



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 26

MEETING DATE: August 17, 2022

SUBJECT: Liquidity Study

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

RECOMMENDATION

Staff recommends the Board receive and file the liquidity study performed by SCERS' general investment consultant, Verus Advisory.

PURPOSE

This agenda item supports SCERS' Cash Management Policy, which calls for Staff and SCERS' general investment consultant to update the Board on SCERS' liquidity profile annually.

SUMMARY

Verus recently conducted an annual liquidity study for SCERS. Verus generates two measures for liquidity, a (1) Liquidity Coverage Ratio (LCR) and a (2) Modified Liquidity Coverage Ratio (MLCR). Both ratios measure whether an institutional investor has sufficient liquidity over a 5-year period. The MLCR is a more conservative measure, as it includes only those liquid assets that an investor would likely favor selling in a stressed market environment, whereas the LCR includes all liquid assets. The results of the liquidity study show that SCERS has a LCR of 2.2, compared to the 2020 measure of 2.2. The MLCR of 1.1 compares to the 2020 measure of 1.0.

The measures demonstrate that SCERS' liquidity position remains at a healthy level.

BACKGROUND

Verus has been conducting liquidity studies for its clients over the past several years. Whereas Verus' prior methodology (prior to 2020) took a more linear approach with greater use of historical data, the current methodology incorporates forward looking capital market assumptions and runs scenario analysis, which provides a more accurate measurement of a plan's liquidity profile.

A liquidity study provides an understanding of the plan's overall cash flow profile, and insight into how the plan can address future cash flow needs, both from the actuarial and investment sides. The analysis is particularly useful given SCERS' meaningful private markets exposure, which is illiquid. Past studies have determined that while SCERS has negative cash flows as a plan, due to benefit payments exceeding contributions, its overall liquidity profile remains healthy.

SCERS created a cash management policy in 2019, which assists in ensuring that SCERS is in a sufficient liquidity position across economic and market cycles. The objectives of the cash management policy are to: (1) ensure that member benefit payment and funding obligations are met without interruption regardless of financial market conditions; (2) provide a process for the oversight and management of cash; and, (3) oversee liquidity risk and maintain appropriate liquidity profiles within the SCERS Plan. The Policy identifies sources of cash and various liquidity categories within SCERS' plan, and the time it would be expected to convert assets into cash. The policy also identifies how liquidity is to be measured within the SCERS plan, and calls for Staff and SCERS' general investment consultant to update the Board on SCERS' liquidity profile annually. The Cash Management Policy will be revised/re-affirmed later this year.

LIQUIDITY MANAGEMENT OBJECTIVES

There are multiple objectives of a liquidity management framework. These include:

- Maintaining sufficient cash to meet member benefit payment and other funding obligations such as plan expenses and the funding of investment commitments.
- The ability to rebalance the investment portfolio to target allocations.
- The ability to make modifications to the asset allocation when needed.

SCERS' annualized actuarial rate of return is 6.75%. The investment program aims to earn the actuarial rate of return consistently, while limiting volatility in the range of outcomes that the portfolio is subjected. The strategic asset allocation emphasizes diversification across market segments to reduce volatility and portfolio downside and to generate increasing levels of cash flows. However, in a stressed market environment SCERS' assets can experience negative returns, which makes earning the actuarial rate of return difficult. Falling short of the actuarial rate of return over an extended period puts pressure on SCERS' ability to meet benefit payment and funding obligations, which emphasizes the need for maintaining sufficient liquidity within the investment portfolio.

Like many public pension plans, SCERS is a mature plan with negative cash flows, meaning member benefit payments going out are greater than employer and employee contributions, and net investment income, coming in on an annual basis. As shown on slide 5 of the Verus presentation, which uses data from SCERS' actuarial consultant, Segal, SCERS currently has a 1.47% deficit, which is expected to increase to over 3% over the next 10 years.

The negative cash flow profile is also influenced by private market investments, where due to the 'J-curve effect' in the earlier stages of allocating toward a target allocation, cash outflows (capital calls) are greater than cash inflows (distributions). As private market portfolios become more mature, cash inflows eventually outpace cash outflows to create a positive net cash flow

profile. SCERS' private equity portfolio is mature and cash flow positive, whereas private real assets and private credit are maturing but still cash flow negative. Cliffwater models private equity to be cash flow positive (distributions outpacing contributions) over the next 10 years, with private credit and real assets becoming cash flow positive over the next few years. Townsend forecasts the real estate portfolio to ebb and flow between cash flow positive and negative over the next ten years. Keep in mind that a dislocated/stressed market can translate to distributions from private markets managers being cut back, while capital calls accelerate, which can negatively impact cash flows.

It should be noted that a negative cash flow position for a plan represents the gap between a plan's cash inflows and cash outflows, but does not necessarily represent a requirement to cut or liquidate plan assets to cover the gap. If a plan is in a negative cash flow position, there are ways to address the gap. For SCERS this includes: (1) using available cash (SCERS has a dedicated 1% cash allocation); (2) rebalancing portions of the portfolio that are overweight to their respective targets; (3) distributions from private market investments; (4) increasing contributions toward the plan (generally a byproduct of a reduction in the actuarial rate); or (5) selling assets (which would be a last case scenario). Over the longer-term, a negative cash position can also be addressed through adjustments to the strategic asset allocation.

SCERS LIQUIDITY PROFILE

Verus breaks SCERS' assets into different liquidity categories (slide 4). The most liquid include public equity and fixed income strategies, which tend to have daily liquidity. Absolute return, core real estate, and core infrastructure invested through open-end funds tend to have 30 to 90 day liquidity; however, these strategies can also see liquidity move to one year in a stressed liquidity environment, in which a fund could be subject to exit queues and investor gates. The least liquid category consists of illiquid assets such as private equity, private credit, much of private real assets, and non-core real estate. These assets are invested within multi-year fund structures, so liquidity, for purposes of Verus' analysis, is measured at one year, and for the most part are considered illiquid, unless sold in the secondary private markets at a potential discount to fair value.

LIQUIDITY ANALYSIS

Verus' approach to liquidity studies analyzes a plan's liquidity by comparing a plan's liquid assets and cash inflows to a plan's cash outflows (slide 8 of the Verus presentation). Within the study, Verus measures SCERS' liquidity over a 5-year period.

Cash inflows include:

- Liquid financial assets
- Employer and employee contributions
- Investment Income
- Distributions from illiquid assets (i.e., private equity; private credit; real assets; real estate)

Cash outflows include:

- Member benefit payments
- Capital calls for illiquid assets
- Plan expenses

As referenced previously, Verus runs its liquidity study using two measures: (1) Liquidity Coverage Ratio (LCR); and (2) Modified Liquidity Coverage Ratio (MLCR).

The LCR measures whether a plan has enough cash flows and liquid assets to meet cash outflows over a 5-year period, without having to sell illiquid assets to cover liquidity needs. The LCR calculated in the analysis (slide 10) is 2.2, meaning it has 2.2x coverage in liquidity available relative to SCERS' spending needs over the next 5 years. Verus views any measure greater than 1.0 as sufficient liquidity; however, a measure above 2.0 is optimal. The 2.2 measure is the same as the 2.2 LCR from the last full liquidity study in 2020 (Verus also ran a liquidity analysis in 2021 for the recently approved asset allocation revision, which came out as 2.3).

Verus also uses a more conservative measure, the MLCR. While the LCR measure is useful in understanding SCERS' liquidity profile, it assumes that SCERS would be comfortable selling all types of liquid assets in a drawdown period to meet the plan's liquidity needs. The MLCR only includes those liquid assets that SCERS would likely favor selling in a stressed market environment, labeled 'liquid diversifying assets' on slide 4, including U.S. Treasuries, core fixed income, liquid real return assets, and cash. Verus views a reading above 1.0 as an optimal measure for the MLCR, which translates to a plan not being in a position of needing to sell any liquid risk assets (also defined on slide 4), such as public equities and liquid credit, to meet planned obligations over the 5 years following a market dislocation. The MLCR calculated in the analysis (slide 14) is 1.1, meaning it has 1.1x coverage on assets that SCERS would be comfortable selling to cover liquidity needs over the 5 years following a market dislocation. The 1.1 measure is slightly better than the 1.0 MLCR from the last full liquidity study in 2020 (Verus also ran a liquidity analysis in 2021 for the recently approved asset allocation revision, which came out as 1.1).

The LCR and MLCR should be viewed in conjunction to one another.

SUMMARY OF CHANGES IN LIQUIDITY:

Both the LCR and MLCR improved slightly since the last time Verus conducted a full liquidity study in 2020, and are in line with the liquidity analysis ran during the 2021 asset liability modeling study. The reason for the slight improvement is due to the higher plan market values from the prior fiscal year, where the plan returned 27.7%. The liquidity ratios are also benefitting from a maturing private markets portfolio, with an increase in distributions from mature funds. The private equity portfolio is the largest private markets asset class, and is also the most mature, consistently generating distributions in excess of capital being called (i.e., it's self-funding or cash flow positive). The liquidity study modeled an increase in projected private markets distributions and a decrease in projected capital calls over the next 10 years.

Staff and Verus do not believe that the results of the current liquidity data requires any action. The MLCR is slightly above the preferred target of above 1.0. SCERS' LCR rating of 2.2 means that SCERS has ample liquidity within liquid risk assets that can be accessed through rebalancing to account for any deterioration in the MLCR and insufficient levels of liquid diversifying assets.

While the LCR and MLCR are in good shape currently, as discussed earlier, SCERS currently has a 1.47% cash flow deficit, which is expected to increase to over 3% over the next 10 years. Increasing benefit payments are a function of demographic changes within the system, including the ratio of active to inactive/retired members. Growth in total contributions will not keep pace with the growth in benefit payments, particularly as the plan becomes more fully funded and the unfunded liability is paid off. In fact, with the exceptionally high investment return of 27.7% during FY 2021, Segal has reduced the forecasted total contributions over the next 10 years due to a reduction in the unfunded liability and the plan moving closer to a fully funded status, as shown on slide 5. However, SCERS will recognize an investment loss in FY 2022, as SCERS likely generated a negative return vs. the actuarial target return of 6.75%, which will reverse some of the reduction in the contribution rates within the Segal data.

While moving toward a fully funded status and reducing the unfunded liability are good for SCERS' plan, it does create a wider gap between benefit payments and contributions. This places greater emphasis on managing cash flows, and creates limits on the level of illiquid asset exposures within a portfolio. At the same time, illiquid assets have demonstrated an ability to earn higher returns than liquid assets, as well as higher and more consistent cash flows (in the case of private credit and parts of real assets), and they provide portfolio diversification. SCERS will need to be cognizant of its cash position in subsequent asset liability studies, and potentially adjust the strategic asset allocation to ensure sufficient liquidity to meet the growing gap between benefit payments and contributions. SCERS will need to balance this against maintaining a diversified investment portfolio with ample allocations to asset classes that can earn the actuarial rate of return, generate cash flows, and provide downside protection in dislocated market environments.

The liquidity study performed by Verus provides a good look-through as to SCERS' current liquidity profile. The analysis demonstrates that SCERS is currently in a healthy liquidity position, with ample liquid assets to meet cash outflows over a 5-year period. A follow-up liquidity study will be conducted in 2023, and will incorporate any changes in market developments and data. Future liquidity studies and asset allocation studies will factor in SCERS' liquidity profile and cash flow needs as the gap between benefit payments and contributions widens.

ATTACHMENTS

- Board Order
- Liquidity Study Presentation

Prepared by:

Reviewed by:

/S/

/S/

Steve Davis
Chief Investment Officer

Eric Stern
Chief Executive Officer



Retirement Board Order

Sacramento County Employees' Retirement System

**Before the Board of Retirement
August 17, 2022**

AGENDA ITEM:

Liquidity Study

THE BOARD OF RETIREMENT hereby accepts the recommendation of staff to receive and file the Liquidity Study performed by SCERS' general investment consultant, Verus Advisory.

I HEREBY CERTIFY that the above order was passed and adopted on August 17, 2022 by the following vote of the Board of Retirement, to wit:

AYES:

NOES:

ABSENT:

ABSTAIN:

ALTERNATES (Present but not voting):

Board President

Eric Stern
Chief Executive Officer and
Board Secretary



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



AUGUST 2022

Liquidity Study

Sacramento County Employees' Retirement System

Introduction

Present annual liquidity study

- SCERS' Cash Management Policy calls for an annual update on SCERS' liquidity profile
- Liquidity study conducted by general investment consultant, Verus

Purpose

- Study provides an understanding of the plan's overall cash flow profile
 - Investment and actuarial data as inputs
- Insight into how the plan can address future cash flow needs

SCERS Objectives and Characteristics

Defined Benefit Plan

OBJECTIVES

1. Achieve 6.75% Long Term Rate of Return Assumption
2. Achieve the return as efficiently and effectively as possible
3. ***Always have enough cash and available liquidity on hand to fund benefit payments and plan commitments***

Managing liquidity risk is a primary imperative for the trustees

PLAN CHARACTERISTICS

1. Cash flow negative (benefit payments > contributions)
2. Meaningful exposure to illiquid private market investments

2022 Liquidity Model Assumptions

Liquidity assumptions by asset class

Asset Class	Allocation	Liquidity Model Classification	Days to Convert to Cash
US Large	18.0%	Liquid Risk Assets	3
US Small	2.0%	Liquid Risk Assets	3
International Developed	16.0%	Liquid Risk Assets	3
Emerging Markets	4.0%	Liquid Risk Assets	3
High Yield Corp. Credit	1.0%	Liquid Risk Assets	30
Bank Loans	1.0%	Liquid Risk Assets	30
Hedge Fund	7.0%	Liquid Risk Assets	30-90
Core Real Estate	5.0%	Liquid Risk Assets	90+
Cash	1.0%	Liquid Diversifying Assets	1
US Treasury	4.0%	Liquid Diversifying Assets	1-3
Core Fixed Income	12.0%	Liquid Diversifying Assets	3
Liquid Real Return	2.0%	Liquid Diversifying Assets	3
Private Equity (Direct)	11.0%	Illiquid Risk Assets	Illiquid
Private Credit	5.0%	Illiquid Risk Assets	Illiquid
Value Add Real Estate	2.0%	Illiquid Risk Assets	Illiquid
Opportunistic Real Estate	2.0%	Illiquid Risk Assets	Illiquid
Private Real Assets	7.0%	Illiquid Risk Assets	Illiquid
	100%		

- Verus updated its liquidity model in 2020. The new model uses the same basic framework for measuring liquidity (LCR and MLCR) but how it makes return projections, handles Plan cash flows and runs scenario analysis is different
- Verus believes its updated liquidity model provides a more realistic projection of SCERS' liquidity position

SCERS' Pension Cash Flows

Calendar Year	Beginning of Year Market Value of Assets	Total Contributions	Total Benefit Projection + Expenses	Net Cash Flow %	Net Cash Flow (\$)
2022	12,891,476,352	480,359,849	670,227,389	-1.47%	-189,867,540
2023	13,577,844,735	472,512,960	701,967,752	-1.69%	-229,454,792
2024	14,270,908,053	440,100,207	739,306,358	-2.10%	-299,206,151
2025	14,939,210,827	418,104,192	777,922,810	-2.41%	-359,818,618
2026	15,590,565,016	401,430,954	817,285,878	-2.67%	-415,854,924
2027	16,228,558,508	351,180,074	857,016,115	-3.12%	-505,836,041
2028	16,817,828,737	311,299,188	897,188,560	-3.48%	-585,889,372
2029	17,363,910,836	317,368,819	937,780,387	-3.57%	-620,411,568
2030	17,911,695,571	323,656,131	978,760,606	-3.66%	-655,104,475
2031	18,461,123,544	330,174,235	1,019,995,728	-3.74%	-689,821,493

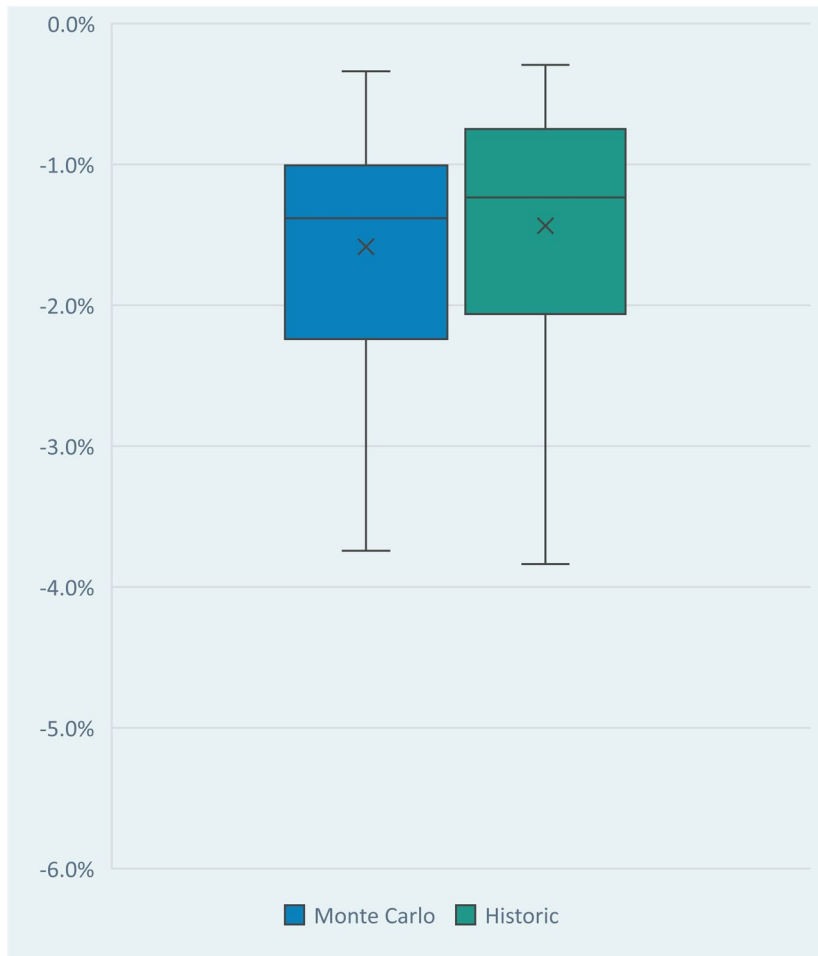
SCERS has a 1-4% cash flow deficit each year, excluding capital calls and distributions from private investments

Deficit is projected to grow overtime, reaching 3.7% in 10 years

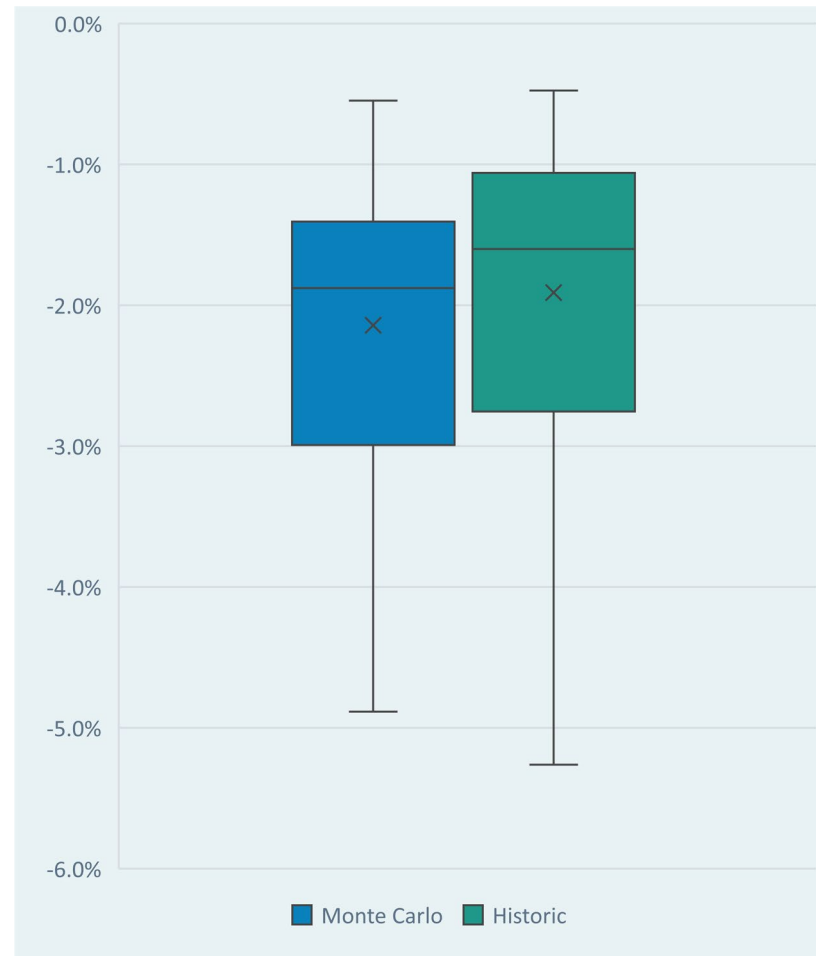
Data provided by Segal

Liquidity needed to meet cash flow needs - 2020

% OF TOTAL PORTFOLIO LIQUIDATED FOR CF NEEDS



% OF LIQUID PORTFOLIO LIQUIDATED FOR CF NEEDS



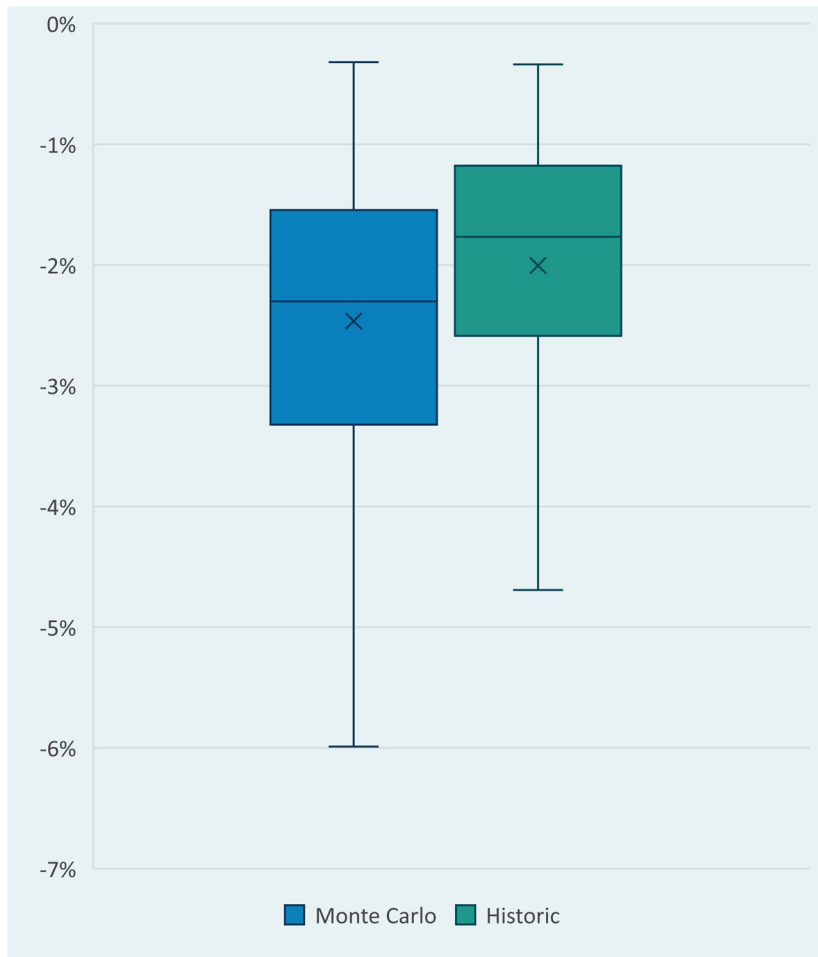
Based on our projections, SCERS will have a negative cash flow each year of around 1.6% of Plan assets.

Includes capital calls and distributions from private funds

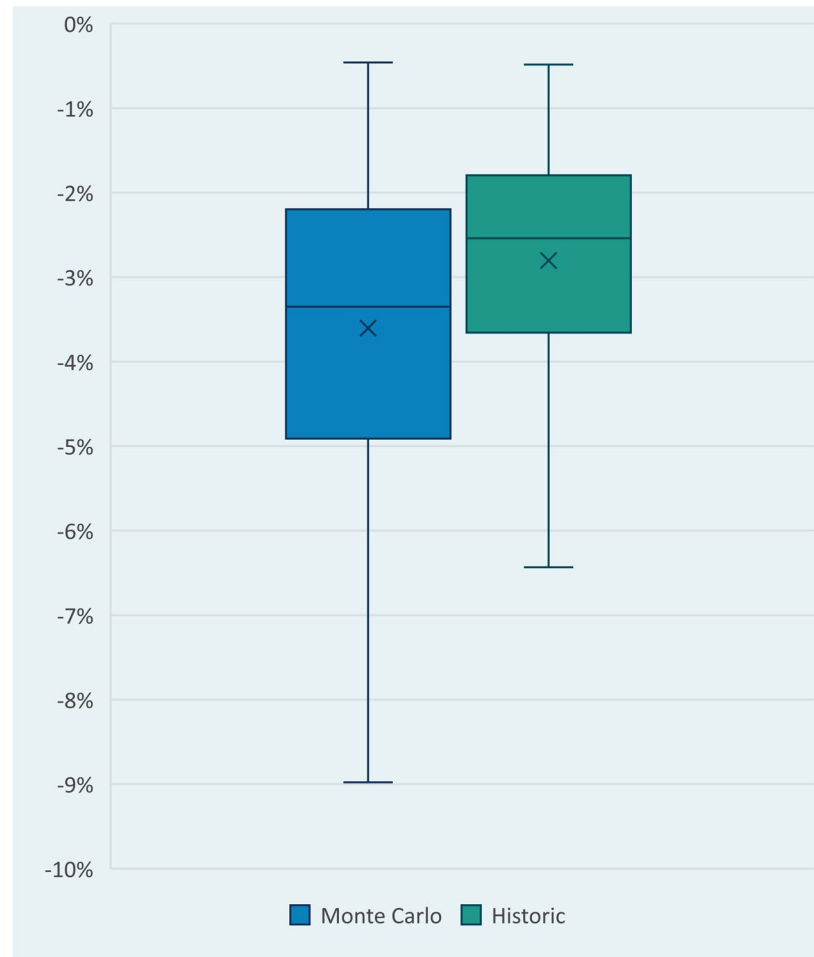
- Actuarial information provided by Segal
- Private market projections for capital calls and distributions provided by Cliffwater and Townsend

Liquidity needed to meet cash flow needs 2022

% OF TOTAL PORTFOLIO LIQUIDATED FOR CF NEEDS



% OF LIQUID PORTFOLIO LIQUIDATED FOR CF NEEDS



Based on our projections, SCERS will have a negative cash flow each year of around 2.5% of Plan assets.

Includes capital calls and distributions from private funds

– Actuarial information provided by Segal

– Private market projections for capital calls and distributions provided by Cliffwater and Townsend

LCR

Does the plan need to sell illiquid assets to cover cash outflows over a 1-year & 5-year period?

This is the same LCR formula used in prior liquidity models

$$\text{Liquidity Coverage Ratio (LCR)} = \frac{\begin{aligned} & \text{Liquid Financial Assets (normal market condition)} \\ & \Sigma(\text{Distributions from Illiquid Assets}) \\ & \Sigma\left(\frac{\text{Employer}}{\text{Employee}} \text{Contributions}\right) \\ & \Sigma(\text{Investment Income}) \end{aligned}}{\begin{aligned} & \Sigma(\text{Benefit Payments}) \\ & \Sigma(\text{Capital Calls for Illiquid Assets}) \\ & \Sigma(\text{Plan Expenses}) \end{aligned}}$$

LCR Value	Implication
<1	The plan will need to sell illiquid assets to cover cash flows
1	The plan has sufficient liquidity to cover all cash flows
>1	The plan will not be required to sell illiquid assets to cover liquidity needs

SCERS Liquidity Coverage Ratio – LCR

LCR 2022

Liquidity Available	Liquid Diversifying + Liquid Risk Assets	\$9,410,777,737
	Distributions from Illiquids	\$3,360,645,570
	Employer + Employee Contributions	\$2,212,508,162
	Investment Income	
Liquidity Needs	Benefit Payments + Plan Expenses	\$3,706,710,187
	Capital Calls	\$2,869,274,191
	UAAL Amortization	-
LCR		2.28

LCR 2020

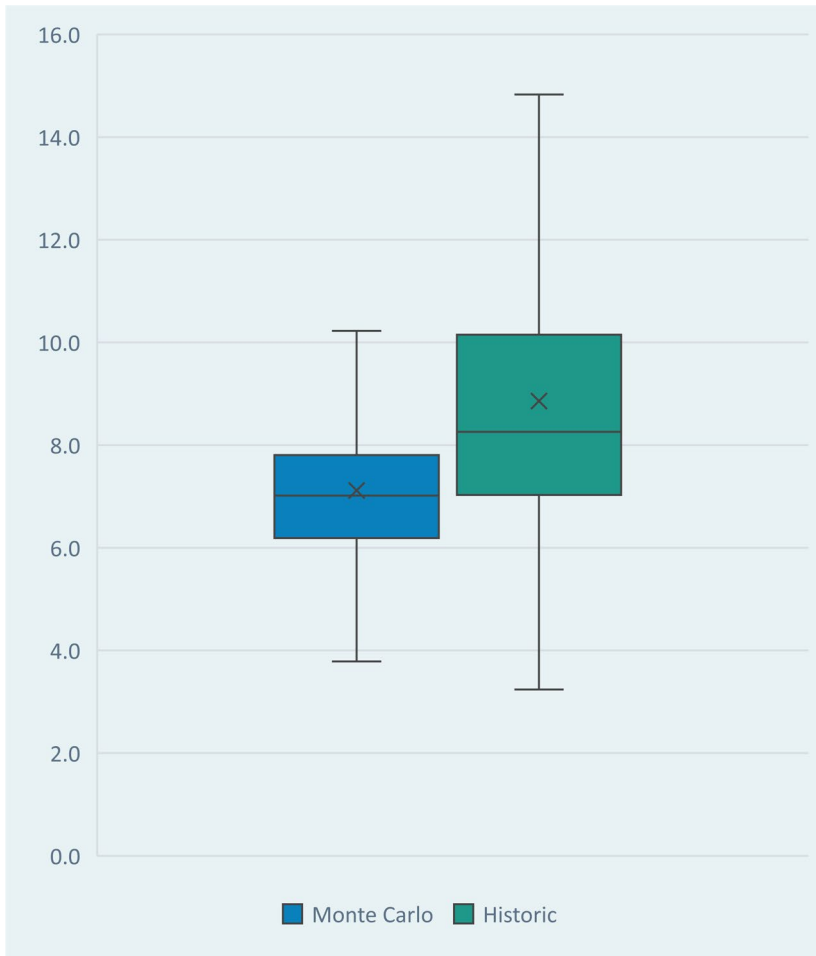
Liquidity Available	Liquid Diversifying + Liquid Risk Assets	\$ 7,850,948,075
	Distributions from Illiquids	\$ 3,277,740,866
	Employer + Employee Contributions	\$ 2,228,046,966
	Investment Income	
Liquidity Needs	Benefit Payments + Plan Expenses	\$ 3,336,426,310
	Capital Calls	\$ 3,275,061,579
	UAAL Amortization	-
LCR		2.02

New liquidity model does not calculate an LCR in the same way as in prior years (before 2020).

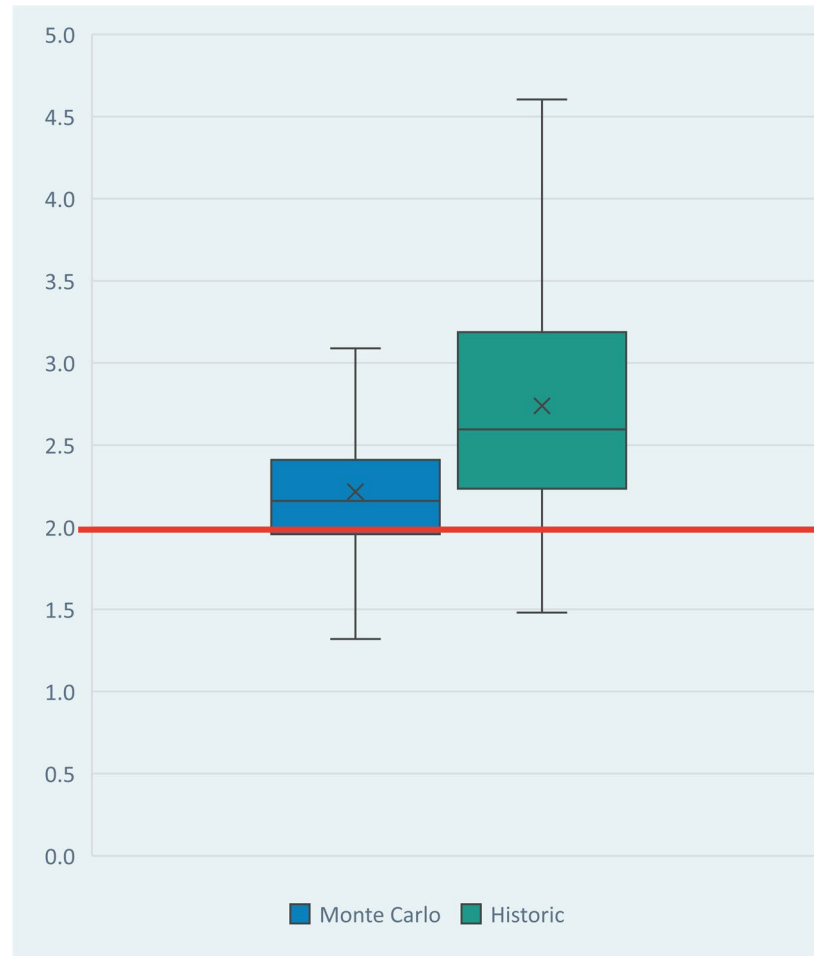
The projected LCR of 2.28 will differ from our updated LCR measure as seen on the next page

Liquidity Coverage Ratio – 2020

1-YEAR LCR



5-YEAR LCR

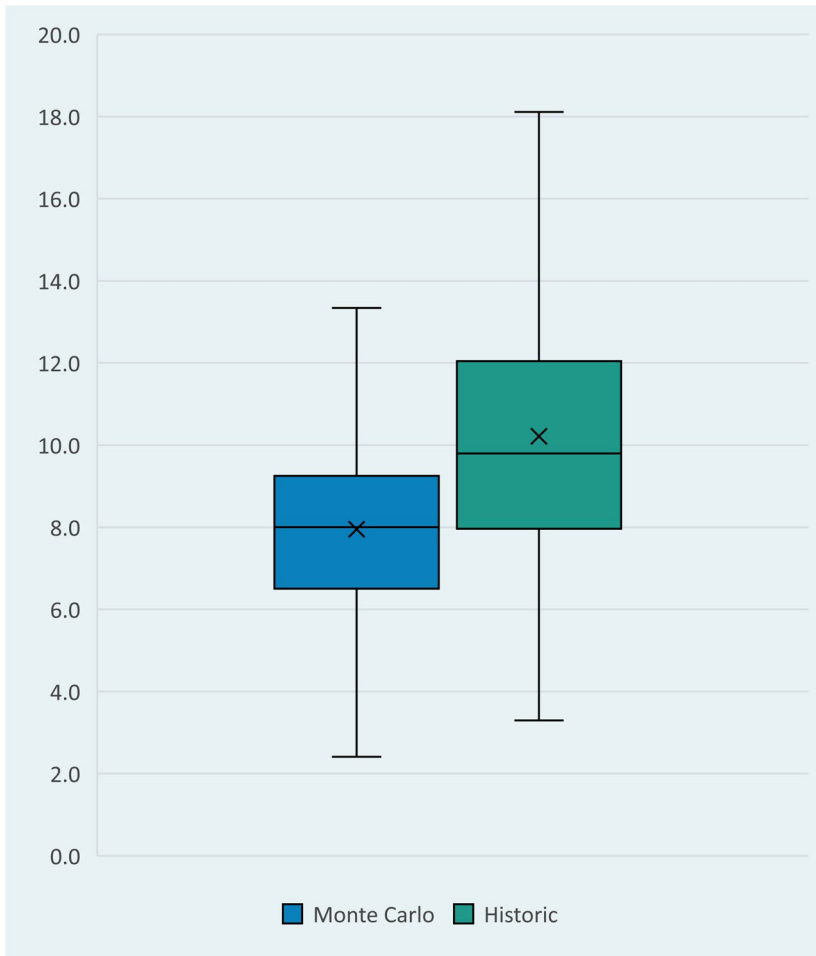


5-year LCR median outcome is 2.2 with 50% of all observations between 1.9-2.4

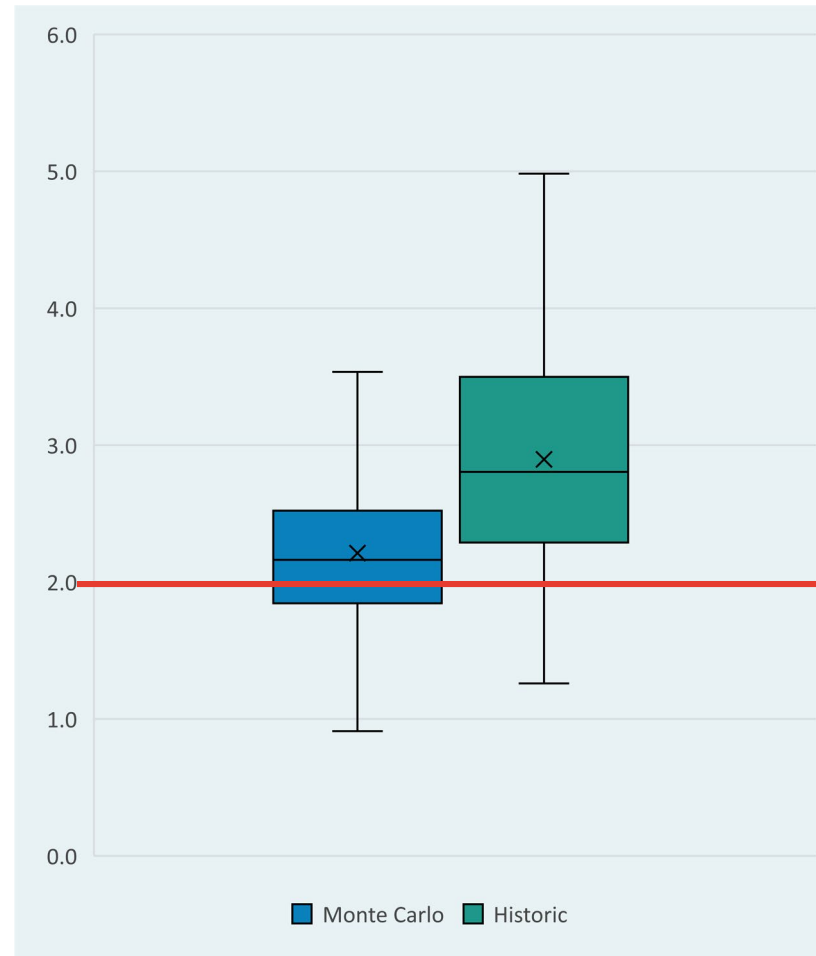
- Actuarial information provided by Segal
- Private market projections for capital calls and distributions provided by Cliffwater and Townsend

Liquidity Coverage Ratio – 2022

1-YEAR LCR



5-YEAR LCR



5-year LCR median outcome is 2.2 with 50% of all observations between 1.8-2.5

- Actuarial information provided by Segal
- Private market projections for capital calls and distributions provided by Cliffwater and Townsend

SCERS Modified Liquidity Coverage Ratio – MLCR

MLCR 2022

Liquidity Available	Diversifying Liquid Assets	\$2,449,380,507
	Distributions from Illiquids	\$3,360,645,570
	Employer + Employee Contributions	\$2,212,508,162
	Investment Income	
Liquidity Needs	Benefit Payments + Plan Expenses	\$3,706,710,187
	Capital Calls	\$2,869,274,191
	UAAL Amortization	-
MLCR		1.22

MLCR includes the following in liquid assets:

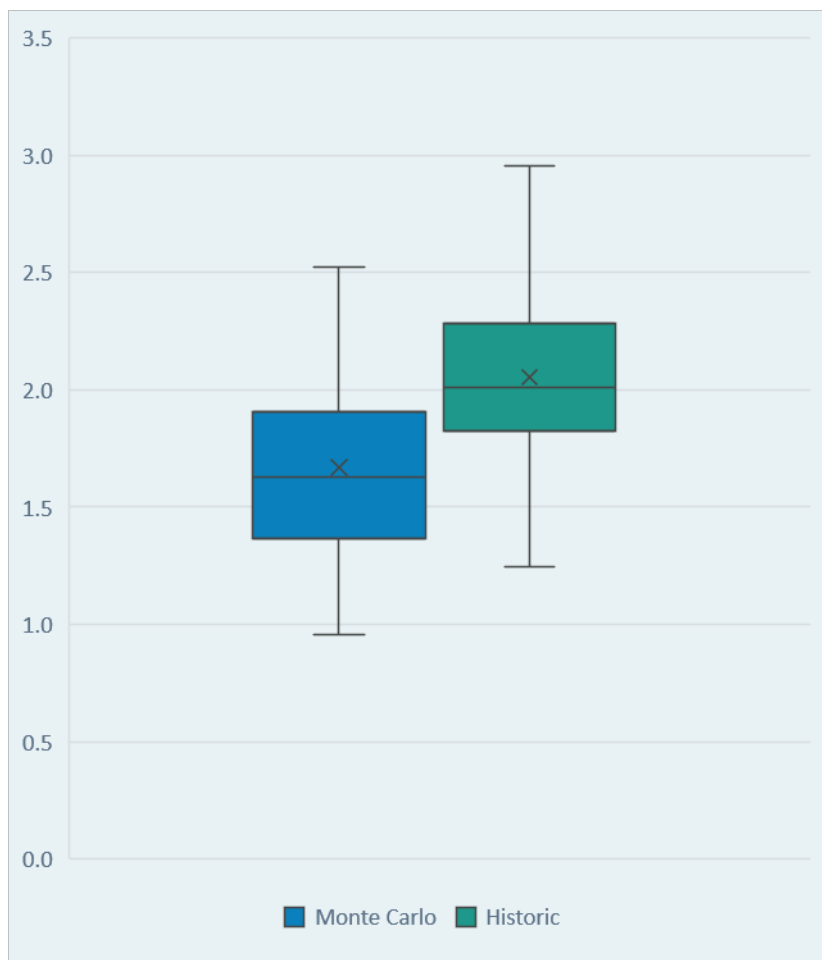
- Core Fixed Income
- Treasuries
- Global ex. US Fixed Income
- Liquid Real Assets
- Cash

MLCR 2020

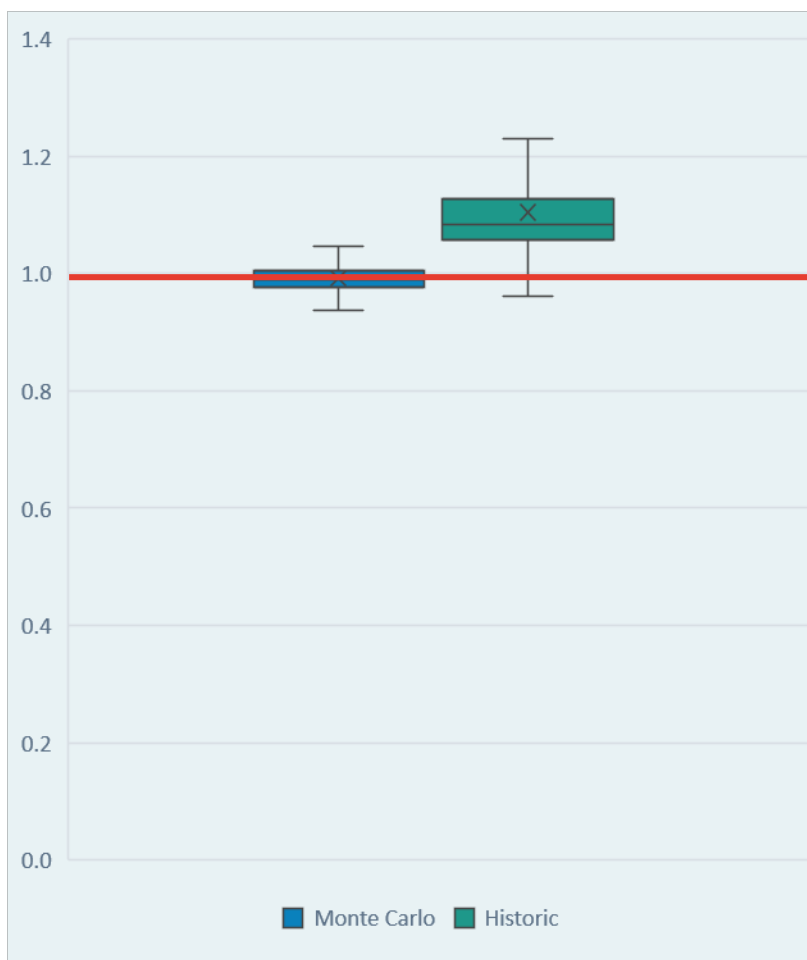
Liquidity Available	Diversifying Liquid Assets	\$ 2,113,716,789
	Distributions from Illiquids	\$ 3,277,740,866
	Employer + Employee Contributions	\$ 2,228,046,966
	Investment Income	
Liquidity Needs	Benefit Payments + Plan Expenses	\$ 3,336,426,310
	Capital Calls	\$ 3,275,061,579
	UAAL Amortization	-
MLCR		1.15

Modified Liquidity Coverage Ratio - 2020

1-YEAR MLCR



5-YEAR MLCR

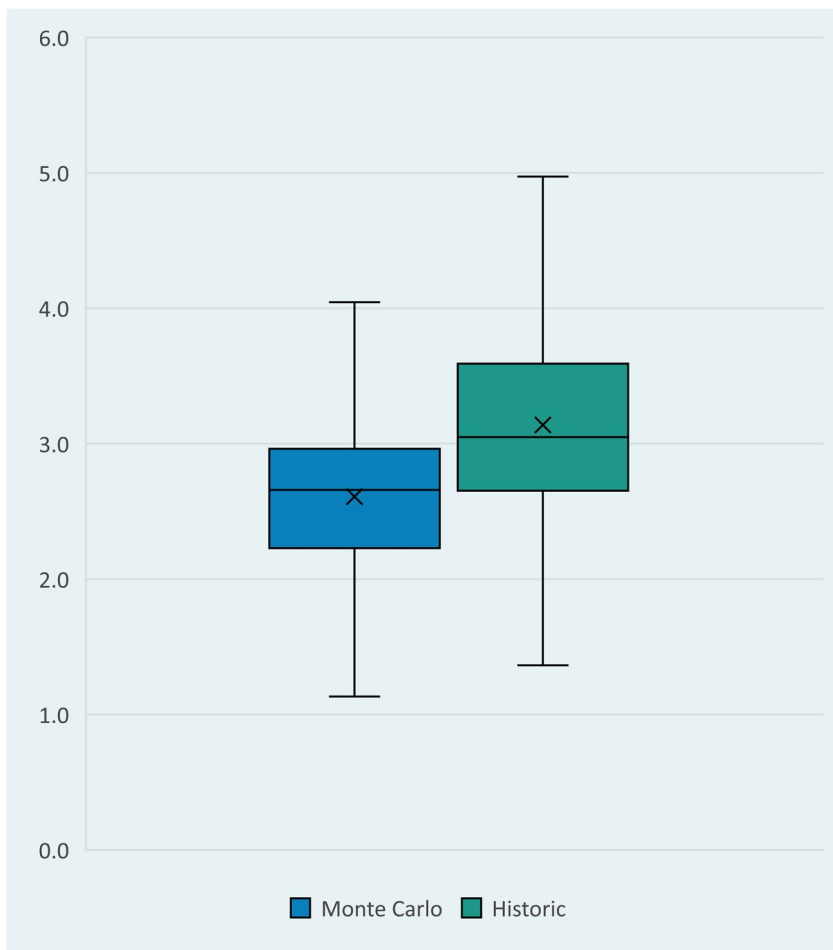


5-year MLCR median outcome is 1.0 with 50% of all observations between 0.9-1.1

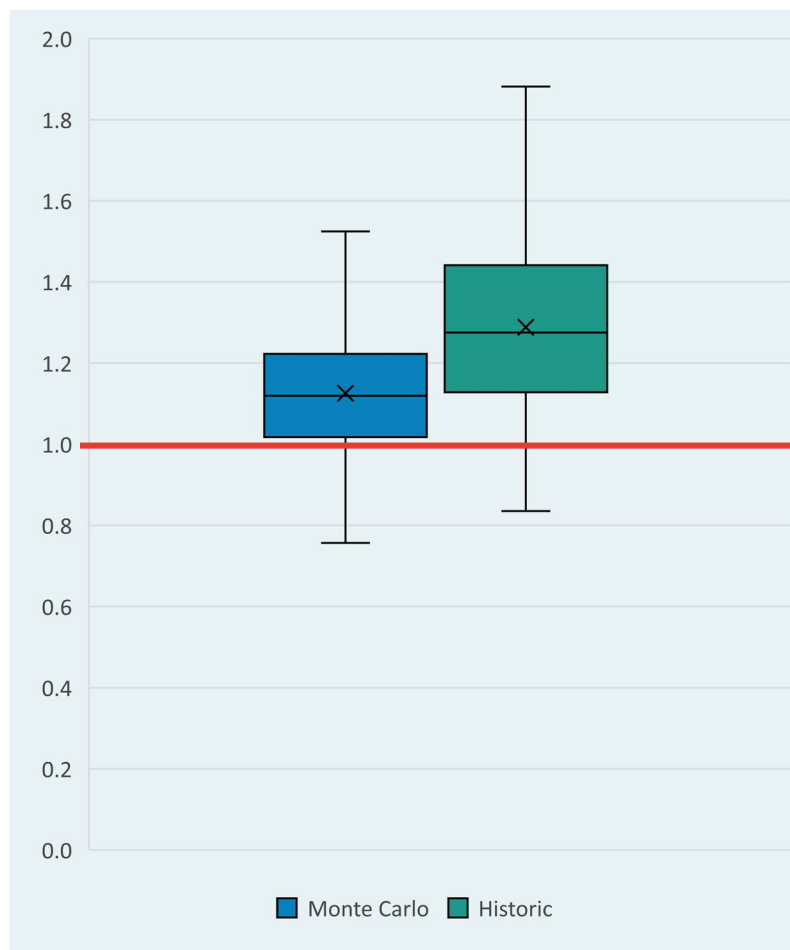
- Actuarial information provided by Segal
- Private market projections for capital calls and distributions provided by Cliffwater and Townsend

Modified Liquidity Coverage Ratio – 2022

1-YEAR MLCR



5-YEAR MLCR



5-year MLCR median outcome is 1.1 with 50% of all observations between 1.0-1.2

- Actuarial information provided by Segal
- Private market projections for capital calls and distributions provided by Cliffwater and Townsend

Summary

Compared to 2020, the Plan's liquidity needs have increased due to a larger projected cash flow deficit. The increase is driven primarily by the large investment return recognized in FY 2021 (+27.7%), which reduced the unfunded liability and brought expected contributions lower. FY 2022 will recognize an investment loss, reversing some of this development.

- Deficit expected to increase over time
- Emphasizes the importance of tracking and managing cash flows

Compared to 2020, the LCR and MLCR are higher due to the following:

- Higher Plan market values
- An increase in projected distributions from illiquid investments
- A decrease in projected capital calls from illiquid investments

The increase in the 5-year LCR and MLCR are partially offset by the decrease in projected contributions mentioned above.

Recommendation/Next Steps

While liquidity needs have increased, the LCR and MLCR have improved relative to 2020, and SCERS remains in a health liquidity position.

- SCERS has ample liquid assets to meet cash outflows over a 5-year period
- No actions recommended

Follow-up study in 2023, which will incorporate recent market developments.

Future liquidity studies and asset allocation studies will factor in SCERS' liquidity profile and cash flow needs as the gap between benefit payments and contributions widens.

Notices & disclosures

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