SCERS

2018 Investment Year in Review
2019 Annual Investment Plan

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2019 Annual Investment Plan

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Letter of Introduction

As Chief Executive Officer of the Sacramento County Employees' Retirement System (SCERS), I am pleased to present the 2018 SCERS Investment Year in Review and 2019 Annual Investment Plan.

The purpose of this report is to summarize the major events and developments in the investment program in the past year and preview the investment program's projects and objectives for this year.

Overall, this annual report on SCERS' investment program helps track our progress toward achieving near-term and long-term investment objectives, and in particular, meeting the fundamental goal of providing funding for the benefits paid to our members.

After a prolonged economic expansion, SCERS experienced a 1.3% loss in 2018, our first negative return since calendar year 2015. The year ended with concerns over interest rates, slowing economic growth, uncertainty around global trade, and the fading impact of U.S. tax cuts on corporate earnings.

To mitigate these risks in 2019, SCERS will continue to work with our internal investment staff, investment consultants, and key investment partners to continue to maintain a highly diversified investment portfolio that provides value across different economic and market environments.

As a long-term investor, SCERS will focus efforts in 2019 on fortifying the strategic asset allocation and holding firm to a long-term outlook that best positions SCERS to sustain benefits for our members for generations to come. However, tactical investment opportunities will be considered as appropriate, especially given recent market volatility.

Respectfully Submitted,

Eric Stern
Chief Executive Officer

Staff, Consultants & Strategic Partners

Under the California Constitution, the SCERS Board has the exclusive authority and fiduciary responsibility for the management of SCERS' investment program. In carrying out this duty, the SCERS Board establishes the strategic direction, asset allocation, return and risk parameters, and investment policies for the retirement system. The SCERS Board receives guidance in making these decisions from its internal staff of investment professionals (Staff) and from expert investment consultants, all of whom also serve as fiduciaries with respect to the fund. SCERS' general investment consulting services are provided by Verus Advisory. Cliffwater LLC serves as lead consultant for the alternative asset classes, and The Townsend Group serves as lead consultant for the real estate asset class.

Given the complexities of managing a large, multi-asset class investment program, the SCERS Board has delegated substantial responsibility for the day-to-day oversight and management of the assets of the retirement system to the internal investment Staff, who in turn, utilize and draw upon the investment expertise and resources of SCERS' investment consultants and key investment partners. SCERS believes that a strong, collaborative partnership between Staff, consultants, and investment service providers not only assures the prudent oversight of the fund, but produces significant investment value over time in the form of higher returns, lower risk, and lower costs.

The collaborative partnership between Staff, consultants, and investment partners is grounded in the following principles:

- Staff focuses on and directly engages in those areas where it can add investment value;
- Consultants serve as an 'extension of staff' in those areas where they have greater expertise, capabilities and/or resources; however, Staff continues to be actively involved in any decisions involving such areas;
- Both Staff and consultants are responsible for monitoring and overseeing the investment portfolio;
- Both Staff and consultants are charged with developing ways to improve investment performance and manage risk;
- Strategic partnerships may be established with investment providers if they will (a) allow SCERS to develop an efficient, customized solution to an investment need; (b) allow SCERS to gain access to specialized investment knowledge or expertise; or (c) improve access to niche investment markets or strategies that will add value to the portfolio; and
- Overlapping expertise and capabilities of Staff, consultants, and strategic partners is beneficial because it brings multiple perspectives to the investment decision-making process.

Implicit in this approach is SCERS' belief that a strong internal investment Staff is central to the successful execution of the investment program, in that Staff: (1) serves as the 'hub' and coordinator of the activities of consultants and strategic partners; (2) provides a source of analysis independent from those partners; (3) allows SCERS to be a generator of investment ideas and not simply a passive recipient of investment ideas; (4) facilitates investment solutions specific to SCERS' needs; and (5) enables SCERS to capture and institutionalize knowledge and expertise.

The effectiveness of the collaborative partnership between SCERS' Staff, consultants, and strategic partners can be seen in the significant level of asset class structuring and implementation that occurred in 2018 to align with SCERS' recently revised strategic asset allocation, as well as other investment program undertakings. The strategic asset allocation is designed to produce a risk-balanced portfolio with a reasonable expected return profile, reduced levels of volatility, and less susceptibility to drawdowns in poorly performing markets.

Implementation of the strategic asset allocation will continue in 2019, as SCERS' investment team seeks to:

- Create competition for investment allocations by comparing the relative value and risk/return profiles of assets and investment strategies;
- Assess the status of the economic and market cycles and position the portfolio accordingly;
- Identify opportunities to expand the reach, scope, and resources of the investment program through strategic investment partnerships;
- Ensure that the interests of investment managers are properly aligned with the interests of SCERS; and
- Ensure that SCERS has ample portfolio liquidity and cash flows to meet its benefit payment obligations.

SCERS completed the build out of its investment Staff, with the hiring of a Deputy Chief Investment Officer at the end of 2018.

Commentary on the ongoing development of SCERS' investment program from consultants Verus, Cliffwater, and Townsend can be found in Appendix 1 to 3 of this Report.

Portfolio Overview

Summary Overview

For the calendar year ended December 31, 2018, the Sacramento County Employees' Retirement System (SCERS) generated a gross loss of 1.3%. As explained in more detail below, SCERS' return was slightly above the Policy Index loss of 1.4%. Over the 3-year and 5-year periods, SCERS has returned 7.7% and 5.5%, respectively, versus the Policy Index return of 6.9% and 5.4%.

Market Overview

After a subdued 2017, calendar year 2018 marked the return of volatility and negative market returns, especially across equity markets. The market catalysts of 2017, including synchronized global growth, supportive financial conditions, and stimulative fiscal policy in the U.S., faded into concern over increasing Federal Reserve (the Fed) interest rate hikes, slowing economic growth, uncertainty around global trade, and the fading impact of U.S. tax cuts on corporate earnings. To put the divergence between 2017 and 2018 into perspective, during 2018 the S&P 500 lost 4.4%, and had a daily move of more than 1% sixty-four times, in contrast to only eight times in all of 2017, where the index returned 21.8%.

While the markets experienced meaningful volatility during 2018, overall economic activity and data within the U.S. remains strong. There appears to be a low risk of a recession in the U.S. over the next year; however, there are concerns over momentum slowing going forward as the U.S. economy enters a late-cycle phase. GDP remains in good shape in the U.S., with a year-over-year rate of 3.0% as of September 30, 2018, driven by strength in consumer spending, which compares to an annual rate of 2.3% at the same time a year prior. Employment in the U.S. also remains in solid shape, with unemployment ending the year at 3.9%, down from 4.1% a year earlier, and an average of 220,000 jobs were added per month during the year. The strong labor market has translated to above average wage growth of 3.3%, which while below the highs from prior cycles, trended up during the year. Rising interest rates have led to softening within the housing market. Existing home sales fell to an annualized rate of 5.3% in November, which represents the slowest pace since 2015. Home prices increased during the year, but at a slower rate than prior years. Consumer sentiment, as measured by the University of Michigan's consumer sentiment index for the U.S., ended the year at 98.3, which is above the long-term average of 86.5. However, sentiment has fallen to start 2019 with a reading of 90.7, which is the lowest reading since 2016, reflecting a subdued outlook for the U.S. economy. Core inflation of 1.9% remains below the Fed's 2% target, and represents a lower number than recent readings, primarily due to the decline in gasoline prices.

Though the financial markets became much more volatile during the year, the Fed continued on its directive of unwinding bond purchases from its balance sheet, and raising interest rates. The Fed remained focused on its dual mandate of maximum employment and stable prices, and given the stability of both, raised interest rates four times during the calendar year, bringing the Federal Funds rate to a range of 2.25% to 2.5%. However, Fed Chairman Jerome Powell also indicated early in 2019 that the Fed will be flexible within its monetary policy and not path dependent. He was quoted as saying, "We're listening to the message that markets are sending and we're going to be taking those downside risks into account as we make policy going forward."

Outside of the U.S., the eurozone economy is growing at a slower pace than that of the U.S., and is losing momentum due to weaker foreign trade, rising political risk, and uncertainty over Brexit. The British Parliament rejected Theresa May's Brexit deal in January 2019, creating uncertainty ahead of the March 30, 2019 Brexit deadline. This has not had a meaningful impact on financial markets to date, but could going forward. The European Central Bank (ECB) announced in June 2018 the end of Europe's bond buying program, with asset purchases ending in December 2018. Some expect the ECB to raise interest rates at some point in 2019; however, the ECB is expressing a more cautious tone given tempered growth expectations and a greater climate of uncertainty. Japan is growing at a low rate, which has allowed the Bank of Japan (BOJ) to maintain low interest rates and keep quantitative easing programs in place, given that low inflation remains a concern. However, the BOJ significantly tapered its pace of bond purchases during the year. China's economy is expected to slow from the 6.6% level in 2018, and marked participants anticipate it will need to continue its efforts to loosen fiscal and monetary policies going forward.

Ninety three percent of global financial markets generated negative returns in 2018, the worst such performance in an over 100-year data set. The only major asset classes that generated slightly positive returns were U.S. Treasuries and U.S. agency mortgages. Within equities, returns were significantly negative across the board, with the S&P 500 experiencing a near 20% peak to trough drawdown during the fourth quarter. There were meaningful divergences both geographically and across styles. On the geographic front, domestic equities outperformed international equities, including developed and emerging markets. The Russell 3000 Index declined 5.2%, versus the MSCI EAFE and MSCI Emerging Markets Indexes, which declined 13.8% and 14.6%, respectively. Within styles, value stocks significantly underperformed growth stocks, and small capitalization stocks meaningfully underperformed large capitalization stocks.

Fixed income returns ranged from negative to slightly positive during the year, but meaningfully outperformed equities. The Bloomberg Barclays Capital Aggregate Index was flat, returning 0.0%, and the Bloomberg Barclays U.S. Treasury Index returned 1.9%, which served to offset the losses within equities. However, there were periods in 2018 where the traditional negative correlation of stocks and bonds broke down and were instead positive. For example, early in the year bond yields rose due to concerns over interest rate hikes, at the same time that equity prices fell. Credit lagged within fixed income, with the Bloomberg Barclays U.S. Corporate High Yield Index and the Bloomberg Barclays U.S. Credit Index both declining 2.1%. Hedge funds delivered a variety of results depending on strategy; however, they were down for the year in aggregate, as represented by a decline of 3.5% for the HFRI FoF Composite. Commodity prices, as represented by the Bloomberg Commodity Index, were down significantly during the year, declining 11.2%.

At this time last year, investors entered 2018 with equity markets sitting at all-time highs, and credit spreads and market volatility at historically low levels. However, valuations across many asset classes were at all-time highs, and concerns and uncertainty were mounting, including a potentially slower growth environment, tighter monetary policy, evolving trade wars, a partial government shutdown, and greater political uncertainty, which led to higher volatility within financial markets. The dramatic fall in market prices, especially during the fourth quarter of 2018, has created buying opportunities and strong returns to start 2019. It is unclear how sustainable this is. Clarity on the Fed's interest rate path, a solution on the escalating trade wars with China and other nations, and a resolution over Brexit could keep volatility in check. However, it is reasonable to expect volatility to pick back up if the issues that plagued the markets in 2018 are not resolved, or if economic growth slows. SCERS' strategic asset allocation is structured to include enough growth assets to participate in market upside, while also providing greater levels of diversification and exposure across many less correlated market segments, which should partially protect SCERS if the experience of 2018 persists going forward.

Portfolio Review and Considerations

SCERS' investment program is structured around a strategic asset allocation with the objective of ensuring diversification of investments in a manner that generates a desired rate of investment return with an acceptable level of investment risk. The asset allocation targets are not tactical, but rather, are long term in nature, consistent with the long term nature of SCERS' benefit obligations.

SCERS' strategic asset allocation was last revised in 2017. Several objectives were prioritized within the strategic asset allocation, including: (1) a reduction in portfolio volatility; (2) protection against significant drawdowns; (3) improvement in the cash flow generation of the portfolio; (4) increased diversification, especially to investment strategies with low and negative correlation to equity markets; and, (5) improvement in the funding status of the plan.

SCERS' strategic asset allocation incorporates a functional framework that groups and classifies segments of SCERS' portfolio in order to link those segments that are exposed to similar economic environments and risk factors, and which would be expected to have similar roles and outcomes in a portfolio. The functional grouping breaks the portfolio into three asset categories: (1) Growth; (2) Diversifying; (3) Real Return, with asset classes that underlie these asset categories.

The Growth asset category includes those segments of the portfolio that tend to perform best in a high growth and low/moderate inflationary environment, including most equity and credit investments. In contrast, they tend to perform poorly during recessionary periods, when GDP growth is contracting, or during certain periods when unexpected inflation arises. Growth assets tend to comprise the dominant allocation within most institutional investment portfolios, including that of SCERS. The Diversifying asset category includes those segments of the portfolio which are expected to protect capital and perform better than the Growth asset category during dislocated and stressed market environments, including traditional fixed income and diversifying absolute return strategies. The Real Return asset category includes those segments of the portfolio that protect against inflation, generate cash flow, and provide further portfolio diversification, including real estate, infrastructure, energy, agriculture, and commodities investments.

SCERS' strategic asset allocation is summarized in **Table 1** below:

Table 1 – SCERS' Strategic Asset Allocation

Asset Category/Asset Class	Target Allocation
Growth	**59.0%**
Domestic Equity	21.0%
International Equity	20.0%
Private Equity	9.0%
Public Credit	2.0%
Private Credit	4.0%
Growth Absolute Return	3.0%
Diversifying	**25.0%**
Core Plus Fixed Income	10.0%
US Treasury	5.0%
Global Fixed Income	3.0%
Diversifying Absolute Return	7.0%
Real Return	**16.0%**
Real Estate	7.0%
Real Assets	7.0%
Commodities	2.0%
Opportunities	**0.0%**
Total	**100.0%**

During the 2018 calendar year, SCERS continued the process of transitioning the portfolio to the target allocations of the strategic asset allocation. Most of the structural modifications to underlying asset classes to align with the new strategic asset allocation were made in 2017 except for the Domestic Equity and International Equity asset classes. These asset classes were re-structured early in 2018, with implementation also taking place during the calendar year. The remainder of the implementation toward the asset allocation targets will likely occur over the next few years, especially within the alternative asset classes. Bringing the actual allocations toward their targets is a multi-year process to fully execute, especially within the private market asset classes, given the unique cash flow characteristics of these segments and the importance of maintaining vintage year diversification. Private equity reached its target allocation in 2018, while Private Credit and Real Assets are making good progress toward reaching their target allocations, with full implementation expected to be completed by 2021 for each.

Table 2 below compares SCERS' actual physical allocations as of the end of 2018 to the target allocations.

Table 2 – SCERS' Actual Allocations versus Target Allocations

Asset Category/Asset Class	Actual Allocation*	Target Allocation	Variance
Growth	**54.5%**	**59.0%**	**-4.5%**
Domestic Equity	20.1%	21.0%	-0.9%
International Equity	18.4%	20.0%	-1.6%
Private Equity	9.3%	9.0%	0.3%
Public Credit	1.9%	2.0%	-0.1%
Private Credit	1.5%	4.0%	-2.5%
Growth Absolute Return	3.3%	3.0%	0.3%
Diversifying	**24.1%**	**25.0%**	**-0.9%**
Core/Core Plus Fixed Income	9.7%	10.0%	-0.3%
US Treasury	4.9%	5.0%	-0.1%
Global Fixed Income	2.6%	3.0%	-0.4%
Diversifying Absolute Return	6.9%	7.0%	-0.1%
Real Return	**15.1%**	**16.0%**	**-0.9%**
Real Estate	9.6%	7.0%	2.6%
Real Assets	5.2%	7.0%	-1.8%
Commodities	0.3%	2.0%	-1.7%
Opportunities	**0.1%**	**0.0%**	**0.1%**
Overlay Program	2.0%	0.0%	2.0%
Cash	4.2%	0.0%	4.2%
	100.0%	100.0%	

* Based on Verus Advisory market values

Successful implementation of the asset allocation is contingent on selecting and maintaining allocations to investment strategies and managers that will outperform their respective benchmarks. Staff and SCERS' investment consultants, Verus Advisory, Cliffwater, and The Townsend Group (Consultants) believe that SCERS continues to be on the right path to accomplishing this in aggregate with the investments that SCERS has made over the past several years, including those made in 2018.

With the increased market volatility in 2018, and the sell-off in asset prices to end the year, an emphasis in capital preservation and downside protection is becoming particularly important when underwriting investment opportunities. Implementation decisions over the past year have included the addition of a dedicated U.S. Treasury allocation, and allocating to investment strategies with low and negative correlations to equity markets, particularly within the Diversifying Absolute Return portfolio and segments of Real Assets. In those asset classes that tend to be more correlated to a favorable growth market, such as Private Equity, implementation continues to focus on sector specific funds that are less cyclical or where an investment manager has a demonstrated track record of understanding and managing the risks associated with their sector of expertise during recessionary periods. SCERS also allocated to a distressed debt fund in 2018, and Staff and Consultants have been identifying potential investments for SCERS' Opportunities portfolio, which could benefit in a dislocated market environment.

SCERS has a greater level of benefit payments going out than contributions coming in, so investments that generate cash flows and contracted yields are an increasingly important component of assisting SCERS in managing cash flows. Continued implementation within Private Credit and segments of Real Assets play a role in this regard. During the calendar year, Verus and Staff analyzed SCERS' liquidity profile, given its meaningful footprint in illiquid asset classes. The results demonstrated that SCERS has sufficient liquidity coverage; however, to better manage liquidity and cash flows going forward, in 2019, Staff and Verus plan to present a cash management policy for the Board to consider. The policy will: (1) ensure that benefit payment and funding obligations are met without interruption; (2) provide a process for the oversight and management of cash; (3) and, oversee liquidity risk and maintain appropriate liquidity profiles within the SCERS investment portfolio.

As SCERS continues the implementation of its portfolio, especially within the alternative asset classes, Staff and Consultants have been finding a balance between investment strategy cost and liquidity, and generating excess returns. This has translated to emphasizing lower cost strategies with greater liquidity in more efficient market segments where the dispersion of returns between investment managers is low, while emphasizing higher returning investment opportunities with higher fee structures in less efficient market segments where the dispersion of returns between investment managers is high. In higher dispersion segments there is the potential to earn meaningful excess returns over a benchmark or a median performing manager.

An example of where SCERS has utilized this approach is Real Estate. Within Real Estate, SCERS exclusively invests using core open-end commingled funds in the core portfolio, which provide diversified exposure to private real estate in an open-end structure with quarterly liquidity, and reasonable management fees with little or no carried interest. While there is potential to earn excess returns over the NFI-ODCE benchmark, there has historically been a lower dispersion of returns between top performing and lower performing core real estate funds. Utilizing open-end fund structures is also becoming more prevalent in core infrastructure as well. In contrast, implementation in non-core real estate has focused on using closed-end funds that have little liquidity and which employ higher fees and carried interest, but which also have higher return expectations. Differentiated investment strategy and investment manager selection is critical in non-core as there is a higher dispersion of return between various non-core strategies and investment managers.

Closed-end structures are also utilized in Private Equity and the non-core segments of Infrastructure, where investors have historically been compensated for lower liquidity and higher fee structures, by earning higher returns. Another market segment which has traditionally employed higher fee structures (albeit with greater liquidity in open-end structures) is Absolute Return. However, there is now a greater number of options for lower cost structures to gain exposure to absolute return strategies, and where traditional "2 and 20" fee structures have come down meaningfully over the years.

As a reminder, while implementation of the strategic asset allocation continues, SCERS utilizes the Overlay Program managed by State Street Global Advisors (SSGA) to bring SCERS' portfolio in line with its target asset allocation, and to invest excess portfolio cash. The Overlay Program uses proxies to replicate exposures within the portfolio, and is particularly effective in rebalancing public market assets due to the low tracking error of the underlying proxies compared to public market managers. On the other hand, the Overlay Program is not as effective in replicating alternative asset exposure because it is limited to the use of public market proxies, which can create basis risk to the return and risk characteristics of the underlying asset class. Restructuring of the Overlay Program occurred early in 2018, to align with the new strategic asset allocation, with the incorporation of overlay proxies at the asset category level to replicate SCERS' strategic asset allocation.

Portfolio Performance and Attribution

For 2018, SCERS generated a total gross fund loss of 1.3%, which slightly outperformed the Policy Index return, which generated a loss of 1.4%. The Overlay Program detracted from performance during the year, as SCERS' total gross fund return ex-Overlay incurred a loss of 0.8%. SCERS' returns were strong relative to the InvestorForce peer universe of defined benefit plans with assets greater than $1 billion, whose median return was down 3.6% during 2018, demonstrating the benefits of a well-diversified portfolio during a down market.

SCERS' asset categories delivered a wide range of returns, with Growth assets delivering losses of 3.5%, Diversifying assets generating smaller losses of 1.0%, while Real Return assets generated positive returns of 8.5%. The Growth asset category was negatively impacted by significant losses across Public Equities and Growth Absolute Return, while Private Equity and Private Credit generated strong positive returns (private market returns are lagged a quarter). Within the Diversifying asset category, the Public Fixed Income portfolio generated flat returns, while Diversifying Absolute Return generated negative returns, though less so than those of growth assets. Within Public Fixed Income, Core Plus and U.S. Treasuries generated small positive returns, while Global Fixed Income incurred losses. Across the Real Return asset category, both Real Assets (one quarter lagged) and Real Estate (non-core real estate is lagged a quarter) generated strong positive returns, while Commodities delivered double-digit negative returns.

SCERS' asset classes, which underlie each asset category, produced mixed results relative to their respective benchmarks during the year. Asset classes that exceeded their benchmarks included International Equity by 1.5%, Private Equity by 8.8%, Private Credit by 4.1%, Public Fixed Income by 0.1%, Real Assets by 5.9%, and Commodities by 0.3%. Asset classes that trailed their benchmarks included Domestic Equity by 0.3%, Growth Oriented Absolute Return by 2.9%, Diversifying Absolute Return by 2.4%, and Real Estate by 2.4%. Please recall that the returns calculated by Verus are time-weighted returns, and the performance of the Private Equity, Private Credit, Real Assets, and Real Estate (non-core) asset classes are better reflected through an IRR calculation, which accounts for asset inflows and outflows. The performance results of these segments in the asset class sections of this report utilize an IRR calculation, as calculated by Cliffwater and Townsend.

Over the longer 3-year and 5-year periods, SCERS has generated gross returns of 7.7% and 5.5%, respectively. Both the 3-year and 5-year figures exceed the Policy Index return of 6.9% and 5.4%, respectively. The 3-year return exceeds SCERS' actuarial return assumption of 7.0%, while the 5-year return trails. Since inception (as of June 1986), SCERS' portfolio has generated a gross return of 8.2%, which slightly trails the Policy Index return of 8.3%; however, it exceeds SCERS' actuarial return assumption of 7.0%.

SCERS' investment results (as calculated by Verus) are summarized in **Table 3.**

Table 3 – Investment Results

	For the Period Ended December 31, 2018		
	Annualized		
	1 Year	**3 Years**	**5 Years**
GROWTH ASSET CATEGORY:*	-3.5%	-%	-%
Policy Benchmark: Blended weighted average of asset class benchmarks	-4.1	-	-
Domestic Equity	**-5.5**	**8.6**	**7.6**
Policy Benchmark: Russell 3000 Index	-5.2	9.0	7.9
InvestorForce All DB U.S. Eq Gross Median	-5.9	8.7	7.3
International Equity	**-12.3**	**6.0**	**1.9**
Policy Benchmark: MSCI ACWI ex-U.S. Index	-13.8	5.0	1.1
InvestorForce All DB ex-U.S. Eq Gross Median	-14.6	4.6	1.1
Private Equity**	**25.9**	**17.5**	**15.7**
Policy Benchmark: Thomson Reuters C/A All PE 1 Quarter Lag	17.1	16.8	14.7
L/T Benchmark: Russell 3000 + 3% 1 Quarter Lag	20.6	20.1	16.5
InvestorForce All DB Private Eq Net Median	15.6	13.1	12.2
Public Credit	**-0.6**	**9.2**	**3.4**
Policy Benchmark: 50% BofA ML High Yield II / 50% Credit Suisse Leveraged Loans	-0.6	6.2	3.6
InvestorForce All DB Total Fix Inc Gross Median	-1.8	6.3	3.8
Private Credit**	**7.2**	**10.3**	**8.0**
Policy Benchmark: Credit Suisse Leveraged Loan + 2%	3.1	7.1	5.4
Growth Absolute Return***	**-6.0**	**3.0**	**2.1**
Policy Benchmark: HFRI Fund of Funds Composite Index + 1%	-3.1	2.3	2.4
DIVERSIFYING ASSET CATEGORY:*	-1.0	-	-
Policy Benchmark: Blended weighted average of asset class benchmarks	-0.3	-	-
Public Fixed Income	**-0.2**	**3.4**	**3.2**
Policy Benchmark: Custom****	-0.3	2.7	2.3
Diversifying Absolute Return***	**-3.3**	**0.0**	**0.6**
Policy Benchmark: HFRI Fund of Funds Conservative Index	-0.9	1.7	1.7

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REAL RETURN ASSET CATEGORY:*	8.5	-	-
Policy Benchmark: Blended weighted average of asset class benchmarks	6.2	-	-
Real Estate*****	**6.1**	**9.6**	**11.0**
Policy Benchmark: 65% NFI-ODCE / 35% NFI-ODCE + 1%	8.5	7.7	9.6
InvestorForce All DB Real Estate Net Median	7.3	7.2	9.5
Real Assets**	**15.2**	**15.9**	**21.3**
Policy Benchmark: Custom******	9.3	8.1	7.0
L/T Benchmark: CPI-U Headline + 5%	6.9	7.0	6.3
Commodities	**-10.9**	**-1.5**	**-9.5**
Policy Benchmark: Bloomberg Commodity Index	-11.2	0.3	-8.8
OPPORTUNITIES*	1.0	5.3	6.3
Policy Benchmark: Policy Index Benchmark	-1.4	6.9	5.4
TOTAL FUND:			
SCERS Total Fund - Gross	-1.3%	7.7%	5.5%
SCERS Total Fund - Net	-1.5	7.4	5.2
Policy Benchmark Index*******	-1.4	6.9	5.4
InvestorForce Public DB > $1B Gross Median	-3.6	6.4	4.9

Notes: Unless noted, returns were prepared by Verus Advisory, Inc., and shown on a gross of fee basis (except for absolute return, private equity, private credit, real assets, real estate, and opportunities, which are net of fees), and included the overlay effect. Return calculations were prepared using a time-weighted rate of return.

* Verus asset category composite returns did not start until March 31, 2017.
** Investment return and index return are one quarter in arrears.
*** Verus composite returns did not start until June 30, 2017. Cliffwater returns are used in its place using an internal rate of return (IRR).
**** The public fixed income benchmark consists of 55.6% Bloomberg Barclays Aggregate Bond Index, 27.8% Bloomberg Barclays US Treasury Index, 13.3% Citi WGBI Index, and 3.3% JPM GBI-EM Index.
***** Non-core real estate returns are one quarter in arrears.
****** The real assets benchmark consists of 45% Cambridge Associates Private Infrastructure Index, 35% Cambridge Associates Private Energy Index, 10% NCREIF Agriculture Index, and 10% NCREIF Timber Index.
******* The policy index benchmark consists of (Domestic Equity - 21% Russell 3000); (International Equity - 20% MSCI ACWI ex U.S.); (Fixed Income - 10% Barclays Aggregate, 5% Barclays US Treasury, 2.4% Citigroup WGBI ex U.S. Unhedged, 0.6% JPM GBI EM Diversified, 1% BofA ML High Yield II, 1% Credit Suisse Leveraged Loans); (Private Equity - 9% Thomson Reuters C/A All PE 1 Qrt Lag); (Private Credit - 4% Credit Suisse Leveraged Loans + 2%); (Absolute Return - Growth-Oriented 3% HRFI FoF Composite + 1%, Diversifying 7% HFRI FoF Conservative); (Real Estate - 4.5% NFI-ODCE, 2.5% NFI-ODCE +1%); (Real Assets - 3.1% Cambridge Assoc Private Infrastructure 1 Qtr Lag, 2.5% Cambridge Assoc Private Energy 1 Qtr Lag, 0.7% NCREIF Farmland 1 Qtr Lag, 0.7% NCREIF Timberland Index Lagged); (Commodities - 2.0% Bloomberg Commodity Index).

Asset Classes

SCERS

U.S. Equity Market Overview

The U.S. equity markets experienced heightened volatility throughout 2018, resulting in negative returns for the broad market for the first time since 2008. While the markets experienced increased volatility throughout the year, especially compared to a historically calm 2017, the performance was split between a positive first half and negative second half. U.S. equity markets were up 3.2% through the first half of the year before declining 8.2% in the second half, resulting in a full year decline of 5.2%. The equity market decline was most severe in the fourth quarter, with the market down 14.3% in the last three months of the year.

The U.S. equity markets focused on several notable risks during the second half of 2018, which led to a decline in prices. The Federal Reserve raised interest rates four times in 2018, capped off with a 25 basis point increase in December. The increase in interest rates has fed into an increase in mortgage rates, putting pressure on housing market activity. Geopolitical issues, most notably increasing tariffs and a potential trade war with China, also put pressure on equity prices, with U.S. stocks that have the largest exposure to China significantly underperforming the broader market. Despite strong economic growth in 2018, measured by U.S. Gross Domestic Product expected to increase by over 3% for the year, growth is expected to slow in 2019. Slowing economic growth combined with the fading benefits of the 2017 tax cuts have contributed to a decline in corporate earnings expectations, further pressuring U.S. equity prices.

Large cap stocks outperformed small cap stocks in 2018, continuing a recent trend which has occurred in four out of the last five years. The outperformance of large cap stocks was driven by the fourth quarter performance, where large cap declined 13.5% compared to the 20.2% decline of small cap stocks. During December 2018, small cap stocks declined 11.9%, the worst monthly performance since February 2009. For the year, large cap stocks declined 4.8% compared to the 11.0% decline for small cap stocks. Growth stocks outperformed value stocks for the year, outperforming for the first three quarters of the year before experiencing a sharp reversal in the fourth quarter. For the year, growth outperformed value by approximately 7%, despite value outperforming growth by 4% during the fourth quarter drawdown.

Domestic Equity Portfolio

During 2018, SCERS continued the restructuring and implementation efforts, which began in 2017, to align the Domestic Equity portfolio with SCERS' strategic asset allocation. The broad structure for the asset class was approved in January 2018, which established allocation targets for the large cap passive, large cap active, and small cap active segments of the portfolio. Throughout 2018, the asset class structure was implemented across the actively managed segments of the portfolio. The implementation included reducing the overall manager lineup to simplify the portfolio, eliminating redundancies where possible, and maintaining investments with the highest conviction active managers. Consolidating the investment manager lineup also allowed SCERS to reduce overall management fees across the portfolio.

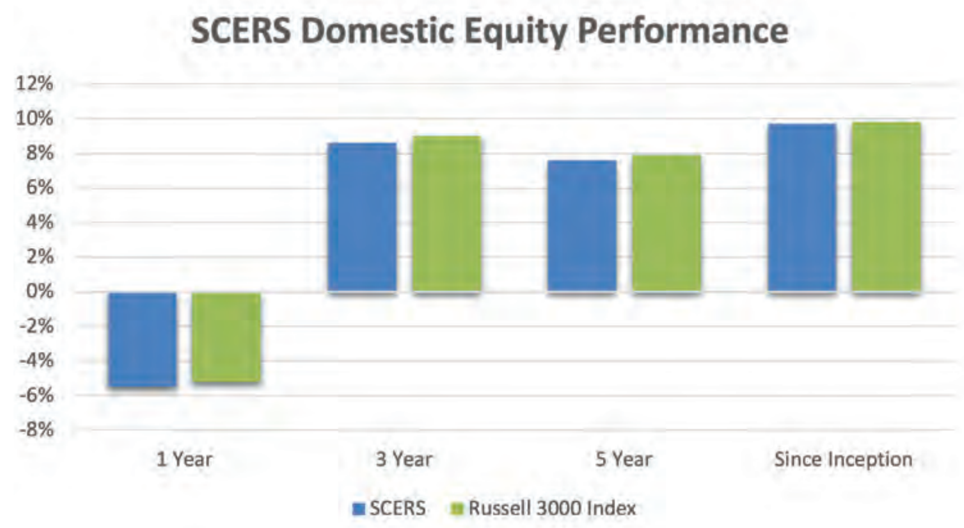
SCERS Domestic Equity Portfolio Construction					
	Minimum	**Target Allocation**	**Maximum**	**Manager Allocation**	**Policy Index Benchmark**
Total Domestic Equity Portfolio	19%	**21%**	23%		**Russell 3000 Index**
Large Cap Passive (Russell 1000)		**54%**		54.0%	
Large Cap Active (Russell 1000)		**36%**			
Fundamental Concentrated				12.0%	
Equity Extension 130/30				12.0%	
Systematic Multi-Factor				12.0%	
Small Cap Value (Russell 2000 Value)		**5%**		5.0%	
Small Cap Growth (Russell 2000 Growth)		**5%**		5.0%	

The large cap segment of the Domestic Equity portfolio contains a combination of passive and active exposures, both managed against the Russell 1000 Index. Within the large cap actively managed segment of the portfolio, SCERS moved to a core approach, balanced between quantitative and fundamental investment strategies. The core approach is expected to generate excess returns, while experiencing less overall volatility and tracking error versus the portfolio benchmark. The small cap portfolio is entirely actively managed and maintains neutral style risk, with equal allocations between growth and value oriented managers.

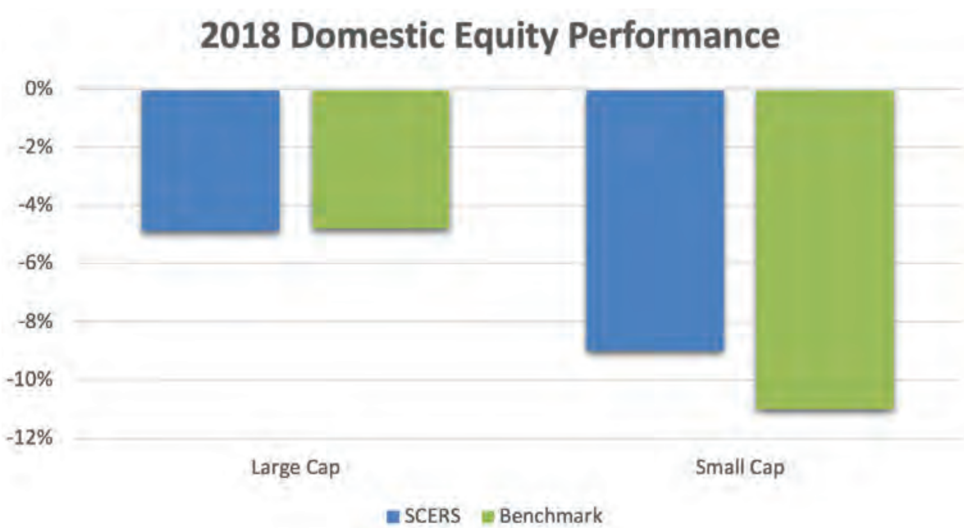
2018 ACTIVITY

- Restructured and implemented the Domestic Equity asset class to align with the strategic asset allocation.
  - Reduced the manager count from ten to seven managers
  - Performed a manager search to fill a new systematic multi-factor large cap mandate, which resulted in the hiring of AQR and its U.S. Enhanced Equity strategy in June 2018
  - Reduced management fees across the large and small cap actively managed segments of the portfolio
  - Performed a manager search for the increased allocation to the 130/30 equity extension large cap mandate, completing the recommendation in January 2019 with the hiring of D.E. Shaw and its Broad Market Core Alpha Extension 130/30 strategy
- Oversaw, monitored, and met with SCERS' existing Domestic Equity managers

Performance and Attribution



SCERS' Domestic Equity portfolio was down 5.5% in 2018, versus the benchmark Russell 3000 Index, which was down 5.2%. Over longer time periods, the SCERS portfolio has just slightly underperformed the benchmark, with SCERS' portfolio up 9.7% since inception compared to the Russell 3000 Index up 9.8%.



Within SCERS' Domestic Equity portfolio, the U.S. large cap portfolio, which constitutes approximately 90% of the Domestic Equity portfolio, slightly underperformed the Russell 1000 benchmark. SCERS' large cap portfolio was down 4.9% versus the Russell 1000 performance, which was down 4.8%. SCERS' small cap portfolio outperformed the Russell 2000 benchmark for the year, down 9.0% versus the benchmark, which was down 11.0%.

2019 ANNUAL PLAN

- Implement the 130/30 equity extension large cap manager addition
  - Rebalance the passive portfolio to align with the strategic asset allocation target
- Review alternative passive management strategies to complement existing market cap weighted passive exposure
- Oversee, monitor, and meet with SCERS' existing Domestic Equity managers
- Monitor allocations to existing managers and rebalance the portfolio as appropriate

International Equity

Market Overview

International markets started 2018 with high expectations following strong returns in 2017 and synchronized global growth across most developed and emerging markets. However, sentiment shifted early in the year and global markets faced numerous headwinds throughout 2018, with issues ranging from the impact of trade tariffs, weak economic results across the eurozone, uncertainty around the U.K. and Brexit, declining oil prices, and a strengthening U.S. dollar. Most international equity market indices were negative through the first three quarters of the year and then experienced steep declines in the fourth quarter.

Looking back at 2017, the dollar experienced its sharpest decline in over a decade, which boosted the returns of international equities on a local U.S. currency basis. Moving forward to 2018, the Federal Reserve continued to increase interest rates throughout the year, and U.S. GDP growth outpaced other developed economies, leading to a strengthening U.S. dollar, which negatively impacted foreign equity market returns in local U.S. currency terms. For the year, International Equity markets declined 13.8%.

Within developed markets, the MSCI EAFE Index declined by 13.8% for the year, with the majority of the decline coming in the fourth quarter, which was down 12.5%. Among major international developed markets, Japan held up relatively better compared to other markets, declining 12.9% for the year, supported by continued accommodative financial conditions by the Bank of Japan. European markets underperformed significantly, with the FTSE Europe Index down 17.2% for the year. Germany led the decline among major European countries, declining 21.3% for 2018.

Emerging markets were also down significantly for 2018, with concerns around trade and the impact of tariffs, along with a stronger U.S. dollar, contributing to negative results. The MSCI Emerging Markets Index was down 14.6% on a U.S. dollar basis. China, which accounts for approximately 30% of the Index, was down 18.6% for the year and faced significant pressure following the implementation of tariffs on Chinese goods by the U.S. Government.

International Equity Portfolio

SCERS' International Equity portfolio is allocated entirely to actively managed investment strategies and comprises a mix of developed large cap, developed small cap, and dedicated emerging market strategies. The International Equity portfolio structure was revised in early 2018. Within the structure, large cap developed markets represent the majority of the portfolio, with a 70% target allocation, and small cap developed markets have a 10% target allocation. The allocation to developed markets maintains a neutral approach to investment style, with a balanced allocation to growth and value strategies. Emerging markets has a 20% target allocation with active managers pursuing opportunities across the market cap spectrum.

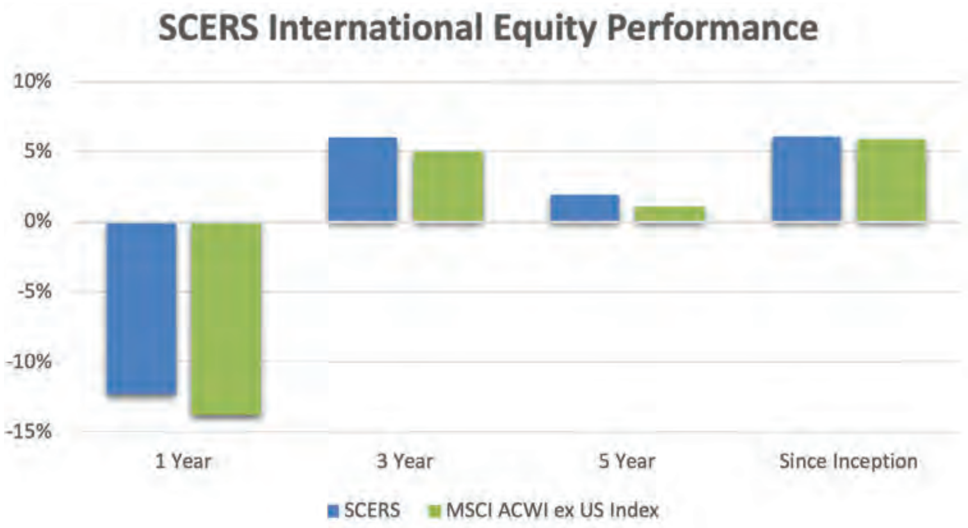
SCERS International Equity Portfolio Construction				
	Minimum	Target Allocation	Maximum	Policy Index Benchmark
Total International Equity Portfolio	18%	20%	22%	MSCI ACWI ex-US Index
ACWI ex-U.S. (MSCI ACWI ex-US)		20%		
Developed Large Cap Growth (MSCI World ex-US)		25%		
Developed Large Cap Value (MSCI World ex-US)		25%		
Developed Small Cap Growth (MSCI World ex-US Small Cap)		5%		
Developed Small Cap Value (MSCI World ex-US Small Cap)		5%		
Emerging Markets All-Cap (MSCI Emerging Markets)		20%		

Following the strong performance of international equity markets in 2017, SCERS' International Equity portfolio began the year overweight the target allocation of 20%. With the revised structure approved in January 2018, SCERS rebalanced the International Equity portfolio in the first quarter of 2018 to align with the new structure, and to bring the portfolio in-line with the strategic asset allocation. The rebalancing activity proved to be timely, as International Equity markets experienced their worst annual performance since 2008, as measured by the MSCI ACWI ex-U.S. Index.

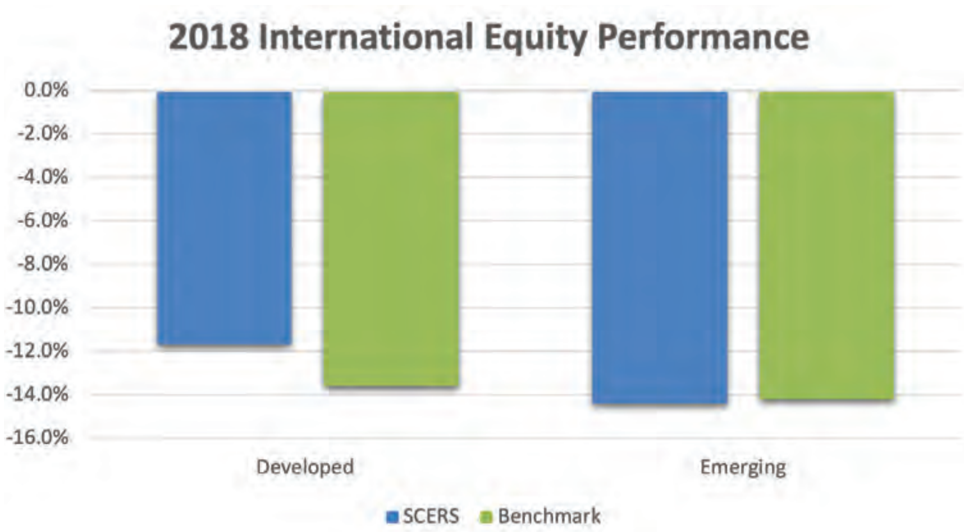
2018 ACTIVITY

- Restructured and implemented the International Equity asset class to align with the strategic asset allocation
  - Reduced the manager count from ten to seven managers
  - Rebalanced the International Equity portfolio toward the target allocation of 21%, down from the approximately 25% allocation at the beginning of the year
  - Reduced management fees by eliminating allocations to higher fee structure mandates
- Oversaw, monitored, and met with SCERS' existing International Equity managers

Performance and Attribution



SCERS' International Equity portfolio outperformed the benchmark during a challenging year for international equity markets. SCERS' International Equity portfolio was down 12.3% compared to the benchmark MSCI ACWI ex-U.S. Index, which was down 13.8%. The International Equity portfolio has slightly outperformed over the longer term, returning 6.1% since inception compared the benchmark return of 5.9%.



Within SCERS' International Equity portfolio, developed market managers outperformed their benchmark, generating returns that were down 11.7% compared to the benchmark MSCI World ex-U.S., which was down 13.6%. Emerging markets were the worst performing segment across equity markets. SCERS' emerging markets portfolio slightly underperformed the benchmark during the year, and was down 14.4% compared to the benchmark return, which was down 14.2%.

2019 ANNUAL PLAN

- Oversee, monitor, and meet with SCERS' existing International Equity managers
- Monitor allocations to existing managers and rebalance the portfolio as appropriate

Fixed Income

Market Overview

Fixed income returns significantly outpaced broad market returns during 2018, particularly equities. Within the asset class, government bonds outperformed credit. Treasury returns, as measured by the Bloomberg Barclays U.S. Treasury Index, returned 1.9% during the year. This figure is strong relative to equity returns, which were down 9.4% globally, as measured by the MSCI ACWI Index. Within credit, the Bloomberg Barclays Corporate High Yield Index and the Bloomberg Barclays U.S. Credit index were both down 2.1% during the year. The broad based Bloomberg Barclays Aggregate Index, which contains a combination of government bonds and corporate credit, was flat for the year. Credit spreads widened during the year, particularly within the high yield market, where spreads increased to 5.3% at year-end, compared to 3.4% the year prior. Spreads ended the year at their highest level since 2016; however, default rates remained at a very low level of 1.9%, which is well below the historical average.

While the markets experienced meaningful volatility during 2018, economic activity and data within the U.S. remained strong, with a low risk of a recession over the next year. With a solid economic backdrop, the Federal Reserve (the Fed) continued on its transition from quantitative easing to quantitative tightening by unwinding bond purchases from its balance sheet, and raising interest rates. The Fed remained focused on its dual mandate of maximum employment and stable prices, and given the stability of both, raised interest rates four times during the calendar year, bringing the federal funds rate to a range of 2.25% to 2.5%.

The rising of short-term interest rates through monetary policy caused the yield curve to flatten during the year, meaning yields at the short end of the curve increased more than those at the long end of the curve. 30-year yields, 10-year yields, and 2-year yields ended 2018 at 3.01%, 2.68%, and 2.49%, respectively. This compares to yields of 2.74%, 2.40%, and 1.89%, respectively, to end 2017. Outside of the U.S., the European Central Bank left its policy interest rate in place, but ended its asset purchase quantitative easing program, while the Bank of Japan left its low policy interest rate in addition to its quantitative easing program in place, but tapered the pace of bond purchases within the program.

The Fed has indicated that future interest rate hikes will be more data dependent, meaning it will be flexible with its monetary policy going forward. This is reflected in the Fed's recent communication that it expects only two interest rate hikes in 2019, and that it will listen to messages from the markets and account for downside risks within monetary policy going forward.

Fixed Income Portfolio

SCERS' Fixed Income portfolio structure was modified in 2017 within the revised strategic asset allocation. The overall allocation to fixed income is 20%; however, exposures reside within different segments of the overall SCERS portfolio. A dedicated public credit mandate, which is comprised of mostly high yield corporate credit and bank loans, resides within the Growth asset category to reflect its higher risk and return profile. The traditional fixed income exposures reside within the Diversifying asset category to reflect their lower correlation to growth assets, and their ability to provide downside protection. Within the traditional fixed income allocation, a dedicated U.S. Treasury mandate was added in 2017 (and implemented in 2018) to complement the existing core plus and global fixed income mandates. SCERS' targeted fixed income exposures are shown in the following table:

	SCERS Fixed Income Portfolio Construction				
	Asset Category	Minimum	Target Allocation	Maximum	Policy Index Benchmark
Total Fixed Income Portfolio		14%	20%	26%	Custom Blend of benchmarks below:
U.S. Treasuries	Diversifying	3%	5%*	7%	Bloomberg Barclays U.S. Treasury Index
Core Plus Fixed Income	Diversifying	8%	10%*	12%	Bloomberg Barclays U.S. Aggregate Index
Global Fixed Income	Diversifying	2%	3%*	4%	80% FTSE WGBI ex U.S. + 20% JPMorgan GBI EM Diversified
Public Credit (high yield/bank loans)	Growth	1%	2%*	3%	50% ICE BofA ML High Yield + 50% Credit Suisse Leveraged Loan

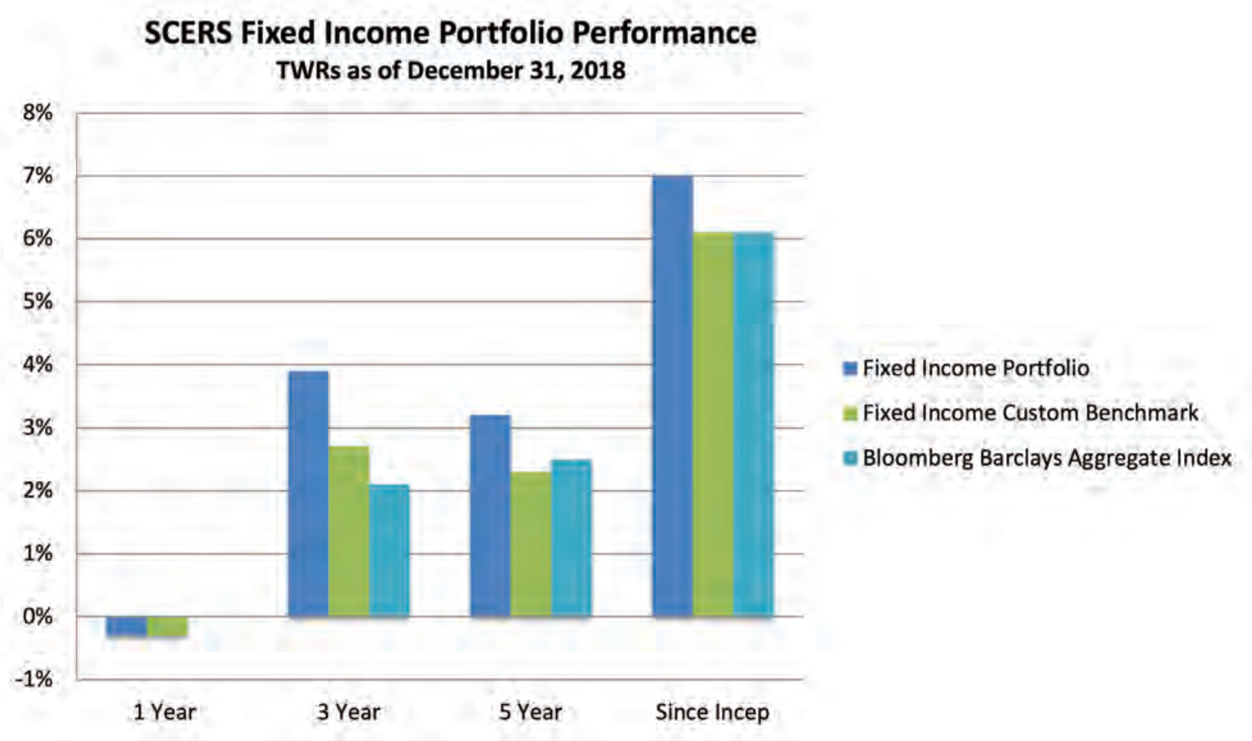
* Percentage of total portfolio

2018 ACTIVITY

- Completed the implementation of a dedicated U.S. Treasury mandate with Neuberger Berman
- Performed a physical rebalance of several of SCERS' fixed income managers, which were underweight to their target allocations
- Oversaw, monitored, and met with SCERS' Fixed Income managers

Performance and Attribution

During 2018, SCERS' Total Fixed Income portfolio, which aggregates Public Credit, Core Plus Fixed Income, U.S. Treasuries, and Global Fixed Income, generated muted performance, but served as a diversifier to SCERS' total plan. The Fixed Income portfolio was down 0.3% for the year, in-line with the policy index custom benchmark return, which was also down 0.3%. The returns slightly trailed the Bloomberg Barclays Aggregate Index return of 0.0%. Leading the way were SCERS' Core Plus Fixed Income mandates, which generated a 0.2% return for the year. SCERS' Public Credit and Global Fixed Income mandates generated losses of 0.6% and 4.8%, respectively. SCERS' dedicated U.S. Treasury mandate was added during 2018, so it did not have a full year of returns.



2019 ANNUAL PLAN

- Oversee, monitor, and meet with SCERS' Fixed Income managers
- Monitor allocations to existing managers and rebalance the portfolio as appropriate

Market Overview

Absolute return portfolios delivered mixed results in 2018, impacted by the increased volatility and negative returns that were common throughout global capital markets. On an absolute basis, returns across absolute return strategies were negative for the year, with the HFRI Fund Weighted Index down 4.5% and the HFRI Fund of Funds Composite Index down 3.9%. However, on a relative basis, absolute return strategies significantly outperformed global equity markets, which experienced steep declines in the fourth quarter and for the full year. The MSCI All Country World Index (ACWI), which captures equity returns across developed and emerging markets, declined 12.8% in the fourth quarter and 9.4% for the year. Despite the better relative performance, the hedge fund/absolute return industry faced pressure from aggregate investor redemptions of capital, which totaled $34 billion for the year with $22 billion in the fourth quarter, the largest quarterly outflow since 3Q 2016.

At the strategy level, there was wide dispersion in performance across strategies in 2018. Equity-oriented strategies suffered the worst losses among absolute return strategies, in-line with the difficult performance for equity markets overall, with the HFRI Equity Hedge Index down 7.0% for the year. Equity Market Neutral strategies were the bright spot among the equity hedged products, down just 1% for the year, and up 0.5% in December. At the sector level, energy was negatively impacted from declining commodity prices and was the worst performing sector, down 10.3%. The technology sector was the top performing equity sector, up 3.8% for the year. Event driven strategies also produced negative results for the year, down 2.4%, also impacted by the declining equity markets in December.

Global Macro strategies offered a good representation of the dispersion during the year. Overall, the HFRI Macro Index was down 3.6%, with Systematic Macro strategies down 6.0%. However, Discretionary Macro strategies produced positive results, up 0.5%. Relative Value strategies held up reasonably well in the volatile environment, declining just 0.2%. Credit strategies turned in mixed performance, with the HFRI Credit Arbitrage Index up 2.1%, while the HFRI Distressed/Restructuring Index was down 1.6%.

Absolute Return Portfolio

SCERS' Absolute Return portfolio has an overall target allocation of 10%. The portfolio is structured with two distinct segments, Diversifying Absolute Return with a target allocation of 7%, and Growth Absolute Return with a target allocation of 3%. These segments are aligned with SCERS' asset categories, and are included in the Diversifying and Growth asset categories, respectively. The Growth Absolute Return portfolio is structured to have higher equity beta and correlation, targeting returns similar to equity and credit markets, with lower comparable volatility. The Diversifying Absolute Return portfolio is structured to produce positive absolute return performance over time with limited sensitivity and correlations to broader equity and credit markets. The objectives and guidelines for the Absolute Return portfolio segments include:

	Absolute Return Portfolio Construction	
	Growth-Oriented Strategies	**Diversifying Strategies**
Portfolio Objective	Equity and credit like returns over the long-term with lower volatility than equities and credit markets	Positive absolute return profile over time with limited sensitivity to broad market performance
Benchmark	**Policy:** HFRI FoF Composite Index +1% **Long-term objective:** T-bills + 5%	**Policy:** HFRI FoF Conservative Index **Long-term objective:** T-bills + 2%
Risk Target	Standard Deviation < 50% of global equities	Standard Deviation < 25% of global equities
Market Sensitivity	Target an equity beta <0.5 Target equity correlation <0.8	Target an equity beta <0.1 Target equity correlation <0.1
Market Exposure	Total notional gross exposure < 250%	Total notional gross exposure < 750%

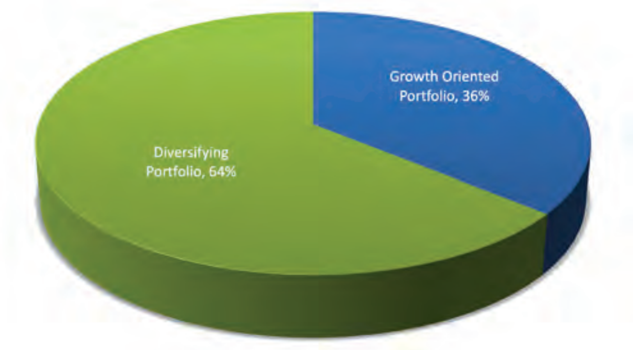
	Absolute Return Portfolio Construction	
	Growth-Oriented Strategies	**Diversifying Strategies**
Target Allocation	3% of total assets	7% of total assets
Allocation Range	1% to 5% of total assets	5% to 9% of total assets
Primary Strategies	Credit/Distressed Event Driven Equity Long/Short	Market Neutral Global Macro Multi Strategy
Number of Funds	Target 5 funds with a range of 2 to 8 funds	Target 10 funds with a range of 6 to 13
Non-U.S. Exposure	Expect 20% to 40% non-U.S. exposure	Expect 20% to 50% non-U.S. exposure

The asset allocation structure for the Absolute Return portfolio is a combination of a direct absolute return portfolio and a diversified fund of funds separate account managed by Grosvenor Capital Management (GCM). The asset allocation structure is applied to both the Growth and Diversifying Absolute Return segments. The direct portfolio is invested across multiple managers and strategies, providing exposure across the hedge fund/absolute return landscape. As of December 31, 2018, SCERS is invested with four direct managers in the Growth portfolio and eight managers in the Diversifying portfolio.

The fund of funds portfolio managed by GCM is called SC Absolute Return Fund (SCARF) and is structured to align with the Growth and Diversifying segments, with allocations split accordingly among a SCARF-G portfolio and a SCARF-D portfolio. GCM also manages a SCARF-B portfolio, which is an interim solution residing within the Diversifying Absolute Return portfolio. SCARF-B is structured to have greater liquidity and be drawn down over the next two years to fund direct absolute return investments.

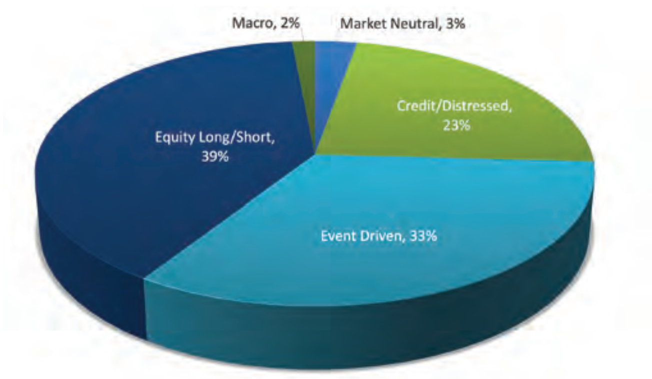
At year-end, SCERS' Absolute Return portfolio is roughly broken out between Growth and Diversifying as detailed in the following chart.

Total Absolute Return Portfolio
as of December 31, 2018

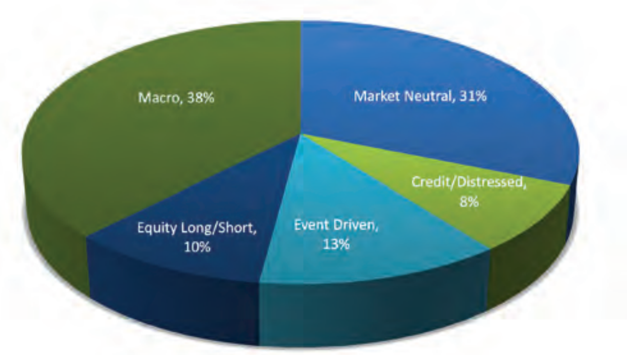


The Growth and Diversifying Absolute Return portfolio are diversified across strategies and managers. The allocation to each strategy, including the GCM separate accounts, is detailed in the following charts.

Growth Oriented Portfolio Strategy Allocations
as of December 31, 2018



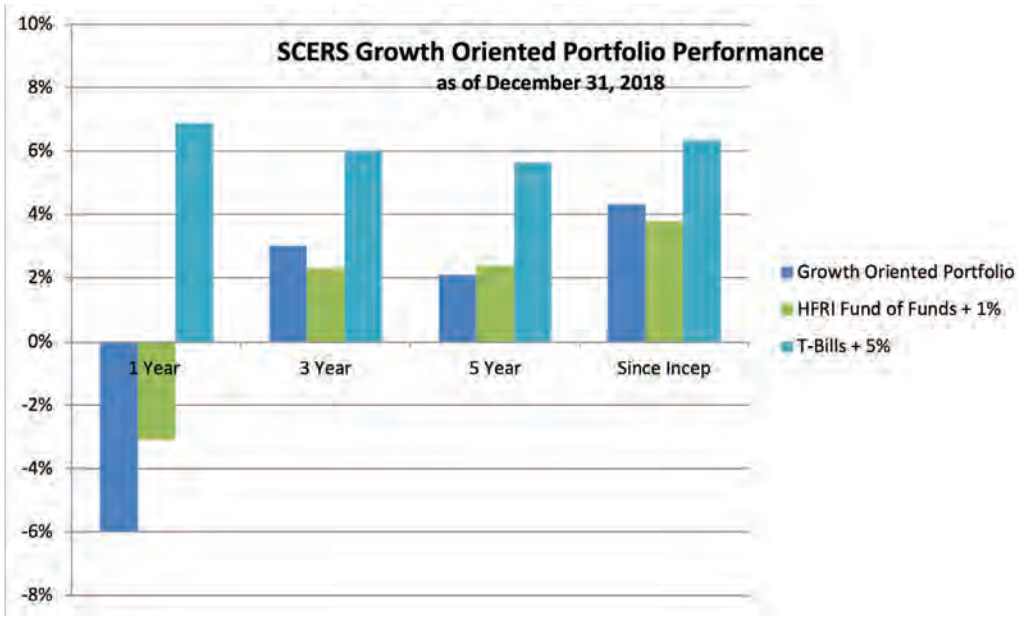
Diversifying Portfolio Strategy Allocations
as of December 31, 2018



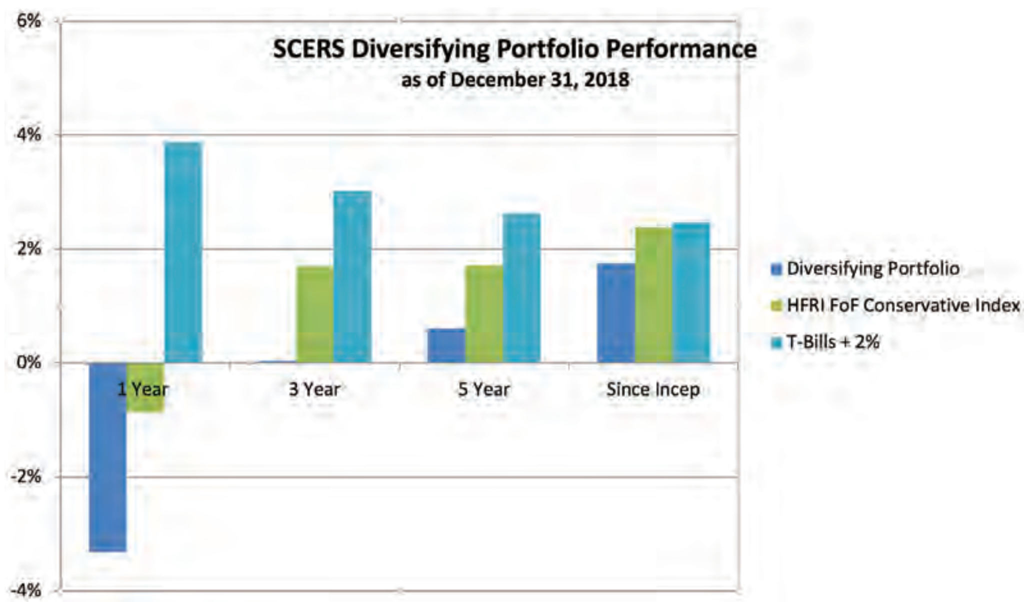
2018 ACTIVITY

- Met 2018 Annual Plan targets to invest in two funds within the Diversifying Absolute Return portfolio and revise the SCARF portfolio with GCM
- Invested $40 million in the KLS Diversified Master Fund, L.P. (fixed income arbitrage strategy) within the Diversifying Absolute Return portfolio
- Invested $40 million in the Marshall Wace Global Opportunities Fund, L.P. (equity long/short strategy) within the Diversifying Absolute Return portfolio
- Developed and implemented an interim solution (SCARF-B) with GCM to fill the underweight allocation to the Diversifying Absolute Return portfolio, while SCERS continues to build out this portfolio
- Oversaw, monitored, and met with SCERS' existing Absolute Return managers

Performance Attribution



SCERS' Growth Absolute Return portfolio declined 6.0% for 2018, underperforming the policy benchmark (HFRI FoF Composite Index +1%), which was down 3.1%. The Growth portfolio has outperformed the policy benchmark over the three-year and since inception time periods, returning 4.3% since inception annually. The negative performance in 2018 has resulted in the Growth portfolio underperforming the long-term objective (T-Bills +5%) over all time periods.



SCERS' Diversifying Absolute Return portfolio was down 3.3% for 2018, underperforming the policy benchmark (HFRI Conservative Index), which was down 0.9%. The Diversifying portfolio has also underperformed the policy benchmark and long-term objective (T-Bills +2%) over the longer term. Since inception, the Diversifying portfolio has returned 1.8% annually, compared to the HFRI Conservative Index and T-Bills +2% benchmarks, which returned 3.4% and 2.5%, respectively.

2019 ANNUAL PLAN

- Continue to develop SCERS' Diversifying Absolute Return direct portfolio
  - Complete investment due diligence on potential managers and investment strategies
    - Strategy considerations include alternative risk premia and market neutral fixed income
  - Reduce allocation to the interim portfolio with GCM (SCARF-B) as the direct portfolio is more fully invested
- Annual Absolute Return Investment Plan, as recommended by Cliffwater

SCERS Absolute Return Annual Investment Plan			
		Range	
	Target	Min	Max
Number of Funds	3	2	5
Diversifying Strategies	2	1	3
Growth Strategies	1	0	2
Investment per Fund	**$45 MM**	**$30 MM**	**$60 MM**

- Target three total direct Absolute Return investments in 2019, with a range of 2 to 5 funds
  - Target two investments within the Diversifying segment, and one within the Growth segment
  - Target an average investment sized of $45 million, and a range between $30 million and $60 million
- Manage SCERS' Growth Absolute Return portfolio
  - Reduce Growth Absolute Return portfolio to 3%, in-line with SCERS' strategic asset allocation
  - Evaluate potential investment opportunities within the direct portfolio, to maintain diversification and replace manager redemptions as necessary
- Oversee, monitor, and meet with SCERS' existing Absolute Return managers

Market Overview

2018 private equity fundraising for buyouts is expected to top $166 billion, down 25.9% from the $225 billion raised in 2017. Capital available for investment within the buyout market (approximately $1.3tn) is equivalent to nearly four years of current record fundraising and approximately two years of investment deployment. In 2018, returns were solid, and valuations continued to increase, although the public markets correction in Q4 2018 could affect year-end results. In 2018, U.S. buyouts saw an estimated $803.5 billion total deal value across 5,050 deals (32.1% and 11.0% YoY increases, respectively.) With easy access to financing and swelling dry powder, managers closed on the most buyouts ever in 2018. Despite a healthy deal market, Enterprise Value/EBITDA multiples remained elevated, finishing the year at 11.6x. Investment managers are reacting to the higher pricing environment by adding to their highest conviction investment ideas. Add-on acquisitions accounted for almost two-thirds of the transactions completed by buyout firms in 2018. These add on transactions permit firms to reduce all-in purchase price multiples while expanding top and bottom line performance. Private equity firms took advantage of a high purchase-price environment in 2018 to exit 1,049 companies worth a combined $365.4 billion - a 16.3% decline and 0.1% rise from 2017, respectively. While the absolute number of exits fell in 2018 compared to 2017, the median value of those exit transactions of $330.0 million was the largest on record.

According to the National Venture Capital Association, 2018 could hold the mark for most venture capital invested in the U.S. in a single year and could exceed $130 billion. Findings reveal 2018 median VC deal sizes experienced double-digit percentage growth across all stages compared to 2017. The steady increase in deal sizes is attributable to the growing number of mega-funds, as investors increasingly view larger vehicles as a competitive advantage to invest in high-quality companies. Upper quartile venture capital funds continue to generate strong returns, but with capital being increasingly concentrated, access to the best managers is paramount.

Over the last few years, some mature investment programs have observed net capital outflows (distributions - capital calls) which coupled with strong public market valuations, have led some groups to be under-allocated to private equity. The desire to get capital into the market has aided in a fundraising boom, primarily driven by buyouts. Groups have seen the time between fundraising shorten. 2018 saw a continuing trend with 80% of funds raising between 100-125+% of their target fund size in a first closing. With a growing number of funds having a “one and done” closing, investors are facing increased pressure to shortcut due diligence and accept manager friendly terms.

Having a strong investment process and not shortcutting investment steps are critical to lowering the risks of making the wrong decision. Continued emphasis on investing with specialized, focused managers who have strict pricing discipline and thoughtful funds sizes should result in a portfolio better suited for market volatility as well as be able to maximize investor returns.

Private Equity Portfolio

SCERS' Private Equity portfolio has a target allocation of 9%, and is broken out by strategy, including buyout, venture capital, distressed debt, and 'other' less defined strategies, as well as by region. The policy index benchmark that SCERS uses to assess the performance of the Private Equity asset class is the Cambridge Associates LLC Global Private Equity & Venture Capital Pooled Index. The longer-term objective of the Private Equity portfolio is to earn equity-like returns with an additional premium (Russell 3000 Index + 3%) to compensate for the liquidity risk undertaken by investing in the asset class. The targeted range of investment exposures within Private Equity are shown below:

SCERS Private Equity Portfolio Construction

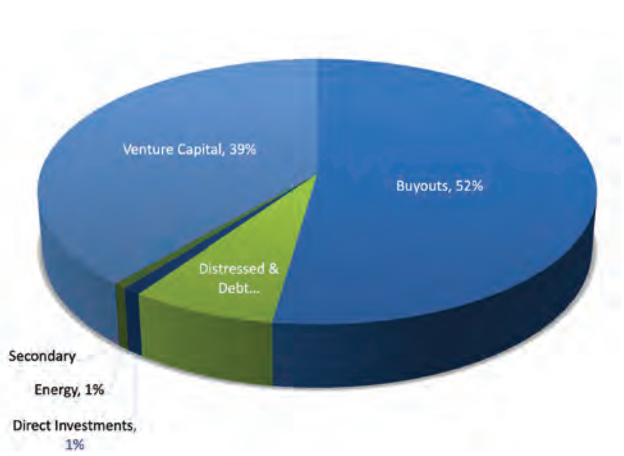
	Minimum	Target Allocation	Maximum	Policy Index Benchmark
Total Private Equity Portfolio	7%	**9%**	11%	**Cambridge Associates PE/VC Index**
U.S Focused				
Buyout	30%	**50%**	70%	
Venture Capital	10%	**20%**	30%	
Distressed Debt	0%	**10%**	20%	
Other	0%	**0%**	15%	
Non-U.S Focused				
Buyout	10%	**15%**	20%	
Distressed Debt	0%	**2%**	10%	
Venture Capital	0%	**3%**	10%	
Other	0%	**0%**	5%	

SCERS has been building a direct private equity program since 2011 by making commitments to private equity funds consistent with the asset class's investment plan and investment structure. These direct commitments complement SCERS' legacy private equity fund-of-funds, which were established during the 2006-08 time period. 2018 marked the year where SCERS reached its target allocation of 9.0%, as the current allocation to Private Equity stands at 9.1% as of December 31, 2018. Given the unique cash flow characteristics of private equity, SCERS will need to continue to commit to private equity funds across vintage years in order to maintain its target allocation to the asset class.

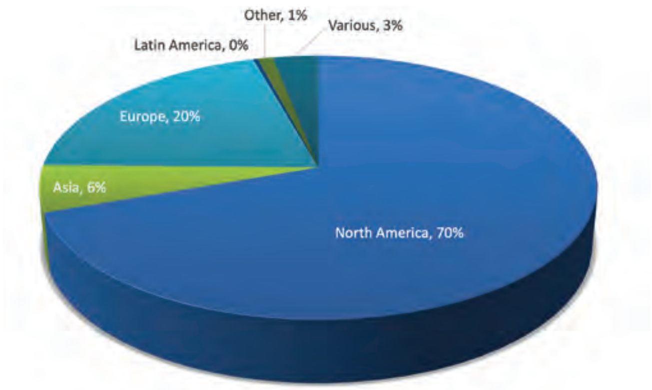
Staff and Cliffwater had an active year committing capital to private equity. SCERS committed to eight funds, of which six were follow-on fund investments to existing investment managers and two were new fund investments to a new investment manager. The follow-on investments were to a range of funds including, sector specialist buyout funds, a venture capital fund, and a distressed debt fund. Within the new fund investments, SCERS invested capital with a small/lower-middle market buyout specialist, RCP Advisors, investing in a fund of funds vehicle, which makes primary investments to smaller buyout funds, and to a co-investment vehicle, which makes direct investments into underlying fund portfolio companies.

SCERS' current Private Equity strategy and geographic breakdowns are shown the the following charts:

Private Equity Portfolio Strategy Allocations
as of September 30, 2018



Private Equity Portfolio Geographic Allocations
as of September 30, 2018

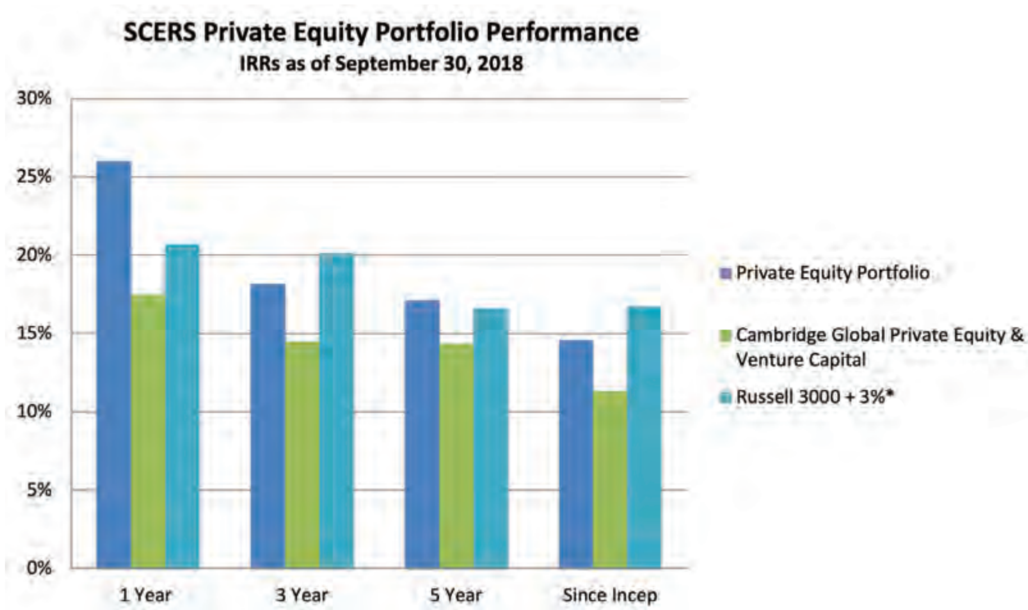


2018 ACTIVITY

- Presented the 2018 Private Equity annual investment plan
  - A range of 4-9 fund commitments, with a target of 6 funds
  - A total of $250 million in commitments, with a range of $150-$300 million
  - An average commitment size of $45 million per fund
- Made 8 fund commitments in 2018 totaling approximately $288 million in aggregate (6 follow-on and 2 new fund investments)
  - $44.33 million to Linden Capital Partners IV, L.P. (healthcare buyout)
  - $35 million to Khosla Ventures VI, L.P. (venture capital)
  - $35 million to TSSP Opportunities Partners IV, L.P. (distressed debt)
  - $33.32 million to Accel-KKR Growth Capital Partners III, L.P. (structured equity)
  - $45 million to Thoma Bravo Fund XIII, L.P. (technology buyout)
  - $50 million to RCP Fund XIII, L.P. (small market buyout fund of funds) – spread over 2 years
  - $25 million to RCPDirect III, L.P. (small market buyout co-investments)
  - $45 million to TSG8, L.P. (consumer branded buyout)
- Added a private equity strategic partner to the PE portfolio to complement SCERS' direct PE investments
  - Invested in two funds by RCP Advisors (as described above), a small/lower middle market buyout specialist
  - Will assist SCERS in maintaining target allocation to PE, reduce the number of GP relationships, and provide exposure in a PE segment which is challenging to access directly in an efficient manger
- Oversaw, monitored, and met with SCERS' existing Private Equity managers

Performance and Attribution

SCERS' Private Equity portfolio continues to progress through the J-curve and is generating increasing levels of positive performance. For the 1-year period ending September 30, 2018, SCERS' Private Equity portfolio generated a net IRR of 26.0%, which outperformed the policy index Cambridge Global Private Equity & Venture Capital benchmark return of 17.5%. The Private Equity return also outperformed SCERS' public market benchmark, the Russell 3000 + 3%, which returned 20.7%. SCERS' since inception net IRR of 14.6% is also ahead of the policy index benchmark return of 11.3%, but trails the public market benchmark return of 16.7%. While SCERS' fund-of-funds commitments made in 2006 and 2008 were a contributor to returns early in the Private Equity portfolio, the direct private equity portfolio represents an increasing component of SCERS' overall historical Private Equity returns.



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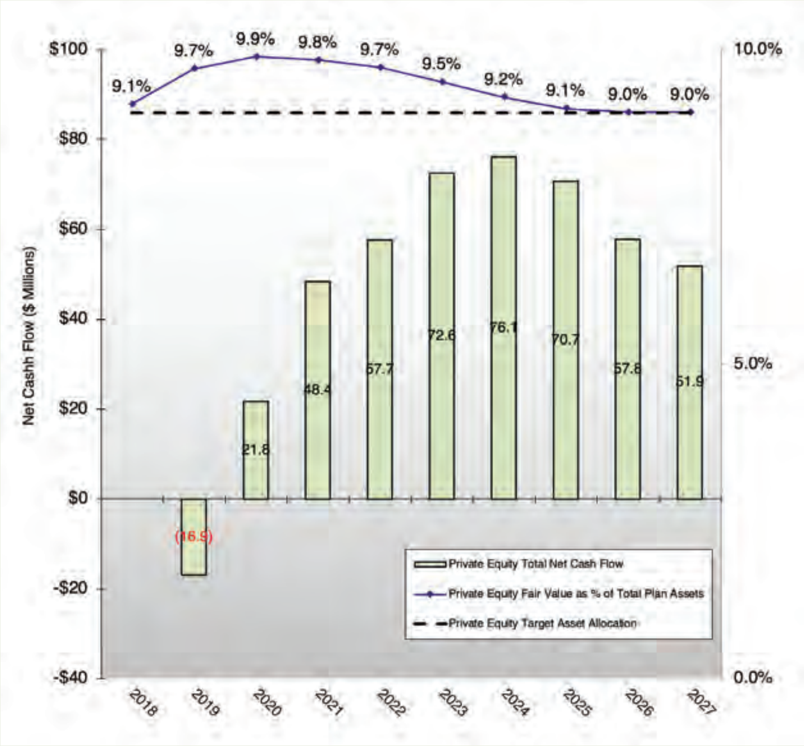
2019 ANNUAL PLAN

Below is the annual plan for the Private Equity asset class, as recommended by Cliffwater:

SCERS Private Equity Annual Investment Plan			
		Range	
	Target	Min	Max
Commitment Level	**$200 MM**	**$150 MM**	**$250 MM**
Number of Funds	7	5	12
Buyout fund(s)	4	2	7
Distressed fund(s)	1	0	2
VC fund(s)	2	1	4
Other fund(s)	0	0	1
Non-U.S. fund(s)	1	0	2
Commitment per Fund	**$30 MM**	**$10 MM**	**$45 MM**

- Cliffwater and Staff recommend a $200 million commitment budget for 2019, with a range of $150 million to $250 million
  - Expect to make 7 fund commitments with an average commitment size of $30 million, and a range between $10 million and $45 million
  - The budget Includes any funds that a commitment has already been made to, or is in the process of being made to, in 2019
- Private Equity capital pacing



2019 ANNUAL PLAN, Continued

- Reached the target 9% allocation in 2018
  - Slightly earlier than expected due to the decrease in the level of plan assets in the fourth quarter of 2018, and the better relative performance of private equity
- Many assumptions go into the capital pacing, but SCERS will seek to maintain a consistent allocation to the target allocation going forward

- Areas of focus
  - Investment opportunities across buyout, venture capital, and distressed debt
  - Focus on select new manager relationships, and follow-on investments with existing funds that will be in the market fundraising
  - Remain cognizant of risks later in the cycle, including increasing valuations and fund sizes, while maintaining vintage year and sector diversification
  - Place particular focus on sector-specific funds where a fund manager has differentiated expertise, experience managing multiple cycles, and access to proprietary deal flow
- Evaluate methods to rationalize the Private Equity portfolio through the secondary market
- Evaluate the further development of a co-investment portfolio alongside high confidence investment managers
- Continue to oversee, monitor, and assess the existing manager lineup

Market Overview

The traditional lending source for small to middle-market private companies, the banking sector, began to scale back lending in the aftermath of the GFC. As the banking sector retrenched, private equity firms entered the market to fill the void. It was during this transitional period post-GFC that private credit/direct lending began to take off as an institutional asset class. Capital raised within the asset class has grown exponentially, as evidenced by the record $54 billion raised across 61 funds in 2017. This compares to capital raise levels of $5.5 billion in 2012, $14.6 billion in 2013, and $24 billion in 2016. According to Preqin, 2018 tracked to another record year of fundraising within private credit. The majority of funds (51%) are targeting North America followed by Europe (26%).

Driving the unprecedented amount of capital is institutional investors' attraction to private credit's favorable characteristics of contracted payments, floating rate terms in a rising interest rate environment, and attractive risk-return profile in a low yield environment. With the record amount of capital and dry powder in the market, credit spreads have come under pressure. According to Cliffwater, the overall risk premium (credit spread) across the private credit market had compressed 360 bps (3.6%) from June 2016 to September 2018, while the lower middlemarket credit spread came down 186 bps (1.86%).

Despite compressed spreads and heightened competition, Staff and Cliffwater continue to believe that an allocation to private credit serves an important role in SCERS' portfolio, particularly since the asset class resides within SCERS' Growth asset category, which accounts for the credit risk and downside susceptibility inherent in private credit. In implementing the asset class, manager selection becomes even more important given the aforementioned dynamics of an increasing number of funds in the market and the inherent risks of lending near the later stage of an economic and market cycle. In this highly competitive market, it is ever important that Staff and Cliffwater identify top tier differentiated managers who deploy capital in sectors and areas where there are fewer competitive pressures, but also managers with workout experience in navigating a default cycle within credit.

Private Credit Portfolio

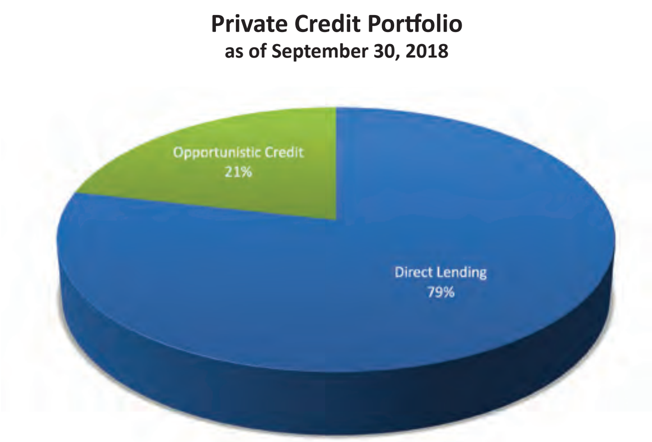
The Private Credit asset class was created in 2017, and as mentioned previously, is a component of SCERS' Growth asset category. Private credit represents loans to primarily performing, non-public companies. An attractive feature of private credit investments is the majority of its return is generated from contracted loan payments (interest and principal), which tend to be more predictable and less volatile than other Growth asset category assets such as high yield credit, public equity, and private equity. To compensate for the illiquidity of the asset class, SCERS' Private Credit investments have an objective to generate a total return exceeding publicly traded bank loans, represented by the policy index benchmark of the Credit Suisse Leveraged Loan Index plus a premium of 2%.

The target allocation for SCERS' Private Credit allocation is 4%, which a range of 2% to 6%. As of December 31, 2018, the actual allocation stands at 1.4%, with a total committed amount of 3.2%. The target allocation is expected to be reached in 2021. The Private Credit allocation is split between Direct Lending and Opportunistic Credit, with the former having a majority of the allocation. The majority of investments are made within the United States. The targeted range of investment exposures within Private Credit are shown in the following table:

SCERS Private Credit Portfolio Construction				
	Minimum	**Target**	**Maximum**	**Policy Index Benchmark**
Total Private Credit Portfolio	**2%**	**4%**	**6%**	**Credit Suisse Leveraged Loan + 2%**
Direct Lending	50%	**70%**	100%	
Opportunistic Credit	0%	**30%**	50%	
U.S. Private Credit	75%	**85%**	100%	
Non-U.S. Private Credit	0%	**15%**	25%	

Since initiating the implementation of the Private Credit portfolio, Staff and Cliffwater have focused on investment opportunities in U.S. and Europe middle-market lending. In 2018, SCERS made two commitments to the asset class, totaling $100 million. These included a follow-on investment for $50 million and a new fund investment for an additional $50 million. As the market becomes more competitive with more investment managers raising funds and compressed spreads, Staff and Cliffwater have taken a more measured and prudent approach toward implementing the asset class, by seeking to identify truly differentiated investment strategies, even if it translates to coming in below annual budget targets for the asset class. Another consideration in the implementation of Private Credit is to ensure that the fee structures of fund offerings are aligned with risk/return and alpha expectations. Staff and Cliffwater have also focused on more efficient and liquid investment structures where approriate, such as the $100 million fund of one formed with Tennenbaum Capital Partners Direct Lending Fund VIII in 2017, which is an evergreen structure that distributes income to SCERS and reinvests principal, with the option for SCERS to shut off the investment period at any time.

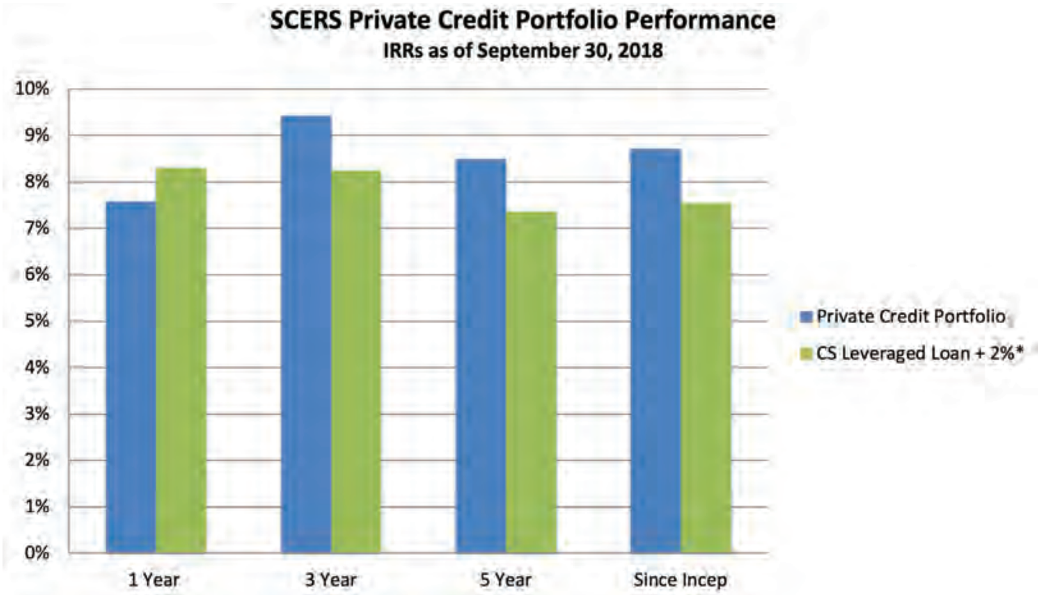
In the chart below is SCRES' Private Credit portfolio diversification by investment strategy, as of September 30, 2018:



2018 ACTIVITY

- Presented the 2018 Private Credit annual investment plan
  - A range of 3-5 fund commitments, with a target of 4 funds
  - A total of $220 million in commitments, with a range of $150-$250 million
  - An average commitment size of $60 million per fund
- Made 2 fund commitments in 2018 totaling $100 million in aggregate (1 follow-on and 1 new fund investment)
  - $50 million to Summit Credit Fund III, L.P. (lower-middle market direct lending)
  - $50 million to Benefit Street Partners Senior Secured Opportunities Fund, L.P (direct lending)
- Oversaw, monitored, and met with SCERS' existing Private Credit managers

Performance and Attribution



Private credit loans typically have terms ranging from 3-5 years, resulting in investors receiving a quicker return of capital, particularly as compared to Private Equity. This quicker return of capital has the effect of muting the j-curve and is a favorable characteristic of the Private Credit asset class. SCERS' Private Credit portfolio is early in its build out; however, four credit funds previously held in SCERS' Private Equity portfolio moved to Private Credit in 2017, thus representing the long-term performance figures above. The Private Credit portfolio has earned a since inception net IRR of 8.7%, outperforming the Credit Suisse Leveraged Loan Index + 2% benchmark return of 7.5%. As shown in the chart above, SCERS' Private Credit returns for the 3- and 5-year reporting periods also exceeded the benchmark returns, while the 1-year return lagged the index.

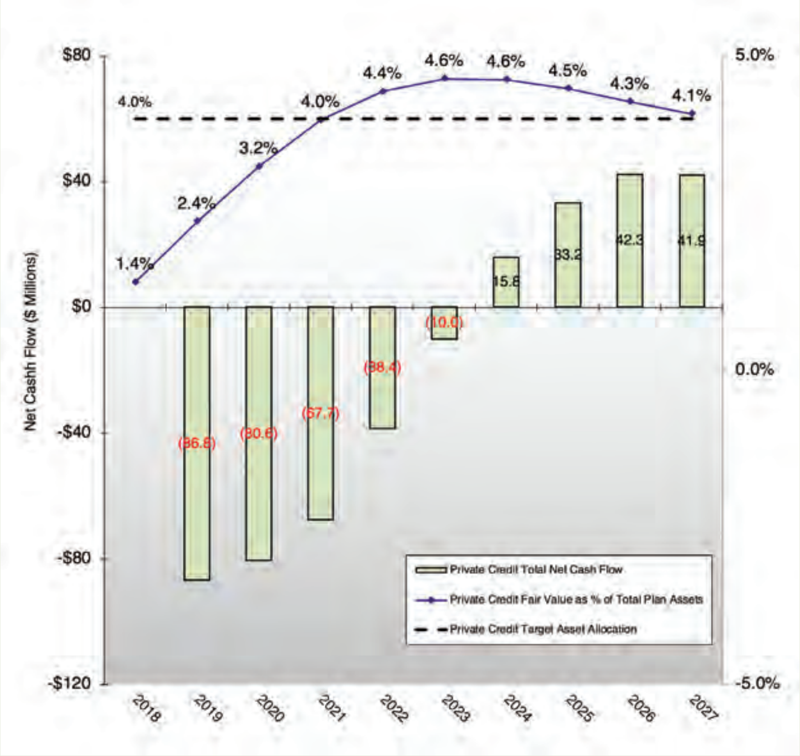
2019 ANNUAL PLAN

Below is the annual plan for the Private Credit asset class, as recommended by Cliffwater:

SCERS Private Credit Annual Investment Plan			
		Range	
	Target	Min	Max
Commitment Level	**$175 MM**	**$125 MM**	**$225 MM**
Number of Funds	**4**	3	5
Direct Lending fund(s)	**2**	1	3
Opportunistic Credit fund(s)	**2**	1	3
Commitment per Fund	**$50 MM**	**$25 MM**	**$100 MM**

- Cliffwater and Staff recommend a $175 million commitment budget for 2019, with a range of $125 million to $225 million
  - Expect to make 4 fund commitments with an average commitment size of $50 million, and a range between $25 million and $100 million
  - The budget Includes any funds that a commitment has already been made to, or is in the process of being made to, in 2019

Below is the Private Credit capital-pacing plan:



2019 ANNUAL PLAN, Continued

- Over the next few years, the actual Private Credit allocation will progress, albeit measured, but it is expected that the target 4.0% allocation will be reached in 2021
- Investment strategies and themes of focus for 2019 include:
  - Sector and geographic specific direct lending strategies with well-aligned fee structures, globally
  - Niche lending strategies, globally
  - Opportunistic and special situation credit opportunities, globally
- Continue to oversee, monitor, and assess the existing manager lineup

Market Overview

As the Real Assets asset class has matured, the definition of the sector has been refined, broadened, and re-characterized. Case in point is infrastructure, whereas the sector was generally considered to represent assets such as roads, airports, utilities, and hospitals, is now defined by attributes that exhibit characteristics of infrastructure. These infrastructure-like characteristics include such features as an essential service or facility to society, high barriers to entry, low price elasticity of demand, long-term stable cash flows, and less sensitivity to economic conditions. Viewing infrastructure from a risk-return attribute opens an investor to a broader universe of sectors with fewer competitive pressures, more favorable economics, and less sensitivity to economic cycles. With the broadening of infrastructure opportunities, Staff has continued to refine portfolio construction around a 'Core and Satellite' structure, where traditional core infrastructure investments with higher cash yield and diversifying characteristics, and often with greater liquidity through open-end fund structures, remains the Core (beta) foundation of the segment. Satellite (alpha) opportunities with higher return expectations and lower liquidity through closed-end structures emanate from the Core, whether defined by attribute, niche strategy, or otherwise non-core in execution. This flexibility is becoming increasingly advantageous as the influx of capital has heightened demand for assets and, in turn pressured valuations to higher levels. Preqin reported that a total of $37 billion was raised for infrastructure funds during the third quarter, the highest amount on record, with funds on average raising 22% more than their targeted amount. As of Q3 2018, there were 187 infrastructure funds in the market raising an aggregate $147 billion in institutional capital, indicating the huge appetite for infrastructure and an increasing competitive landscape.

Within the energy sector, despite volatility in oil and gas prices, the industry still continues to encounter an infrastructure supply/demand imbalance, particularly in the need for pipelines and processing plants. This imbalance has been exacerbated by the difference in the timeframe it takes to construct and bring an oil well operational (six months) compared to the timeframe it takes to construct the pipelines necessary to move the oil and gas from the well (two years). Further contributing to the imbalance, it takes upwards of four years to construct the processing plants essential to manufacture the oil and gas into useful products. This difference in development timeframes has resulted in the supply of energy infrastructure not keeping up with the production of oil and gas. As a result, bottlenecks are symptomatic throughout the energy value chain leading to significant price differentials across oil basins, upwards of $15 per barrel, especially those further way from the main energy processing and distribution hubs. However, with shale producers keenly focused on costs and efficiencies, pricing pressures are already building in the midstream sector despite the supply imbalance. Oil and gas producers are strongly negotiating away from take-or-pay contracts and to shorter contract periods, which introduces commodity price and volume risks. So despite demand exceeding supply, pricing pressure on the midstream infrastructure sector bears watching.

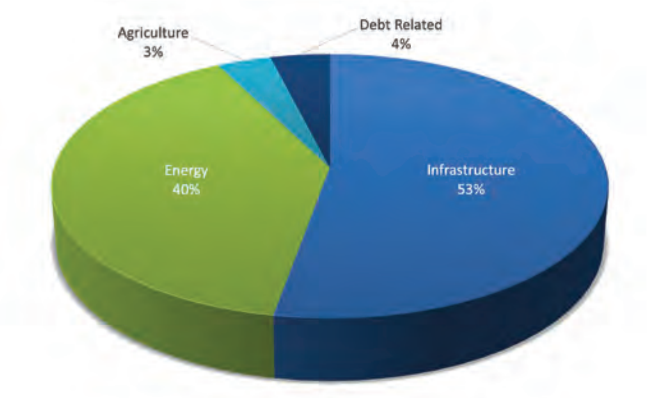
Real Assets Portfolio

The Real Assets asset class is comprised of investments in infrastructure, energy, agriculture, timber, and other natural resources, through a combination of equity and debt investments. The investment objective of the Real Assets portfolio is to generate moderate income with lower volatility and diversification to SCERS' overall portfolio. The range of targeted investment exposures within Real Assets are shown below:

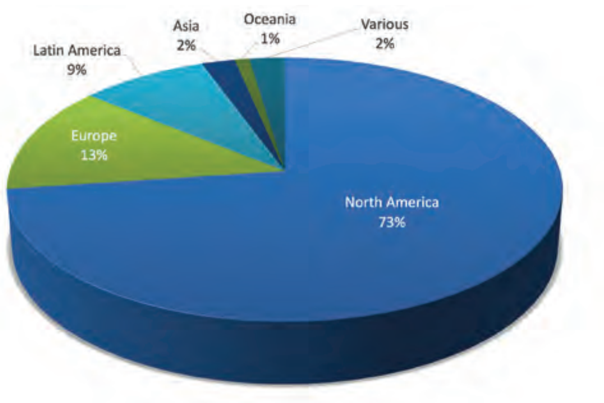
SCERS Real Assets Portfolio Construction				
	Minimum	**Target**	**Maximum**	**Policy Index Benchmark**
Total Real Assets Portfolio	**5%**	**7%**	**9%**	**Custom blend of benchmarks below:**
Infrastructure	30%	45%	60%	45% Cambridge Associates Private Infrastructure
Energy	20%	35%	50%	35% Cambridge Associates Private Energy
Agriculture, Timber, Other	10%	20%	30%	10% NCREIF Farmland + 10% NCREIF Timberland

SCERS continues to make significant progress in building out the Real Assets portfolio, and is projected to be fully allocated to the asset class by 2021. As of December 31, 2018, the actual allocation stands at 4.9%, but still below the 7.0% target allocation. Over the past couple of years, Staff and Cliffwater have been focused on real assets opportunities that derive a higher portion of the total return from consistent levels of contracted income, and with less sensitivity to the macro economy. During the year, Staff and Cliffwater focused on several real assets themes and investment strategies within the risk-return profile of the asset class. SCERS made several investments in the targeted strategies through its customized separate account with Pantheon, and with various closed-end commingled funds across infrastructure, midstream energy, and agriculture. The current sector and geographic diversification for SCRES' Real Assets portfolio are shown in the following charts, as of September 30, 2018:

Real Assets Portfolio Strategy Allocations
as of September 30, 2018



Real Assets Portfolio Geographic Allocations
as of September 30, 2018

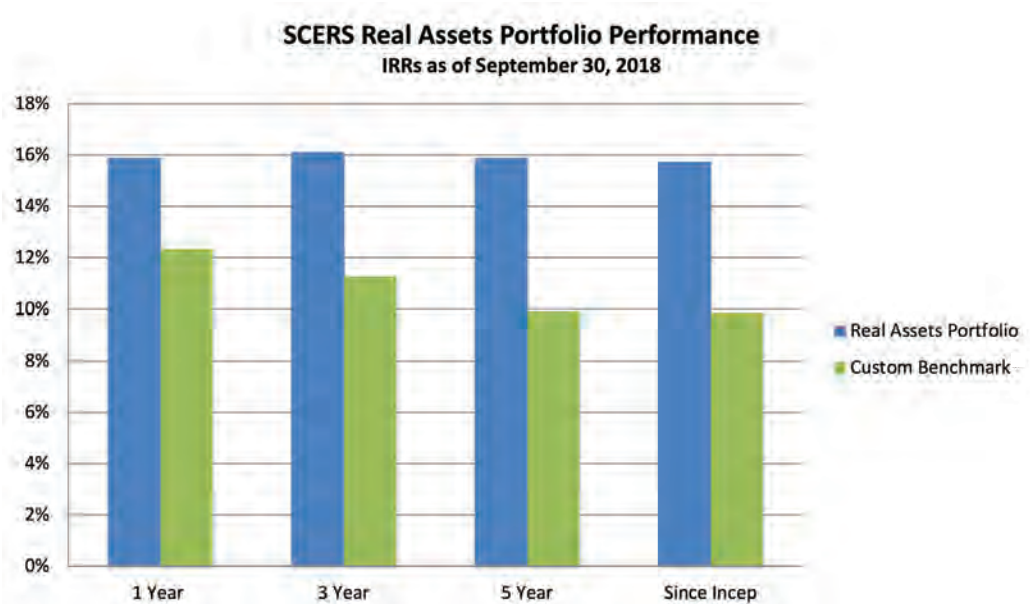


2018 ACTIVITY

- Presented the 2018 Real Assets annual investment plan
  - A range of 3-7 fund commitments, with a target of 6 funds
  - A total of $220 million in commitments, with a range of $150-$290 million
  - An average commitment size of $40 million per fund
- Made 5 real assets commitments in 2018 totaling $169.5 million in aggregate (2 follow-on and 3 new investments)
  - Additional $25 million to IFM Global Infrastructure Fund, L.P. (core infrastructure)
  - $22.5 million to EnCap Flatrock Midstream Fund IV, L.P. (midstream energy)
  - $32 million to Tailwater Energy Fund III, L.P. (midstream energy)
  - $50 million to ISQ Global Infrastructure Fund II, L.P. (value add infrastructure)
  - $40 million to Paine Schwartz Food Chain Fund V, L.P. (midstream agriculture)
- Continued building out the customized separate accounts with Atalaya and Pantheon:
  - Atalaya (asset-backed credit originations)
    - No investments made
  - Pantheon (real assets secondary investments and co-investments)
    - Co-investment in 179 aircraft and 14 aircraft engines for $2.5 million
    - Co-investment in U.S. upstream energy assets for $4.9 million
    - Co-investment in U.S. oil producing assets for $3.0 million
    - Co-investment in a global integrated utility for $2.9 million
    - Co-Investment in European transportation assets for $2.85 million
    - Co-Investment in European cell towers for $3.0 million
    - Secondary investment in U.S. upstream energy assets for $3.0 million
    - Secondary investment in U.S. timberland assets for $4.4 million
    - Secondary investment in global timberland assets for $5.5 million
    - Secondary investment in global energy assets for $0.4 million
- Oversaw, monitored, and met with SCERS' existing Real Assets managers

Performance and Attribution

For the 1-year period ending September 30, 2018, SCERS' Real Assets portfolio, excluding the SSGA Real Assets overlay proxy, generated a 15.9% net IRR, exceeding the custom blended benchmark return of 12.4%. Since inception, SCERS' Real Assets portfolio has generated a 15.7% net IRR, exceeding the custom blended benchmark net IRR of 9.9%. SCERS' Real Assets return over the 5-year and since inception periods benefited from the run-up in energy prices after the GFC.



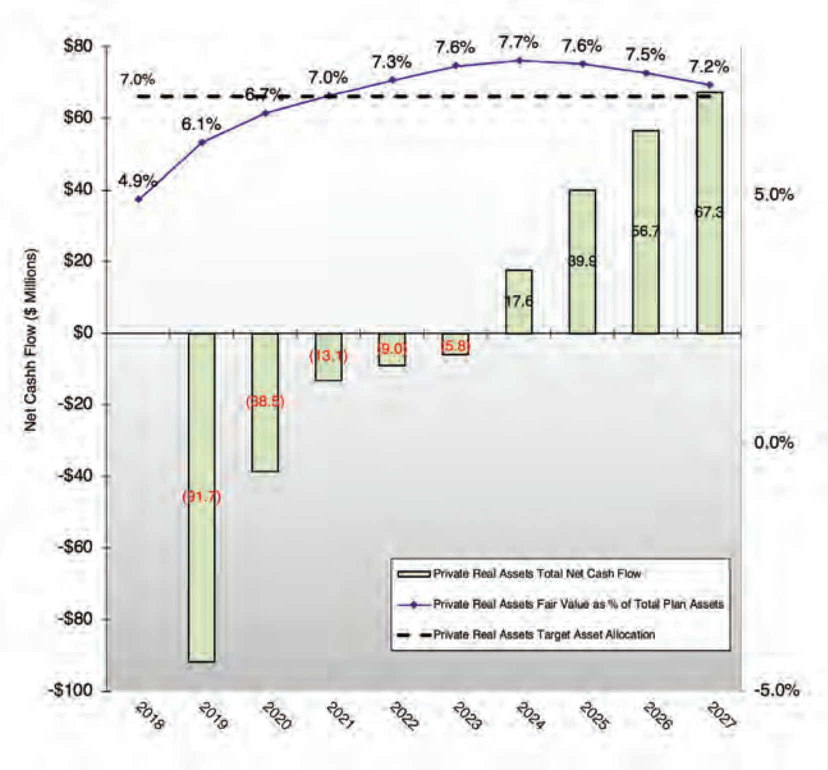
2019 ANNUAL PLAN

Below is the annual plan for the Real Assets asset class, as recommended by Cliffwater:

SCERS Real Assets Annual Investment Plan			
		Range	
	Target	Min	Max
Commitment Level	**$200 MM**	$150 MM	$250 MM
Number of Funds	**5**	**3**	**7**
Energy Related	**1**	0	3
Infrastructure	**3**	1	4
Ag, Minerals, Timber	**1**	0	2
Other	**0**	0	1
Commitment per Fund	**$40 MM**	**$20 MM**	**$60 MM**

- Cliffwater and Staff recommend a $200 million commitment budget for 2019, with a range of $150 million to $250 million
  - Expect to make 5 fund commitments with an average commitment size of $40 million, and a range between $20 million and $60 million
  - The budget Includes any funds that a commitment has already been made to, or is in the process of being made to, in 2019

Below is the Real Assets capital-pacing plan:



2019 ANNUAL PLAN (Continued)

- Over the next couple of years, SCERS' actual allocation to Real Assets will progress towards the target 7.0% allocation and is expected to be reached by 2021
  - Capital commitments will be measured, with market dynamics dictating pace
- Investment strategies and themes of focus for 2019 include:
  - Opportunities across the energy value chain, globally
  - U.S. mineral rights
  - Opportunities across the agriculture/food value chain, globally
  - Asia infrastructure
  - Niche, hard asset-backed strategies
- Evaluate strategic direction of customized separate accounts with Atalaya and Pantheon
  - Pantheon
    - Real assets secondary investments and co-investments
    - Coming to end of investment period
  - Atalaya
    - Asset-backed credit originations
    - Evaluate market opportunity set relative to the size of the Atalaya mandate
- Continue to oversee, monitor, and assess the existing manager lineup

Market Overview

Consensus among U.S. real estate investors is that the real estate market is well into a mature cycle. Overall, real estate fundamentals are considered fairly benign, although there are indications of excess (supply and values) in isolated sectors (apartments/multi-family) and markets (Washington D.C., New York, and San Francisco). However, geopolitical events have dropped uncertainty into investors' conversations and along with rising interest rates, transaction volumes have moderated from the historic levels reached in 2015. As a capital driven asset class, indecision by capital providers is typically felt by the real estate industry, and given how highly valued real estate has become, uncertainty can create immediate reverberations. As tracked and measured by Real Capital Analytics, commercial property prices currently stand at 26.4% above the prior peak values of 2007, with apartment values 66.5% over peak. Given this backdrop, many investors are projecting real estate returns to continue to trend downward, with many expecting a total return of around 7% for 2018, similar to 2017, and 6% for 2019. However, this assumption is predicated on continued 3% NOI growth, which would suffer if the market enters into a down cycle.

Going into 2018, U.S. real estate investors were cautious and transaction volumes were reflective of this caution; however, transaction activity in the third quarter accelerated, bringing year-to-date investment activity up 10.6% over the same period in 2017. On a rolling four quarter basis, CBRE reports investment volumes are up 3% from the prior year when excluding entity transactions. The pickup in activity, in the face of economic and political headwinds, is understandable given the sheer volume of capital raised and still waiting to be put to work. JLL research reports a record $180 billion in dry powder, capital held but not yet spent, as of Q3 2018. Preqin tallies 388 funds in the market targeting U.S. real estate raising an aggregate $130 billion. This same narrative is also seen in Europe, with 156 Europe focused funds in the market seeking an aggregate $53 billion in institutional capital. In total worldwide, Preqin's research reports 674 real estate funds in the market seeking a total of $250 billion, with a record $295 billion held in available capital (dry powder). Given this sheer volume of capital, a back stop to real estate values is expected in the near term despite the late cycle indicators and political headwinds.

The benefit of having a global real estate portfolio is that many markets are in differing stages of an economic cycle and cycle risks can be diversified away. For Europe, while growth slowed in 2018, the economic recovery is still in its earlier stage compared to the U.S. Compared to the U.S., Europe's real estate market cycle is considered 18-24 months behind the U.S. Real estate fundamentals are reflective of its early stage, with strong leasing activity generating increasing rental growth across all property sectors. JLL noted leasing activity in Europe was the strongest on record and not surprisingly, vacancy rates are at or below pre-recession levels. Given the strengthening fundamentals, investor demand has been keen leading to further cap rate compression, particularly for logistics assets. CBRE noted the transaction markets are performing at near-record levels. Q3 2018 investment activity was the second strongest Q3 on record, though flat on a trailing 12 month basis. Germany continues to enjoy outsize investor interest, with transaction volumes heading towards record levels.

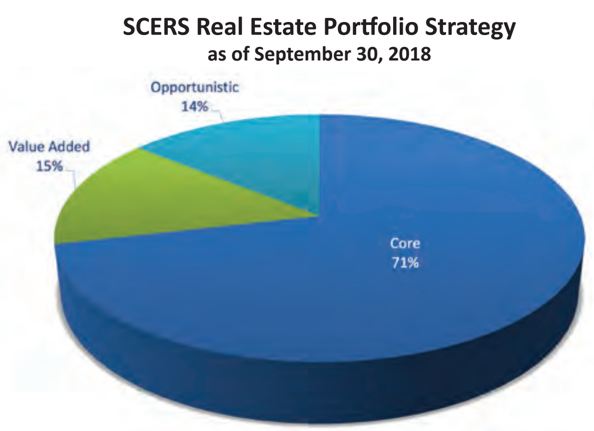
Real Estate Portfolio

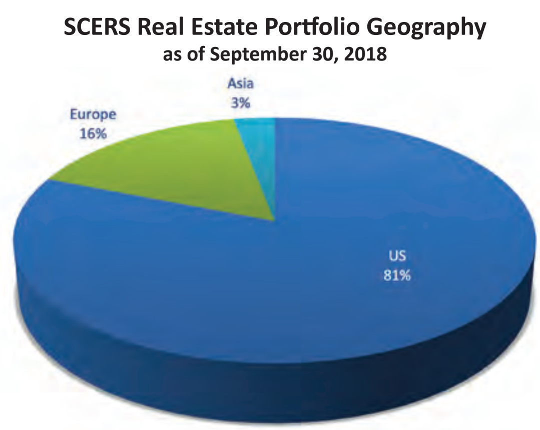
Real estate is a separate and dedicated SCERS asset class within SCERS' Real Return asset category, and encompasses investments across U.S. and non-U.S. core and non-core strategies. Among the objectives of the Real Estate portfolio are current income, moderate return volatility, and diversification to SCERS' overall portfolio. Shown below are the range of investment exposures within the Real Estate asset class:

SCERS Real Estate Portfolio Construction				
	Minimum	Target	Maximum	Policy Index Benchmark
Total Real Estate Portfolio	**5%**	**7%**	**9%**	**Custom blend of benchmarks below:**
Core Real Estate	50%	**65%**	80%	65% NFI-ODCE
Non-Core Real Estate	20%	**35%**	50%	35% NFI-ODCE + 1%
U.S. Real Estate	60%	**70%**	100%	
Non-U.S. Real Estate	0%	**30%**	30%	

As of September 30, 2018, the actual Real Estate allocation stood at 8.7%, within the upper 9.0% range but above the target 7.0% allocation; however, as of year end it increased to 9.7%, above the top of the range for the asset class. To date, SCERS has been comfortable holding a higher than target real estate allocation, while the SCERS Real Assets portfolio is building up. For 2019, Staff and Townsend are putting a plan together to rebalance the real estate portfolio, within a Core and Satellite framework and within appropriate ranges that may include partial or full redemptions from existing core open-end funds. However, it is expected that SCERS will commit capital to non-core funds in 2019.

Over the past few years, Staff and Townsend have been broadening SCERS' Real Estate portfolio by disposing of unattractive separate account assets and adding better relative investment opportunities outside of the U.S. and among niche investment strategies globally. To that end, an important goal for 2018 was to fully unwind SCERS' separate account real estate portfolio, in which SCERS owned underlying real estate assets, by exchanging these assets for shares in an Open-End Core Fund (OECF), to complement SCERS' existing OECF exposure. The result is SCERS' real estate portfolio is better diversified across countries and investment strategies as shown by the current exposures below:





2018 ACTIVITY

- Presented the 2018 Real Estate annual investment plan
  - A range of 1-3 fund commitments, with a target of 2 funds
  - A total of $70 million in commitments, with a range of $35-$50 million
  - An average commitment size of $35 million per fund
- Made 2 real estate commitments in 2018 totaling $55 million (1 follow-on and 1 new fund investment)
  - Additional $20 million to Carlyle China Rome Logistics, L.P. (China logistics)
  - $35 million to Asana Partners Fund II, L.P. (U.S. urban retail)
- Finalized the unwinding of SCERS' separate account real estate portfolio and exchanged proceeds for shares into an open-end core fund and an open-end core plus fund
- Oversaw, monitored, and met with SCERS' existing Real Estate managers

Performance and Attribution

For the 1-year period ending September 30, 2018, SCERS' Real Estate portfolio generated a net timeweighted return of 9.6%, outperforming against SCERS' blended NFI-ODCE benchmark net timeweighted return of 8.1%. Since inception, SCERS' Real Estate portfolio has generated a net timeweighted return of 8.3%, exceeding the blended NFI-ODCE benchmark net return of 6.7%. SCERS' Real Estate return over the 5-year and since inception periods were negatively impacted from the poor performance of several non-core real estate funds invested in prior the GFC, and by two underperforming open-ended core funds, which were liquidated.

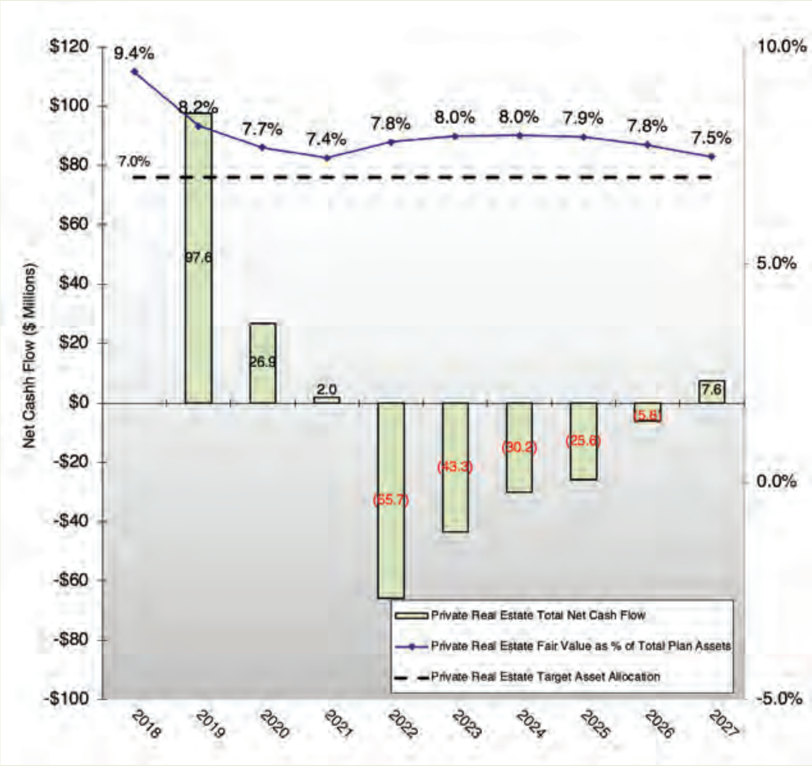
2019 ANNUAL PLAN

Below is the annual plan for the Real Estate asset class, as recommended by Townsend:

SCERS Real Estate Annual Investment Plan			
		Range	
	Target	Min	Max
Commitment Level	**$70 MM**	**$35 MM**	**$105 MM**
Number of Funds	**2**	**1**	**3**
Core Real Estate	**0**	0	0
Non-Core Real Estate	**2**	1	3
Commitment per Fund	**$35 MM**	**$20 MM**	**$50 MM**

- Townsend and Staff recommend a $70 million commitment budget for 2019, with a range of $35 million to $105 million
  - Expect to make 2 non-core fund commitments with an average commitment size of $35 million, and a range between $20 million and $50 million
  - The budget Includes any funds that a commitment has already been made to, or is in the process of being made to, in 2019

Below is the Real Estate capital pacing plan:



2019 ANNUAL PLAN (Continued)

- Rebalance the Real Estate portfolio to reduce the actual allocation toward the 7% target allocation
  - Redeem approximately $100 million in aggregate from existing core open-end funds
  - Maintain an 8% real estate allocation over the near term
    - Above the 7% target, but below the top of the asset class range of 9%
  - Increase non-core allocation within the target range of 35%
- Finalize the lease up and disposition of Leland James Center
- Investment strategies and themes of focus for 2019 include:
  - European student housing
  - Manufactured housing
  - Japan value-add
  - Refrigerated logistics and cold storage

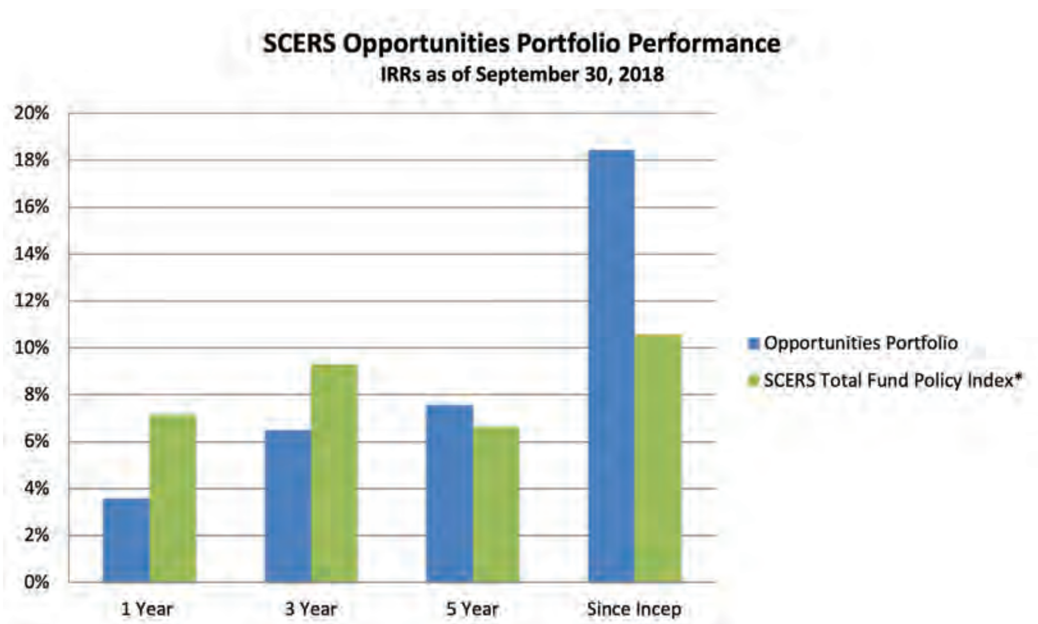
Opportunities

The Opportunities portfolio does not have a fixed allocation, but instead has a permissible range of 0% to 5%. As of December 31, 2018, the actual allocation is 0.1%. The Opportunities portfolio consists of investments in tactical strategies that offer attractive risk-return attributes. Potential opportunities may be short-term, niche, non-traditional, or opportunistic in nature, which may exist across the range of asset classes. Any potential Opportunities investment will draw its capital allocation from the asset class with the most comparable risk-return characteristic as the potential investment. This allocation process serves as a method for the potential Opportunities investment to compete for capital against comparable opportunities and have its performance measured against the asset class. Given the tactical nature of the asset class, it is possible there will be no Opportunities investments made in any given year, such as occurred in 2016, 2017, and 2018. With the market volatility that was experienced during 2018, and being later in the economic cycle, Staff and Consultants expect to be more active in 2019 identifying potential investment opportunities within the Opportunities portfolio.

2018 ACTIVITY

- Oversaw, monitored, and met with SCERS' existing Opportunities manager

Performance and Attribution



As of September 30, 2018, SCERS' Opportunities portfolio has generated a since inception net IRR of 18.4%, outperforming against SCERS' policy index benchmark return of 10.6%. The strong since inception performance is due to several distressed debt funds SCERS invested in the aftermath of the GFC and have since liquidated. SCERS' lone Opportunities investment is winding down, resulting in the trailing 1-year period return of 3.6% underperforming against SCERS' policy index return.

2019 ANNUAL PLAN

- Continue to identify and evaluate tactical opportunities in unique/differentiated investment strategies that offer an attractive risk-return profile
- Given the late economic cycle, increasing market volatility, and historical high pricing, review potential opportunities in distressed/special situations in the real estate and corporate sector, and dislocations in the public credit markets

Other Investment Activities

2018 Activities

In addition to the activities within SCERS' investment program at the asset allocation and asset class levels, a number of enhancements and efforts were made in the day-to-day management of the investment program.

- Restructured and implemented SCERS' Overlay Program to align with the new strategic asset allocation
- To comply with California Government Code Section §7514.7, provided public disclosure of calendar year 2017 information regarding fees, expenses, and returns for alternative investment funds in which SCERS invests
- Created investment policy statements for the Growth, Diversifying, and Real Return asset categories – replaced individual asset class IPSs
- Worked with Verus Advisory to generate and present a liquidity analysis of SCERS' plan
- Oversaw, monitored, and met with existing managers
- Monitored and reviewed SCERS' securities lending program
- Monitored and reported on SCERS' securities trading costs and commission re-capture program
- Conducted transition management for the implementation of the Domestic Equity and International Equity restructured asset classes
- Hired Jim Donohue as Deputy Chief Investment Officer
- Conducted Board education on investment matters

2019 Objectives

- Create a cash management policy that incorporates results from SCERS' recently generated liquidity analysis
- Review ranges around target allocations within SCERS' Overlay Program, and make any modifications as necessary
- Assist in the engagement of a third party accounting firm to assist SCERS is processing, recording, and verifying private markets investment financial statements and cash flows
- Evaluate SCERS' currency exposures and currency hedging solutions in the market
- Provide an update to the Board on proxy voting services for SCERS' investment portfolio
- To comply with California Government Code Section §7514.7, provide public disclosure of calendar year 2018 information regarding fees, expenses, and returns for alternative investment funds in which SCERS invests
- Evaluate risk management and portfolio management needs
- Oversee, monitor, and visit with investment managers
- Review the securities lending and commission recapture programs

2018 Board Education

- Education on alternative active management equity strategies
- Education on private credit investing
- Education on private equity small/lower middle market buyout investing

2019 Board Education

- SCERS investment manager presentations
- Educational presentations by Consultants and Staff
  - Private markets scondary investing

Appendix

SCERS

Verus

Memorandum

To: Sacramento County Employees' Retirement System Board (SCERS)

From: Verus

Date: February 20th, 2019

RE: 2018 Review and Outlook

Executive Summary

SCERS' portfolio ended 2018 down 1.3% (-1.6% net) in what proved to be a challenging year across nearly all asset classes. The results were slightly in excess of the Policy Index and ranked in the top decile of SCERS' peers. Global Equity markets were down 9.4%, with domestic equities outperforming non-US markets. Fixed income was of little help during the year, ending mostly flat-to-negative across credit and government securities. Growth outperformed value during the calendar year by over 6.0% in U.S. Large Cap which continued a trend we saw in 2017. Private asset classes were largely positive on the year as a swift market reversal in the 4th quarter was not reflected in lagged valuations across private investments.

The SCERS team spent much of 2018 orienting the portfolio towards the most recently approved asset allocation. This re-orienting resulted in a lower risk portfolio which helped significantly in the 4th quarter sell-off. In the year ahead, we plan to provide policy and education updates around cash management and liquidity, currency hedging alternatives and opportunistic strategies.

In this memo we will review the investment environment in 2018 for major asset classes, detail 2018's initiatives and outline the work plan for 2019.

U.S. Equity

After a run of seven straight calendar years of positive returns, the total return for S&P 500 Index in 2018 was -4.4%. This included a tumultuous fourth quarter in which the index returned -13.5%, its worst quarter of performance since Q3 2011. Thus, the market environment for U.S. equities in 2018 can be broken out into two distinct periods: the first nine months and the last three months.

Outside of a short-lived spike in equity volatility and a 10% price correction in February, U.S. equities continued to produce strong returns in the first three quarters of the year. Performance was fueled by historically impressive earnings growth that was realized, in part, due to the corporate tax cut package that was passed at the end of 2017. As of Q3 2018, year-over-year earnings growth for S&P 500 companies was 27.7% and it is expected to be 20.7% for all of 2018. U.S. economic growth was also boosted by fiscal stimulus, which underpinned robust corporate earnings and supported positive market sentiment towards risk assets. This positive backdrop in fundamentals came despite increasing investor concern over the impact of U.S. trade policy. In its first act on trade in March, the Trump administration placed 10% and 25% tariffs on aluminum and steel imports, respectively. As the year progressed, the administration became increasingly focused on China and the perceived trading imbalances between the world's two biggest economies. Over the course of 2018, the U.S. imposed tariffs on $250 billion worth of Chinese imports, while China responded with retaliatory tariffs on $110 billion worth of U.S. imports (tariff rates ranged from 10-25%).

In the fourth quarter, investors became increasingly concerned with two key risks: slowing growth (both corporate earnings and economic growth) as economic data and corporate guidance started to underwhelm and Fed monetary tightening. The market appeared particularly worried about the impact of the Fed's balance sheet unwind, which was exacerbated by Fed officials' persistent comments that the tapering plan was on "autopilot". Other risks, such as Brexit, were brought to the forefront as investor sentiment soured. The move lower in equity prices was magnified by a lack of market liquidity, particularly around the end of the year. While the fundamental picture for equities worsened and earnings expectations were revised slightly lower, the bulk of the drawdown was caused by a contraction in valuations. As of year-end, the forward 12-month P/E multiple on the S&P 500 Index was 14.5, down from 18.2 one year prior.

International Equities

One of the biggest themes of 2018 was the divergence in performance between U.S. and international equities that occurred in the middle of the year. Much of this performance gap was driven by relatively higher earnings and growth expectations in the U.S. as economic data in international developed countries consistently came in below expectations, specifically in Europe. While some of the underperformance in international equities reversed in the fourth quarter, U.S. equities still significantly outperformed over the full year. In 2018, the MSCI EAFE Index returned -13.8% in U.S. dollar terms and -11.0% in local currency terms.

Emerging markets were the worst performing equity region, plagued by several negative events including severe currency depreciation in a few countries, heightened concerns over the impact of tariffs on China and Southeast Asia, and further monetary tightening in the U.S. In 2018, the MSCI Emerging Markets Index returned -14.6% in U.S. dollar terms and -10.1% in local currency terms. Part of the pain in emerging markets was driven by idiosyncratic risks in smaller countries, such as Turkey and Argentina, which led to capital outflows and currency depreciation across the space more broadly. On a relative basis, emerging market equities recovered toward the end of the year as contagion fears proved overblown.

Fixed Income

It was also a difficult year for many fixed income asset classes, particularly riskier U.S. credit. Underwhelming fixed income returns along with negative performance across equities and other risk assets created a painful experience for investors with diversified portfolios. The Bloomberg Barclays U.S. Aggregate Bond Index returned 0.0% in 2018, while the Bloomberg Barclays Corporate Investment Grade and High Yield Credit Indices each lost 2.1%.

A review of the fixed income market environment can also be segmented into the first three quarters of the year and the last quarter. During the first part, the Federal Reserve hiked interest rates three more times on the back of strong economic growth and a tight labor market, long-term Treasury yield rose steadily, and credit spreads tightened back to cycle lows. The 10-year Treasury yield rose materially from 2.4% at the end of 2017 to a peak of 3.2% early in the third quarter. Meanwhile, high yield credit spreads hit a cycle low of 300 bps in October. As equity markets began to fall in the fourth quarter, the themes in fixed income from the early part of the year reversed. Credit spreads widened, and Treasury yields tumbled. Although the Fed hiked rates again in December, officials took a much more dovish tone on the outlook for future monetary tightening.

Outlook

Although the sharp market movements in the fourth quarter appear overdone, we have a more cautious outlook this year compared to last year. The narrative of synchronized global economic growth has disappeared, led by underwhelming economic data in the Eurozone and China in particular. Economic growth in the U.S. has held up better than peers, but this may be due to positive impact from fiscal stimulus, which is set to fade in the first half of 2019. Developed central banks, namely the Fed and European Central Bank, continue to tighten on the margin, although the outlook for future tightening appears more uncertain given the volatility in financial markets. Additionally, corporate profit growth estimates have been downgraded recently and growth is expected to slow basically everywhere. According to the bottom-up consensus analyst estimate, S&P 500 companies are expected to see 5.6% earnings growth in 2019. All of this leads us to believe that we are late in both the economic/credit cycle and perhaps the corporate profit cycle. However, this cycle has been unique as we have not yet seen any glaring signs of overheating, such as inflation, that could force central banks to tighten faster than they might prefer. However, if economic growth stabilizes at lower but mildly positive levels, and inflation remains muted, the cycle may continue longer than expected. We believe a neutral portfolio risk level is warranted in the current environment, but investors should be diligent in where they are taking risk and should make sure they are being appropriately compensated for that risk.

Portfolio Initiatives

Asset Allocation Implementation

The primary initiatives for 2018 involved implementing the newly completed asset allocation study. Staff and Consultants for SCERS completed a number of new strategy hires, strategy terminations and portfolio rebalancing's throughout the year that we will summarize below. The changes made in 2018 resulted in a lower risk posture and reduction in the number of managers and costs.

Growth Portfolio

In public equities we made the following changes during the year:

- Eliminated the REIT allocations in domestic and international equity portfolios
- Eliminated the emerging market small cap allocations
- Reduced the number of small cap domestic equity managers from four to two
- Removed the dedicated large cap value and large cap growth mandates from the domestic equity portfolio
- Hired a new large cap core multi-factor strategy to complement the two active large cap core strategies
- Hired a new large cap core 130/30 manager to complement the existing 130/30 strategy run by JPMorgan
- Rebalanced the public equity portfolio to the new target weights

Diversifying Portfolio

In order to bring the diversifying portfolio to its new target, SCERS shifted the core bond strategy managed by Neuberger Berman to a dedicated treasury strategy. This brought the core fixed income allocation to its 10% target and filled the new 5% target to treasuries. Within the diversifying absolute return portfolio, SCERS made a number of new manager hires and completed the shift of existing absolute return strategies into the diversifying portfolio.

Real Return Portfolio

During 2018, SCERS committed to several new strategies within private real assets and sold down part of the real estate portfolio. The dedicated commodities allocation is below policy target though there is additional exposure to commodities through the SSgA Real Asset overlay which is not reflected in the Verus allocation report. Staff and Verus plan to revisit the dedicated commodities allocation in 2019 and will report back to the SCERS Board if we recommend any changes to the current structure.

Overlay

SCERS' overlay was modified in early 2018 to incorporate the new asset allocation along with a new set of market proxies that better fit the underlying asset allocation. We plan to study different rebalancing ranges and triggers with SSgA, the current overlay provider, in an effort to better capitalize on market volatility.

Projects for 2019

Staff and Verus will be finalizing a new cash management policy that will address plan liquidity risk. We plan to provide board education on currency risk and discuss the merits of hedged vs unhedged portfolios. Lastly, Staff and Consultants plan to consider ways to systematize opportunistic investments and/or more proactively look for tactical investment ideas.

CLIFFWATER LLC

To: Sacramento County Employees' Retirement System
From: Cliffwater LLC
Date: February 7, 2019
Regarding: **Alternative Assets 2018 Year in Review**

Heightened investor concerns, and increasing volatility, returned to the capital markets in 2018, particularly towards the end of the year. Concern over slowing global growth, rising interest rates, potential trade wars, and further geopolitical uncertainty combined with typical late cycle concerns to send risk asset prices lower across the board during the year. Equity markets were hit particularly hard in the fourth quarter, dragging global equities lower by almost 10% for the year. U.S. equities fared better than non-U.S. equities, falling 5% as compared to non-U.S. equity markets, which fell roughly 15% in 2018. Fixed income markets provided some relative stability, though displayed elevated correlations with equities and other risk assets during several periods throughout the year. In total, the Bloomberg Barclays U.S. Aggregate Bond Index finished the year flat; high yield bonds declined 2% during the year. Commodities also finished down for the year, losing more than 10% primarily due to a significant decline in the price of oil.

The Sacramento County Employees' Retirement System ("SCERS") portfolio features a diversified mix of alternative investments which includes allocations to private equity, private credit, real assets, and absolute return-oriented strategies. While alternative assets were not immune to the downturn and volatility seen in the capital markets, the allocations to alternative investments in the SCERS portfolio helped to limit the portfolio's drawdown during the year. SCERS continued to build out these portfolios during the year, consistent with its long-term implementation plans, as it maintains a well-diversified portfolio to meet its investment objectives over a variety of market environments.

Absolute Return Portfolio

Absolute return strategies produced mixed results in 2018 with a considerable degree of dispersion across strategies and across managers within the same strategies. Although absolute return strategies delivered good performance relative to global equities, returns in the aggregate were negative, down roughly 4% on the year. Alpha generation proved difficult for most managers in 2018 as well, with overall alpha generation turning negative for the full year.

The best results over the past year came from market neutral and other low beta relative value strategies, which benefitted from low market exposure, higher volatility, and greater dispersion among security prices. These strategies ended the year flat to slightly down overall. Credit strategies, which were down roughly 1% for the year, held up well despite spread widening and a meaningful downturn in the high yield market during the fourth quarter. Absolute return strategies with greater equity orientation, including most equity long/short and equity focused event driven funds, suffered the most in 2018. These strategies were hurt by beta (market exposure) and negative alpha generation that was most pronounced during periods of fund deleveraging. While discretionary global macro funds generally fared better than systematic macro funds, global macro managers in particular displayed a wide dispersion of performance. Global macro strategies in the aggregate returned -4% for the year.

The performance of SCERS' Absolute Return investments in 2018 was largely like that of the broader industry. The year's portfolio results certainly saw a wide dispersion of returns across funds and strategies. The SCERS Absolute Return portfolio contained funds that generated solidly positive returns for the year, mostly funds in the Diversifying Absolute Return portfolio. These positive results were unfortunately more than offset by negative returns across a number of the other funds, particularly in the Growth Oriented Absolute Return portfolio. Importantly, SCERS made good progress during 2018 in adjusting the allocation between Diversifying and Growth Oriented strategies in the Absolute Return portfolio to favor Diversifying strategies and align with its targeted 7% allocation to Diversifying strategies and 3% allocation to Growth Oriented strategies. SCERS made further progress during the year within its Diversifying Absolute Return portfolio by allocating to two new direct fund investments. These new investments included a market neutral/arbitrage fund and a low beta equity long/short fund. Although the Absolute Return portfolio has reached its targeted allocation, SCERS will continue to diversify this allocation with new exposures to appropriately position the portfolio for anticipated market conditions and ensure it is allocating to the highest quality funds within each portfolio.

Private Equity

The environment for private equity remained robust in 2018, although the effects from the fourth quarter capital market turmoil may further impact private equity as we head into 2019. Private equity managers continued to quickly raise sought after funds while investing considerable amounts of existing uncalled capital. This significant investment activity was aided by an ongoing supply of available debt financing, which remains cheap by historical standards. Managers also took advantage of increasing valuations and periods of strong equity market performance to exit existing investments and return significant amounts of capital back to investors.

The SCERS Private Equity portfolio, which includes a variety of buyout, growth equity, venture capital, and special situations strategies (e.g. stressed and distressed debt strategies) continues to perform well on an absolute and relative basis. Net returns (IRRs) exceeded 25% for the most recent trailing 12-month period. Trailing three- and five-year returns were 18% and 17%, respectively. This performance has been broadly generated across the Private Equity portfolio rather than being driven by a few vintage years, strategies, or funds. Performance gains in the Private Equity portfolio continue to grow over time as the impact from the larger, "legacy" positions (those made prior to the 2011 portfolio structure redesign) diminishes.

We remain cognizant of macro risks that can impact private equity investors, including the large amounts of uncalled capital available for new investments, rising costs of leverage (debt financing), elevated valuations and purchase prices, heightened public market volatility and geopolitical risks, and greater competition from newer sources of capital. Against this backdrop, SCERS has remained disciplined in its pacing of new commitments, recognizing that vintage year diversification is an important characteristic of successful private equity programs. New private equity fund commitments in 2018 were primarily "re-ups" made to new funds of general partners already managing capital for SCERS. These new commitments spanned investment strategies from venture and growth capital to special situations and niche buyout strategies. SCERS also added a new strategic partner relationship in Private Equity. The goal of adding this new relationship is to create a more efficient structure for investing in a wide range of small funds.

SCERS has targeted attractive opportunities over varying market conditions to complement the Private Equity portfolio's existing exposures. Ensuring good diversification across strategies, geographies, sub-sectors, market capitalization, and time is important as SCERS maintains a diversified Private Equity portfolio that is not over-reliant on the success of a particular investing style or strategy. Going forward, particularly now that SCERS has reached its 9% strategic allocation target, SCERS will look to additional types of investments and portfolio management tools that become increasingly appropriate as the Private Equity portfolio matures.

Private Credit

The SCERS Private Credit portfolio is intended to produce attractive risk-adjusted returns and generate current cash flow, with most of the expected return to be generated by cash flow yield. The Private Credit portfolio includes lending-oriented strategies focused on performing companies where the manager expects to receive principal and interest payments. Direct lending investments (directly originated, non-traded loans to middle market companies) will comprise the majority of the Private Credit portfolio. Other performing lending-oriented strategies in the Private Credit portfolio will be considered Opportunistic Credit investments. Investment types within Opportunistic Credit can vary but may include royalty investments, other asset-based lending, or consumer lending.

SCERS made two new commitments to private credit funds in 2018. Both new commitments, each sized at $50 million, were made to funds focused on direct lending. One of the commitments was made to an existing general partner in the Private Credit portfolio. The other commitment represents a new relationship for SCERS. These commitments will provide "core" exposure within the Private Credit portfolio and will help SCERS move towards its 4% strategic allocation target. We are forecasting that SCERS will reach its targeted allocation in 2021 based upon the commitment pacing plan incorporated into the Private Credit annual plan.

We believe that private credit remains an attractive investment opportunity that should provide 7% to 9% returns with low volatility relative to other asset classes with similar expected returns. The returns generated from private credit investments are typically more immediate in the form of current yield with mitigated J-curve effects versus typical private equity investments. These loans also have minimal interest rate risk due to the floating rate structures of most of these investments.

Real Assets

The SCERS Real Assets portfolio includes allocations to the broad sub-strategies of Infrastructure, Energy, and Agriculture, Timber, and Other. Each of these categories includes investments that span different sectors, geographies, and markets to provide diversified exposure to a broad array of investments that are, in the aggregate, intended to meet the Real Assets portfolio objectives of income generation, inflation protection, and risk factor diversification. SCERS continued to build out this exposure during the year with commitments to infrastructure funds, energy funds, and an agriculture fund. The infrastructure fund commitments covered core and value-add infrastructure strategies. The new energy funds pursue midstream energy investments, which involve the processing, transportation, and/or storage of energy related resources. The newly added agriculture fund is focused on the processing and distribution of agriculture products, as well as agriculture technology and services investments.

Investor interest in infrastructure funds grew further and remained high in 2018. Seasoned infrastructure managers have in turn been raising larger funds, while new managers increasingly emerged to launch new fund strategies. Investment activity accelerated in 2018 and competition for core infrastructure assets, along with the prices paid for these investments, also continues to increase. Investors are also seeing more opportunity for private investment in U.S. infrastructure assets. That activity remains small as compared to non-U.S. investment. Private energy fundraising remains depressed given reduced investor enthusiasm for upstream (exploration and production) oil and gas investments. However, investor interest held steady for midstream energy funds, particularly those focused on smaller midstream assets. Investor interest in other private real asset strategies represents a smaller portion of the private real assets marketplace.

Performance of the SCERS Real Assets portfolio has been quite good. The portfolio has delivered mid-teens net returns (IRRs) over multi-year periods and since inception. As with many of the SCERS portfolios, the contribution to these returns has been varied such that no single fund or group of funds has been driving the returns. Although SCERS will likely see a downturn within some of its private energy investments early in 2019, following the significant oil price decline in the fourth quarter of 2018, the portfolio is diversified and has shown resilience despite commodity price volatility over the years.

Planning and Outlook

We continue to believe that including diversified alternatives allocations in institutional investment portfolios can improve return and risk profiles and provide investors with increasingly better opportunities to meet their return objectives. Our outlook remains positive for well-constructed alternative asset portfolios, seeing continued support for 2% to 3% return premia for private assets; we believe that absolute return strategies can help diversify portfolios and reduce portfolio risk without sacrificing potential upside gains. However, selection remains critical in each of these asset classes. Thoughtful implementation and portfolio construction are also paramount to the success of these programs.

Since SCERS redesigned its approach to investing in, and increased its allocations to, alternative investments in 2011, SCERS has devoted significant resources to developing its increasingly complex portfolios within each of the alternative asset classes. As mentioned in previous annual reviews, SCERS has developed a well-defined, rigorous investment process that remains nimble in its ability to target unique opportunities within the alternative asset classes. SCERS has remained diligent in its implementation and has maintained investment discipline investing in these asset classes over a variety of environments. Maintaining this well-structured and thoughtful approach to investing in alternative investments should continue to position SCERS to meet its investment objectives through a variety of market environments and help facilitate the ongoing evolution of the SCERS portfolio.

TOWNSEND® GROUP
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MEMORANDUM

TO:	**Sacramento County Employees' Retirement System**
DATE:	February 20, 2019
SUBJECT:	Real Estate Investment Year in Review (Data as of September 30, 2018)
FROM:	**The Townsend Group**

In 2018, U.S. private real estate markets continued their positive run for the ninth straight year. SCERS has benefitted from this trend and managed to add additional relative value through strong asset selection. On a trailing twelve-month basis, the SCERS real estate portfolio (the "Portfolio") outperformed its benchmark by 150 basis points, achieving a net time-weighted return of 9.6%. The Portfolio has benefited from long-term strategies designed to provide stable core returns and attractive non-core returns that offer diversification advantages. The SCERS real estate portfolio underperformed the benchmark (5.5% vs. 6.0% net) for the year-to-date. As of 3Q2018, real estate represented 8.6% of total plan assets which is below the upper target limit of 9.0%.

In reviewing the 2018 calendar year, we once again reflect upon the active role that the SCERS staff and consultants have played in identifying tactical investment opportunities that offer unique characteristics, selling down existing assets and completing the transition of core separate accounts to commingled funds. This repositioned portfolio will help SCERS to perform well across future real estate cycles.

Real Estate Return and Risk Forecasts

Long range expectations for real estate have decreased since last year. The following are Townsend's private real estate and real asset return forecasts as of January 2019:

Risk & Return	Core	Value	Opportunistic	REITs	Timber	Row Crop	Perm Crop	Private Infrastructure
Expected Net Return	**5.7%**	**6.2%**	**8.7%**	**6.0%**	**5.8%**	**6.0%**	**11.0%**	**7.0%**
Standard Deviation	**6.5%**	**9.1%**	**10.4%**	**21.0%**	**5.0%**	**4.3%**	**10.7%**	**7.5%**

Core Real Estate

SCERS' core portfolio represents 6.1% of the total plan which is well within the established range of 4.0% to 9.0%. The change to the IPS approved in July 2017 removed the previous restriction on core investment vehicles to allow for future execution flexibility and reflect the intention of the SCERS real estate program to focus on open-end core commingled funds going forward.

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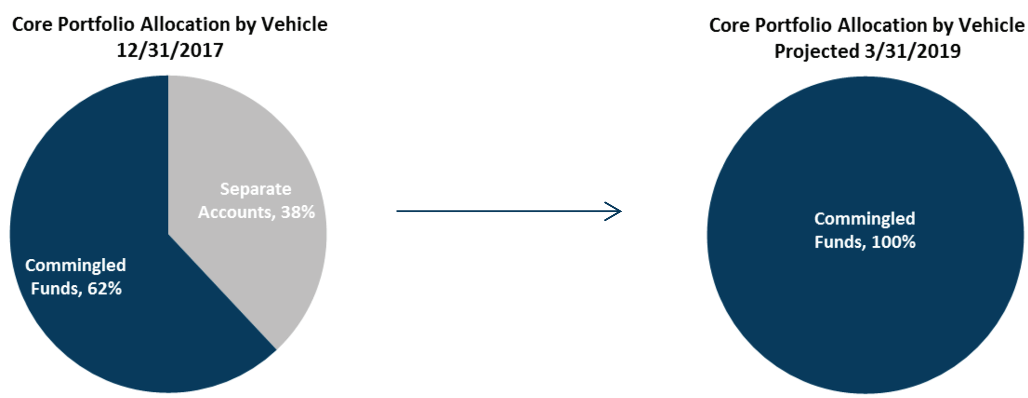
In 2018, the main focus within the core portfolio was to transition the remaining separate account assets to commingled funds. This process has been successfully completed during the year, with the last separate account asset sale/transition occurring in the fourth quarter of 2018. As of year-end, only a small separate account cash balance is held in reserves. Disregarding this cash balance, the core portfolio is now comprised open-end commingled funds.

In addition to the core rebalancing activity that resulted in the addition of two new funds, Clarion Lion Properties Fund and Brookfield Premier Real Estate Partners, SCERS increased their prior commitment to Prologis Europe by $15 million in 2018.



Non-Core Real Estate

Non-core real estate represents 2.4% of the total plan which is within the established range of 0.0%-5.0% of total plan. SCERS made three non-core investments in 2018, a $20 million re-up to the Project Rome co-investment with Carlyle China, a $40 million commitment to NREP Nordic Strategies Fund III, and a $35 million commitment to Asana Partners Fund II. The Ex-US commitments were driven by continued strong thematics in the Chinese logistics sector and Nordic region and were underwritten by Townsend's regional specialists in Hong Kong and London, while the investment in Asana Partners Fund II adds US urban retail exposure with a specialist operator that is primarily funded by Townsend's client capital.

In addition to commingled fund activity, Townsend and Staff have put a lot of focus on the remaining non-core separate account asset, Leland James. After soliciting pricing on the asset along with the stabilized assets that were transferred to a commingled fund manager during the year, Townsend and SCERS decided that holding on to this asset until leasing activity is complete is the best solution. This step was taken in an effort to maximize value to SCERS. Other than soliciting pricing and the decision to delay a sale, the process included the close monitoring of leasing activity through frequent communication with the manager, BlackRock. BlackRock has started a soft marketing process for Leland James, and the asset is expected to be

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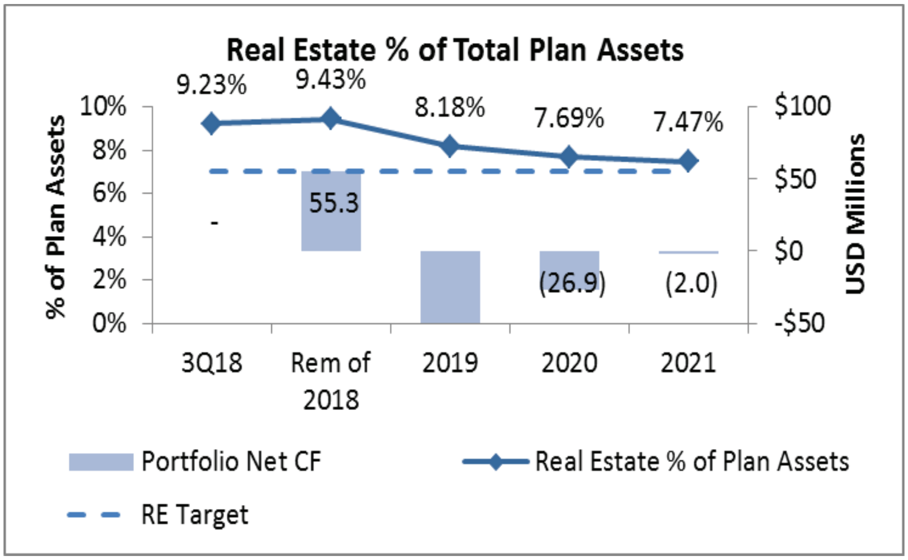
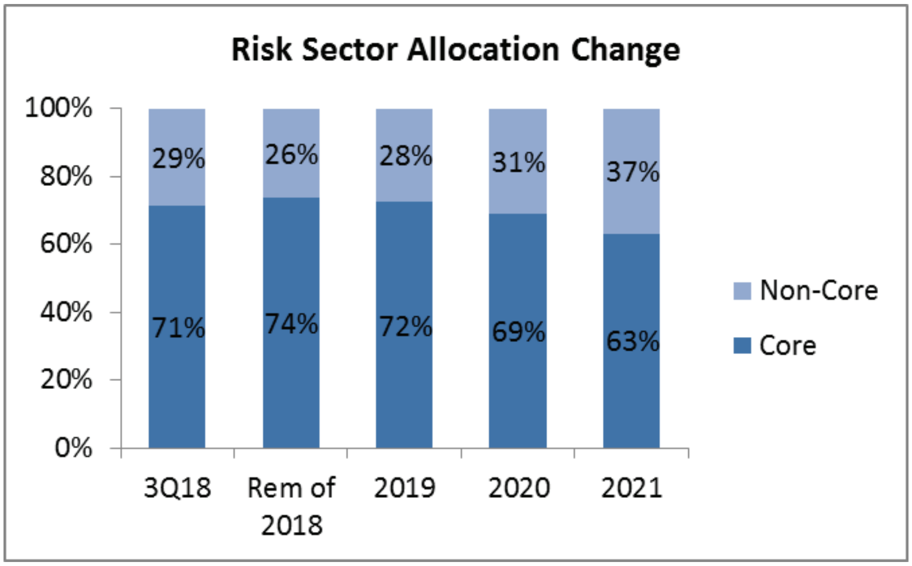
sold in 2019. The sale is projected to realize significant value gains that will reward SCERS for the risk taken by executing this non-core strategy.

SCERS Private Real Estate Forecasts

Given the current overweight to private real estate and higher than targeted core allocation, SCERS and Townsend are in discussions about potential core redemptions in 2019. The below forecasted pacing assumes $150 million in core redemptions over two years, and $70 million of new non-core commitments each year. This would result in a real estate exposure of 7.5% by year-end 2021, with a core/non-core mix of 63%/37%.





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Global Diversification

SCERS' international exposure has grown steadily since 2013. As of 3Q2018, 80.8% of the SCERS private real estate portfolio is invested in the United States. 19.2% of the real estate portfolio is invested in ex-US markets, of which approximately 80% is in Europe and 20% is in Asia. The majority of SCERS' international exposure is housed in the non-core portfolio, which was 51.6% ex-US as of 3Q2018 and projected to be 57.1% ex-US by 2021.

The current benchmarks for the SCERS private real estate portfolio are US-based and include:

- NFI-ODCE (core),
- NFI-ODCE + 100 basis points (non-core).

Due to the increasing importance of ex-US to the SCERS real estate portfolio, the board adopted an ancillary benchmark in July 2017. The ancillary custom global benchmark is made-up of the NFI-ODCE (core), NFI-ODCE + 100bps (non-core), GREFI core and GREFI non-core for Europe and Asia to create a global blended benchmark based on weighted average invested capital for each global region and strategy.

Private Real Estate Considerations for 2019

Townsend proposes the follow considerations to SCERS for its Real Estate Portfolio:

1. Rebalance the SCERS core portfolio to achieve optimal sector weightings and reduce overall exposure to core and real estate as a whole.
2. Consider any existing core investments that are underperforming, and rationalize 'hold' v. 'sell.'
3. Commit between $70 and $75 million per annum to non-core strategies (2019-2021).
4. Continue to use non-core funds as a mechanism to access strategies that are underweight in the real estate portfolio.
5. Further diversify Ex-US exposure. Staff and Townsend are currently evaluating real estate opportunities in Japan.
6. Further explore niche investment opportunities that are expected to generate outsized risk-adjusted returns, and/or provide a level of diversification to the portfolio (downside protection, sector exposure, etc.).
   - Staff continues to conduct research in such niche opportunities such as cold storage, manufactured housing, student accommodation and emerging market logistics.
7. Consider further investments with vertically-integrated owner-operators.

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8. Control risk by investing in durable capital structures and by avoiding interest-rate sensitive investments.

9. Mindfully consider future investments and remain selective; increasing non-core exposure is appropriate, but capital could be preserved for out-years in order to take advantage of a possible correction.

Recap and Vision for 2019

Townsend continues to monitor SCERS' deliberate overweight to the real estate sector, which existed while the real assets category funded in to the portfolio. It is expected that real assets will reach its targeted allocation in the next 12-24 months and as such, we have shifted to rebalancing in order to reduce the overall exposure to real estate, retain vintage year diversification and maximize value for SCERS.

A majority of 2018 was focused on the rebalancing of the SCERS core portfolio. This complex process of transitioning remaining core separate account assets to core open-end commingled funds offers broader diversification and liquidity advantages over separate account vehicles. Townsend and Staff worked to drive value for SCERS throughout this process through the solicitation of bids, selection, pricing and term negotiation. In addition to this core activity, SCERS remained selective in non-core and pursued one U.S. investment.

Looking ahead to 2019, we are mindful that real estate enters into the tenth year of a recovery/expansion cycle. There are various uncertainties that may impact the global real estate returns; yet fundamentals remain stable to strong. The past nine years have delivered outstanding returns, and SCERS has certainly benefited. Townsend's long-term return and standard deviation forecasts have been revised downward.

Townsend will continue to work with Staff, on the Board's behalf, to pursue SCERS's plan objectives. On the sell-side, we will consider options to redeem some core capital in order to decrease real estate exposure and bring core real estate closer to the 65% target of the total real estate portfolio. On the buy-side, we will continue to exercise disciplined underwriting standards and negotiate favorable terms on predominantly non-core opportunities that add unique characteristics to SCERS' real estate portfolio.

Topic	2018 Preview	2018 Actual	2019 Preview
Consultants	• Formally review Verus consulting mandate in-line with conclusion of current contract expiration in June 2019	• Reviewed Verus consulting mandate and will extend the contract for a year; further guidance will be provided to the Board during 2019	• Formally review Verus consulting mandate in-line with conclusion of next contract expiration in June 2020
			• Formally review Townsend Group real estate consulting mandate in-line with conclusion of contract expiration in June 2019
Asset Allocation	• Implement the recently approved asset allocation to bring physical exposures toward their respective target allocations	• Restructured and implemented Domestic and International Equity asset classes, and allocated to several funds within the Absolute Return, Private Equity, Private Credit, and Real Assets asset classes	• Implement the recently approved asset allocation to bring physical exposures toward their respective target allocations
Equities		• Approved revised domestic and international equity asset class structures in January 2018	
	• Implement Domestic and International equity asset class structures by making any manager changes, and rebalancing exposures toward new target allocations	• Restructured, implemented, and rebalanced the Domestic and International Equity asset class structures, including reducing the manager count from 10 to 7 for both asset classes, and adding an active systematic factor based strategy in Domestic Equity	
	• Conduct a manager search for an active systematic factor based equity strategy within SCERS' revised Domestic Equity structure	• Approved AQR Capital Management to manage an active systematic factor based equity mandate	• Review alternative passive management strategies to complement existing market cap weighted passive exposure
		• Approved The D.E. Shaw Group to manage a 130/30 equity extension large cap mandate	• Implement the 130/30 equity extension mandate with D.E. Shaw
Fixed Income		• Completed the implementation of the dedicated U.S. Treasury mandate with Neuberger Berman	
	• Perform a physical rebalance of SCERS' Fixed Income managers, which are underweight to their respective target allocations	• Performed a physical rebalance of several of SCERS' Fixed Income managers, which were underweight to their target allocaitons	

Topic	2018 Preview	2018 Actual	2019 Preview
Absolute Return	• Progress in the implementation of the Absolute Return structure, especially within Diversifying Absolute Return, by identifying and investing in absolute return funds		
	• Identify and invest in 1-3 potential absolute return funds with an average investment size of $45 million per fund	• Made two diversifying absolute Return investments totaling $80 million in aggregate	• Identify and invest in 2-5 potential absolute return funds with an average investment size of $45 million per fund
	• Add to interim absolute return solution portfolio managed by Grosvenor Capital Management, while direct program is being implemented	• Developed and implemented an interim solution (SCARF-B) with GCM to fill the underweight allocation to the Diversifying Absolute Return portfolio, while SCERS continues to build out this portfolio	• Reduce allocation to the interim portfolio with GCM (SCARF-B) as the direct portfolio becomes fully invested
	• Bring in current Absolute Return managers for Board education		• Bring in current Absolute Return managers for Board education
Private Equity	• Identify and commit to 4-9 potential Private Equity investments with an average commitment size of $45 million per fund; $250 million in total with a range of $150 to $300 million	• Committed to 8 private equity funds totaling $288 million in aggregate	• Identify and commit to 5-12 potential private equity investments with an average commitment size of $30 million per fund; $200 million in total with a range of $150 to $250 million
	• Continue to assess strategic partners to assist SCERS in fully building out its Private Equity portfolio within niche segments	• Formed a strategic partnership with RCP Advisors, a small/lower middle market buyout specialist	• Continue to assess strategic partners to assist SCERS in fully building out its private equity portfolio within niche segments
			• Evaluate methods to rationalize the Private Equity portfolio through the secondary market
			• Evaluate the further development of a co-investment portfolio alongside high confidence investment managers
	• Bring in current Private Equity managers to educate SCERS' Board		• Bring in current Private Equity managers to educate SCERS' Board
Private Credit	• Identify and commit to 3-5 potential private credit investments with an average commitment size of $60 million per fund; $220 million in total with a range of $150 to $290 million	• Committed capital to 2 private credit funds totaling $100 million in aggregate	• Identify and commit to 3-5 potential private credit investments with an average commitment size of $50 million per fund; $175 million in total with a range of $125 to $225 million
	• Bring in current private credit managers to educate SCERS' Board	• An existing private credit investment manager provided education to SCERS' Board on its direct lending strategy	• Bring in current private credit managers to educate SCERS' Board

Topic	2018 Preview	2018 Actual	2019 Preview
Real Assets	• Identify and commit to 3-7 potential real assets investments with an average commitment size of $40 million per fund; $220 million in total with a range of $150 to $290 million	• Committed capital to 5 real assets funds totaling $169.5 million in aggregate	• Identify and commit to 3-7 potential real assets investments with an average commitment size of $40 million per fund; $200 million in total with a range of $150 to $250 million
	• Continue to underwrite investment opportunities within customized separate accounts in the Real Assets portfolio	• Completed 10 investments in real assets secondary/co-investment separate account	• Continue to underwrite investment opportunities within customized separate accounts in the Real Assets portfolio
	• Bring in current Real Assets managers to educate SCERS' Board		• Bring in current Real Assets managers to educate SCERS' Board
Real Estate	• Identify and commit to 1-3 potential real estate investments with an average commitment size of $35 million per fund; $70 million in total with a range of $35 to $105 million	• Committed capital to 2 real estate funds totaling $55 million in aggregate	• Identify and commit to 1-3 potential real estate investments with an average commitment size of $35 million per fund; $70 million in total with a range of $35 to $50 million
	• Execute separate account portfolio asset sales in exchange for shares in an open end commingled fund	• Finalized the unwinding of SCERS' separate account real estate portfolio and exchanged proceeds for shares into an open-end core fund and an open-end core plus fund	• Finalize the lease up and disposition of Leland James Center
			• Rebalance the Real Estate portfolio to reduce the actual allocation toward the 7% target allocation
	• Bring in current Real Estate managers to educate SCERS' Board		• Bring in current Real Estate managers to educate SCERS' Board
Opportunities		• Did not make any additional Opportunities investments in 2018; monitored and oversaw existing investments	• Review late cycle opportunities in distressed/special situations in the real estate and corporate sector, and dislocations in the public credit markets

Topic	2018 Preview	2018 Actual	2019 Preview
Other Investment Activity	• Convert SCERS' individual asset class IPS's into three asset category IPS's (Growth; Diversifying; Real Return)	• Created investment policy statements for the Growth, Diversifying, and Real Return asset categories – replaced individual asset class IPSs	
	• Implement SCERS' restructured Overlay Program	• Restructured and implemented SCERS' Overlay Program to align with the new strategic asset allocation	• Review ranges around target allocations within SCERS' Overlay Program, and make any modifications as necessary
	• Conduct on-site due diligence of existing investment managers	• Oversaw and monitored existing managers including several manager on-site meetings	• Oversee and montitor existing investment managers, inlcuding on-site due diligence where appropriate
	• Assist in the implementation of a new investment accounting system for SCERS	• Assisted in evaluating investment accounting systems as part of a larger investment account project	• Assist in the engagement of a third party accounting firm to assist SCERS is processing, recording, and verifying private markets investment financial statements and cash flows
	• Evaluate risk management and portfolio management software systems for SCERS' total portfolio and asset categories/classes		• Evaluate risk management and portfolio management software systems needs
	• Research liquidity and cash management solutions and systems	• Worked with Verus Advisory to generate and present a liquidity analysis of SCERS' plan	• Create a cash management policy that incorporates results from SCERS' recently generated liquidity analysis
		• To comply with California Government Code Section §7514.7, provided public disclosure of calendar year 2017 information regarding fees, expenses, and returns for alternative investment funds in which SCERS invests	• Provide public disclosure of calendar year 2018 information regarding fees, expenses, and returns for alternative investment funds in which SCERS invests, to comply with California Government Code Section §7514.7
	• Follow-up with SCERS' equity and fixed income investment managers based on results of the manager research budget and soft dollars audit	• Conducted followup into manager research budgets and soft dollar practices	
		• Conducted transition management for the implementation of the Domestic Equity and International Equity restructured asset classes	
			• Evaluate SCERS' currency exposures and currency hedging solutions in the market

SCERS

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