



ITEM 20

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Richard Stensrud
Chief Executive Officer
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Chief Investment Officer
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General Counsel
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Chief Operations Officer
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Chief Benefits Officer

For Agenda of:
December 21, 2016

December 16, 2016

TO: President and Members
Board of Retirement

FROM: JR Pearce
Investment Officer

SUBJECT: SCERS' Alternative Assets Performance Review for Periods
Ending September 30, 2016

Recommendation:

It is recommended that your Board receive and file the Cliffwater performance presentation reports for the third quarter of 2016, and consider taking action on any recommendations made therein.

Attached are reports for the period ending September 30, 2016 including: (1) A presentation by Cliffwater summarizing the quarterly performance review for SCERS' alternative assets; (2) The quarterly Absolute Return performance; (3) The quarterly Private Equity performance report; (4) The quarterly Real Assets performance report; and (5) The quarterly Opportunities portfolio performance report. As you will recall, the time gap between the close of the period covered by the reports and the present is a function of the lag in performance reporting across the alternative assets industry.

This memorandum will provide a recap of each alternative asset class' quarterly performance as presented within Cliffwater's performance summary report and supplemented by Townsend's quarterly real estate report. This memorandum will also highlight any recent alternative asset class investments made by SCERS and explain how

the investment fits within the sub-asset class and market environment. Cliffwater, with commentary from Staff, will be presenting the attached report at the Board meeting.

Market Recap:

Global monetary policy, worldwide political events, global economic weakness, and higher asset valuations are combining to elevate investor angst. The third quarter continued the markets' pattern of risk-off in response to global macro events. Investor risk-off was played out during the quarter as dividend-paying defensive industry stocks were being bid up to ever-higher valuations. In this low-interest rate environment, investors are reaching for any source of reasonable yield and many yield investors are gravitating towards fixed income substitutes, such as the defensive sector dividend stocks (utilities and industrials), by rationalizing the stock's fixed dividend payments as a proxy for fixed income but with considerably more yield. At the end of the third quarter, investors began to rotate out of dividend paying stocks and into more value orientated stocks. The equity market as measured by the S&P 500 was up +3.8% during the third quarter, the fourth consecutive quarter of positive returns as investors accepted lower for longer interest rate policy. Market volatility, as measured by the volatility index (VIX), settled down from the beginning of the quarter, as investors were feeling more complacent about market risks. The VIX settled at 13.3 in September, down considerably from its long-term average of 20.0 and down from 15.6 recorded at the start of July.

Despite the Fed holding off a rate increase at their September meeting, the long end of the interest rate curve steepened; i.e. the spread between short-term and long-term treasuries increased. To be compensated for holding long-term bonds, where the price decreases as rates go up, bond investors were pricing in a rate increase at the Fed's December meeting, which widened the spread. Reflecting investors' thirst for yield, high yield corporate bonds and commercial loan obligations (CLOs) were bid up during the quarter, with the Barclay's High Yield Corporate Bond index up +5.6% and year-to-date up +15.0%. Bond interest rates are inversely related to bond price, meaning as price goes up interest rate comes down. Investors were trading into the high yield sector for yield; the resulting demand pressing bond prices upward, resulting in the index gaining +5.6%.

The commodity market suffered early in the quarter on news of continued oversupply in the energy sector. However, in September energy prices rebounded after OPEC announced efforts to reduce production among its members to boost pricing. Despite oil's late rally, the Bloomberg Commodity index was down -3.9% for the quarter, with oil gaining +8.0% but offset by a collapse in agricultural commodities (primarily cotton and lean hog).

For the quarter, the returns for the Russell 3000 Index, the MSCI EAFE Index, the MSCI Emerging Markets Index, the Barclays Aggregate Index, the Bloomberg Commodity Index, the HFRI Fund-of-Funds Index (absolute return index) and the Cambridge Associates U.S. Private Equity Index were +2.6%, +6.4%, +9.0%, +0.5%, -3.9%, +2.4% and +4.0% (lagged one quarter), respectively.

Absolute Return:

The absolute return sector and SCERS' Absolute Return portfolio generated positive returns for the third quarter. The HFRI Fund-of-Funds Composite Index was up +2.5% for the quarter, compared to returns for the S&P 500, MSCI EAFE, MSCI Emerging Market and Barclays Aggregate Indices of +3.8%, +6.4%, +9.0%, and +0.5%, respectively. After a weak first half performance, SCERS' Absolute Return portfolio produced stronger returns for the third quarter, returning +2.5% compared to SCERS' long-term absolute return benchmark, 90-day T-Bills + 5% of +1.3%, and the SCERS' short-term absolute return benchmark, the HFRI Fund-of-Funds Composite Index, of +2.5%.

The SC Absolute Return Fund, LLC ('SCARF') managed by Grosvenor Capital Management, which invests in a portfolio of absolute return funds diversified by strategy and across geographies, was up +2.8% for the quarter, outperforming both the HFRI Fund-of-Funds Composite Index and the 90-day T-Bills +5% benchmark. Also managed by Grosvenor, SCARF B, a multi-strategy absolute return portfolio that serves as an interim absolute return placeholder to close the gap between SCERS' actual allocation and target allocation of 10%, was up +1.9%, underperforming against the HFRI Fund-of-Funds Composite Index but outperforming the 90-day T-Bills +5% benchmark. Due to SCARF B's 'interim' strategy, it is expected to underperform compared to SCARF. SCARF B is meant as an interim allocation solution and a liquid placeholder for SCERS to make future direct fund investments.

SCERS' Direct Absolute Return portfolio was up +2.6% for the quarter. All direct sub-strategies produced positive returns except Brevan Howard LP (discretionary global macro) and Claren Road Credit Partners, LP (credit/distressed debt), which were down -2.3% and -2.2%, respectively. SCERS made a full redemption from Claren Road but due to the significant redemption requests, SCERS is being paid out over several quarters. The three best performing managers for the quarter, which are more growth-oriented strategies, included JANA Partners Qualified, LP (event driven), Third Point Partners Qualified, LP (event driven) and Lakewood Capital Partners, LP (equity long/short), returning +5.0%, +5.1%, and +4.3%, respectively.

For the twelve months ending September 30, 2016, SCERS' Direct Absolute Return portfolio significantly outperformed the SCARF fund-of-funds (+3.5% versus -1.2%). The same holds true for the since inception period (+5.6% versus +3.9%). SCERS' Direct Absolute Return portfolio tends to have more exposure to less-correlated sub-strategies, while SCARF tends to have greater exposure to more growth-oriented sub-strategies. This compares to the 1-year HFRI Fund of Funds Composite Index of +0.6% and the 90-day T-Bills +5%, benchmarks of +5.3%.

For the third quarter and fiscal year-to-date, SCERS' absolute return sub-strategies delivered a wide range of performance, with the event driven growth strategies outperforming, while the market neutral and macro discretionary uncorrelated strategies

underperforming. This compares similarly to the Absolute Return sector, where growth orientated sub-strategies (equity long/short and event-driven) performed the best, and the sub-strategies that are intended to be more market uncorrelated (market neutral and macro-discretionary) suffered negative returns. Uncorrelated strategies are intended to perform best when there is market volatility; however, the third quarter brought an unexpected sell-off in global fixed income and a rally in energy prices that most managers misjudged.

SCERS takes a hybrid approach in constructing its Absolute Return mandate by combining a direct absolute return portfolio with Grosvenor's diversified SCARF and SCARF B fund-of-fund portfolios. The SCERS Absolute Return portfolio is intended to be a diversifier for SCERS' overall investment portfolio, while generating returns closely matching SCERS' total return objective with less volatility and downside risk. To achieve this return objective, a diversified Absolute Return portfolio of both positively and negatively correlated strategies is preferred.

While an analysis of SCERS' Absolute Return sub-strategies is informative, the weightings will vary as SCERS' makes more direct fund investments. The SCARF B portfolio, which is used to fund the direct investments, will decline resulting in the sub-strategy weights to change. However, long-term Staff anticipates SCERS' SCARF exposure will retain some allocation in the Absolute Return portfolio. All of the sub-strategy allocations in SCERS' Absolute Return portfolio are within the ranges set forth in SCERS' Absolute Return investment policy statement.

During the quarter, SCERS did not make any direct absolute return investments; however, Staff and Cliffwater have been performing due diligence on investment managers within the global macro and systematic macro strategy segment, and expect to allocate capital to this strategy in early 2017.

Private Equity:

Since inception through September 30, 2016, SCERS' Private Equity portfolio returned +9.8% net IRR, compared to the Cambridge Associates Private Equity Index return of +9.8%. SCERS' multiple of total value to paid in capital ('TVPI') is 1.23x since inception. SCERS' Private Equity returns continue to show improvement and are in line with the Cambridge benchmark, but as you will recall, SCERS' Private Equity portfolio is still early in its investment period (j-curve effect) compared to the index, especially for the direct program, which was initiated in 2011. The investment performance metrics are provided in Cliffwater's investment summary page of the quarterly private equity report.

SCERS' legacy fund-of-funds ('FoFs') investments are the most mature private equity allocations within the Private Equity portfolio. HarbourVest's vintage 2006 funds have generated a since inception net IRR of +10.0%, outperforming the Cambridge

Fund-of-Fund's benchmark of +7.3%. HarbourVest's performance has been positively influenced by significant allocations to discounted secondary investments post the 2008 global financial crisis. SCERS' vintage year 2008 funds managed by Abbott Capital, Goldman Sachs and HarbourVest International, which did not invest meaningfully in secondaries, have demonstrated mixed results, with since inception net IRRs of +10.0%, +10.1%, and +9.2%, respectively. This compares to their respective benchmark returns of +12.0%, +12.0%, and +8.0%.

HarbourVest's 2006 vintage year funds have drawn down 93% of committed capital, Abbott has drawn down 89%, Goldman Sachs has drawn down 83%, and HarbourVest International has drawn 87%.

The SCERS' Direct Private Equity portfolio, which includes the vintage year funds 2011, 2012 and 2013, are generating solid early performance. The vintage year funds' since inception returns are +18.1%, +10.4% and +7.0%, respectively, compared to their respective benchmark returns of +11.3%, +12.5%, and +7.7%. Notable outperforming funds include Waterland Private Equity Fund V (+32.2% net IRR); Khosla Ventures IV (+17.9% net IRR); New Enterprise Associates 14 (+17.1% net IRR); and Summit Partners Venture Capital III (+13.8%% net IRR).

As of September 30, 2016, SCERS' private equity FoF's have called and invested \$181.4 million in capital compared to the \$236 million committed by SCERS. SCERS' direct private equity funds have called and invested \$371 million compared to the \$844 million committed by SCERS. The fair value of SCERS' Private Equity portfolio is \$538.8 million or 6.8% allocated, compared to SCERS' 10% target allocation amount of \$780.3 million.

While SCERS is making progress towards filling out the private equity portfolio, given the deep J-curve effect predominate in the private equity sector, SCERS will need to continue making annual commitments over the next few years to close the allocation gap. The graphs in Section A-2 of Cliffwater's private equity report, provides greater detail on the actual to target allocation gap, including: (1) Commitments in only 2 vintage years prior to 2011; (2) 52% of capital drawn down to date; and, (3) The start of distributions that offset future contributions as well as lowering the portfolio market value. Despite the significant allocation gap, SCERS has made progress. SCERS' direct private equity commitments have increased considerably, and along with future investments and drawdowns, should bring the allocation gap closer to SCERS' 10% target.

Page A-1 in Cliffwater's private equity report provides the fair market values of SCERS' Private Equity investments across strategies and regions. While it is informative to assess the private equity portfolio by strategy type, sub-sector, and region, the reality is the sector weights will change as capital is called and additional commitments are made. Accordingly, Staff and Cliffwater remain focused on new direct investment commitments

based on future relative value considerations and access to the best private equity managers that are raising new funds.

While building out SCERS' Private Equity portfolio, Staff and Cliffwater prefer private equity managers with a hands-on value-add investment strategy, either through majority control or through minority control of the underlying businesses. In the private equity sector, Staff and Cliffwater believe the most successful private equity managers are those that increase the underlying portfolio company's value by bringing meaningful positive change to the business plan and operations. As we get later in the market cycle, Staff and Cliffwater remain vigilant of the inherent market risks, including increasing business valuations (particularly purchase multiples); significant amounts of investment capital pursuing the same highly rated fund managers; ever larger manager fund sizes to accommodate the high investor demand; and the tighter correlations of cyclical sectors to the economic cycle. These factors are translating to a deliberately measured and selective approach to new commitments by Staff and Cliffwater.

For the twelve months ending September 30, 2016, the overall US private equity sector generated a return of +3.0%, while the European Private Equity sector returned +8.9%. The US private equity sub-sectors returns have been mixed. The outperformer for the twelve month period was the Buyout sub-sector, returning +6.1%, while the underperforming sub-sectors were Distressed Debt returning +1.4% and Venture Capital returning -1.4%. Compared to the Russell 300 Index, US private equity has outperformed over the 1-, 5-, and 10-year reporting periods. The reporting period returns for US private equity are +3.0%, +11.7%, and +10.7%, while the Russell 3000 return over the same periods are +2.1%, +11.6%, and +7.1%.

During Q3'16, SCERS did not make any new private equity commitments.

Real Assets:

Since inception through September 30, 2016, SCERS' Real Assets portfolio returned +7.0% net IRR with a TVPI of 1.2x, underperforming against SCERS' real assets' benchmark of CPI +5% return of 7.2%. The Real Assets asset class includes allocations to several sub-asset classes including: (1) Core real estate (7% target); (2) Private real assets (6% target); and (3) Commodities (2% target). The Real Assets asset class has been structured with significant flexibility to allow sub-asset class allocations to move within ranges, which permits SCERS to take exposures down in one segment in favor of attractive risk-adjusted returns in another segment. Within SCERS' Real Assets portfolio, there are two investment structures, commingled funds (open-end and closed-end) and customized separate accounts. The separate account allows SCERS to establish investment guidelines, underwrite a manager's investment recommendations, provide veto/preferred rights, and achieve better manager terms than investing in a commingled fund structure.

The performance of SCERS' Real Assets portfolio is significantly influenced by SCERS' core real estate portfolio. On page C-1 of Cliffwater's real assets report, each real asset investment fund is listed by vintage year or inception date and the performance of the investments are compared to its peer benchmark. For example, BlackRock Realty's total real estate portfolio has generated a since inception 9.1% net IRR compared to the NPI-ODCE Index net IRR of 9.8%. A more comprehensive review of SCERS' real estate investments can be found within the Townsend quarterly performance report and summarized in Staff's quarterly real estate performance memo. In addition, Cliffwater's quarterly report provides a performance summary for the entire real estate portfolio. In total, the SCERS real estate portfolio generated a third-quarter net IRR of 1.9%, an annualized 10.1% net IRR, and a since inception net IRR of 8.5%.

Since its inception in 2008, SCERS' commodities portfolio generated a -6.7% net IRR. Despite the negative return, SCERS' portfolio outperformed against the Bloomberg Commodity Index -8.2% IRR. The Blackstone Resources Select fund has produced relative outperformance since inception at -4.1% net IRR, while the Gresham Strategic Commodities Fund has underperformed at -9.8% net IRR. Gresham's underperformance is attributed to its vintage year of 2008 when the oil market peaked and just before the global financial crisis. Unfortunately, SCERS' investment in Gresham was deployed all at once in 2008 rather than incrementally, compounding the underperformance.

As mentioned in previous reports, SCERS' commodities portfolio has been particularly impacted by the dramatic sell-off in global commodity prices, primarily oil, in late 2014 and into the early parts of 2016. The catalyst for the sell-off was mostly oil supply driven, but softening energy demand contributed as well. However, oil and energy prices rebounded in early 2016; yet prices are still 50% below their peak. Oil prices will remain an outsized influence on commodity returns and ongoing volatility should be expected. As you will recall, SCERS' portfolio also has commodity exposure through the SSGA Real Assets Strategy (a proxy for the Real Assets asset class), which has commodity and natural resource stock exposure. SCERS also has indirect energy exposure through its other asset classes.

Within private real assets, Staff and Cliffwater continue to seek unique investment opportunities that display attractive risk-adjusted returns, lower correlations to the broader economy, provide greater current cash flow, and can hedge against an increase in inflation. Private real asset investments can be made either within a customized separate account (with larger commitment sizes) or through a commingled fund (closed-end and open-end). Examples of a separate account structure include SCERS' \$100 million commitment made in the first quarter of 2015 to a debt backed by real assets strategy managed by Atalaya Capital Management, and a \$100 million commitment made in the second quarter of 2015 to an infrastructure secondary investment and co-investment strategy managed by Pantheon Investments.

Within the Real Assets asset class, the State Street Global Advisors ('SSGA') Real Assets Strategy is used as a proxy in the overlay program to replicate real asset exposures. Due to the large gap between the private real assets' actual and target allocation within SCERS' Real Assets portfolio, the proxy is rather large (\$341.7 million as of September 30, 2016); however, as additional commitments are made over time the gap will begin to decrease. The SSGA proxy is comprised primarily of liquid publicly traded securities, including a blend of commodities, global infrastructure stocks, global natural resource stocks, Treasury Inflation Protected Securities ('TIPS'), global REITs, and midstream energy-focused master limited partnerships ('MLPs'). Since the SSGA Real Assets Strategy is a proxy and not meant as a permanent component of SCERS' Real Assets portfolio, Cliffwater includes two quarterly performance summaries (section C-1) for the real assets section, one that includes the SSGA Real Assets proxy and one that excludes the proxy. Including the SSGA proxy, the Real Assets' since inception return was 7.0% net IRR and excluding the proxy, the since inception return is 7.8% net IRR.

The target allocation for private real assets is 6.0%, which approximately 5.8% has been committed (as of September 30, 2016) and only 1.9% has been invested to date. The target allocation for SCERS' private real assets portfolio is expected by 2019, with a good chunk of the gap to be closed over the next 18 to 24 months, in part due to capital commitments being drawn down. In the meantime, the SSGA proxy will expose SCERS to public market basis risk compared to the risk-return profile of private real assets. This will be particularly evident during volatile dislocated financial market environments, such as the recent energy sector experience.

The twelve-month returns for the Real Assets sector were widely dispersed. The positive performing sub-sectors were TIPS at +4.6%, Timber at +3.5%, and public listed Infrastructure at +3.2%, while the negative performers were Energy MLPs at -15.2% and Energy E&Ps at -12.8%.

During the quarter, SCERS made commitments to: (1) \$25 million to ACM Permanent Crops II, LP (closed-end agriculture fund); and (2) an additional \$25 million to IFM Global Infrastructure Fund, LP (open-end core infrastructure fund).

Opportunities:

Since inception through September 30, 2016, SCERS' Opportunities portfolio returned a +8.6% net IRR, exceeding SCERS' long-term benchmark (SCERS' actuarial rate of return) of +7.5%. SCERS' investments in several distressed debt funds coming out of the global financial crisis outperformed SCERS' opportunities benchmark and as a group returned a +18.8% net IRR. Investment in the distressed debt funds was made during the vintage years 2007, 2008 and 2009, which have since distributed all capital and all gains back to SCERS.

SCERS' other legacy Opportunities investments include several value-add real estate funds made during the 2006/2007 period, and have significantly underperformed against SCERS' benchmark, and as a group generated a +0.7% net IRR. Since their inceptions, UBS Allegis Value Trust, AEW Value Investors II, L.P., and Hines US Office Value Added Fund II, L.P. have generated net IRRs of +3.0%, +6.0%, and -8.0%, respectively. The poor performance of these funds is in large part due to the global financial crisis after their investment periods, when investment values were at their peak and their use of high leverage. With a focus on office properties, which suffered the most during the downturn, Hines' returns are predictably the worst. While the since inception returns of UBS, AEW, and Hines trail the benchmark, over the last three years they have recovered somewhat and are generating positive returns.

Over the past few years, SCERS has made commitments to several value-add and opportunistic real estate funds, which draw capital from the Real Assets asset class, and are still in their investment phase and have yet to make a meaningful positive contribution to SCERS' Real Assets returns to date. Staff and Townsend believe the recent value-add and opportunistic real estate commitments made are better positioned over this cycle, particularly as compared to those committed in 2006 and 2007. In addition, the recent commitments were a better relative value compared to US core real estate returns. There are a number of examples of recent fund investments generating significant returns, but two notable examples are ECE European Prime Retail Fund II (39.0% since inception net IRR) and NREP Nordic Strategies Fund I (39.4% since inception net IRR) as reported by Townsend in their third quarter real estate report.

During the quarter, SCERS did not make any Opportunities commitments.

We will be happy to answer any questions you might have.

Respectfully submitted,

Concur:

JR Pearce
Investment Officer

Richard Stensrud
Chief Executive Officer

Steve Davis
Chief Investment Officer

Attachment



INVESTMENT ADVISORY SERVICES

Los Angeles • New York

Sacramento County Employees' Retirement System Quarterly Performance Review

December 21, 2016



Executive Summary

Absolute Return Portfolio Performance Summary – as of November 30, 2016

The Absolute Return portfolio returned 4.27% FYTD and 1.44% for the 1 year period ending November 30, 2016

- Seeing a resurgence of alpha generation during the fiscal year; 1 year returns remain muted
 - Outperforming the HFRI Fund of Funds Index by 233 bps (FYTD) and 255 bps (1 year)
 - Performing in-line with global equities fiscal YTD as well (ACWI +4.30% FYTD)

The direct portfolio outperformed the Grosvenor accounts over the last year

- +3.27% return for the direct portfolio
 - Elliott (+10.0%), Lakewood (+7.2%), and Third Point (+4.7%) led performance over the last year
 - Brevan Howard was SCERS' only direct hedge fund that didn't produce positive returns over the last year
 - The remaining investment in Claren Road is a liquidating position, following SCERS' redemption in September 2015
 - Performance was held back by Brevan Howard (-1.0%), Laurion (+1.3%), and AQR DELTA (+1.7%)
- -0.08% return for the Grosvenor separate accounts
 - SCARF A returned +0.7% while SCARF B returned -1.5%
 - The third Grosvenor portfolio is residual holdings from SCERS' previous fund of fund investment (results not meaningful)

Longer-term performance results remain positive, though lag the long-term T-bill + 5% benchmark

- 3 year annualized return of 1.90% for the Absolute Return portfolio
 - The HFRI Fund of Funds Index returned 1.23% over this period
 - 5.13% return for SCERS' long-term benchmark of T-bills + 5%

SCERS' staff and Cliffwater also track the portfolio's risk characteristics against the MSCI ACWI

- Expect AR portfolio to have half the volatility of the ACWI, with a correlation of 0.5 or less, over the long term
 - The AR portfolio is meeting its volatility objective; correlation is slightly higher than target
 - Portfolio standard deviation of 3.54% compared to the ACWI standard deviation of 11.38% since December 2011
 - Portfolio correlation with the ACWI has been 0.68, with a beta of only 0.21

Absolute Return Portfolio Performance – as of November 30, 2016

Fund	Market Value	Actual %	Returns								Std Dev	Sharpe Ratio	Incep Date
			Nov	QTD	YTD	FYTD	1 Year	3 Year	5 Year	Incep			
Market Neutral													
Laurion Capital, Ltd.	41,470,416	6.0%	1.59%	1.73%	0.78%	2.30%	1.28%	-	-	6.36%	5.70%	1.03	Mar-14
Credit/Distressed													
Claren Road Credit Partners, LP	3,285,819	0.5%	0.00%	0.65%	-8.26%	-6.28%	-12.09%	-10.11%	-	-4.91%	7.14%	-0.72	Feb-12
Event Driven													
Elliott International Limited	47,960,284	6.9%	2.13%	2.52%	10.33%	5.56%	9.99%	6.51%	-	7.70%	3.66%	1.95	Apr-12
JANA Partners Qualified, L.P.	38,068,420	5.5%	2.42%	2.67%	1.62%	7.84%	2.67%	0.99%	-	2.49%	8.48%	0.28	Jul-13
Third Point Partners Qualified L.P.	41,623,364	6.0%	-0.80%	-1.49%	5.77%	3.42%	4.73%	4.51%	-	10.35%	7.64%	1.28	May-12
Equity Long/Short													
Lakewood Capital Partners, LP	41,161,476	6.0%	3.02%	4.14%	9.04%	8.64%	7.17%	6.89%	-	7.32%	7.70%	0.91	Jul-13
Macro-Discretionary													
Brevan Howard LP	35,784,806	5.2%	5.54%	6.36%	2.74%	3.95%	-0.99%	-	-	0.81%	5.83%	0.09	Mar-14
Multi-Strategy													
AQR DELTA Fund II, LP	49,019,606	7.1%	0.00%	1.74%	1.25%	4.03%	1.74%	6.81%	-	5.84%	5.39%	1.01	May-13
OZ Domestic Partners II, L.P.	41,463,079	6.0%	1.54%	1.92%	2.88%	5.53%	2.39%	2.98%	-	6.80%	4.72%	1.34	Jan-12
Direct Hedge Funds Portfolio	339,837,269	49.2%	1.78%	2.31%	4.04%	4.94%	3.27%	3.37%	-	5.85%	3.36%	1.60	Jan-12
Fund of Funds													
Grosvenor Institutional US Hedged Fund	248,339	0.0%	-0.26%	-2.05%	-2.64%	-4.49%	-14.89%	-3.07%	0.48%	1.88%	7.40%	0.06	Sep-04
Grosvenor SC Absolute Return Fund LLC	248,132,840	35.9%	1.64%	1.60%	1.77%	4.48%	0.67%	0.77%	4.91%	4.91%	4.34%	1.04	Dec-11
Grosvenor SC Absolute Return Fund LLC Series B	102,885,320	14.9%	0.49%	0.35%	-1.14%	2.21%	-1.45%	0.51%	-	2.95%	3.60%	0.72	Feb-13
Fund of Funds Portfolio	351,266,499	50.8%	1.30%	1.21%	0.72%	3.69%	-0.08%	0.68%	4.50%	3.93%	6.13%	0.38	Sep-04
SCERS Absolute Return Portfolio	691,103,768	100.0%	1.53%	1.72%	2.22%	4.27%	1.44%	1.90%	5.07%	4.16%	6.04%	0.43	Sep-04
Benchmarks													
3 Month T-Bills+5%			0.43%	0.87%	4.85%	2.19%	5.32%	5.13%	5.11%	6.34%	0.52%	-	Sep-04
HFRI Fund of Funds Composite Index			-0.17%	-0.46%	-0.69%	1.94%	-1.11%	1.23%	3.06%	2.86%	5.26%	0.24	Sep-04
Market Indices													
Libor3Month			0.08%	0.15%	0.68%	0.36%	0.73%	0.42%	0.39%	1.69%	0.54%	-	Sep-04
Barclays Aggregate Bond Index			-2.37%	-3.11%	2.51%	-2.67%	2.19%	2.79%	2.43%	4.19%	3.23%	0.76	Sep-04
Barclays High Yield Credit Bond Index			-0.47%	-0.08%	15.01%	5.46%	12.11%	4.22%	7.54%	7.62%	9.84%	0.62	Sep-04
S&P 500 TR			3.70%	1.81%	9.79%	5.73%	8.06%	9.07%	14.44%	8.02%	14.12%	0.50	Sep-04
MSCI AC World Index Free - Net			0.76%	-0.95%	5.58%	4.30%	3.68%	2.99%	8.85%	6.37%	15.82%	0.37	Sep-04
MSCI EAFE - Net			-1.99%	-4.00%	-2.34%	2.18%	-3.66%	-2.22%	5.62%	4.77%	17.47%	0.26	Sep-04
MSCI EMF (Emerging Markets Free) - Net			-4.60%	-4.38%	10.94%	4.26%	8.47%	-3.10%	0.99%	8.21%	22.81%	0.39	Sep-04

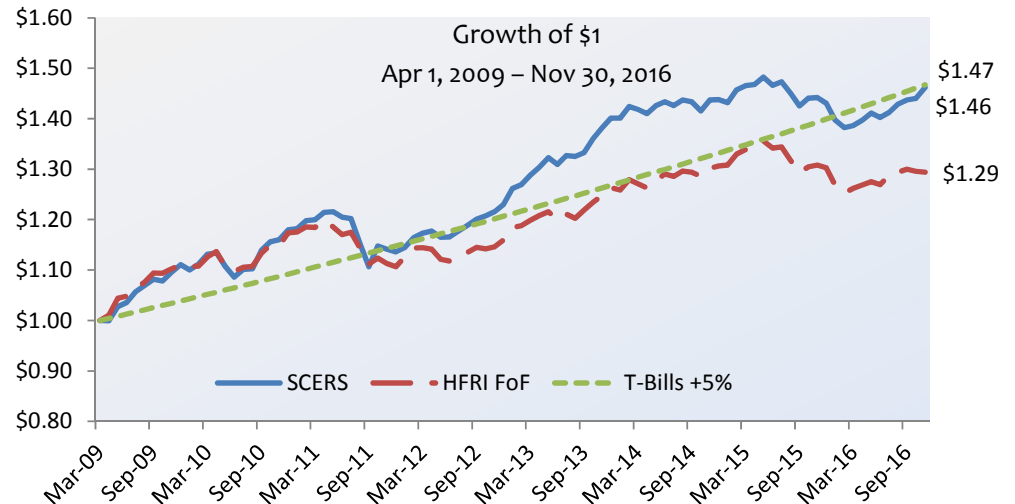
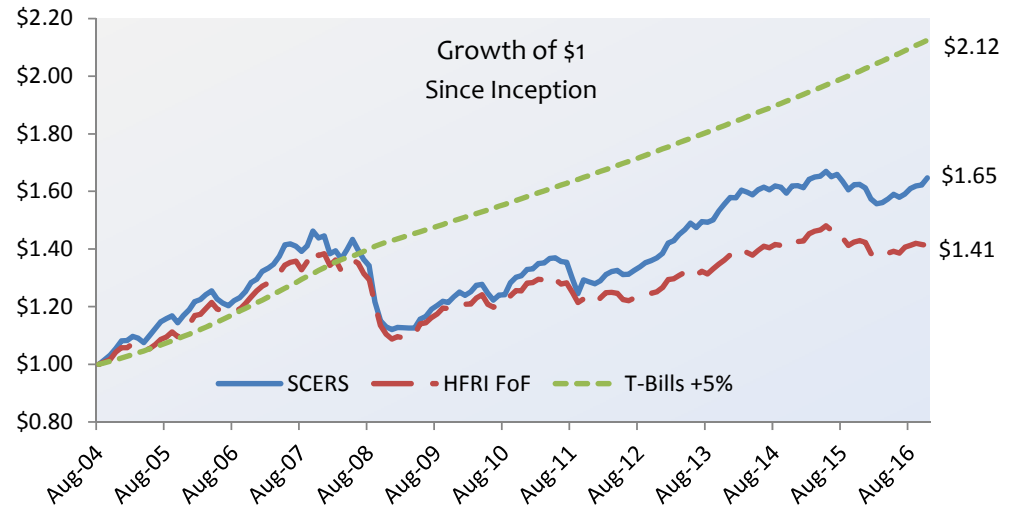
Absolute Return Portfolio Performance – as of November 30, 2016

The Absolute Return portfolio has outperformed the Fund of Funds Index, with slightly higher volatility, since the program’s inception in 2004

- Outperformance has increased since redesigning the portfolio at the end of 2011

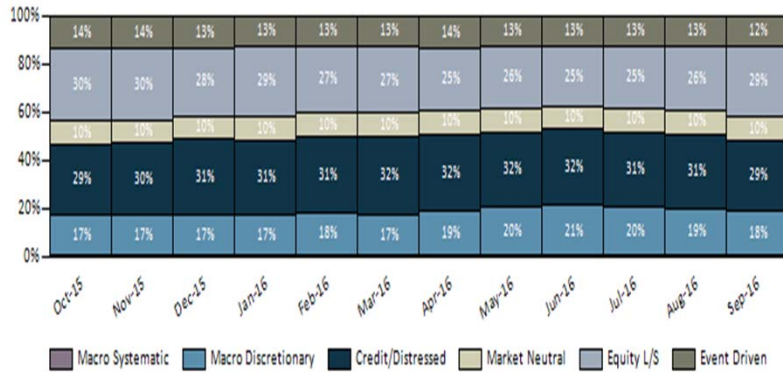
The Absolute Return portfolio’s performance since the ‘08 Financial Crisis is nearly even with its long-term T-bills + 5% benchmark

- Performance remains ahead of the Fund of Funds Index over this period

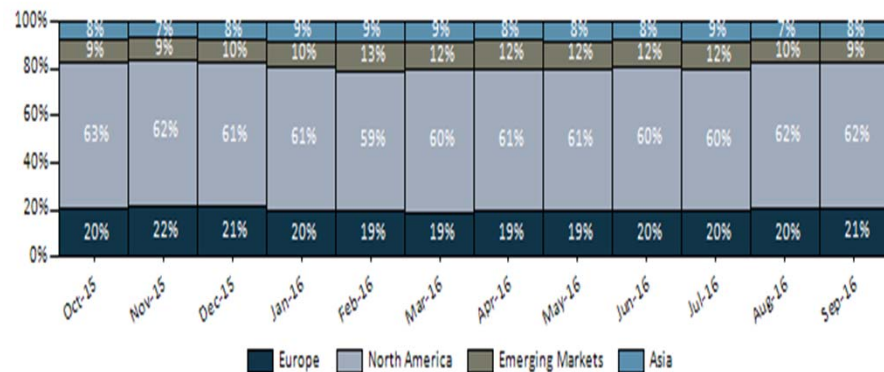


Absolute Return Portfolio Characteristics – as of September 30, 2016

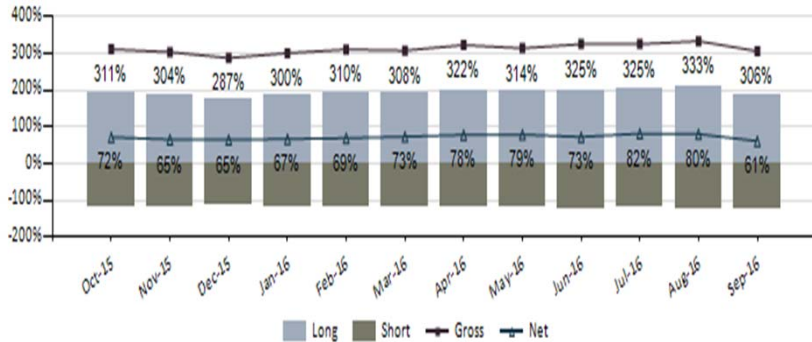
Portfolio “Look Through” Strategy Allocations



Portfolio Geographical Breakdown



Portfolio Leverage



The SCERS Absolute Return portfolio is adequately diversified among strategies and geographies

- However, planning to add more market neutral and systematic macro exposure in the direct portfolio

Portfolio leverage remains appropriate and in-line with leverage for other large institutional investors

- 306% gross exposure, 61% net exposure
- Recent decrease in gross and net exposure is driven primarily by reductions in the Grosvenor portfolios

Private Equity Portfolio – as of June 30, 2016

The Private Equity portfolio's net IRR since inception is 9.75%, versus the Cambridge Associates benchmark IRR of 9.81%

- The long-term benchmark (Russell 1000 + 3%) has a 13.97% IRR over this period

The private equity portfolio again reported solid gains during a quarter that saw a modest uptick in global equity markets

- Strongest gains came among buyout and distressed/special situations funds; venture capital continued to show gains
 - Thoma Bravo XI, Marlin Heritage, Summit VC III, TOP III, and Athyrium reported the largest gains during the quarter
- Also seeing strong distributions from a number of the direct fund investments as well as the fund of funds
 - Summit Credit I & II, Athyrium, TOP III and RRJ II led distributions within direct; good distributions from the fund of funds

Continued strong performance of the direct fund investments, still too early to gauge ultimate results

- Double-digit net IRRs for the first vintage years of direct: 18.2% (2011) and 10.4% (2012)
 - Waterland V (32.2%), Marlin Heritage (27.6%), Khosla IV (17.9%), NEA 14 (17.1%) and Summit VC III (13.8%) are leading performance

The fund of funds reported solid gains overall during the quarter

- Aggregate net IRR and total value (TVPI) increased slightly during the quarter
 - The aggregate fund of funds' net IRR is 10.04% with a 1.41x TVPI
- All of the fund of funds reported gains for the quarter
 - HarbourVest VIII has generated the best relative performance, HarbourVest International also leads its benchmark
- Abbott Capital and Goldman Sachs continue to lag peer vintage year fund of funds
- The fund of funds comprise one third of the current fair value of the Private Equity portfolio

Changes during the quarter

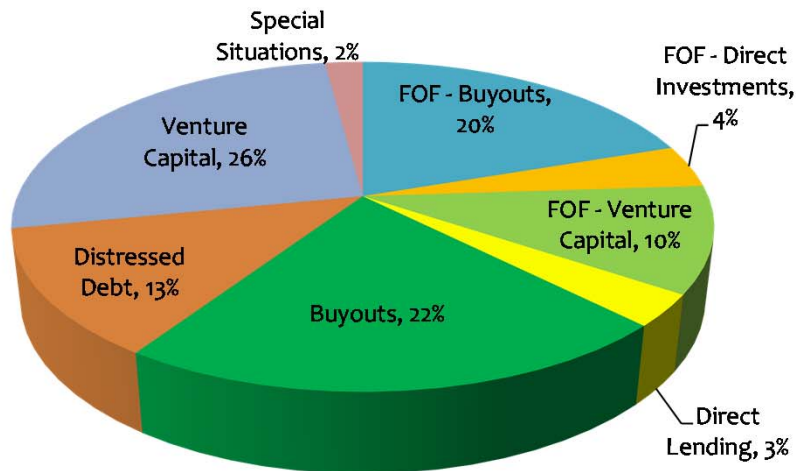
- SCERS committed \$30 million to Thoma Bravo XII (IT focused buyouts) during Q2 2016
 - SCERS also committed €13 million to Marlin Heritage Europe (small European buyouts) in Q3 2016
- \$49.9 million in new contributions, \$10.6 million in distributions
- Portfolio IRR increased 0.08% while the total portfolio gain increased by \$13.1 million

Private Equity Portfolio Characteristics as of June 30, 2016

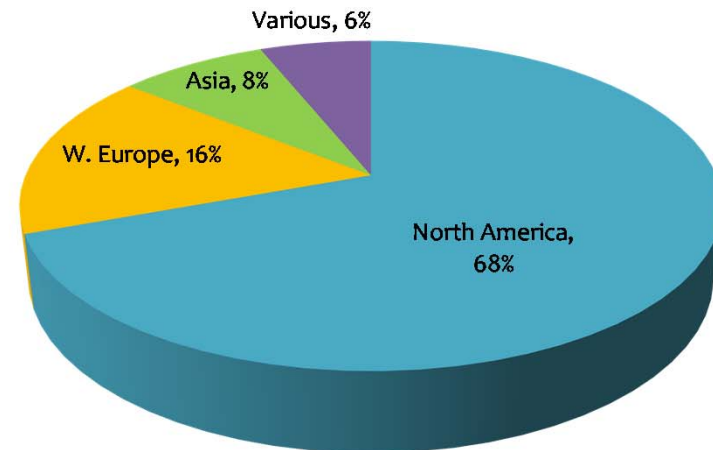
The SCERS Private Equity portfolio is diversified by strategy and geography

- Investments remain focused in North America, with meaningful exposure to Europe
 - Exposure to direct fund investments (as opposed to fund of funds) continues to increase
 - Investments from direct private equity funds represent 67% of the total portfolio's value as of June 30, 2016
- 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 6/30/16

Private Equity Portfolio Performance Details – as of June 30, 2016

Partnership (\$ in thousands)	Strategy	(A)		(B)		(C)		(D) Fair	(C+D) Total	(C+D-B)	IRR		TVPI
		Commitment Amount	Unfunded Amount	Cumulative Contributions	% Drawn	Cumulative Distributions	Value	Value	Gain/Loss	Net IRR	Benchmark ¹		
Vintage Year 2006													
HarbourVest Partners VIII - Buyout Fund L.P.	Fund of Funds	37,500	2,813	34,688	93%	32,046	21,832	53,878	19,191	10.13%	7.41%	1.55x	
HarbourVest Partners VIII - Mezzanine and Distressed Debt Fund L.P.	Fund of Funds	5,000	275	4,725	95%	4,250	2,159	6,409	1,684	7.92%	7.41%	1.36x	
HarbourVest Partners VIII - Venture Fund L.P.	Fund of Funds	7,500	188	7,313	98%	6,015	5,923	11,938	4,626	10.25%	7.41%	1.63x	
Vintage Year 2006 Total		50,000	3,275	46,725	93%	42,311	29,914	72,225	25,500	9.97%	7.35%	1.55x	
Vintage Year 2008													
Abbott Capital Private Equity Fund VI, L.P.	Fund of Funds	75,000	8,625	66,375	89%	24,376	62,196	86,572	20,197	10.01%	12.05%	1.30x	
Goldman Sachs Private Equity Partners X, L.P.	Fund of Funds	75,000	12,426	68,340	83%	37,997	58,267	96,264	27,925	10.13%	12.05%	1.41x	
HarbourVest International Private Equity Partners VI-Partnership Fund L.P.	Fund of Funds	35,757	8,582	31,164	87%	8,509	30,535	39,044	7,879	9.19%	8.01%	1.25x	
Vintage Year 2008 Total		185,757	29,633	165,879	86%	70,881	150,998	221,880	56,001	9.95%	9.01%	1.34x	
Vintage Year 2011													
Waterland Private Equity Fund V, L.P.	Buyout	17,767	5,786	13,377	75%	15,522	8,376	23,898	10,521	32.20%	8.51%	1.79x	
Summit Partners Credit Fund, LP	Opportunistic Credit	20,000	0	20,731	103%	14,651	10,918	25,569	4,837	9.38%	8.84%	1.23x	
Khosla Ventures IV	Venture Capital	10,000	950	9,050	91%	956	13,103	14,059	5,009	17.86%	16.14%	1.55x	
Vintage Year 2011 Total		47,767	6,736	43,159	90%	31,129	32,397	63,526	20,367	18.17%	11.27%	1.47x	
Vintage Year 2012													
Garrison Opportunity Fund III, LLC	Distressed Debt	20,000	0	20,000	100%	5,447	15,306	20,753	753	1.37%	9.44%	1.04x	
New Enterprise Associates 14	Venture Capital	25,000	1,500	23,500	94%	1,359	31,878	33,236	9,736	17.07%	13.87%	1.41x	
Summit Partners Venture Capital III, LP	Venture Capital	16,350	654	15,696	96%	0	21,223	21,223	5,527	13.75%	13.87%	1.35x	
Vintage Year 2012 Total		61,350	2,154	59,196	96%	6,806	68,407	75,213	16,017	10.40%	12.45%	1.27x	
Vintage Year 2013													
Accel-KKR Capital Partners IV, L.P.	Buyout	15,000	5,751	9,249	62%	1,843	8,559	10,402	1,153	10.32%	9.54%	1.12x	
H.I.G. Capital Partners V, L.P.	Buyout	14,000	11,032	2,968	21%	0	2,646	2,646	-323	-8.51%	9.54%	0.89x	
Marlin Equity IV, L.P.	Buyout	20,000	11,588	8,412	42%	0	8,718	8,718	306	2.24%	9.54%	1.04x	
RRJ Capital Master Fund II, L.P.	Buyout	35,000	6,285	33,465	82%	11,647	27,896	39,543	6,078	11.43%	7.12%	1.18x	
H.I.G. Bayside Loan Opportunity Fund III (Europe), L.P.	Distressed Debt	30,000	13,840	16,160	54%	3,086	16,150	19,236	3,076	8.82%	3.05%	1.19x	
Wayzata Opportunities Fund III, L.P.	Distressed Debt	30,000	16,650	14,385	45%	2,163	11,358	13,521	-864	-4.58%	4.13%	0.94x	
Trinity Ventures XI	Venture Capital	25,000	9,063	15,938	64%	0	18,087	18,087	2,150	7.11%	7.84%	1.13x	
Vintage Year 2013 Total		169,000	74,208	100,577	56%	18,740	93,414	112,153	11,576	6.99%	7.65%	1.12x	
Vintage Year 2014													
Dyal Capital II, L.P.	Buyout	35,000	24,316	11,205	31%	535	8,944	9,480	-1,725	N/M	N/M	0.85x	
H.I.G. Europe Capital Partners II, L.P.	Buyout	15,546	15,358	232	1%	0	-255	-255	-487	N/M	0.20%	-1.10x	
Marlin Heritage, L.P.	Buyout	10,000	4,112	5,888	59%	312	7,226	7,538	1,649	27.63%	6.45%	1.28x	
Thoma Bravo Fund XI, L.P.	Buyout	30,000	3,473	26,527	88%	0	29,694	29,694	3,167	10.54%	6.45%	1.12x	
TPG Opportunities Partners III	Distressed Debt	40,000	23,512	19,942	41%	3,957	16,745	20,702	759	4.99%	6.10%	1.04x	
Summit Partners Credit Fund II, L.P.	Opportunistic Credit	35,000	11,954	23,046	66%	1,010	23,098	24,108	1,063	6.31%	6.43%	1.05x	
Khosla Ventures V, L.P.	Venture Capital	20,000	12,720	7,280	36%	0	7,596	7,596	316	N/M	N/M	1.04x	
Spectrum Equity Investors VII, L.P.	Venture Capital	25,000	13,125	11,875	48%	0	11,511	11,511	-364	-3.48%	5.43%	0.97x	
Vintage Year 2014 Total		210,546	108,570	105,995	48%	5,815	104,559	110,373	4,378	4.49%	5.42%	1.04x	

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 June 30, 2016 (continued)

Partnership (\$ in thousands)	Strategy	(A)		(B)		(C)		(D) Fair	(C+D) Total	(C+D-B)	IRR		TVPI
		Commitment Amount	Unfunded Amount	Cumulative Contributions	% Drawn	Cumulative Distributions	Value	Value	Gain/Loss	Net IRR	Benchmark ¹		
Vintage Year 2015													
RRJ Capital Master Fund III, L.P.	Buyout	40,000	38,382	1,618	4%	0	1,333	1,333	-284	N/M	N/M	0.82x	
WPEF VI Feeder, L.P.	Buyout	26,651	24,090	2,529	9%	0	2,195	2,195	-333	N/M	N/M	0.87x	
WPEF VI Overflow Fund C.V.	Buyout	6,663	6,654	9	0%	0	1	1	-7	N/M	N/M	0.16x	
Athyrium Opportunities Fund II	Distressed Debt	32,000	11,215	23,079	65%	2,187	21,580	23,767	688	N/M	N/M	1.03x	
Accel-KKR Growth Capital Partners II, L.P.	Mezzanine	15,000	12,461	2,539	17%	0	2,107	2,107	-432	-21.16%	5.81%	0.83x	
New Enterprise Associates 15, L.P.	Venture Capital	35,000	22,050	12,954	37%	0	13,140	13,140	186	N/M	N/M	1.01x	
Summit Partners Venture Capital IV, L.P.	Venture Capital	35,000	33,715	1,285	4%	0	1,540	1,540	255	N/M	N/M	1.20x	
Vintage Year 2015 Total		190,314	148,568	44,012	22%	2,187	41,898	44,085	72	0.26%	-7.30%	1.00x	
Vintage Year 2016													
Accel-KKR Capital Partners V, LP	Buyout	25,000	25,000	0	0%	0	N/A	0	0	N/M	N/M	N/A	
Linden Capital Partners III L.P.	Buyout	35,000	30,668	4,332	12%	0	3,570	3,570	-762	N/M	N/M	0.82x	
Thoma Bravo Fund XII, L.P.	Buyout	30,000	28,341	1,659	6%	0	1,463	1,463	-197	N/M	N/M	0.88x	
TSG7 A L.P.	Buyout	16,000	15,912	88	1%	0	-8	-8	-96	N/M	N/M	-0.09x	
TSG7 B L.P.	Buyout	4,000	3,741	259	6%	0	219	219	-39	N/M	N/M	0.85x	
Atalaya Special Opportunities Fund VI, L.P.	Distressed Debt	25,000	15,625	9,628	38%	0	9,780	9,780	152	N/M	N/M	1.02x	
Trinity Ventures XII, L.P.	Venture Capital	30,000	27,600	2,400	8%	0	2,200	2,200	-200	N/M	N/M	0.92x	
Vintage Year 2016 Total		165,000	146,887	18,366	11%	0	17,224	17,224	-1,142	N/M	N/M	0.94x	
Portfolio Total:		1,079,734	520,030	583,909	52%	177,868	538,811	716,679	132,770	9.75%	9.81%	1.23x	
Portfolio Strategy Totals													
Buyout		234,000	163,933	70,588	30%	2,691	71,031	73,722	3,134	4.21%		1.04x	
Distressed Debt		147,000	67,002	87,034	54%	13,754	74,769	88,523	1,489	1.42%		1.02x	
Fund of Funds		200,000	24,326	181,440	88%	104,684	150,378	255,062	73,622	10.04%		1.41x	
Mezzanine		15,000	12,461	2,539	17%	0	2,107	2,107	-432	-21.16%		0.83x	
Opportunistic Credit		55,000	11,954	43,777	79%	15,661	34,016	49,677	5,900	8.69%		1.13x	
Venture Capital		221,350	121,376	99,978	45%	2,314	120,278	122,593	22,615	12.43%		1.23x	
Non-US		207,384	118,978	98,554	45%	38,764	86,231	124,996	26,442	12.91%		1.27x	
Portfolio Total:		1,079,734	520,030	583,909	52%	177,868	538,811	716,679	132,770	9.75%	9.81%	1.23x	

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

Real Assets Portfolio – as of June 30, 2016

The Real Assets portfolio's net IRR since inception is 6.97% including the overlay performance, and 7.75% without the overlay

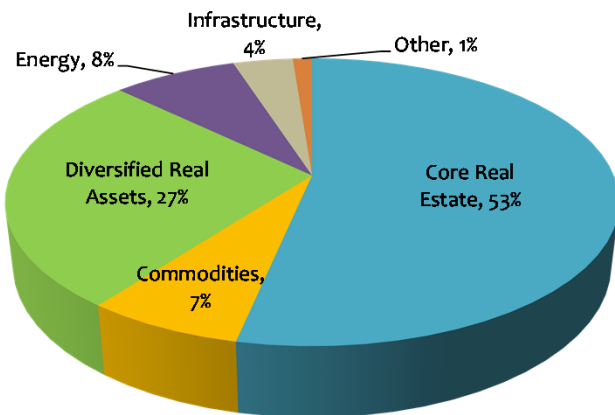
- The benchmark returned 7.19% during this period (benchmark equals CPI+5%)

Strong rebound in commodity prices in Q2, particularly within energy; crude oil (WTI) increased 16.9% during the quarter

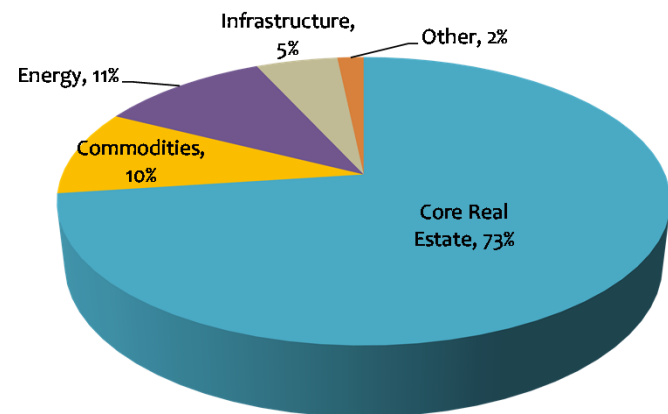
- Commodities gained 13%, MLPs gained 20%, and natural resource equities increased nearly 7% in Q2
- SSgA Real Assets returned 8.41% during the quarter, in-line with the benchmark's 8.45% return
 - Performance benefitted primarily from MLPs and commodity exposure
- Blackstone Commodities returned 12.8% and Gresham returned 11.6%; the benchmark increased 12.8%
- EnCap IX also produced strong gains during the quarter with two profitable exits
- SCERS core real estate again posted modest gains during the quarter; performance across managers was somewhat mixed

Changes during the quarter

- SCERS committed \$40 million to Brookfield Infrastructure Fund III during Q2 2016
- \$167.4 million in new contributions, \$235.9 million in distributions (largely real estate and SSgA overlay rebalancings)
- Portfolio IRR increased 0.46%, total portfolio gain increased by \$67.6 million



Portfolio Strategy Exposures*
With overlay (left graph)
Without overlay (right graph)



* Exposures are based on the market values of investments as of 6/30/16

Real Assets Portfolio Performance Details – as of June 30, 2016

Partnership (\$ in thousands)	Strategy	(A) Commitment Amount	Unfunded Amount	(B) Cumulative Contributions	% Drawn	(C) Cumulative Distributions	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	Benchmark ¹	Total Value to Paid in Capital
Vintage Year 1998												
BlackRock Realty Portfolio I	Core RE	826,698	0	826,698	100.00%	999,084	175,967	1,175,051	348,353	12.02%	8.93%	1.42x
Vintage Year 1998 Total		826,698	0	826,698	100.00%	999,084	175,967	1,175,051	348,353	12.02%		1.42x
Vintage Year 2002												
BlackRock Realty Portfolio II	Core RE	150,427	0	150,427	100.00%	172,819	43,937	216,755	66,329	8.39%	8.25%	1.44x
Vintage Year 2002 Total		150,427	0	150,427	100.00%	172,819	43,937	216,755	66,329	8.39%		1.44x
Vintage Year 2004												
*Cornerstone Patriot Fund	Core RE	50,000	0	50,000	100.00%	94,447	0	94,447	44,447	6.51%	8.08%	1.89x
Cornerstone Real Estate	Core RE	254,963	0	254,963	100.00%	267,387	61,076	328,463	73,500	5.10%	8.23%	1.29x
Vintage Year 2004 Total		304,963	0	304,963	100.00%	361,834	61,076	422,910	117,947	5.56%		1.39x
Vintage Year 2005												
*BlackRock Granite Property Fund	Core RE	70,434	0	70,434	100.00%	62,599	0	62,599	-7,835	-2.05%	5.04%	0.89x
Vintage Year 2005 Total		70,434	0	70,434	100.00%	62,599	0	62,599	-7,835	-2.05%		0.89x
Vintage Year 2008												
Blackstone Resources Select Fund	Commodities	60,000	0	60,000	100.00%	0	42,961	42,961	-17,039	-4.14%	-8.23%	0.72x
Gresham Strategic Commodities Fund Ltd.	Commodities	60,000	0	60,000	100.00%	0	25,958	25,958	-34,042	-9.83%	-8.23%	0.43x
State Street Real Assets Strategy	Diversified RA	843,550	0	843,550	100.00%	593,544	264,159	857,702	14,153	1.08%	0.08%	1.02x
Vintage Year 2008 Total		963,550	0	963,550	100.00%	593,544	333,078	926,622	-36,928	-1.69%		0.96x
Vintage Year 2013												
Jamestown Premier Property Fund	Core RE	15,000	0	17,302	100.00%	2,637	19,883	22,521	5,219	12.73%	12.81%	1.30x
MetLife Core Property Fund	Core RE	35,000	0	39,024	100.00%	4,024	48,949	52,973	13,949	14.37%	12.81%	1.36x
MS Prime Property Fund	Core RE	35,000	0	39,391	100.00%	4,391	49,020	53,410	14,020	13.37%	12.99%	1.36x
EnCap Energy Capital Fund IX, L.P.	Energy	33,000	9,152	26,311	72.27%	5,302	26,094	31,396	5,085	13.92%	-2.61%	1.19x
Vintage Year 2013 Total		118,000	9,152	122,027	92.24%	16,353	143,946	160,299	38,272	13.69%		1.31x
Vintage Year 2014												
Carlyle Power Partners II, L.P.	Energy	40,000	25,153	14,986	37.12%	2	12,881	12,882	-2,104	N/M	N/M	0.86x
EnCap Flatrock Midstream Fund III, L.P.	Energy	20,000	17,025	3,545	14.87%	1,049	3,111	4,159	614	29.09%	-1.67%	1.17x
First Reserve Energy Infrastructure Fund II, L.P.	Energy	35,000	28,744	6,437	17.87%	181	5,807	5,989	-448	-10.42%	-1.67%	0.93x
Quantum Energy Partners VI, LP	Energy	35,000	26,931	8,793	23.05%	1,771	7,834	9,605	812	N/M	N/M	1.09x
Pantheon SCERS SIRF MM, LLC	Infrastructure	100,000	75,300	24,700	24.70%	0	35,896	35,896	11,196	31.38%	N/A	1.45x
Wastewater Opportunity Fund	Infrastructure	25,000	23,104	1,903	7.58%	0	1,184	1,184	-719	N/M	N/M	0.62x
Vintage Year 2014 Total		255,000	196,257	60,365	23.04%	3,002	66,713	69,715	9,351	18.40%		1.15x

¹ Benchmarks:

Commodities Investments: Dow Jones UBS Commodity Index + 1%

Core RE Investments: NFI-ODCE

Diversified RA Investments: Manager's stated custom blended index

¹ Benchmarks:

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

Real Assets Portfolio: CPI + 5%

Real Assets Portfolio Performance Details – as of June 30, 2016 (continued)

Partnership (\$ in thousands)	Strategy	(A)		(B)		(C)		(D) Fair Value	(C+D) Total Value	(C+D-B)		Total Value to Paid in Capital
		Commitment Amount	Unfunded Amount	Cumulative Contributions	% Drawn	Cumulative Distributions	Gain/Loss			Net IRR	Benchmark ¹	
Vintage Year 2015												
Principal U.S. Property Fund	Core RE	35,000	0	35,000	100.00%	0	36,639	36,639	1,639	N/M	N/M	1.05x
Prologis Targeted Europe Logistics Fund	Core RE	30,632	0	31,324	102.26%	1,082	30,874	31,956	632	2.17%	13.02%	1.02x
Prologis Targeted US Logistics Fund	Core RE	35,000	5,200	29,800	85.14%	741	31,429	32,170	2,370	13.92%	13.02%	1.08x
Townsend Real Estate Fund, L.P.	Core RE	70,000	47,972	22,235	31.47%	207	22,700	22,907	672	N/M	N/M	1.03x
ArcLight Energy Partners VI, L.P.	Energy	40,000	26,109	14,288	34.73%	573	13,513	14,086	-202	N/M	N/M	0.99x
EnCap Energy Capital Fund X, L.P.	Energy	40,000	31,478	8,522	21.31%	0	7,740	7,740	-782	N/M	N/M	0.91x
Atalaya Real Assets SMA	Other	100,000	88,617	13,700	11.38%	2,714	11,923	14,637	937	N/M	N/M	1.07x
Vintage Year 2015 Total		350,632	199,376	154,871	43.34%	5,317	154,820	160,137	5,266	6.18%		1.03x
Vintage Year 2016												
Brookfield Infrastructure Fund III, L.P.	Infrastructure	40,000	36,808	3,192	7.98%	0	3,643	3,643	451	N/M	N/M	1.14x
IFM Global Infrastructure Fund	Infrastructure	75,000	75,000	0	0.00%	0	N/A	0	0	N/M	N/M	N/A
Vintage Year 2016 Total		115,000	111,808	3,192	2.78%	0	3,643	3,643	451	N/M		1.14x
Portfolio Total:		3,154,703	516,593	2,656,525	83.65%	2,214,552	983,180	3,197,732	541,207	6.97%	7.19%	1.20x
Portfolio Strategy Totals												
Commodities		120,000	0	120,000	100.00%	0	68,920	68,920	-51,080	-6.70%		0.57x
Core RE		1,577,521	53,172	1,535,273	96.63%	1,608,335	489,601	2,097,937	562,664	9.09%		1.37x
Diversified RA		843,550	0	843,550	100.00%	593,544	264,159	857,702	14,153	1.08%		1.02x
Energy		243,000	164,592	82,883	32.27%	8,878	76,980	85,857	2,975	4.65%		1.04x
Infrastructure		125,000	98,404	26,603	21.28%	0	37,080	37,080	10,477	29.08%		1.39x
Other		100,000	88,617	13,700	11.38%	2,714	11,923	14,637	937	N/M		1.07x
Non-US		145,632	111,808	34,516	23.70%	1,082	34,517	35,599	1,083	N/M		1.03x
Portfolio Total:		3,154,703	516,593	2,656,525	83.65%	2,214,552	983,180	3,197,732	541,207	6.97%	7.19%	1.20x
Active / Liquidated Partnership Totals												
Active Partnerships		3,034,269	516,593	2,536,091	83.00%	2,057,506	983,180	3,040,686	504,595	7.53%		1.20x
Liquidated Partnerships		120,434	0	120,434	100.00%	157,046	0	157,046	36,612	3.42%		1.30x
Portfolio Total:		3,154,703	516,593	2,656,525	83.65%	2,214,552	983,180	3,197,732	541,207	6.97%	7.19%	1.20x

*Liquidated funds

¹ Benchmarks:

Commodities Investments: Dow Jones UBS Commodity Index + 1%

Core RE Investments: NFI-ODCE

Diversified RA Investments: Manager's stated custom blended index

¹ Benchmarks:

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

Real Assets Portfolio: CPI + 5%

Opportunities Portfolio – as of June 30, 2016

The Opportunities portfolio's net IRR since inception is 8.56%

- The long-term benchmark is SCERS' 7.50% total portfolio actuarial return objective
- Also tracking the portfolio's 3 year IRR versus an intermediate-term benchmark
 - 9.64% portfolio IRR v 5.25% IRR for the SCERS' total portfolio policy weighted benchmark over the last 3 years

Distressed debt has outperformed, while value-add real estate has struggled; opportunistic real estate is performing well

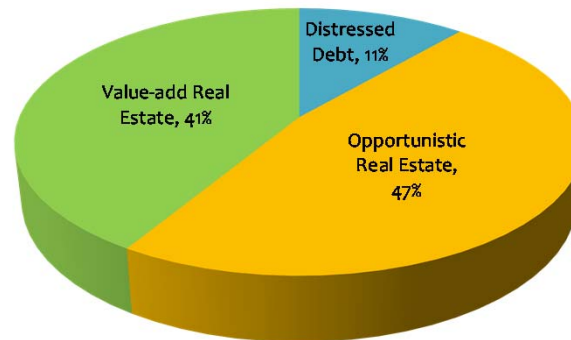
- SCERS' earlier vintage distressed debt funds are liquidated and have distributed significant capital back to SCERS
 - Stone Tower, MetWest TALF, and PIMCO have distributed \$129.3 million
- Older vintage value-add real estate funds continue to show some improvement although performance remains poor
- Recent vintage value-add real estate funds are off to a strong start

Changes during the quarter

- SCERS made no new commitments during Q2 2016
- \$10.3 million in new contributions, \$8.9 million in distributions
- Portfolio IRR declined 0.17%, total portfolio gain increased by \$1.4 million

Almost all of SCERS' more recent Opportunities commitments have been to Real Estate funds (Value Add and Opportunistic)

Market Value Strategy Exposure
(Fair Market Value as of 6/30/16)



Opportunities Portfolio Performance Details – as of June 30, 2016

Partnership (\$ in thousands)	Strategy	(A)		(B)		(C)		(D) Fair Value	(C+D) Total Value	(C+D-B)		Total Value to Paid in Capital
		Commitment Amount	Unfunded Amount	Cumulative Contributions	% Drawn	Cumulative Distributions	Gain/Loss			Net IRR	Benchmark ¹	
Vintage Year 2006												
UBS Allegis Value Trust	Value-Add RE	25,550	0	25,550	100.00%	10,109	21,539	31,648	6,098	2.95%	9.23%	1.24x
Vintage Year 2006 Total		25,550	0	25,550	100.00%	10,109	21,539	31,648	6,098	2.95%		1.24x
Vintage Year 2007												
*PIMCO Distressed Mortgage Fund, LP	Distressed Debt	18,000	0	18,000	100.00%	25,384	0	25,384	7,384	8.96%	7.91%	1.41x
AEW Value Investors II, L.P.	Value-Add RE	25,000	0	21,813	100.00%	26,114	2,092	28,206	6,393	6.03%	8.72%	1.29x
Hines US Office Value Added Fund II, L.P.	Value-Add RE	25,000	3,273	24,186	86.91%	7,489	6,927	14,416	-9,771	-7.97%	8.94%	0.60x
Vintage Year 2007 Total		68,000	3,273	63,999	94.95%	58,987	9,019	68,006	4,006	1.33%		1.06x
Vintage Year 2008												
*PIMCO Distressed Mortgage Fund II, L.P.	Distressed Debt	12,000	0	12,000	100.00%	35,277	0	35,277	23,277	34.39%	12.26%	2.94x
Vintage Year 2008 Total		12,000	0	12,000	100.00%	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	100.00%	25,304	0	25,304	5,304	11.21%	15.34%	1.27x
*Stone Tower Structured Credit Recovery Fund LP	Distressed Debt	25,000	0	25,248	100.00%	43,383	0	43,383	18,135	25.30%	15.34%	1.72x
Vintage Year 2009 Total		45,000	0	45,248	100.00%	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	95.53%	10,053	18,720	28,773	3,898	9.17%	4.13%	1.16x
DRC European Real Estate Debt Fund II, L.P.	Opportunistic RE	42,050	12,661	33,380	80.24%	4,730	29,790	34,520	1,140	1.90%	13.69%	1.03x
KKR Real Estate Partners Americas	Opportunistic RE	35,000	15,748	24,795	55.01%	9,350	21,551	30,901	6,106	19.22%	13.69%	1.25x
Vintage Year 2013 Total		102,050	29,527	83,050	75.33%	24,133	70,061	94,194	11,144	8.26%		1.13x
Vintage Year 2014												
CIM Fund VIII, LP	Opportunistic RE	35,000	20,143	17,218	42.45%	437	18,102	18,539	1,322	N/M	N/M	1.08x
Och-Ziff Real Estate Fund III	Opportunistic RE	35,000	27,358	8,933	21.84%	372	8,526	8,898	-35	-0.45%	N/A	1.00x
NREP Nordic Strategies Fund, FIS-FCP	Value-Add RE	21,876	4,375	18,291	82.47%	5,053	18,232	23,285	4,994	N/M	N/M	1.27x
Vintage Year 2014 Total		91,876	51,876	44,442	44.12%	5,862	44,861	50,723	6,281	13.85%		1.14x

¹ Benchmarks:

Opportunistic RE Investments: NCREIF + 2%

Value-Add RE Investments: NCREIF + 2%

Distressed Debt: U.S. Cambridge Associates LLC

Total Opportunities Portfolio (long-term benchmark): 7.50% actuarial return objective

² Internal rate of return based upon the policy weighted benchmark for SCERS' total portfolio using the Opportunities portfolio cash flows.

Opportunities Portfolio Performance Details – as of June 30, 2016 (continued)

Partnership (\$ in thousands)	Strategy	(A)		(B)		(C)		(D) Fair	(C+D) Total	(C+D-B)		Total Value to Paid in Capital
		Commitment Amount	Unfunded Amount	Cumulative Contributions	% Drawn	Cumulative Distributions	Value	Value	Gain/Loss	Net IRR	Benchmark ¹	
Vintage Year 2015												
ECE European Prime Shopping Centre Fund II, SCS SIF	Value-Add RE	34,424	26,541	7,918	23.00%	421	7,792	8,213	295	N/M	N/M	1.04x
Hammes Partners II, LP	Value-Add RE	25,000	17,375	7,625	30.50%	908	7,123	8,031	406	N/M	N/M	1.05x
NREP Nordic Strategies Fund II SCSp	Value-Add RE	35,535	30,949	4,585	12.90%	0	4,445	4,445	-141	N/M	N/M	0.97x
Vintage Year 2015 Total		94,959	74,865	20,128	21.20%	1,328	19,360	20,689	561	N/M		1.03x
Portfolio Total:		439,435	159,541	294,416	64.56%	204,383	164,840	369,222	74,806	8.56%	7.50%	1.25x
Portfolio Strategy Totals												
Distressed Debt		100,000	1,117	100,123	98.88%	139,401	18,720	158,121	57,998	18.83%		1.58x
Opportunistic RE		105,000	63,249	50,946	39.76%	10,159	48,180	58,339	7,393	12.82%		1.15x
Value-Add RE		100,550	20,648	79,174	78.79%	44,620	37,681	82,301	3,127	0.70%		1.04x
Non-US		133,884	74,526	64,174	48.02%	10,204	60,258	70,462	6,288	8.26%		1.10x
Portfolio Total:		439,435	159,541	294,416	64.56%	204,383	164,840	369,222	74,806	8.56%	7.50%	1.25x
Active / Liquidated Partnership Totals												
Active Partnerships		364,435	159,541	219,169	57.20%	75,035	164,840	239,874	20,706	3.21%		1.09x
Liquidated Partnerships		75,000	0	75,248	100.00%	129,348	0	129,348	54,100	19.50%		1.72x
Portfolio Total:		439,435	159,541	294,416	64.56%	204,383	164,840	369,222	74,806	8.56%	7.50%	1.25x

*Liquidated funds

3-Year IRR	
SCERS Opportunities portfolio	9.64%
SCERS policy benchmark ²	5.25%

¹ Benchmarks:

Opportunistic RE Investments: NCREIF + 2%

Value-Add RE Investments: NCREIF + 2%

Distressed Debt: U.S. Cambridge Associates LLC

Total Opportunities Portfolio (long-term benchmark): 7.50% actuarial return objective

² Internal rate of return based upon the policy weighted benchmark for SCERS' total portfolio using the Opportunities portfolio cash flows.

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