respective strategies and vintage years
Opportunities Portfolio: 7.00% actuarial return objective

Important Notice

This presentation was prepared exclusively for information and discussion purposes, and is not meant to be, nor shall it be construed as, an attempt to define all information that may be material to you. All information including opinions or facts expressed herein are current as of the date appearing in this presentation and is subject to change without notice. All third party information has been obtained from sources believed to be reliable. No representation, warranty, or undertaking, express or implied, is given as to the accuracy or completeness of the information or opinions contained in this presentation. Past performance does not guarantee future performance.

This presentation may include sample or pro forma performance. Such information is presented for illustrative purposes only and is based on various assumptions, not all of which are described herein. Such assumptions, data, or projections may have a material impact on the returns shown.

References to market or composite indices (such as the S&P 500), benchmarks or other measures of relative market performance over a specified period of time (each, an “index”) are provided for information only. Reference to an index does not imply that a portfolio will achieve returns, volatility or other results similar to the index. The composition of an index may not reflect the manner in which a portfolio is constructed in relation to expected or achieved returns, portfolio guidelines, restrictions, sectors, correlations, concentrations, volatility or tracking error targets, all of which are subject to change over time.

- Hedge Fund Research, Inc. (“HFR”) is the source and owner of the HFR data contained or reflected in this report and all trademarks related thereto.
- Frank Russell Company (“FRC”) is the source and owner of the Russell Index data contained or reflected in this material and all trademarks and copyrights related thereto. The Russell Index data may contain confidential information and unauthorized use, disclosure, copying, dissemination or redistribution is strictly prohibited.
- Thomson Financial Inc. is the owner and/or licensor of the Cambridge Associates LLC data contained or reflected in this material.