Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 19

MEETING DATE: **February 19, 2020**

SUBJECT: **2019 Investment Year in Review and 2020 Annual Investment Plan**

SUBMITTED FOR: ___ **Consent** _X_ **Deliberation and Action** ___ **Receive and File**

RECOMMENDATION

SCERS' Staff and investment consultants recommend that the Board receive and file the calendar year 2019 Investment Year in Review and 2020 Annual Investment Plan Report, and approve the annual investment plans for the following asset classes:

- Domestic Equity
- International Equity
- Fixed Income
- Absolute Return
- Private Equity
- Private Credit
- Real Assets
- Real Estate
- Opportunities

PURPOSE

This item supports the 2019-20 Strategic Management Plan to implement activities identified in the annual investment plan. This item also complies with the Master Investment Policy Statement (IPS) reporting requirements, and contributes to the effective management and oversight of investment activities.

BACKGROUND

The Implementation Protocol sections of SCERS' asset category investment policy statements direct the SCERS Board to approve a 12-month (annual) investment plan for each of SCERS' underlying asset classes. All of the major individual asset class annual investment plan recommendations are included in the Investment Year in Review and Annual Investment Plan Report for approval by the SCERS Board.

The written 2019 Investment Year in Review and 2020 Annual Investment Plan Report contains detailed information on investment initiatives, activity, developments, and performance that occurred during calendar year 2019. Given the quantity of information in the report, the presentation at the February meeting will highlight activity and performance that occurred in 2019, with a greater focus on the 2020 initiatives for the total portfolio, as well as the annual investment plans for each of the individual asset classes.

SUMMARY

In 2019, SCERS met nearly all of the major investment program projects targeted in last year's report. Meaningful implementation of the strategic asset allocation occurred in 2019, particularly within the alternative asset classes, which will continue in 2020. Other activities included adding a dedicated cash allocation and creating a cash management policy, modifying the intra quarter rebalancing bands for the Overlay Program, providing Board education on proxy voting services and revising SCERS' proxy voting policy, engaging a third parting private markets accounting service provider, renewing the consulting contracts for Verus and Townsend, and evaluating approaches to portfolio currency hedging solutions with Verus.

Within asset classes, SCERS met almost all of the objectives and targets within the approved annual investment plans. While important to meet targets and ranges within the annual plans, Staff and consultants also remain cognizant of the macro environment and risk factors inherent in investment opportunities when making investment decisions, and will change an implementation course as needed. This balance can translate to actual implementation taking place near the top or bottom of an annual plan range, and in some cases falling short of a target or range. For example, SCERS committed $110 million in 2019 to Real Assets, which was short of the $150 million to $250 million target. As highlighted in the report, there is an abundance of capital pursuing real assets, in particular infrastructure. With heightened competition and peak asset values, Staff and Cliffwater have taken a more measured and prudent approach toward implementation.

From a performance perspective, SCERS generated an impressive return of 17.2%, which outperformed the policy index benchmark return of 14.7%, by 2.5%. The majority of asset classes contributed to the strong relative returns versus the policy index benchmark, with private markets leading the way. Relative to the median public pension plan with assets greater than $1 billion universe, which returned 16.9%, SCERS kept up and slightly outperformed. SCERS' asset allocation tends to have less exposure to public equities than many peer public plans, and will typically perform better on a relative basis in down years for the broader market. As an example in a challenging 2018, SCERS outperformed the median public plan universe by 2.3%. Objectives of the current strategic asset allocation are to maintain adequate exposure to growth assets, while also reducing volatility, protecting against significant market drawdowns, increasing diversification to less correlated investment strategies, and improving the cash flow generation of the plan.

As discussed within the report, accommodative central bank monetary policy has extended the current economic expansion, fueling high valuations and lowering going forward return expectations. This emphasizes finding a balance between participating in market upswings through growth assets, while also maintaining exposure to diversifying and lower correlated assets late in the cycle. Another consideration is the increasing complexity of SCERS' portfolio with an increasing number of manager relationships and underlying fund investments, and identifying ways to find efficiencies in the implementation with limited Staff resources. This includes investing in multiple strategies with existing managers, and utilizing open-end and evergreen structures where feasible.

ATTACHMENTS

2019 Investment Year in Review and 2020 Annual Investment Plan Presentation and Report

Prepared by:	Reviewed by:
/S/	/S/
Steve Davis Chief Investment Officer	Eric Stern Chief Executive Officer

2019 Investment Year in Review and 2020 Annual Investment Plan

SCERS
SACRAMENTO COUNTY
EMPLOYEES' RETIREMENT SYSTEM

February 19, 2020

Introduction

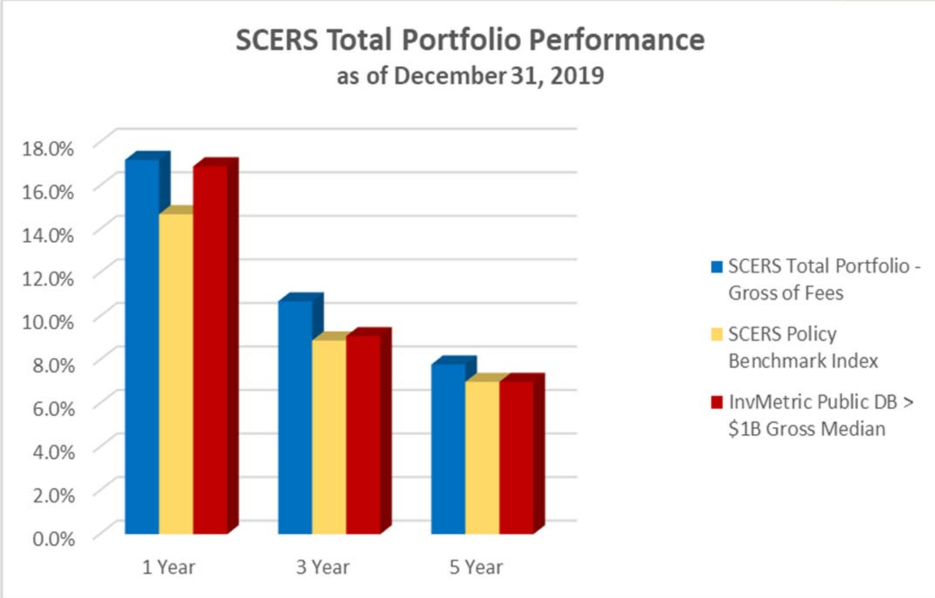
- Summarize the key investment decisions and activity during 2019, including investment performance

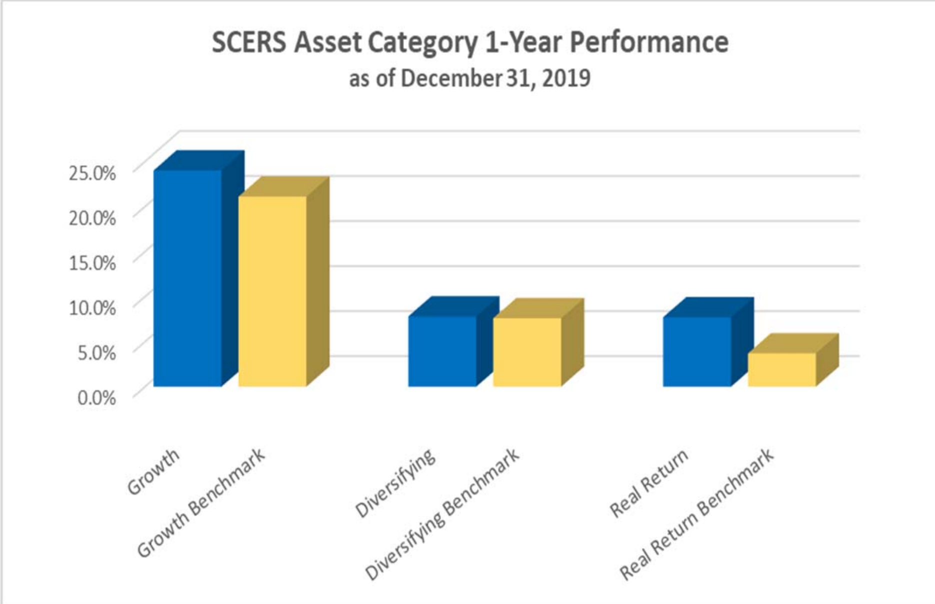
- Preview investment program projects, initiatives, and implementation considerations for the year to come

- Preview and approve the annual investment plans for each of SCERS' underlying major asset classes

Portfolio Review

- 17.2% (SCERS Total Return) vs. 14.7% (Policy Index Benchmark)
  - Kept up with peer public fund universe in a strong year for the markets
  - Strong 3- and 5-year returns on an absolute and relative basis
- All asset categories positive, and outperformed policy index benchmark
  - Growth asset category drove performance





Strategic Asset Allocation Positioning

SCERS' Actual versus Target Allocations:

Asset Category/Asset Class	Actual Allocation*	Target Allocation	Variance
Growth	**57.8%**	**58.0%**	**-0.2%**
Domestic Equity	22.4%	20.0%	2.4%
International Equity	19.6%	20.0%	-0.4%
Private Equity	9.1%	9.0%	0.1%
Public Credit	1.8%	2.0%	-0.2%
Private Credit	1.9%	4.0%	-2.1%
Growth Absolute Return	3.0%	3.0%	0.0%
Diversifying	**22.5%**	**25.0%**	**-2.5%**
Core/Core Plus Fixed Income	9.1%	10.0%	-0.9%
US Treasury	4.5%	5.0%	-0.5%
Global Fixed Income	2.5%	3.0%	-0.5%
Diversifying Absolute Return	6.4%	7.0%	-0.6%
Real Return	**15.9%**	**16.0%**	**-0.1%**
Real Estate	8.2%	7.0%	1.2%
Real Assets	5.7%	7.0%	-1.3%
Liquid Real Return	2.0%	2.0%	0.0%
Opportunities	**0.1%**	**0.0%**	**0.1%**
Cash	2.3%	**1.0%**	1.3%
Overlay Program	1.4%	0.0%	1.4%
	100.0%	100.0%	

* Based on Verus Advisory market values

- Public Markets
  - Domestic Equity overweight
  - Fixed Income underweight
  - Potential physical rebalance for both in 2020
- Private Markets
  - Private Equity and Absolute Return in-line with targets
  - Real Estate above target – rebalancing down as Real Assets moves up
  - Private Credit and Real Assets making progress toward targets
- 1% cash allocation and 2% Liquid Real Return added in 2019
  - Cash management policy also created
- Overlay Program utilized to rebalance to target allocations
- Next ALM study in 2021

Implementation Considerations

- Completed investment program targeted projects and met nearly all asset class annual plan targets in 2019
  - Measured approach in asset classes with increasing risk considerations

- Accommodative central bank policy has extended economic expansion and asset price gains
  - Valuations at or near record levels
  - Lower capital market assumptions could impact going forward returns
    - Next ALM study in 2021
  - Balance between participating in market upswings via growth assets and maintaining exposure to diversifying and lower correlated assets late in the cycle

- Increasing role of alternative assets have produced strong returns and increased diversification, but also increased complexity. Considerations:
  - Mindful of staff resources
  - Balance new manager relationships with follow-on investments with existing managers
  - Invest more with existing manager relationships
  - Utilize open-end and evergreen structures where feasible
  - Onboard third party private markets account provider Colmore

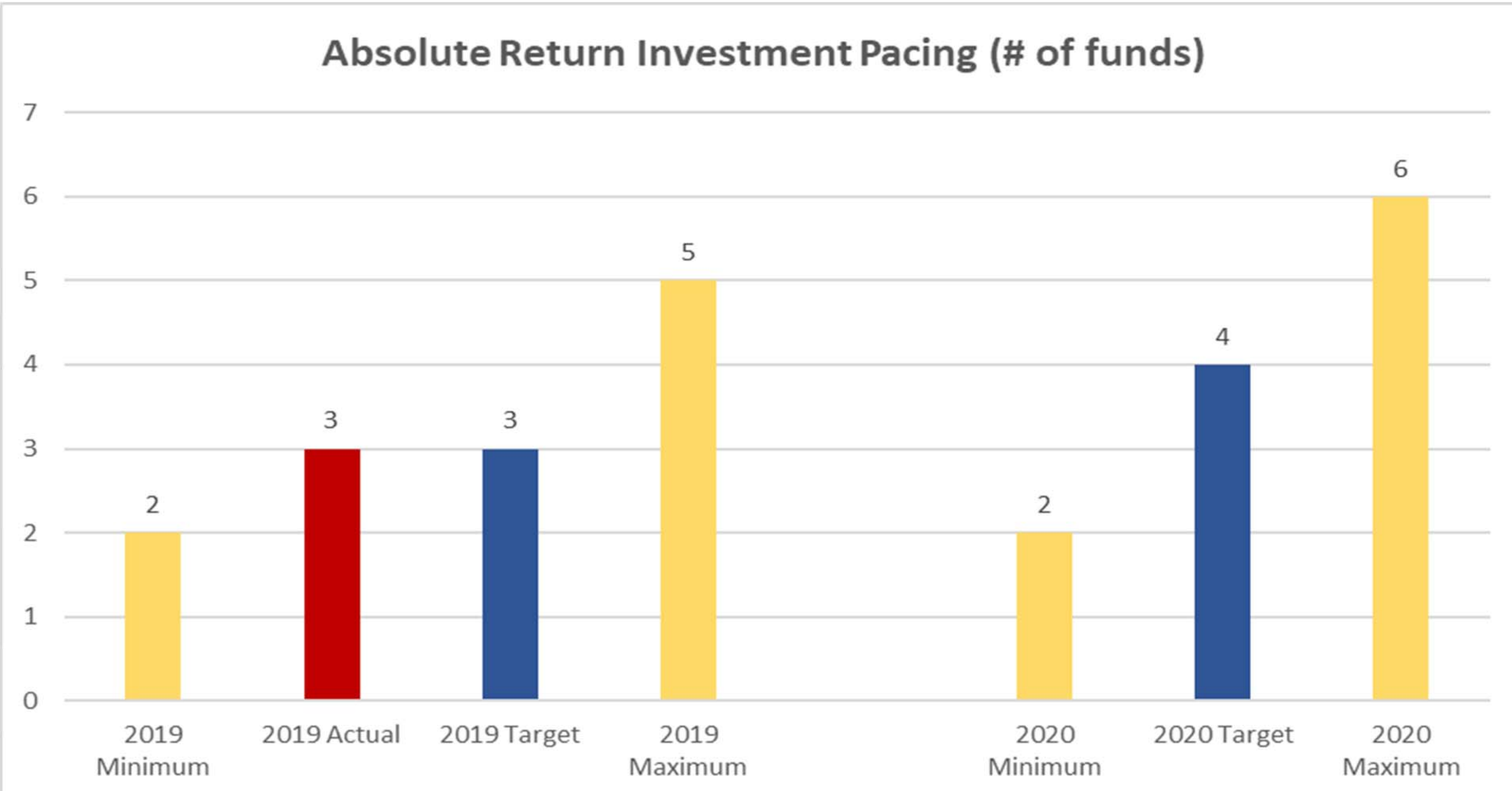
2020 Domestic Equity Plan

- Monitor allocations to existing managers and rebalance the portfolio as appropriate
  - Portfolio is currently overweight the target allocation, but still within range
- Review style and sector exposures for unrecognized portfolio tilts
- Evaluate potential new strategies and managers that would be additive to the portfolio
- Oversee, monitor, and meet with SCERS' existing Domestic Equity managers

2020 International Equity Plan

- Monitor allocations to existing managers and rebalance the portfolio as appropriate
  - Portfolio is slightly underweight the target allocation
- Evaluate country specific mandates, including Emerging Markets, for role in the portfolio
- Review style and sector exposures for unrecognized portfolio tilts
- Oversee, monitor, and meet with SCERS' existing International Equity managers

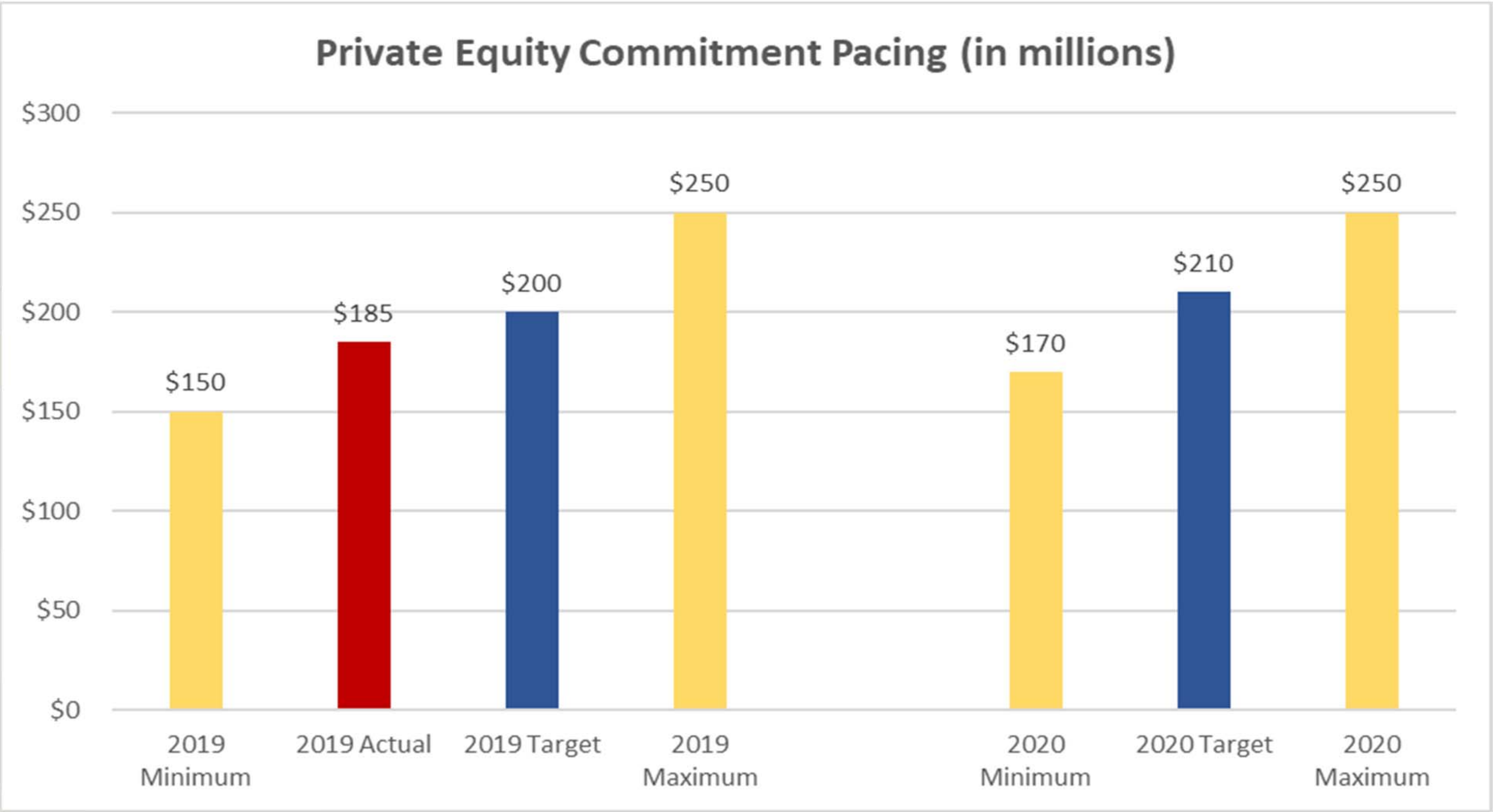
Absolute Return



Absolute Return

- 2020: Target 4 funds (2-6 range); $45 million per fund
- Complete build out of SCERS' Diversifying Absolute Return direct portfolio and reach target allocation of 7%
  - Add 2-3 new direct fund investments in 2020
  - Wind down the interim portfolio with GCM (SCARF-B) and invest proceeds as necessary in new direct fund investments
- Reduce allocation to GCM Growth portfolio (SCARF-G) to allow for an additional direct investment in the Growth Absolute Return portfolio, while maintaining the 3% target allocation

Private Equity



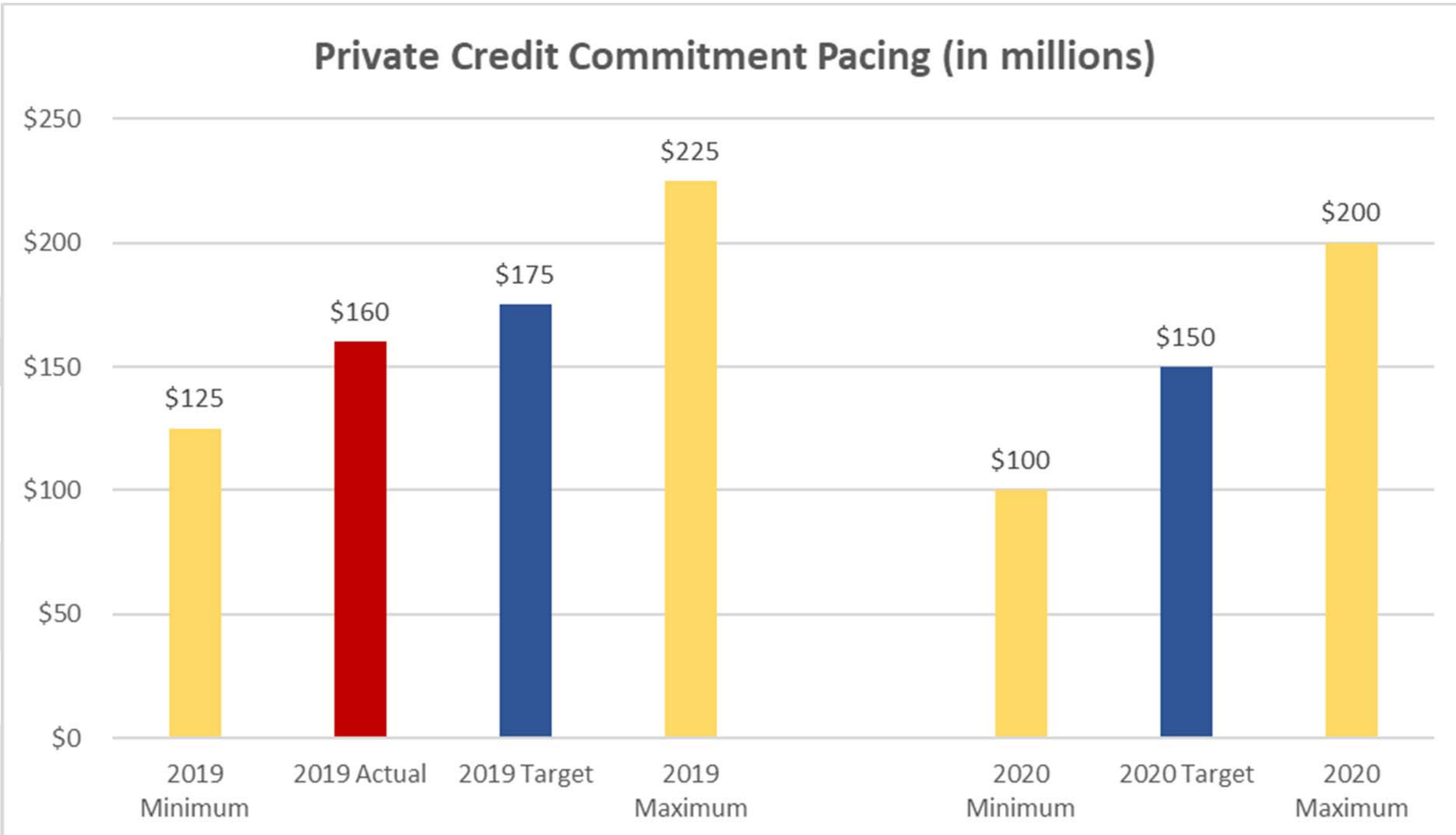
Private Equity

- 2020: Target $210 million; 7 funds (6-9 range); $30 million per fund

- Reached the target 9% allocation in 2018
  - Strong relative performance has slightly outpaced the target; seek to maintain target allocation going forward

- Areas of focus
  - Blend of select new manager relationships and follow-on investments with core existing managers
  - Cognizant of risks later in the cycle, including increasing valuations and fund sizes
  - Sector-specific funds where a fund manager has differentiated expertise, experience managing multiple cycles, and access to proprietary deal flow
  - Co-investment partnerships, capitalizing on potential co-investment deal flow from SCERS' existing private equity relationships and from that of a strategic partner
  - Methods to rationalize the Private Equity portfolio through the secondary market

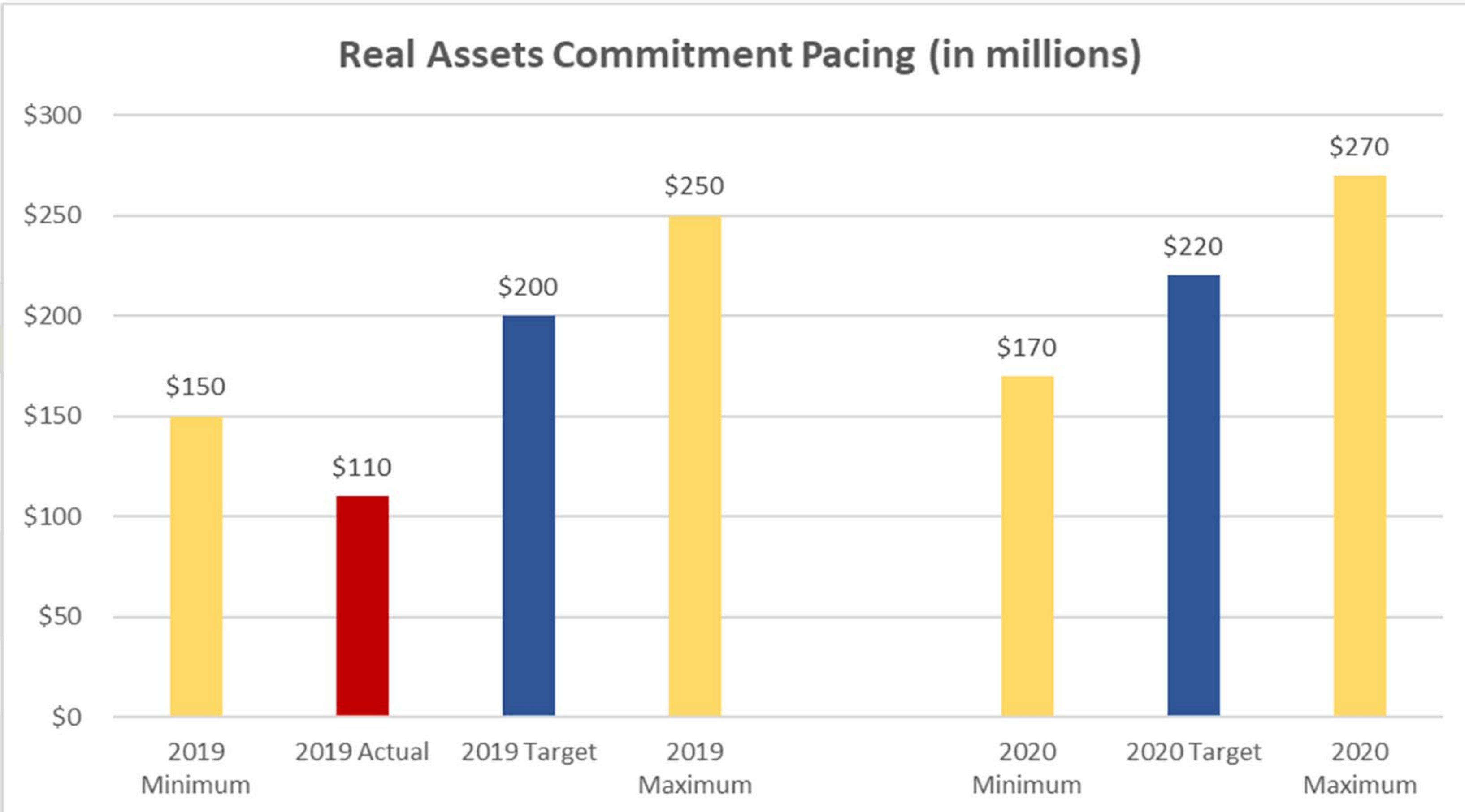
Private Credit



Private Credit

- 2020: target $150 million; 3 funds (2-5 range); $50 million per fund
- Current allocation of 1.8%
  - Expect to reach the 4% target allocation in 2022
  - With tightening credit spreads and weakening lender protections, will remain prudent and thoughtful in deploying capital
- Investment strategies and themes of focus for 2020 include:
  - Sector and geographic specific direct lending strategies, globally
  - Niche lending strategies, globally
  - Opportunistic and special situation credit opportunities, globally

Real Assets



Real Assets Commitment Pacing (in millions)
$300
$250
$200
$150
$100
$50
$0
$150
$110
$200
$250
$170
$220
$270
2019 Minimum
2019 Actual
2019 Target
2019 Maximum
2020 Minimum
2020 Target
2020 Maximum

Real Assets

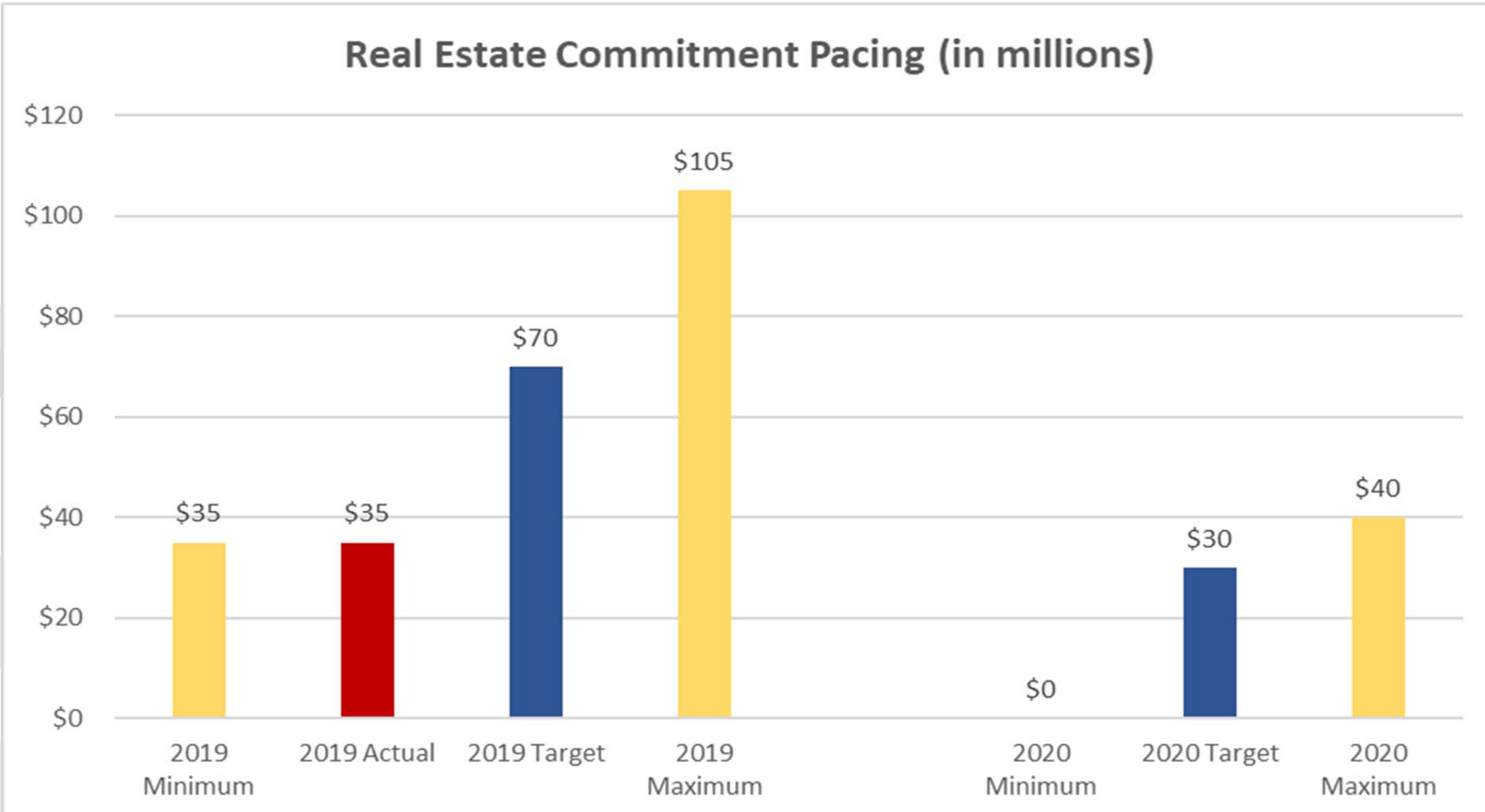
- 2020: target $220 million; 5 funds (3-7 range); $40 million per fund

- Current allocation of 5.2%
  - Expect to reach the 7% target allocation in 2023
  - Under-allocated in 2019; capital commitments will remain thoughtful, with market dynamics and opportunities dictating pace

- Investment strategies and themes of focus for 2020 include:
  - Infrastructure, including renewables, globally
  - Non-U.S. oil and gas upstream and midstream infrastructure
  - U.S. oil and gas mineral rights
  - Agriculture permanent crops globally
  - Social and digital infrastructure globally

- Evaluate strategic direction of customized separate accounts with Atalaya and Pantheon

Real Estate



Real Estate Commitment Pacing (in millions)
$120
$100
$80
$60
$40
$20
$0
$35
$35
$70
$105
$0
$30
$40
2019 Minimum
2019 Actual
2019 Target
2019 Maximum
2020 Minimum
2020 Target
2020 Maximum

Real Estate

- 2020: target $30 million; 1 fund (0-2 range); $30 million per fund

- Current allocation of 8.2%
  - Expect to rebalance toward the 7% target allocation by 2022; in conjunction with build out of Real Assets
  - Reduction in core open-end fund exposure

- Non-core investment strategies and themes of focus for 2020 include:
  - Diversifying/non-traditional strategies
  - Non-U.S. student housing
  - China logistics
  - Japan value-add
  - Refrigerated logistics and cold storage globally

2020 Fixed Income Plan

- Review risk/return characteristics of global fixed income mandate
- Review bond sector exposures, particularly levels of credit
- Monitor allocations to existing managers and rebalance the portfolio as appropriate
  - Portfolio is currently underweight the target allocation
- Oversee, monitor, and meet with SCERS' Fixed Income managers

Opportunities

- Opportunities portfolio does not have a fixed allocation but a permissible range (0% to 5%)
  - Includes tactical investment opportunities with attractive risk and return attributes
  - Lack of distress and dislocation in the broad markets has resulted in no investment activity in recent years

- Potential areas for investment in 2020:
  - Contingent/dislocation funds in the corporate credit and real estate sectors

- The Opportunities portfolio has earned a since inception net IRR of 18.4%, outperforming the custom benchmark return of 11.4%

Other 2019 Investment Activities

- Created a cash management policy to identify processes and tools to assist SCERS in the management of cash, monitoring of liquidity, and the management of liquidity risk
- Revised Overlay Program asset category intra-quarter rebalancing bands to provide a higher level of probability that rebalancing will occur during significant intra-quarter market movements
- Engaged a third party private markets accounting service provider, Colmore, to assist SCERS with the accounting and reporting of its growing private markets portfolio
- Confirmed the continued use of a third-party service provider to voting proxies, and approved an updated Proxy Voting Policy
- On-boarded Deputy Chief Investment Officer

2020 Initiatives

- Issue RFP for alternative assets consulting and evaluate consultant responses
- Update SCERS' fiduciary standard of care policy as it relates to entering into alternative asset investment contracts
- Approve updated proxy voting guidelines with third-party proxy voting service provider Institutional Shareholder Services (ISS)
- Evaluate additional investment staffing needs
- Initiate education on asset liability modeling (ALM) in anticipation for the next ALM study in 2021
- Further evaluate SCERS' currency exposures and currency hedging solutions in the market

2019 INVESTMENT YEAR IN REVIEW
2020 ANNUAL INVESTMENT PLAN

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2019 INVESTMENT YEAR IN REVIEW
2020 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 2019 SCERS Investment Year in Review and 2020 Annual 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.

SCERS experienced a 17.2% gain in 2019, as the U.S. economic expansion passed the 10-year mark, representing the longest run in modern history. While that has been good news for the public employees and retirees who depend on a strong SCERS fund, capital market assumptions point to lower returns and increased risk as the economic cycle progresses and markets continue to rise.

To mitigate these risks in 2020, 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.

SCERS will focus efforts in 2020 on maintaining the strategic asset allocation, considering tactical opportunities as appropriate, and evaluating actuarial assumptions and investment projections to ensure our portfolio continues to be prudently balanced from a risk and return perspective to meet SCERS' long-term benefit obligations

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.

During 2019, SCERS renewed its general investment consulting contract with Verus and its real estate consulting contract with Townsend. During the year, SCERS made the decision to issue an RFP for alternative assets consulting in 2020. The alternative assets consulting space has seen meaningful changes since SCERS hired its current alternative assets consultant, Cliffwater. Issuing an RFP will allow SCERS to evaluate its current consulting relationship with Cliffwater relative to other consultants in the marketplace.

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 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;

Staff, Consultants & Strategic Partners (Continued)

- 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 investment 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 investment 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 investment partners can be seen in the significant level of implementation that occurred in 2019 to align with SCERS' strategic asset allocation, as well as other investment program undertakings.

Implementation of the strategic asset allocation will continue in 2020, 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;
- Assure that the interests of investment managers are properly aligned with the interests of SCERS;
- Identify opportunities to expand the reach, scope, and resources of the investment program through strategic investment partnerships; and
- Assure 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 and on boarding of a Deputy Chief Investment Officer in 2019, and will evaluate additional investment staffing needs in 2020.

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, 2019, SCERS generated a gross return of 17.2%. As explained in more detail below, SCERS' return was above the Policy Index return of 14.7%. Over the 3-year and 5-year periods, SCERS has returned 10.7% and 7.8%, respectively, versus the Policy Index return of 8.9% and 7.0%. Plan assets ended the year at $10.4 billion.

Market Overview

At over 10 years, the current U.S. economic expansion (2009 – 2020) is the longest in modern history, slightly longer than the expansion that occurred during the tech expansion in the 1990's. In the modern era, since the Federal Reserve (the Fed) was established as an independent body, the average length of expansions has been 66 months. The current expansion has almost doubled that timeframe.

After a rocky 2018, in which 93% of global financial markets generated negative returns, the worst such performance in an over 100-year data set, 2019 saw financial markets deliver stellar results with all major asset classes generating outsized returns. After raising interest rates four times in 2018, the Fed reversed course in 2019 and initiated interest rate cuts and reinstated a dovish stance on monetary policy. Concerns over a weakening global economic outlook, combined with weak manufacturing data, and uncertainty around trade policy were the catalysts that drove the change in policy. While many were expecting a recession in the U.S., the Fed appears to have navigated a soft landing in the near-term with its actions in 2019. However, many fear that the Fed utilized monetary policy preemptively in 2019 and left the U.S. open to greater intermediate and long-term risk as a result. This is particularly true given that its more dovish stance and rate cuts occurred as global equities returned greater than 20%, unemployment remains near 50-year lows, and inflation and economic growth are coming in just shy of long-term trends.

Economic activity and data in the U.S. remains in good shape, fueled by a healthy labor market and steady consumer trends. The last U.S. GDP measure as of September 30, 2019 came in at 2.1% year over year, which is stronger than most other developed economies, but is lower than the 3% plus figures that came in during prior quarters in 2018 and early 2019. The consumer is driving GDP growth, and to a lesser extent government spending, but business investment and trade have been detractors. The consumer has been a strength to the economy, demonstrated by strong sentiment numbers and solid consumer spending trends fueled by low interest rates, though spending on big ticket items such as homes and automobiles has slowed. An area of economic weakness has been manufacturing as demonstrated by the ISM Manufacturing Purchasing Managers' Index, which dropped below 50 in the third quarter of 2019, but has stabilized recently. Any figure below 50 signals a contraction in activity. Unemployment in the U.S. remains very low at 3.5% (as of December 2019), down from 4.0% to start the year. While unemployment remains at multi-decade lows, wage growth ended the year at 3.7%, which while experiencing some

Portfolio Overview (Continued)

upward trend, is well below the 4-6% levels seen in prior cycles. While non-core inflation (which excludes food and energy) was trending below the Fed's baseline level of 2% earlier in 2019, December numbers show that inflation rose at a 12-month rate of 2.3%, which is inline with headline inflation numbers.

Outside of the U.S., developed market GDP growth has been subdued at around 1%, including 1.2% for the Eurozone and 0.8% for Japan. Inflation is tracking below 1% in these nations, which has translated to central banks employing negative short term interest rates. The European Central Bank (ECB) provided more stimulus in 2019, including a rate cut to -0.50% and the restarting of asset purchases in the fourth quarter of 2019; however, with negative rates, the ECB has limited policy space left. China is growing at 6.0%, which is higher compared to developed economies; however, it represents the slowest growth rate in China in 27 years. Though some of the uncertainty around trade tensions between the U.S. and China were eased with the announced "phase one" trade deal, more negotiations between the two countries is still to come, and the ramifications of the recent coronavirus outbreak creates additional uncertainty.

All asset classes generated positive returns during 2019, many outsized relative to their historical averages. Within equities, returns were exceptional across the board, with the global MSCI ACWI Index returning 26.6%. There were divergences across both geographies and styles. On the geographic front, domestic equities outperformed international equities, including developed and emerging markets. The Russell 3000 Index returned an astounding 31.0%, while the MSCI EAFE and MSCI Emerging Markets Indexes returned 22.0% and 18.4%, respectively. Within styles, growth stocks meaningfully outperformed value stocks, continuing a multiyear trend, and large capitalization stocks outperformed small capitalization stocks.

After experiencing muted returns in 2018, fixed income markets benefitted in 2019 from easing central bank monetary policy in the face of weakening global growth and muted inflation. Treasuries returned 6.9% (Bloomberg Barclays U.S. Treasury Index), as Treasury yields fell during the year (from 2.7% on December 31, 2018, to 1.8% on December 31, 2019 for 10-year bonds) off of messaging and actions by the Fed. Credit spreads tightened during much of the year, ending below long-term historical averages. Overall, corporate credit generated impressive results, with the Bloomberg Barclays U.S. Investment Grade Credit Index returning 13.7%, and the Bloomberg Barclays U.S. Corporate High Yield Index returning 14.2%. The broad based Bloomberg Barclays Aggregate Index generated a strong return of 8.7% during the year.

Heading into 2020, risks appear to be fairly balanced. The 2019 rally fueled by accommodative monetary policy could continue into 2020 and provide further upside to financial markets. However, there are plenty of downside risks that could trigger a slowdown, and it is reasonable to expect episodic periods of volatility related to negative economic data, trade negotiations, geopolitical risk, and political uncertainty, including this year's presidential election in the U.S. With current economic expansion reaching record levels and with most asset classes priced near perfection, SCERS' portfolio necessitates finding a balance between continuing to allocate to growth assets that can drive returns, while also preparing for the next sustained market downturn and/or recession through assets that focus on capital preservation and liquidity. As a reminder, SCERS' strategic asset allocation is structured to include enough growth assets to participate in market upside, while also providing greater levels of diversification and cash flow generation across many less correlated market segments, which should serve SCERS well in a variety of market outcomes.

Portfolio Overview (Continued)

Portfolio Review

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. Ranges are incorporated around target allocations to add flexibility in the implementation of the portfolio based on relative value considerations across asset classes.

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, and agriculture investments.

SCERS' strategic asset allocation has heavy allocations to growth assets that can drive returns. However, it also maintains meaningful diversification, especially to investment strategies with low and negative correlations to equity markets that can reduce portfolio volatility and protect against significant market drawdowns. It is also expected to generate meaningful cash flow for SCERS' plan. The strategic asset allocation contains a meaningful allocation to higher returning, diversifying, and less liquid private market investments, so tracking SCERS' liquidity profile in order to maintain sufficient cash flows in order to meet benefit payment obligations is a key focus of SCERS' Board, investment staff, and investment consultants.

Portfolio Overview (Continued)

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

Table 1 – SCERS' Strategic Asset Allocation

Asset Category/Asset Class	Target Allocation
Growth	**58.0%**
Domestic Equity	20.0%
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%
Liquid Real Return	2.0%
Cash	**1.0%**
Opportunities	**0.0%**
Total	**100.0%**

During the 2019 calendar year, SCERS continued the implementation and transition of the portfolio to the target allocations of the strategic asset allocation that was approved in 2017. Bringing the actual allocations to 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 continue to make progress toward their target allocations. Full implementation is expected to be completed in 2022 for Private Credit and 2023 for Real Assets. Within the Absolute Return portfolio, progress was made in reducing growth absolute return in favor of diversifying absolute return exposures, and the further build out of direct investments within the Diversifying Absolute Return segment. It should be noted that the pacing of alternative asset investments relative to target allocations can ebb and flow annually based on investment opportunities and risk considerations within the markets.

Portfolio Overview (Continued)

Table 2 below compares SCERS' actual physical allocations as of the end of 2019 to the target allocations.

Table 2 – SCERS' Actual Allocations versus Target Allocations

Asset Category/Asset Class	Actual Allocation*	Target Allocation	Variance
Growth	**57.8%**	**58.0%**	**-0.2%**
Domestic Equity	22.4%	20.0%	2.4%
International Equity	19.6%	20.0%	-0.4%
Private Equity	9.1%	9.0%	0.1%
Public Credit	1.8%	2.0%	-0.2%
Private Credit	1.9%	4.0%	-2.1%
Growth Absolute Return	3.0%	3.0%	0.0%
Diversifying	**22.5%**	**25.0%**	**-2.5%**
Core/Core Plus Fixed Income	9.1%	10.0%	-0.9%
US Treasury	4.5%	5.0%	-0.5%
Global Fixed Income	2.5%	3.0%	-0.5%
Diversifying Absolute Return	6.4%	7.0%	-0.6%
Real Return	**15.9%**	**16.0%**	**-0.1%**
Real Estate	8.2%	7.0%	1.2%
Real Assets	5.7%	7.0%	-1.3%
Liquid Real Return	2.0%	2.0%	0.0%
Opportunities	**0.1%**	**0.0%**	**0.1%**
Cash	2.3%	1.0%	1.3%
Overlay Program	1.4%	0.0%	1.4%
	100.0%	100.0%	

* Based on Verus Advisory market values

SCERS utilizes an 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. During 2019, SCERS made some revisions to the Overlay Program by modifying the intra-quarter rebalancing bands around the Growth, Diversifying, and Real Return asset categories to provide a higher level of probability that rebalancing will occur during significant intra-quarter market movements.

Also during 2019, SCERS increased the liquidity profile of the plan by adding a 1% dedicated cash allocation. Any excess cash has historically been invested by SCERS' Overlay Program, in a manner which replicates SCERS' policy target strategic asset allocation. Given that SCERS is a mature plan with a greater level of benefit payments going out than contributions coming in on an annual basis, a dedicated cash allocation helps close this gap in an environment where investment earnings fall short of target. Funding for the cash allocation came from a 1% reduction in the Domestic Equity portfolio. Another asset allocation change made during the year was transitioning the Commodities allocation to a diversified Liquid Real Return allocation. During the year, SCERS hired Brookfield Asset Management to manage an active liquid real return separate account strategy, to complement the existing State Street Global Advisors real return overlay proxy. The combination of the added cash and liquid real return allocations translated to no change in the expected return profile, and a slight reduction in the risk profile of the plan.

In conjunction with the cash allocation, SCERS also created a cash management policy to identify processes and tools to assist SCERS in the management of cash, monitoring of liquidity, and the management of liquidity risk. The policy breaks SCERS' portfolio into different liquidity categories, and provides an approach to measuring liquidity that compares SCERS' liquid assets and cash inflows to its cash outflows and expenses.

Also during the year, the SCERS Board confirmed the continued use of a third-party service provider to voting proxies, and approved an updated Proxy Voting Policy that establishes procedures to meet SCERS' fiduciary duty and regulatory requirements to voting proxies.

Portfolio Considerations

Continued central bank policy has sparked new life to the current economic expansion, which is into its eleventh year. Global economic growth, while expected to be moderate, is predicted to stay positive and out of recessionary levels for the foreseeable future. However, with valuations across many assets at or above peak levels, it is important that implementation for SCERS' portfolio finds a balance between continuing to participate in market upswings by maintaining allocations to growth assets, while maintaining sufficient diversification to assets that have lower correlations and offer consistent cash flows. As we get later in the cycle, it is also becoming more important to have contingent capital available to opportunistically take advantage of any future dislocations within the markets.

With the continued run up in market prices, capital market assumptions point toward lower returns going forward and increased risks with valuations across assets near or at record levels. Recent modeling from Verus showed SCERS' strategic asset allocation generating a 6.5% return over the next 10 years, below the 7% actuarial return target. While SCERS will be undergoing a triennial experience study in 2020 with its actuary consultant Segal, this does not necessarily mean that SCERS will be lowering its discount rate to close the gap. Capital market assumptions ebb and flow yearly and represent one data point in a broader range of outcomes that the portfolio can experience. The current strategic asset allocation was approved in 2017, and the next asset liability modeling study is expected to take place in 2021.

To make up for any gap between expected returns and the actuarial return target, there are various levers that can be utilized. One is by selecting investment strategies and managers that can potentially generate excess returns over their respective benchmarks. Over the past 3 and 5 years, with the assistance of its investment consultants Verus, Cliffwater, and Townsend, SCERS has generated excess returns of 1.6% and 0.5% net of fees, respectively over its policy index benchmark.

The drivers of an institutional portfolio like SCERS have changed over time. With yields on bonds below 3% today, portfolios have added meaningful allocations to alternative asset classes to enhance returns, increase cash flows, and improve diversification over the past 10 years. Alternative asset investment strategies tend to have a wider dispersion of returns between top performing and median performing

Portfolio Overview (Continued)

strategies, and have been the largest contributor to generating excess returns within SCERS' portfolio. However, as we get later in the cycle, record amounts of capital are being raised, particularly within the private markets, which makes it especially important to identify and invest in differentiated investment managers and strategies that have the expertise and experience to manage through a cycle.

An implementation consideration going forward is the maturation and complexity of SCERS' portfolio, particularly within the private markets. SCERS' track record of generating excess returns within the private markets has demonstrated that investing directly to differentiated general partners and investment funds is a successful approach. However, it has also increased the complexity of the portfolio and resulted in an increasing number of investment manager relationships and underlying investment funds. It is important that SCERS is cognizant of limitations in internal resources in continuing to implement this approach, and the importance of having ample resources to be able to monitor and oversee existing investments in a prudent and thorough manner. An approach to reducing some of the complexity within the portfolio is to invest more with its existing manager relationships across multiple strategies. An example of this is with Brookfield Asset Management, where SCERS is invested in several Brookfield strategies within the Real Return asset category, including a core plus real estate fund, a series of core plus infrastructure funds, and a recently created liquid real return separately managed strategy.

Another approach to reducing complexity is to find efficiency in allocating to evergreen and open-end structures, including the structuring of larger and custom mandates where feasible. These structures have greater liquidity than a closed-end private market fund, and in the case of a custom separately managed account, it provides SCERS with greater control of the investment guidelines and investment period, and sometimes reduced fees can be attained. SCERS is allocated to open-end fund structures within both the core real estate and infrastructure portfolios, and has utilized custom evergreen separate accounts with private credit, absolute return, and real asset debt. An area where Staff is focusing on a potential custom mandate is within private equity co-investments, with a structure that would allow SCERS to participate in potential co-investment deal flow from its existing private equity relationships, while also participating in deal flow from a strategic partner. Implementation of this structure is a consideration within Private Equity in 2020.

There are a few broader initiatives within the SCERS portfolio that are targeted for 2020. One is the issuance of a RFP for alternative assets consulting, which will allow SCERS to evaluate its current consulting relationship with Cliffwater relative to the evolving alternative assets consulting marketplace. Another is the onboarding of Colmore, who SCERS hired as a third party private markets accounting service provider to assist SCERS with the accounting and reporting of its growing private markets portfolio.

Portfolio Performance and Attribution

For 2019, SCERS generated a total gross fund return of 17.2%, which meaningfully outperformed the Policy Index return of 14.7%. The Overlay Program slightly detracted from performance during the year, as SCERS' total gross fund return ex-Overlay was 16.6%. SCERS' return was ahead of the Investment Metrics peer universe of defined benefit plans with assets greater than $1 billion, whose median return was 16.9% during 2019.

SCERS' asset categories delivered a range of positive returns, with Growth assets returning an impressive 24%, Diversifying assets returning 7.8%, and Real Return assets returning 7.7%. The Growth asset category benefitted the most from stellar returns across Public Equities and Private Equity; however, Growth Absolute Return, Public Credit, and Private Credit also delivered strong returns (private market returns are lagged a quarter). Within the Diversifying asset category, both Public Fixed Income and Diversifying Absolute Return generated positive returns, with the former outperforming the latter. 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 in-line with each other. The newly formed Liquid Real Return asset class did not have a full year's worth of data.

SCERS' asset classes, which underlie each asset category, produced positive returns across the board, with mixed results relative to their respective benchmarks during the year. Asset classes that exceeded their benchmarks included Domestic Equity by 0.8%, International Equity by 2.5%, Private Equity by 10.2%, Growth Absolute Return by 3.5%, Public Fixed Income by 0.4%, Real Estate by 2%, and Real Assets by 7.3%. Asset classes that trailed their benchmarks included Public Credit by 2.3%, Private Credit by 4.4%, Diversifying Absolute Return by 1.9%, and Opportunities by 6.1%. 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 10.7% and 7.8%, respectively. Both the 3- and 5-year figures exceed the Policy Index return of 8.9% and 7.0%, respectively. Both the 3-year and 5-year returns also exceed SCERS' actuarial return assumption of 7.0%. Since inception (as of June 1986), SCERS' portfolio has generated a gross return of 8.4%, which slightly trails the Policy Index return of 8.5%; however, it exceeds SCERS' current actuarial return assumption of 7.0%.

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

Portfolio Overview (Continued)

Table 3 – Investment Results

	For the Period Ended December 31, 2019		
	Annualized		
	1 Year	**3 Years**	**5 Years**
GROWTH ASSET CATEGORY:*	24.0%	-%	-%
Policy Benchmark: Blended weighted average of asset class benchmarks	21.1	-	-
Domestic Equity	**31.0%**	**14.6%**	**11.1**
Policy Benchmark: Russell 3000 Index	31.0	14.6	11.2
InvMetrics All DB U.S. Eq Gross Median	30.2	13.9	10.7
International Equity	**24.6**	**12.6**	**7.6**
Policy Benchmark: MSCI ACWI ex-U.S. Index	22.1	10.4	6.0
InvMetric All DB ex-U.S. Eq Gross Median	22.9	10.1	6.1
Private Equity**	**17.8**	**20.5**	**15.2**
Policy Benchmark: Thomson Reuters C/A All PE 1 Quarter Lag	7.6	13.3	11.8
L/T Benchmark: Russell 3000 + 3% 1 Quarter Lag	5.9	15.8	13.5
InvMetric All DB Private Eq Net Median	8.0	11.8	10.8
Public Credit	**9.0**	**4.9**	**5.1**
Policy Benchmark: 50% BofA ML High Yield II / 50% Credit Suisse Leveraged Loans	11.3	5.4	5.4
InvMetric All DB Total Fix Inc Gross Median	14.3	6.4	6.1
Private Credit**	**5.8**	**7.3**	**6.8**
Policy Benchmark: Credit Suisse Leveraged Loan + 2%	10.2	6.5	6.6
Growth Absolute Return	**12.9**	**5.7**	**3.9**
Policy Benchmark: HFRI Fund of Funds Composite Index + 1%	9.4	4.6	4.8
DIVERSIFYING ASSET CATEGORY:*	7.8	-	-
Policy Benchmark: Blended weighted average of asset class benchmarks	7.6	-	-
Public Fixed Income	**9.2**	**5.0**	**3.6**
Policy Benchmark: Custom***	8.8	4.3	3.2
Diversifying Absolute Return	**4.4**	**0.8**	**1.2**
Policy Benchmark: HFRI Fund of Funds Conservative Index	6.3	3.6	4.2

Portfolio Overview (Continued)

REAL RETURN ASSET CATEGORY:*	7.7	-	-
Policy Benchmark: Blended weighted average of asset class benchmarks	3.7	-	-
Real Estate****	**7.5**	**9.2**	**9.6**
Policy Benchmark: 65% NFI-ODCE / 35% NFI-ODCE + 1%	5.5	6.9	8.3
InvMetric All DB Real Estate Net Median	5.1	6.5	8.0
Real Assets**	**7.7**	**13.3**	**10.1**
Policy Benchmark: Custom*****	0.4	5.8	5.9
L/T Benchmark: CPI-U Headline + 5%	7.3	7.1	6.6
Liquid Real Return	-	-	-
Policy Benchmark: Custom******	-	-	-
OPPORTUNITIES*	8.6	5.7	6.9
Policy Benchmark: Policy Index Benchmark	14.7	8.9	7.0
CASH	-	-	-
Policy Benchmark: Overnight LIBOR	-	-	-
TOTAL FUND:			
SCERS Total Fund - Gross	17.2	10.7	7.8
SCERS Total Fund - Net	17.0	10.5	7.5
Policy Benchmark Index*******	14.7%	8.9%	7.0%
InvMetric Public DB > $1B Gross Median	16.9	9.1	7.0

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.
*** 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 liquid real return benchmark consists of 15% FTSE EPA/NAREIT Developed Liquid Index, 25% S&P Global Infrastructure Index, 10% S&P Global Large Mid Cap Commodity and Resource Index, 10% Bloomberg Roll Select Commodity Index, 30% Bloomberg Barclays 1-10 Year US TIPS Index, 10% Bloomberg Barclays US Dollar Floating Rate Note < 5 Years 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 Return - 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); (Liquid Real Return - 0.3% FTSE EPA/NAREIT Developed Liquid Index, 0.5% S&P Global Infrastructure Index, 0.2% S&P Global Large Mid Cap Commodity and Resource Index, 0.2% Bloomberg Roll Select Commodity Index, 0.6% Bloomberg Barclays 1-10 Year US TIPS Index, 0.2% Bloomberg Barclays US Dollar Floating Rate Note < 5 Years Index).

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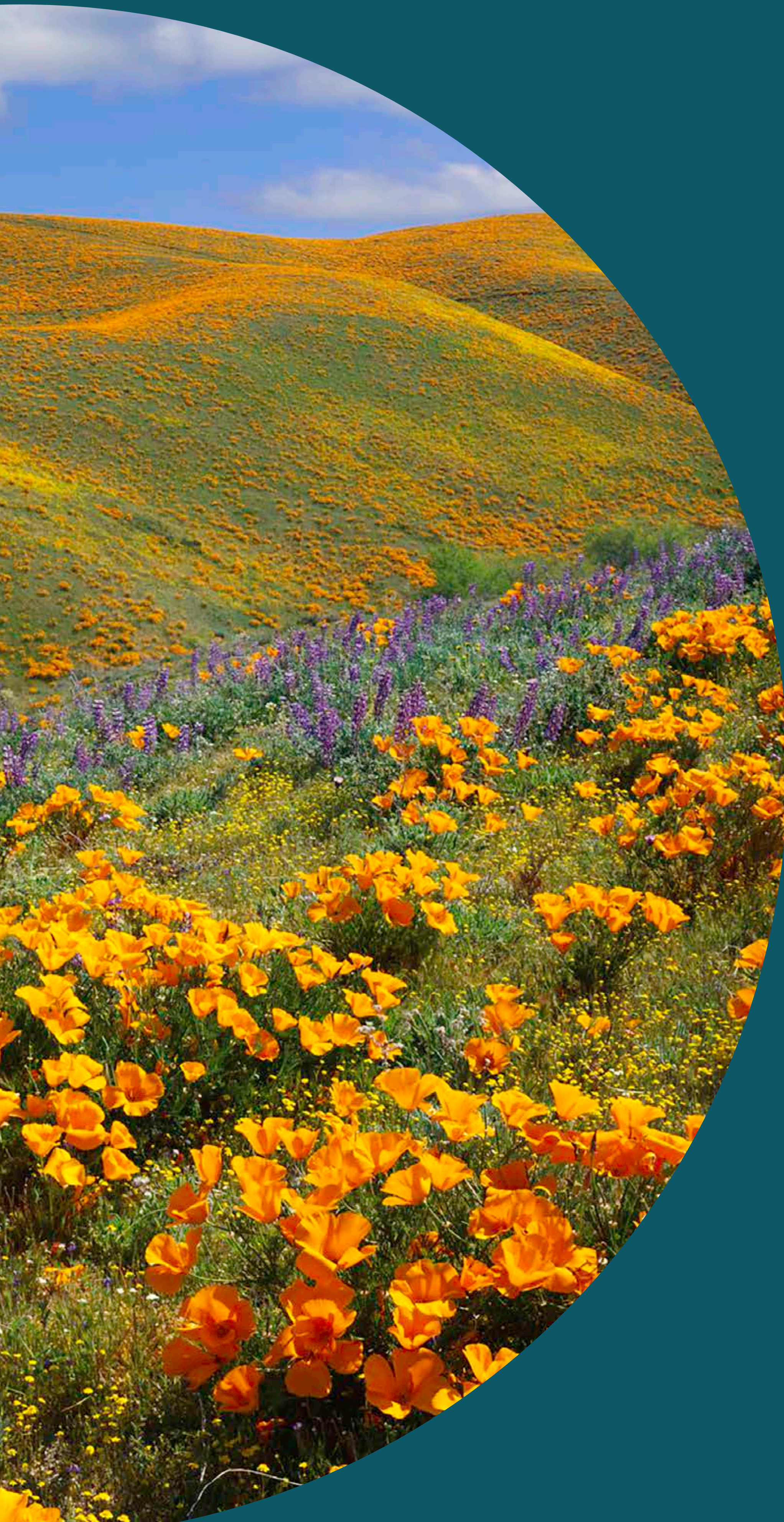


Asset Classes

Domestic Equity

U.S. Equity Market Overview

2019 was an exceptional year for the U.S. equity markets, with the Russell 3000 Index up 31%, the strongest annual return since 2013, and the second best annual return over the past 20 years. The strong performance of the past year came after a difficult 2018, when equity markets were down for the year following a 20% peak to trough decline in the fourth quarter. Viewed in the context of the prior year, the equity markets have returned a more modest 10% gain from the 2018 market highs. The sharp equity market rebound started in January following a shift in monetary policy from the Federal Reserve, which cut interest rates three times during the course of the year, reversing most of the rate increases of 2018. After some heightened volatility experienced during the year, driven mostly by trade tensions, the market rallied to close the year on hopes of economic improvement and moderating political risks as the U.S. and China announced a "phase one" trade deal.

While the markets levels increased significantly during the year, most of the expansion was driven by an increase in valuations. Increased valuations drove 90% of market returns, highlighted by the S&P 500 forward price-to-earnings (P/E) multiple increasing from 14x to 19x. Overall earnings growth was relatively flat for the year, contributing modestly to returns, with dividend income providing the balance. This is a sharp contrast to the prior 10 years since the financial crisis, when earnings growth drove two-thirds of market returns and P/E multiple expansion contributed one-third.

From a sector perspective, Information Technology stocks advanced 50%, accounting for over 30% of the total market return for the year, with Financials contributing 14%, and Communication Services 11%. Overall market dispersion was low, with the top 10 stocks contributing one-third of market returns; Apple (+88%) and Microsoft (+57%) alone contributed 16% to overall market returns. The low market dispersion presented a difficult environment for active management, with only 27% of large capitalization mutual fund managers beating their benchmarks.

Large capitalization stocks significantly outpaced small capitalization stocks during the year, with the Russell 1000 Index +31% versus Russell 2000 Index +26%. Growth stocks continued the decade long trend of outperforming Value, with the Russell 3000 Growth Index (+36%) beating the Russell 3000 Value Index (+26%) by 10% for the year; however, there were some indications in the latter part of the year that the tide may be starting to turn for Value stocks.

Domestic Equity Portfolio

At the beginning of 2019, SCERS added quantitative investment firm D.E. Shaw to manage a portion of the 130/30 equity extension segment of the large cap active portfolio. With the hiring of D.E. Shaw, SCERS completed the restructuring of the equity portfolio that began in prior years. Toward the latter part of 2019, SCERS reduced the target allocation to Domestic Equity from 21% to 20%. The reduced allocation was made in conjunction with the implementation of SCERS' Cash Management Policy and the creation of a 1% target cash allocation. Given overall portfolio allocations, SCERS did not complete any physical rebalancing of the domestic equity portfolio during the year. The large cap portfolio contains a combination of passive and active exposures, both managed against the Russell 1000 Index. The large actively managed segment of the portfolio takes a core approach, balanced between quantitative and fundamental investment strategies. The small cap segment is entirely actively managed with equal allocations to growth and value oriented managers.

SCERS Domestic Equity Portfolio Construction

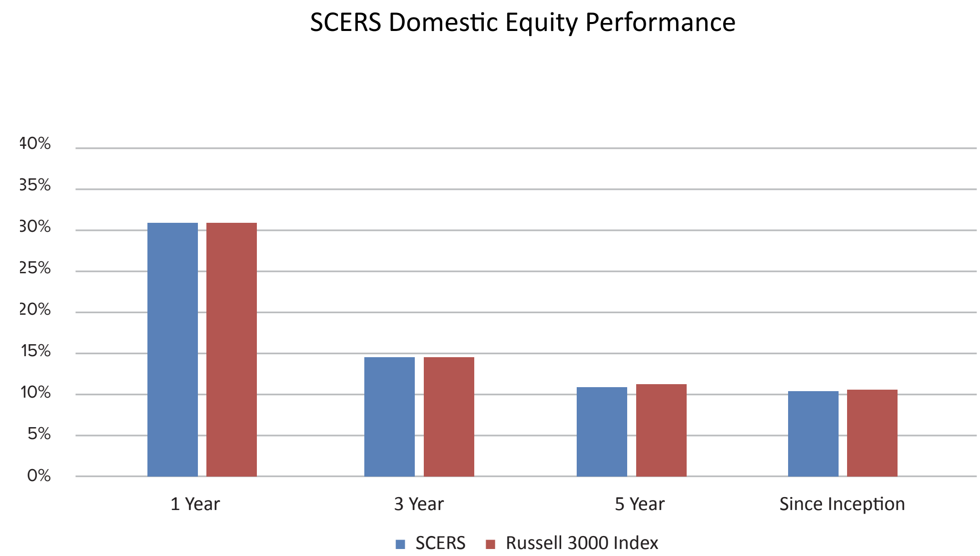
	Minimum	Target Allocation	Maximum	Manager Allocation	Policy Index Benchmark
Total Domestic Equity Portfolio	18%	**20%**	22%		**Russell 3000 Index**
Large Cap Passive (Russell 1000)		**54%**		54.0%	
Large Cap Active (Russell 1000)		**36%**			
Fundamental Concentrated				12.0%	
Equity Extension 130/30				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%	

2019 ACTIVITY

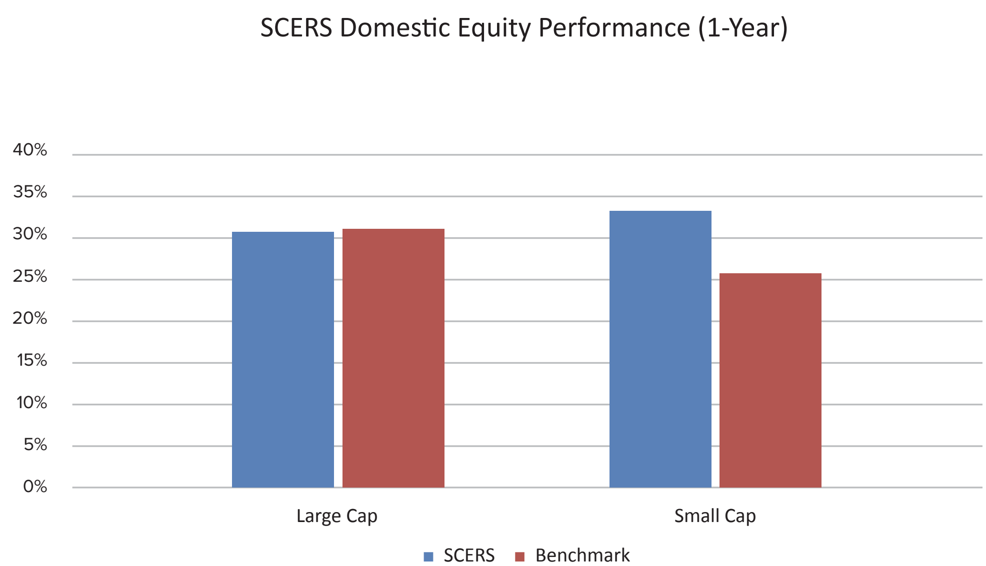
- Hired quantitative investment firm D.E. Shaw as a manager within the 130/30 equity extension segment of the portfolio, investing in their Broad Market Core Alpha Extension 130/30 fund
- Reviewed potential new strategies, including alternative passive management strategies to diversify the portfolio from existing market cap weighted exposure
- Oversaw, monitored, and met with SCERS' existing Domestic Equity managers

Domestic Equity (Continued)

Performance and Attribution



SCERS' Domestic Equity portfolio performed in-line with the benchmark for 2019, with SCERS' portfolio and the Russell 3000 Index both up 31.0%. Over the longer term, the performance of SCERS' portfolio has also matched the benchmark, returning 14.6% and 11.1% for the three and five year periods, respectively.



SCERS' U.S. large cap portfolio slightly underperformed the Russell 1000 index for the year, returning 30.8% versus 31.4% for the benchmark. SCERS' small cap portfolio, which is approximately 10% of the Domestic Equity portfolio, significantly outperformed the Russell 2000 benchmark, returning 33.0% compared to the benchmark return of 25.5%.

Domestic Equity (Continued)

2020 ANNUAL PLAN

- Monitor allocations to existing managers and rebalance the portfolio as appropriate
  - Portfolio is currently overweight the target allocation, but still within range
- Review style and sector exposures for unrecognized portfolio tilts
- Evaluate potential new strategies and managers that would be additive to the portfolio
- Oversee, monitor, and meet with SCERS' existing Domestic Equity managers

International Equity

Market Overview

While not as robust as U.S. equity markets, International equities also delivered strong returns in 2019, with the MSCI ACWI ex USA Index up 22%, and the MSCI Emerging Markets (EM) Index up 18%. Following significant declines in 2018 across most developed and emerging international markets, global central banks followed the U.S. Federal Reserve and shifted monetary policy into easing mode after two years of broad-based policy tightening. Collectively, 2019 saw the largest amount of central bank easing since the 2008 financial crisis, with nearly half of global central banks cutting rates during the year. The impact of trade uncertainty on exports, which contributed to declines in capital spending and manufacturing, led to lower GDP growth across most international economies. In addition, political instability in Europe and policy uncertainty related to Brexit were headwinds during the year. A stabilization of manufacturing output and reduction in political uncertainty later in the year helped fuel the rally in international equities, with developed and emerging markets up 9% and 12% in the fourth quarter, respectively. While the U.S. dollar strengthened a bit during the year, as stronger U.S. economic growth helped bolster the dollar versus foreign currencies, the impact was small, especially compared to foreign currency movements in prior years.

Similar to U.S. equity markets, multiple explanation was the major driver of returns during the year, contributing between 15-20% of total returns, with dividend income providing a marginal benefit, and earnings growth detracting from returns slightly, depending on the country or region. At the end of 2019, the MSCI ACWI ex USA Index traded at a 14x forward P/E multiple versus 12x at the end of 2018. Emerging markets, as measured by the MSCI EM Index, were trading at a 13x forward P/E multiple, up from 11x at prior year-end. From a valuation perspective, international equities continue to remain attractively valued relative to the U.S. equity markets. The gap in valuation between the U.S. and international markets is significantly greater than long-term averages due to the outperformance of U.S. equity markets over the past 10 years since the global financial crisis.

Within developed markets, the MSCI EAFE Index was up 22%, with France up 27%, while Germany, the U.K., and Japan were all up between 20-22%, on a U.S. Dollar basis. Emerging market countries presented a broader range of dispersion, with Russia up 53%, while India lagged, up only 8% for the year. China, which represents the largest country weight in the MSCI EM Index at 34%, was up 24% in 2019. China's weight in the emerging market and global indices continues to increase, as the country removes restrictions and opens the A-shares market to foreign investors, while index providers such as MSCI follow suit and increase the weight of China A-shares in benchmark indices.

International Equity (Continued)

International Equity Portfolio

Following the restructuring of the international equity portfolio in early 2018, no allocation changes were made to the portfolio in 2019. The entire international equity portfolio is actively managed and is balanced between growth and value oriented strategies. Large cap developed markets represent the largest segment of the portfolio with a 70% target allocation. Small cap developed markets have a 10% target allocation, while emerging markets all-cap strategies comprise a 20% target allocation. At year-end, the overall portfolio is slightly below the target 20% allocation at 19.5% of the total SCERS portfolio.

SCERS International Equity Portfolio Construction

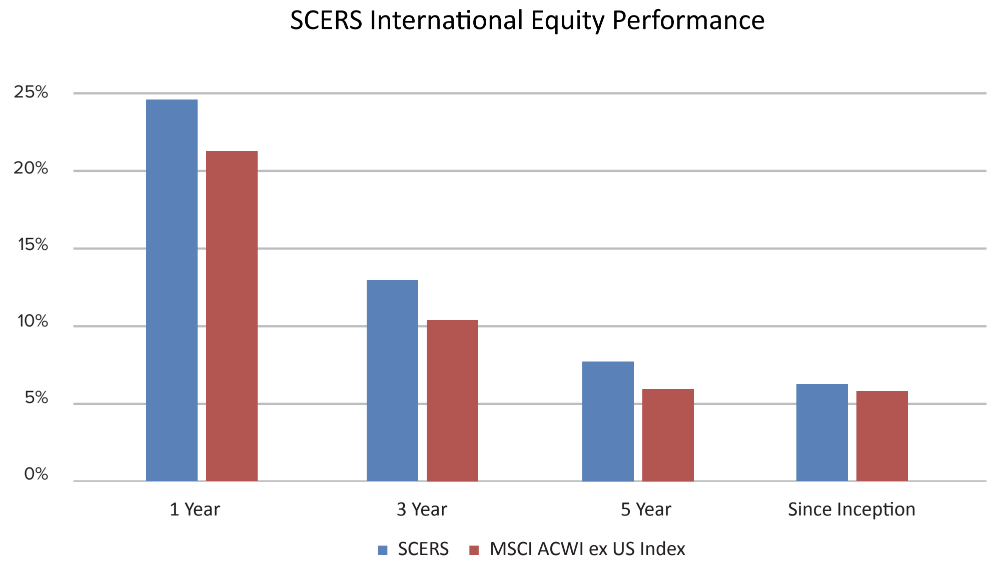
	Minimum	Target Allocation	Maximum	Policy Index Benchmark
Total International Equity Portfolio	18%	**20%**	22%	MSCI ACWI ex-US Index
ACWI ex-U.S. (MSCI ACWI ex-US)		**20%**		
Developed Large Cap Growth (MSCI World ex-US)		**25%**		
Developed Large Cap Value (MSCI World ex-US)		**25%**		
Developed Small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

2019 ACTIVITY

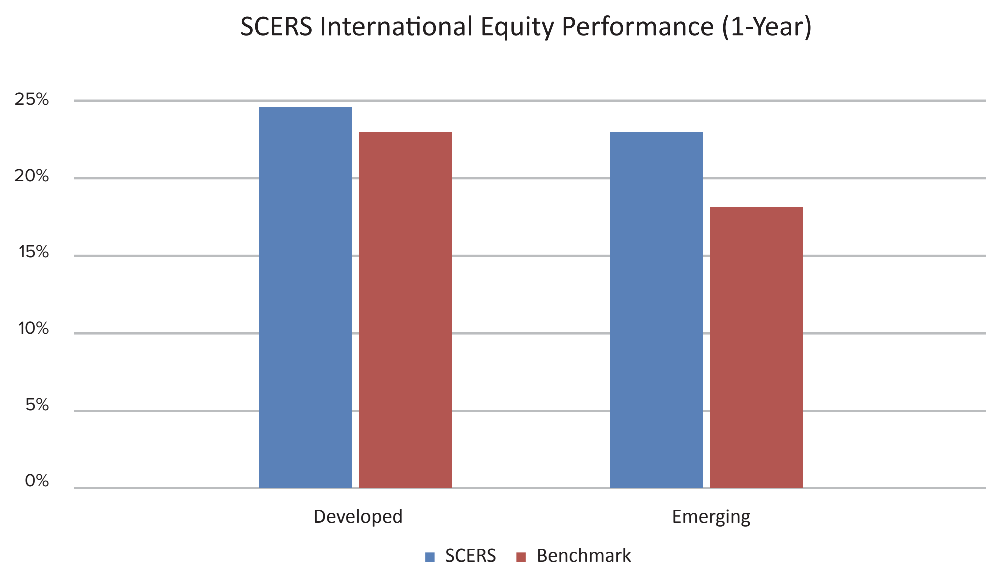
- Reviewed potential new strategies and managers, including broader global mandates
- Oversaw, monitored, and met with SCERS' existing International Equity managers

International Equity (Continued)

Performance and Attribution



SCERS' International Equity portfolio has outperformed the benchmark MSCI ACWI ex US benchmark across all time periods. For 2019, the International Equity portfolio returned 24.6% compared to the benchmark return of 22.1%. Since inception, the portfolio has slightly outperformed the benchmark, returning 6.6% compared to the benchmark return of 6.3%.



Developed markets outperformed Emerging markets during 2019, with the SCERS portfolio outperforming its benchmarks across both segments. SCERS' Developed Markets portfolio, which includes large cap and small cap allocations, outperformed the MSCI World ex US benchmark, returning 24.8% versus 23.2% for the benchmark. SCERS' Emerging Markets portfolio significantly outperformed the MSCI Emerging Markets benchmark, returning 23.8% compared to 18.9% for the benchmark. Across both Developed and Emerging markets, growth stocks significantly outperformed value stocks during the year.

International Equity (Continued)

2020 ANNUAL PLAN

- Monitor allocations to existing managers and rebalance the portfolio as appropriate
  - Portfolio is slightly underweight the target allocation
- Evaluate country specific mandates, including Emerging Markets, for role in the portfolio
- Review style and sector exposures for unrecognized portfolio tilts
- Oversee, monitor, and meet with SCERS' existing International Equity managers

Fixed Income

Market Overview

The Fed had a meaningful impact on the bond markets in 2019. After raising rates in 2018, the Fed reversed course in 2019 and lowered rates off of a weakening global economic outlook, weak manufacturing data, and uncertainty around trade policy. The reduction in rates benefitted Treasuries, which were already coming off of stong returns during the fourth quarter of 2018 market selloff, as well as credit markets.

By the end of the year, Fed rates were held steady at 1.5% to 1.75%. It appears that the Fed has limited monetary policy levers left to pull, and further rate reductions are unlikely. However, the bar for the Fed raising rates again is also high, and has indicated that rate increases were unlikely as long as economic data remains consistent. Outside of the U.S., the European Central Bank (ECB) and the Bank of Japan (BoJ) also have limited monetary policy tools left at their disposal, given that both regions are maintaining negative rates, even though inflation remains persistently low. Easy monetary policy, low rates, and low bond yields have led investors to seek yield in other market segments, including emerging market debt, private credit, and infrastructure assets. It appears that further global economic stimulus will need to come from fiscal stimulus rather than monetary stimulus. However, the upcoming U.S. presidential election will make fiscal stimulus in the U.S. unlikely, so Europe and Japan would be the more likely sources.

Overall fixed income markets delivered stellar returns, even if they significantly trailed the outsized returns of equity markets. Within the asset class, credit delivered the strongest results, outpacing government bonds. Treasury returns, as measured by the Bloomberg Barclays U.S. Treasury Index, returned 6.9% during the year. The Treasury yield curve, after inverting earlier in the year, steepened later in the year as long-term rates increased. Within credit, the Bloomberg Barclays Corporate High Yield Index and the Bloomberg Barclays U.S. Credit Index returned 14.3% and 13.8%, respectively. Credit spreads compressed during much of the year in the rate cutting environment, ending below long-term historical averages. However, within high yield there was a bifurcation between higher quality and lower quality credits, where the former saw meaningful spread compression during the year and strong excess returns over Treasuries, and the latter saw spread widening and underperformance. The broad based Bloomberg Barclays Aggregate Index, which contains a combination of government bonds and corporate credit, returned 8.7% for the year. Emerging market debt also delivered strong returns, with the JP Morgan GBI-EM Global Diversified Index returning 13.5%.

With the Fed and other central banks most likely on hold as it relates to policy rate reductions, many bond experts are somewhat neutral on fixed income returns in 2020. The Treasury yield curve is predicted to further steepen, which would favor shorter duration. Credit markets are considered richly priced; however, decent economic fundamentals and benign monetary policy supports an environment where they should outperform government bonds.

Fixed Income Portfolio

SCERS' Fixed Income portfolio has a 20% target allocation; 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 complements the existing core plus and global fixed income mandates. At year-end, the aggregate Fixed Income portfolio had a weight of approximately 18%, which is below the target allocation of 20%, but within range. SCERS' targeted fixed income exposures are shown below:

	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

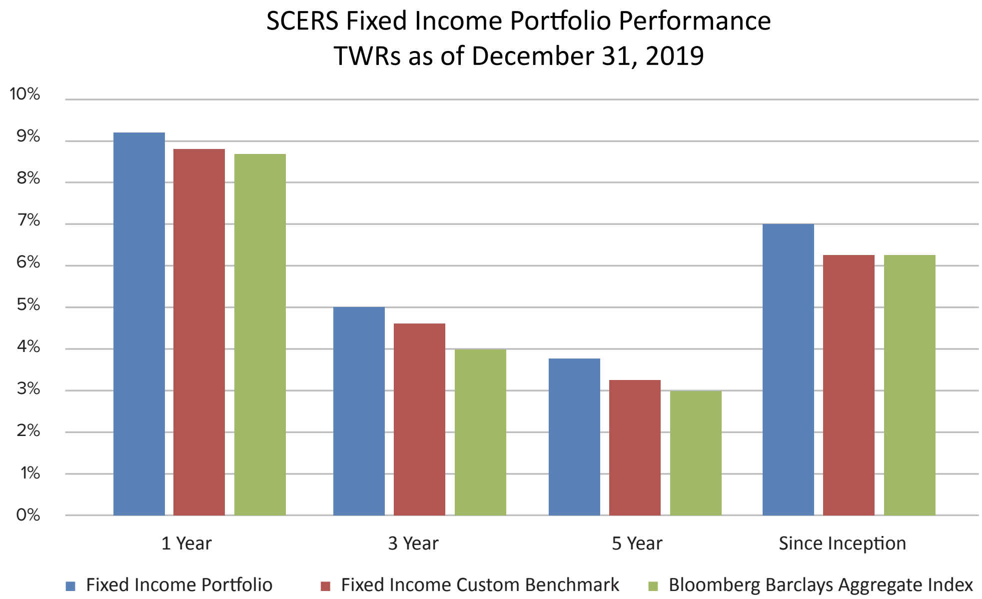
2019 ACTIVITY

- Oversaw, monitored, and met with SCERS' Fixed Income managers

Fixed Income (Continued)

Performance and Attribution

During 2019, SCERS' Total Fixed Income portfolio returned an impressive 9.2%, outperforming the policy index custom benchmark return of 8.8%. The returns were also ahead of the Bloomberg Barclays Aggregate Index of 8.7%. Leading the way were SCERS' Core Plus Fixed Income mandates, which generated a 10.1% return for the year. The other fixed income segments also delivered strong returns, with Global Fixed Income up 9.7%, Public Credit up 9%, and the U.S. Treasury mandate up 6.9%.



2020 ANNUAL PLAN

- Review bond sector exposures, particularly levels of credit
- Review risk/return characteristics of global fixed income mandate
- Monitor allocations to existing managers and rebalance the portfolio as appropriate
  - Portfolio is currently underweight the target allocation
- Oversee, monitor, and meet with SCERS' Fixed Income managers

Absolute Return

Market Overview

The positive market environment across asset classes provided a favorable backdrop for absolute return strategies. The HFRI Fund Weighted Composite Index advanced 10.4%, the strongest calendar year performance since 2009, when the index was up 20%. The HFRI Fund of Funds Composite Index lagged, returning 7.8% for the year. Long-biased and higher beta strategies led the market benefitting from strong returns across equity and fixed income markets, while market neutral and defensive strategies underperformed on a relative basis, but still delivered positive returns for the year.

At the strategy level, the top performing segment was equity long/short, with the HFRI Equity Hedge Index up 13.9% for the year, with Healthcare and Information Technology focused sub-strategies delivering the strongest returns. Event-Driven and Relative Value Arbitrage strategies also delivered strong results, benefiting from a strong M&A/IPO market, as well as low interest rates and tight credit spreads. The HFRI Event-Driven Index was up 7.4% for the year, with activist oriented strategies leading the category. The HFRI Relative Value Index was up 7.6%, with Fixed Income/Convertible Arbitrage strategies delivering strong results.

The bottom performing strategies were Equity Market Neutral and Distressed/Restructuring, with the HFRI Index for these segments returning 1.8% and 2.9%, respectively. Equity Market Neutral strategies were hurt from the short side of their portfolios, especially during the fourth quarter as global equity markets rallied on trade optimism and positive U.S. economic indicators. Some managers within the Distressed segment of the market suffered from divergence in the high yield credit markets, as easy monetary policies from central banks and excess liquidity extended the economic cycle.

Absolute Return Portfolio

SCERS' Absolute Return portfolio maintained an overall target of 10% during 2019. The Absolute Return portfolio is broken up between a Diversifying segment, which has a 7% target allocation, and a Growth segment, which has a 3% target. The Diversifying Absolute Return portfolio is designed to have lower sensitivity and correlation to equity and credit markets. The Growth Absolute Return portfolio allows for higher beta and correlation, with higher corresponding return expectations and volatility targets. The objectives and guidelines for the Absolute Return portfolio segments include:

Absolute Return (Continued)

	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

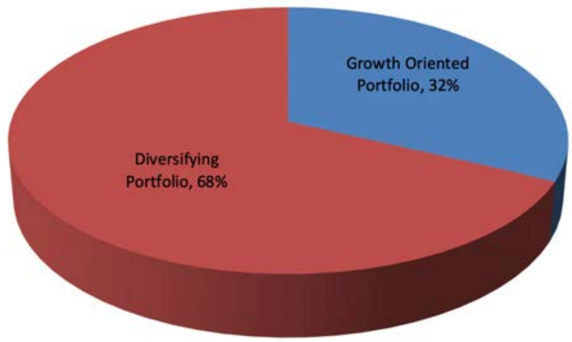
The Absolute Return portfolio, for both Growth and Diversifying segments, is allocated to a combination of direct fund investments and a diversified fund of funds program managed by Grosvenor Capital Management (GCM). The direct portfolio is allocated across multiple managers, to provide diversification and exposure across various hedge fund strategies. During 2019, SCERS redeemed from one direct manager in the Growth portfolio and made direct investments with three managers in the Diversifying portfolio, with one of the investments transferred from the GCM portfolio. As of December 31, 2019, SCERS is invested with three direct managers in the Growth portfolio and ten managers in the Diversifying portfolio.

The fund of funds program is managed by GCM and has separate customized accounts aligned with the Growth (SCARF-G) and Diversifying (SCARF-D) segments of the Absolute Return portfolio. GCM also manages an interim portfolio (SCARF-B), which was established to provide increased exposure to the Diversifying Absolute return segment as SCERS built out the allocation to direct portfolio investments. SCARF-B is structured to have greater liquidity and is expected to be drawn down over the next year as SCERS completes fully allocating to direct investments within the Diversifying Absolute Return portfolio.

Absolute Return (Continued)

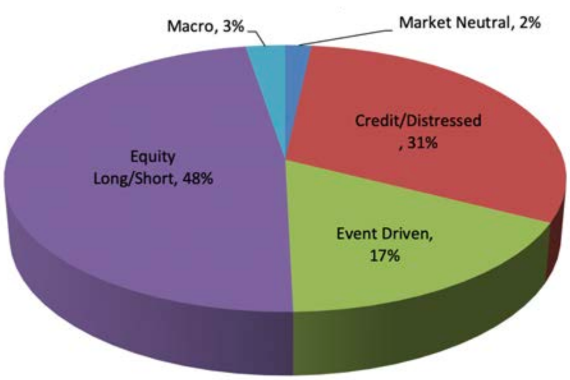
At year-end, SCERS' Absolute Return portfolio is roughly split between Growth and Diversifying as detailed in the chart below.

Total Absolute Return Portfolio
as of December 31, 2019

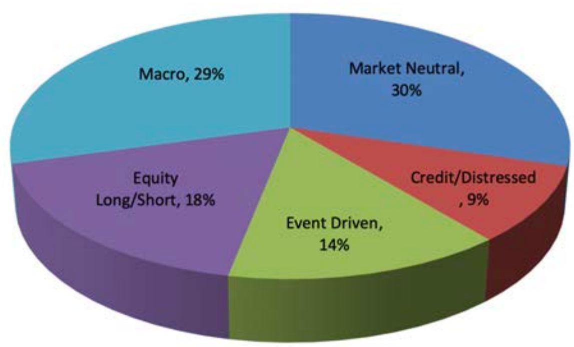


The Growth and Diversifying Absolute Return portfolios are diversified across strategies and managers. The allocation to each strategy, including the GCM separate account, is detailed in the following charts.

Growth Oriented Portfolio Strategy Allocations
as of December 31, 2019



Diversifying Portfolio Strategy Allocations
as of December 31, 2019



2019 ACTIVITY

- Presented the 2019 Absolute Return annual investment plan
  - A range of 2-5 fund investments, with a target of 3 funds
  - An average investment size of $45 million per fund, with a range of $30 million to $60 million
- Met the 2019 annual plan target by making 3 fund investments
  - $45 million investment in the Two Sigma Risk Premia Enhanced Fund (systematic market neutral strategy) within the Diversifying Absolute Return portfolio

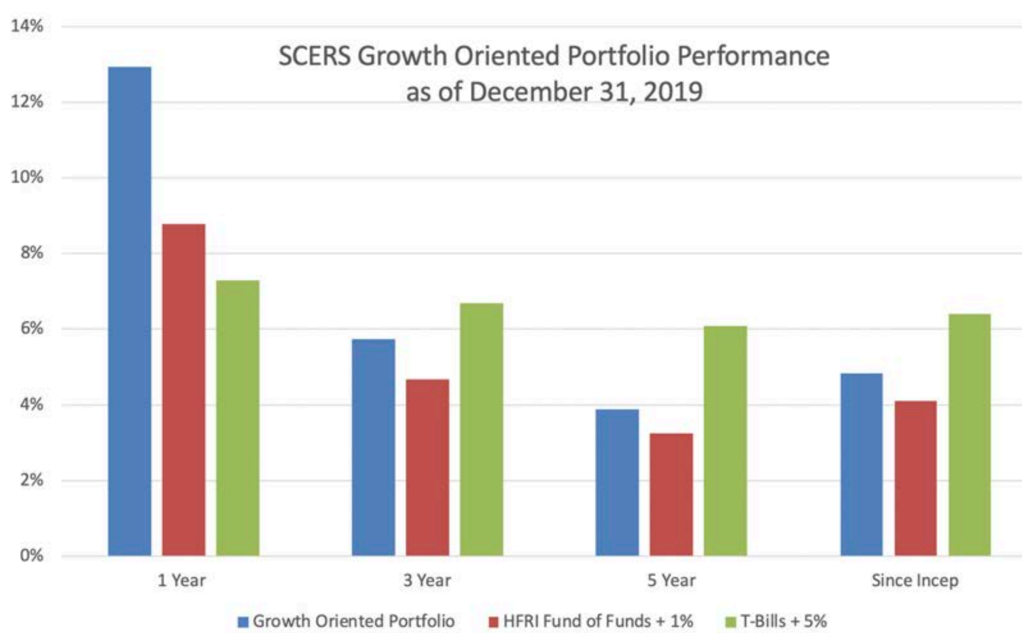
Absolute Return (Continued)

2019 ACTIVITY (Continued)

- $45 million investment in the LMR Fund (multi-strategy, market neutral) within the Diversifying Absolute Return portfolio
- Transferred a $32 million investment in Davidson Kempner Institutional Partners (diversified event driven) from the GCM Portfolio to a direct investment in the Diversifying Absolute Return portfolio.

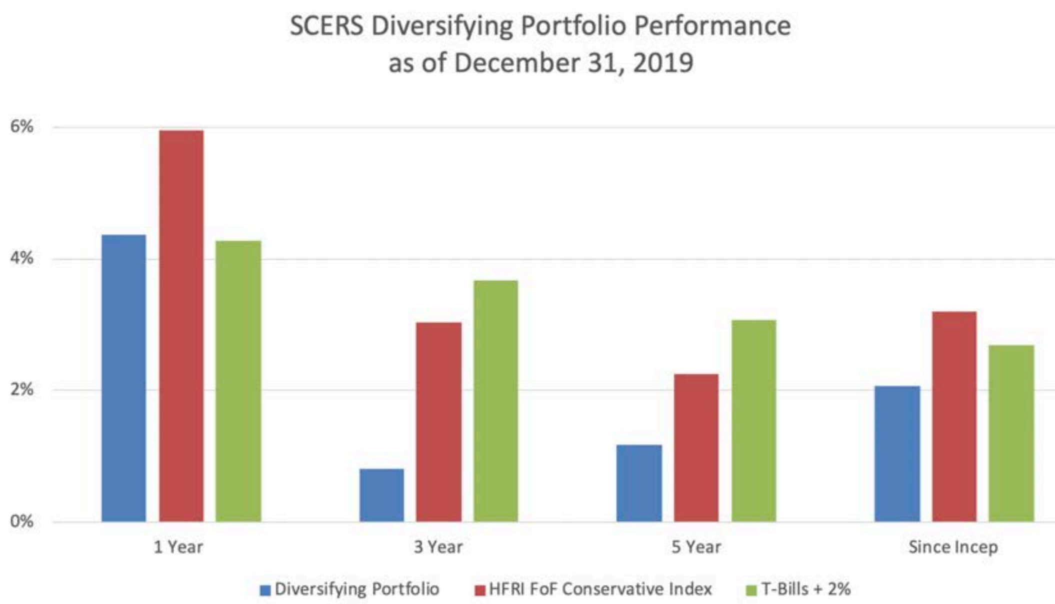
- Reduced the allocation to the GCM SCARF-B portfolio, an interim solution within the Diversifying Absolute Return portfolio, and used the funds for direct diversifying absolute return fund investments
- Worked with GCM to identify ways to reduce an overweight allocation to the GCM Growth portfolio (SCARF-G) and transfer appropriate investments to the GCM Diversifying portfolio (SCARF-D)
- Fully redeemed capital from equity long/short event driven fund Jana Partners Qualified, LP, within the Growth Absolute Return portfolio
- Reduced the allocation to AQR Delta Fund II, which was placed on SCERS' Watch List and has underperformed absolute return benchmarks

Performance and Attribution



SCERS' Growth Absolute Return portfolio delivered strong results for the year, up 12.9% and significantly outperforming the policy benchmark (HFRI FoF Composite Index +1%), which was up 8.8%. Over longer time periods, the SCERS Growth Absolute Return portfolio has exceeded the policy benchmark, but lagged the long-term objective (T-Bills +5%).

Absolute Return (Continued)



The SCERS Diversifying portfolio delivered positive overall results for the year, up 4.4%, but were relatively lackluster given the strength across equity and fixed income markets. The performance across strategies was fairly consistent, with a few notable pockets of weakness that affected results. Compared to benchmarks, the SCERS Diversifying portfolio lagged the policy benchmark (HFRI FoF Conservative Index), which was up 6.0% for the year, and performed in-line with the longer term objective (T-Bills +2%). Over longer time periods, the SCERS portfolio has lagged both benchmarks.

Absolute Return (Continued)

2020 ANNUAL PLAN

Below is the annual plan for the Absolute Return portfolio, as recommended by Cliffwater and Staff:

SCERS Absolute Return Annual Investment Plan			
		Range	
	Target	Min	Max
Number of Funds	**4**	2	6
Diversifying Strategies	**3**	2	4
Growth Strategies	**1**	0	2
Investment per Fund	**$45 MM**	**$30 MM**	**$50 MM**

- Recommend targeting 4 direct Absolute Return investments in 2020, with a range between 2 to 6 funds
    - Target 3 investments within the Diversifying segment and one within the Growth segment
    - Average investment size of $45 million, and a range between $30 million and $50 million
- Complete build out of SCERS' Diversifying Absolute Return direct portfolio and reach target allocation of 7%
    - Add 2-3 new direct fund investments in 2020
- Wind down the interim portfolio with GCM (SCARF-B) and invest proceeds as necessary in new direct fund investments
- Reduce allocation to GCM Growth portfolio (SCARF-G) to allow for an additional direct investment in the Growth Absolute Return portfolio, while maintaining the 3% target allocation
- Continue to oversee, monitor, and meet with SCERS' existing Absolute Return managers

Private Equity

Market Overview

U.S. private equity fundraising continued to strengthen in 2019, driven by large and mega-funds. Some $191 billion was raised by 131 funds through Q3 of 2019, compared to $121 billion raised by 143 funds during the same period last year. In all, U.S. private equity fundraising for the full-year 2019 raised $595 billion to surpass 2018 levels, itself a particularly strong year. Through the third quarter, the value of U.S. buyouts fell 25% year to date through October, compared with the same period a year earlier, according to data provider Preqin. Deal activity totaled $155.2 billion during the first 10 months of the year—the lowest since 2014. The drop in deal activity comes as private equity firms' unspent cash dedicated to buyouts reached a record $771.5 billion, up nearly 24% since the end of last year, and more than double where it stood at the end of 2014, according to Preqin. Individual pockets of the U.S. market remain robust; firms that invest in business software, for example, have kept up their deal-making pace, thanks in part to the proliferation of targets.

2018 was a record-breaking year for U.S.-based venture capital funds, and 2019 should eclipse 2018 in both the number of funds closed and the amount of capital raised. At the end of September 2019, 299 funds raised an aggregate $35 billion, according to Preqin, up from the same period in 2018 when 242 funds secured $29 billion. As in years' prior, trade sales have been the most common exit type, accounting for 73% of all exits of U.S.-based portfolio companies in 2019. The venture-backed IPO has seen several high profile failures with companies like Uber, Pinterest, Lift, SmileDirectClub, and Peloton all trading below their IPO prices. According to EY, the number of IPOs and proceeds year-to-date have fallen behind compared with the same period in 2018 (a decline of 22% by deal number and 9% by proceeds).

Investors are tripping over each other to get access to the well-established managers and large investors have found getting access to funds at scale challenging. More and more general partners (GPs) are turning away (or limiting the commitment sizes for) large investors who often demand special terms. The days of 12-month fundraises for managers seems to be a feature of history, with many managers raising substantially larger funds in a matter of weeks. Capital is increasingly becoming a commodity, forcing limited partners (LPs) to proactively target managers well in advance of a formal launch.

2019, like 2018, saw realizations/distributions outpace contributions, putting further pressure on institutional investors to keep capital invested. When coupled with active public market returns, many LPs are finding themselves under-allocated to the asset class. 2019 marked the eleventh year of the bull market, and SCERS remains steadfast in not chasing returns and not taking short cuts. SCERS' emphasis on investing with specialized managers who maintain pricing discipline should result in a portfolio better suited for market volatility as well as being able to maximize investor returns. With a number of managers in the market at any one point in time, SCERS holds existing relationships to the same underwriting and due diligence standards as new managers. No manager, regardless of the returns they have generated

Private Equity (Continued)

for SCERS in the past, is categorized an automatic re-investment, but instead faces the same cautious skepticism as a new relationship. With full prices being paid by managers and 10-year plus fund structures, ultimate success can be about which funds are not invested in as much as which funds are invested in.

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 its 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%, and the current allocation to Private Equity stands at 9.1% as of December 31, 2019. Given the unique cash flow characteristics of private equity, SCERS will need to continue to commit to private equity funds across vintage years to maintain its target allocation to the asset class.

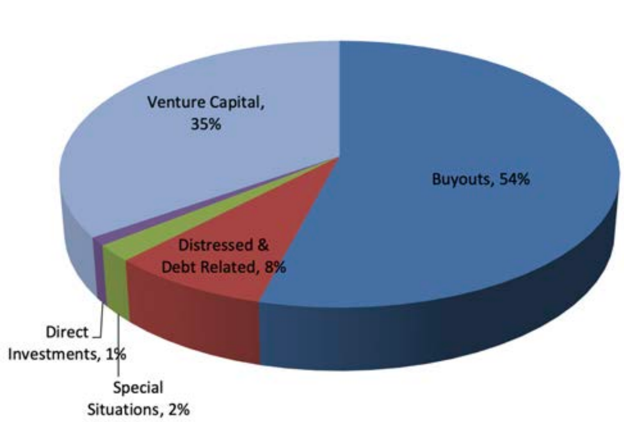
Staff and Cliffwater had an active year committing capital to private equity. SCERS committed to seven funds, of which three were follow-on fund investments to existing investment managers, and four were new fund investments to new investment managers. The follow-on investments were to a range of funds including a sector specialist buyout fund, a venture capital fund, and a distressed debt fund. Within the new fund investments, SCERS invested capital with three middle-market buyout specialists and an early-

Private Equity (Continued)

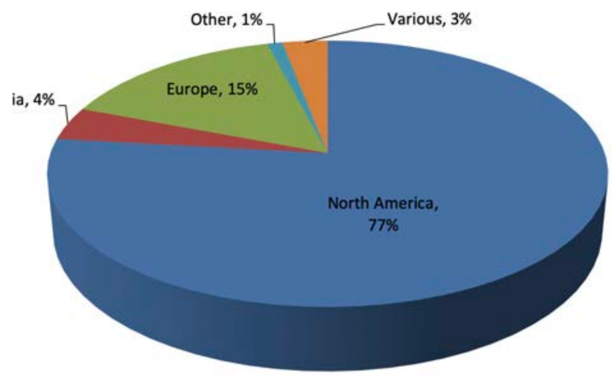
stage venture capital fund. With a maturing private equity portfolio which includes a large number of existing manager relationships, and with general partners coming to market with follow-on funds quicker later in the cycle, there are more investment opportunities in private equity than capital available in the SCERS budget. Therefore, Staff and Cliffwater are prudently managing the investment pace and number of manager relationships within the portfolio. This includes finding a balance between making follow-on investments with existing investment managers, while also leaving flexibility to introduce new manger relationships into the portfolio. Each follow-on investment under consideration is fully underwritten as if it was a new investment and Staff is comfortable not committing capital to a follow on fund if the opportunity is not warranted, and/or if there is a new manager/fund that is a better fit in the portfolio.

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

Private Equity Portfolio Strategy Allocations
as of September 30, 2019



Private Equity Portfolio Geographic Allocations
as of September 30, 2019



Private Equity (Continued)

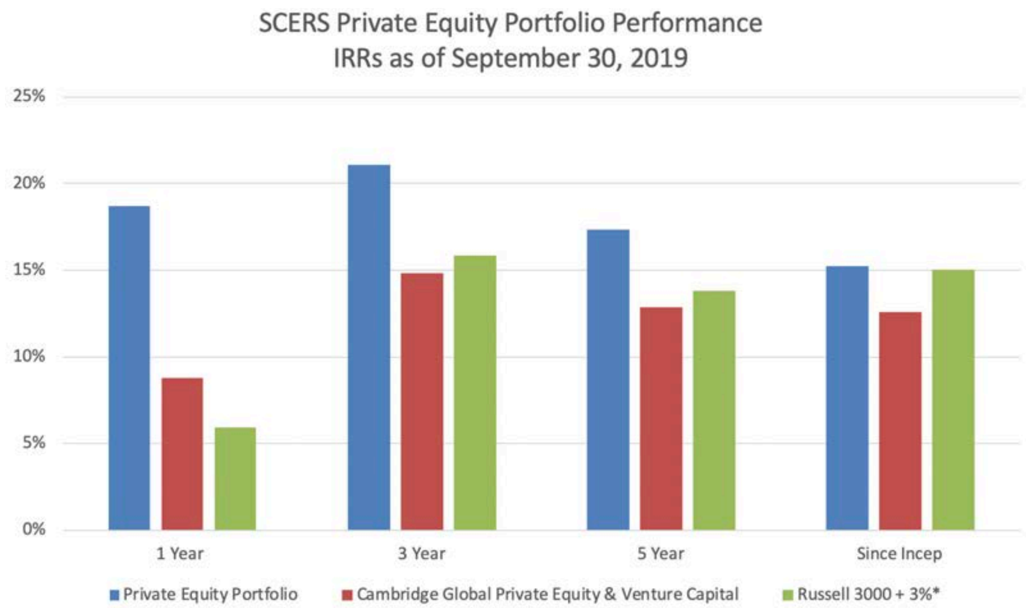
2019 ACTIVITY

- Presented the 2019 Private Equity annual investment plan
  - A range of 5-12 fund commitments, with a target of 7 funds
  - A total of $200 million in commitments, with a range of $150-$250 million
  - An average commitment size of $30 million per fund
- Made seven fund commitments in 2019 totaling approximately $185 million in aggregate (3 follow-on and 4 new fund investments)
  - $25 million follow-on investment to New Enterprise Associates 17, L.P. (venture capital)
  - $30 million follow-on investment to Davidson Kempner Long-Term Distressed Opportunities Fund V, L.P. (distressed debt)
  - $30 million follow-on investment to Accel-KKR VI, L.P. (technology buyout)
  - $30 million to Gridiron Capital Fund IV, L.P. (buyout)
  - $20 million to Threshold Ventures III, L.P. (venture capital)
  - $20 million to Wynnchurch Capital Partners V, L.P. (manufacturing buyout)
  - $30 million to Cortec Group Fund VII, L.P. (specialist buyout)
- Oversaw, monitored, and met with SCERS' existing Private Equity managers
- Identified a process to access co-investments

Performance and Attribution

SCERS' Private Equity portfolio continues to progress through the J-curve and is generating increasing levels of positive performance. For the one year ending September 30, 2019, SCERS' Private Equity portfolio generated a net IRR of 18.7%, which outperformed the policy index Cambridge Global Private Equity & Venture Capital benchmark return of 8.8%. The Private Equity return also outperformed SCERS' public market benchmark, the Russell 3000+3%, which returned 6.0%. SCERS' since inception net IRR of 15.2% is also ahead of the policy index benchmark return of 12.6%, and in-line with the public market benchmark return of 15.0%. 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.

Private Equity (Continued)



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2020 ANNUAL PLAN

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

SCERS Private Equity Annual Investment Plan			
		Range	
	Target	Min	Max
Commitment Level	**$210 MM**	**$170 MM**	**$250 MM**
Number of Funds	**7**	6	9
Buyout fund(s)	**4**	3	5
Distressed fund(s)	**1**	0	2
VC fund(s)	**2**	1	4
Other fund(s)	**0**	0	1
Non-U.S. fund(s)	**2**	1	3
Commitment per Fund	**$30 MM**	**$20 MM**	**$50 MM**

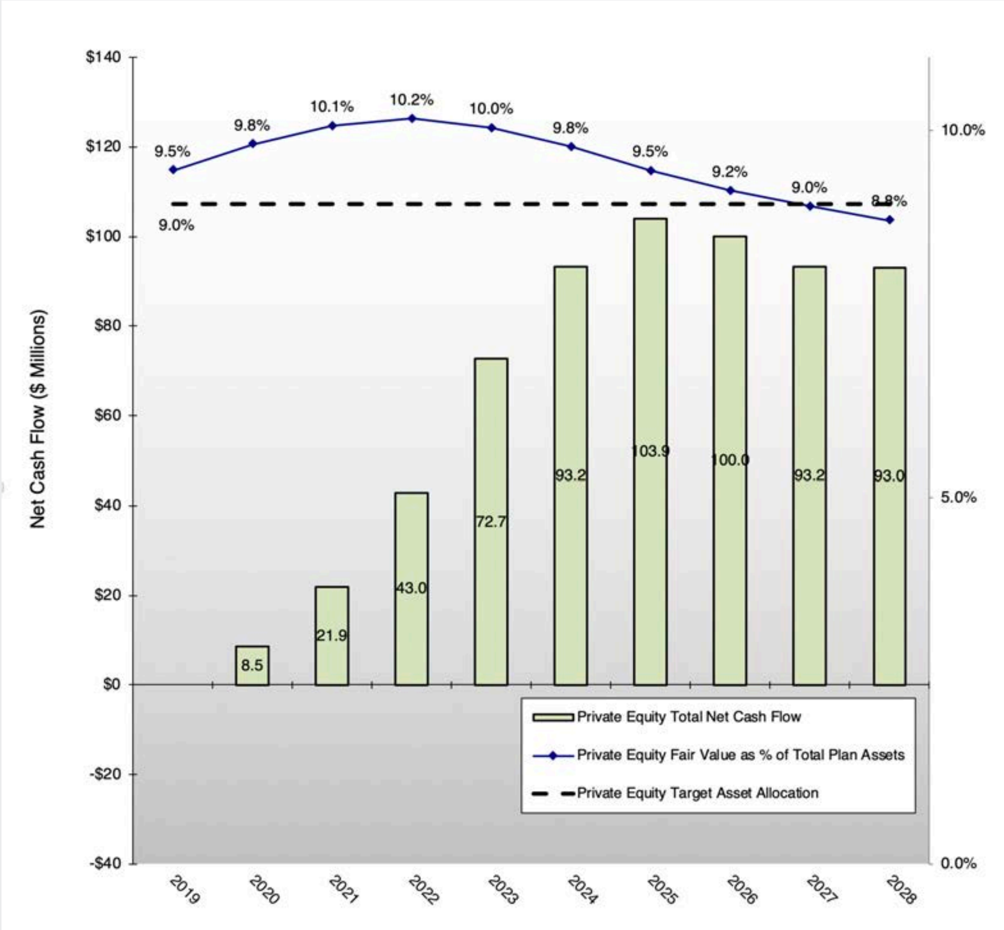
Non-U.S. funds are already reflected in the strategy categories above.

- Recommend a $210 million commitment budget for 2020, with a range of $170 million to $250 million
  - Expect to make 7 fund commitments, with a range between 6 to 9 funds
  - Expect an average commitment size of $30 million, with 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 2020

Private Equity (Continued)

2020 ANNUAL PLAN (Continued)

Below is the Private Equity capital-pacing plan:



- Reached the target 9% allocation in 2018, but continued strong performance in the Private Equity portfolio has outpaced the strong returns in the other parts of the portfolio, keeping the allocation slightly above the 9% target
  - 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 core existing managers 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

2020 ANNUAL PLAN (Continued)

- Continue to evaluate methods to rationalize the Private Equity portfolio through the secondary market
- Evaluate the market for co-investment partnerships, capitalizing on potential co-investment deal flow from SCERS' existing private equity relationships, while also participating in deal flow from a strategic partner
- Continue to oversee, monitor, and assess the existing manager lineup

Private Credit

Market Overview

With values in nearly every asset class at cyclical peaks and concern of a potential late cycle downturn, it's not surprising investors have swelled into private credit for its current yield and asset protections. Beneficiaries of this capital influx have been non-bank sponsored lenders, or credit managers who lend to companies owned by a private equity firm. According to JP Morgan, non-bank lenders represented 91% of the leveraged loan market in 2018 compared to only 54% in 2000.

Many non-bank lenders are expressing concern over the heightened competition from the flood of capital in the market. Industry data provider Preqin reported that private credit funds raised a total of $107 billion worldwide in 2019, down from the peak $132 billion raised in 2017, but still significant. Despite the lower fund raise in 2019, Preqin is currently tracking 436 new funds targeting $192 billion in investor capital, and an estimated $261 billion in dry powder or unspent capital.

With the market awash in capital, risk spreads have been compressing and lender protections are tougher to come by, which has led to a proliferation of covenant-lite loans. Industry reports have also cited increasing examples of borrower friendly terms, such as EBITDA-addbacks that allow private equity borrowers to add proforma or projected revenue increases and margin improvements to actual results in an effort to increase the amount of leverage obtained. According to JP Morgan, covenant-lite loans represented nearly 88% of total U.S. leverage loan issuance in 2018, versus less than 30% in 2007. Should there be a market downturn, the preponderance of covenant-lite loan terms will make it challenging for many lender's to mitigate negative outcomes.

Illustrative of the competitive pressures being felt in the marketplace, Cliffwater's Q3 2019 U.S. Direct Lending report showed that the Cliffwater Direct Lending Index (CDLI) generated a solid trailing 12 month total return of 7.8%, but well below the CDLI since inception (September 2004) total return of 9.6%. The CDLI has been on a descending path since 2012 when it returned a robust 14.0%, which can be attributed to the supply of capital putting downward pressure on credit spreads and loan rates. Cliffwater believes warning signs are beginning to pop up, noting risk premiums continuing to compress spreads, and diluted lender loan protections seen in the upper middle market trickling into the broader market.

Despite the competitive pressures and apparent capital excess, Staff and Cliffwater continue to support allocating to private credit and believe, more than ever, that manager selection and identifying differentiated strategies will be essential to navigating through a market cycle.

With heightened competition and weakening fundamentals, Staff and Cliffwater remain measured in making new private credit commitments and are cautious of the prevalence of less experienced managers entering the space. In this highly competitive environment, Staff and Cliffwater are vigilant in selecting top tier managers that, due to their competitive advantage, face fewer competitors. In addition, identifying managers that have workout expertise, and experience navigating a default cycle will be essential. While Staff and Cliffwater expect to reach the 4% target allocation in 2022, this could be extended if caution in the market warrants a more measured approach.

Private Credit Portfolio

Initiated in 2017, the Private Credit asset class sits within SCERS' Growth asset category. Private credit represents loans to primarily performing, non-public companies. An attractive feature of private credit investments is that the majority of its return is earned from contracted loan payments (interest and principal), which tend to be more predictable and less volatile. To compensate for the illiquidity of the asset class, SCERS' Private Credit investments must generate a total return exceeding publicly traded bank loan returns by 2%, the benchmark of which is the Credit Suisse Leveraged Loan Index, an index of 1,600 publicly traded bank loans.

SCERS' Private Credit allocation can range from 2%-6%, with a target of 4%. As of September 30, 2019, the actual allocation was 1.8%, with commitments totaling 3.5%. Reaching the target allocation is expected to be reached in 2022 but, as noted above, could be extended out. The range of investment exposures within Private Credit are shown below:

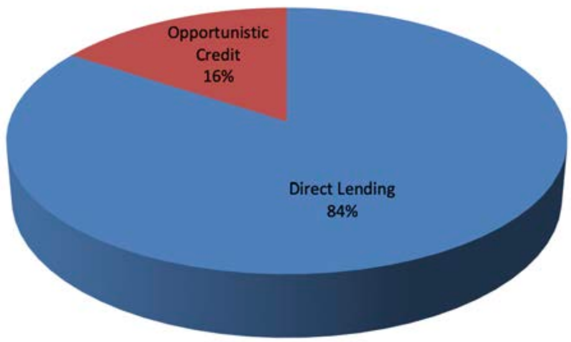
SCERS Private Credit Portfolio Construction

	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 the initiation of the Private Credit mandate, Staff and Cliffwater have been focused on differentiated strategies and top tier managers globally. During 2019, SCERS made four commitments totaling $160 million versus the $175 million budgeted. The commitments included a $50 million follow-on investment with an existing manager, and three commitments with new manager relationships totaling $110 million. The commitments were further broken between two direct lending and two opportunistic credit strategies. The market continues to exhibit competitive pressures, which has led Staff and Cliffwater to focus on investment managers with long tenured track records and experience managing through a down cycle.

Private Credit (Continued)

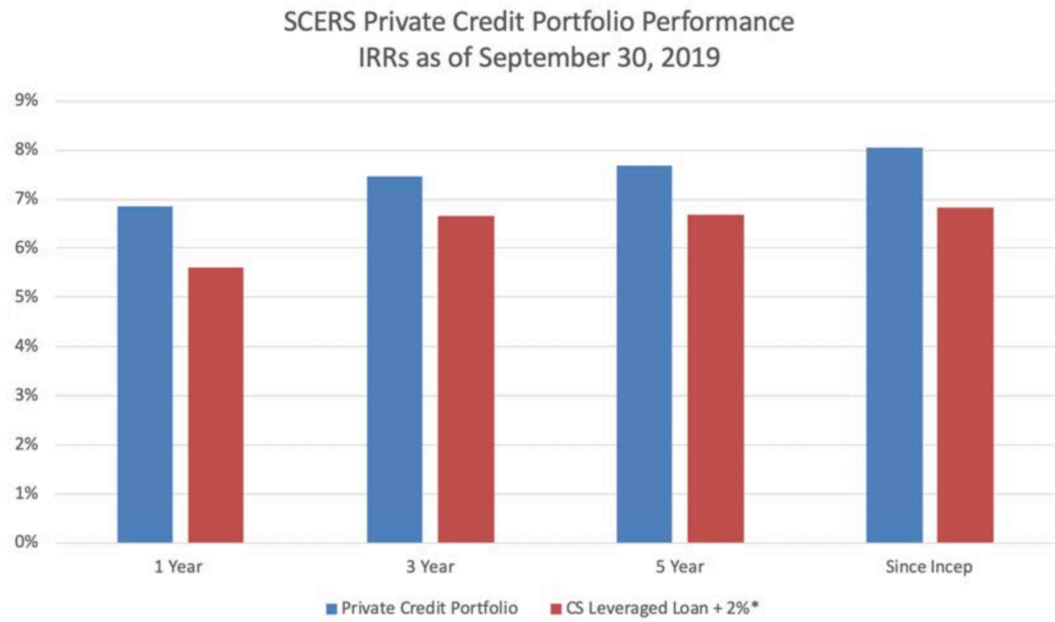
As of September 30, 2019, SCERS' Private Credit portfolio diversification by investment strategy is shown below:



2019 ACTIVITY

- Presented the 2019 Private Credit annual investment plan
  - A range of 3-5 fund commitments, with a target of 4 funds
  - A total of $175 million in commitments, with a range of $125-$225 million
  - An average commitment size of $50 million per fund
- With increasing competitive pressures in the marketplace, Staff and Cliffwater took a prudent approach to allocating in 2019, with 4 commitments totaling $160 million:
  - $50 million follow-on investment to Benefit Street Senior Secured Opportunities Fund II, LP (direct lending)
  - $40 million to IFM U.S. Infrastructure Debt Fund (direct lending)
  - $35 million to MCP Private Capital Fund IV, SCSp (opportunistic credit)
  - $35 million to OrbiMed Royalty & Credit Opportunities Fund III, LP (opportunistic credit)
- Oversaw, monitored, and met with SCERS' existing Private Credit managers

Performance and Attribution



Private credit loans typically have terms ranging from 3-7 years, which means investors receive their investment capital back quicker when compared to other private market asset classes. By receiving capital sooner, private credit investors experience a much shorter J-curve, which is a distinguishing feature of the asset class. SCERS' Private Credit portfolio is still being built out but was initiated with four credit funds previously held in SCERS' Private Equity portfolio, resulting in the longer time period returns shown above. As shown in the chart above, SCERS' Private Credit portfolio returns have exceeded the benchmark across all reporting periods. For the one year ending September 30, 2019, SCERS' Private Credit portfolio generated a net IRR of 6.8%, which outperformed the policy index Credit Suisse Leveraged Loan Index + 2% benchmark return of 5.6%. Since inception (October 2011) through September 30, 2019, SCERS' Private Credit portfolio has earned a 8.1% net IRR, outperforming the benchmark return of 6.8%.

2020 ANNUAL PLAN

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

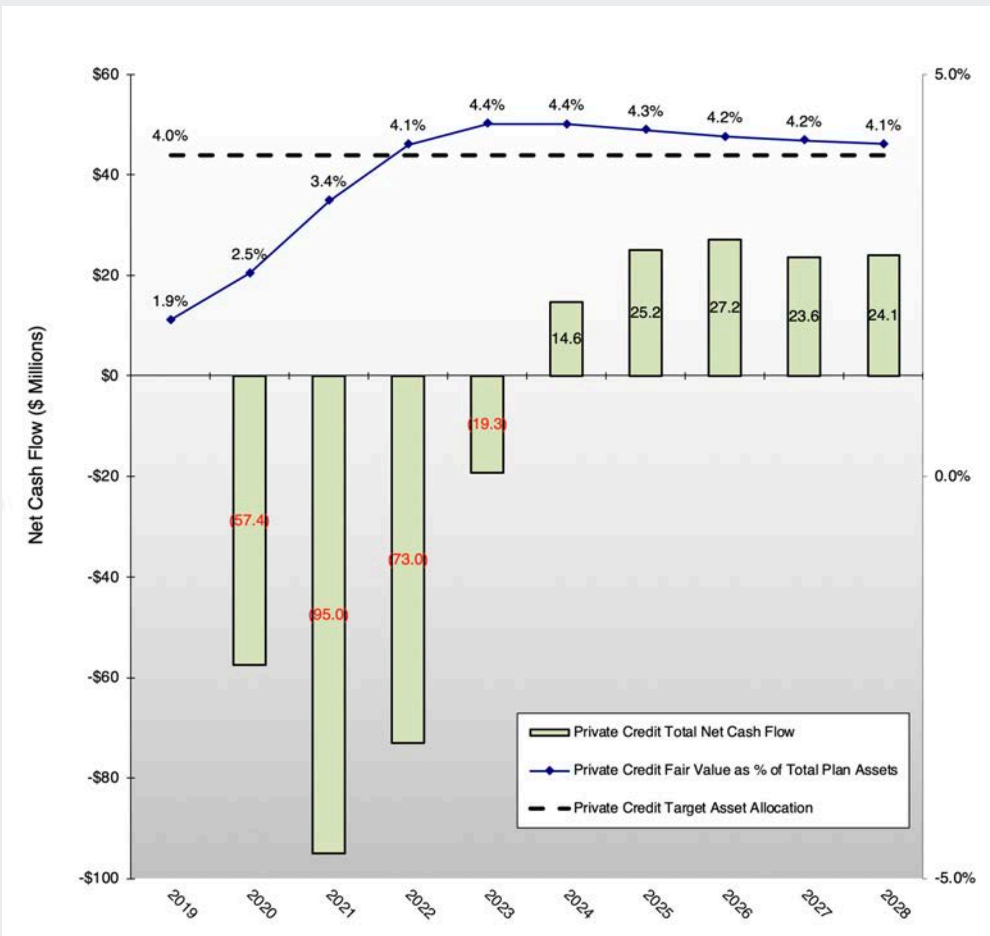
SCERS Private Credit Annual Investment Plan			
		Range	
	Target	Min	Max
Commitment Level	**$150 MM**	**$100 MM**	**$200 MM**
Number of Funds	**3**	2	5
Direct Lending fund(s)	**2**	1	3
Opportunistic Credit fund(s)	**1**	1	3
Commitment per Fund	**$50 MM**	**$25 MM**	**$100 MM**

Private Credit (Continued)

2020 ANNUAL PLAN (Continued)

- Recommend a $150 million commitment budget for 2020, with a range of $100 million to $200 million
  - Expect to make 3 fund commitments, with a range between 2 to 5 funds
  - Expect an average commitment size of $50 million, and a range between $25 million and $100 million
    - Target 2 direct lending and 1 opportunistic credit investments
  - The budget includes any funds that a commitment has already been made to, or is in the process of being made to, in 2020

Below is the Private Credit capital-pacing plan:



Private Credit (Continued)

2020 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 2022
- Investment strategies and themes of focus for 2020 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

Real Assets

Market Overview

According to industry data provider Preqin, at the start of 2019 there were a record number of infrastructure and energy funds in the marketplace seeking to raise a larger amount of aggregate capital than what was raised in total over the last 10 years. By the end of 2019, a record $207 billion had been raised within infrastructure and energy, up from the $201 billion raised in 2018. Currently, there are 253 infrastructure funds and 219 energy funds in the market seeking a record $376 billion in investor capital. Adding to this is a record amount of dry powder or unspent capital–$212 billion for infrastructure and $243 billion for energy–clearly an abundance of capital that will be competing for deals.

With the continual growth in fund raising and increasing dry powder, there is intense competition for assets that is leading to what some industry participants believe are exuberant valuations. As such, unease has begun to creep in among investors, with most industry investor surveys highlighting investors' belief that the market cycle is at or past its peak, and a market correction is inevitable. With concerns around stretched asset values and an uncertain economic environment, infrastructure performance may experience a period of muted returns going forward. Yet, despite the unease and uncertainty in the marketplace, institutional investors continue to view infrastructure favorably for its cash yield and uncorrelated returns.

With the abundance of capital pursuing infrastructure assets, managers are expressing frustration over finding fewer investment opportunities, with acquisition multiples at or beyond prior peaks. What this dynamic is producing is the arrival of ever larger funds, with two mega funds in 2019 raising $20 billion each in investor capital. These larger funds are targeting transactions well over $1 billion, where there tend to be fewer participants capable of writing large checks, although this is beginning to change. With fewer investment opportunities, fund managers are also finding the need to stretch the definition of what is an infrastructure asset as they search for opportunities in a crowded marketplace.

An infrastructure sector where competition is especially heated is renewable energy. Per Preqin, 57% of all infrastructure deals in 2018 were made in the renewable energy sector. Government support globally for the development of renewables, the improving economic viability of renewable energy, and the call to energy sustainability have fostered investment opportunities and demand from institutional investors seeking environmental, social, and governance mandates. This is particularly apparent in Europe, where renewable energy transactions accounted for 68% of the market in 2018, as the European Union (EU) implements its Renewable Energy Directive's target of fulfilling at least 27% of its total energy needs from renewable sources by 2030. The EU expects to spend nearly €1 trillion towards climate and environmental sustainable projects over the next decade, which is driving the demand for renewable energy projects.

With heightened competition and peak asset values, Staff and Cliffwater remain cautious in making new real assets commitments and retain a healthy skepticisms of the blurring of what is considered

Real Assets (Continued)

an infrastructure investment. In this highly competitive market, Staff and Cliffwater remain focused on selecting differentiated strategies and managers, especially managers that take an operational approach to generating returns. Staff and Cliffwater continue to favor strategies that generate more of the overall return from income and strategies that focus on operational improvements and capital investment, where the outcome is self-made.

Real Assets Portfolio

Real Assets 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 current income with lower return volatility, providing a diversification benefit to SCERS' overall portfolio, and serving as a hedge against inflation. The range of investment exposures within Real Assets are shown below:

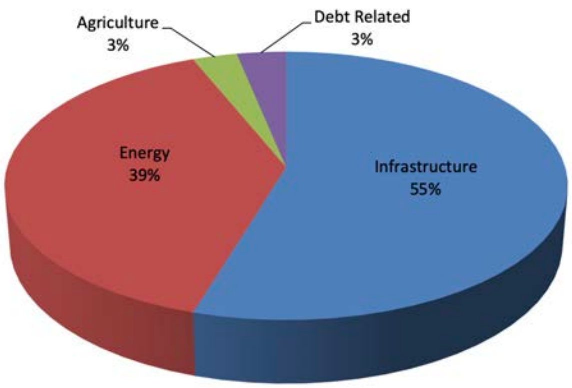
SCERS Real Assets Portfolio Construction				
	Minimum	**Target**	**Maximum**	**Policy Index Benchmark**
Total Real Assets Portfolio	**5%**	**7%**	**9%**	**Custom blend of benchmarks below:**
Infrastructure	30%	**45%**	60%	45% Cambridge Associates Private Infrastructure
Energy	20%	**35%**	50%	35% Cambridge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

SCERS continues to make progress in building out the Real Assets portfolio, which is projected to reach its 7% allocation target in 2023. As of September 30, 2019, the actual allocation was 5.2%, with commitments totaling 9.3%. Staff and Cliffwater continue to favor real asset strategies that generate a greater portion of the total return from contracted income and that are also less sensitive to economic cycles. During 2019, SCERS made three commitments totaling $110 million versus $200 million budgeted, which is comprised of $75 million in follow-on investments with existing investment managers, and one commitment with a new manager relationship for $35 million. As the market continues to exhibit competitive pressures, Staff and Cliffwater are comfortable taking a measured approach to allocating capital within Real Assets, even if it means extending out the timeline to reach the 7% target allocation. This entails identifying differentiated investment strategies with long tenured managers experienced in managing through a down cycle.

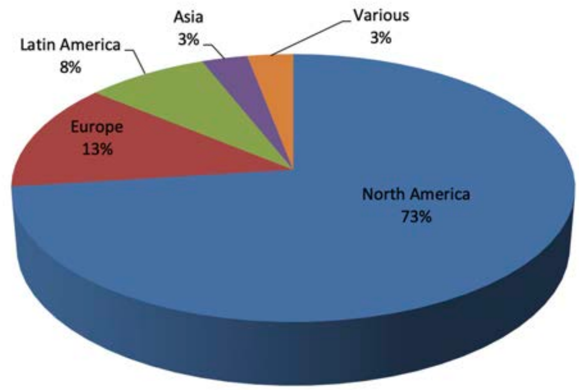
Real Assets (Continued)

As of September 30, 2019, SCRES' Real Assets portfolio diversification by investment strategy and geographic region is shown below:

Real Assets Portfolio Strategy Allocations as of September 30, 2019



Real Assets Portfolio Geographic Allocations as of September 30, 2019

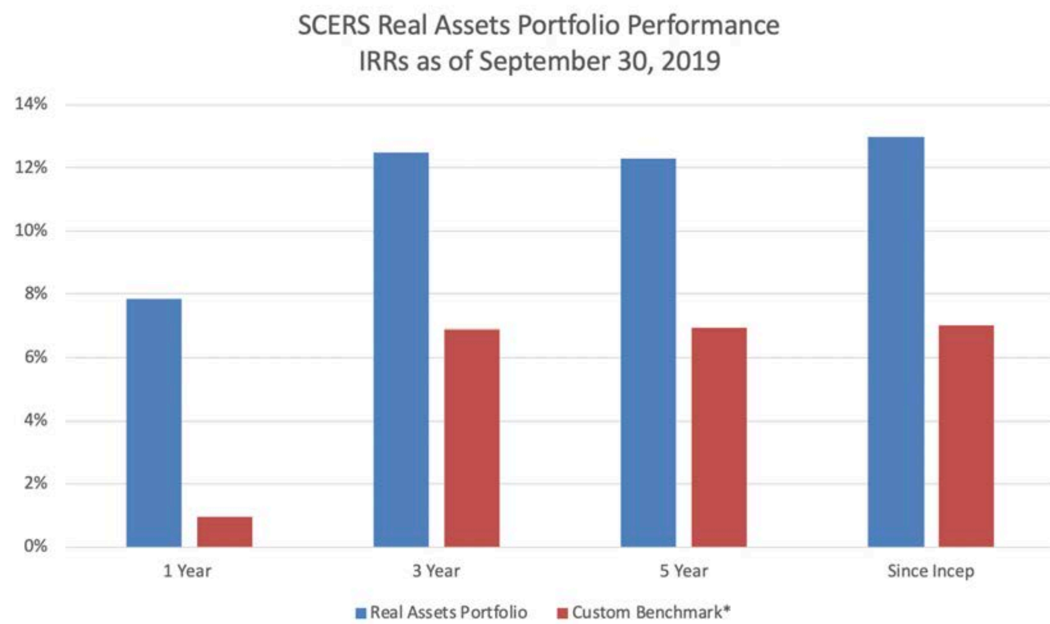


2019 ACTIVITY

- Presented the 2019 Real Assets annual investment plan
  - A range of 3-7 fund commitments, with a target of 5 funds
  - A total of $200 million in commitments, with a range of $150-$250 million
  - An average commitment size of $40 million per fund
- Made 3 real assets commitments in 2019 totaling $110 million
  - $35 million follow-on investment to Tailwater Energy Fund IV, LP (midstream energy)
  - $40 million follow-on investment to Brookfield Infrastructure Fund IV, LP (infrastructure-value add)
  - $35 million to EQT Infrastructure Fund IV, SCSp (infrastructure-value add)
- Continued building out the customized separate accounts with Atalaya and Pantheon:
  - Atalaya (asset-backed credit strategies)
    - No investments made
  - Pantheon (real assets secondaries and co-investments)
    - Co-investment in a French sub-metering business for $1.5 million
    - Secondary investment in U.S. timberland assets for $4.2 million
    - Secondary investment in U.S. timberland assets for $0.9 million
    - Secondary investment in U.S. seaports for $2.8 million
    - Investment period for the Pantheon separate account ended in 2019
- Oversaw, monitored, and met with SCERS' existing Real Assets managers

Real Assets (Continued)

Performance and Attribution



As shown in the chart above, SCERS' Real Assets portfolio returns have exceeded the benchmark across all reporting periods. For the one year ending September 30, 2019, SCERS' Real Assets portfolio generated a net IRR of 7.9%, which outperformed the policy index custom benchmark (45% Cambridge Private Infrastructure + 35% Cambridge Private Energy + 20% NCREIF Agriculture/Timber) return of 1.0%. Since inception (January 2013) through September 30, 2019, SCERS' Real Assets portfolio has generated a 13.0% net IRR, outperforming SCERS' custom benchmark 7.0% net return.

2020 ANNUAL PLAN

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

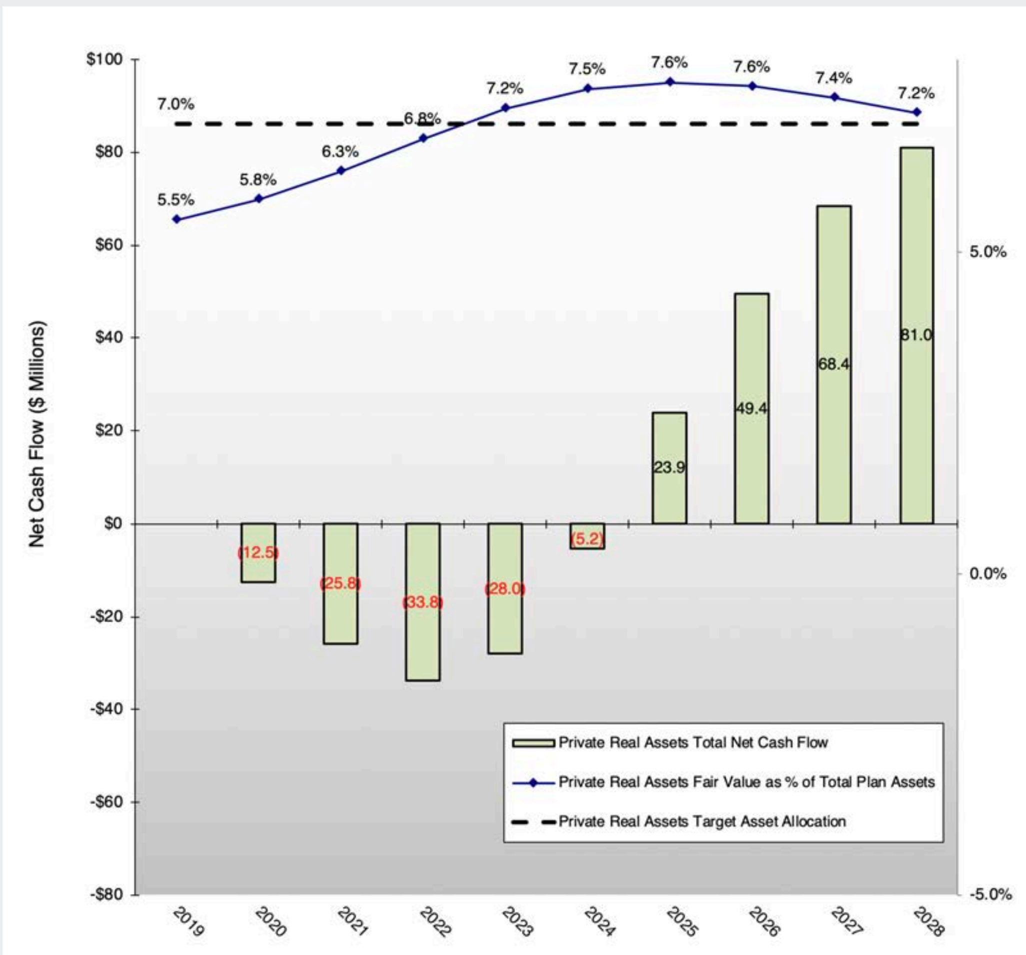
SCERS Real Assets Annual Investment Plan			
		Range	
	Target	Min	Max
Commitment Level	**$220 MM**	$170 MM	$270 MM
Number of Funds	**5**	**3**	**7**
Energy Related	**1**	1	3
Infrastructure	**2**	1	3
Ag, Minerals, Timber	**2**	0	2
Other	**0**	0	1
Commitment per Fund	**$40 MM**	**$20 MM**	**$100 MM**

Real Assets (Continued)

2020 ANNUAL PLAN (Continued)

- Recommend a $220 million commitment budget for 2020, with a range of $170 million to $270 million
  - Expect to make 5 fund commitments, with a range between 3 to 7 funds
  - Expect an average commitment size of $40 million, with a range between $20 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 2020

Below is the Real Assets capital-pacing plan:



- SCERS' actual allocation to Real Assets continues to progress towards the target 7.0%, which is expected to be reached by 2023, extended out from 2022 in last year's plan
  - Capital commitments will remain thoughtful, with market dynamics and identifying differentiated investment opportunities dictating pace

Real Assets (Continued)

2020 ANNUAL PLAN (Continued)

- Investment strategies and themes of focus for 2020 include:
  - Infrastructure, including renewables, globally
  - Non-U.S. oil and gas upstream and midstream infrastructure
  - U.S. oil and gas mineral rights
  - Agriculture permanent crops globally
  - Social and digital infrastructure globally
- Evaluate strategic direction of customized separate accounts with Atalaya and Pantheon
- Continue to oversee, monitor, and assess the existing manager lineup

Real Estate

Market Overview

Real estate performance has always ebbed and flowed with the broader economy. No differently than in past cycles, the current slowing economic growth environment is resulting in moderating real estate returns and waning transaction activity. Tensions wrought by the U.S.-China and Japan-South Korea trade wars is ingraining risk and uncertainty into investor's daily discussions. Heightened geopolitical risk from the U.S.-Iran conflict, UK Brexit, and protests in Hong Kong and France are upending investor sentiments bringing with it even more nervousness. Yet, real estate risk spreads have not widened as capital is readily available, with the abundance of debt making for a favorable investor's market. Accommodative global central bank monetary policies maintaining low, and in a number of countries negative interest rates, is helping to support real estate values.

As a capital driven industry, the direction of real estate pricing follows the path of capital. More capital leads to higher demand, which leads to higher valuations. As long as rates remain low and capital readily available, real estate values will remain elevated, along with muted return expectations. Consensus among U.S. institutional real estate investors over the next five years is that the average total return for the NFI-ODCE index is expected to be in the 5%-6.5% range, significantly less than the index's 10.9% average 10-year historical return.

Capital continues to favor real estate, with Preqin reporting that a record $151 billion was raised in 2019 globally for real estate. The majority of the capital raised is targeting the U.S. (76%) and primarily value-add/opportunistic investment strategies (90%). Currently, Preqin is tracking 918 funds in the market globally seeking to raise a record $281 billion in investor capital. Add in unspent capital or dry powder of $319 billion and the market is awash in capital, just as economic growth is slowing globally and showing some signs of stress.

Global real estate fundamentals appear to be fairly balanced and stable, yet are trending downward from record levels reached in 2016. Among the property sectors, general themes are permeating worldwide, such as reasonably healthy office leasing demand. However, it is declining from record levels, and new supply coming to the U.S. market is expected to pressure vacancy and rental rates downward. Logistics assets remain hot and in demand worldwide, with leasing demand driving above average rental growth and record low vacancy rates. However, an increasing supply of new developments is expected to bring more balance to the U.S. market, but there remains an undersupply in Europe and Asia-Pacific. Globally, the logistics markets continue to benefit from the structural shift towards omni-channel distribution models and more efficient use of space as e-commerce and traditional retailers aim to get their products to consumers as quickly as possible, putting increased focus on urban logistics and last mile delivery. Retail remains challenged universally due the increasing penetration of online commerce, changing consumer shopping habits towards experiences and entertainment, and structural oversupply.

Outside of the U.S., even with increasing property prices, new supply has been peculiarly limited, particularly in Europe where new supply remains near record lows across all property sectors. In Asia-Pacific, although new supply has ramped up, especially office, the rate of new supply is well below previous levels. With limited new supply and low interest rates, market fundamentals in Europe and Asia-Pacific are expected to remain healthy, if not tighten further, providing support for increasing property values and performance compared to the U.S.

With SCERS' real estate portfolio allocation over target, Staff and Townsend expect to make further rebalances in the core open-end fund holdings. Currently, the real estate portfolio is underweight non-core and non-U.S. strategies. Staff and Townsend have identified a number of non-core strategies, particularly in Asia, that will offer enhanced diversification, particularly from U.S. cycle risk, and the potential to generate a better return.

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. The investment objective of the Real Estate portfolio is to generate current income with moderate return volatility, while providing a diversification benefit 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%	

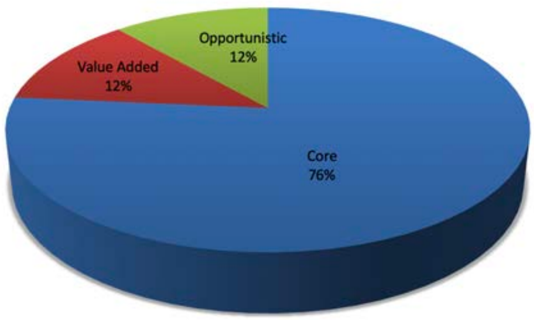
During 2019, SCERS made redemption requests from two core open-end funds to reduce the overweight in the SCERS Real Estate portfolio. After the redemptions were made, SCERS' actual real estate allocation declined from 9.0% to 8.2%, still above the target allocation of 7.0% but within the permissible range of 5.0%-9.0%.

As SCERS' Real Assets portfolio has been being built out, SCERS has been comfortable holding a higher than target Real Estate allocation as an offset. As the Real Assets portfolio moves towards its target allocation, Staff and Townsend expect further rebalancing of the Real Estate portfolio towards its 7% target allocation, which will require further redemptions from SCERS' U.S. core open-end funds.

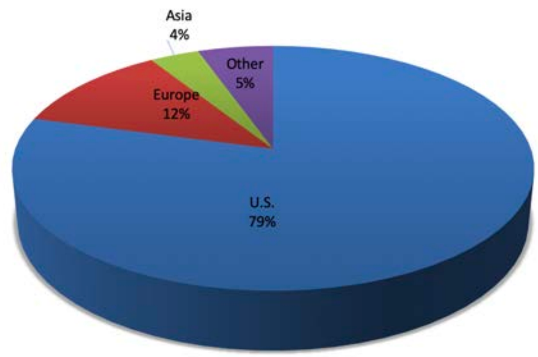
Real Estate (Continued)

As of September 30, 2019, SCRES' Real Estate portfolio diversification by investment strategy and geographic region is shown below:

SCERS Real Estate Portfolio Strategy
as of September 30, 2019



SCERS Real Estate Portfolio Geography
as of September 30, 2019

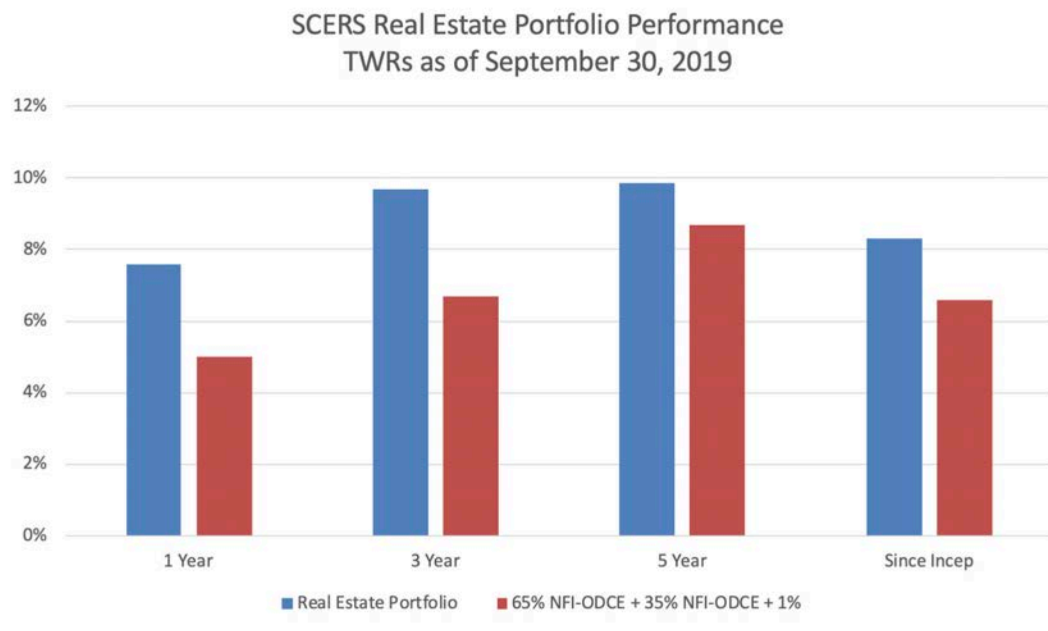


2019 ACTIVITY

- Presented the 2019 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 $20-$50 million
  - An average commitment size of $35 million per fund
- Made one real estate commitment in 2019 totaling $35 million
  - $35 million follow-on investment to NREP Nordic Strategies Fund IV, SCSp (Nordic value add)
- Rebalanced the portfolio to reduce the actual allocation from 9.0% to 8.2%
- Finalized the sale of Leland James Center, an office redevelopment project in Portland, OR
- Oversaw, monitored, and met with SCERS' existing Real Estate managers

Real Estate (Continued)

Performance and Attribution



As shown in the chart above, SCERS' Real Estate portfolio returns have exceeded the benchmark across all reporting periods. For the 1-year period ending September 30, 2019, SCERS' Real Estate portfolio generated a net timeweighted return of 7.6%, outperforming SCERS' blended NFI-ODCE benchmark net timeweighted return of 5.0%. Since inception, SCERS' Real Estate portfolio has generated a net timeweighted return of 8.3%, exceeding the blended NFI-ODCE benchmark net return of 6.6%.

2020 ANNUAL PLAN

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

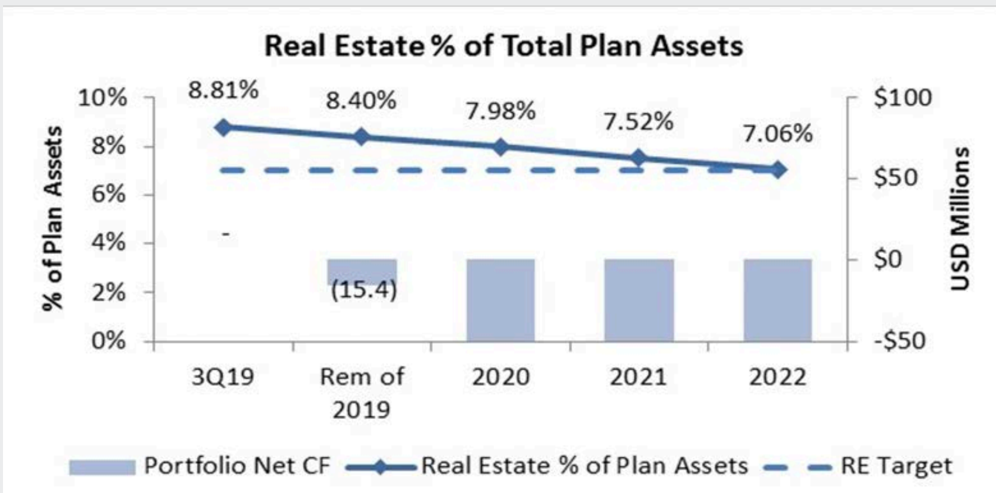
SCERS Real Estate Annual Investment Plan			
		Range	
	Target	**Min**	**Max**
Core Commitment Level	**$ 0 MM**	$ 0 MM	$ 0 MM
Non-Core Commitment Level	**$ 30 MM**	$ 0 MM	$ 50 MM
Total Commitment Level	**$ 30 MM**	**$ 0 MM**	**$ 50 MM**
Number of Funds	**1**	**0**	**2**
Commitment per Fund	**$ 30 MM**	**$ 20 MM**	**$ 50 MM**

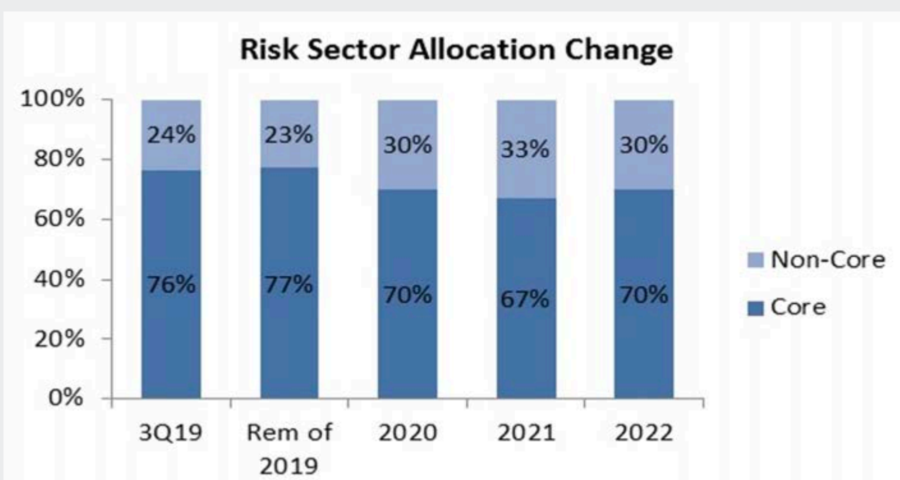
Real Estate (Continued)

2020 ANNUAL PLAN (Continued)

- Recommend a $30 million commitment budget for 2020, with a range of $20 million to $50 million
    - Expect to make 1 fund commitment, with a range between 0 to 2 funds
    - Expect an average commitment size of $30 million, with 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 2020

Below is the Real Estate capital-pacing plan:





Real Estate (Continued)

2020 ANNUAL PLAN (Continued)

- Rebalance the portfolio to keep the actual allocation within acceptable ranges
  - Maintain an 8% real estate allocation over the near term
  - Review diversifying the U.S. core open-end allocation with an allocation to core open-end funds in Europe and Asia
  - Target non-core strategies that will bring the non-core allocation closer to the 30% target
- Investment strategies and themes to focus on in 2020 include:
  - Diversifying/non-traditional strategies
  - Non-U.S. student housing
  - China logistics
  - Japan value-add
  - Refrigerated logistics and cold storage globally

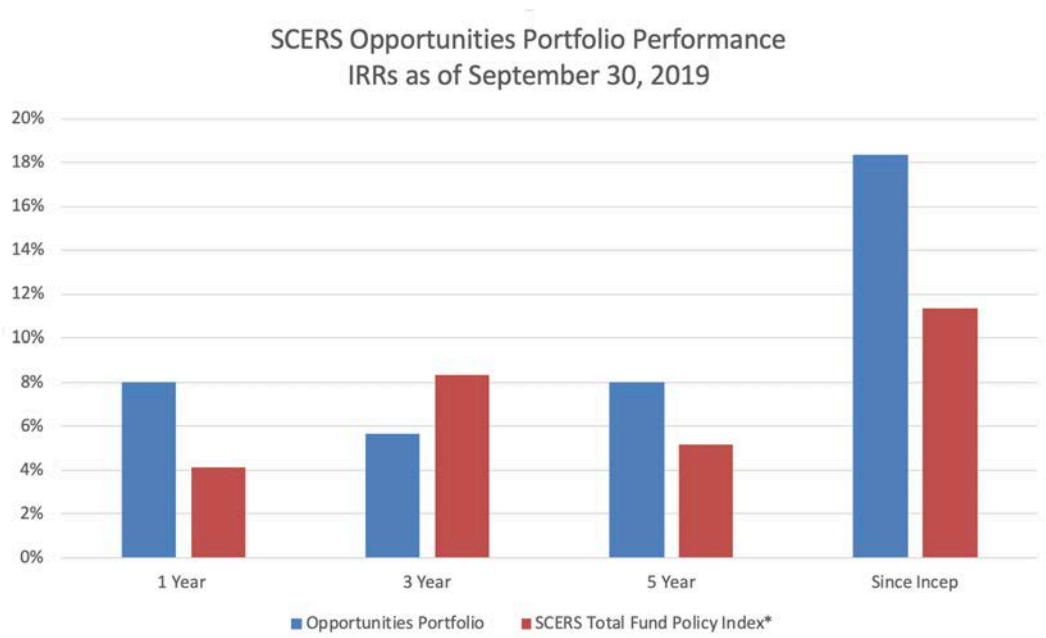
Opportunities

SCERS' Opportunities portfolio does not have a fixed allocation, but instead has a permissible range of 0% to 5%. As of September 30, 2019, the actual allocation stood at 0.1%. Investments in the Opportunities portfolio consist of tactical strategies offering attractive risk-return attributes. Potential opportunities may be short term, niche, non-traditional, or opportunistic in nature, and may exist across the range of asset classes. Any potential Opportunities investment will draw its capital allocation from the asset class that is most comparable to the risk-return characteristic of the investment. By subjecting potential Opportunities investments to this allocation process, it serves as a mechanism for the investment to compete for capital against other alternatives and subjects the investment's performance to compare against its appropriate asset class. Given the tactical approach of the Opportunities portfolio, it is possible there will be no investments made in any given year, which has occurred over the past several years, including 2019, given the lack of distress and dislocation in the broad markets. As we get later in the cycle, it is becoming more important to have contingent and tactical capital available to opportunistically take advantage of any future dislocations within the markets, so this will to be a focal point in 2020.

2019 ACTIVITY

- Evaluated tactical investment opportunities, including contingent/dislocation funds and high yield credit strategies that trigger making investments off of credit spread widening
- Oversaw and monitored SCERS' existing Opportunities manager

Performance and Attribution



Opportunities (Continued)

As of September 30, 2019, SCERS' Opportunities portfolio generated a since inception (2007) 18.4% net IRR, outperforming SCERS' policy index benchmark return of 11.4%. The strong since inception performance is due to several distressed debt funds SCERS invested in the aftermath of the Global Financial Crisis that have since been liquidated.

2020 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, potential increasing market volatility, and historical high pricing, evaluate potential opportunities through contingent/dislocation funds in the corporate credit and real estate sectors

Other Investment Activities

2019 Activities

Additional projects, activities, and enhancements within the investment program in 2019 included:

- Verus Advisory ran an updated liquidity analysis of SCERS' plan, as part of the 1% dedicated cash allocation addition
- Created a cash management policy to identify processes and tools to assist SCERS in the management of cash, monitoring of liquidity, and the management of liquidity risk
- Revised the Overlay Program by modifying the intra-quarter rebalancing bands around the Growth, Diversifying, and Real Return asset categories to provide a higher level of probability that rebalancing will occur during significant intra-quarter market movements
- Issued an RFP and engaged a third party private markets accounting service provider, Colmore, to assist SCERS with the accounting and reporting of its growing private markets portfolio
- Renewed the general investment consulting contract with Verus and the real estate consulting contract with Townsend
- Updated investment policy statements for the Master IPS, and the Growth, Diversifying, and Real Return asset categories
- Confirmed the continued use of a third-party service provider to voting proxies, and approved an updated Proxy Voting Policy
- Evaluated approaches to portfolio currency hedging solutions with Verus
- Oversaw, monitored, and met with existing managers
- Conducted transition management for the implementation of a U.S. 130/30 equity extension mandate and a liquid real return mandate
- On boarded Jim Donohue as Deputy Chief Investment Officer
- Conducted Board education on investment matters

Ohter Investment Activities (Continued)

2020 Initiatives

- Further evaluate SCERS' currency exposures and currency hedging solutions in the market
- Perform research and evaluate approaches to capital efficiency, to potentially improve liquidity, enhance returns and/or improve diversification
- Evaluate approaches to incorporate tactical positioning to the SCERS portfolio
- Initiate education on asset liability modeling (ALM) in anticipation for the next ALM study in 2021
- Select and approve updated proxy voting guidelines with third-party proxy voting service provider Institutional Shareholder Services (ISS)
- Fully onboard third party private markets accounting service provider, Colmore
- Issue RFP for alternative assets consulting and evaluate consultant responses
- Evaluate risk management and systems for SCERS' total portfolio and asset categories/classes
- Update SCERS' fiduciary standard of care policy as it relates to entering into alternative asset investment contracts
- Oversee, monitor, and visit with investment managers, in addition to attending manager meetings where feasible
- Attend and participate in industry conferences

Board Education

2019 Board Education

- Education on consumer branded private equity investing by investment manager TSG Consumer Partners
- Education on future implementation considerations for SCERS' Private Equity portfolio
- Education on proxy voting
- Education on an investment structure for making co-investments within the Private Equity asset class
- Education on capital market assumptions by Verus Advisory

2020 Board Education

- SCERS investment manager presentations
- Educational presentations by Consultants and Staff
- Fiduciary standard of care education
- Monthly investment manager activity, compliance, and watch list report education
- Asset liability modeling study education

Appendix

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Appendix 1 - Verus 2019 Review and Outlook

Verus

Memorandum

To:	Sacramento County Employees' Retirement System Board (SCERS)
From:	Verus
Date:	February 19th, 2020
RE:	2019 Review and Outlook

Executive Summary

SCERS' portfolio ended 2019 up 17.2% (+17.0% net), with all asset classes showing positive results which was a notable reversal from 2018. The results were well in excess of the Policy Index and ranked above median against SCERS' peers. Global Equity markets were up 26.6%, with domestic equities once again outperforming non-US markets. Fixed income was up 8.7% as measured by the Barclays Aggregate Index. Growth outperformed value during the calendar year by almost 10.0% in U.S. Large Cap which continued a trend we saw in '17 and '18. Private asset classes were up in 2019, with private equity returning 17.8%, private credit up 5.8% and private real assets up 7.7% (quarterly lagged). SCERS' private equity portfolio has been particularly strong both on a relative and absolute basis, ranking in the top decile of its universe across most trailing time periods in the last 5 years.

In this memo we will review the investment environment in 2019 for major asset classes, detail 2019's initiatives and outline the work plan for 2020.

U.S. EQUITY

Large-cap U.S. equities led the global universe in 2019; the S&P 500 Index delivered a total return of +31.5%, good enough for its best calendar year since 2013 when the index returned +32.4%. While at first glance these returns may seem impressive, it is worth noting that much of this performance was simply digging out of a very poor fourth quarter of 2018, when the S&P 500 Index fell 19.8% from its prior peak. Additionally, corporate profits are expected to have been flat for the calendar year 2019, implying that performance was driven by expanding multiples rather than improving fundamentals.

Global manufacturing activity slowed significantly over the course of the year, business fixed investment remained anemic, and the U.S. and China engaged in negotiations regarding trade, intellectual property protections, and many other issues. Central banks around the world viewed these developments as potential headwinds for the global outlook, and the Federal Reserve cut the upper bound of its range for federal funds three times in the second half of 2019, from 2.50% to 1.75%.

Falling interest rates in 2019 have supported stock prices, as fixed income becomes less attractive on a relative basis, and cheaper borrowing should bolster future corporate earnings. The dividend yield of U.S. stocks is once again higher than U.S. Treasury yields.
U.S. markets could continue to outperform over the shorter-term due to relative economic and market strength, and prices may certainly rise further. But history suggests that a widening gap

Appendix 1 - Verus 2019 Review and Outlook (Continued)

between U.S. and international stock valuations may constrain U.S. performance over the longer-term.

INTERNATIONAL EQUITIES

In 2019, international developed equities underperformed U.S. equities, but outperformed equities in the emerging markets. On a hedged basis, the MSCI EAFE Index delivered a total return of 24.6%. On an unhedged basis, the MSCI EAFE Index returned 22.0% as the dollar strengthened slightly versus the embedded currency portfolio of the MSCI EAFE Index. On an unhedged basis, equities in the Eurozone (+25.9%) outperformed those in the U.K. (+22.1%) where the country's focus remained set on securing an exit from the European Union. Japanese equities returned 21.9% on an unhedged basis and lagged most major regional equity indices in Europe.

When investing in international equities, movement in currency markets has often had just as large an impact on return as the movement in underlying asset value. Over the last three years however, global currency volatility has been muted, which has made it much easier for investors to avoid thinking about their currency exposure embedded in international assets. Verus' view remains that the embedded currency risk within non-U.S. equity exposure is not compensated. Emerging market equities underperformed their global peers over the year, though emerging market currency exposure boosted returns experienced by U.S. investors by about 0.7%. On an unhedged basis the MSCI Emerging Markets Index generated a total return of 18.4%, and the more highly weighted Asian component (+19.2%) slightly outperformed the Latin American (+17.5%) component of the overall index.

Inflation remains muted in emerging economies, and most economies are experiencing consumer price inflation below their respective 5-year averages. Central bank policy has remained accommodative in many major countries within the universe such as China, South Korea, Brazil, and South Africa. This accommodation could provide a boost for equity market pricing as we move further into 2020.

FIXED INCOME

The "rising rate environment" many had forecast for the U.S. in 2019 gave way to an environment characterized by dovish monetary policy and calls for complementary fiscal accommodation. The Federal Reserve cut rates three times, bringing the federal funds range to 1.50 – 1.75%, and the cuts were described as "a mid-cycle adjustment to policy" and not the "beginning of a lengthy cutting cycle". At the July meeting, the Fed announced that the balance sheet unwind would conclude on August 1st, a month earlier than the initially discussed cutoff point.

At the end of September, demand for overnight funding to cover things like quarter-end corporate tax payments was met with insufficient supply, leading overnight repo rates to spike as high as 10%. Some of this shortage was attributed to the balance sheet unwind which drained liquidity from the financial system and shrank the amount of "lendable reserves" that marginal lenders such as J.P. Morgan Chase Bank were able to lend while maintaining compliance with required liquidity coverage ratios. In order to prevent further disruptions in the overnight funding markets, the New York Fed stepped in to provide liquidity through term repurchase operations, and in the process, grew its balance sheet by about $400B between

Appendix 1 - Verus 2019 Review and Outlook (Continued)

August and December. Analysts have continued to debate whether this balance sheet growth should be considered stimulative in nature or simply the result of a technical response to what some have called a "plumbing issue" in the U.S. financial infrastructure.

The accommodative monetary policy implemented by the Fed was primarily aimed at supporting markets during a period when the health of many segments of the U.S. economy (the labor market remaining a key exception) was deteriorating. The Fed's preferred inflation gauge remained about 40 basis points below the target level of 2.0%, which further encouraged a more stimulative monetary approach.

Most major central banks around the world shifted policy in the same direction as the Fed. In Europe, the ECB cut its deposit rate 10 basis points further into negative territory to -0.50% and restarted net asset purchases to the tune of €20 billion per month in November. The People's Bank of China made several cuts to their reference lending rates, injected liquidity through reverse repo operations, and slashed the level of reserves major banks were required to keep on hand, another liquidity-providing action.

Ten-year sovereign yields fell significantly around the globe and established fresh all-time lows in many countries. The U.S. dollar value of global negative-yielding outstanding debt rose from $8.3B to $11.3B and reached as high as $17B at the peak of the global bond rally back in late August of 2019. Long duration Treasuries were the top performers within U.S. fixed income markets for the year, delivering a total return of +14.8%. Within the U.S. credit universe, riskier fixed income outperformed safer fixed income as credit spreads tightened from December 2018 levels.

Outlook

The strong increase in both stock and bond prices in 2019 set the stage for a less prosperous near-to-intermediate future. Combined with slowing global economic growth, high levels of debt and stagnant corporate earnings growth, consensus expectations for future returns are well below average levels.

The market's focus on "trade wars" will continue. Phase one decisions in China negotiations suggested a cooling off period, but only reduced tariff levels by 15%. In other words, there is a lot more to be done. Further, the Trump administration's intention to hold off future adjustments until after the 2020 election will inject uncertainty into capital spending decisions. From a broader perspective, investors are wondering if the trend toward globalization has peaked which will raise concerns regarding slower economic growth and higher inflation in developed economies.

Central Banks have remained accommodative while inflation has remained low. In the U.S., the market currently suggests a 50% probability of one 25bps cut in 2020 and a 17% probability of two cuts. While this monetary accommodation has propped up the prices of risk assets, evidence supports the notion that its effect is waning and that fiscal policy that supports infrastructure and education will be needed to keep a positive growth trajectory. This could prove difficult in an era of polarized politics.

Appendix 1 - Verus 2019 Review and Outlook (Continued)

The upcoming elections will impact the market, with the Presidency, the Senate and the House of Representative all "up for grabs". Historically, the markets have preferred an element of "gridlock", where no major party controls all three.

Perhaps the greatest potential for surprise lies in inflation expectations, which currently stands at 1.8% over the next 10 years in the U.S. Rising wages tend to drive inflation higher and with low unemployment and a tightening labor market, the pieces are in place for an unexpected uptick in price levels.

On the brighter side, continued advances in technology will help to contain inflation and the rapidly expanding middle class in India and China is likely to spur global demand for goods and services. Also, a recent steepening of the U.S. yield curve and an uptick in U.S. housing starts suggests that a recession has been pushed out further into the future.

Altogether, this calls for an investment portfolio with balanced exposure to the risks and rewards of varying levels of growth, interest rates and inflation. The changes made to the SCERS portfolio in 2019 position the system to prosper or survive in various economic environments.

PORTFOLIO INITIATIVES

Policy Adjustment & Liquidity Management
In June, the SCERS Board approved an adjustment to the Plan's asset allocation, creating a dedicated cash allocation of 1% and shifting the 2% commodities allocation to a more diversified liquid real assets portfolio. The 1% cash allocation was funded by reducing Large cap U.S. equities by 1%. The dedicated cash allocation coincided with the introduction of a formal cash management policy which lays out the tools and processes that SCERS will use to manage its cash allocation, monitor liquidity and oversee liquidity risk. The dedicated commodities allocation was shifted towards a more diversified portfolio of liquid real asset strategies that should provide a better risk-adjusted return than commodity futures.

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

- Reduced the large cap U.S. equities allocation from 19% of total plan assets to 18%
- Hired D.E. Shaw to manage a new 130/30 strategy to complement the existing 130/30 product managed by JPMorgan
- Committed to several new strategies within private equity and private credit
- Redeemed capital from a growth-oriented absolute return strategy to bring the allocation in-line with the 3% target

Diversifying Portfolio
SCERS made three new manager hires within the Diversifying Absolute Return portfolio which brought the portfolio to the target allocation of 7.0%. No other changes were made during 2019 with the remaining Diversifying portfolio.

Real Return Portfolio
During 2018, SCERS committed to several new strategies within private real assets and real estate. The dedicated commodities allocation was eliminated, and a liquid real assets strategy managed by SSgA was funded in place of commodities.

Appendix 1 - Verus 2019 Review and Outlook (Continued)

Overlay
SCERS' overlay was modified following the adoption of the new policy adjustment. In addition, SCERS tightened the rebalancing bands within the asset class categories in order to ensure the overlay rebalances during large market moves intra-quarter.

PROJECTS FOR 2020

Staff and Verus plan to review opportunities that have the potential to increase liquidity and add incremental return utilizing strategies that provide greater capital efficiency. We plan to provide board education on the concept of capital efficiency, and strategies of interest in the space. In addition, we plan to provide education later in the year on the Asset/Liability Study that takes place in 2021 and if time permits, education on currency hedging. As part of the ongoing liquidity management process, Staff and Verus will provide an updated liquidity report.

Appendix 2 - Cliffwater Review of SCERS' Alternative Assets

CLIFFWATER LLC

To: Sacramento County Employees' Retirement System
From: Cliffwater LLC
Date: February 6, 2020
Regarding: **Alternative Assets 2019 Year in Review**

Investor confidence and risk appetite returned to the markets in 2019 following a turbulent end to the prior year, driving double-digit gains for most asset classes for the calendar year 2019. Equities around the globe quickly rebounded from the sharp sell-off experienced in the fourth quarter of 2018 and continued to produce strong gains throughout the year. Despite experiencing periods of heightened volatility during the year, equity markets (and other risk assets) were boosted by accommodative central bank policies, strong consumer spending, solid corporate earnings, and generally positive economic data. Geopolitical uncertainty, including ongoing trade talks between the U.S. and China, drove most of the disruptions in capital market performance during the year.

The U.S. stock market once again led performance across major asset classes, gaining more than 30% on the year. Non-U.S. developed equity markets gained 22%, while emerging market equities returned 18%. The backdrop of generally supportive economic conditions, accommodative central banks, and a lessening of certain tail risks proved a benefit to nearly all asset classes. High yield bonds returned 14% during the year as credit spreads tightened and interest rates declined. Publicly traded BDCs and REITs rounded out the top performing asset classes for the year, returning 29% and 27%, respectively.

The Sacramento County Employees' Retirement System ("SCERS") portfolio includes a diversified mix of alternative investments within private equity, private credit, real assets, and absolute return-oriented strategies. SCERS continued to develop these portfolios during the year, consistent with its long-term implementation plans, with the portfolios now at or near their targeted allocations. The alternative investments also extended their trend of delivering strong performance in meeting the objectives for SCERS.

Absolute Return Portfolio

Absolute return strategies generally outperformed expectations in 2019. Higher beta/equity-oriented funds, which benefitted from a strong market rally, led performance particularly among equity long/short and event driven strategies. Global macro strategies, which had trailed over the past several years, rebounded in 2019 and generated broadly positive returns. Market neutral strategies saw more mixed performance across funds and sub-strategies though overall these strategies delivered returns of 2 - 3% above the risk-free rate. The only lagging strategy was credit where managers struggled to produce sustained positive returns. These managers primarily suffered from underperformance of lower quality credits and several widely held positions that declined due to idiosyncratic issuer events. Market hedges also proved costly as both equity and credit markets rose sharply during the year.

Managers adjusted their portfolio positioning throughout the year as they raised net market exposures after beginning 2019 at close to historic lows. Net exposures are now near 12-month highs entering into 2020. Although absolute return strategies produced meaningful alpha in the first part of 2019, alpha generation deteriorated from September through the end of the year. Alpha

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Appendix 2 - Cliffwater Review of SCERS' Alternative Assets (Continued)

generation in this context is being defined as returns above the risk-free rate in excess of returns generated from broad market exposure. Alpha generation from absolute return strategies in the aggregate, as represented by industry index results, was slightly negative for the calendar year. However, Cliffwater estimates that institutional portfolios of absolute return strategies generated slightly positive alpha in 2019, as manager selection and portfolio construction decisions were additive to performance.

The SCERS Absolute Return portfolio saw solid gains across most of its investments, particularly within the Growth Oriented Absolute Return portfolio. The Growth Oriented portfolio returned 12.9% in 2019, with all of the direct fund investments producing double digit gains. The Diversifying Absolute Return portfolio's one-year return of 4.4%, though much more muted than the return of the Growth Oriented portfolio, still exceeded the risk-free rate by more than its targeted 2% hurdle. The Diversifying Absolute Return portfolio also continued to deliver on its objective of generating positive returns with limited sensitivity to broad market performance. This limited market sensitivity effectively capped the returns generated by the portfolio, as did the greater dispersion of returns across funds and strategies within the Diversifying portfolio, which limited the impact of certain funds' strong performance during the year.

Although each of the Growth Oriented and Diversifying Absolute Return portfolios were at or near their targeted allocations of 3% and 7%, respectively, SCERS continued to rotate its exposure within the Diversifying Absolute Return portfolio in 2019. SCERS made investments in two new funds within the market neutral category. One fund utilizes a systematic strategy designed to capture a diverse mix of market risk premia. The second fund is a global quantitative multi-strategy arbitrage fund. SCERS also transferred one investment from its fund of funds program to its direct fund holdings within the Diversifying Absolute Return portfolio. SCERS has been selectively adding direct fund investments in this portfolio while reducing the allocation to its fund of funds program to maintain its targeted allocations. SCERS will continue to add new exposures as needed to appropriately position the portfolio for anticipated market conditions.

Private Equity

A sharply rising stock market, record debt issuance in 2019, and robust demand from asset allocators provided plenty of fuel for private equity investing in 2019. A continued strong fundraising environment supported increasingly larger fund sizes or more frequent fundraisings by firms that maintained the sizing of their funds. Rapid fundraises were not uncommon during the year. U.S. buyout investment activity increased during the year, where larger sized transactions supported much of this activity. Smaller companies and transactions remain in focus for managers of all sizes, while larger transactions are also attracting sovereign wealth funds and large pension funds that are now purchasing companies directly. Although competition for new investments remains considerable, private equity buyout activity is still low as compared to the highs seen in 2006 and 2007. Deal volume in 2019 was less than half the amount that general partners invested in the years prior to the downturn. Exit activity among private funds did slow in 2019, which was at least partially reflective of accelerated sales activity in prior years.

Investment activity remains equally robust within venture capital, where investment in U.S. venture-backed companies surpassed $100 billion for the second year in a row. Venture capital fundraising remained steady in 2019, although new investment activity has far exceeded the pace of capital raised by venture capital firms over the last several years. The venture market has also seen increased participation of non-traditional investors, which accounted for roughly half of venture capital deal volume in 2019. These non-traditional investors are increasingly entering the market as they look to take advantage of the value creation that has shifted prior to an IPO. The result is high levels of capital available to fund companies as they stay private longer rather than rushing to have a public listing. 2019 also saw a record-breaking level of exits by venture capital funds. Nearly 80% of this activity came from public listings (IPOs) of venture capital backed companies. Although the performance of these IPOs has been mixed, there remains a large number of companies generating revenue and growth levels necessary for a public offering. The trends of elevated

Appendix 2 - Cliffwater Review of SCERS' Alternative Assets (Continued)

prices, heavy competition for new deals, and considerable amounts of available capital are expected to continue as asset allocators maintain or upsize private asset allocations.

The SCERS Private Equity portfolio includes a variety of buyout, growth equity, venture capital, and special situations strategies that in the aggregate are invested globally. SCERS has developed its portfolio of direct private equity fund commitments across these strategies over the past several years and the SCERS Private Equity portfolio has continued to produce very strong results on both an absolute basis and relative to its benchmarks. The Private Equity portfolio generated a net return, as measured on an IRR basis, of 18.7% for the trailing 12-month period ended September 30, 2019. Trailing three- and five-year returns were 21.1% and 17.3%, respectively. These results have significantly exceeded those of the peer universes and the SCERS long term performance objective of earning a 3% illiquidity premium above public equities. The SCERS performance continues to be broadly generated across the Private Equity portfolio rather than being driven by a few vintage years, strategies, or funds.

SCERS has maintained a strategic, long-term view of its private equity portfolio while remaining sensitive to near-term risks that can impact private equity investors. SCERS remains disciplined in its pacing of new commitments as it looks to sustain its allocation at the 9% strategic target and invest with specialized managers who have demonstrated an ability to add value. SCERS was again able to access high-quality managers while committing to seven new private equity funds during the year. The private equity fund commitments in 2019 included both "re-ups" made to new funds of general partners already managing capital for SCERS, as well as commitments to investment managers that are new to the SCERS portfolio. New commitments in 2019 were diversified across private equity strategies and included specialist buyout funds, venture capital funds, and a fund focused on distressed investing.

SCERS has ensured good portfolio diversification across strategies, geographies, sub-sectors, market capitalization, and time as SCERS looks to continue to generate its strong results over varying time periods and market conditions. As SCERS has reached its 9% strategic allocation target with a deep roster of top tier investment managers, SCERS will work to balance maintaining its existing manager relationships with an ability to selectively add new manager funds to the portfolio.

Private Credit

The SCERS Private Credit portfolio includes lending-oriented strategies focused on company situations where the manager expects to receive principal and interest payments. The asset class is intended to produce attractive risk-adjusted returns and generate current cash flow, with most of the return expected to be generated by cash flow yield. The SCERS Private Credit portfolio includes directly originated, non-traded loans to middle market companies as well as other lending-oriented strategies that may include royalty investments or other asset-based lending. Investments in the former category are considered Direct Lending investments in the Private Credit portfolio. The other lending strategies are considered Opportunistic Credit investments within this portfolio.

The SCERS Private Credit portfolio continued to deliver steady returns that have exceeded the returns earned in the broadly syndicated loan market plus a desired 2% illiquidity premium. The Private Credit portfolio generated a 6.8% net return for the 12-month period ending September 30, 2019. Returns for the three and five-year periods were 7.5% and 7.7%, respectively. The portfolio's 8.1% annualized net return since inception also exceeded the leveraged loan + 2% return target.

Although private debt fundraising has appeared to normalize from the peak in 2017, suggesting that institutional investor exuberance for the asset class has moderated, we remain cautious given the amount of competition in the market. However, we believe that private credit remains an attractive investment opportunity, particularly relative to other asset classes with similar expected returns. We continue to favor experienced managers with proven and established platforms and are focused on strategies that invest at the top of the capital structure with managers who have proven underwriting capabilities.

Appendix 2 - Cliffwater Review of SCERS' Alternative Assets (Continued)

SCERS remained diligent and disciplined in its ongoing implementation of the Private Credit portfolio. SCERS made four new commitments to private credit funds in 2019. Two of the new commitments were made to funds focused on direct lending and two of the new commitments were made to funds that fall within the Opportunistic Credit category. One of the direct lending commitments was made to an existing general partner in the Private Credit portfolio. The other three commitments represent new relationships for SCERS. The new commitments spanned a range of investment strategies that will provide differentiated exposure to the Private Credit portfolio. These strategies include infrastructure debt, royalty-related healthcare investments, and European lower middle-market lending.

Real Assets
The SCERS Real Assets portfolio is comprised of several sub-strategy allocations to infrastructure, energy, agriculture, timber, and other related strategies. Each of these strategies 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 its Real Assets exposure during the year with three new commitments, including commitments to two infrastructure funds and one energy-focused fund. The infrastructure fund commitments covered core-plus and opportunistic infrastructure strategies. Both of these funds are expected to invest in projects globally. The lone energy fund will pursue small to midsized midstream energy investments, which involve the processing, transportation, and/or storage of energy related resources. This fund will invest in midstream energy projects within the U.S.

Demand for infrastructure investments continued to increase through the year, supporting large fundraisings for several infrastructure managers and creating further pricing pressure for core infrastructure investments. Infrastructure funds have responded in part by looking for additional opportunities outside of what has typically been viewed as infrastructure investments. Some of this push has resulted in infrastructure strategies that begin to blend into real estate with investments in sectors such as data centers, senior housing, logistics and other industrials, and life sciences related projects. Infrastructure managers, as well as traditional energy managers, have also been increasingly focused on renewable power generation or energy transition strategies. Although multiple funds are being raised to focus solely on the renewable energy sector, diversified infrastructure funds have been the largest private investor in the renewable energy sector.

Conversely, demand for traditional energy investments has continued to decline. This is particularly evident for upstream (exploration and production) oil and gas investments, where a lack of exits and weakening performance has significantly curtailed interest in new funds. Energy funds focused on smaller projects, particularly within the energy infrastructure and midstream sectors, is one segment of the energy market that remains of interest to investors with long-term investment horizons. There is also some activity occurring with funds focused on mineral interests or royalties as a way to access the energy markets with lower risk. Investor interest in other private real asset strategies continues to represent a smaller portion of the real assets landscape.

Although SCERS did experience a downturn within some of its private energy investments following the significant oil price decline in the fourth quarter of 2018, performance of the SCERS Real Assets portfolio remains quite good. The portfolio has delivered low to mid-teens net returns (IRRs) over multi-year periods and since inception, even when including the 12-month period ending September 30, 2019 where the portfolio generated a more modest 7.9% return in a difficult market environment. The returns over each of these periods have been well ahead of the portfolio's benchmark returns. As with most of the SCERS alternatives portfolios, the contribution to these returns has been varied such that no single fund or group of funds has been driving the returns. The performance of the Real Assets portfolio has also been resilient despite commodity price volatility over the years.

Appendix 2 - Cliffwater Review of SCERS' Alternative Assets (Continued)

Heading into 2020

The SCERS Board, Staff, and Cliffwater have spent much of the past decade building portfolios of direct fund commitments within the alternative asset classes following the decision to diversify away from the fund of funds exposure SCERS initially selected to gain exposure to alternatives. SCERS has continued to develop and refine these portfolios as it reaches its targeted allocations and manages the increasing breadth and complexity of these allocations.

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 consistent that private assets can deliver 2% to 3% return premia and believe that absolute return strategies can help to reduce portfolio risk with less return degradation than many other diversifying assets. Market pressures and implementation challenges remain, however, and selection remains critical in each of these asset classes. Thoughtful implementation and portfolio construction are also paramount to the success of these programs. The investment process that the SCERS Board, Staff, and Cliffwater have developed and implemented represents a well-structured and thoughtful approach to investing in alternative investments. This approach has generated strong results and should continue to position SCERS to meet its investment objectives through a variety of market environments.

Appendix 3 - Townsend Review of SCERS' Real Estate Investments

TOWNSEND® GROUP
an Aon company

MEMORANDUM

TO: **Sacramento County Employees' Retirement System**

DATE: February 19, 2020

SUBJECT: Real Estate Investment Year in Review (Data as of September 30, 2019)

FROM: **The Townsend Group**

In 2019, U.S. private real estate markets continued their positive run for the tenth straight year. Despite recent strong performance, SCERS remains committed to reducing its overweight position to the real estate asset class and to finding opportunities focused on adding value and providing more diversification to the SCERS program. On a trailing twelve-month basis, the SCERS real estate portfolio (the "Portfolio") outperformed its benchmark by 264 basis points, achieving a net time-weighted return of 7.6%. Additionally, the Portfolio outperformed the benchmark (5.7% vs. 3.3% net) for the year-to-date. Relative outperformance has resulted from long-term strategies designed to provide stable core returns paired with attractive non-core returns that offer diversification advantages. As of 3Q2019, real estate represented 8.8% of total plan assets, which is below the upper target limit of 9.0%.

In reviewing the 2019 calendar year, we once again reflect upon the active role that the SCERS staff and consultants have played in identifying strategic investment opportunities that offer unique characteristics, strong fundamentals and compelling thematics. Furthermore, we note the ongoing reduction of SCERS' overweight to real estate through re-balancing process, as well as the completion of the transition from core separate accounts to commingled funds. We have conviction that this repositioned portfolio will help SCERS to perform well across future real estate cycles.

Real Estate Return and Risk Forecasts

Long-term return 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 2020:

Risk & Return	Core	Value	Opportunistic	REITs	Timber	Row Crop	Perm Crop	Private Infrastructure
Expected Net Return	**6.0%**	**6.5%**	**9.0%**	**6.0%**	**5.8%**	**6.0%**	**11.0%**	**7.0%**
Standard Deviation	**6.4%**	**9.1%**	**10.3%**	**20.9%**	**5.0%**	**4.3%**	**10.7%**	**7.3%**

Appendix 3 - Townsend Review of SCERS' Real Estate Investments (Continued)

TOWNSEND® GROUP
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Core Real Estate

SCERS' core portfolio represents 6.7% of the total plan, which is well within the established range of 4.0% to 9.0%. Current core weighting reflects changes to the IPS approved in July 2017, which removed the previous restriction on core investment vehicles to allow for future execution flexibility and captures the intention of the SCERS real estate program to focus on open-end core commingled funds going forward.

In 2019, the core portfolio was comprised exclusively of open-end funds, with only a negligible separate account cash balance held in reserves. As part of the core rebalancing activity, a partial redemption from Clarion Lion Properties Fund and a full redemption from Jamestown Premier Property Fund were requested during the year and paid out in late 2019 and early 2020 respectively. In addition, Prologis Europe called the remaining unfunded commitment of $14.7 million during the Third Quarter; no further core commitments remain unfunded.

Non-Core Real Estate

Non-core real estate represents 2.1% of the total plan, within the established range of 0.0%-5.0%. Townsend and Staff continued to focus on high conviction thematic opportunities for the non-core portfolio in 2019. SCERS made one non-core investment, a $35 million commitment to NREP Nordic Strategies Fund IV to further pursue the attractive themes in the Nordic regions. Furthermore, Townsend and Staff recognized tactical macro-economic themes in Japan and will continue to evaluate future opportunities in the Japanese non-core space.

In addition to commingled fund activity, the sale of Leland James was completed in 2019, generating significant return for the Portfolio. With the completion of the disposition, the non-core portfolio fully liquidated of Separate Account assets, and only has a relatively small amount of cash remaining in the BlackRock High Return Separate Account.

SCERS Private Real Estate Forecasts

Given the current overweight to private real estate and the higher-than-targeted core allocation, SCERS and Townsend are in discussions about potential core redemptions in 2020. The below forecasted pacing assumes $134 million in core redemptions over the next three years, and $30 million of new non-core commitments each year. This would result in achieving the real estate target allocation of 7% by year-end 2022, with a core/non-core mix of 70%/30%.

Appendix 3 - Townsend Review of SCERS' Real Estate Investments (Continued)

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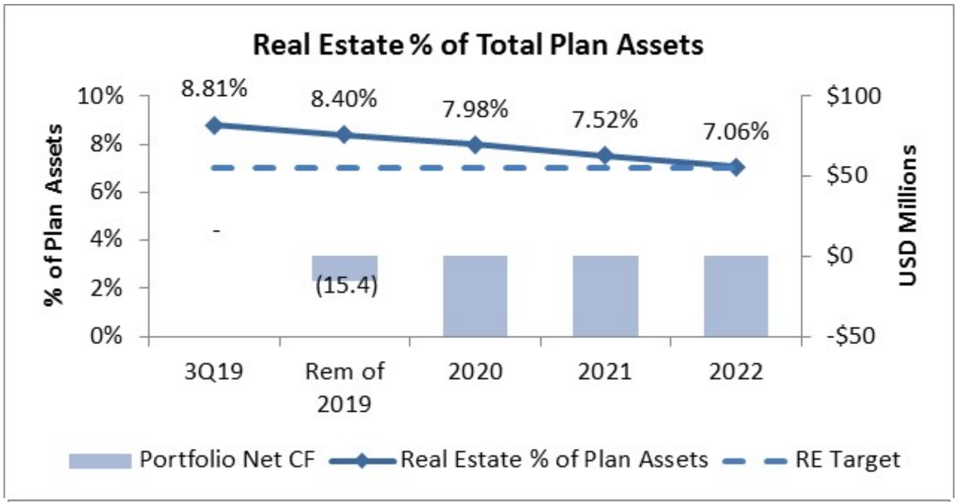

Global Diversification

SCERS' international exposure has grown steadily since 2013. As of 3Q2019, 79.2% of the SCERS private real estate portfolio is invested in the United States. 20.8% 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 62.8% ex-US as of 3Q2019 and is projected to be 36.8% ex-US by 2022.

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).

Appendix 3 - Townsend Review of SCERS' Real Estate Investments (Continued)

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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 2020

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 specifically and the real estate asset class generally.
2. Re-evaluate any existing core investments that are underperforming and determine 'hold' v. 'sell.'
3. Commit between $30 million per annum to non-core strategies over the next three years (2020-2022).
4. Further diversify Ex-US exposure. Staff and Townsend are currently evaluating real estate opportunities in Japan.
5. 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, Ex-US student accommodation and emerging market logistics (mainly in China).
7. Diligently evaluate future investments and remain selective; increasing non-core exposure is appropriate, but capital could be preserved for out-years to take advantage of a possible correction.
8. Monitor and reduce SCERS real estate exposure to achieve the 7% set target exposure for real estate by evaluating redemptions from the core Portfolio.

Appendix 3 - Townsend Review of SCERS' Real Estate Investments (Continued)

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Recap and Vision for 2020

Townsend continues to be focused on reducing SCERS' deliberate overweight to the real estate sector, which was necessary while the real assets category funded in to the Portfolio.

In 2019, investment activity was limited and the separate account liquidation was completed. The main concern was with rebalancing the SCERS core portfolio and evaluating redemption opportunities, resulting in two redemptions from the core portfolio occurring during the year. Townsend and Staff worked to enhance expected returns for SCERS throughout this process while maintaining a well-diversified Core portfolio. On the non-core side, SCERS remained selective about investment activity and pursued one Non-Core investment in the Nordic region.

For 2020, we are mindful that real estate has entered the eleventh year of a recovery/expansion cycle. There are various uncertainties and risks that may impact global real estate returns; yet fundamentals remain stable to strong. The past ten years have delivered outstanding returns, and SCERS has certainly benefited. Nonetheless, Townsend's long-term return and standard deviation forecasts have been revised downward.

Townsend will continue to pursue our strategic objectives for the Portfolio, as approved by SCERS board. On the sell-side, we will continue the process of reducing the real estate exposure, with an aim to reach the 7% exposure target through redemptions of liquid core holdings. On the buy-side, we will continue to be selective and identify non-core opportunities accretive to the SCERS Portfolio, with a focus on evaluating investments in Japan and Asia.

Appendix 4 - 2019/2020 Road Map

Topic	2019 Preview	2019 Actual	2020 Preview
Consultants	• Formally review Verus consulting mandate in-line with conclusion of contract expiration in June 2019	• Renewed the consulting contract with Verus for general consulting services	
	• Formally review Townsend Group real estate consulting mandate in-line with conclusion of contract expiration in June 2019	• Renewed the consulting contract with Townsend for real estate consulting services	
		• The Board approved issuance of an RFP for alternative assets consulting, to evaluate current consultant Cliffwater and the broader consulting marketplace	• Issue RFP for alternative assets consulting and evaluate consultant responses
Asset Allocation	• Implement the recently approved asset allocation to bring physical exposures toward their respective target allocations	• Hired a 130/30 equity extension manager as part of the 2019 Domestic Equity restructuring, and allocated to multiple funds within the Absolute Return, Private Equity, Private Credit, Real Assets, and Real Estate asset classes	• Continue implementation of the strategic asset allocation to bring physical exposures toward their respective target allocations
			• Initiate education on asset liability modeling (ALM) in anticipation for the next ALM study in 2021
Equities	• Review alternative passive management strategies to complement existing market cap weighted passive exposure	• Reviewed potential new strategies, including alternative passive management strategies to diversify the portfolio from existing market cap weighted exposure	• Evaluate potential new strategies and managers that would be additive to the Domestic and International Equity portfolios
	• Implement the 130/30 equity extension mandate with D.E. Shaw	• Implemented a 130/30 equity extension large cap mandate with the D.E. Shaw Group	• Evaluate country specific mandates, including Emerging Markets, for role in the International Equity portfolio
			• Perform a physical rebalance of SCERS' Domestic Equity portfolio, which is overweight to its target allocation
			• Review style and sector exposures for unrecognized portfolio tilts
Fixed Income		• Oversaw, monitored, and met with SCERS' Fixed Income managers	• Review bond sector exposures, particularly levels of credit
			• Perform a physical rebalance of SCERS' Fixed Income portfolio, which is underweight to its target allocation

Appendix 4 - 2019/2020 Road Map (Continued)

Topic	2019 Preview	2019 Actual	2020 Preview
Absolute Return	• Identify and invest in 2-5 potential absolute return funds with an average investment size of $45 million per fund	• Made two diversifying absolute Return investments totaling $90 million in aggregate	• Identify and invest in 2-6 potential absolute return funds with an average investment size of $45 million per fund; 2-4 diversifying strategies and 0-2 growth strategies
	• Reduce allocation to the interim portfolio with GCM (SCARF-B) as the direct portfolio becomes fully invested	• Transferred a $32 million investment from the GCM (SCARF-B) portfolio to a direct investment in the Diversifying Absolute Return portfolio; also redeemed an additional $40 million from SCARF -B	• Wind down the interim SCARF-B portfolio with GCM, and invest proceeds in direct fund investments
	• Bring in current Absolute Return managers for Board education		• Bring in current Absolute Return managers for Board education
Private Equity	• 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	• Committed to 7 private equity funds totaling $185 million in aggregate	• Identify and commit to 6-9 potential private equity investments with an average commitment size of $30 million per fund; $210 million in total with a range of $170 to $250 million
	• 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	• Provided Board education on secondary investments	• Continue to 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	• Provided Board education on co-investments, and identified a process and structure for identifying and evaluating co-investment opportunities	• Evaluate investment managers to assist in implementation of a co-investment portfolio with diversified deal flow, including that of SCERS' existing general partners
	• Bring in current Private Equity managers to educate SCERS' Board	• An existing private equity investment manager provided education to SCERS' Board on its consumer branded buyout strategy	• 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 $50 million per fund; $175 million in total with a range of $125 to $225 million	• Committed capital to 4 private credit funds totaling $160 million in aggregate	• Identify and commit to 2-5 potential private credit investments with an average commitment size of $50 million per fund; $150 million in total with a range of $100 to $200 million
	• Bring in current private credit managers to educate SCERS' Board		• Bring in current private credit managers to educate SCERS' Board

Appendix 4 - 2019/2020 Road Map (Continued)

Topic	2019 Preview	2019 Actual	2020 Preview
Real Assets	• 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	• Committed capital to 3 real assets funds totaling $110 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 5 investments in the real assets secondary/co-investment separate account	• Evaluate commitment level and investment pacing of the real assets asset-backed lending separate account
	• 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 $50 million	• Committed capital to 1 real estate fund totaling $35 million in aggregate	• Identify and commit to 0-2 potential real estate investments with an average commitment size of $30 million per fund; $30 million in total with a range of $0 to $40 million
	• Finalize the lease up and disposition of Leland James Center	• Finalized the sale of Leland James Center, and office redevelopment project in Portland, OR	
	• Rebalance the Real Estate portfolio to reduce the actual allocation toward the 7% target allocation	• Rebalanced the Real Estate portfolio to reduce the allocation from 9% to 8.5%	• Rebalance and reduce the Real Estate portfolio further 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 2019; monitored and oversaw existing investments	• Review late cycle opportunities in distressed/special situations through contingent capital/ dislocation funds

Appendix 4 - 2019/2020 Road Map (Continued)

Topic	2019 Preview	2019 Actual	2020 Preview
Other Investment Activity	• Review ranges around target allocations within SCERS' Overlay Program, and make any modifications as necessary	• Revised the Overlay Program by modifying the intra-quarter rebalancing bands around the Growth, Diversifying, and Real Return asset categories to provide a higher level of probability that rebalancing will occur during significant intra-quarter market movements	
	• Oversee and monitor existing investment managers, including on-site due diligence where appropriate	• Oversaw and monitored existing managers including several manager on-site meetings	• Oversee and monitor existing investment managers, including on-site due diligence where appropriate
	• 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	• Issued an RFP and engaged a third party private markets accounting service provider, Colmore, to assist SCERS with the accounting and reporting of its growing private markets portfolio	• Fully onboard third party private markets accounting service provider, Colmore
	• Evaluate risk management and portfolio management software systems needs		• Evaluate risk management and systems for SCERS' total portfolio and asset categories/classes
	• Create a cash management policy that incorporates results from SCERS' recently generated liquidity analysis	• Created a cash management policy to identify processes and tools to assist SCERS in the management of cash, monitoring of liquidity, and the management of liquidity risk	
		• Updated investment policy statements for the Master IPS, and the Growth, Diversifying, and Real Return asset categories	
		• Confirmed the continued use of a third-party service provider to voting proxies, and approved an updated Proxy Voting Policy	• Select and approve updated proxy voting guidelines with third-party proxy voting service provider Institutional Shareholder Services (ISS)
		• Evaluated approaches to portfolio currency hedging solutions with Verus	• Further evaluate SCERS' currency exposures and currency hedging solutions in the market
		• On boarded recently hired Deputy Chief Investment Officer	• Evaluate additional investment staffing needs in 2020
			• Perform research and evaluate approaches to capital efficiency, to potentially improve liquidity, enhance returns, and/or improve diversification
			• Update SCERS' fiduciary standard of care policy as it relates to entering into alternative asset investment contracts

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