



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 15

MEETING DATE: March 16, 2022

SUBJECT: Overlay Program – Education and Revisions

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

RECOMMENDATION

Staff recommends that the Board receive and file the educational presentation on SCERS' Overlay Program, and approve the following revisions to the Overlay Program to align with SCERS' revised strategic asset allocation:

- Adjust and implement the Overlay asset category targets in line with the revised target allocations for the strategic asset allocation, as follows:
 - Growth asset category: 58%
 - Diversifying asset category: 24%
 - Real Return asset category: 18%
- Maintain the existing Overlay intra-quarter rebalance bands, as follows:
 - Growth asset category: +/- 5% around the target
 - Diversifying asset category: +/- 3% around the target
 - Real Return asset category: +/- 2% around the target
- Overlay proxy revisions:
 - Growth asset category
 - Combine separate proxies for domestic and international equity into one global public equity proxy basket using futures and currency designed to replicate the MSCI ACWI IMI
 - Update the proxy for non-public equity (private equity, public credit, private credit) from 85% Global Equity and 15% US Treasury to 88% Global Equity and 12% US Treasury to reflect the elimination of the Growth Absolute Return portfolio
 - Diversifying asset category
 - No changes – maintain a basket of Treasury futures and mortgage TBA forward contracts
 - Real Return asset category
 - Continue to use SSGA Real Assets fund (series of real return based equity, fixed income, and commodity based funds) as the Real Return proxy

- Add in the flexibility to substitute futures-based solution when cash is not available to fully fund the SSGA Real Assets fund or there is a need to sell/short exposure beyond physical position in the SSGA Real Assets fund: 60% Growth (Equities) & 40% Diversifying (Fixed Income)

PURPOSE

This item supports the implementation of the revised strategic asset allocation, and contributes to the effective management and oversight of investment activities.

BACKGROUND

SCERS rebalances its investment portfolio by either physically rebalancing assets or by the utilization of an Overlay Program. SCERS' Overlay Program is managed by State Street Global Advisors (SSGA), and it serves two primary purposes:

- Rebalance the asset allocation to policy targets
- Invest available cash

The Overlay Program performs these two functions in a manner which replicates SCERS' policy target strategic asset allocation. The Overlay Program is also utilized to maintain market exposures during asset transitions.

The Overlay Program rebalances the asset allocation to policy targets and minimizes the risk that SCERS falls short of achieving its targeted return due to the asset allocation straying from policy target ranges. The Overlay Program also invests available cash, including: (1) unallocated cash; and (2) the cash balances in manager portfolios, in a manner which replicates SCERS' policy target strategic asset allocation. The Overlay Program does not invest the 1% dedicated cash allocation that is part of SCERS' strategic asset allocation.

While SCERS' Overlay Program reduces the need for physical rebalancing, it does not eliminate it, as there are circumstances whereby physical rebalancing would be a better solution compared to the Overlay Program, including when there is a persistently large difference between physical assets and the target allocation. While physical rebalancing typically costs more to execute compared to the Overlay Program, it is important to assess whether SCERS' portfolio is at a point where physical rebalancing should be utilized over relying on the Overlay Program to rebalance.

The Overlay Program is particularly effective in rebalancing public market assets due to the low tracking error of the underlying proxies compared to public market managers and the higher expenses of purchasing and liquidating interests held by investment managers. On the other hand, the Overlay Program is not as effective in tracking alternative assets because it is limited to the use of public market proxies. Public market proxies will not, for example, be able to replicate the 'illiquidity premium' or higher returns achieved historically by private equity and private real assets, or the 'absolute' return characteristics of SCERS' Absolute Return portfolio, including its ability to outperform equity markets in times of distress. Accordingly, it is beneficial

for SCERS to invest in alternative assets in a consistent manner to achieve its asset allocation targets rather than heavily relying on the Overlay Program to rebalance these assets to the target allocations.

SCERS’ investment staff and general investment consultant, Verus Advisory, monitor the asset allocation on a quarterly basis and update the Board if the asset allocation moves outside of policy ranges and conditions warrant physical rebalancing.

The Overlay Program structure replicates SCERS’ asset category targets (Growth; Diversifying; Real Return), with bands around these targets. It also rebalances SCERS’ 1% dedicated cash allocation, to keep it +/- 15 bps of the 1% target. Below are the targets and ranges associated with SCERS’ prior strategic asset allocation (the revised targets and ranges are shown later). The rebalancing methodology that SSGA utilizes is quarterly rebalancing with bands, where rebalancing occurs on a quarterly basis (at the end of a quarter), unless the bands are breached on an intra-quarter basis, in which case rebalancing occurs upon the breach of a band.

Asset Category	Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)
Growth	53	58	63
Diversifying	22	25	28
Real Return	14	16	18
Cash	0	1	2

The ranges/bands that determine if any intra-quarter rebalancing is triggered are as follows:

- Growth asset category: +/- 5% around the target
- Diversifying asset category: +/- 3% around the target
- Real Return asset category: +/- 2% around the target

The ranges are typically only triggered during a dislocated market event, such as during the global financial crisis. An intra-quarter rebalance was triggered in March 2020 when markets volatility reached historic levels during the onset of the pandemic; however, in most market environments, an intra-quarter rebalance will not trigger and the Overlay Program rebalance at the each of each quarter.

Each asset category has a separate overlay proxy, which contains a mixture of investments that attempt to replicate the objectives and exposures of the asset category and the underlying asset classes within the asset category, in order to minimize tracking error and costs.

The current underlying components of each asset category overlay proxy, aligned to the prior asset allocation, are provided in the appendix.

Much of SCERS’ overlay exposure is implemented by SSGA through the use of derivatives contracts; primarily futures contracts. This includes the proxies for the Growth and Diversifying asset categories. In contrast, the Real Return proxy is a series of commingled funds, which uses

physical positions, not derivatives, meaning that they are fully funded, whereas derivatives contracts only require partial funding through margin.

SSGA will be presenting at the March Board meeting, providing an education on Overlay implementation, and much of SSGA’s presentation will focus on the use of derivatives, including what they are and why they are used as a key implementation vehicle.

RECOMMENDATIONS

Below is a recap of the Overlay Program recommendations from Staff and SSGA.

Targets and Ranges:

Staff and SSGA recommend adjusting the Overlay asset category targets in line with the revised target allocations for the strategic asset allocations, as shown below:

Asset Category	Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)
Growth	53	58	63
Diversifying	21	24	27
<i>Cash</i>	<i>0</i>	<i>1</i>	<i>2</i>
Real Return	16	18	20

Staff and SSGA recommend maintaining the existing intra-quarter rebalance bands, as follows:

- o Growth asset category: +/- 5% around the target
- o Diversifying asset category: +/- 3% around the target
- o Real Return asset category: +/- 2% around the target

Please note that the 1% dedicated cash allocation is a component of the Diversifying asset category within SCERS’ revised strategic asset allocation; however it will continue to be maintained by the Overlay Program in isolation, and is not invested using the Diversifying proxy.

Proxies:

SSGA and Staff recommend the following overlay proxy revisions. The primary changes are to the Growth asset category proxies, and are summarized below. The detailed components of the revised proxies are provided in the appendix (the primary changes are highlighted in orange). The proxy changes align with the revised strategic asset allocation and asset class structural revisions.

Growth:

- Combine separate proxies for domestic and international equity into one global public equity proxy basket using futures and currency designed to replicate the MSCI ACWI IMI

- Update the proxy for non-public equity (private equity, public credit, private credit) from 85% Global Equity and 15% US Treasury to 88% Global Equity and 12% US Treasury to reflect the elimination of the Growth Absolute Return portfolio

Diversifying:

- No changes – continue to use a basket of Treasury futures and mortgage TBA forward contracts

Real Return

- Continue to use the SSGA Real Assets fund as the proxy, which is a series of commingled funds investing in infrastructure stocks, TIPS, global REITS, natural resource stocks, commodities, and floating rate notes
- Add in the flexibility to substitute a futures-based solution (60% Growth (Equities) & 40% Diversifying (Fixed Income)) when cash is not available to fully fund the SSGA Real Assets fund, or if there is a need to short exposure beyond the physical position in the SSGA Real Assets fund

Adding a futures-based solution as an alternative for the SSGA Real Assets fund Real Return proxy adds more flexibility to implementing the Overlay Program. The SSGA Real Assets fund, which is a series of commingled funds, is a good proxy for SCERS' Real Return asset category, but it is comprised of physical positions, which requires full cash funding and offers less implementation flexibility compared to derivatives, which are used for the Growth and Diversifying proxies, and which only require partial funding through margin.

This is particularly true when there are large market movements, and the Overlay models require selling a larger amount of the proxy to bring SCERS' exposure back to target, than SCERS owns with the proxy. This played out in March 2020, during the volatile period at the onset of the pandemic. The Overlay Program was looking to purchase the Growth proxy, and sell the Diversifying and Real Return proxies. The Overlay needed to sell more Real Return proxy exposure than SCERS owned through its physical holdings. Since the Real Return proxy is comprised of different forms of real return equity and bond exposures in a roughly 60%/40% split, SCERS and SSGA made the decision to revert to using the Growth and Diversifying proxies for a period of time, in a 60/40 split, to make up for the Real Return shortfall, which was communicated to the Board at that time. In other words, SSGA adjusted the Growth and Diversifying proxies to account for the Real Return imbalance.

The futures-based solution also adds some flexibility in circumstances where SCERS has temporary cash constraints that would make it challenging to fully fund the physical positions within the Real Return proxy (SSGA Real Assets Fund). The futures-based solution could be used on a temporary basis to implement Real Return Overlay exposure adjustments while cash is raised in other parts of the portfolio, to then fund the SSGA Real Assets Fund at a later date.

IMPLEMENTATION

Staff recommends that the Overlay Program transition to the revised strategic asset allocation targets using the recommended proxy revisions during the second quarter of 2022. This would entail the following:

- Within the Growth asset category, combining the separate proxies for domestic and international equity into one global public equity proxy basket using futures and currency designed to replicate MSCI ACWI IMI
 - Implementing the revised non-public equity proxy (private equity, public credit, private credit) to incorporate a mix of 88% global equity futures and currencies and 12% US Treasury futures to reflect the elimination of the Growth Absolute Return portfolio
- Decreasing the Diversifying proxy to get in line with the 24% Diversifying asset category target allocation within the revised asset allocation (excluding the 1% dedicated cash allocation)
- Increasing the Real Return proxy to get in line with the 18% Real Return asset category target allocation within the revised asset allocation. The increase will eventually flow to the Real Estate assets class, as the Real Estate target allocation increased from 7% to 11%, but this will take a couple of years to implement.
 - Could entail partly utilizing the substitute futures-based solution referenced above, if cash is not available to fully fund the increase while other asset allocation implementation initiatives are still taking place (i.e., winding down the Growth Absolute Return portfolio).

ATTACHMENTS

- Appendices: Overlay Proxies
- Board Order
- Staff Overlay Presentation
- SSGA Exposure Management Presentation

Prepared by:

/S/

Steve Davis
Chief Investment Officer

Reviewed by:

/S/

Eric Stern
Chief Executive Officer

APPENDIX 1 - CURRENT OVERLAY PROXIES:

Growth Asset Category Proxy		
	Policy Allocation	Overlay Implementation
Domestic Equities	20%	Basket of S&P 500, S&P 400, and Russell 2000 Futures
International Equities	20%	Basket of Local Index, EAFE, EM Futures plus currency
Private Equity	11%	Basket of 85% Global Equity and 15% US TSY
Public Credit	2%	Basket of 85% Global Equity and 15% US TSY
Private Credit	5%	Basket of 85% Global Equity and 15% US TSY

Diversifying Asset Category Proxy		
	Policy Allocation	Overlay Implementation
Fixed Income	16%	Basket of Treasury Futures and Mortgage TBAs (forwards)
Absolute Return	7%	Basket of Treasury Futures and Mortgage TBAs (forwards)
Cash	1%	+/- 15 bps of 1% cash target

Real Return Asset Category Proxy		
	Policy Allocation*	Overlay Implementation
Global Real Estate (REITs)	15%	FTSE EPRA/NAREIT Developed Liquid Index
Global Infrastructure Equity	25%	S&P Global Infrastructure Index
Global Natural Resources Equity	10%	S&P Global Large Mid Cap Commodity and Resources Index
Commodities	10%	Bloomberg Roll Select Commodity Index
US Intermediate TIPS	30%	Bloomberg Barclays 1-10 Year US TIPS Index
Floating Rate Notes	10%	Bloomberg Barclays US Dollar Floating Rate Note < 5 Years Index

**Relative to Real Return Asset Category*

APPENDIX 2 – REVISED OVERLAY PROXIES:

Growth Asset Category Proxy		
	Policy Allocation	Overlay Implementation
Global Equity	40%	Basket of S&P 500, S&P Midcap, Russell 2000, TSE 60, MSCIEA (NY), MSCIEM (NY) futures and currency
Private Equity	11%	Basket of 88% Global Equity and 12% US TSY
Public Credit	2%	Basket of 88% Global Equity and 12% US TSY
Private Credit	5%	Basket of 88% Global Equity and 12% US TSY

Diversifying Asset Category Proxy		
	Policy Allocation	Overlay Implementation
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Floating Rate Notes	10%	Bloomberg Barclays US Dollar Floating Rate Note < 5 Years Index

**Relative to Real Return Asset Category*



Retirement Board Order

Sacramento County Employees' Retirement System

Before the Board of Retirement
March 16, 2022

AGENDA ITEM:

Overlay Program – Education and Recommended Revisions

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 - Growth asset category: +/- 5% around the target
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 - Real Return asset category: +/- 2% around the target
- Overlay proxy revisions:
 - Growth asset category
 - Combine separate proxies for domestic and international equity into one global public equity proxy basket using futures and currency designed to replicate the MSCI ACWI IMI
 - Update the proxy for non-public equity (private equity, public credit, private credit) from 85% Global Equity and 15% US Treasury to 88% Global Equity and 12% US Treasury to reflect the elimination of the Growth Absolute Return portfolio
 - Diversifying asset category



Retirement Board Order

Sacramento County Employees' Retirement System

- No changes – maintain a basket of Treasury futures and mortgage TBA forward contracts
- Real Return asset category
 - Continue to use SSGA Real Assets fund (series of real return based equity, fixed income, and commodity based funds) as the Real Return proxy
 - Add in the flexibility to substitute futures-based solution when cash is not available to fully fund the SSGA Real Assets fund or there is a need to sell/short exposure beyond physical position in the SSGA Real Assets fund: 60% Growth (Equities) & 40% Diversifying (Fixed Income)

I HEREBY CERTIFY that the above order was passed and adopted on March 16, 2022 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



Overlay Program – Education and Recommended Revisions

March 16, 2022

SACRAMENTO COUNTY EMPLOYEES' RETIREMENT SYSTEM

Introduction

- Education on SCERS' Overlay Program
 - Background
 - Implementation
 - Proxies
 - SSGA will be presenting
- Recommended proxy revisions
- Implementation timing

Recommendations

- Implement Overlay asset category targets in line with revised strategic asset allocation:
 - Growth: 58%; Diversifying: 24%; Real Return: 18%
- Maintain existing Overlay intra-quarter rebalance bands around the target, as follows:
 - Growth: +/- 5%; Diversifying: +/- 3%; Real Return: +/- 2%
- Overlay proxy revisions:
 - Growth asset category
 - Combine separate proxies for domestic and international equity into one global public equity proxy basket using futures and currency designed to replicate the MSCI ACWI IMI
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Recommendations (cont.)

- Overlay proxy revisions:
 - Diversifying asset category
 - No changes – maintain a basket of Treasury futures and mortgage TBA forward contracts
 - Real Return asset category
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Overlay Program Background

- Dual objectives
 - Rebalance asset allocation to policy targets
 - Invest all excess cash
 - Unallocated cash
 - Manager cash balances
 - Excludes 1% dedicated cash allocation
- Invested in a manner that replicates SCERS' strategic asset allocation
- Utilizes proxies for each asset category
- Reduces the need for physical rebalancing, but does not eliminate it
 - Particularly effective in rebalancing public market assets
 - Not as effective in tracking alternative assets – limited to public market proxies

Overlay Proxies

- Asset category proxies
 - Growth
 - Basket of futures to replicate public equities
 - Combination of mostly global equity and some treasury futures to replicate non-public equity asset classes
 - Diversifying
 - Basket of treasury futures and government agency forward contracts to replicate Bloomberg U.S. Aggregate Index
 - Real Return
 - Series of comingled funds across liquid real return
 - Real return based equities, bonds, and commodities
 - Dual role – strategic Liquid Real Return allocation and Overlay proxy
- Growth and Diversifying proxies use derivatives
- Real Return proxy use cash physical positions

Current Overlay Proxies

Growth Asset Category Proxy

	Policy Allocation	Overlay Implementation
Domestic Equities	20%	Basket of S&P 500, S&P 400, and Russell 2000 Futures
International Equities	20%	Basket of Local Index, EAFE, EM Futures plus currency
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Diversifying Asset Category Proxy

	Policy Allocation	Overlay Implementation
Fixed Income	16%	Basket of Treasury Futures and Mortgage TBAs (forwards)
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Real Return Asset Category Proxy

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Floating Rate Notes	10%	Bloomberg Barclays US Dollar Floating Rate Note < 5 Years Index

*Relative to Real Return Asset Category

Overlay Proxies – with recommended revisions

Growth Asset Category Proxy		
	Policy Allocation	Overlay Implementation
Global Equity	40%	Basket of S&P 500, S&P Midcap, Russell 2000, TSE 60, MSCIEA (NY), MSCIEM (NY) futures and currency
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*Relative to Real Return Asset Category

- Recommending flexibility to substitute futures-based solution for Real Return under certain circumstances

Rebalancing Methodology

Asset Category	Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)
Growth	53	58	63
Diversifying	22	25	28
Real Return	14	16	18
Cash	0	1	2

- Quarterly rebalancing with intra-quarter bands
 - Rebalancing occurs at the end of each quarter to target
 - Intra-quarter rebalancing occurs intra-quarter if ranges are breached

Revised Targets/Ranges

Asset Category	Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)
Growth	53	58	63
Diversifying	21	24	27
<i>Cash</i>	<i>0</i>	<i>1</i>	<i>2</i>
Real Return	16	18	20

- Will transition Overlay Program to revised asset allocation targets during second quarter of 2022
- Maintain existing intra-quarter rebalance bands
- 1% dedicated cash maintained in isolation by SSGA

State Street Global Advisors

A Presentation to Sacramento County Employees' Retirement System

Exposure Management

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SCERS Overlay

Designed to align portfolio exposures with policy benchmark using derivatives

Key components

Cash Overlay

- Over the long-term cash tends to underperform riskier assets, however all plans have liquidity needs
- Overlay provides appropriate market exposure to cash held by SCERS for liquidity purposes and cash held by certain equity managers. Note that cash does not have to move.

Rebalancing

- Overlay is used to align exposures back to benchmark on a quarterly basis. This helps to reduce transaction costs and alleviates the logistical burden on staff.

Transitions

- From time to time, SCERS will transition from one manager to another. During these events, the overlay is used to maintain appropriate market exposure

The information contained above is for illustrative purposes only.

Myth Busting

Myth #1: Derivatives are risky

- Fully funded derivatives produce similar returns to their underlying cash markets
- Derivatives are useful tools that can improve efficiency and hedge risks

Myth #2: Derivatives are incredibly complicated

- While more complicated than buying stocks or bonds, the process is quite straightforward
- With the proper setup, reporting can be streamlined

Myth #3: Derivatives are more expensive over the long-term

- Depends upon the direction of trade (long/short) and specific market dynamics

What is a derivative?

A derivative is an instrument that derives its value from the performance of another asset. Three common types of financial derivatives include:

- **Futures contracts:** These are traded on a futures exchange whereby one party (i.e. the buyer) agrees to purchase an underlying asset from the other party, (i.e. the seller), at a future date at a price agreed upon by the two parties when the contract is initiated and in which there is a daily mark-to-market of the investment. Futures contracts are standardized, so they are not custom, but there is relatively lower risk of default.
- **Forward Contracts:** These are similar to futures contracts, but differ in that they are not traded on an exchange, offer the flexibility to be customized, but may also carry higher risk of default (i.e. counterparty risk).
- **Swaps:** These are also traded over the counter, with two parties agreeing to exchange a series of cash flows in which one party pays variable cash flows (determined by underlying asset or rate) and the other party either pays fixed stream of cash flows or another stream of variable cash flows.

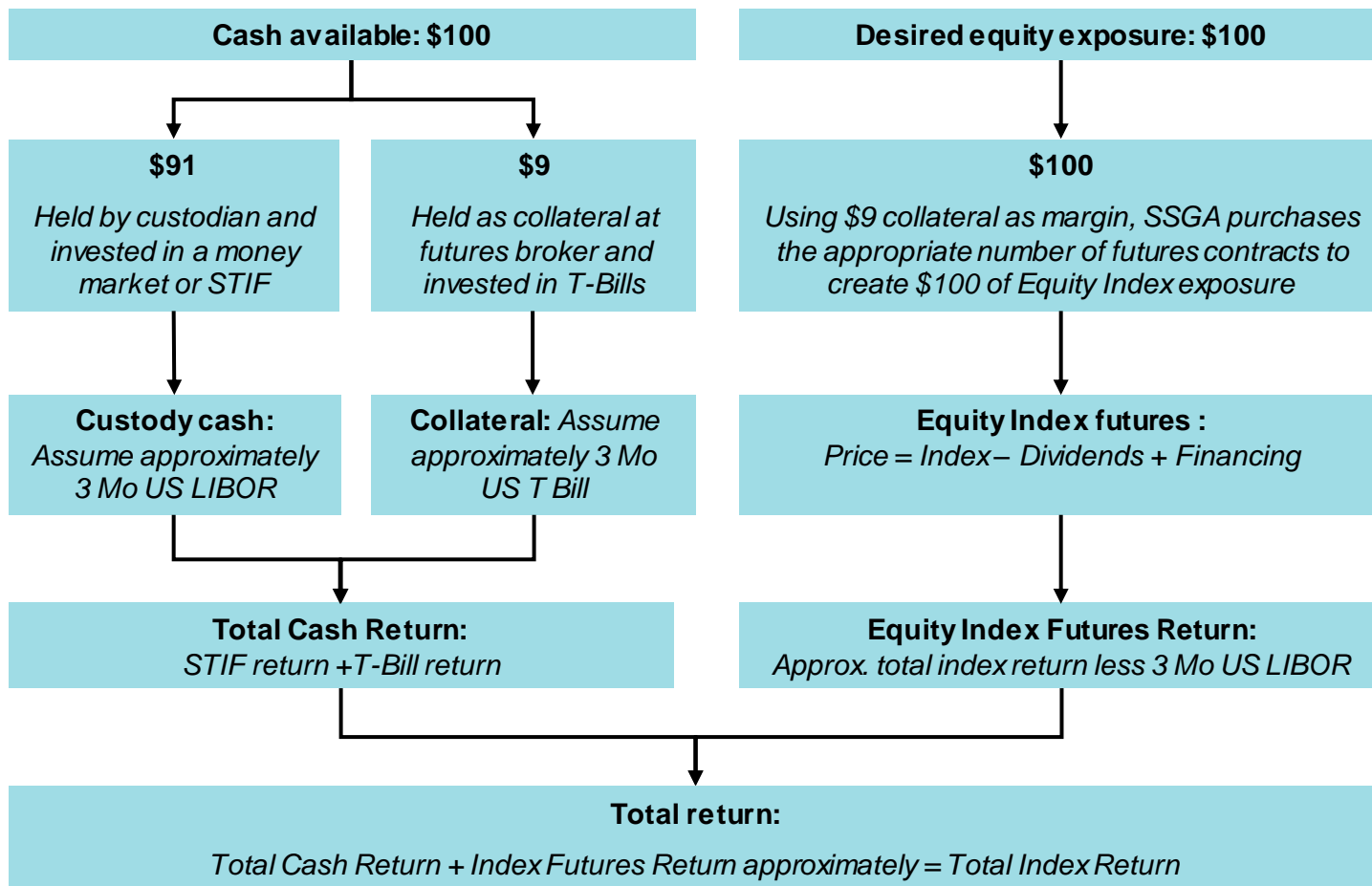
The information contained above is for illustrative purposes only.

Navigating Implementation Options, all about trade-offs

Instruments	Pros	Cons	
Index Funds	<ul style="list-style-type: none"> • Fixed Income • Equity • Commodity 	<ul style="list-style-type: none"> • Available across all major markets • Tight tracking • Less expensive over longer periods • Can accommodate daily cash in/outflows 	<ul style="list-style-type: none"> • Must be fully funded with cash • Notification requirements may constrain same day cash availability • Exposures are less customizable
ETFs	<ul style="list-style-type: none"> • Fixed Income • Equity • Commodity • Alternative 	<ul style="list-style-type: none"> • Available across all major markets • Access niche/thematic market exposures • Intra-day trading • Highly transparent 	<ul style="list-style-type: none"> • Must be fully funded with cash • Standard settlement is T+2 • Expense ratios may be higher than comparable institutional funds
Futures	<ul style="list-style-type: none"> • Interest Rate • Equity Index • Commodity • Swap 	<ul style="list-style-type: none"> • Exchange traded • Low transaction costs • Low capital requirement — margin and variation margin only 	<ul style="list-style-type: none"> • Not available in all markets • Tracking error between local index futures contracts and asset class benchmark • Long run roll costs should be considered
Swaps	<ul style="list-style-type: none"> • Interest Rate • CDS/CDX • Inflation • Asset • Total Rate of Return 	<ul style="list-style-type: none"> • Complete customization yields low tracking error • Transactions costs comparable to futures and stocks in some markets • Swaps clearing • Bilateral agreements to exchange collateral and customizable P&L thresholds 	<ul style="list-style-type: none"> • Not traded through an exchange • Counterparty risk* • Less liquid • Legal and administrative costs • Higher initial margins for cleared swaps
Options	<ul style="list-style-type: none"> • Interest Rate • Equity • Swaptions 	<ul style="list-style-type: none"> • Flexible — can be used for a variety of purposes • Exchange-traded or OTC customized 	<ul style="list-style-type: none"> • Costs can be high for outright hedging/protection • Counterparty risk (for OTC options)
TBAs/Forwards	<ul style="list-style-type: none"> • MBS • Currencies 	<ul style="list-style-type: none"> • Liquid 	<ul style="list-style-type: none"> • Counterparty risk

* Mitigated by bilateral exchange of collateral which may be conducted daily or based on profit/loss thresholds.

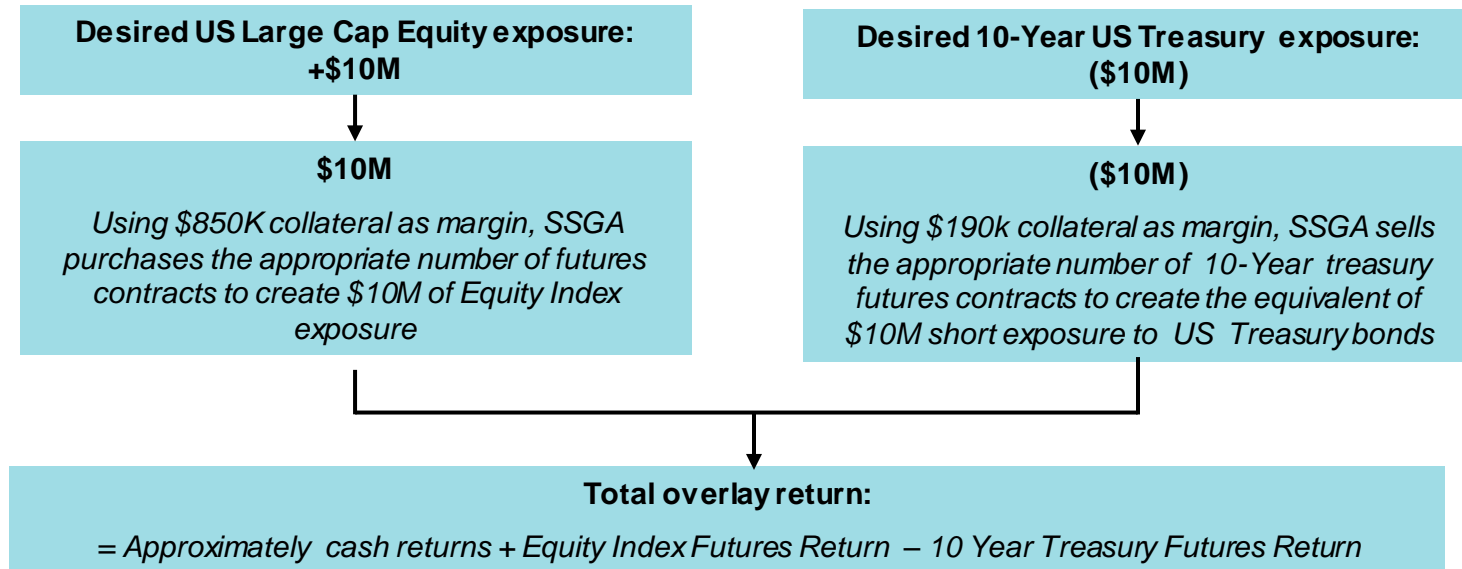
Cash equitization example



- SSGA coordinates all activities:**
- Monitoring cash positions
 - Monitoring collateral
 - Buying/selling futures
 - Coordinating margin cash flows
 - Reporting

Source SSGA The information contained above is for illustrative purposes only.

Rebalancing Overlay Example



Source SSGA The information contained above is for illustrative purposes only.

SCERS Overlay Recommendations

Current Snapshot

Portfolio compared to new policy target weights

Asset Category	Asset Class	Physical Portfolio	Physical Weight	Overlay	Overlay Weight	Total Portfolio	Total	Target	Difference
Growth	Global Equity	4,648,095,983	37.25%	242,633,821	1.94%	4,890,729,804	39.19%	40.00%	-0.81%
	Private Equity	1,618,062,771	12.97%	-	0.00%	1,618,062,771	12.97%	11.00%	1.97%
	Public Credit	222,152,564	1.78%	-	0.00%	222,152,564	1.78%	2.00%	-0.22%
	Private Credit	312,379,235	2.50%	-	0.00%	312,379,235	2.50%	5.00%	-2.50%
	Growth Absolute Return	107,969,942	0.87%	-	0.00%	107,969,942	0.87%	0.00%	0.87%
	Growth US Treasury	-	0.00%	(13,128,820)	-0.11%	(13,128,820)	-0.11%	0.00%	-0.11%
Diversifying	Fixed Income	1,455,950,802	11.67%	536,452,422	4.30%	1,992,403,224	15.97%	16.00%	-0.03%
	Global Fixed Income	272,024,947	2.18%	-	0.00%	272,024,947	2.18%	0.00%	2.18%
	Diversifying Absolute Return	865,514,474	6.94%	-	0.00%	865,514,474	6.94%	7.00%	-0.06%
	Cash	873,467,490	7.00%	(765,957,423)	-6.14%	107,510,067	0.86%	1.00%	-0.14%
Real Return	Real Estate	896,702,536	7.19%	-	0.00%	896,702,536	7.19%	9.00%	-1.81%
	Real Assets	767,896,525	6.15%	-	0.00%	767,896,525	6.15%	7.00%	-0.85%
	Liquid Real Return	439,371,974	3.52%	-	0.00%	439,371,974	3.52%	2.00%	1.52%
Total		12,479,589,243	100.00%	-	0.00%	12,479,589,243	100.00%	100.00%	0.00%

Source: SCERS / SSGA. As of 2/28/2022

SCERS Asset Allocation Change

SCERS has completed an ALM Study resulting in a few changes

- Changes to benchmarks
- Removal of some asset classes
- Shifting allocations within the plan

SCERS would like to introduce flexibility into the Real Return Proxy

How will the current overlay program be adjusted to reflect changes and needs?

SCERS Overlay - Growth

Asset Class	Current Allocation	New Asset Class	New Allocation	Change
Growth	58%	Growth	58%	0.0%
Domestic Equity	20.0	Global Equity	40.0	0.0
International Equity	20.0			
Private Equity	9.0	Private Equity	11.0	2.0
Public Credit	2.0	Public Credit	2.0	0.0
Private Credit	4.0	Private Credit	5.0	1.0
Growth Absolute Return	3.0	Growth Absolute Return	0.0	-3.0

Comments and Observations

- Public Equity benchmark is changing to MSCI ACWI IMI
- Removal of Growth Absolute Return
- Increase to Private Equity and Private Credit

Recommendation

Update the proxy for Private Equity and Credit to 88% Global Equity and 12% US Treasury

Combine public equity into one basket using futures and currency designed to replicate MSCI ACWI IMI.

Source: SCERS / SSGA.

SCERS Overlay - Global Equity

Contract	Exposure	Weight in Basket
S&P 500	US Large Cap	51.48
S&P Midcap	US Mid Cap	0.00
Russell 2000	US Small Cap	9.32
TSE 60	Canada	2.66
MSCIEA (NY)	International Developed	25.27
MSCIEM (NY)	Emerging Markets	11.27

Updated basket uses broader index futures and currency to replicate MSCI ACWI IMI

SCERS Overlay - Diversifying

Asset Class	Current Allocation	New Asset Class	New Allocation	Change
Diversifying	26%	Diversifying	24%	-2.0%
Core/Core Plus Fixed Income	10	Fixed Income	16	1.0
US Treasury	5.0			
Global Fixed Income	3.0	Global Fixed Income	0.0	-3.0
Diversifying Absolute Return	7.0	Diversifying Absolute Return	7.0	0.0
Cash	1.0%	Cash	1.0%	0.0%

Comments and Observations

- Removing Global Fixed Income, increasing Core Fixed Income
- Reducing overall weight to Diversifying

Recommendation

No changes are required

Source: SSGA as of 2/18/2022

Beta calculations based on historical returns and have been de-smoothed when only quarterly returns were provided.

SCERS Overlay - Real Return

Asset Class	Current Allocation	New Asset Class	New Allocation	Change
Real Return	16.0%	Real Return	18.0%	2.0%
Real Estate	7.0	Real Estate	9.0	2.0
Private Real Assets	7.0	Private Real Assets	7.0	0.0
Liquid Real Return	2.0	Liquid Real Return	2.0	0.0

Comments and Observations

- Increase to Real Estate
- Current Proxy is physicals based which requires cash
- Cannot short physical exposure if there is a need to reduce weight
- Few vehicles are available in derivatives space, consider different futures

Recommendation

Continue to use Real Assets fund as the Real Return Proxy.
Substitute futures-based solution when cash is not available or need to short exposure: 60% Growth (Equities) & 40% Diversifying (Fixed Income).

Source: SCERS / SSGA.

Recommendation Summary

- Update Global Equity Basket - Simplified basket using broad index futures and currency
- Change proxy for growth alternative asset classes
- Allow for use of derivatives-based proxy when necessary
- Anticipate implementation in 2Q2022

Appendix A: Important Disclosures

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These investments may have difficulty in liquidating an investment position without taking a significant discount from current market value, which can be a significant problem with certain lightly traded securities.

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Appendix B: Biographies

Biographies



Tyhesha Harrington

Tyhesha is a Vice President of State Street Global Advisors and a Senior Portfolio Manager in the Investment Solutions Group. She is responsible for developing and implementing investment solutions for clients, including strategic and tactical global balanced funds, equitization and exposure management strategies, and country selection portfolios.

Prior to joining SSGA, Tyhesha worked as a Portfolio Manager at PanAgora Asset Management, helping develop and implement passive U.S. and International equity strategies. Her responsibilities also included running optimizations and trading. Prior to taking on these duties, Tyhesha was responsible for the daily implementation of PanAgora's U.S. Tactical Asset Allocation Strategy. Previously, Tyhesha was the manager of PanAgora's International Equity Operations team where she had been an associate immediately after college. She has been working in the investment management field since 1995.

Tyhesha holds Bachelor of Arts degrees in Psychology and Urban Studies from Boston University and a Master degree in Business Administration with a concentration in Finance from the Graduate School of Management at Boston University.



Michael Martel

Mike is a Managing Director of State Street Global Advisors and the Head of Portfolio Management in the Americas for SSGA's Investment Solutions Group (ISG). In this role, he is responsible for the design and management of multi-asset class strategies geared towards meeting the investment objectives of a broad and diverse client base. His work with clients includes aligning assets with long and short-term investment objectives, tactical asset allocation, and employing overlay strategies to enhance return and better manage risks. Prior to this role, Mike led ISG's Exposure Management Team.

He has been working in the investment management field since 1992.

Mike holds a Bachelor of Arts degree in Economics from the College of the Holy Cross and Master degrees in both Finance and Business Administration from the Carroll School of Management at Boston College.

Biographies



Sonya Park

Sonya is a Managing Director of State Street Global Advisors in the San Francisco Office. She is responsible for managing existing SSGA client relationships and driving new business development in the Western U.S.

Prior to joining State Street Global Advisors in 2011, Sonya was a Vice President at Dimensional Fund Advisors in the Institutional Sales & Services Group. Prior to Dimensional Fund Advisors, Sonya was an Associate Director at Watson Pharmaceuticals. Sonya has also worked at Lehman Brothers as an Equity Research Analyst and began her career at SEI Corporation.

Sonya earned a BA from the University of Pennsylvania and an MBA from the NYU Stern School of Business and has been working in the financial services industry since 1993. Sonya holds the FINRA 7 and 63 registrations.

Sonya also holds the NFA Series 3 and 30 and is an Associated Person of SSGA Funds Management, Inc. ('SSGA FM') SSGA FM is a Commodity Trading Advisor registered with the Commodity Futures Trading Commission.