Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 14

MEETING DATE: September 20, 2023

SUBJECT: Liquidity Study

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

RECOMMENDATION

Receive and file the liquidity study and cash-flow profile of SCERS' portfolio, as presented by Verus Advisory.

PURPOSE

This 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 2.13, compared to the 2022 measure of 2.28. The MLCR of 1.25 compares to the 2022 measure of 1.22.

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

BACKGROUND

Several years ago, SCERS Staff approached Verus to inquire if they had a method for calculating a plan's liquidity and cash flow profile when aggregating plan assets, liabilities, and cash flows. This was particularly important given SCERS' negative cash flow plan profile (more benefit payments paid annually than contributions received) and increasing exposure to private market investments. Verus had been developing a methodology, which it used to initially run a liquidity study for SCERS in 2017. Since that time, Verus' methodology has evolved and it conducts liquidity studies for several clients, including SCERS. Verus' methodology incorporates forward-looking capital market assumptions and runs scenario analysis, to calculate a 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, 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 was re-affirmed last 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 1.86% deficit, which is expected to increase toward 3% over the next 10 years. The negative cash flow profile was higher in last year's study due to the exceptionally high investment return in FY 2021, as Segal reduced the 10-year forecasted total contributions due to a reduction in the unfunded liability and the plan moving closer to fully funded status. However, SCERS incurred an investment loss in FY 2022, falling short of the 6.75% actuarial rate, which increased the 10-year forecasted contributions in the Segal data, and therefore improved the negative cash flow profile of the plan.

The negative cash flow profile of the plan 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 and expected to become cash flow positive over the next few years. SCERS’ real estate portfolio is forecasted to ebb and flow between cash flow positive and negative over the next 10 years.

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 2% 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 9) is 2.13, meaning it has 2.13x 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 2.13 measure is slightly lower than the 2.28 LCR from the 2022 liquidity study, which is due to lower plan assets compared to the prior year.

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 <u>risk</u> 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 12) is 1.25, meaning it has 1.25x coverage on assets that SCERS would be comfortable selling to cover liquidity needs over the 5 years following a market dislocation. The 1.25 measure is slightly better than the 1.22 MLCR from the 2022 liquidity study. The slight improvement is due to improved net plan cash flows.

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

CONCLUSION

Both the LCR and MLCR are in line with the figures from the 2022 liquidity analysis. The MLCR rating of 1.25 is above the preferred target of 1.0. SCERS' LCR rating of 2.13 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.

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. Staff and Verus do not believe that the results of the current liquidity data requires any action. A follow-up liquidity study will be conducted in 2024 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
September 20, 2023

AGENDA ITEM:

Liquidity Study

THE BOARD OF RETIREMENT hereby approves Staff's recommendation to receive and file the liquidity study and cash-flow profile of SCERS' portfolio, as presented by Verus Advisory.

I HEREBY CERTIFY that the above order was passed and adopted on September 20, 2023 by the following vote of the Board of Retirement, to wit:

AYES:

NOES:

ABSENT:

ABSTAIN:

ALTERNATES:
(Present but not voting)

James Diepenbrock
Board President

Eric Stern
Chief Executive Officer and
Board Secretary

PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS

SEPTEMBER 2023

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

Managing liquidity risk is a primary imperative for the trustees

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***

Plan Characteristics

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

2023 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	6.0%	Liquid Risk Assets	90+
Cash	2.0%	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	1.0%	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	1.5%	Illiquid Risk Assets	Illiquid
Opportunistic Real Estate	1.5%	Illiquid Risk Assets	Illiquid
Private Real Assets	7.0%	Illiquid Risk Assets	Illiquid
	100%		

— Allocation updated with the most recently approved policy targets

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 ($)
2023	12,117,586,976	499,064,639	724,203,599	-1.86%	-225,138,960
2024	12,712,048,318	498,122,007	755,010,380	-2.02%	-256,888,373
2025	13,314,498,154	489,461,016	792,793,551	-2.28%	-303,332,535
2026	13,910,074,034	487,306,527	831,116,879	-2.47%	-343,810,352
2027	14,504,339,827	492,978,019	869,862,323	-2.60%	-376,884,304
2028	15,104,968,731	497,592,272	908,956,013	-2.72%	-411,363,741
2029	15,710,982,976	511,417,950	948,307,594	-2.78%	-436,889,644
2030	16,331,787,574	529,605,089	988,094,933	-2.81%	-458,489,844
2031	16,972,752,877	540,598,279	1,028,023,369	-2.87%	-487,425,090
2032	17,627,562,027	551,419,021	1,067,700,698	-2.93%	-516,281,677

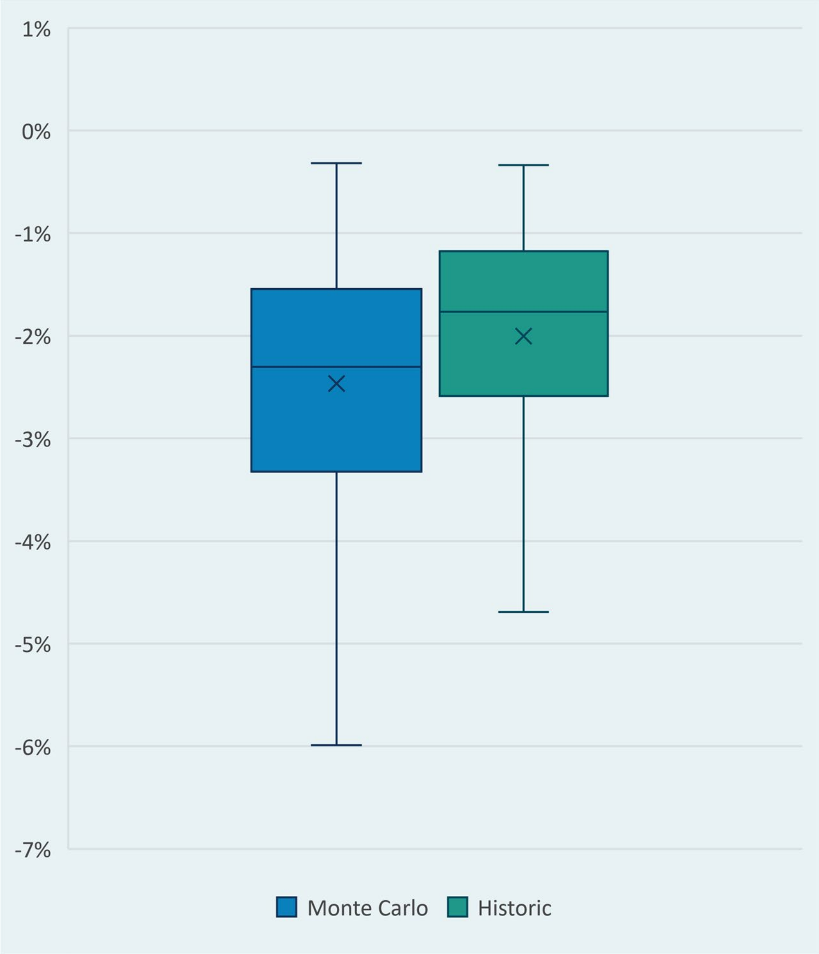
SCERS has a 1-3% cash flow deficit each year, excluding capital calls and distributions from private investments

The cash flow deficit improved in the later years relative to 2022. Contribution assumptions increased more than projected benefits relative to what was assumed in 2022.

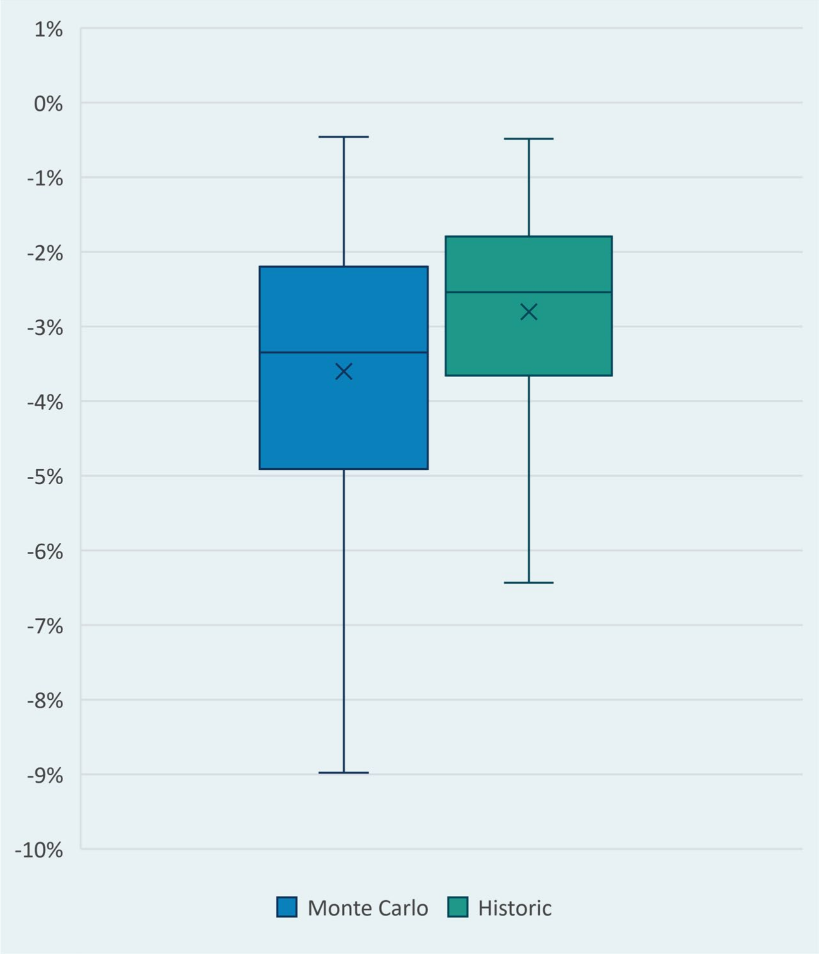
Data provided by Segal

Liquidity needed to meet cash flow needs 2022

% OF TOTAL PORTFOLIO LIQUIDATED FOR CF NEEDS



% OF LIQUID PORTFOLIO LIQUIDATED FOR CF NEEDS



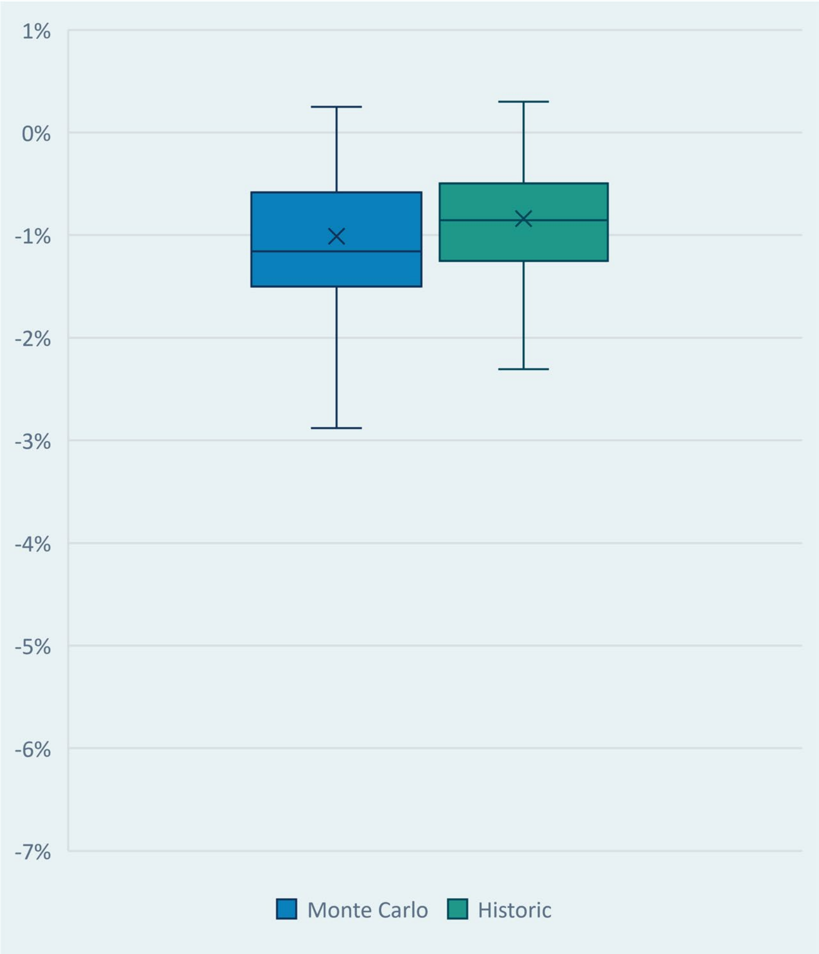
Based on our projections, SCERS will have a negative cash flow of around 2.5% of Plan assets.

Includes capital calls and distributions from private funds

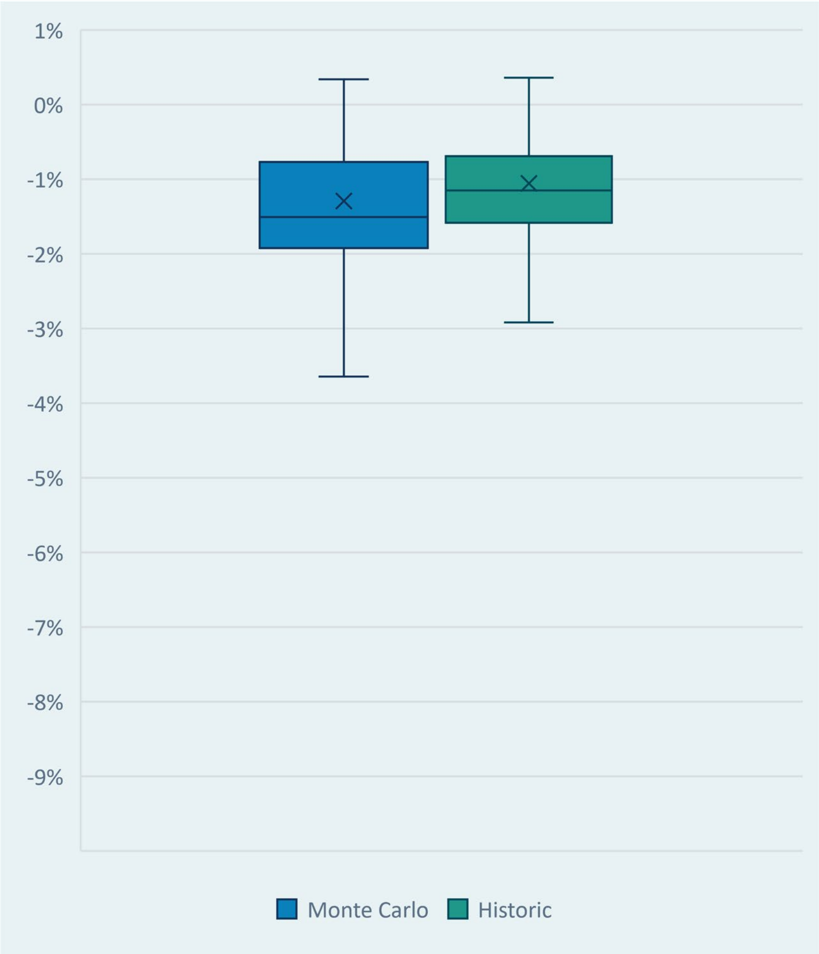
– *Actuarial information provided by Segal*
– *Private market projections for capital calls and distributions provided by Cliffwater and Townsend*

Liquidity needed to meet cash flow needs 2023

% 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 of around 1.0% 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

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

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 fell a small amount from 2022 due to lower plan assets

LCR 2023

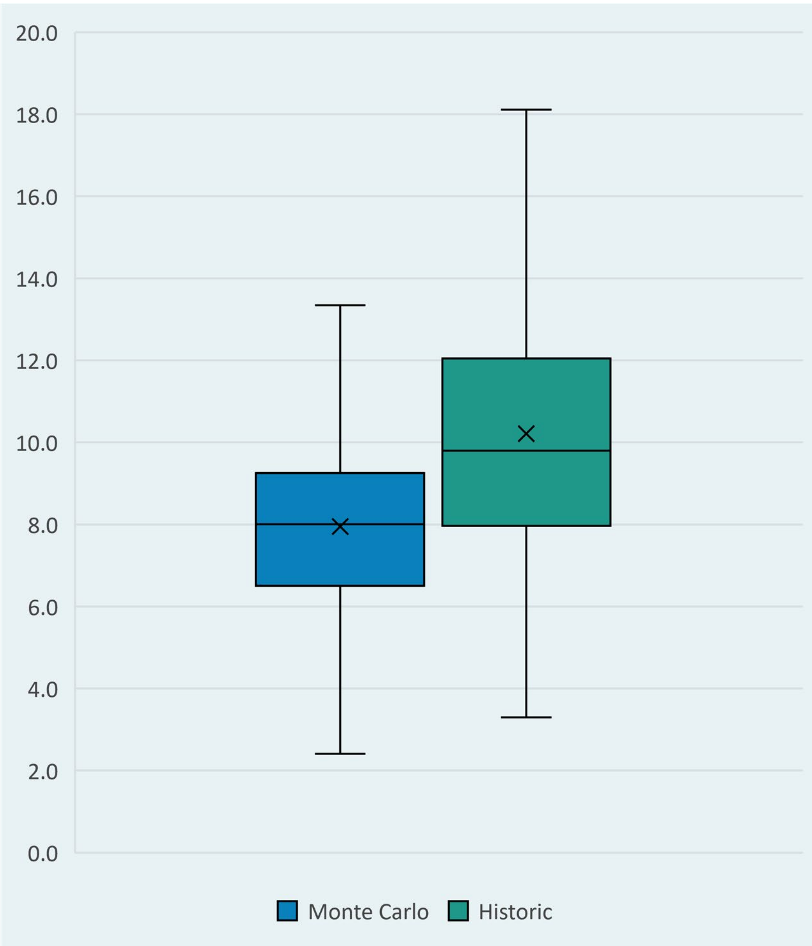
Liquidity Available	Liquid Diversifying + Liquid Risk Assets	$8,967,014,362
	Distributions from Illiquids	$4,686,204,529
	Employer + Employee Contributions	$2,446,932,208
	Investment Income	
Liquidity Needs	Benefit Payments + Plan Expenses	$3,972,986,732
	Capital Calls	$3,582,884,449
	UAAL Amortization	-
LCR		**2.13**

LCR 2022

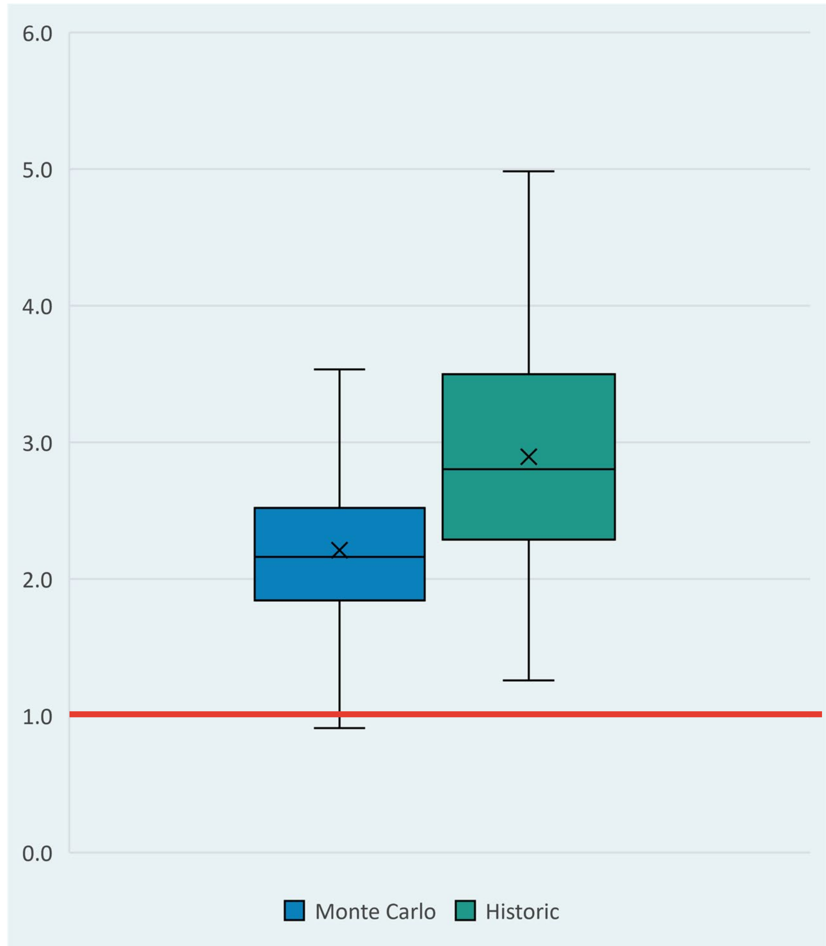
Liquidity Available	Liquid Diversifying + Liquid Risk Assets	$9,410,777,737
	Distributions from Illiquids	$3,360,645,570
	Employer + Employee Contributions	$2,212,508,162
	Investment Income	
Liquidity Needs	Benefit Payments + Plan Expenses	$3,706,710,187
	Capital Calls	$2,869,274,191
	UAAL Amortization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

Liquidity Coverage Ratio – 2022

1-YEAR LCR



5-YEAR LCR

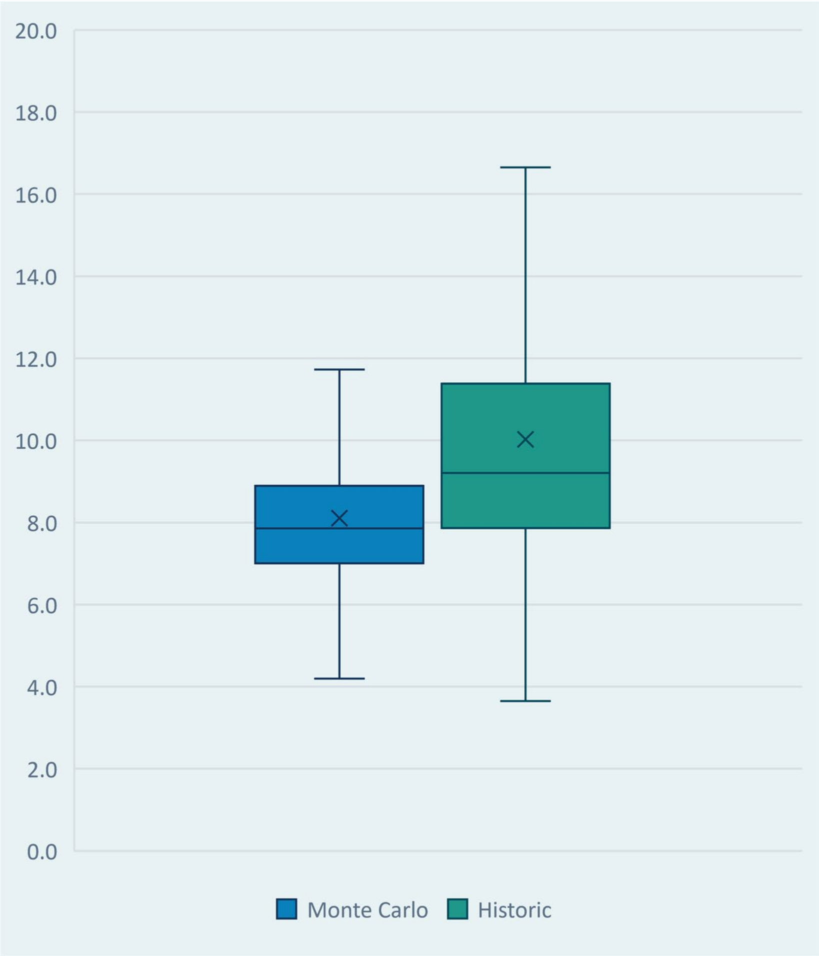


5-year LCR median outcome is 2.2 with 50% of all observations between 1.8-2.5

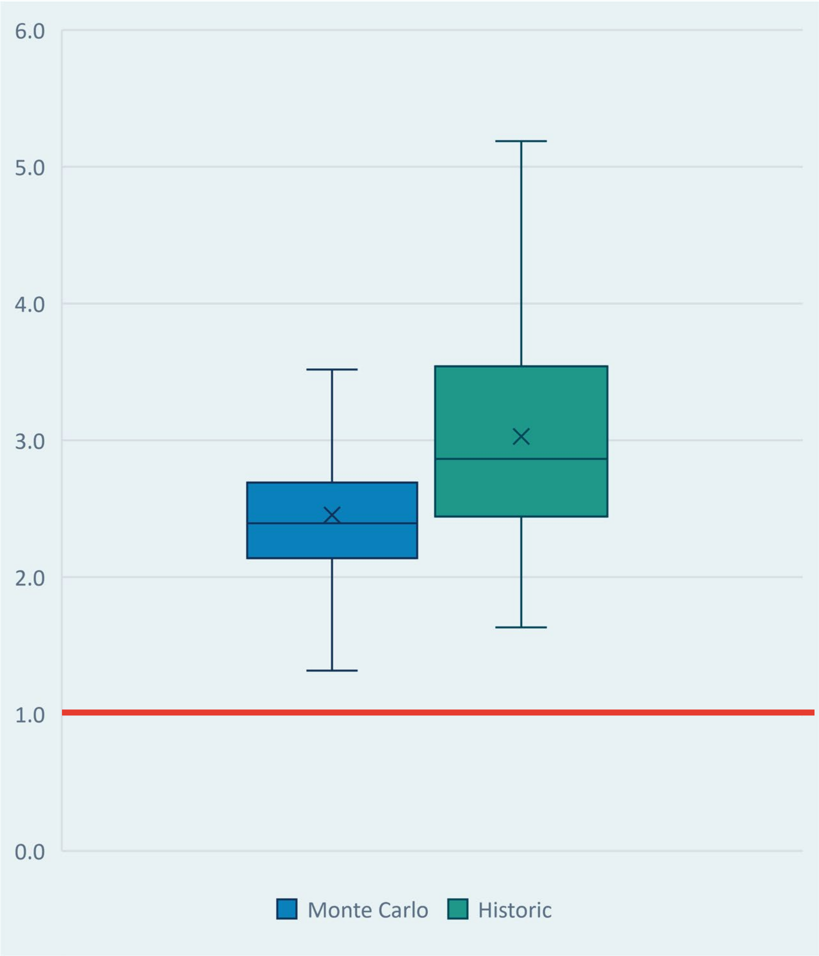
– *Actuarial information provided by Segal*
– *Private market projections for capital calls and distributions provided by Cliffwater and Townsend*

Liquidity Coverage Ratio – 2023

1-YEAR LCR



5-YEAR LCR



5-year LCR median outcome is 2.4 with 50% of all observations between 2.1-2.7

– *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 2023

Liquidity Available	Diversifying Liquid Assets	$2,302,341,525
	Distributions from Illiquids	$4,686,204,529
	Employer + Employee Contributions	$2,446,932,208
	Investment Income	
Liquidity Needs	Benefit Payments + Plan Expenses	$3,972,986,732
	Capital Calls	$3,582,884,449
	UAAL Amortization	-
MLCR		1.25

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

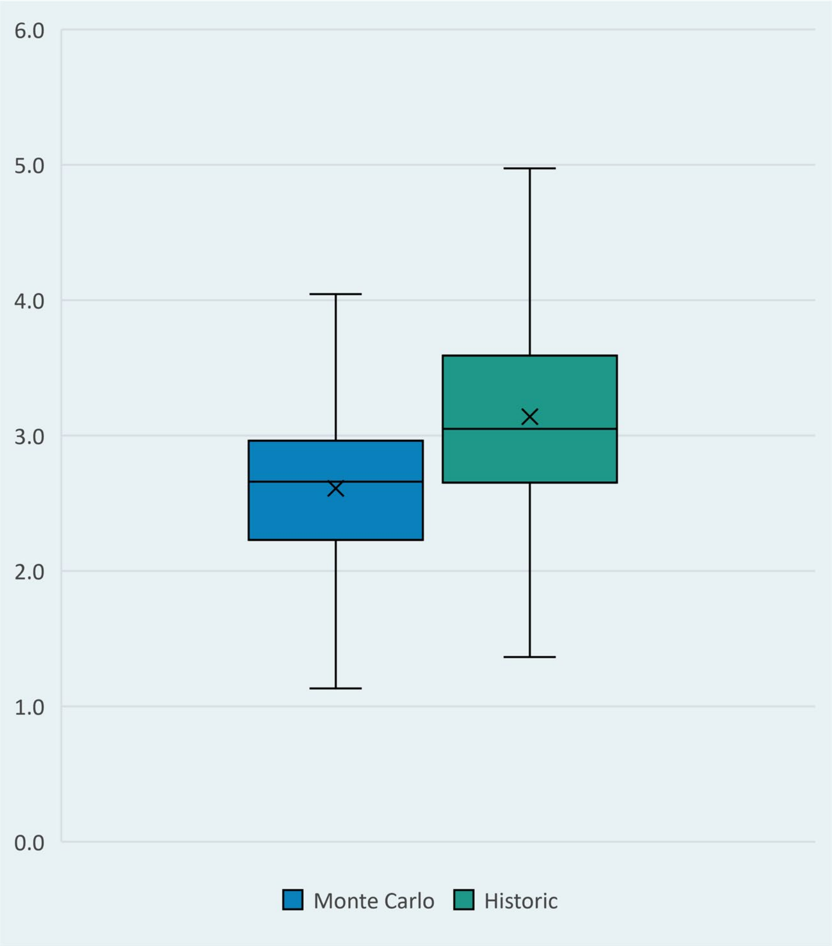
MLCR includes the following in liquid assets:

- Core Fixed Income
- Treasuries
- Liquid Real Assets
- Cash

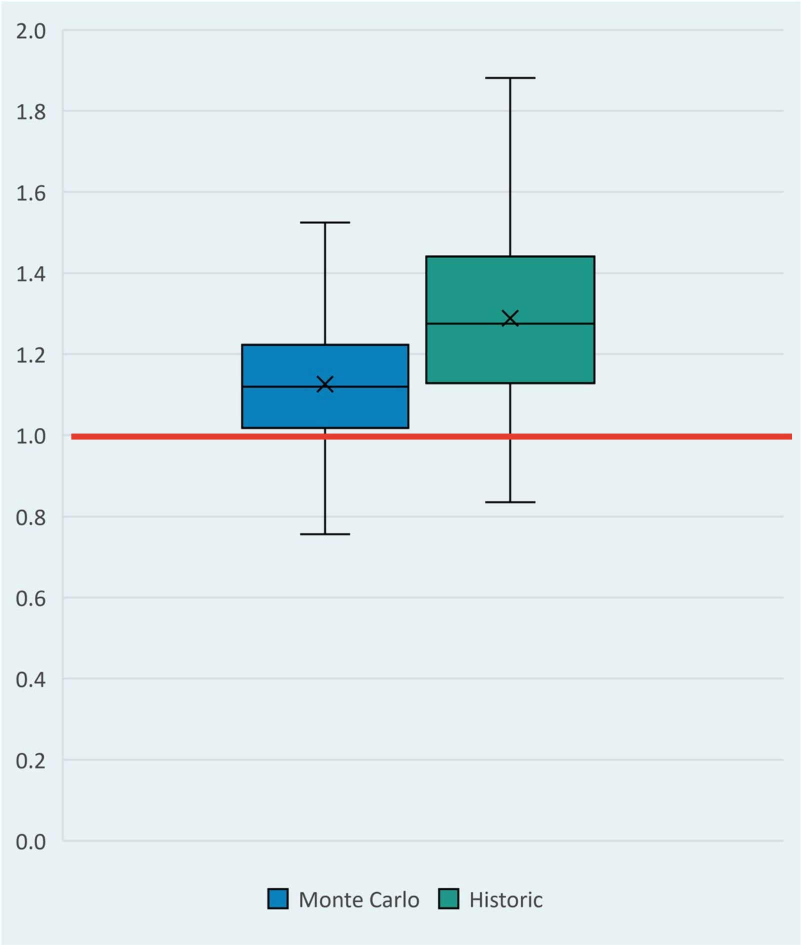
MLCR slightly increased due to improved net plan cash flows

Modified Liquidity Coverage Ratio – 2022

1-YEAR MLCR



5-YEAR MLCR

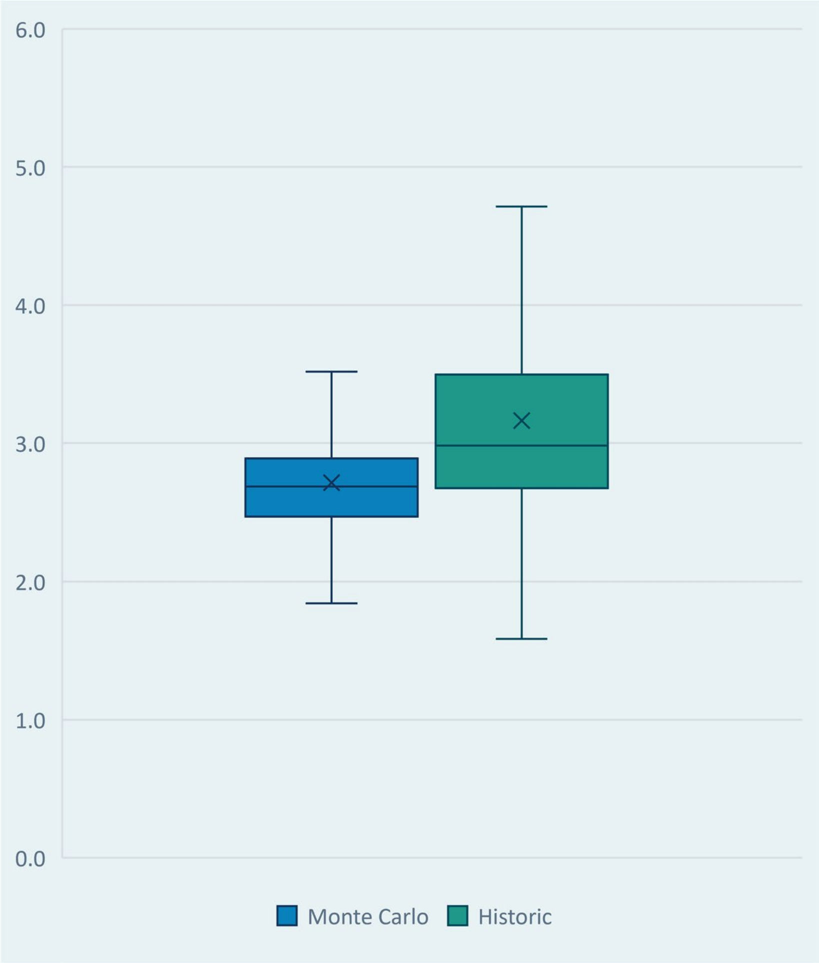


5-year MLCR median outcome is 1.1 with 50% of all observations between 1.0-1.2

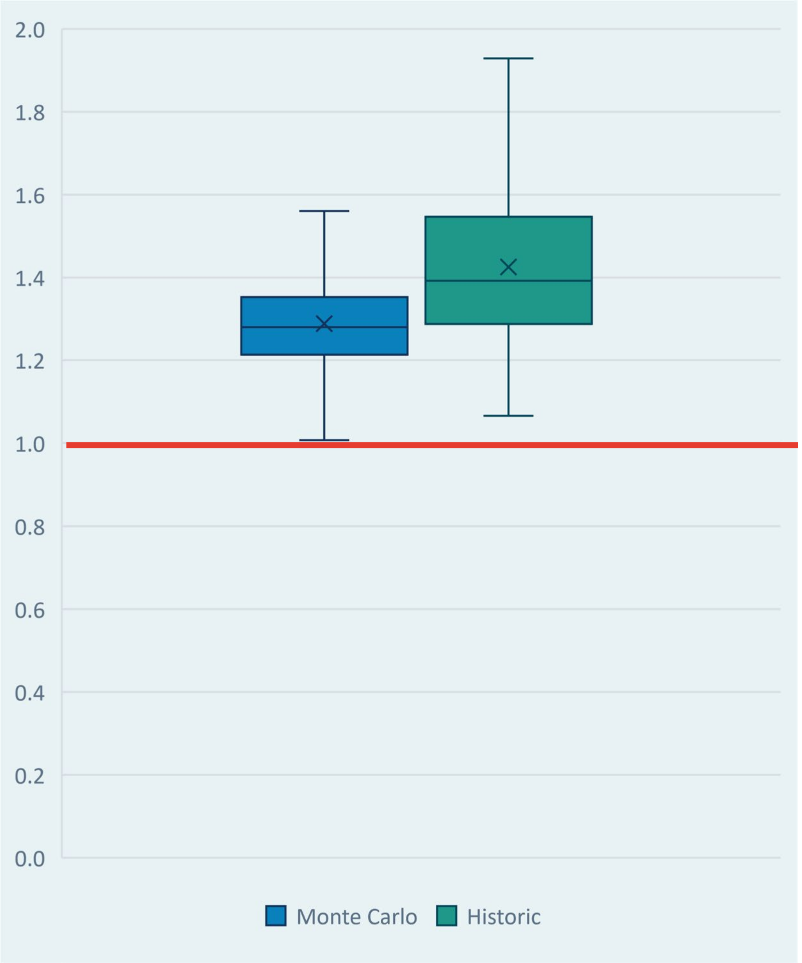
– *Actuarial information provided by Segal*
– *Private market projections for capital calls and distributions provided by Cliffwater and Townsend*

Modified Liquidity Coverage Ratio – 2023

1-YEAR MLCR



5-YEAR MLCR



5-year MLCR median outcome is 1.3 with 50% of all observations between 1.2-1.4

– *Actuarial information provided by Segal*

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

Summary

Compared to 2022, the Plan's liquidity needs have slightly improved, especially in the outer years due to higher contribution rates. The cash flow projections are still showing a growing cash flow deficit so monitoring of liquidity needs is still prudent.

SCERS remains in a healthy liquidity position with both 5-year LCR and MLCR above 1.0, indicating sufficient liquidity to meet 5 years worth of cashflow needs.

Compared to 2022, the LCR and MLCR are higher due to the following:

— An increase in the amount of Plan contributions, especially beyond 2027

— An increase in projected distributions from illiquid investments

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