



INVESTMENT ADVISORY SERVICES

Los Angeles • New York

Sacramento County Employees' Retirement System Quarterly Performance Review

September 18, 2019



Executive Summary

Absolute Return Portfolio Performance Summary – as of June 30, 2019

Growth Oriented Strategies

- The Growth Oriented Portfolio returned 2.23% in Q2 and 0.02% for the 1 year period ending June 30, 2019
 - Outperforming the HFRI FoF Index + 1% benchmark by 32 bps in Q2 though trailing by 234 bps for the 1 year period
 - The portfolio is outperforming that benchmark by 128 bps (annualized) over the trailing 3 year period
 - Underperforming the T-bills + 5% long term objective by 284 bps (annualized) over the trailing 5 year period
- The portfolio's most recent outperformance was driven by Och-Ziff and Third Point

Diversifying Strategies

- The Diversifying Portfolio returned 1.80% in Q2 and 0.25% for the 1 year period ending June 30, 2019
 - Outperforming the HFRI Conservative FoF Index benchmark by 9 bps in Q2 though trailing by 210 bps for the 1 year period
 - Underperforming the T-bills + 2% long term objective by 172 bps (annualized) over the trailing 5 year period
- AQR DELTA has been the primary detractor from performance over these periods

Portfolio risk and market sensitivity remains within expectations for the Growth Oriented and Diversifying portfolios

- Growth Oriented
 - Portfolio standard deviation of 5.24% compared to the ACWI standard deviation of 11.50% since December 2011
 - Portfolio equity beta of 0.38 with an equity correlation of 0.84
 - Target standard deviation < 50% of global equities, with an equity beta < 0.5 and equity correlation < 0.8
- Diversifying
 - Portfolio standard deviation of 2.53% compared to the ACWI standard deviation of 11.50% since December 2011
 - Portfolio equity beta of 0.05 with an equity correlation of 0.21
 - Target standard deviation < 25% of global equities, with an equity beta < 0.1 and equity correlation < 0.1

Relative differences between the Growth Oriented and Diversifying portfolios reflect objectives and design

- Expect higher returns over the long-term from the Growth Oriented portfolio, though with more volatility
 - Both portfolios expected to provide diversification and risk reduction benefits for the overall SCERS portfolio
 - However, risk and correlations certainly increased with the broad market downturn seen in Q4 2018

Growth Oriented Absolute Return Portfolio Performance – as of June 30, 2019

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													
JANA Partners Qualified, L.P.	4,050,323	0.4%	-2.28%	-2.28%	-0.16%	-12.04%	-12.04%	2.19%	-1.28%	1.24%	8.78%	0.06	Jul-13
Third Point Partners Qualified L.P.	49,759,972	5.4%	3.70%	3.82%	13.33%	-0.05%	-0.05%	7.33%	4.74%	9.19%	7.96%	1.03	May-12
Event Driven - HF Total	53,810,295	5.9%	3.22%	3.33%	11.02%	-2.13%	-2.13%	6.26%	2.60%	7.43%	8.02%	0.82	May-12
Equity Long/Short													
Lakewood Capital Partners, LP	44,755,348	4.9%	2.70%	1.58%	14.81%	3.12%	3.12%	5.71%	4.42%	5.57%	9.50%	0.51	Jul-13
Equity Long/Short - HF Total	44,755,348	4.9%	2.70%	1.58%	14.81%	3.12%	3.12%	5.71%	4.42%	5.57%	9.50%	0.51	Jul-13
Multi-Strategy													
OZ Domestic Partners II, L.P.	51,404,786	5.6%	2.30%	4.12%	12.49%	5.46%	5.46%	9.37%	5.50%	7.44%	5.13%	1.25	Jan-12
Multi-Strategy - HF Total	51,404,786	5.6%	2.30%	4.12%	12.49%	5.46%	5.46%	9.37%	5.50%	7.44%	5.13%	1.25	Jan-12
Fund of Funds													
Grosvenor SC Absolute Return Fund LLC (Growth)	148,617,864	16.2%	1.24%	1.39%	5.26%	-0.30%	-0.30%	6.95%	2.72%	5.70%	4.52%	1.04	Dec-11
Fund of Funds - HF Total	148,617,864	16.2%	1.24%	1.39%	5.26%	-0.30%	-0.30%	6.65%	2.74%	4.48%	5.97%	0.47	Sep-04
Growth-Oriented Portfolio Total	298,588,292	32.5%	1.99%	2.23%	8.69%	0.02%	0.02%	6.60%	3.03%	4.73%	6.32%	0.49	Sep-04
HFRI FoF Composite + 1%			1.80%	1.91%	6.80%	2.36%	2.36%	5.32%	3.23%	4.11%	4.99%	0.49	Sep-04
3 Month T-Bills+5%			0.61%	1.83%	3.68%	7.31%	7.31%	6.38%	5.87%	6.38%	0.48%	-	Sep-04
Market Indices													
Libor3Month			0.19%	0.61%	1.26%	2.54%	2.54%	1.78%	1.22%	1.73%	0.50%	-	Sep-04
Bloomberg Barclays US Aggregate Bond Index			1.26%	3.09%	6.12%	7.88%	7.88%	2.32%	2.95%	4.12%	3.14%	0.75	Sep-04
Bloomberg Barclays US High Yield Bond Index			2.28%	2.50%	9.93%	7.48%	7.48%	7.52%	4.70%	7.43%	9.12%	0.64	Sep-04
S&P 500 TR			7.05%	4.30%	18.54%	10.42%	10.42%	14.19%	10.71%	9.07%	13.87%	0.57	Sep-04
MSCI AC World Index Free - Net			6.55%	3.61%	16.23%	5.74%	5.74%	11.62%	6.16%	7.30%	15.19%	0.43	Sep-04
MSCI EAFE - Net			5.93%	3.68%	14.03%	1.08%	1.08%	9.11%	2.25%	5.61%	16.55%	0.31	Sep-04
MSCI EMF (Emerging Markets Free) - Net			6.24%	0.61%	10.59%	1.21%	1.21%	10.66%	2.49%	8.64%	21.53%	0.42	Sep-04

Diversifying Absolute Return Portfolio Performance – as of June 30, 2019

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.	48,538,292	5.3%	-2.09%	3.37%	4.80%	5.88%	5.88%	6.19%	7.09%	6.32%	5.16%	0.99	Mar-14
KLS Diversified Fund LP	40,751,928	4.4%	0.70%	1.21%	1.88%	-	-	-	-	1.88%	3.12%	-	Jan-19
Market Neutral - HF Total	89,290,220	9.7%	-0.84%	2.37%	3.45%	4.51%	4.51%	5.73%	6.81%	6.06%	4.87%	1.00	Mar-14
Event Driven													
Elliott International Limited	56,586,010	6.2%	2.60%	2.91%	4.34%	3.61%	3.61%	7.59%	6.29%	7.31%	3.42%	1.80	Apr-12
Davidson Kempner Institutional Partners LP	32,801,246	3.6%	0.69%	-	-	-	-	-	-	0.39%	-	-	May-19
Event Driven - HF Total	89,387,256	9.7%	1.89%	2.19%	3.62%	2.89%	2.89%	7.34%	6.14%	7.21%	3.37%	1.79	Apr-12
Equity Long/Short													
Marshall Wace Funds LP - MW Global Opportunities (US)	40,978,660	4.5%	0.06%	1.40%	2.45%	-	-	-	-	2.45%	4.12%	-	Jan-19
Equity Long/Short - HF Total	40,978,660	4.5%	0.06%	1.40%	2.45%	2.45%	4.95%	4.95%	4.95%	4.95%	4.12%	0.59	Apr-12
Macro-Systematic													
Graham Global Investment Fund II SPC Ltd. - Tactical Treas	33,707,719	3.7%	4.61%	6.62%	11.02%	3.44%	3.44%	-	-	-1.54%	12.66%	-0.22	Feb-17
Winton Diversified Futures Fund L.P.	37,324,134	4.1%	-0.28%	-0.05%	1.17%	-0.39%	-0.39%	-	-	2.61%	7.36%	0.12	Jan-17
Macro-Systematic - HF Total	71,031,854	7.7%	1.98%	3.01%	5.62%	1.39%	1.39%	-	-	0.43%	9.03%	-0.12	Jan-17
Multi-Strategy													
AQR DELTA Fund II, LP	57,543,951	6.3%	-0.42%	-4.14%	-5.89%	-12.19%	-12.19%	-4.56%	0.27%	0.39%	5.89%	-0.08	May-13
Multi-Strategy - HF Total	57,543,951	6.3%	-0.42%	-4.14%	-5.89%	-12.19%	-12.19%	-4.56%	0.27%	0.39%	5.89%	-0.08	May-13
Fund of Funds													
Grosvenor SC Absolute Return Fund LLC (Diversifying)	123,689,072	13.5%	1.06%	2.59%	3.41%	1.05%	1.05%	0.74%	-0.34%	1.53%	3.06%	0.21	Dec-11
Grosvenor SC Absolute Return Fund LLC Series B	148,700,366	16.2%	1.33%	2.59%	4.16%	1.32%	1.32%	-0.67%	-0.92%	0.59%	2.71%	-0.14	Feb-13
Fund of Funds - HF Total	272,389,438	29.6%	1.20%	2.59%	3.83%	1.19%	1.19%	0.18%	-0.57%	1.38%	2.84%	0.17	Dec-11
Diversifying Portfolio Total	620,621,378	67.5%	0.86%	1.80%	2.85%	0.25%	0.25%	1.59%	1.15%	2.01%	2.53%	0.43	Dec-11
HFRI FOF: Conservative Index			0.95%	1.71%	4.95%	2.35%	2.35%	3.89%	2.17%	3.29%	2.30%	1.01	Dec-11
3 Month T-Bills+2%			0.38%	1.12%	2.22%	4.31%	4.31%	3.38%	2.87%	2.60%	0.23%	-	Dec-11
SCERS Absolute Return Portfolio	919,209,671	100.0%	1.23%	1.94%	4.73%	-0.01%	-0.01%	3.96%	1.91%	3.95%	5.66%	0.41	Sep-04
3 Month T-Bills+5%			0.61%	1.83%	3.68%	7.31%	7.31%	6.38%	5.87%	6.38%	0.48%	-	Sep-04
HFRI Fund of Funds Composite Index			1.74%	1.69%	6.38%	1.36%	1.36%	4.32%	2.23%	3.11%	5.03%	0.29	Sep-04

* Included the SCERS Total Absolute Return Portfolio performance for reference

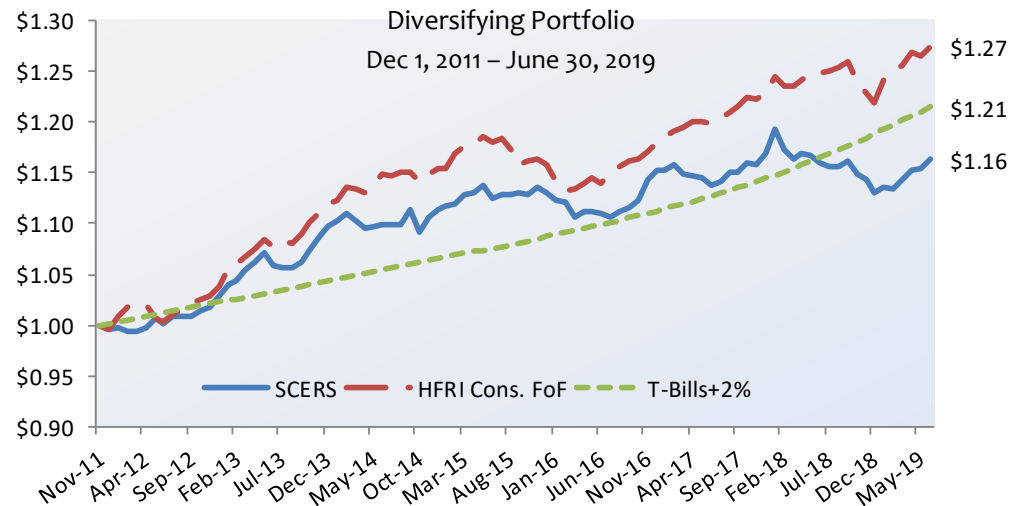
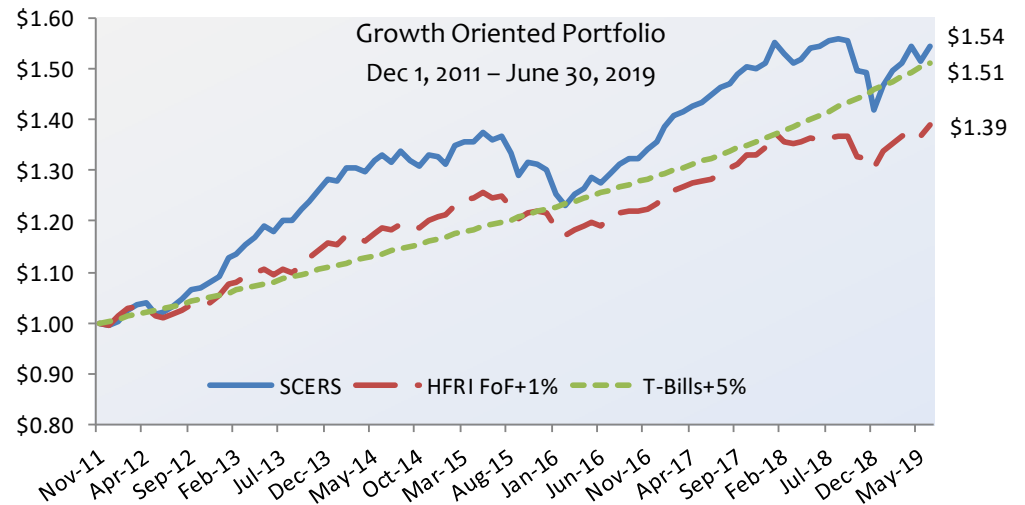
Absolute Return Portfolios Cumulative Performance – Dec 2011 to June 2019

The Growth Oriented portfolio has outperformed the Fund of Funds Index + 1% benchmark and the T-bills + 5% long term objective

The Diversifying portfolio was tracking the T-bills + 2% long term objective until the Q4 downturn; the portfolio has underperformed 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, 2019

The Private Equity portfolio's net IRR since inception is 14.83%, versus the Cambridge Associates benchmark IRR of 12.89%

- The long-term Policy objective (Russell 3000 + 3%) has a 15.11% IRR over this period

The private equity portfolio continued to generate meaningful gains during a quarter where global equities rebounded sharply

- Many of the funds generated quarterly returns greater than 10% in Q1
 - Trinity Ventures XI & XII, Khosla Ventures IV, Thoma Bravo XI & XII, Linden III and Marlin Heritage reported the largest gains
- Distributions remained steady among the direct fund investments (\$29.0 million) and fund of funds (\$8.8 million)
 - Summit VC III & IV, Waterland V, AKKR Growth II, HIG Bayside Loan III, and Marlin IV led distributions within directs

Continued strong longer-term performance across most of the private equity funds

- Double-digit net IRRs for all vintage years prior to 2017
- Trinity Ventures XII (45.2%), Summit VC IV (43.4%), Waterland V (36.7%) & Marlin Heritage (36.7%) are leading performance

The legacy fund of funds reported modest declines during the quarter

- Aggregate since inception net IRR fell slightly, to 11.41% from 11.49%, during the quarter
 - The aggregate total value (TVPI) remained at 1.63x
- The legacy fund of funds comprise only 14.5% of the current fair value of the Private Equity portfolio

Changes during the quarter

- SCERS made no new commitments to Private Equity funds during Q1
 - SCERS committed \$30 million to a specialty buyout fund and \$20 million to a diversified VC fund in Q2 2019
 - Both Q2 commitments were reups with existing portfolio General Partners
- \$32.5 million in new contributions, \$37.8 million in distributions
- Total portfolio gain increased by \$42.7 million while the total portfolio IRR increased by 0.27%

Private Equity Portfolio Characteristics as of March 31, 2019

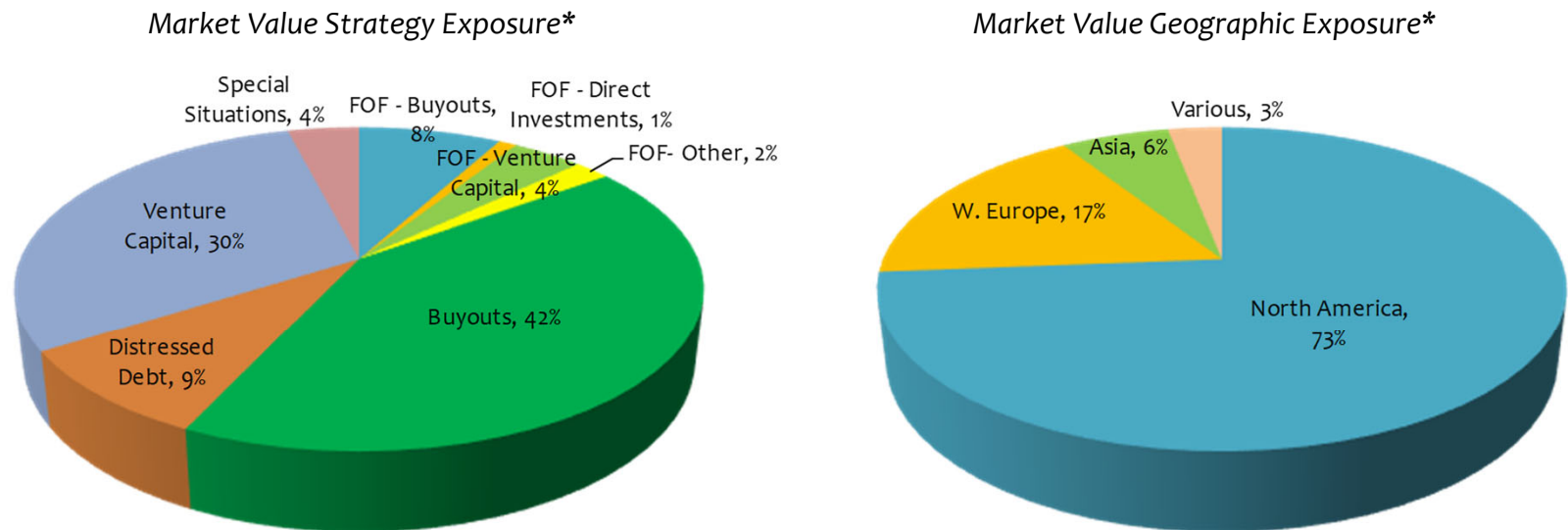
The SCERS Private Equity portfolio is diversified by strategy and geography

- 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 14.5% of the total portfolio's value as of March 31, 2019

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



* Exposures are based on the market values of investments as of 3/31/19.

Private Equity Portfolio Performance Details – as of March 31, 2019

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%	50,540	11,692	62,233	26,420	10.88%	7.49%	1.74x
HarbourVest Partners VIII - Mezzanine and Distressed Debt Fund L.P.	Fund of Funds	5,000	200	4,800	96%	5,865	756	6,621	1,821	7.42%	7.49%	1.38x
HarbourVest Partners VIII - Venture Fund L.P.	Fund of Funds	7,500	150	7,350	98%	9,660	4,199	13,859	6,509	10.79%	7.49%	1.89x
Vintage Year 2006 Total		50,000	2,038	47,963	96%	66,065	16,648	82,713	34,750	10.60%	7.22%	1.72x
Vintage Year 2008												
Abbott Capital Private Equity Fund VI, L.P.	Fund of Funds	75,000	1,125	73,875	99%	68,251	50,799	119,050	45,175	12.08%	12.55%	1.61x
Goldman Sachs Private Equity Partners X, L.P.	Fund of Funds	75,000	13,144	68,958	82%	88,290	26,556	114,846	45,888	11.52%	12.55%	1.67x
HarbourVest International Private Equity Partners VI-Partnership Fund L.P.	Fund of Funds	36,135	2,168	37,619	94%	22,837	36,490	59,327	21,708	11.83%	8.98%	1.58x
Vintage Year 2008 Total		186,135	16,437	180,452	91%	179,378	113,846	293,223	112,772	11.79%	8.18%	1.62x
Vintage Year 2011												
Waterland Private Equity Fund V C.V.	Buyout	17,955	3,716	15,501	79%	28,274	11,868	40,142	24,641	36.73%	12.95%	2.59x
Khosla Ventures IV, L.P.	Venture Capital	10,000	190	9,810	98%	6,955	19,655	26,610	16,800	22.46%	17.09%	2.71x
Vintage Year 2011 Total		27,955	3,906	25,311	86%	35,229	31,523	66,752	41,441	29.85%	13.54%	2.64x
Vintage Year 2012												
Garrison Opportunity Fund III A LLC	Distressed Debt	20,000	0	20,000	100%	7,660	13,568	21,228	1,228	1.30%	9.74%	1.06x
New Enterprise Associates 14, L.P.	Venture Capital	25,000	1,500	23,500	94%	16,985	31,593	48,578	25,078	17.18%	14.33%	2.07x
Summit Partners Venture Capital III-A, LP	Venture Capital	16,350	2,122	18,995	87%	20,439	14,511	34,949	15,954	17.53%	14.33%	1.84x
Vintage Year 2012 Total		61,350	3,622	62,495	94%	45,084	59,672	104,756	42,260	12.49%	13.37%	1.68x
Vintage Year 2013												
Accel-KKR Capital Partners IV, L.P.	Buyout	15,000	849	14,151	94%	18,211	14,647	32,858	18,707	36.37%	15.74%	2.32x
H.I.G. Capital Partners V, L.P.	Buyout	14,000	3,595	10,405	74%	3,317	12,236	15,553	5,149	23.24%	15.74%	1.49x
Marlin Equity IV, L.P.	Buyout	20,000	234	19,766	99%	9,877	14,324	24,201	4,436	8.00%	15.74%	1.22x
RRJ Capital Master Fund II, L.P.	Buyout	35,000	4,683	35,067	87%	27,972	20,532	48,503	13,436	11.55%	14.95%	1.38x
H.I.G. Bayside Loan Opportunity Fund III (Europe-US\$), L.P.	Distressed Debt	30,000	5,769	24,231	81%	15,229	18,126	33,356	9,125	10.25%	8.04%	1.38x
Wayzata Opportunities Fund III, L.P.	Distressed Debt	30,000	22,835	14,718	24%	7,911	6,415	14,325	-393	-0.95%	8.52%	0.97x

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, 2019 (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	3,375	21,625	87%	4,242	36,918	41,160	19,535	18.08%	14.02%	1.90x
Vintage Year 2013 Total		169,000	41,342	139,962	76%	86,759	123,198	209,958	69,995	14.24%	13.55%	1.50x
Vintage Year 2014												
Dyal Capital Partners II	Buyout	35,000	12,318	24,015	65%	3,613	14,976	18,589	-5,426	-14.52%	18.10%	0.77x
H.I.G. Europe Capital Partners II, L.P.	Buyout	15,711	5,335	10,899	66%	2,499	8,597	11,096	197	1.26%	13.03%	1.02x
Marlin Heritage Fund	Buyout	10,000	760	9,359	92%	9,137	10,566	19,703	10,343	36.73%	18.10%	2.11x
Thoma Bravo XI	Buyout	30,000	3,430	32,305	89%	22,256	46,375	68,631	36,326	25.74%	18.10%	2.12x
TPG Opportunities Partners III	Distressed Debt	40,000	18,417	39,854	54%	22,977	24,299	47,275	7,421	10.48%	8.49%	1.19x
Khosla Ventures V	Venture Capital	20,000	2,640	17,360	87%	1,013	21,954	22,967	5,607	11.68%	14.45%	1.32x
Spectrum Equity Investors VII, L.P.	Venture Capital	25,000	2,375	22,625	91%	15,998	31,924	47,922	25,297	34.90%	14.45%	2.12x
Vintage Year 2014 Total		175,711	45,275	156,417	74%	77,492	158,691	236,183	79,766	19.31%	15.24%	1.51x
Vintage Year 2015												
* WPEF VI Overflow Fund C.V.	Buyout	6,733	6,723	10	0%	0	0	0	-10	0.00%	12.78%	0.00x
RRJ Capital Master Fund III, LP	Buyout	40,000	10,943	30,114	73%	3,276	34,764	38,039	7,925	16.36%	12.78%	1.26x
WPEF VI Feeder, L.P.	Buyout	26,933	10,754	16,183	60%	0	22,933	22,933	6,750	22.10%	12.78%	1.42x
Accel-KKR Growth Capital Partners II	Mezzanine	15,000	4,219	10,781	72%	4,142	8,905	13,046	2,266	12.45%	10.41%	1.21x
New Enterprise Associates 15, L.P.	Venture Capital	35,000	4,725	30,279	87%	3,994	46,133	50,126	19,847	22.31%	13.19%	1.66x
Summit Partners Venture Capital Fund IV-A, L.P.	Venture Capital	35,000	35,132	18,786	0%	18,917	12,830	31,747	12,962	43.39%	13.19%	1.69x
Vintage Year 2015 Total		158,666	72,496	106,153	54%	30,328	125,564	155,892	49,739	23.00%	14.47%	1.47x
Vintage Year 2016												
Accel-KKR Capital Partners V, L.P.	Buyout	25,000	14,266	10,734	43%	256	10,998	11,254	520	4.58%	9.41%	1.05x
Dyal III Pension Investors LP	Buyout	35,000	22,964	16,115	34%	3,702	17,928	21,630	5,515	19.54%	9.41%	1.34x
Linden Capital Partners III	Buyout	35,000	4,613	32,853	87%	3,512	51,978	55,490	22,637	30.89%	9.41%	1.69x
Marlin Heritage Europe, L.P.	Buyout	14,589	9,770	5,098	33%	0	6,148	6,148	1,050	N/M	N/M	1.21x
Thoma Bravo Fund XII, L.P.	Buyout	30,000	2,083	35,366	93%	7,451	34,320	41,771	6,405	14.10%	9.41%	1.18x
TSG7 A L.P.	Buyout	16,000	5,449	10,551	66%	80	11,982	12,063	1,512	9.08%	9.41%	1.14x
TSG7 B L.P.	Buyout	4,000	2,653	1,347	34%	6	1,098	1,104	-244	-14.51%	9.41%	0.82x

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, 2019 (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%	12,251	22,230	34,481	5,541	10.71%	10.44%	1.19x
Trinity Ventures XII, L.P.	Venture Capital	30,000	11,250	18,750	63%	0	33,192	33,192	14,442	45.15%	14.31%	1.77x
Vintage Year 2016 Total		214,589	75,502	159,754	65%	27,257	189,875	217,133	57,379	21.31%	12.01%	1.36x
Vintage Year 2017												
Marlin Heritage II	Buyout	10,000	5,455	4,546	45%	0	4,300	4,300	-246	NM	NM	0.95x
Summit Partners Europe Growth Equity Fund II, SCSP	Remaining	33,666	30,935	11,628	8%	8,626	7,992	16,618	4,991	NM	NM	1.43x
New Enterprise Associates 16, L.P.	Venture Capital	35,000	20,125	14,875	43%	0	16,890	16,890	2,015	NM	NM	1.14x
Vintage Year 2017 Total		78,666	56,514	31,048	28%	8,626	29,181	37,807	6,759	NM	NM	1.22x
Vintage Year 2018												
Linden Capital Partners IV LP	Buyout	44,330	42,531	1,886	4%	1,907	797	2,704	817	NM	NM	1.43x
Marlin Equity V	Buyout	25,000	19,986	5,014	20%	375	5,138	5,513	499	NM	NM	1.10x
TSG8 L.P.	Buyout	45,000	44,632	368	1%	0	-24	-24	-392	NM	NM	-0.07x
Davidson Kempner Long-Term Distressed Opportunities Fund IV LP	Distressed Debt	35,000	15,750	19,250	55%	0	20,467	20,467	1,217	NM	NM	1.06x
TSSP Opportunities Partners IV (A), L.P.	Distressed Debt	35,000	33,202	1,856	5%	57	1,888	1,945	89	NM	NM	1.05x
RCP Fund XIII	Fund of Funds	50,000	49,500	500	1%	0	41	41	-459	NM	NM	0.08x
RCPDirect III	Fund of Funds	25,000	21,250	3,750	15%	0	3,904	3,904	154	NM	NM	1.04x
Accel-KKR Growth Capital Partners III	Mezzanine	33,320	33,320	0	0%	0	0	0	0	NM	NM	N/A
Khosla Ventures VI, L.P.	Venture Capital	35,000	27,020	7,980	23%	0	7,730	7,730	-250	NM	NM	0.97x
Spectrum Equity VIII, L.P.	Venture Capital	25,000	20,938	4,063	16%	0	3,381	3,381	-682	NM	NM	0.83x
Vintage Year 2018 Total		352,650	308,129	44,666	13%	2,339	43,322	45,661	995	NM	NM	1.02x
Vintage Year 2019												
Thoma Bravo Fund XIII, LP	Buyout	45,000	38,523	6,477	14%	0	6,378	6,378	-99	NM	NM	0.98x
Vintage Year 2019 Total		45,000	38,523	6,477	14%	0	6,378	6,378	-99	NM	NM	0.98x
Portfolio Total :		1,519,722	663,784	960,697	56%	558,558	897,898	1,456,456	495,759	14.83%	12.89%	1.52x

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, 2019

The Private Credit portfolio's net IRR since inception is 8.11%, versus the benchmark return of 7.09%

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

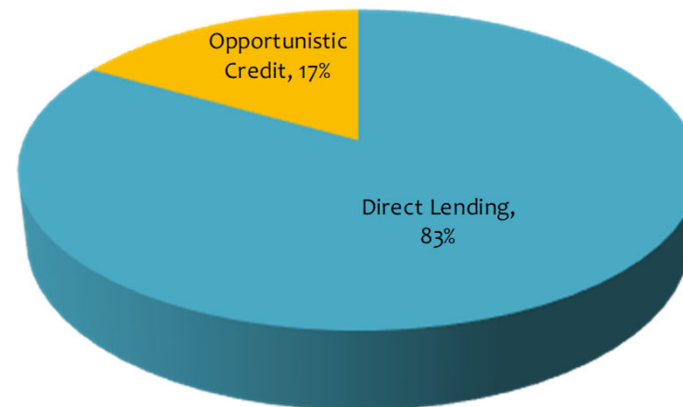
The Private Credit funds reported solidly positive returns during Q1

- The portfolio returned 3.3% in Q1 and 6.3% for the trailing 1 year period ending March 31, 2019
 - Positive performance from each of the private credit funds in Q1
- Longer term performance remains steady, with annualized returns of more than 7% over multi-year periods
 - 8.6% net IRR for the 3 year period and 7.8% net IRR for the 5 year period

Changes during the quarter

- SCERS made no new commitments to Private Credit funds during Q1
 - SCERS committed \$35 million to a healthcare focused lending/royalties fund in Q2 2019
- \$26.0 million in new contributions, \$5.5 million in distributions
- Portfolio IRR increased by 0.66% while the total portfolio gain increased by \$4.8 million

*Market Value Strategy Exposure
(based on fair value of investments)
as of March 31, 2019*



Private Credit Portfolio Details – as of March 31, 2019

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%	23,848	2,751	26,600	5,903	8.91%	N/A	1.29x
Vintage Year 2011 Total		20,000	2,125	20,697	89%	23,848	2,751	26,600	5,903	8.91%	13.54%	1.29x
Vintage Year 2014												
Summit Partners Credit Fund II, L.P.	Direct Lending	35,000	9,755	42,342	72%	24,054	25,126	49,180	6,838	9.05%	3.69%	1.16x
Vintage Year 2014 Total		35,000	9,755	42,342	72%	24,054	25,126	49,180	6,838	9.05%	15.24%	1.16x
Vintage Year 2015												
Athyrium Opportunities Fund II	Opportunistic Credit	32,000	7,332	37,717	77%	28,430	14,781	43,211	5,493	8.47%	10.41%	1.15x
Vintage Year 2015 Total		32,000	7,332	37,717	77%	28,430	14,781	43,211	5,493	8.47%	14.47%	1.15x
Vintage Year 2017												
Athyrium Opportunities Fund III	Opportunistic Credit	25,000	12,814	15,502	49%	3,280	12,359	15,639	138	N/M	N/M	1.01x
Vintage Year 2017 Total		25,000	12,814	15,502	49%	3,280	12,359	15,639	138	N/M	N/M	1.01x
Vintage Year 2018												
Benefit Street Partners Senior Secured Opportunities Fund L.P.	Direct Lending	50,000	8,977	43,213	82%	4,081	41,649	45,730	2,518	N/M	N/M	1.06x
Summit Partners Credit Fund III, L.P.	Direct Lending	50,000	29,011	20,989	42%	0	21,863	21,863	874	N/M	N/M	1.04x
TCP Direct Lending Fund VIII-S, LLC	Direct Lending	100,000	56,364	43,636	44%	1,800	43,678	45,477	1,841	N/M	N/M	1.04x
Vintage Year 2018 Total		200,000	94,352	107,838	53%	5,881	107,189	113,071	5,233	N/M	N/M	1.05x
Portfolio Total :		312,000	126,378	224,095	59%	85,494	162,207	247,701	23,605	8.11%	7.09%	1.11x
Portfolio Strategy Totals												
Direct Lending		255,000	106,232	170,876	58%	53,784	135,067	188,851	17,974	8.39%		1.11x
Opportunistic Credit		57,000	20,146	53,219	65%	31,710	27,140	58,850	5,631	7.33%		1.11x
Portfolio Total :		312,000	126,378	224,095	59%	85,494	162,207	247,701	23,605	8.11%	7.09%	1.11x

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, 2019

The Real Assets portfolio's net IRR since inception is 14.86%, versus the blended benchmark return of 7.22%

- 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 Energy and Infrastructure partnerships

- Both Energy and Infrastructure partnerships have performed well since inception
 - Since inception net IRRs of 16.6% for Energy and 14.5% for Infrastructure
- The Real Asset Debt separate account has also performed well with an 11.3% since inception net IRR
 - That separate account market value remains small at \$17.8 million, with very few new investments

The portfolio generated a 2.9% net return during a quarter that saw a strong rebound in the Energy sector

- The EnCap Flatrock funds, Real Asset Debt SMA, and Brookfield Infrastructure III reported the largest gains in Q1
 - Good performance was seen across all major strategies during the quarter
- ACM Fund II (agriculture), Wastewater, and the Quantum funds were the laggards during the quarter

Changes during the quarter

- SCERS committed \$35 million to EQT Infrastructure IV (global infrastructure) during Q1
- \$12.9 million in new contributions, \$4.2 million in distributions
- Portfolio IRR declined by 0.31% while the total portfolio gain increased by \$13.8 million

Real Assets Portfolio Performance Details – as of March 31, 2019

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	2,082	36,802	94%	25,752	23,784	49,535	12,733	13.32%	3.92%	1.35x
Vintage Year 2013 Total		33,000	2,082	36,802	94%	25,752	23,784	49,535	12,733	13.32%		1.35x
Vintage Year 2014												
Carlyle Power Partners II, L.P.	Energy	40,000	24,601	20,767	38%	5,210	17,389	22,599	1,832	3.78%	10.75%	1.09x
EnCap Flatrock Midstream III	Energy	20,000	4,501	19,267	77%	8,454	15,549	24,003	4,736	19.53%	10.75%	1.25x
Global Energy & Power Infrastructure Fund II	Energy	35,000	8,556	29,823	76%	18,021	23,815	41,835	12,012	33.62%	10.75%	1.40x
Quantum Energy Partners VI, LP	Energy	35,000	11,516	28,593	67%	13,947	34,094	48,041	19,448	36.79%	10.75%	1.68x
Pantheon SCERS SIRF MM, LLC	Infrastructure	100,000	35,368	68,932	65%	8,100	89,407	97,507	28,576	16.72%	9.82%	1.41x
Wastewater Opportunity Fund	Infrastructure	25,000	6,838	18,169	73%	1,998	15,738	17,736	-433	-2.09%	9.82%	0.98x
Vintage Year 2014 Total		255,000	91,380	185,552	64%	55,731	195,992	251,723	66,171	18.72%		1.36x
Vintage Year 2015												
ArcLight Energy Partners Fund VI	Energy	40,000	6,269	40,516	84%	12,253	39,668	51,920	11,404	13.46%	13.54%	1.28x
EnCap Energy Capital Fund X, L.P.	Energy	40,000	9,137	33,363	77%	6,427	34,319	40,747	7,384	12.30%	13.54%	1.22x
Atalaya Real Assets SMA	Real Asset Debt	100,000	84,669	36,169	15%	24,910	17,754	42,664	6,495	11.26%	N/A	1.18x
Vintage Year 2015 Total		180,000	100,075	110,047	44%	43,590	91,740	135,331	25,283	12.49%		1.23x
Vintage Year 2016												
ACM Fund II, LLC	Agriculture	25,000	11,148	17,998	55%	4,513	12,552	17,065	-933	-4.39%	6.37%	0.95x
Brookfield Infrastructure Fund III, L.P.	Infrastructure	40,000	12,225	27,764	69%	3,812	27,769	31,581	3,818	10.69%	N/A	1.14x
IFM Global Infrastructure Fund	Infrastructure	125,053	25,000	100,053	80%	32,529	93,753	126,282	26,229	N/M	N/M	1.26x
Vintage Year 2016 Total		190,053	48,374	145,815	75%	40,854	134,074	174,928	29,113	13.04%		1.20x
Vintage Year 2017												
Quantum Energy Partners VII, LP	Energy	40,000	25,346	17,011	37%	2,415	15,447	17,862	851	N/M	N/M	1.05x
Meridiam Infrastructure North America Fund III	Infrastructure	50,000	48,426	1,574	3%	1	311	312	-1,262	N/M	N/M	0.20x
Vintage Year 2017 Total		90,000	73,772	18,586	18%	2,416	15,758	18,174	-412	N/M		0.98x
Vintage Year 2018												
Paine Schwartz Food Chain Fund V, LP	Agriculture	40,000	40,000	0	0%	0	-374	-374	-374	N/M	N/M	N/A

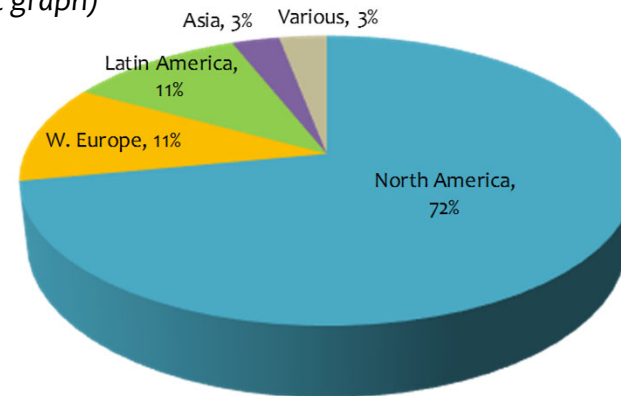
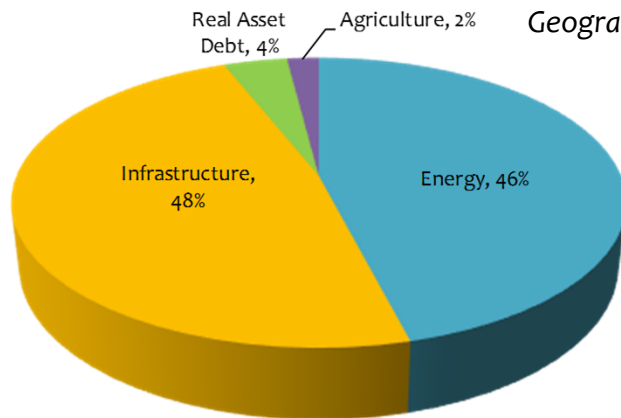
¹ Benchmarks:

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 March 31, 2019 (continued)

Partnership Name	Strategy	(A) Committ. 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	15,965	6,535	29%	0	7,099	7,099	564	N/M	N/M	1.09x
Tailwater Energy Fund III, LP	Energy	32,000	13,001	21,054	59%	1,662	20,084	21,745	691	N/M	N/M	1.03x
ISQ Global Infrastructure Fund II	Infrastructure	50,000	37,283	13,452	25%	1,119	13,285	14,403	952	N/M	N/M	1.07x
Vintage Year 2018 Total		144,500	106,249	41,041	26%	2,781	40,093	42,873	1,833	N/M		1.04x
Vintage Year 2019												
EQT Infrastructure IV (No.2) USD SCSp	Infrastructure	35,000	35,000	0	0%	0	-202	-202	-202	N/M	N/M	N/A
Vintage Year 2019 Total		35,000	35,000	0	0%	0	-202	-202	-202	N/M		N/A
Portfolio Total :		927,553	456,932	537,842	51%	171,123	501,238	672,362	134,520	14.86%	7.22%	1.25x
Portfolio Strategy Totals												
Agriculture		65,000	51,148	17,998	21%	4,513	12,178	16,691	-1,307	-6.20%		0.93x
Energy		337,500	120,974	253,731	64%	94,141	231,246	325,388	71,656	16.55%		1.28x
Infrastructure		425,053	200,141	229,943	53%	47,559	240,061	287,620	57,676	14.54%		1.25x
Real Asset Debt		100,000	84,669	36,169	15%	24,910	17,754	42,664	6,495	11.26%		1.18x

Portfolio Exposures*
Strategy Exposure (left graph)
Geographic Exposure (right graph)



* Exposures are based on the market values of investments as of 3/31/19

¹ Benchmarks:

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.

Opportunities Portfolio – as of March 31, 2019

The Opportunities portfolio's net IRR since inception is 18.38%

- 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
 - 5.31% portfolio IRR v 8.93% 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 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 7.74% net IRR since inception

Changes during the quarter

- SCERS made no new commitments categorized as Opportunities funds during Q1 2019
- No new contributions, \$0.8 million in distributions
- Portfolio IRR decreased 0.04%, 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, 2019

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%	9.28%	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%	12.23%	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%	14.89%	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%	14.89%	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%	22,412	8,120	30,532	5,657	7.74%	8.52%	1.23x
Vintage Year 2013 Total		25,000	1,117	24,875	96%	22,412	8,120	30,532	5,657	7.74%		1.23x
Portfolio Total :		100,000	1,117	100,123	99%	151,760	8,120	159,880	59,757	18.38%	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

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