Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 22

MEETING DATE: **August 18, 2021**

SUBJECT: **Asset Liability Modeling Study – Final Recommendation**

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

RECOMMENDATION

Staff recommends that the Board approve the asset allocation model mix presented by Verus Advisory and Staff. The recommended asset allocation is 'Mix 2' from the June Board meeting.

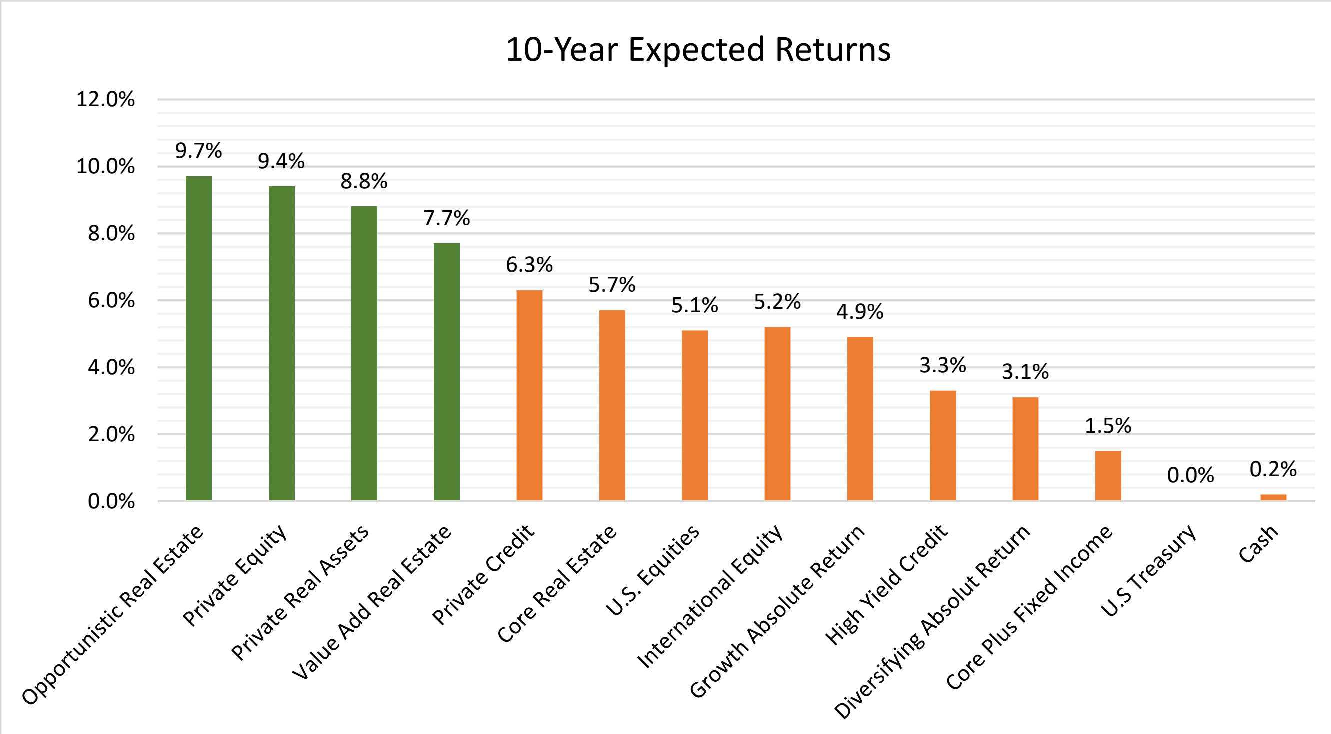
PURPOSE

This item supports the 2021 Annual Investment Plan, which identifies conducting an asset liability modeling study in 2021, and supports SCERS' Master Investment Policy Statement, which calls for an asset liability modeling (ALM) study to be conducted at least every five years.

BACKGROUND

Over the past few months, SCERS has been working on an ALM study with the assistance of SCERS' general consultant, Verus. During the ALM study, Verus and Staff communicated lower return expectations forecasted within current capital market assumptions (CMAs) across most asset classes. Using updated CMAs, SCERS' current strategic asset allocation models to a 5.4% return, versus SCERS' 6.75% actuarial rate of return. The 5.4% return is down from a modeled expected return of 6.5% in January 2020 using last year's CMAs.

As noted during the ALM study, the only asset classes that currently have a return expectation above SCERS' actuarial rate of return include private equity, non-core real estate (opportunistic and value add), and private real assets.

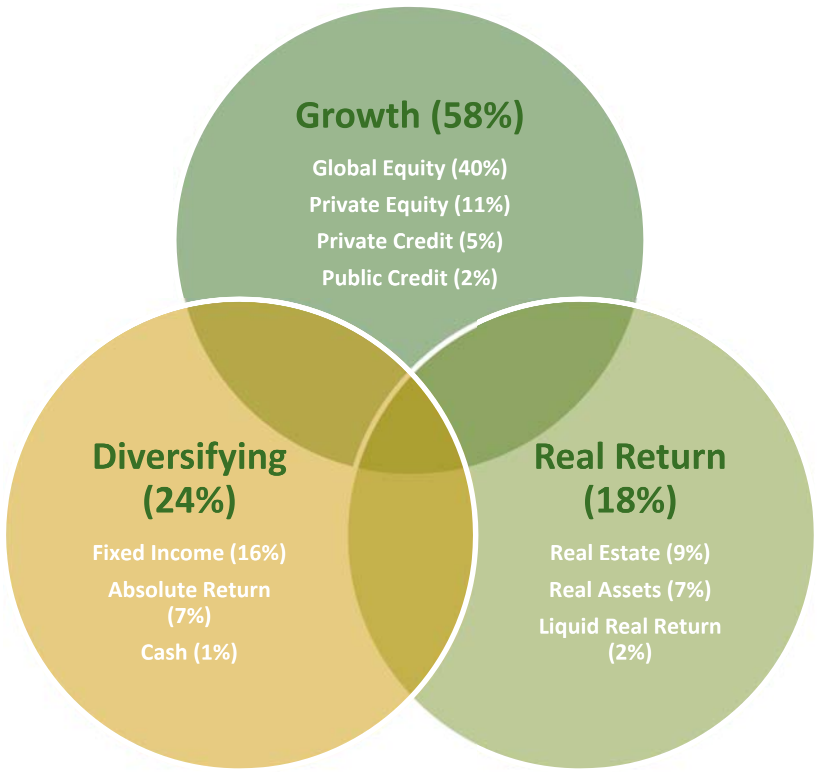


These asset classes currently make up approximately 18.5% of SCERS' asset allocation. To model a portfolio near the actuarial rate, SCERS would need to increase the allocation to these segments and reduce exposure to lower returning segments such as fixed income, which would increase SCERS' risk profile, including its illiquid footprint. A 60/40 (public equity/fixed income) portfolio has historically returned over 7%; however, the projected 10-year return is well under 5%, due to the muted forecasted returns for both public equity and fixed income.

At the June meeting, Verus and Staff presented four model mixes to compare against the current asset allocation. The takeaway from the June meeting was that Staff and Verus did not expect to recommend sweeping changes to SCERS' strategic asset allocation, but rather marginal tweaks including modest increases to higher returning private market asset classes. The June meeting concluded with guidance that Mix 2 and Mix 3 from that meeting contain the most attractive attributes in meeting SCERS' broad plan and portfolio objectives. Staff and Verus communicated that it would come back at the August meeting with a final recommended mix based off Mixes 2 and 3.

<u>RECOMMENDED ASSET ALLOCATION:</u>

Verus and Staff evaluated Mixes 2 and 3, and recommend that the Board adopt Mix 2 from the June meeting as SCERS' new policy allocation, as shown below.



Below is a comparison of the proposed mix and SCERS' current asset allocation.

Asset Class	SCERS' Current Policy	Proposed Mix	Changes
Growth	**58.0%**	**58.0%**	**0.0%**
Global Equity	40.0%	40.0%	0.0%
Private Equity	9.0%	11.0%	2.0%
Public Credit	2.0%	2.0%	0.0%
Private Credit	4.0%	5.0%	1.0%
Growth Absolute Return	3.0%	0.0%	-3.0%
Diversifying	**26.0%**	**24.0%**	**-2.0%**
Fixed Income	15.0%	16.0%	1.0%
Global Fixed Income	3.0%	0.0%	-3.0%
Diversifying Absolute Return	7.0%	7.0%	0.0%
Cash	1.0%	1.0%	0.0%
Real Return	**16.0%**	**18.0%**	2.0%
Real Estate	7.0%	9.0%	2.0%
Real Assets	7.0%	7.0%	0.0%
Liquid Real Return	2.0%	2.0%	0.0%
	100.0%	100.0%	

The key changes between the recommended asset allocation and SCERS' current asset allocation are as follows:

Growth:

- Overall Growth allocation remains at 58%.
    - Public equities remain at 40%, but consolidates separate Domestic Equity and International Equity asset classes into a Global Equity asset class, while also considering smaller allocations to global and less constrained equity mandates.
        - Staff and Verus will present the structure for Global Equity at a future Board meeting.
    - Public Credit remains at a 2% allocation.
    - The 3% Growth Absolute Return allocation is removed from the asset allocation.
    - Private Equity increases from 9% to 11%.
    - Private Credit increases from 4% to 5%.

Diversifying:

- Decrease overall Diversifying allocation from 26% to 24%.
    - Recommend a single Fixed Income allocation at a 16% target, which will contain a blend of core/core plus, treasuries, and/or non-credit fixed income strategies.
        - Prior allocation to Fixed Income (not including global fixed income) was 15%.
        - The 3% Global Fixed Income allocation is removed from the asset allocation.
        - Staff and Verus will present the structure for Fixed Income at a future Board meeting.
    - Diversifying absolute return remains at a 7% allocation.

Real Return:

- Increase overall Real Return allocation from 16% to 18%.
    - Real Estate increases from 7% to 9%.
    - Real Assets remains at a 7% allocation.
    - Liquid Real Return remains at a 2% allocation.

The recommenced asset allocation mix reallocates the Growth Absolute Return and Global Fixed Income exposures to private market asset classes that have higher expected returns going forward. At the asset category level, it maintains the same weighting to Growth assets, decreases Diversifying assets slightly, and reallocates a portion of this exposure to Real Return assets.

The recommended asset allocation mix has a moderately higher expected return of 5.7%, versus 5.4% for the current portfolio, though still below SCERS' actuarial rate of 6.75%. The proposed allocation has a moderately higher risk profile with a standard deviation of 11.5%, versus 11.2% for the current portfolio. The risk adjusted return as measured by the Sharpe Ratio increases slightly to 0.51, versus the current portfolio's 0.50. The allocation to illiquid investments (private equity, private credit, absolute return, real estate, real assets) increases from 37% to 39% of the total portfolio, so SCERS' liquidity profile with this mix decreases moderately.

Structural and sizing changes within the recommended asset allocation are described in more detail below. Several of these were discussed during the June Board meeting.

Global Equity:

Verus and Staff recommend the asset allocation adopt a Global Equity framework, rather than use separate asset classes for Domestic Equity and International Equity. Under a broader Global Equity framework, SCERS would still allocate to domestic, international, and emerging markets mandates, but they will be wrapped under one umbrella, and benchmarked against a global equity benchmark.

While the bulk of the investment manager universe is comprised of domestic and international specific mandates, and these will continue to comprise the bulk of the Global Equity asset class structure, there is a growing number of global mandates that have the flexibility to invest across geographies, and also have less constraint around style and market capitalization. These strategies could serve a complementary role and fit within a global equity framework.

The Global Equity structure could also include a small allocation to other less constrained equity type mandates, similar to those that currently reside in the Global Absolute Return portfolio, examples of which include equity long/short and event strategies.

A recommended structure for the Global Equity asset class will be presented to the Board subsequent to the completion of the asset liability modeling study, and will include considerations around the mix between geographies, target allocations to passive versus active, and style and market capitalization considerations, as well as any incorporation of global and less constrained equity mandates.

Absolute Return:

SCERS' current Absolute Return portfolio has a target allocation of 10% and is broken out into two separate segments of SCERS' total portfolio. The Growth Absolute Return portfolio has a 3% target allocation and resides within the Growth asset category. The Diversifying Absolute Return portfolio has a 7% target allocation and resides within the Diversifying asset category. The distinction is to separate Growth strategies that typically do well during a more favorable economic environment and have higher correlations and betas to equity and credit markets, from Diversifying strategies that have low to negative correlation to equity and credit markets and serve as a diversifier to the more growth oriented segments of SCERS' portfolio.

Staff and consultants believe that the current Absolute Return structure, with separate Growth and Diversifying segments, adds greater complexity than is needed. Growth Absolute Return exposures are often just a less constrained form of public equity and public credit, and do not need to be a dedicated segment/asset class within the total portfolio, and can potentially be incorporated into other parts of the Growth asset category, in modest amounts. Therefore, Growth Absolute Return has been removed as a separate asset class within the recommended asset allocation.

The Diversifying Absolute Return segment serves an important and distinct role within SCERS' portfolio, given it tends to emphasize a lower sensitivity to broad market performance (i.e., less correlated returns), while still generating a positive absolute return profile over time, and also serves as a complement to SCERS' traditional fixed income assets, such as treasuries and core plus fixed income. Diversifying Absolute Return, along with traditional fixed income exposures, are SCERS' primary pure play diversifiers for the total portfolio, and should remain a dedicated asset class. Therefore, the Diversifying Absolute Return is recommended to maintain a 7% target allocation. Going forward, the Diversifying Absolute Return portfolio will be renamed Absolute Return.

Cliffwater and Staff will present any Absolute Return structuring recommendations to the Board subsequent to the approval of the asset allocation.

Public Credit:

Staff and Verus recommend that the Public Credit portfolio remain at a 2% allocation, and will present any structuring recommendations to the Board subsequent to the approval of the asset allocation, including the potential incorporation of any less constrained credit type mandates, similar to those that would historically reside within the Growth Absolute Return portfolio.

Fixed Income:

Staff and Verus recommend a single Fixed Income allocation rather than the current asset allocation's separate allocations for core plus, U.S. Treasuries, and global fixed income.

As communicated during the June meeting, Staff and Verus also recommend removing the Global Fixed Income segment from the asset allocation, and the reasoning is two-fold consideration. First, from a capital market assumption perspective, Global Fixed Income has a very low expected return of only 0.3%, which is well below that of U.S. Treasuries (+0.7%) and Core Plus Fixed Income (+1.5%). It also has a higher risk profile, as measured by standard deviation. Verus and Staff believe that there are better long-term yielding and returning opportunities in other asset classes with more attractive risk/return profiles.

Second, the actual mandate, though a compelling strategy managed by a well-regarded investment manager since 2013, does not fit with the role of the Diversifying asset category, which has the following broad objectives:

- Help preserve capital in periods of market distress, particularly in periods of low and falling growth.
- Enhance diversification by exhibiting low or negative correlation to both equity and credit markets.
- Maintain a positive return profile over time.

The current mandate invests through a commingled fund that takes an opportunistic approach to allocating across government bonds and currencies, with smaller allocations to credit. Over a cycle, it tends to favor the bonds and currencies from countries with higher GDP growth rates than those of safe haven developed market bonds and currencies, particularly G3 and G7 countries. The return potential is higher than other fixed income mandates within the Diversifying asset category; however, it also has a higher risk profile that tends to translate to negative performance in periods of market distress, and has higher levels of correlation to the performance of Growth assets.

A recommended structure for the Fixed Income asset class will be presented to the Board subsequent to the completion of the asset liability modeling study, and will contain a blend of core/core plus, treasuries, and/or non-credit fixed income strategies.

Cash:

SCERS maintains two separate cash allocations. The first is non-dedicated cash, which is not part of the strategic asset allocation, and which is comprised mostly of the pre-funded annual employer contribution that funds monthly benefit payments. It is also comprised of capital used to fund private market capital calls. SCERS' Overlay Program eliminates cash drag by investing the non-dedicated cash allocation into positions that replicate SCERS' target portfolio. The non-dedicated cash is therefore exposed to market risks.

SCERS also maintains a dedicated 1% cash allocation that is part of the strategic asset allocation, which the Overlay Program does not invest. The dedicated cash allocation serves as an additional liquidity tool, to help ensure liquidity is available to meet SCERS' pension obligations, particularly in a stressed market environment.

Staff and Verus recommend maintaining the 1% dedicated cash allocation. While it can serve as a drag to performance relative to higher returning asset classes at times, its role as an additional liquidity tool remains important. SCERS, like many public pension plans, is a mature plan with negative cash flows, meaning member benefit payments going out are greater than employer and employee contributions coming in on an annual basis. The dedicated cash allocation assists in closing the gap between annual benefit payments and contributions in an environment where investment earnings fall short of the assumed rate of return.

Often toward the end of the fiscal year and prior to the annual contribution coming in, SCERS' cash levels can run lean. The dedicated cash allocation serves as a liquidity buffer and shows its value in a distressed and tight liquidity environment, such as during the first half of 2020 (the early months of the COVID-19 pandemic). During that period, SCERS saw an influx of private market capital calls combined with limited distributions back to SCERS, combined with benefit payment outflows, which put stress on SCERS' liquidity profile, and SCERS was close to needing to dip into the dedicated cash allocation for liquidity.

Liquid Real Return:

While the bulk SCERS' Real Return asset category is invested in Private Real Estate and Real Assets, SCERS also maintains a separate Liquid Real Return allocation to provide public market exposure to the asset category that can also be used to manage broad Real Return exposures. The Liquid Real Return allocation invests across the broader segments of Real Return through allocations to REITs, infrastructure stocks, real assets fixed income, Treasury Inflation-Protected Securities (TIPS), commodities, and natural resource stocks.

Staff and Verus recommend keeping the Liquid Real Return allocation at 2%, a key reason being the segment's sensitivity to shorter-term inflation. An objective of the broader Real Return asset category is to protect against inflation, though inflation is typically viewed through both a short-term and long-term lens. The Liquid Real Return allocation is a pure way to invest around short-term inflation, while the Private Real Estate and Real Assets segments tend to align and benefit from long-term inflation, so exposure to both segments complement one another from an inflation perspective.

Private Markets - Sizing Considerations:

Below is a breakdown of the sizing recommendations for the private market assets classes, including Private Equity, Private Credit, Real Estate, and Real Assets.

<u>Private Equity:</u>

Staff and Verus recommend increasing SCERS' target allocation to Private Equity from 9% to 11%. SCERS' Private Equity portfolio has generated strong performance on an absolute and relative basis. Using Cliffwater performance data as of December 31, 2020, the Private Equity portfolio has generated net returns of 24.5%, 21.3%, and 17.1% over the 3, 5, and since inception periods. This compares to the Cambridge Associates Global Private Equity and Venture Capital benchmark returns of 17.8%, 17.0%, and 14.2%, respectively. The Private Equity portfolio has also kept pace with the long-term policy objective of the asset class (Russell 3000 Index + 3%) of 17.1%. In other words, it has generated a return premium over public equity returns.

The Private Equity portfolio is a mature portfolio with positive cash flows, meaning there is generally more cash distributed back to SCERS than capital going out through capital calls. There are also more attractive opportunities available on an annual basis, both through follow on investments with existing managers and new managers, than SCERS has capital available to allocate. Within the capital market assumptions, private equity also has one of the highest expected returns of the major asset classes, at 9.4%. Cliffwater and Staff will present any revised Private Equity structuring recommendations to the Board subsequent to the approval of the asset allocation.

<u>Private Credit:</u>

Staff and Verus recommend increasing SCERS' target allocation to Private Credit from 4% to 5%. The Private Credit asset class was created in 2017 with a 4% target allocation, and SCERS has been implementing investments to this asset class over the last four years, making a variety of commitments mostly across traditional direct lending strategies, while also adding some higher returning opportunistic lending strategies. The current allocation sits at approximately 2%, and Staff and Cliffwater expect to reach the 4% target allocation in 2023. While there is a substantial amount of institutional capital allocating to private credit, which has emphasized the importance of portfolio construction and implementation, Staff and Cliffwater are comfortable with the approach that SCERS has taken, and the performance that the asset class has generated to date.

Capital market assumptions point to an expected return of 6.3% for private credit. The majority of the return for private credit is contractual yield, so the strategy generates almost immediate and substantial cash flows. SCERS' since inception net return for Private Credit is 9.4% (going back to 2011 when private credit strategies resided in the Private Equity asset class), which exceeds the Credit Suisse Leveraged Loan plus 2% benchmark. Cliffwater and Staff will present any revised Private Credit structuring recommendations to the Board subsequent to the approval of the asset allocation.

Real Estate:

Staff and Verus recommend increasing SCERS' target allocation to Real Estate from 7% to 9%. SCERS' Real Estate asset class has a target allocation of 7%, and is broken up between core and non-core (value-add and opportunistic) strategies. Core investments make up the bulk of the allocation, and rely on a combination of income and returns, while non-core strategies have a higher risk profile and a higher return as well. SCERS is fully allocated to Real Estate, and has generally run above the 7% target due to strong performance and holding a higher allocation by design as the Real Assets portfolio was being built out.

SCERS' Real Estate portfolio has generated strong performance on an absolute and relative basis. Using Townsend performance data as of March 31, 2021, the Real Estate portfolio has generated net returns of 6.4%, 8.1%, and 8.4% over the 3, 5, and since inception periods. This compares to the NFI-ODCE + 35bps returns of 4.4%, 5.7%, and 6.5%, respectively.

Similar to Private Equity, there are more attractive real estate opportunities available on an annual basis than SCERS has capital available to allocate, particularly in the non-core strategies. Within the capital market assumptions, real estate also has one of the higher expected returns of the major asset classes, particularly within the non-core segments, where value-add and opportunistic real estate are expected to return, 7.7% and 9.7%, respectively. The increase in the Real Estate allocation will be proportional between core and non-core, in order to stay within the policy guidelines for the two segments, and Townsend and Staff will present any revised Real Estate structuring recommendations to the Board subsequent to the approval of the asset allocation.

Real Assets:

Staff and Verus recommend keeping the Real Assets allocation at 7%. Staff and Verus modeled allocation mixes with a higher allocation to Real Assets based on robust capital market assumptions for the asset class, the strong returns generated by SCERS, and attractive cash flow and inflation sensitive characteristics of its underlying assets. However, real assets is a maturing and evolving market and the opportunity set on an annual basis can be more episodic compared to other private market asset classes. SCERS also has to be realistic as to how much capital can be effectively deployed in the asset class, both through open- and closed-end investment funds, as the opportunity set is more limited.

Staff and Consultants have also discussed the portfolio structure for Real Assets going forward. The current structure targets 45% infrastructure, 35% energy, and 20% other (agriculture, timber, and other natural resources). The expectation is that going forward there will be a greater emphasis on the evolving infrastructure segment, and agriculture to an extent, and less of a targeted emphasis on energy (more likely to be an opportunistic approach based on the macro environment and the opportunity set). Cliffwater and Staff will present any revised Real Assets structuring recommendations to the Board subsequent to the approval of the asset allocation.

Opportunities:

SCERS' Opportunities portfolio does not have a fixed allocation, but instead has a permissible range of 0% to 5%. As of June 30, 2021, the actual allocation stood at less than 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 draws its capital allocation from the asset class that is most comparable to the risk-return characteristic of the investment. 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.

SCERS' asset allocation has changed significantly since the Opportunities portfolio was created. Many opportunistic-like investments have been allocated directly within asset classes such as Private Equity (distressed), Private Credit, and non-core Real Estate over the past number of years, and several of SCERS' hedge fund managers are structured to invest in tactical opportunities when they present themselves. Staff and Verus recommend eliminating the Opportunities portfolio, and consider any future tactical and opportunistic investment opportunities directly within the asset class with the closest risk-return characteristics of the opportunity under consideration.

LIQUIDITY:

The recommended asset allocation is moderately less liquid than SCERS' current policy portfolio, as the allocation to illiquid investments (private equity, private credit, absolute return, real estate, real assets) increases from 37% to 39% of the total portfolio.

Verus conducted a liquidity analysis on the recommended asset allocation mix, similar to what they did at the June meeting. The liquidity analysis analyzes potential implications on SCERS' liquidity and cash flow needs related to illiquid exposure, both at the current policy's level and at the proposed asset allocation's increased level.

As a reminder, Verus breaks assets into different liquidity categories. 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 often 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, often at a discount to fair value.

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, and is measured 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

Verus generates a measure for liquidity called a Liquidity Coverage Ratio (LCR), which 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 for the current policy is 2.7, meaning it has 2.7x 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 recommended asset allocation mix has a LCR of 2.3, which is viewed as a good liquidity profile.

Verus also uses a more conservative measure called a Modified Liquidity Coverage Ratio (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, including U.S. Treasuries and core plus fixed income. 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, such as public equities, to meet planned obligations over the 5 years following a market dislocation. SCERS' current asset allocation has an MLCR of 1.3, and the recommended mix has an MLCR of 1.1, which remains above the optimal target measure. The LCR and MLCR should be viewed in conjunction to one another.

<u>CONCLUSION:</u>

During the ALM Study, Verus' modeling demonstrated that current 10-year forecasted returns do not realistically model to SCERS' 6.75% actuarial rate of return, unless the risk profile of the plan increases significantly. In conducting the ALM study, there was a trade-off between taking on more risk to potentially generate higher returns versus maintaining a sufficient level of diversifying and cash-flowing assets to reduce downside risk and the range of outcomes to which the portfolio is subject, and therefore accepting a lower projected return than what is assumed.

As was communicated during the study, the capital market assumptions are just that—assumptions, and they change yearly based on the movements of the markets. SCERS' historical experience shows that in a given year the actual return will vary significantly from the actuarial rate; sometimes higher and other times lower. It is important to understand that SCERS' actual experience will fall within a broad range of outcomes around the modeled median return, so caution should be placed in putting too large a weighting on a single number. Another consideration is that the asset allocation can be re-evaluated prior to the next ALM study as CMAs adjust.

Another point communicated during the study is that the gap between expected returns and the actuarial return can potentially be closed through implementation and the generation of excess returns. As an example, over the past 3-year, 5-year, and 10-year periods (as of June 30, 2021), SCERS has earned annualized excess returns of 1.6%, 1.7%, and 0.5%, respectively, net of fees, over the policy index benchmark. While there is variability to earning excess returns, and they are difficult to earn consistently, they do provide a potential mechanism to close some of the gap.

The recommended asset allocation retains the core foundation of the current policy allocation, including a functional approach that groups and classifies segments of SCERS' portfolio in order to link those segments that are exposed to similar economic environments and risk factors. The functional grouping breaks the portfolio into three asset categories, Growth, Diversifying, Real Return, with a number of underlying asset classes.

Staff and Verus believe that the recommended asset allocation meets many of the objectives identified during the ALM study. The proposed asset allocation maintains a risk-balanced approach that emphasizes having enough return generating assets to drive performance toward the actuarial rate of return, while also maintaining enough uncorrelated/diversifying, cash-flowing, and inflation-sensitive assets to reduce downside risk and the range of outcomes that the portfolio is subject to. The allocation to illiquid assets increases modestly with increases to some of the private market asset classes, but the proposed asset allocation maintains a reasonable liquidity profile as measured by the liquidity analysis conducted by Verus.

NEXT STEPS:

Upon approval of the asset allocation model by SCERS' Board, several subsequent tasks will need to be completed. First, Staff and consultants will identify structuring considerations for each major asset class, and will come back to Board at a later date for approval. Most asset classes will have minor revisions, such as Private Equity and Private Credit; however, it is expected that other asset classes will have more extensive revisions such as Global Equity. Potential revisions include implementation plans for those asset classes with changes to their target allocations, sub-asset class composition and weightings, strategy and geographic considerations, and any benchmark adjustments. Staff and consultants expect to bring asset class structuring considerations to the Board under the following timeline:

- Third quarter 2021 – Private Equity; Private Credit; Absolute Return
- Fourth quarter 2021 – Real Estate; Global Equity
- First/second quarter 2022 – Fixed Income; Public Credit; Real Assets; Liquid Real Return

Staff and consultants will also incorporate the asset allocation changes into the Master Investment Policy Statement (IPS), and revise and adjust the asset category IPSs for any asset class structuring revisions.

Lastly, Staff will review the Overlay Program and its underlying proxies in conjunction with the asset allocation changes, and come back with any revisions.

ATTACHMENTS

- Board Order
- Verus Asset Allocation Recommendation Memo
- Verus Asset/Liability Modeling 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 18, 2021

MOTION:

Asset Liability Modeling Study – Final Recommendation

THE BOARD OF RETIREMENT hereby accepts the recommendation of staff to approve the proposed asset allocation presented by Verus Advisory and SCERS' staff.

I HEREBY CERTIFY that the above order was passed and adopted on August 18, 2021 by the following vote of the Board of Retirement, to wit:

AYES:

NOES:

ABSENT:

ABSTAIN:

ALTERNATES (Present but not voting):

Richard B. Fowler II
Board President

Eric Stern
Chief Executive Officer and
Board Secretary

Verus

Memorandum

To: SCERS Board
From: John Nicolini; Verus
Date: August 18th, 2021
RE: Asset-Liability Recommendation

Summary

Pursuant to the Asset-Liability Study that was conducted in 2021, this memo will outline Verus & Staff's recommendation and the process that was undertaken to arrive at the proposed asset allocation for SCERS.

	Current Policy	Proposed Mix	Return (g)	Standard Deviation	Sharpe Ratio (a)
Global Equity	40.0	40.0	*5.2*	*17.3*	*0.37*
Public Credit	2.0	2.0	3.3	11.3	0.34
Growth Absolute Return*	3.0	0.0	4.9	7.8	0.60
Private Equity*	9.0	11.0	9.4	20.0	0.52
Private Credit*	4.0	5.0	6.3	6.0	0.84
Total Growth Assets	***58.0***	***58.0***			
Fixed Income**	15.0	16.0	*1.5*	*4.0*	*0.50*
Global Fixed Income	3.0	0.0	*0.3*	*7.4*	*0.05*
Diversifying Absolute Return*	7.0	7.0	*3.1*	*3.9*	*0.71*
Cash	1.0	1.0	*0.2*	*1.2*	-
Total Diversifying	***26.0***	***24.0***			
Real Estate***	7.0	9.0	*5.7*	*12.6*	*0.50*
Liquid Real Return	2.0	2.0	*4.8*	*8.4*	*0.56*
Private Real Assets*	7.0	7.0	*8.8*	*16.5*	*0.58*
Total Real Return	***16.0***	***18.0***			
Total Allocation	**100.0**	**100.0**			

* Provided by Cliffwater
** Fixed Income includes both treasuries and core/core plus fixed income
*** Real Estate is a blend of Core, Value-add and Opportunistic strategies. Return shown is for Core RE

	Current Policy	Proposed Mix
Mean Variance Analysis		
Forecast 10 Year Return	***5.4***	***5.7***
Standard Deviation	11.2	11.5
Return/Std. Deviation	*0.5*	*0.5*
1st percentile ret. 1 year	*-17.4*	*-17.6*
Sharpe Ratio	0.50	0.51
% of Portfolio liquid	63.0%	61.0%
% of Portfolio illiquid	37.0%	39.0%

Asset Liability Modeling Process

The ALM study was introduced to the Board in December of 2020. Staff and Verus provided an educational presentation on Verus' Capital Market Assumptions and the ALM Process.
The first step in the ALM process was to conduct an Enterprise Risk Tolerance survey. Verus conducted in-person (virtual) interviews with each Board Member to better understand their risk tolerance and comfort level with the current portfolio's risks. Verus compiled the results and presented them to the Board for discussion and debate.

The discussion suggested that the Board was pleased with the current asset allocation and felt that small tweaks were preferred over large shifts in policy allocations. It was noted that, based on the most recent capital market assumptions, the current asset allocation was projected to fall short of the actuarial assumed rate of return. In fact, after modeling several different asset allocations, it was determined that reaching the actuarial assumed rate of return would require SCERS to substantially increase the allocation to private markets well beyond the Board's comfort level. This points against targeting the actuarial assumed rate of return. With this information, Verus and Staff created asset allocation options to present to the Board.

The first set of allocation mixes were presented in May. The mixes were run through ProVal to simulate their effects on liabilities, funded status, and employer contributions. Verus also conducted a liquidity analysis on a select set of mixes to gauge their impact on plan liquidity risk. All the mixes presented had attractive attributes, and all analysis was presented to the Board in May. With input from the Board, Verus and Staff returned in June with a second set of mixes that were narrower in their deviations from the current policy allocation. Following the June Board meeting, Staff and Verus had enough input from the Board to recommend a final proposed allocation, which is discussed in more detail below.

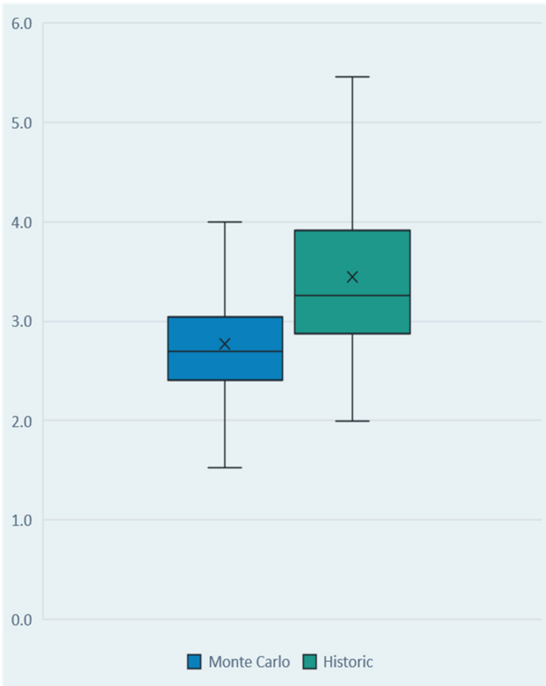
Key Considerations

Based on early modeling exercises, we knew that a realistic portfolio for SCERS was not going to model out to a 6.75% projected return, and that we would need to balance competing desires for a higher expected return while keeping risk at a manageable level. Given the liquidity risk modeling that was conducted, we knew that SCERS could afford to increase exposure to private markets. In addition, reallocating capital away from growth-oriented absolute return and global fixed income (two asset classes that had not delivered the returns and diversification that we had desired) was a key consideration.

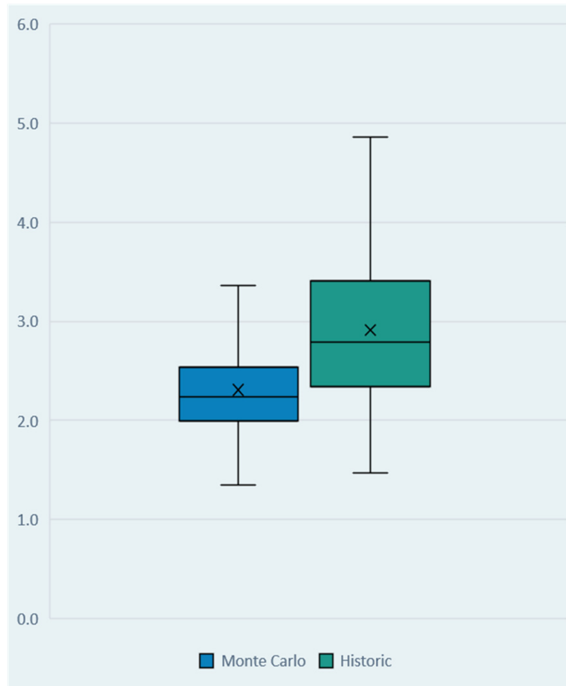
Verus and staff considered how the proposed mix would impact both risk and return relative to the current policy. From a risk standpoint, we looked at several measures including Barra risk decomposition, historical scenario analysis, stress testing, volatility, and liquidity risk. Given the relatively small differences between Current and Proposed, the results showed improvement in return for a slight uptick in risk.

The liquidity analysis is measured in two ways: Liquidity Coverage Ratio (LCR) and the more conservative measure Modified Liquidity Coverage Ratio (MLCR). LCR assumes that all private market investments are illiquid (except core real estate) and therefore not available to meet cash flow needs. MLCR also assumes all private markets are illiquid but also adds hedge funds, core real estate, public credit, and public equities as illiquid. The goal for SCERS is to stay at-or-above a 2.0 for LCR and at-or-above 1.0 for MLCR. In the case of LCR, this means that SCERS has at least 2x the amount of liquid assets needed to meet cash flow needs over a 5-year period. The results of the LCR measure for both Current and Proposed policy allocations are found below.

5-Year LCR – Current Policy



5-Year LCR – Proposed Policy



Based on our modeling, both Current and Proposed portfolios have sufficient liquidity as measured by both LCR and MLCR.

Recommendation

With the consideration of where we are in the economic cycle and taking a forward-looking view towards asset allocation, Verus and Staff recommend Mix 2 (Proposed) for SCERS' new asset allocation. The recommendation for Mix 2 slightly increases the illiquidity of the portfolio but provides a higher expected return. In addition, the private asset classes which we are recommending additional capital to are ones where SCERS has historically achieved substantially higher rates of return than were modeled.

Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

AUGUST 2021

Asset/Liability Modeling Presentation Final

Sacramento County Employees' Retirement System

Table of contents

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I. Introduction

Summary

Objectives:

— Review final asset allocation mix and provide direction to Staff and Verus for a final asset allocation recommendation

Prior meeting summary:

— Adopted a global equity framework within public equity; moving away from strict market cap and geographic constraints

— Removed global fixed income allocation within diversifying fixed income. We are recommending a single "Fixed Income" allocation which can invest in core/core plus fixed income, treasuries and/or non-credit fixed income strategies

— Eliminated growth absolute return as a dedicated asset class.

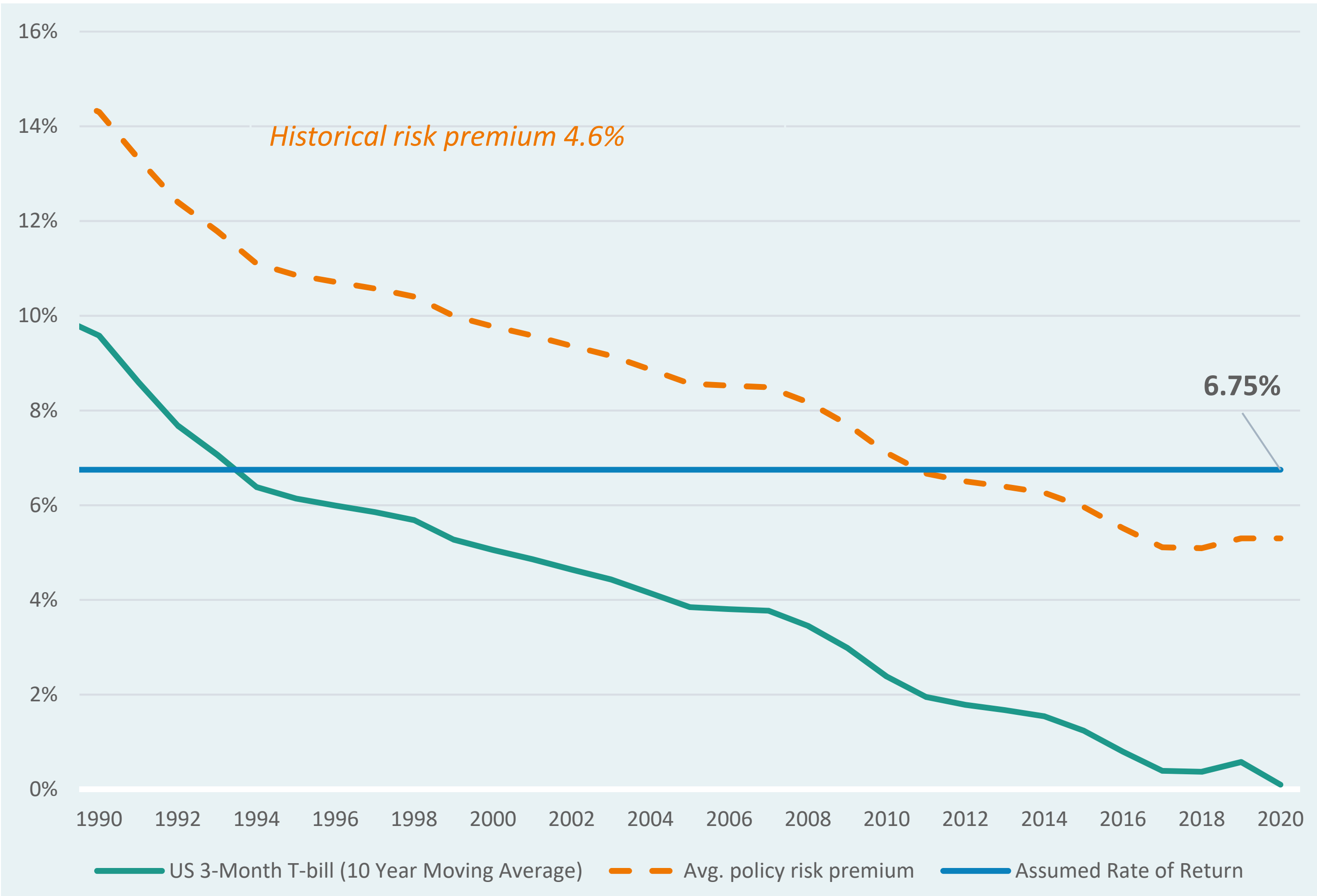
— Recommended SCERS adopt an allocation that aligns closely with Mixes 2 & 3.

Recommendation:

— Staff and Verus are recommending the Board adopt Mix 2 from the June meeting as SCERS' new policy allocation

Achieving 6.75% return used to be easier…

WHAT THE MARKET CAN PROVIDE



As of 12/31/2020. Avg. policy risk premium calculated using a domestic 60/40 portfolio (60% S&P 500 / 40% 10-year T Bonds from 1928-1977; 60% S&P 500 / 40% BBgBarc Agg. from 1977-2020). 10-year trailing T-Bill as of 12/31/2020 = 0.1%

[1]Based on Verus CMA's

10-year capital market assumptions

Projected returns based on Verus & Cliffwater Capital Market Assumptions (CMA'S); 10-year return projected series

II. Deterministic

Mixes: Allocations

	Current Policy	Proposed Mix	Return (g)	Standard Deviation	Sharpe Ratio (a)
Global Equity	40.0	40.0	*5.2*	*17.3*	*0.37*
Public Credit	2.0	2.0	3.3	11.3	0.34
Growth Absolute Return*	3.0	0.0	4.9	7.8	0.60
Private Equity*	9.0	11.0	9.4	20.0	0.52
Private Credit*	4.0	5.0	6.3	6.0	0.84
Total Growth Assets	***58.0***	***58.0***			
Fixed Income**	15.0	16.0	*1.5*	*4.0*	*0.50*
Global Fixed Income	3.0	0.0	*0.3*	*7.4*	*0.05*
Diversifying Absolute Return*	7.0	7.0	*3.1*	*3.9*	*0.71*
Cash	1.0	1.0	*0.2*	*1.2*	-
Total Diversifying	***26.0***	***24.0***			
Real Estate***	7.0	9.0	*5.7*	*12.6*	*0.50*
Liquid Real Return	2.0	2.0	*4.8*	*8.4*	*0.56*
Private Real Assets*	7.0	7.0	*8.8*	*16.5*	*0.58*
Total Real Return	***16.0***	***18.0***			
Total Allocation	**100.0**	**100.0**			

*   Provided by Cliffwater

** Fixed Income includes both treasuries and core/core plus fixed income

*** Real Estate is a blend of Core, Value-add and Opportunistic strategies. Return shown is for Core RE

Maintains the same weighting to Growth assets; decreases Diversifying and increases Real Return assets modestly

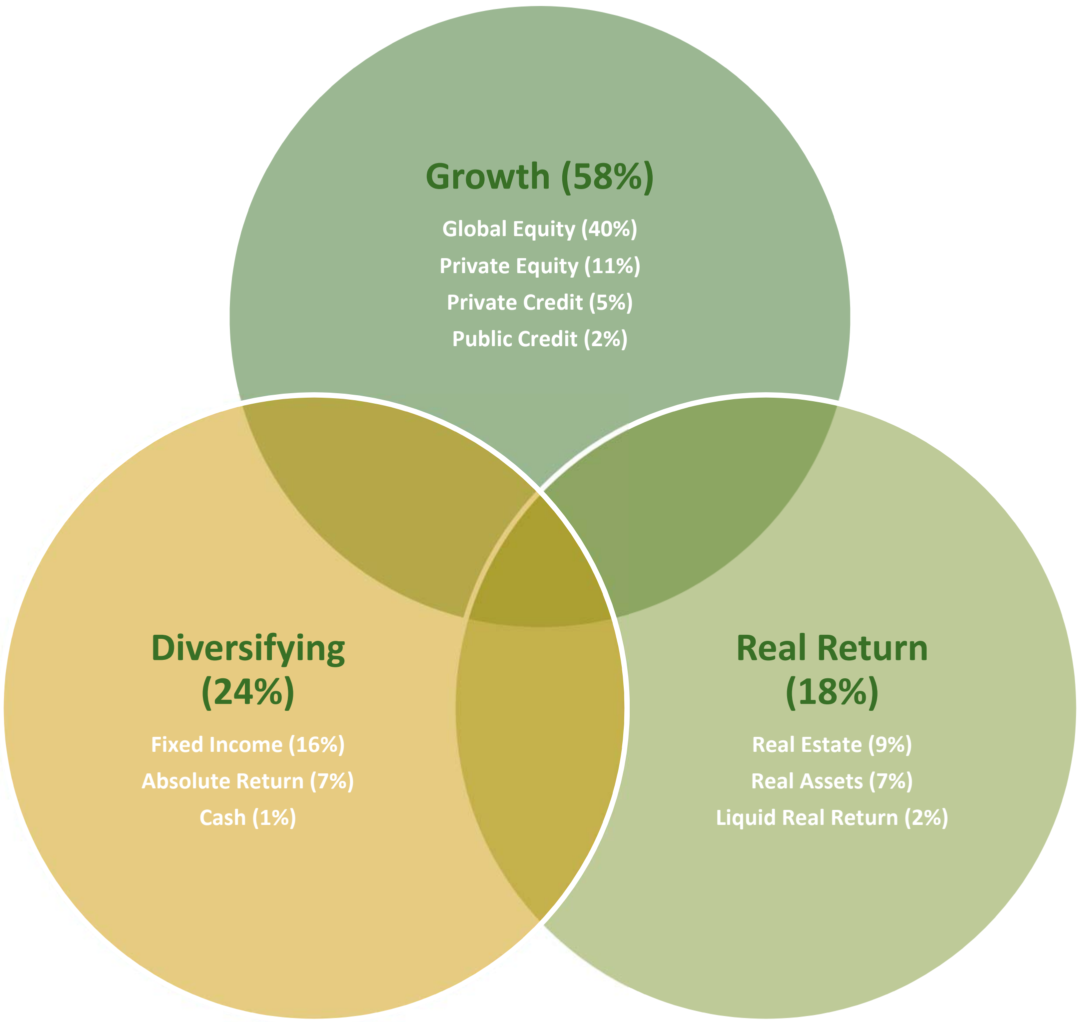
Removes Growth Absolute Return and Global Fixed Income segments

Increases private market allocations marginally

Mixes: Analysis

	Current Policy	Proposed Mix
Mean Variance Analysis		
Forecast 10 Year Return	***5.4***	***5.7***
Standard Deviation	11.2	11.5
Return/Std. Deviation	*0.5*	*0.5*
1st percentile ret. 1 year	*-17.4*	*-17.6*
Sharpe Ratio	0.50	0.51
% of Portfolio liquid	63.0%	61.0%
% of Portfolio illiquid	37.0%	39.0%

Functional Framework



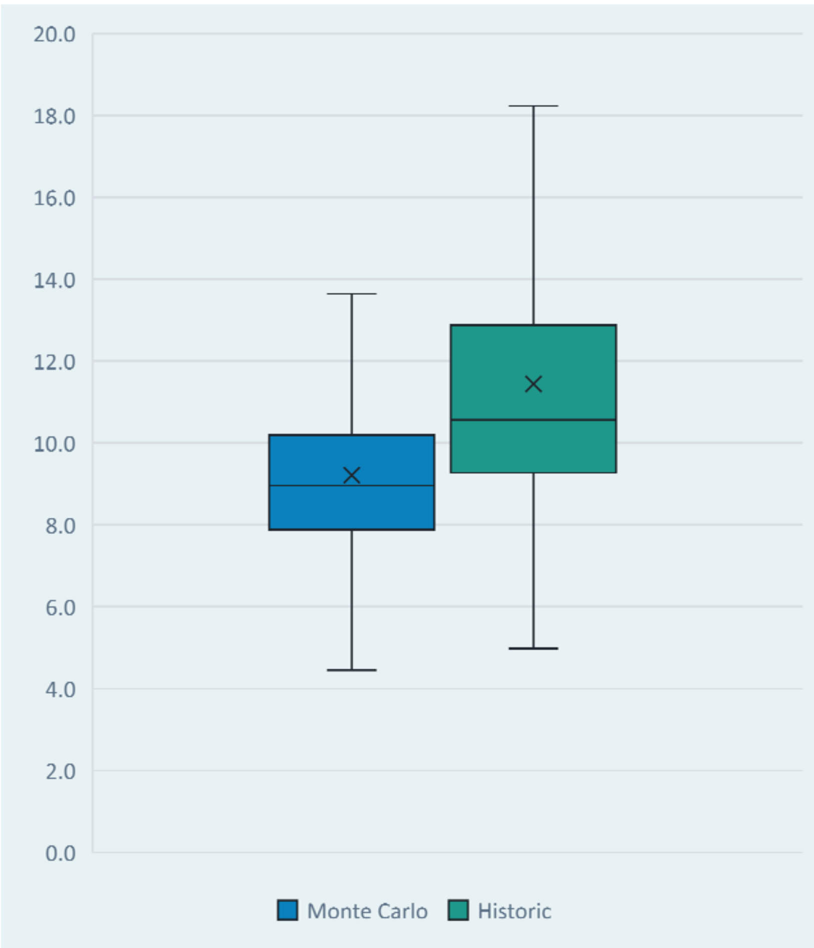
Asset allocation retains a functional approach

Links those segments that are exposed to similar economic environments and risk factors

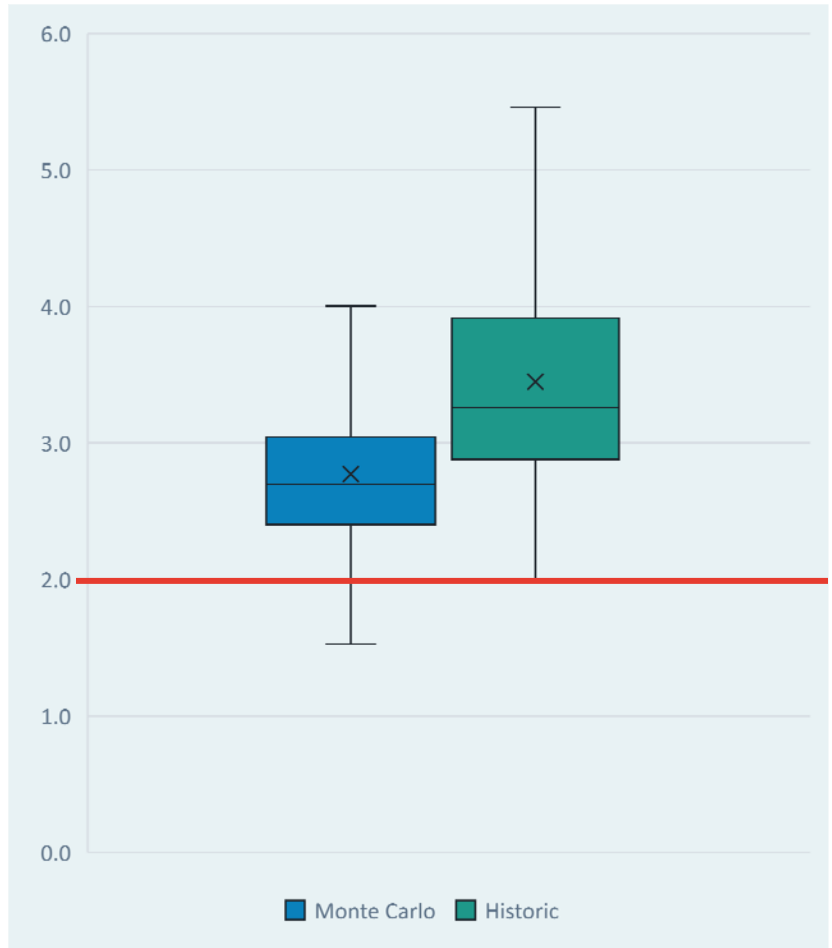
Maintains a risk-balanced approach – return generating assets to drive performance combined with uncorrelated/diversifying, cash-flowing, and inflation-sensitive assets to reduce downside risk

Liquidity Coverage Ratio – Current Policy

1-YEAR LCR



5-YEAR LCR



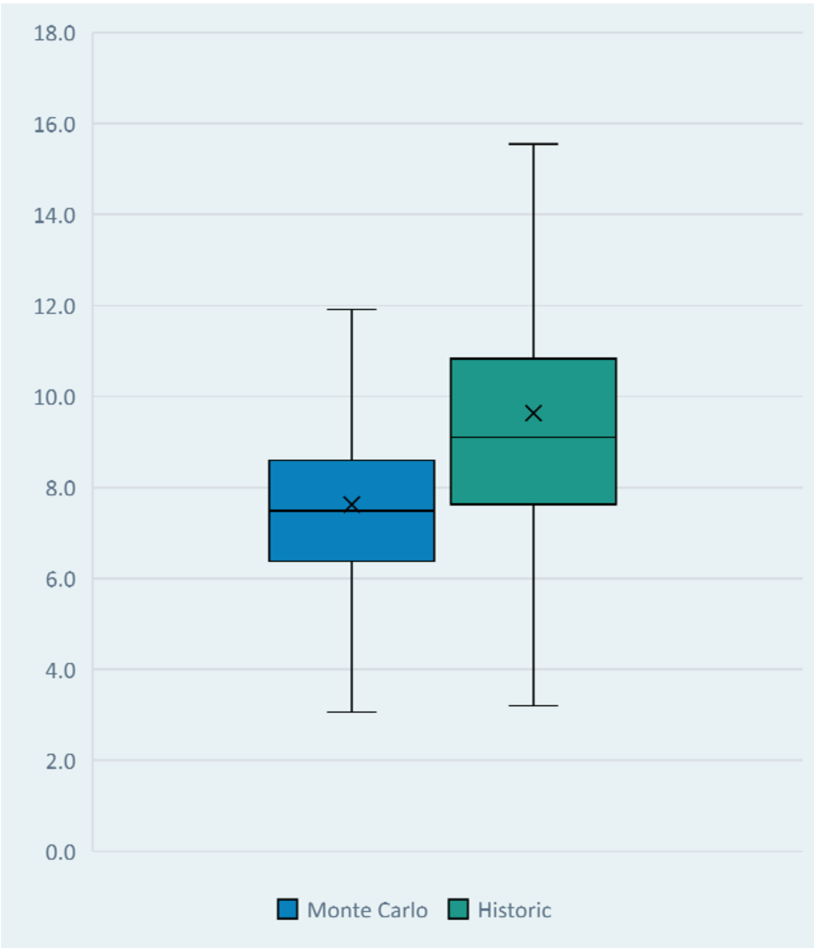
5-year LCR median outcome is 2.7 with 50% of all observations between 2.4-3.1

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

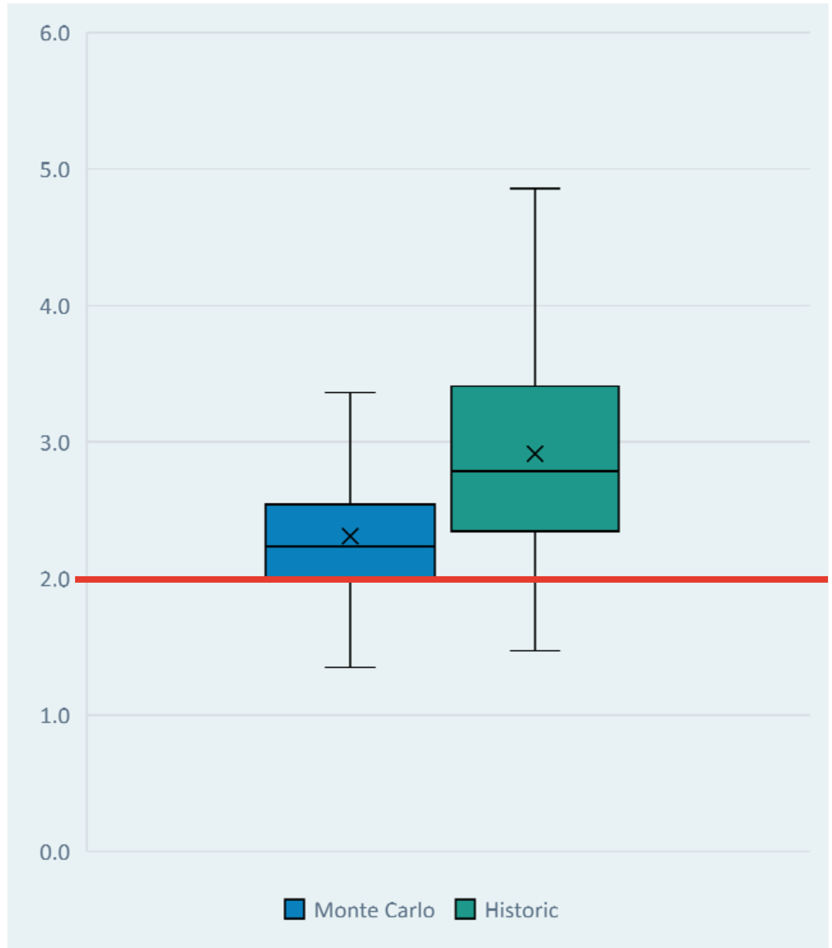
– *Actuarial information provided by Segal*
– *Private market projections for capital calls and distributions provided by Cliffwater and Townsend*

Liquidity Coverage Ratio – Proposed Mix

1-YEAR LCR



5-YEAR LCR



5-year LCR median outcome is 2.3 with 50% of all observations between 2.0-2.5

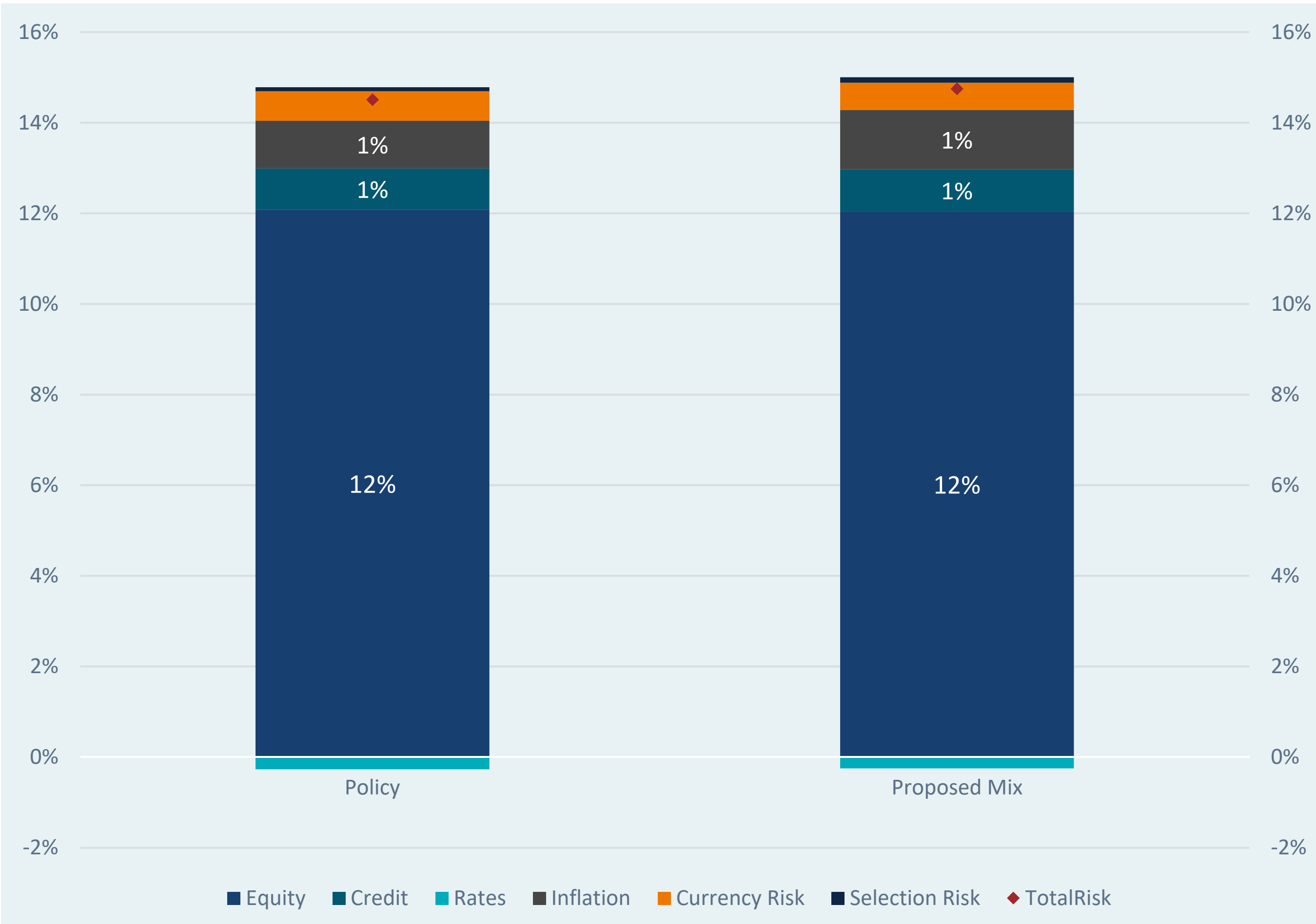
5-year MLCR median outcome is 1.1 with 50% of all observations between 0.9-1.0

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

III. Stochastic & Risk

Risk Decomposition

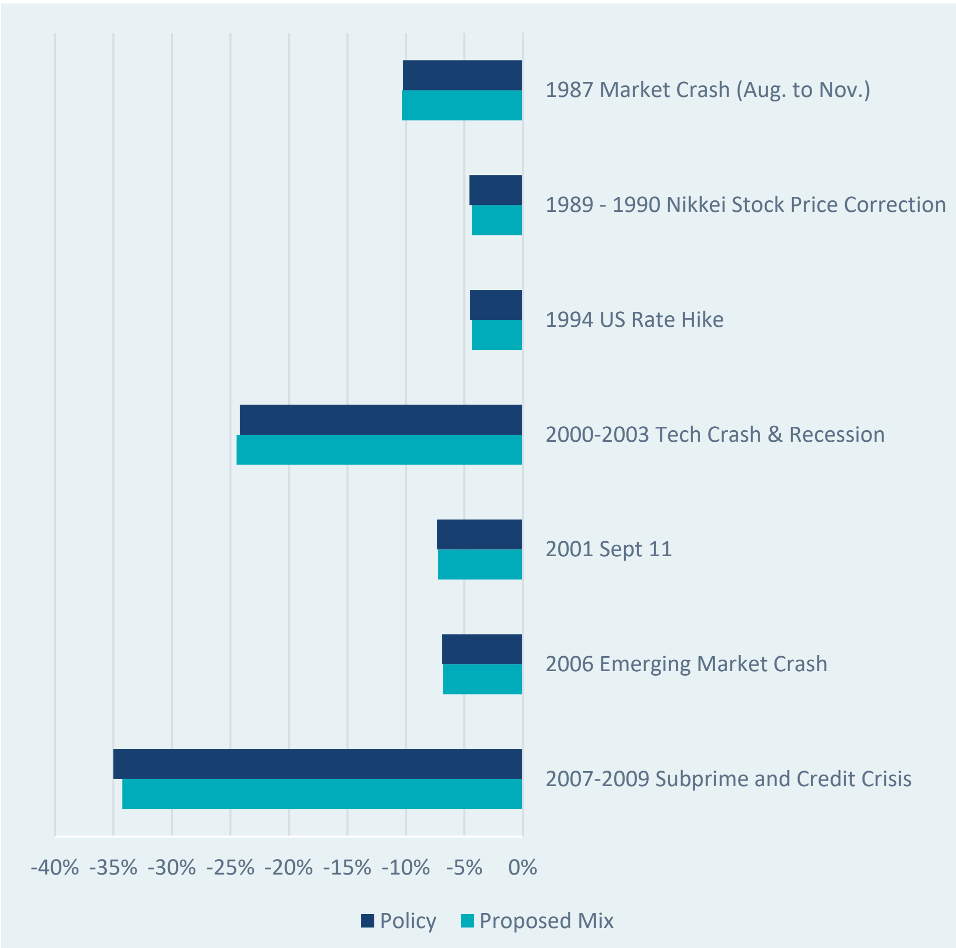
BARRAONE RISK DECOMPOSITION: 1-YEAR PROJECTED VOLATILITY & BREAKOUT



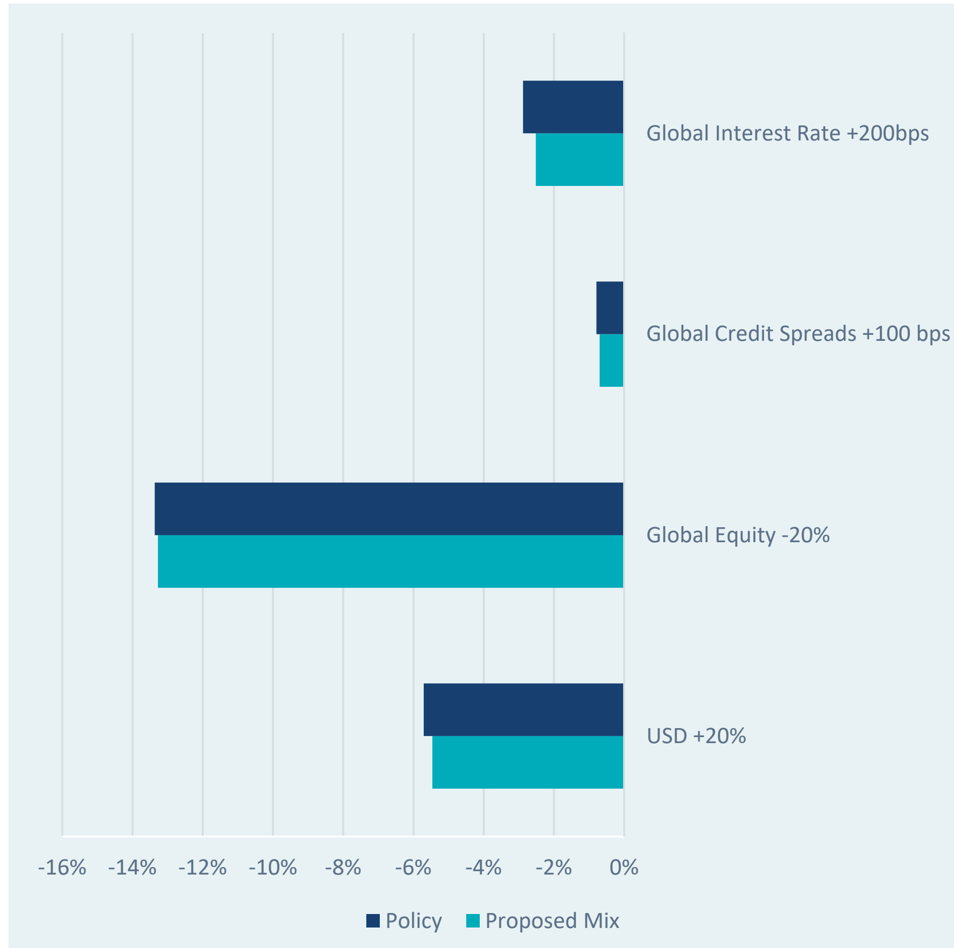
Source: MSCI BarraOne

Scenario and Stress Test

SCENARIO ANALYSIS



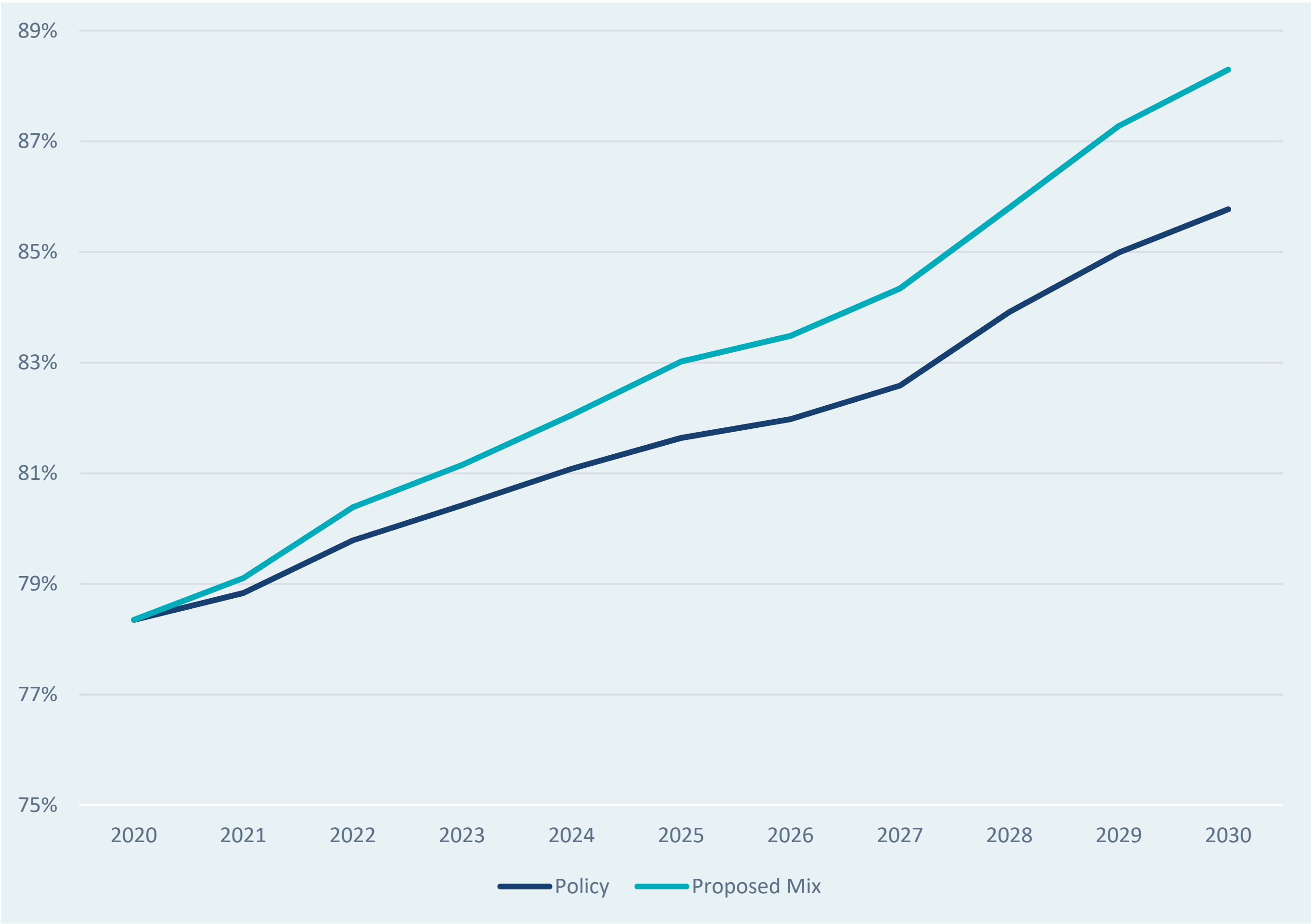
STRESS TEST



Source: MSCI BarraOne

Mix Median Projections

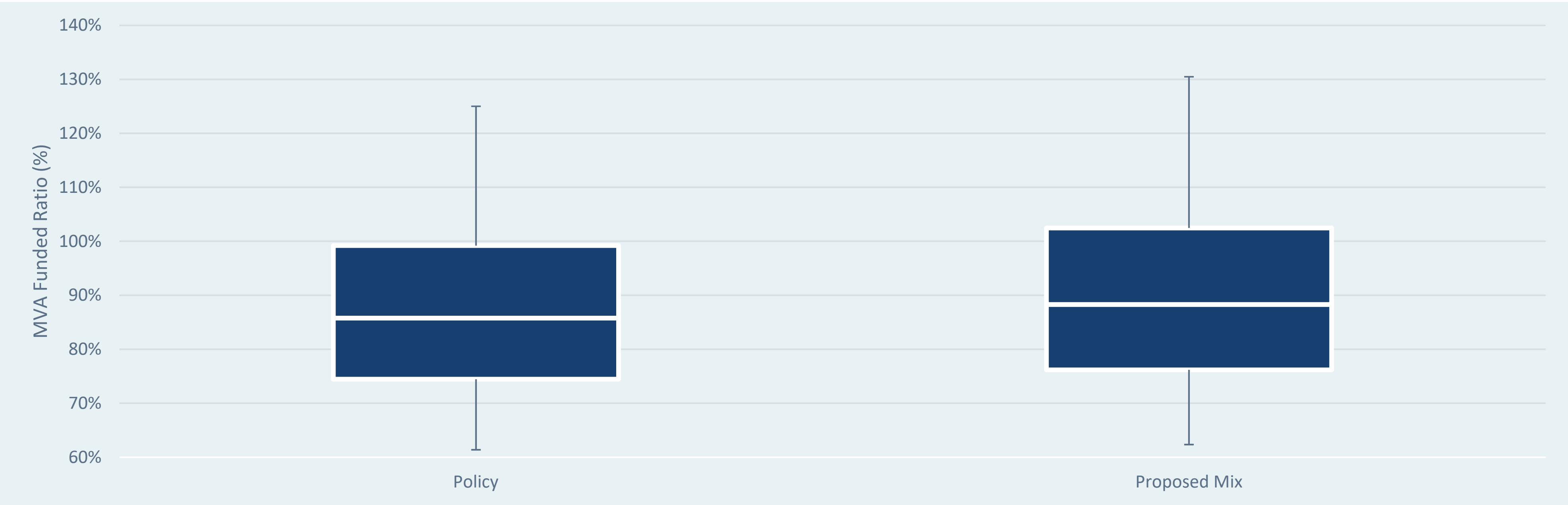
50TH PERCENTILE OUTCOME: MARKET VALUE ASSETS FUNDED RATIO BY MIX



source: Verus

Range of Funded Ratio Outcomes

MARKET VALUE OF ASSETS FUNDED RATIO: END OF YEAR 10

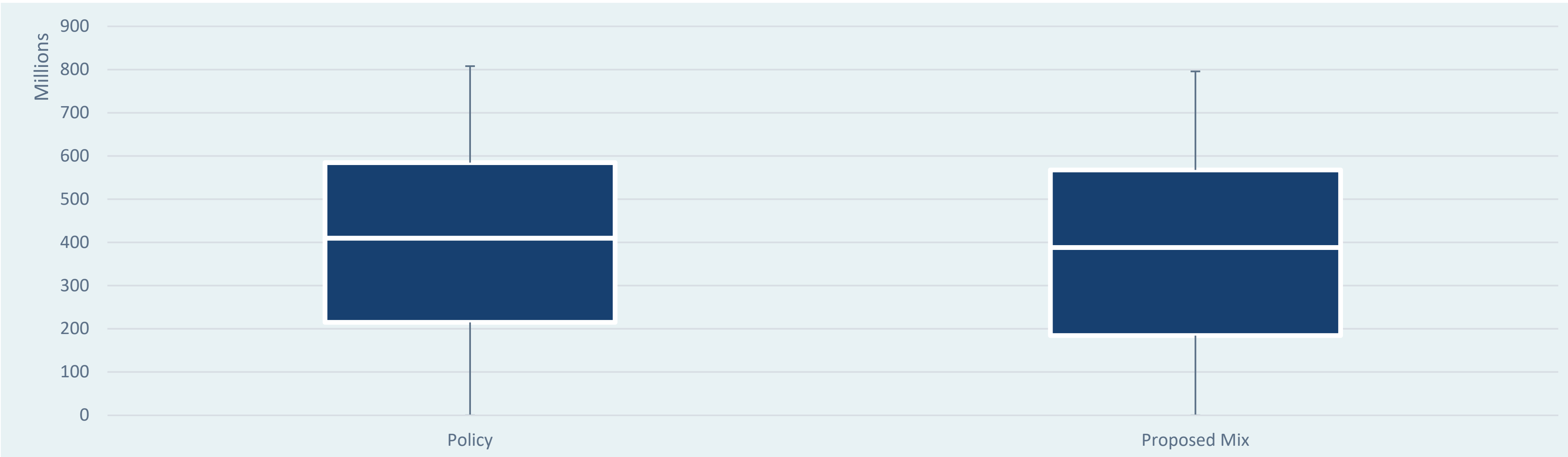


	Policy	Proposed Mix
Best Case (95%)	125.0%	130.5%
Upper Quartile (75%)	99.2%	102.5%
Median Outcome (50%)	85.8%	88.3%
Lower Quartile (25%)	74.5%	76.2%
Worst Case (5%)	61.4%	62.3%

Source: Verus

Range of Employer Contribution Outcomes

EMPLOYER CONTRIBUTION ($): END OF YEAR 10



	Policy	Proposed Mix
Worst Case (95%)	807.9M	795.7M
Lower Quartile (25%)	584.6M	567.7M
Median Outcome (50%)	409.8M	388.2M
Upper Quartile (75%)	214.8M	184.3M
Best Case (5%)	0.0M	0.0M

Source: Verus

IV. Conclusion/Next Steps

Conclusion/Next Steps

- Staff and Verus are recommending the Board adopt the Proposed Mix (Mix 2) as SCERS' new policy allocation

- Staff and consultants will come back at subsequent meetings to recommend asset class structuring considerations – implementation; sub asset classes; benchmarks; etc.
  - Q3'21 – Private Equity; Private Credit; Absolute Return
  - Q4'21 – Real Estate; Global Equity
  - Q1'22 – Fixed Income; Public Credit; Real Assets

- Update to Investment Policy Statements
  - Master IPS
  - Asset category IPSs

- Review Overlay Program and underlying proxies

V. Appendix

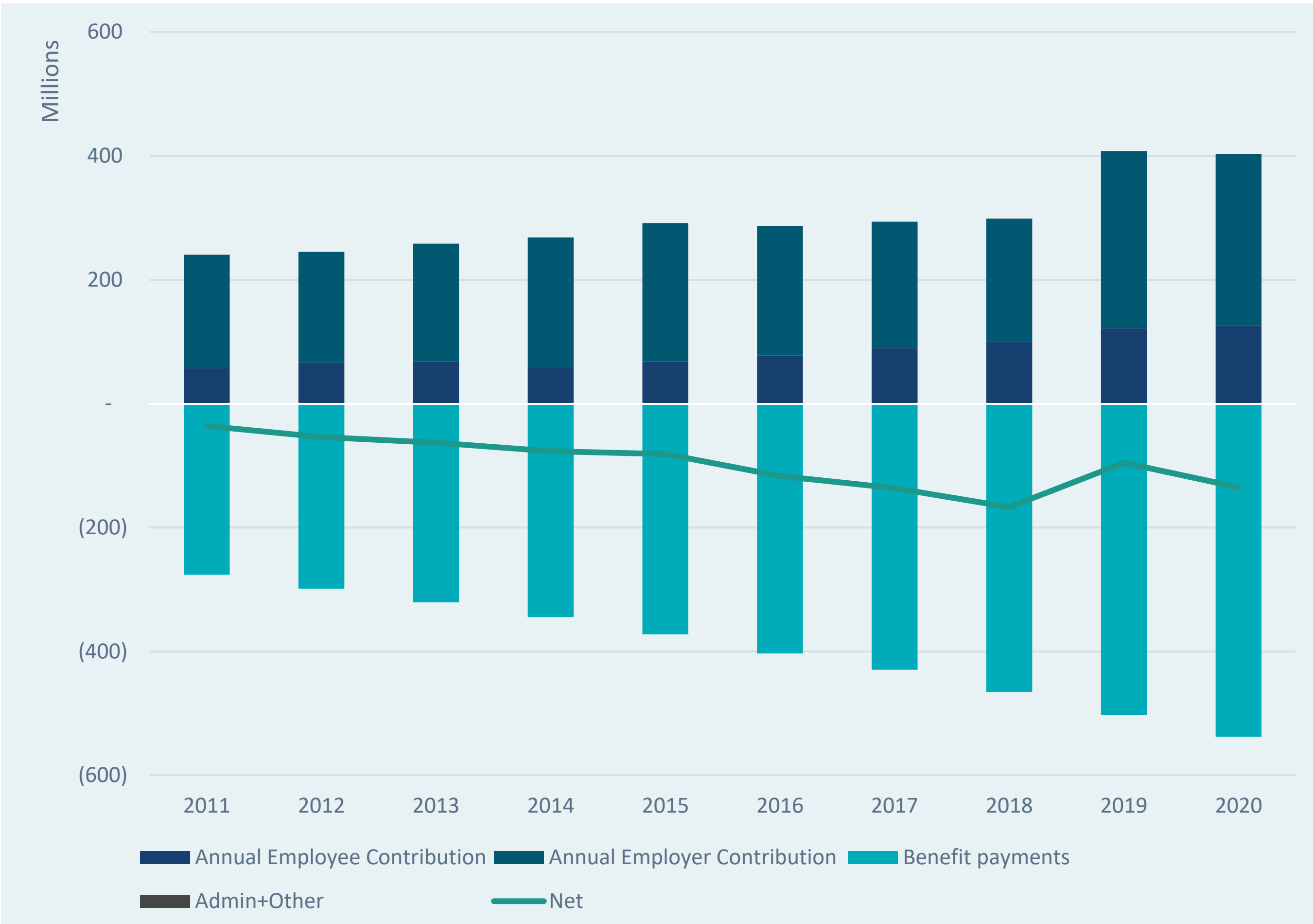
Historical Funded Status

SCERS HISTORICAL FUNDED STATUS

Source: SCERS Actuarial Valuation 6/30/2020

Historical Cashflow

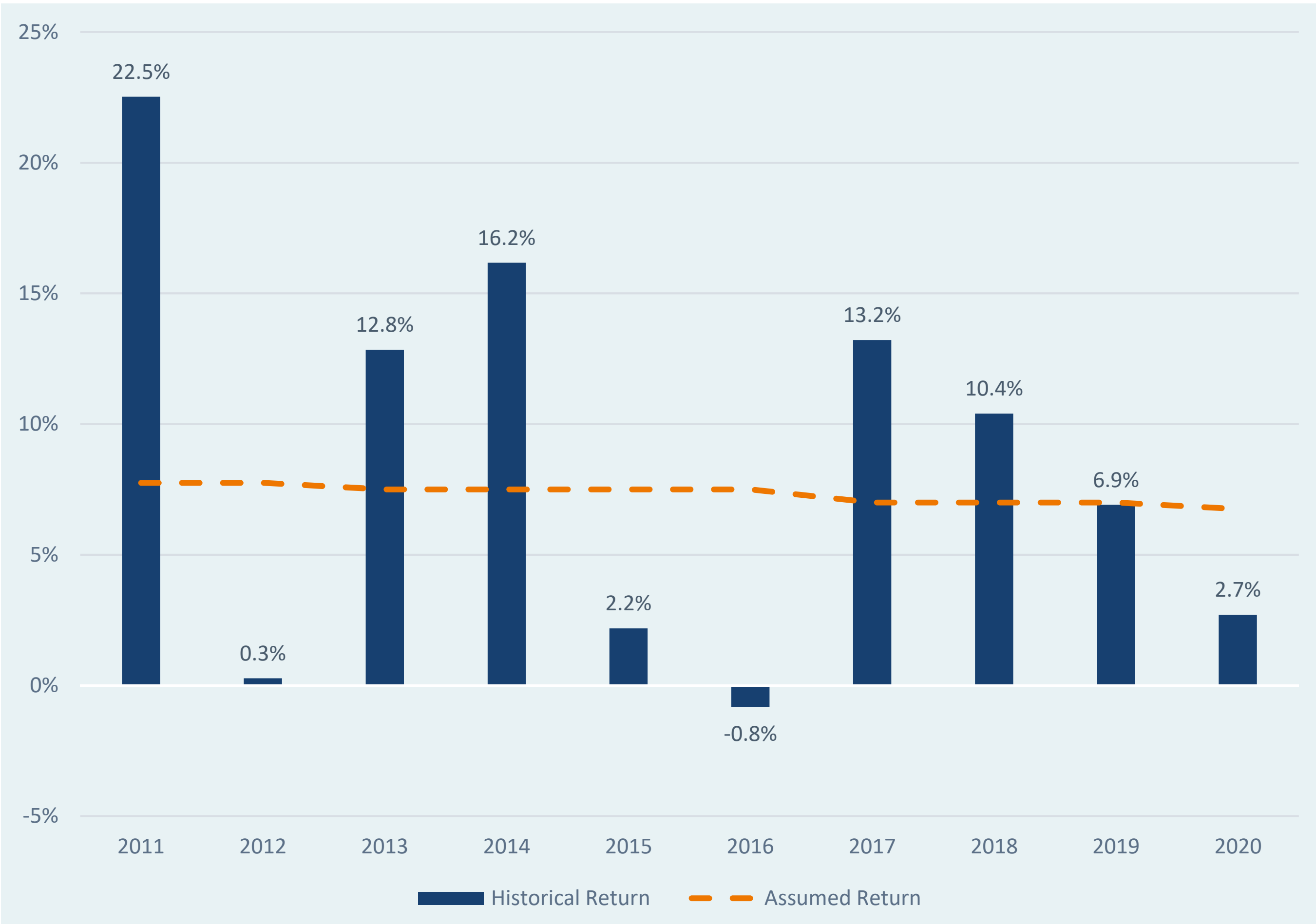
SCERS HISTORICAL CASHFLOW



Source: SCERA 2020 CAFR

Historical Return

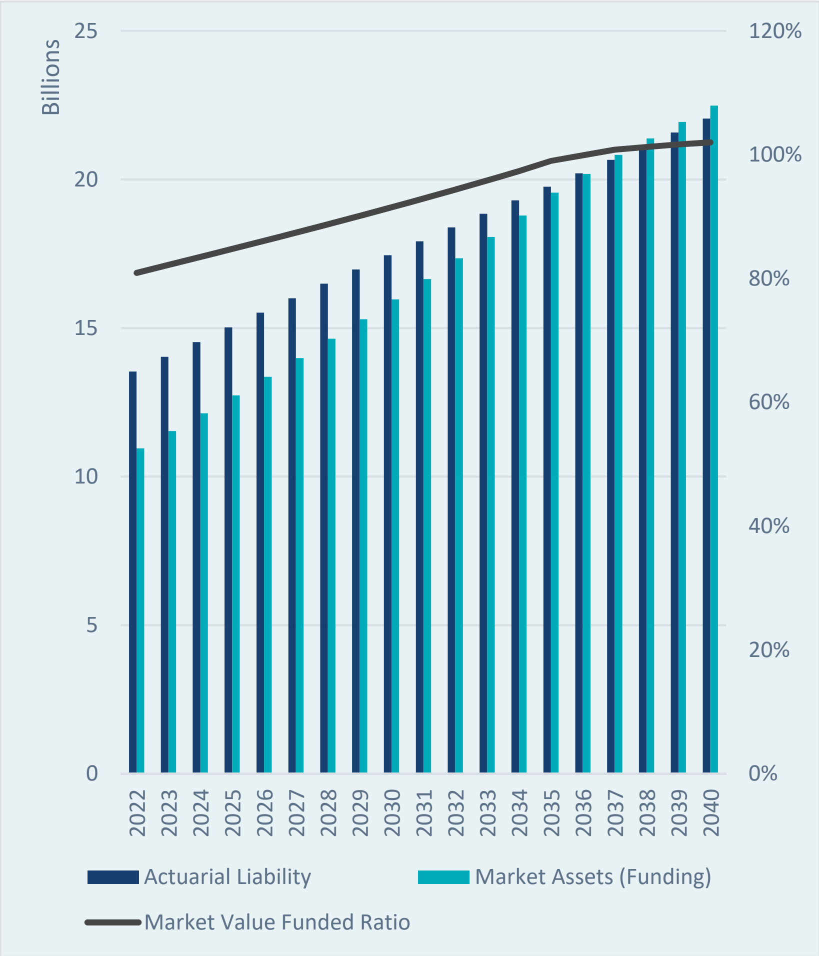
SCERS HISTORICAL RETURN



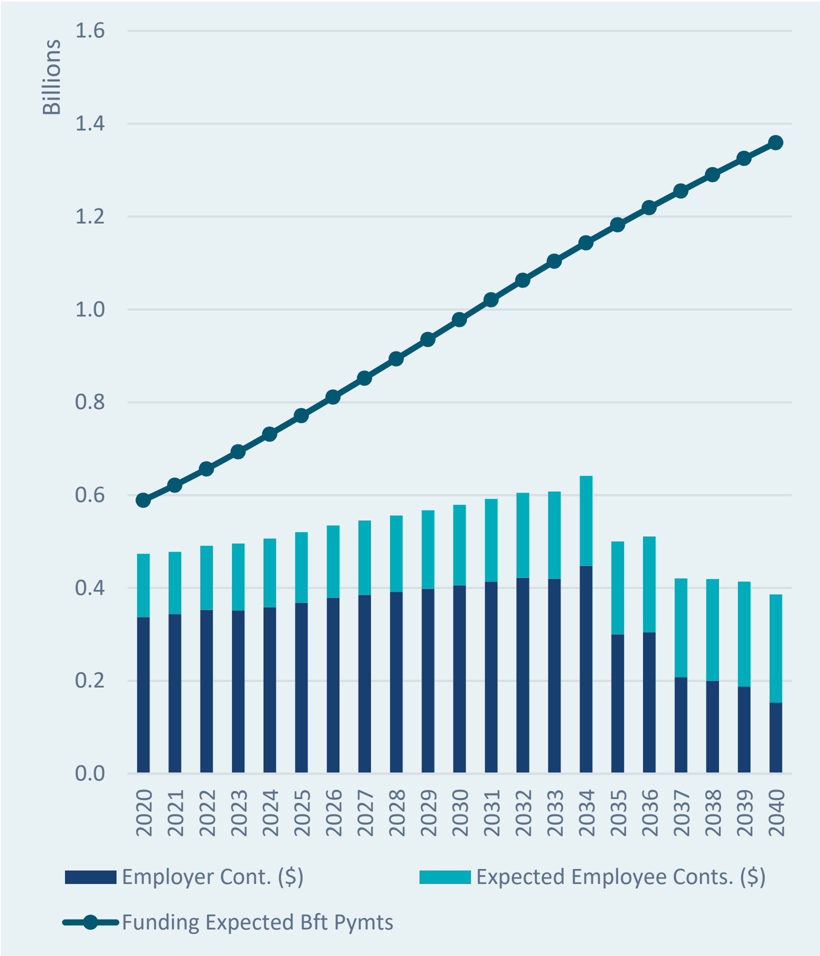
Source: SCERS 2011-2020 Actuarial Valuations

Baseline Projection: 6.75% Return

FUNDED STATUS PROJECTION: 6.75% RETURN



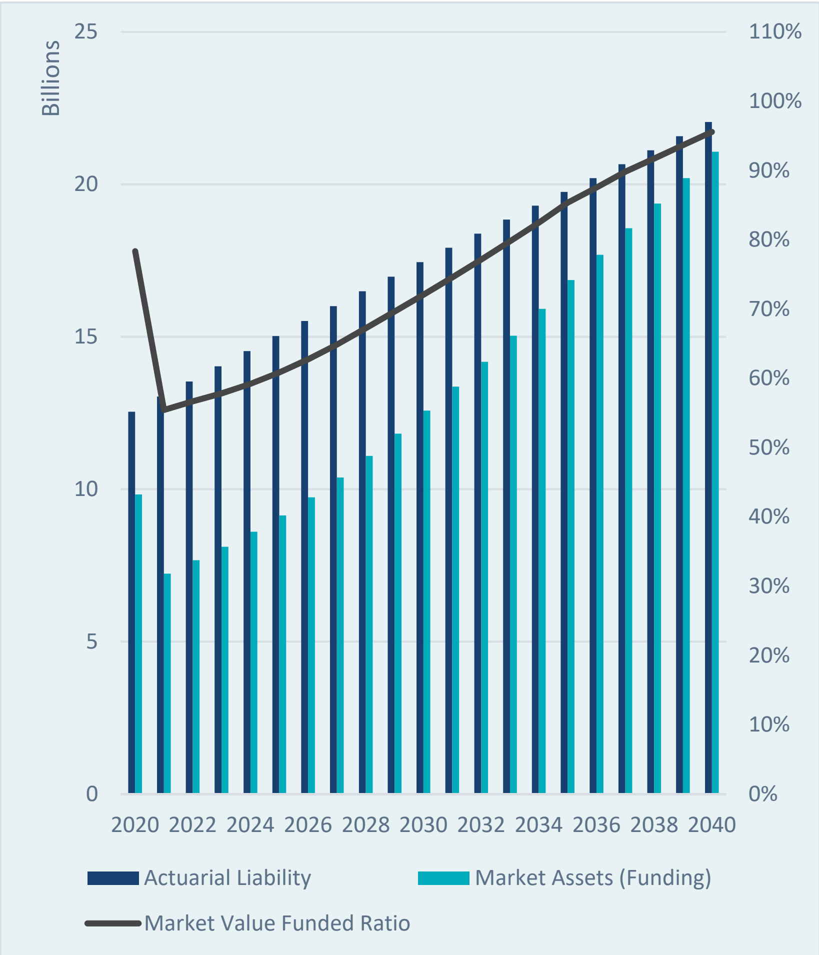
CASHFLOW PROJECTION: 6.75% RETURN



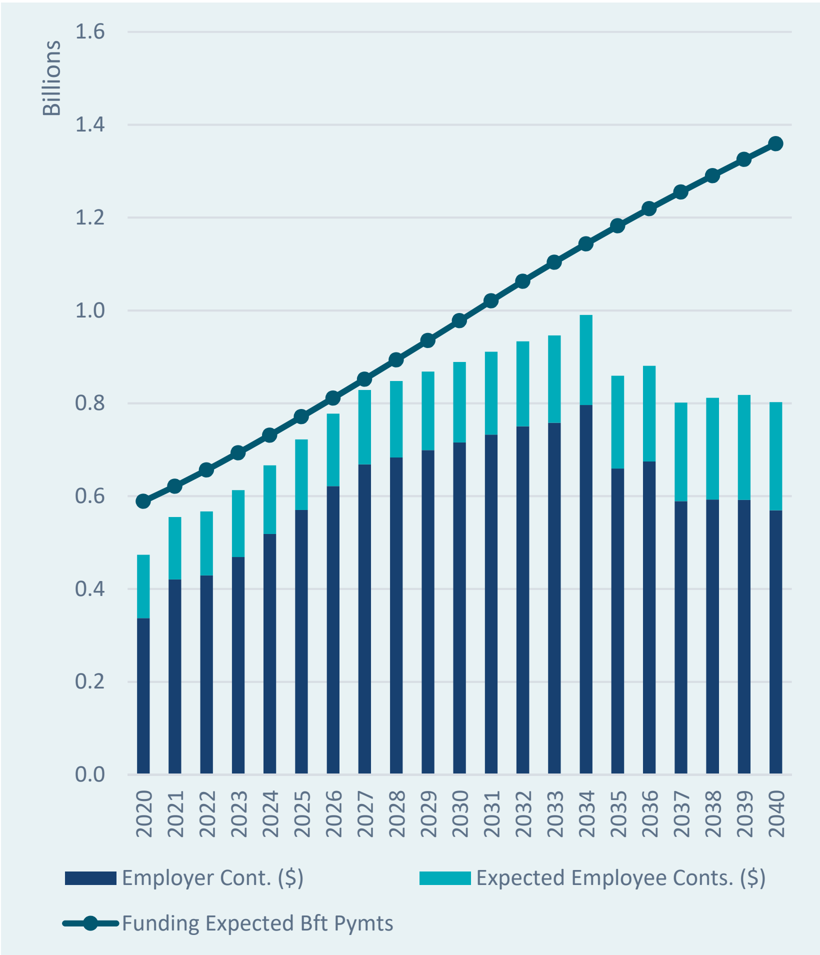
Source: Verus. Inflation assumed to be equivalent to the actuarial assumption of 2.75%

Drawdown Projection: -25% Year 1

FUNDED STATUS PROJECTION: -25% YR1 6.75% THEREAFTER



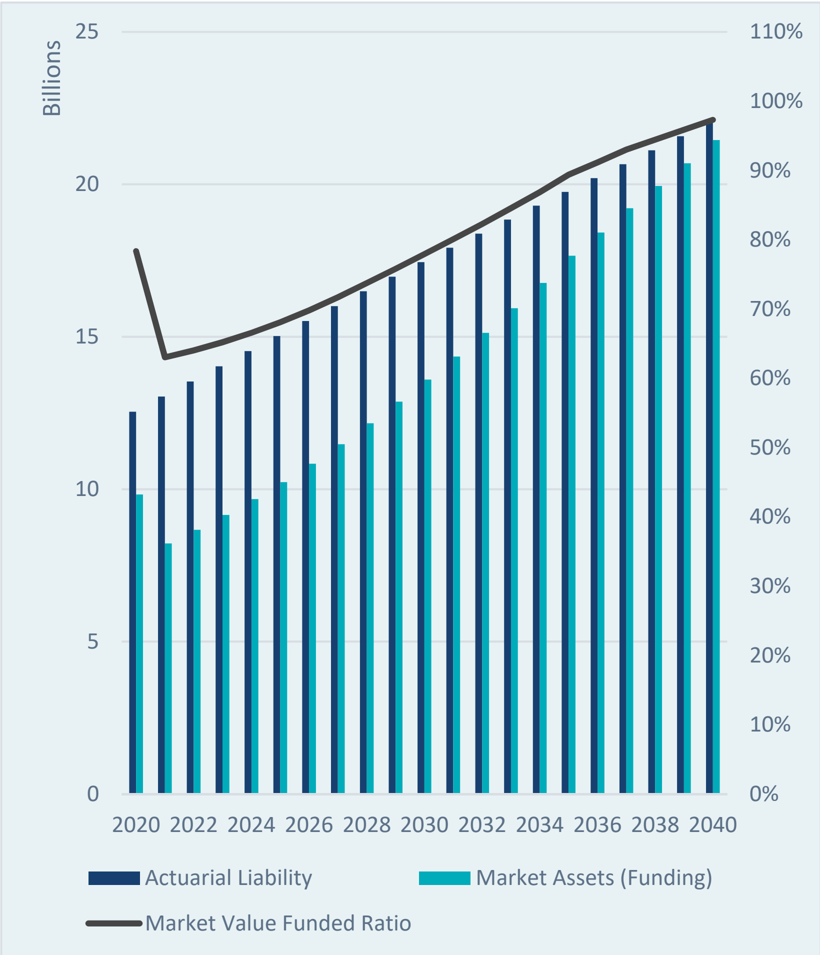
CASHFLOW PROJECTION: -25% YR1 6.75% THEREAFTER



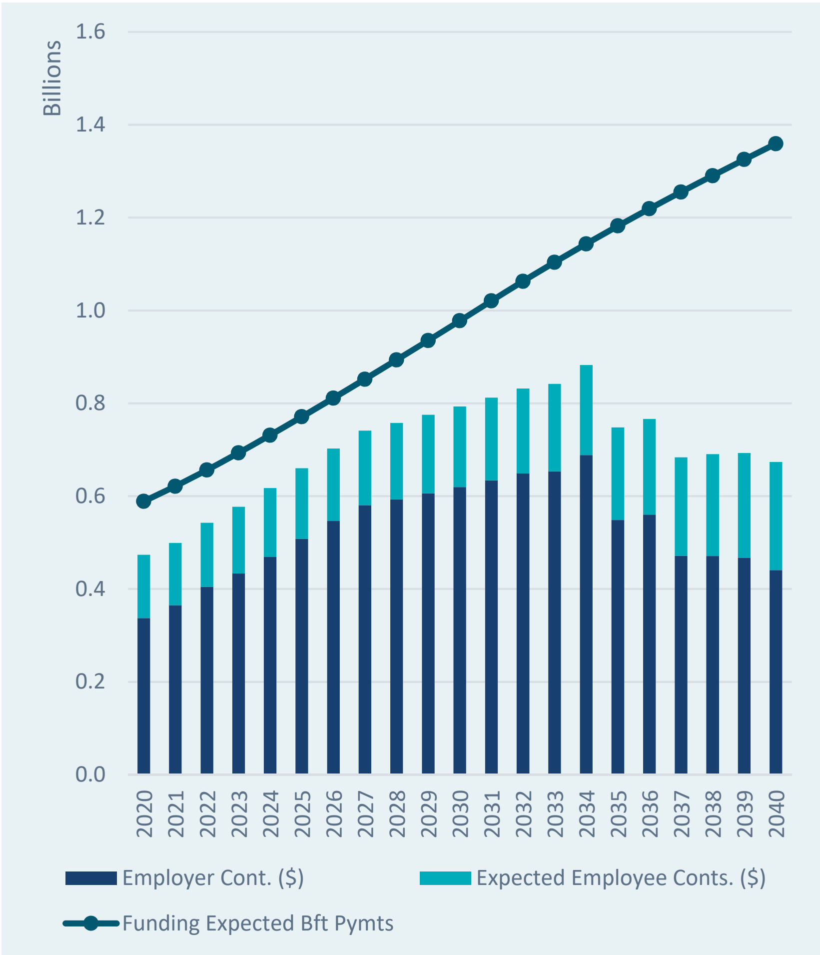
Source: Verus. Inflation assumed to be equivalent to the actuarial assumption of 2.75%

Drawdown Projection: -15% Year 1

FUNDED STATUS PROJECTION: -15% YR1 6.75% THEREAFTER



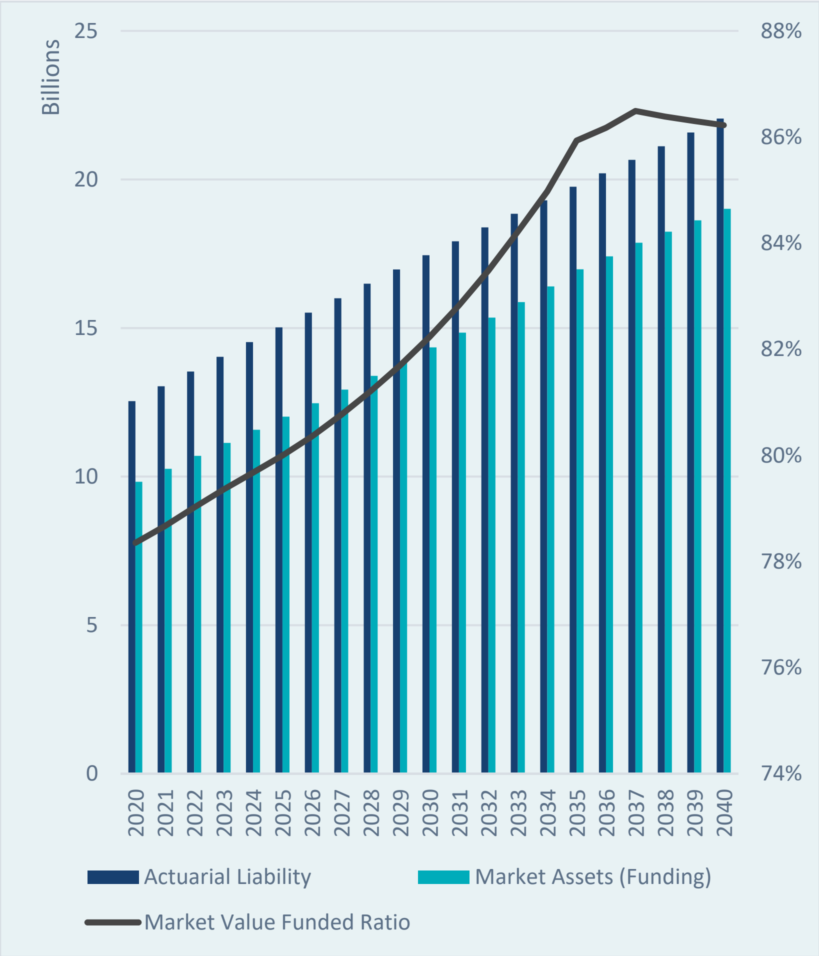
CASHFLOW PROJECTION: -15% YR1 6.75% THEREAFTER



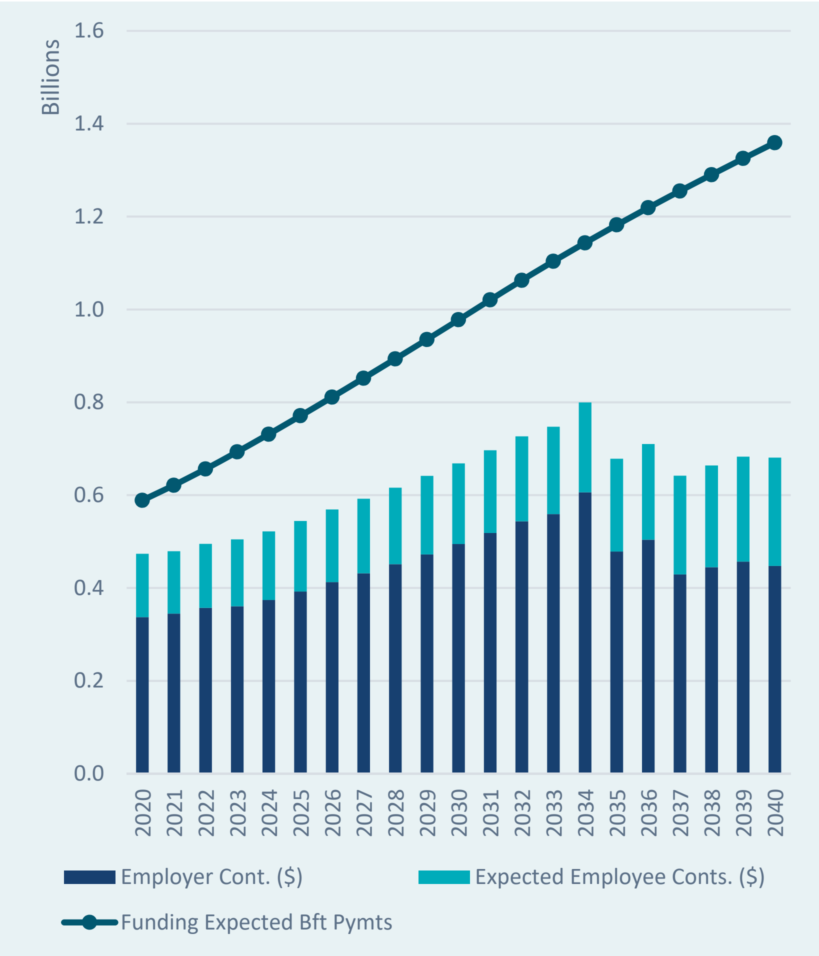
Source: Verus. Inflation assumed to be equivalent to the actuarial assumption of 2.75%

5.5% Return Projection

FUNDED STATUS PROJECTION: 5.5% RETURN



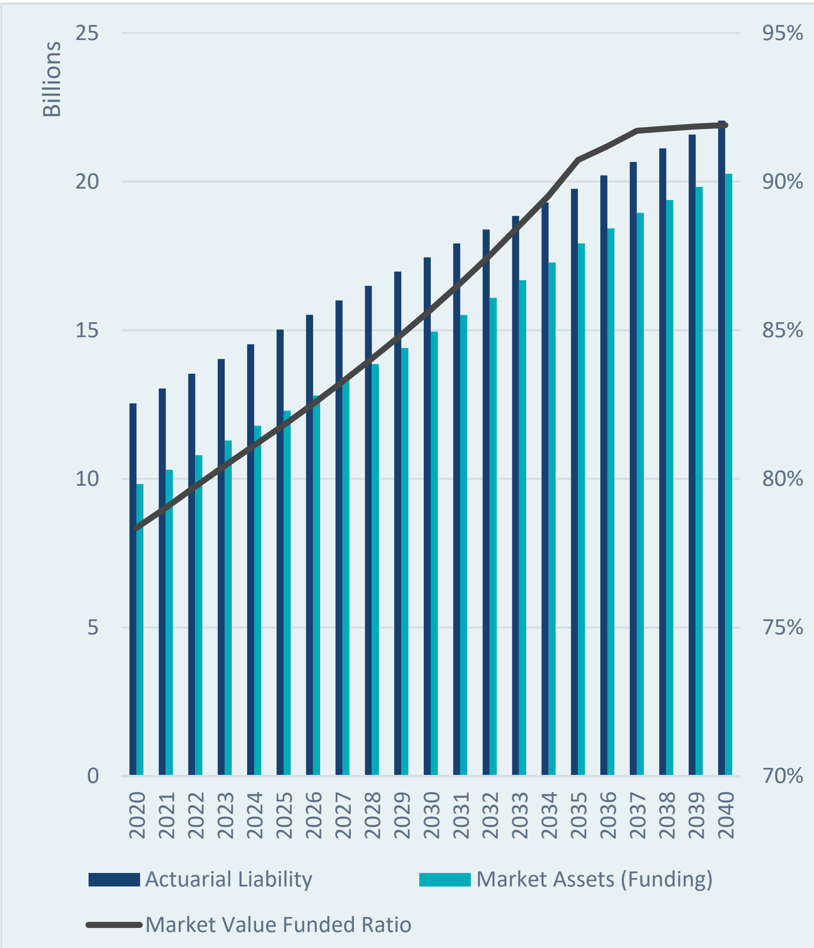
CASHFLOW PROJECTION: 5.5% RETURN



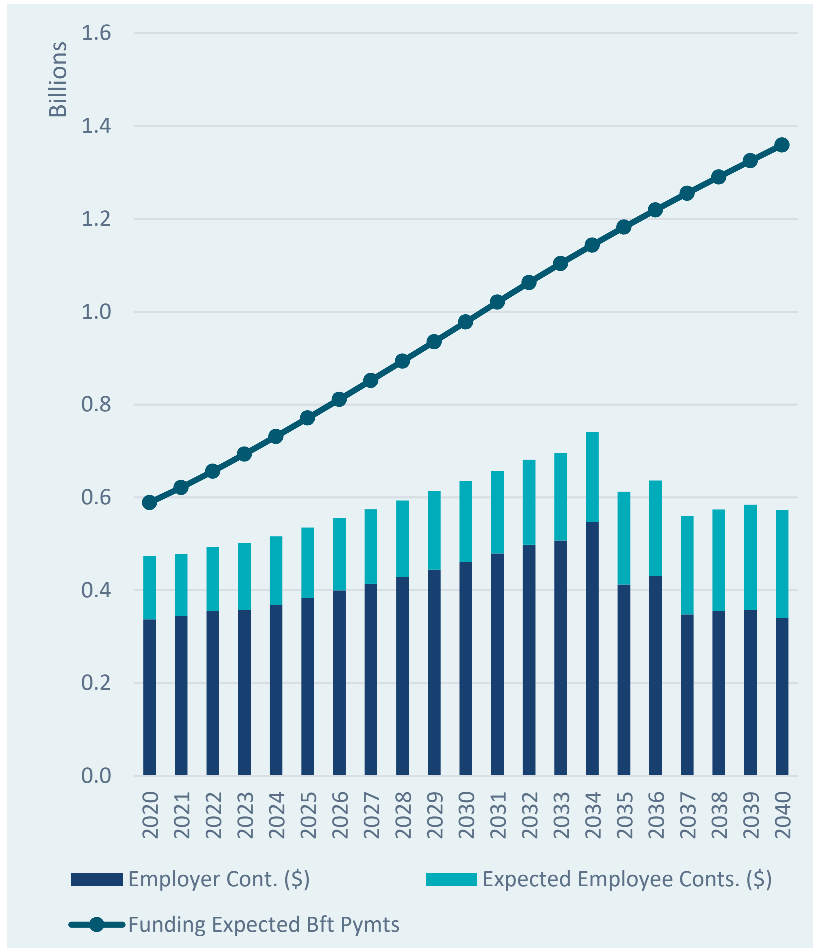
source: Verus. Inflation assumed to be equivalent to the actuarial assumption of 2.75%

6.0% Return Projection

FUNDED STATUS PROJECTION: 6.0% RETURN



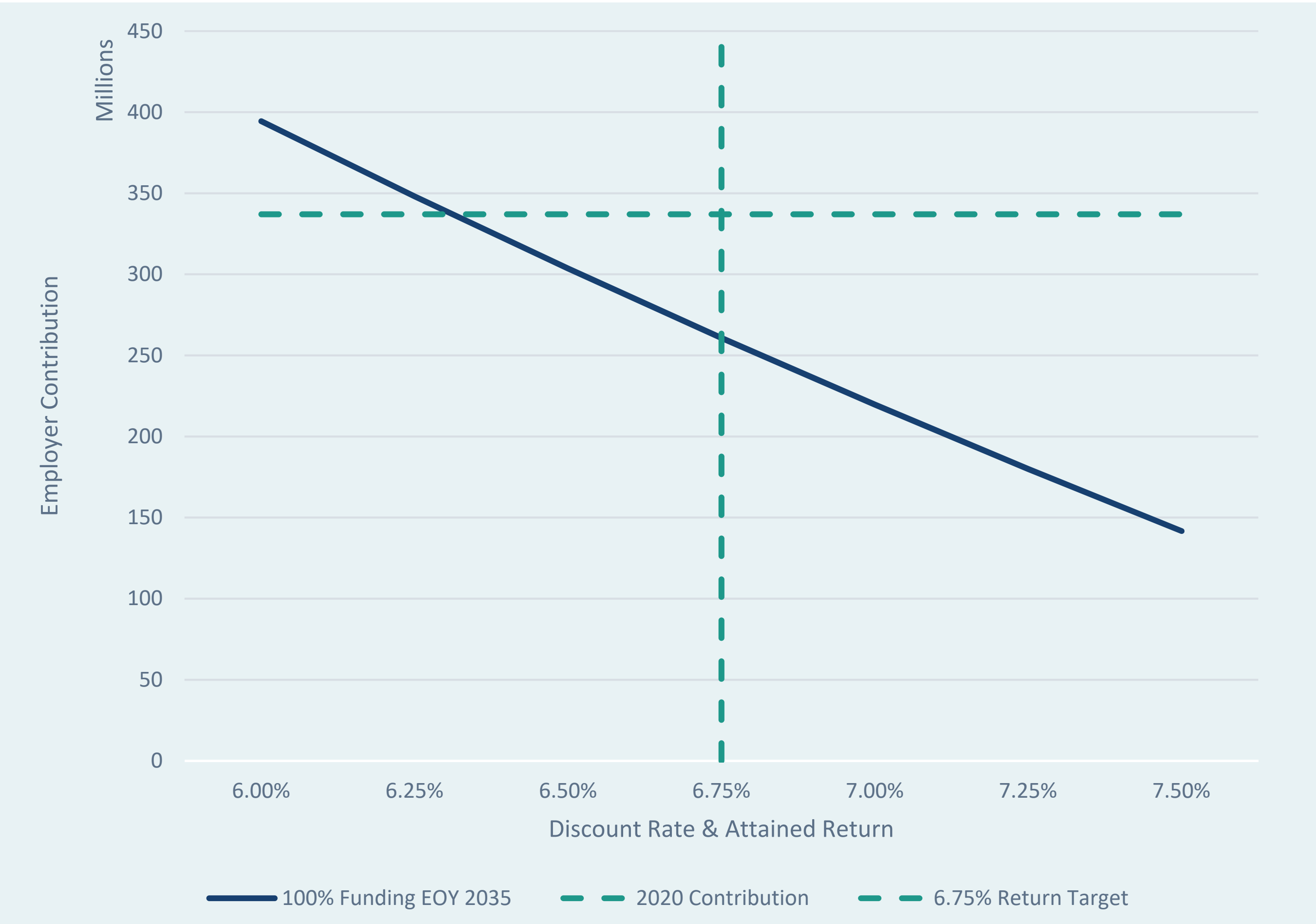
CASHFLOW PROJECTION: 6.0% RETURN



source: Verus. Inflation assumed to be equivalent to the actuarial assumption of 2.75%

Full Funding: 20 Year Horizon

SCERS CONTRIBUTIONS NECESSARY TO FULL FUND IN 20 YEARS



Source: Verus

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