CALSTRS

Investment Committee

Item Number 5 – Open Session

Subject: Liquidity Oversight Management – Leverage Education

Presenter(s): Scott Chan, Geraldine Jimenez, Michael DiRe, Josh Diedesch, and April Wilcox

Item Type: Information

Date & Time: November 1, 2023 – 30 minutes

Attachment(s): None

PowerPoint(s): Liquidity Oversight

Item Purpose

The purpose of this item is to provide the Investment Committee (IC) with additional educational information relating to staff's goals to enhance liquidity management and oversight. This item particularly focuses on the use of leverage as a tool to help manage Total Fund liquidity. After receiving feedback from the IC, staff intends to provide recommended changes to the Investment Policy Statement (IPS), to support enhanced liquidity management and oversight, at the January 2024 Investment Committee meeting.

Executive Summary

This item follows on from the liquidity briefing that staff shared with the Investment Committee in September at the request of the Investment Committee Chair and Vice Chair and several Board members. It further explains the role that leverage can play in enhancing liquidity management and oversight, and specifically how it can help to rebalance the portfolio to optimize risk and return in alignment with Strategic Asset Allocation targets.

Staff describes the benefits, challenges and mitigants of two considerations for the Investment Committee to assist in enhancing liquidity management and oversight: (1) Adjusting the IPS to provide greater ranges in asset allocation bands, and (2) Adding explicit policy language relating to leverage in the IPS.

The item explains how adding specific policy language would provide additional transparency and codify CalSTRS current (modest) use of leverage, while providing the Investment Committee with oversight over an appropriate range of leverage for the fund in the future. While any additional leverage would be beneficial in smoothing reduced cash flows, rebalancing the portfolio and continuing to pay benefits, staff acknowledge and describe the associated risks.

Based on the Investment Committee's input and feedback, staff will provide additional analysis and details of a proposed leverage strategy at the January 2024 Investment Committee meeting. This will support the recommended changes to the IPS to enhance Total Fund liquidity management and oversight.

Background

At the September 13, 2023 Investment Committee meeting, staff provided a presentation on Liquidity Oversight Management. The item focused on how staff manages cash and liquidity to ensure the timely payment of pension benefits and to fund all cash needs while investing the CalSTRS portfolio. Staff discussed liquidity trends and challenges and introduced some of the tools under consideration to better manage liquidity in the future. Specifically, how pacing private asset investments impacts liquidity, the role of leverage in managing liquidity and appropriate governance and risk management controls.

This item further explains the role that leverage can play in managing Total Fund liquidity. It describes what leverage is, the benefits and risk of leverage, and how staff currently monitors and manages leverage.

CalSTRS has a long history of successfully using leverage in different asset classes, with existing policies for Real Estate, Inflation Sensitive, and Securities Lending, and in the public markets using derivative instruments – like futures – in Fixed Income and Global Equity policies. The leverage limits within these asset class policies are currently monitored by the Investment Compliance team, with any deviations outside of policy reported to the Investment Committee by the CIO and summarized in the Director of Investment Services Compliance Report.

The role of the Strategic Asset Allocation and portfolio construction

The Investment Committee approved the Strategic Asset Allocation (SAA) at the May 2023 Investment Committee meeting. Studies have shown that this is one of the Board's most important decisions and the most significant driver of returns to achieve CalSTRS goals. Importantly, the SAA represents a diversified portfolio across asset classes designed to meet or exceed the required or actuarial rate of return to fund liabilities. After the SAA is set by the Investment Committee, the investment team's objective is to build a world class portfolio of assets that optimizes risk and return, while targeting the SAA.

Creating and maintaining a portfolio to resemble the SAA – at the scale of CalSTRS – is like hitting a moving target. Global markets and asset classes are volatile and do not always move in tandem and, when they do move in tandem, they do so in varying amounts. In addition, opportunities to buy and sell assets shift with the markets. These market shifts often require the investment team to actively rebalance the portfolio. Rebalancing the portfolio is a complex process that incorporates the intended positioning of the portfolio in both liquid and illiquid asset classes with current and future cash flows, including the decision to sell liquid asset classes or utilize leverage. Accordingly, staff's ability to oversee and manage liquidity can either enable or constrain better portfolio construction through the continuous rebalancing process. Enhanced liquidity management and oversight naturally helps facilitate staff's liquidity goals during up, and particularly during down markets, when liquidity is tight, including to: (1) Pay benefits, (2) Avoid selling assets at discounted prices, (3) Take advantage of market opportunities, and (4) Rebalance the portfolio.

Staff is considering how the Investment Committee can assist in enhancing liquidity management and oversight by:

- Providing greater ranges in asset allocation bands,
- Adding explicit policy language relating to leverage in the IPS.

The following sections describe and outline the benefits, risks, and mitigants of these proposed policy changes.

1) Providing greater ranges in asset allocation bands

The IPS currently includes a liquidity limit on illiquid assets and asset allocation ranges that determine how much the asset allocation can deviate from long-term asset allocation targets and constrain rebalancing decisions. The current CalSTRS policy ranges have been in existence for multiple decades.

Recommendation and benefit: Staff believe that there would be greater flexibility to rebalance the portfolio if liquidity limits were principles based rather than a defined limit and the current asset allocation ranges or 'bands' were expanded by 2%.

This flexibility would be particularly important in times of market stress when significant and often temporary deviations from policy targets result from the following typical circumstances: (1) Private market cash inflows often slow dramatically while cash outflows do not; and (2) Public market values fluctuate with greater volatility than private markets, which lag. Expanding allocation ranges would increase flexibility and create the option for staff to decide whether it would be optimal to rebalance the portfolio or rather to monitor and allow the market to naturally rebalance a temporary deviation over time.

Table 1 shows the current allowable ranges for each asset class and possible new ranges, if each of the asset class allocation bands were expanded by 2%.

Table 1. Strategic Asset Allocation Policy Targets & Ranges

Asset Class	Long-Term Policy Target	Allowable Range	Possible New Range

Public Equity	37%	+/- 6%	+/- 8%
Private Equity	14%	+/- 3%	+/-5%
Real Estate	15%	+/- 3%	+/-5%
Inflation Sensitive	7%	+/- 3%	+/-5%
Fixed Income	14%	+/- 3%	+/-5%
Risk Mitigating Strategies	10%	+/- 3%	+/-5%
Cash	2%	+/- 3%	0 – 5%

Risks and mitigants: The primary risk of expanding the asset allocation ranges by a proposed 2% is potentially larger deviations from policy targets, which would increase active risk. Staff believes that this risk can be mitigated by actively rebalancing the portfolio. Staff already has a proven and robust internal committee (the internal Risk Allocation Committee) – made up of Investment Branch leadership and asset class specialists – that meets regularly (and as needed, more frequently) to actively rebalance the portfolio and limit active risk to support optimal portfolio construction. Historically, staff has managed the asset allocation within the allowable ranges; but in times of market distress and with the Total Fund's increasing allocations to private markets, the added flexibility of wider ranges could be a valuable tool. Staff would continue to manage the active risk relating to the expanded bands through the existing committee and within existing governance procedures.

2) Adding explicit policy language relating to leverage

Defining liquidity

To better understand the role that leverage can play in enhancing liquidity management and oversight, it is helpful to first define liquidity. A broad definition is *"the ease with which an asset can be converted into ready cash without affecting its market price."* Liquidity involves a trade-off between the price at which an asset can be sold, and how quickly it can be sold, which is dependent on the market environment.

Liquidity can be divided into different categories as shown in Table 2.

Table 2: Liquidity Categories

Liquidity Category	Includes	Examples
Cash and Equivalents	Cash held at custodial bank & short-term investments	Treasury bills Commercial paper Certificate of deposit (CD)
Tier 1	Securities that can easily be converted to cash	All of the above plus: Sovereign bonds rated A to AAA Listed equity Electronically traded funds (ETFs) Derivatives (Futures, Forwards, Swaps)
Tier 2	Includes securities that can still trade at prevailing price levels even during periods of modest market stress	Sovereign bonds rated B to BBB, Investment Grade Corporate Bonds Ex-Emerging Markets Frontier markets equity
Illiquid assets	Private contracts/assets that can only be sold in a highly negotiated secondary/non-transparent market with significant impact to the price	Private Equity, Real Estate, Inflation Sensitive private assets
Leverage (as a liquidity tool)	Borrowed funds to make an investment creating economic exposure that exceeds the value of the capital put up for that investment	Borrowing with banks/other lenders Derivative instruments – financial security with a price "derived" from underlying assets such as stocks, bonds, commodities, currencies, and interest rates

Because of the inherently dynamic nature of liquidity, it is particularly important for a fund like CalSTRS to always maintain sufficient liquidity, especially during volatile, rapidly changing markets. Furthermore, it is during these times that sufficient liquidity is required to provide more options to continue to rebalance portfolios. The greater availability of liquidity tools, the higher the ability to achieve improved performance outcomes, particularly in distressed market environments.

CalSTRS has a history of executing all of the liquidity categories listed in Table 2 including leverage tools and has deep expertise managing these liquidity sources within both the public and private markets. Going forward, staff is exploring how best to utilize these tools to benefit liquidity at the Total Fund level, particularly with the overall increase in exposure to more illiquid assets.

Defining leverage

As highlighted in Table 2, leverage is one of the tools that can be used to help manage liquidity, complementing other liquidity sources, like the sale of assets. A broad definition of leverage is *"using borrowed capital as a funding source"*.

CalSTRS Total Fund leverage (see Figure 1) currently comprises tools used for managing total fund asset allocation and smoothing cash flows over time, including derivatives in public markets, short-term borrowing instruments, and medium to long-term borrowing instruments.

Figure 1: Total Fund Leverage Definition

In 'normal' market environments, CalSTRS generates positive cash flow from selling public markets assets and from net cash inflows coming from private market assets. In times of market distress or dislocations, these sources of cash can drop significantly or even become negative. When those events occur, it is often due to a decline in the public equity market which can then trigger a need to rebalance the portfolio (to adjust public equity to stay within its allocation band) by buying more public equities. At the same time, contractual private market contributions – cash going out from CalSTRS to partners – can exceed cash distributions returning to the fund. These cash needs that are required to manage the fund are in addition to steady net outflows for benefit payments.

Absent any other source to generate cash, the fund can find itself in a position of being forced to sell assets at the wrong time or pass on investment opportunities with attractive risk-adjusted returns – just to meet immediate cash needs.

Leverage tools provide additional options and flexibility to help smooth out these periods of dislocation and liquidity constraints in two important ways by: (1) Borrowing cash and increasing leverage during times of low or negative cash flow, and then repaying the borrowing and decreasing leverage as flows normalize; and (2) Using derivatives to rebalance the portfolio during times of dislocation and then reducing their use as markets recover. By using leverage the fund can maintain greater flexibility to pay benefits, rebalance the portfolio, and take advantage of market opportunities, all while avoiding forced selling of assets.

Using leverage at CalSTRS

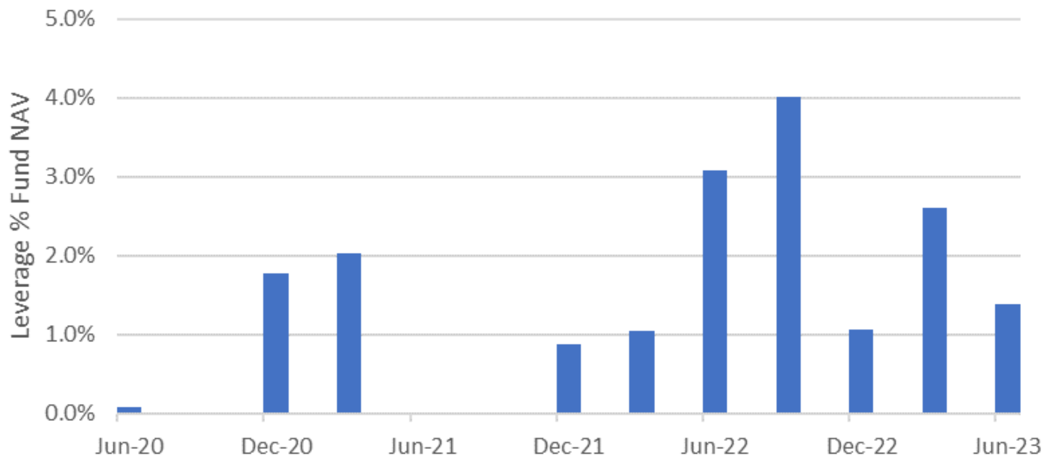
CalSTRS has a long history and experience using its balance sheet and a variety of leverage tools, including a credit enhancement program dating back to the 1990s; different borrowing strategies for implementing the Real Estate portfolio, including construction financing, credit facilities, term debt, and private placement loans; short-term borrowing backed by public fixed income instruments; and derivatives that include futures, forwards, and total return swaps in public markets. Table 3 highlights current leverage uses and capabilities.

Table 3. Current Total Fund Leverage Capabilities

Type of Leverage	Description
Derivative Instruments	Futures
	Forwards
	Swaps
Borrowing	Reverse Repo
	Revolving Credit
	Private Placement Loans

Historically, the amount of Total Fund leverage has been relatively small, in most periods less than 2% of the Total Fund's Net Asset Value (NAV). During 2022, when equity markets and bond markets were falling, Total Fund leverage hit a peak of about 4%. Most of that leverage was in the form of public markets derivatives used to rebalance the portfolio (for asset classes to stay within their allocation bands) and the remainder as medium-term borrowing in revolving credit facilities.

Chart 1. CalSTRS Historical Total Fund Leverage 2020-2023



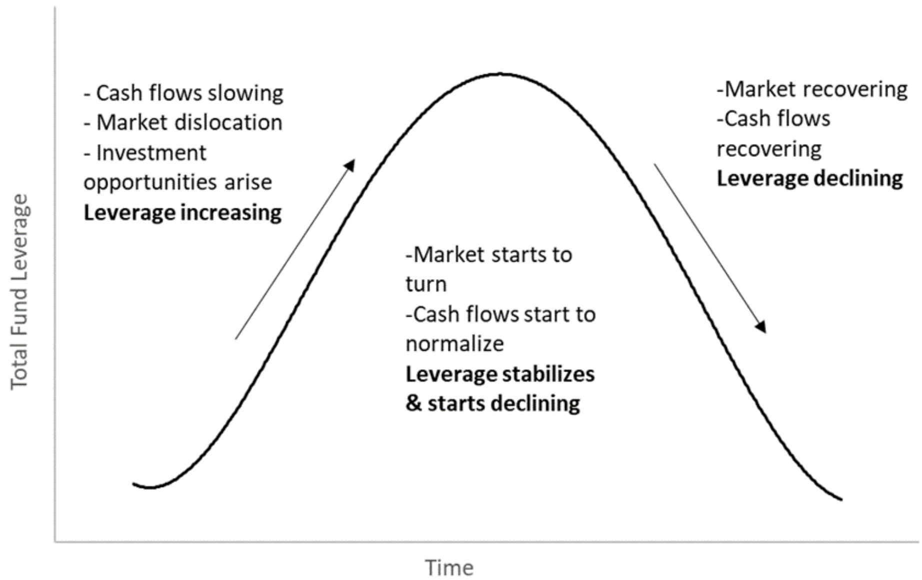
Recommendation and Benefit: To maximize flexibility for smoothing cash flows and rebalancing the portfolio, especially in times of market dislocation, staff believe that CalSTRS would benefit from the addition of explicit policy language relating to the use of leverage, within the IPS. This policy language would provide additional transparency and codify CalSTRS current and future use of leverage while providing the Investment Committee with oversight over an appropriate range of leverage (to be further analyzed and discussed – see later sections) for the fund.

In 'normal' market environments, the Total Fund needs very little leverage to achieve its objectives; in times of market stress, however, the fund may benefit from using additional leverage to smooth reduced cash flows, rebalance the portfolio, and continue to pay benefits. As the market recovers and cash flows return to normal levels, the fund would be in position to pay down any outstanding leverage.

It is important to note that Staff is not advocating for the use of leverage on a permanent basis. For clarification, this contrasts with some investor peers who use leverage on a permanent basis as part of their strategic asset allocation. Leverage on a permanent basis changes the risk and return profile of the total portfolio and has implications for strategic asset allocation.[1] Instead, a discussion on using a leverage range on an intermittent and temporary basis, would focus on creating a leverage strategy to help rebalance the portfolio, smooth imbalances in cash flows, and pay benefits, while continuing to manage the current asset allocation in line with the long-term SAA.

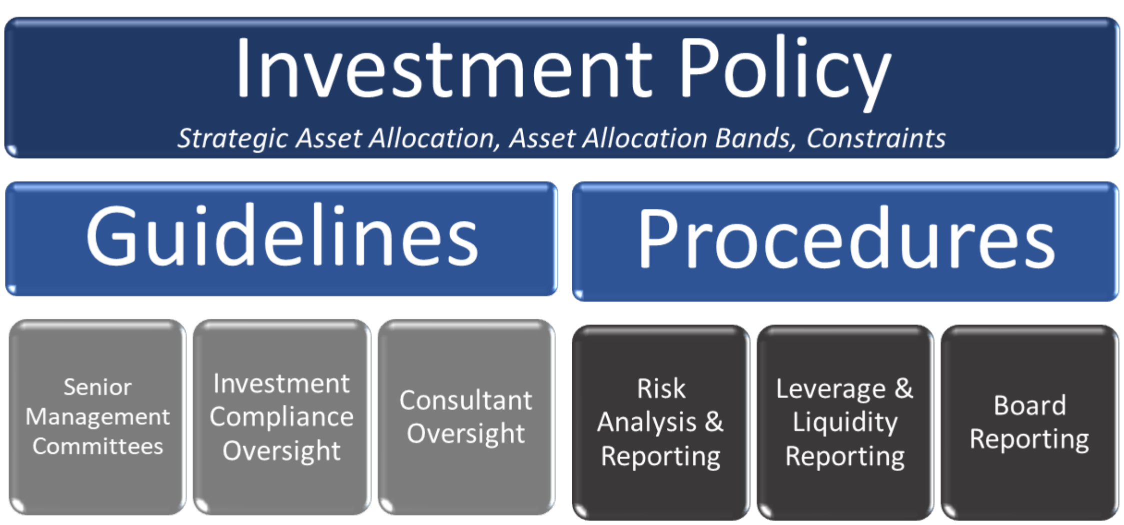
[1] Any subsequent discussion to use leverage on a permanent, strategic basis, would be decided in the Asset-Liability Management Study that occurs at least every four years and would be considered during that distinct process, if deemed appropriate at the time.

Figure 2. Using Leverage Across an Economic Cycle



It is important to note that having the flexibility to increase leverage – within a pre-assigned range – does not mean that CalSTRS would automatically utilize more leverage. Explicit policy language governing the use of leverage would allow staff to explore additional borrowing options to those that CalSTRS currently maintains. Any decision to use additional leverage, within a pre-assigned range, would be made in conjunction with asset allocation options and be subject to a rigorous process of strategic planning, analysis, management, oversight, and governance (see subsequent sections).

Figure 3. CalSTRS Existing Risk Management and Governance Framework



The use of leverage, like any asset allocation decision, will continue to be governed and constrained by the SAA targets and bands outlined in the IPS, limiting the risk of magnified losses to the portfolio and, ultimately, to funding.

Investment senior management and asset class directors are an integral component to managing risk and are critical members of current internal allocation, liquidity management, and oversight committees. This framework helps to implement the asset allocation in line with the SAA, facilitates prudent management of leverage, and helps to ensure adequate liquidity to meet fund objectives. Staff also works closely with the board's consultant, Meketa, to monitor the risks of the Total Fund, including the current liquidity management program and any proposed, future enhancements.

Prudent management of leverage and mitigating the types of risks identified above requires diversification of many factors:

- Timing of leverage execution and maturities
- The type of interest rate on the borrowing and associated interest costs
- Type of leverage
- Potential margin calls or other liquidity needs
- Lending counterparties
- Diversification in how leverage is used

Staff relies on several cross-functional teams and management oversight committees to ensure prudent use of leverage and diversification. These efforts include modeling and forecasting of liquidity needs over different time horizons; monitoring and reporting of leverage types, amounts, and maturities; centralized management of counterparty risk; and comprehensive oversight and management of asset allocation risk. Meketa also provides oversight in their role as General Consultant.

Additionally, Investment Compliance monitors compliance to the Investment policies, including any additional liquidity and leverage parameters. Investment Compliance also independently reports any deviations to the Investment Committee in the Compliance Report to the Board. Development of capabilities, including staff with specialist skills, technology resources, and processes will support additional risk mitigation.

<u>Next Steps</u>

Based on the Investment Committee's input and feedback, staff will provide additional analysis to support two recommended changes to the IPS to enhance Total Fund liquidity management and oversight:

- A greater range to the current asset allocation ranges/bands;
- Explicit policy language relating to leverage, including a suggested leverage range with a supporting leverage strategy.

Staff will also provide recommendations relating to associated governance requirements and preview expanded board oversight reporting that would support these IPS recommendations.

Strategic Plan Linkage: Strategic Plan (calstrs.com)

Board Policy Linkage: Investment Policy Statement (calstrs.com)

Optional Reference Material: *(prior board items, supplemental educational materials, etc.)*

- May 2023 ALM Study Discussion
- September Liquidity Oversight Management
- Investment terms glossary - CalSTRS