Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 16

MEETING DATE: **May 20, 2020**

SUBJECT: **Portfolio Allocation and Rebalancing Report – First Quarter 2020**

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

RECOMMENDATION

Staff recommends that the Board receive and file the quarterly asset allocation and rebalancing report.

PURPOSE

This item complies with the SCERS Master Investment Policy Statement reporting requirements related to the review of SCERS' current asset allocation as it compares to established targets and ranges, and physical and Overlay Program rebalancing activity that occurred during the quarter.

This report is typically presented as a quarterly consent item; however, it has been moved to an open session agenda item for the May meeting in order to serve as an education item to ensure that the Board understands the objectives and layout of this report, and the information that it provides.

SUMMARY

SCERS employs an Overlay Program, which is managed by State Street Global Advisors (SSGA), to rebalance the asset allocation to policy targets and also invests available cash, in a manner which replicates SCERS' policy target strategic asset allocation.

SCERS' Overlay Program reduces the need for physical rebalancing, but it does not eliminate it. While physical rebalancing typically costs more to execute compared to the Overlay Program, it remains important to assess whether SCERS' portfolio is at a point where physical rebalancing warrants greater consideration.

Below is a summary of SCERS' asset category and asset class positioning relative to the target allocations as of March 31, 2020:

Asset Category	Asset Class	Current Allocation	Target Allocation	Difference
GROWTH ASSET CATEGORY		**54.0%**	**58.0%**	**-4.0%**
	Domestic Equity	**20.0%**	20.0%	0.0%
	International Equity	**17.0%**	20.0%	-3.0%
	Private Equity	**10.3%**	9.0%	1.3%
	Public Credit	**1.7%**	2.0%	-0.3%
	Private Credit	**2.3%**	4.0%	-1.7%
	Growth Absolute Return	**2.8%**	3.0%	-0.2%
DIVERSIFYING ASSET CATEGORY		**25.6%**	**25.0%**	**0.6%**
	Public Fixed Income	**18.1%**	18.0%	0.1%
	Diversifying Absolute Return	**7.5%**	7.0%	0.5%
REAL RETURN ASSET CATEGORY		**17.1%**	**16.0%**	**1.1%**
	Real Estate	**9.2%**	7.0%	2.2%
	Real Assets	**6.6%**	7.0%	-0.4%
	Liquid Real Return	**1.2%**	2.0%	-0.8%
OPPORTUNITIES		**0.1%**	**0.0%**	**0.1%**
CASH		**1.8%**	**1.0%**	**0.8%**
OVERLAY		**1.2%**	**0.0%**	**1.2%**

* Growth and Diversifying allocation weights do not include overlay proxy exposures, which are included in the Overlay allocation

** Real Return allocation includes overlay proxy exposures

During the first quarter of 2020, the following Overlay Program rebalancing occurred:

- March 17, 2020 intra-quarter rebalance:
  - Purchased $200 million in the Growth proxy
  - Sold $150 million in the Diversifying proxy
  - Sold $50 million in the Real Return proxy
- Quarter-end rebalance:
  - Purchased $44 million in Growth proxy
  - Sold $44 million in Diversifying proxy

Key current portfolio segment allocations relative to targets, activity, and physical rebalancing considerations include:

- **Domestic Equity** has a 20% allocation as of March 31, 2020, down from a 22.4% allocation as of December 31, 2019, due to the sell-off of public equities during the COVID-19 pandemic. The 20% allocation is in line with the 20% target allocation.
  - No physical rebalancing is recommended at this time.
- **International Equity** has a 17% allocation as of March 31, 2020, down from a 19.6% allocation as of December 31, 2019, due to the sell-off of public equities during the COVID-19 pandemic. The 17% allocation is below the 20% target allocation, and slightly below the 18% low end of the range.
  - Staff is comfortable using the Overlay Program to rebalance the International Equity allocation to its 20% target allocation over physical rebalancing during the pandemic, but will evaluate exposures once private market valuations catch up

    (they are lagged a quarter, and the market impact within private markets is expected to play out over the next few quarters). At that time, international equity physical rebalancing could be considered.

- **Public Fixed Income** has an 18.1% allocation as of March 31, 2020, which is in line with the 18% target allocation. It had been underweight during prior quarters, but increased in value due to the strong performance of fixed income versus other asset classes during the first quarter.
    - Physical rebalancing could be considered for the U.S. Treasury allocation, which is overweight its target allocation, over the next quarter.
- **Alternative Assets** – the following activity occurred within SCERS' alternative assets asset classes during the quarter:
    - Diversifying Absolute Return
        - Fully redeemed from AQR Delta Fund II ($34 million)
        - Additional investment of $12 million to Davidson Kempner Institutional Partners, LP
        - $45 million investment to BlackRock Event Driven Equity Fund
    - Private Equity
        - €20 million commitment to Summit Partners Europe Growth Equity Fund III, LP
    - Private Credit
        - None
    - Real Assets
        - None
    - Real Estate
        - SCERS came into 2020 with an 8.5% allocation to Real Estate, above its 7% target allocation, but within range. Staff and Townsend have been comfortable maintaining an above target Real Estate allocation while the Real Assets asset class is built out. Staff and Townsend had identified further rebalancing (to that which occurred in 2019) of the Real Estate asset class toward the 7% target allocation in 2020. With the market sell-off in the first quarter, and with the lagged effect of real estate valuations, the current allocation stands at 9.2%, which is above the 9% high end of the range. SCERS placed redemptions in aggregate of $85 million for two open end core real estate funds during the first quarter, in order to reduce the overweight to Real Estate. The redemptions will take place on June 30, 2020.
    - Overall, private market allocations are inflated due to the fact that valuations are lagged a quarter.

BACKGROUND

The Overlay Program rebalances the asset allocation to policy targets and minimize 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; (2) the cash balances in manager portfolios; and (3) cash held for previously committed to, but un-invested private market investments, in a manner which replicates SCERS' policy target strategic asset allocation. The Overlay Program does not invest the 1% dedicated cash 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: (1) when there is low correlation between the overlay proxies designed to replicate the underlying asset classes and managers, as is the case with many alternative assets; and (2) 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 remains important to assess whether SCERS' portfolio is at a point where physical rebalancing warrants greater consideration.

The Overlay Program structure replicates SCERS' asset category targets (Growth; Diversifying; Real Return), with bands around these targets (see below). The rebalancing methodology that SSGA utilizes is quarterly rebalancing with bands, where rebalancing occurs on a quarterly basis, 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

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.

There remain some larger gaps between target and actual allocations within some private market assets classes. Private market asset class implementation (Private Credit; Real Assets) continues to make progress, but takes multiple years to execute given the unique capital pacing budgets for these segments of the portfolio. Private Equity is more mature, and in line with its 9% target allocation.

The underlying components of each asset category overlay proxy are shown in Appendix B.

DISCUSSION

Because SCERS' Overlay Program rebalances SCERS' total fund, it is important to note that **Tables 1-15** in Appendix A refer only to physical holdings compared to policy targets, and not the exposures provided through the Overlay Program. The exception is Table 11 (Real Return asset category exposure), which includes the SSGA Real Return Strategy within the Liquid Real Return asset class, which is the Overlay proxy for this asset category, and is implemented through physical exposures.

As noted, SCERS rebalances the fund via both the Overlay Program and physically purchasing or selling assets. 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 the ability to outperform equity markets in times of distress. Accordingly, it is beneficial for SCERS to continue physically investing in alternative assets 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 values in the appendix tables are from SCERS' custodian, State Street, which can differ from those of SCERS' investment consultants.

GROWTH ASSET CATEGORY

The Growth asset category is comprised of the Domestic Equity, International Equity, Private Equity, Public Credit, Private Credit, and Growth Absolute Return segments of the portfolio. As depicted in **Table 1**, the Growth asset category currently has an allocation of 54%, which is well below the strategic asset allocation's target of 58%.

During the quarter, given the extreme market volatility, the low end of the Growth overlay band was breached, triggering an intra-quarter rebalance. SSGA rebalanced midway back to the 58% target allocation, by purchasing approximately $200 million in the Growth proxy. At the end of the quarter, SSGA purchased $44 million in additional Growth proxy to rebalance fully to the target allocation.

The Overlay Program rebalances the Growth asset category to the 58% target allocation by purchasing or selling global equity futures to bring the Domestic Equity and International Equity asset classes to their target allocations, and then adjusts the remainder of the asset category by using a combination of 85% global equity futures and 15% U.S. Treasury futures.

Domestic Equities:

As depicted in **Table 2**, SCERS' Domestic Equity asset class actual weighting of 20% is in line with SCERS' policy target allocation of 20%, as of March 31, 2020. The Domestic Equity allocation is down from 22.4% as of December 31, 2019, due to the sell-off of public equities during the quarter. Domestic Equity came into the first quarter overweight its target allocation.

SSGA buys and sells a basket of U.S. equity index futures to rebalance the Domestic Equity asset class to the policy target allocation, when physical rebalancing is not required. No physical rebalancing is recommended at this time.

At the sub-asset class level, U.S. large cap, at an 18.3% allocation is slightly above the target allocation of 18%. U.S. small cap, at a 1.7% allocation is below with the target allocation of 2%. Small cap equities had a disproportionate selloff during the first quarter.

International Equities:

As depicted in **Table 3**, SCERS' International Equity asset class actual weighting of 17% is well below SCERS' policy target allocation of 20%. The allocation is down from a 19.6% allocation as of December 31, 2019, due to the sell-off of public equities during the quarter.

SSGA buys and sells a basket of international equity index futures to rebalance the International Equity asset class to the policy target allocation, when physical rebalancing is not required. Staff is comfortable using the Overlay Program to rebalance the International Equity allocation to its 20% target allocation over physical rebalancing during the pandemic, but will evaluate exposures once private market valuations catch up (they are lagged a quarter, and the market impact within private markets is expected to play out over the next few quarters). At that time, international equity physical rebalancing could be considered, particularly for two of the international developed large cap mandates and the two all-cap emerging market equity mandates, which are underweight to targets.

At the sub-asset class level, international large cap, at a 12.2% allocation is below the target allocation of 14%. International small cap, at a 1.6% allocation is below with the target allocation of 2%. Emerging markets equity, at a 3.2% allocation is below the policy target allocation of 4%.

Private Equity:

As outlined in **Table 4**, SCERS' Private Equity allocation is 10.3%, which is above the policy target allocation of 9%, and up from 8.8% last quarter. Private market valuations are lagged a quarter, so the impact of the coronavirus pandemic and market sell-off will be reflected over subsequent quarters. Therefore, current exposures are inflated due to the lag effect across private market assets classes, including private equity.

SSGA utilizes a basket of 85% global equities and 15% U.S. Treasuries to replicate Private Equity, as part of a broader non-public equity proxy within the Growth asset category.

During the first quarter, SCERS made one private equity commitment: €20 million to Summit Partners Europe Growth Equity Fund III, LP.

Please note that there is an investment within the Opportunities portfolio (Atalaya Special Opportunities Fund V, LP) which draws capital from the Private Equity asset class, as this is the asset class with the closest risk and return profile of the opportunity being invested in by this fund. The market value of this investment is $6.7 million, which equates to a 0.1% allocation, and brings SCERS' total allocation in Private Equity to 10.4%.

Public Credit:

As outlined in **Table 5**, SCERS' Public Credit allocation is 1.7%, which is below the policy target allocation of 2%. SSGA utilizes a basket of 85% global equities and 15% U.S. Treasuries to replicate Public Credit, as part of a broader non-public equity proxy within the Growth asset category.

Private Credit:

As outlined in **Table 6**, SCERS' Private Credit allocation is 2.3%, which is 1.7% below the policy target allocation of 4%, but up from 1.9% last quarter. Private credit valuations are lagged a quarter, so the impact of the coronavirus pandemic and market sell off will be reflected over subsequent quarters. Therefore, the current exposure is inflated due to the lag effect, though still below the target allocation as the asset class continues to be built out.

SSGA utilizes a basket of 85% global equities and 15% U.S. Treasuries to replicate Private Credit, as part of a broader non-public equity proxy within the Growth asset category. The commitment schedule and cash flow forecast of Private Credit investments projects SCERS achieving and maintaining the policy target in 2022.

During the first quarter, SCERS did not make any private credit commitments

Growth Absolute Return:

As outlined in **Table 7**, SCERS' Growth Absolute Return allocation is 2.8%, which is slightly below the policy target allocation of 3%. SSGA utilizes a basket of 85% global equities and 15% U.S. Treasuries to replicate Growth Absolute Return, as part of a broader non-public equity proxy within the Growth asset category.

DIVERSIFYING ASSET CATEGORY

The Diversifying asset category is comprised of the Public Fixed Income and Diversifying Absolute Return segments of the portfolio. As shown in **Table 8**, the Diversifying asset category currently has an allocation of 25.6%, which is above the strategic asset allocation's target of 25%.

During the quarter, given the extreme market volatility, the upper end of the Diversifying overlay band was breached, triggering an intra-quarter rebalance. SSGA rebalanced midway back to the 25% target allocation, by selling approximately $150 million in the Diversifying proxy. At the end of the quarter, SSGA sold $44 million in additional Diversifying proxy to rebalance fully to the target allocation.

The Overlay Program rebalances the Diversifying asset category to the 25% target allocation by purchasing or selling U.S. government bond futures.

Public Fixed Income:

As depicted in **Table 9**, SCERS' Public Fixed Income allocation actual weighting of 18.1% is slightly above SCERS' policy target allocation of 18%, but up from 16.1% last quarter due to the strong absolute and relative performance of government bonds during the quarter.

The Overlay Program utilizes a combination of U.S. Treasury futures and Mortgage TBAs to rebalance this segment of the portfolio to its policy target allocation, as part of a broader Diversifying asset category proxy. Physical rebalancing could be considered for the U.S. Treasury allocation, which is overweight its target allocation, over the next quarter.

Diversifying Absolute Return:

As outlined in **Table 10**, SCERS' Diversifying Absolute Return allocation is 7.5%, which is above the policy target allocation of 7%, and up from the 6.4% allocation last quarter. The increase is partly due to the strong relative aggregate performance of diversifying absolute return funds during the quarter; however, it is also partly due to underlying funds not fully reflecting first quarter valuations, in particular any negative returns.
During the first quarter, SCERS fully redeemed from AQR Delta Fund II ($34 million), invested an additional $12 million in Davidson Kempner Institutional Partners, LP, and invested $45 million in the BlackRock Event Driven Equity Fund.

SSGA utilizes a combination of U.S. Treasury futures and Mortgage TBAs to rebalance this segment of the portfolio to its policy target allocation, as part of a broader Diversifying asset category proxy.

REAL RETURN ASSET CATEGORY

The Real Return asset category is comprised of the Real Estate, Real Assets, and Liquid Real Return segments of the portfolio. As shown in **Table 11**, the Real Return asset category currently has an allocation of 17.1%, which is above the strategic asset allocation's target of 16%.

During the quarter, given the extreme market volatility, the upper end of the Real Return overlay band was breached, triggering an intra-quarter rebalance. SSGA rebalanced back toward the 16% target allocation, by selling approximately $50 million in the Real Return proxy. At the end of the quarter, SSGA left the remaining Real Return proxy in place, instead rebalancing the overall portfolio using only the Growth and Diversifying proxies.

The Overlay Program rebalances the Real Return asset category to the 16% target allocation, through the SSGA real return overlay proxy, by purchasing or selling a series of commingled funds across global REITs, global infrastructure stocks, global natural resource stocks, commodities, U.S. TIPS, and floating rate notes.

Real Estate:

As outlined in **Table 12**, SCERS' Real Estate allocation is 9.2%, which is above the policy target allocation of 7%, and up from 8.6% last quarter. Non-core real estate is lagged a quarter like other private market assets, and core real estate, while not lagged, is not expected to see an impact to valuations until the second quarter and beyond. Therefore, current exposures are inflated due to a combination of lagged effects.

SCERS came into 2020 with an 8.5% allocation to Real Estate, above its 7% target allocation, but within range. Staff and Townsend have been comfortable maintaining an above target Real Estate allocation while the Real Assets asset class is built out. Staff and Townsend had identified further rebalancing (to that which occurred in 2019) of the Real Estate asset class toward the 7% target allocation in 2020. With the market sell-off in the first quarter, and with the lagged effect of real estate valuations, the current allocation stands at 9.2%, which is above the 9% high end of the range. SCERS placed redemptions in aggregate of $85 million for two open end core real estate funds during the first quarter, in order to reduce the overweight to Real Estate. The redemptions will take place on June 30, 2020.

SSGA utilizes a series of listed commingled funds described above to replicate Real Estate, as part of the broader Real Return asset category proxy.

Real Assets:

As outlined in **Table 13**, SCERS' Real Assets allocation is 6.6%, which is below the policy target allocation of 7%, and up from 5.7% last quarter. Private real asset valuations are lagged a quarter, so the impact of the coronavirus pandemic and market sell-off will be reflected over subsequent quarters. Therefore, the current exposure is inflated due to the lag effect, though still below the target allocation as the asset class continues to be built out.

SSGA utilizes a series of listed commingled funds described above to replicate Real Assets, as part of the broader Real Return asset category proxy. The commitment schedule and cash flow forecast of Real Assets investments project SCERS achieving and maintaining the policy target in 2023.

During the quarter, SCERS did not make any Real Assets fund commitments.

Liquid Real Return:

As outlined in **Table 14**, SCERS' Liquid Real Return allocation ended the quarter at 1.2%, below the policy target allocation of 2%. The Liquid Real Return allocation is split between a strategic active mandate managed by Brookfield Asset Management and the SSGA Real Return Overlay proxy. The latter is used to adjust broad Real Return asset category exposures during quarterly overlay rebalancing. During the first quarter, $50 million of the SSGA Real Return Overlay proxy was sold as part of the intra-quarter rebalance, which accounts for much of the Liquid Real Return underweight.

OPPORTUNITIES PORTFOLIO

The allocation for SCERS' Opportunities portfolio, outlined in **Table 15**, is 0.1% compared to the 0% target allocation, and within the policy range of 0% to 5%. Any investments made within the Opportunities portfolio draw capital from the asset class with the closest risk and return profile as the opportunity being invested in. The asset class where capital is drawn from is listed in the chart below for each investment. Since the target allocation for Opportunities is 0%, the Overlay Program does not utilize a proxy allocation for the Opportunities portfolio, as it does for the other asset categories.

CASH

As outlined in **Table** 16, SCERS' total cash balance is approximately 1.8% (as of March 31, 2020), which includes a combination of the 1% dedicated cash allocation and 0.8% in other/excess cash. The dedicated cash allocation is intended to close the gap between benefit payments and total contributions in an environment where investment earnings fall short of the targeted assumed rate of return, and also serves as an emergency source of cash during a market dislocation, such as the current environment.

The 0.8% other/excess cash allocation is partly comprised of the remaining pre-funded annual employer contribution, and is therefore used to fund monthly benefit payments. It is also used to fund future drawdowns within the private markets segments of the portfolio. SCERS' Overlay Program rebalances the portfolio by eliminating cash drag by investing the non-dedicated cash allocation (0.8%) into positions that replicate SCERS' target portfolio.

ATTACHMENTS

- Appendix A: Portfolio Allocation and Rebalancing Detail
- Appendix B: SCERS Overlay Proxies
- Portfolio Allocation and Rebalancing Presentation

Prepared by:	Reviewed by:
/S/	/S/
Steve Davis Chief Investment Officer	Eric Stern Chief Executive Officer

APPENDIX A: Quarterly Portfolio Allocation and Rebalancing Detail (as of March 31, 2020)

Fund Name	Market Value	Actual	Target	Delta %
Total Fund	**$9,231,662,329**			

Table 1: Growth Asset Category — **Allowable Range: 53-63%**

	Market Value	Actual	Target	Delta %
GROWTH ASSET CATEGORY	**$4,986,111,333**	**54.0%**	**58.0%**	**-4.0%**

Table 2: Domestic Equity Asset Class — **Allowable Range: 18-22%**

Domestic Equity	Sub-Asset Class	Market Value	Actual	Target	Delta %
		$1,843,194,647	**20.0%**	**20.0%**	**0.0%**
AllianceBernstein	Equity Core Index	$1,009,788,531	10.9%	10.8%	0.1%
JP Morgan 130/30	Equity Core Active Short Extension (130/30)	$121,985,737	1.3%	1.2%	0.1%
DE Shaw Broad Market Core Alpha Extension	Equity Core Active Short Extension (130/30)	$128,024,056	1.4%	1.2%	0.2%
Eagle Capital Management	Equity Large Cap Core	$218,451,334	2.4%	2.4%	0.0%
AQR US Enhanced Equity	Equity Systematic Multi-Factor Core	$210,598,425	2.3%	2.4%	-0.1%
	Equity Large Cap		18.3%	18.0%	0.3%
Dalton, Greiner, Hartman, Maher & Co.	Equity Small Cap Value	$64,477,132	0.7%	1.0%	-0.3%
M.A. Weatherbie & Co.	Equity Small Cap Growth	$89,869,432	1.0%	1.0%	0.0%
	Equity Small Cap		1.7%	2.0%	-0.3%

Table 3: International Equity Asset Class **Allowable Range: 18-22%**

International Equity	Sub-Asset Class	Market Value	Actual	Target	Delta %
		$1,567,702,114	**17.0%**	**20.0%**	**-3.0%**
Lazard Asset Management	ACWI Ex-US	$307,638,930	3.3%	4.0%	-0.7%
LSV Large Cap International Value	International Equity Large Cap Value	$320,181,509	3.5%	5.0%	-1.5%
Walter Scott	International Equity Large Cap Growth	$497,946,660	5.4%	5.0%	0.4%
	International Equity Large Cap		12.2%	14.0%	-1.8%
William Blair & Co.	International Equity Small Cap Growth	$73,780,804	0.8%	1.0%	-0.2%
Mondrian Investment Partners	International Equity Small Cap Value	$75,193,785	0.8%	1.0%	-0.2%
	International Equity Small Cap		1.6%	2.0%	-0.4%
Baillie Gifford	Emerging Markets Equity - All Cap	$157,500,477	1.7%	2.0%	-0.3%
Mondrian Emerging Markets Equity Fund, LP	Emerging Markets Equity - All Cap	$135,459,951	1.5%	2.0%	-0.5%
	Emerging Markets		3.2%	4.0%	-0.8%

Table 4: Private Equity Asset Class **Allowable Range: 7-11%**

Private Equity	Sub-Asset Class	Market Value	Actual	Target	Delta %
		$950,265,664	**10.3%**	**9.0%**	**1.3%**
Accel-KKR Capital Partners IV, LP	Buyout	$13,246,276	0.1%		
Accel-KKR Capital Partners V, LP	Buyout	$12,082,931	0.1%		
Accel-KKR Capital Partners VI, LP	Buyout	$0	0.0%		
Accel-KKR Growth Capital Partnes II, LP	Buyout	$9,405,312	0.1%		
Accel-KKR Growth Capital Partnes III, LP	Buyout	$5,433,944	0.1%		
Cortec Group Fund VII, LP	Buyout	$0	0.0%		
Gridiron Capital Fund IV, LP	Buyout	$0	0.0%		
H.I.G. Capital Partners V, LP	Buyout	$14,591,049	0.2%		
Linden Capital Partners III, LP	Buyout	$41,437,400	0.4%		
Linden Capital Partners IV, LP	Buyout	$12,579,318	0.1%		
Marlin Equity Partners IV, LP	Buyout	$15,015,822	0.2%		
Marlin Equity Partners V, LP	Buyout	$10,348,236	0.1%		
Marlin Heritage Europe, LP	Buyout	$13,507,601	0.1%		
Marlin Heritage II, LP	Buyout	$8,059,895	0.1%		
Marlin Heritage, LP	Buyout	$6,572,914	0.1%		

Thoma Bravo Fund XI, LP	Buyout	$37,332,228	0.4%
Thoma Bravo Fund XII, LP	Buyout	$37,187,402	0.4%
Thoma Bravo Fund XIII, LP	Buyout	$21,581,567	0.2%
TSG7 A, LP	Buyout	$14,251,852	0.2%
TSG7 B, LP	Buyout	$1,887,661	0.0%
TSG8, L.P.	Buyout	$5,437,385	0.1%
Wynnchurch Capital Partners V, LP	Buyout	$0	0.0%
H.I.G. Europe Capital Partners II, LP	European Buyout	$10,396,612	0.1%
Waterland Private Equity Fund V, CV	European Buyout	$10,738,001	0.1%
Waterland Private Equity Fund VI, CV	European Buyout	$21,415,679	0.2%
RRJ Capital Master Fund II, LP	Asian Buyout/Special Situations	$15,735,025	0.2%
RRJ Capital Master Fund III, LP	Asian Buyout/Special Situations	$14,165,530	0.2%
Spectrum Equity Investors VII, LP	Growth Equity	$34,752,533	0.4%
Spectrum Equity Fund VIII, LP	Growth Equity	$17,101,539	0.2%
Summit Partners VC Fund III, LP	Growth Equity	$15,148,105	0.2%
Summit Partners Venture Capital Fund IV, LP	Growth Equity	$17,102,498	0.2%
Summit Partners Europe Growth Equity Fund II, LP	European Growth Equity	$18,257,615	0.2%
Summit Partners Europe Growth Equity Fund III, L.P.	European Growth Equity	$0	0.0%
Khosla Ventures IV, LP	Venture Capital	$4,603,683	0.0%
Khosla Ventures V, L.P.	Venture Capital	$17,390,224	0.2%
Khosla Ventures VI, L.P.	Venture Capital	$12,367,483	0.1%
New Enterprise Associates 14, LP	Venture Capital	$31,249,386	0.3%
New Enterprise Associates 15, LP	Venture Capital	$49,735,305	0.5%
New Enterprise Associates 16, LP	Venture Capital	$26,005,295	0.3%
New Enterprise Associates 17, LP	Venture Capital	$4,396,567	0.0%
Threshold Ventures III, LP	Venture Capital	$3,413,128	0.0%
Trinity Ventures XI, LP	Venture Capital	$38,505,434	0.4%
Trinity Ventures XII, LP	Venture Capital	$40,016,701	0.4%
Atalaya Special Opportunities Fund VI, LP	Distressed Debt	$15,752,977	0.2%
Davidson Kempner Distressed Opportunities Fund III,	Distressed Debt	$31,460,710	0.3%
Davidson Kempner Distressed Opportunities Fund IV,	Distressed Debt	$0	0.0%
Garrison Opportunity Fund III, LP	Distressed Debt	$13,650,363	0.1%
H.I.G. Bayside Loan Opportnity III (Europe), LP	Distressed Debt	$10,571,098	0.1%
TPG Opportunities Partners III, LP	Distressed Debt	$19,537,617	0.2%
TSSP Opportunities Partners IV, LP	Distressed Debt	$7,483,624	0.1%
Wayzata Opportunities Fund III, LP	Distressed Debt	$4,959,678	0.1%
Dyal Capital Partners II, LP	Other	$18,245,478	0.2%
Dyal Capital Partners III, LP	Other	$21,751,816	0.2%

Abbott Capital ACE VI	Fund of Funds	$42,637,926	0.5%		
Goldman Sachs PEP X	Fund of Funds	$22,579,261	0.2%		
Harbourvest Partners Intl VI	Fund of Funds	$32,242,645	0.3%		
HarbourVest Partners VIII	Fund of Funds	$13,114,226	0.1%		
RCP Multi-Fund Feeder (SCERS), L.P.	Fund of Funds	$13,823,113	0.1%		

Table 5: Public Credit Asset Class **Allowable Range: 1-3%**

Public Credit	Sub-Asset Class	Market Value	Actual	Target	Delta %
		$154,533,470	**1.7%**	**2.0%**	**-0.3%**
Brigade Capital SC Opportunities Mandate	Public Credit	$154,533,470	1.7%	2.0%	

Table 6: Private Credit Asset Class **Allowable Range: 2-6%**

Private Credit	Sub-Asset Class	Market Value	Actual	Target	Delta %
		$209,517,139	**2.3%**	**4.0%**	**-1.7%**
Benefit Street Partners Senior Opportunities Fund, LP	Direct Lending	$46,271,975	0.5%		
Benefit Street Partners Senior Opportunities Fund II, L	Direct Lending	$2,467,756	0.0%		
IFM U.S. Infrastructure Debt Fund, LP	Direct Lending	$0	0.0%		
Summit Partners Credit Fund, LP	Direct Lending	$537,872	0.0%		
Summit Partners Credit Fund II, LP	Direct Lending	$27,378,638	0.3%		
Summit Partners Credit Fund III, LP	Direct Lending	$27,550,038	0.3%		
Tennenbaum Capital Partners Direct Lending Fund VII	Direct Lending	$69,804,826	0.8%		
Athyrium Opportunities Fund II, LP	Healthcare Opportunistic Credit	$14,118,970	0.2%		
Athyrium Opportunities Fund III, LP	Healthcare Opportunistic Credit	$14,580,819	0.2%		
OrbiMed Royalty and Credit Opportunities Fund III, LP	Healthcare Opportunistic Credit	$6,806,245	0.1%		
MCP Private Capital Fund IV, SCSp	Opportunistic Credit	$0	0.0%		

Table 7: Growth Absolute Return Asset Class **Allowable Range: 1-5%**

Growth Absolute Return	Sub-Asset Class	Market Value	Actual	Target	Delta %
		$260,898,300	**2.8%**	**3.0%**	**-0.2%**
Grosvenor SCARF - Growth Series	Diversified Separate Account	$123,977,897	1.3%		
Lakewood Capital Partners, LP	Equity Long/Short	$33,779,493	0.4%		
Third Point Partners Qualified, LP	Event Driven	$48,895,240	0.5%		
Sculptor Domestic Partners II, LP	Multi Strategy	$54,245,670	0.6%		

Table 8: Diversifying Asset Category **Allowable Range: 22-28%**

	Market Value	Actual	Target	Delta %
DIVERSIFYING ASSET CATEGORY	**$2,365,873,424**	**25.6%**	**25.0%**	**0.6%**

Table 9: Public Fixed Income Asset Class **Allowable Range: 13-23%**

Public Fixed Income	Sub-Asset Class	Market Value	Actual	Target	Delta %
		$1,669,668,132	**18.1%**	**18.0%**	**0.1%**
Prudential Investment Management	Core Plus Active Fixed Income	$472,277,839	5.1%	5.0%	
TCW	Core Plus Active Fixed Income	$468,529,706	5.1%	5.0%	
	Core Plus		10.2%	10.0%	
Neuberger Berman	US Treasuries	$498,924,550	5.4%	5.0%	
Brandywine Global	Global Opportunistic Fixed Income	$229,936,038	2.5%	3.0%	

Table 10: Diversifying Absolute Return Asset Class **Allowable Range: 5-9%**

Diversifying Absolute Return	Sub-Asset Class	Market Value	Actual	Target	Delta %
		$696,205,291	**7.5%**	**7.0%**	**0.5%**
Grosvenor SCARF - Diversifying Series	Diversified Separate Account	$155,804,486	1.7%		
Grosvenor SCARF Series B - Interim Diversifying	Diversified Separate Account	$71,264,943	0.8%		
Marshall Wace Global Opportunities Fund	Equity Long/Shoryt	$42,932,760	0.5%		
BlackRock Event Driven Equity Fund	Event Driven	$42,724,458	0.5%		
Elliott Associates LP	Event Driven	$57,742,404	0.6%		
Davidson Kempner Institutional Partners, LP	Event Driven	$45,832,188	0.5%		
KLS Diversified Fund, L.P.	Fixed Income Arbitrage	$40,491,360	0.4%		
AQR Delta Fund II, LP	Bottom Up Replication	$34,434,840	0.4%		
LMR Fund Ltd	Market Neutral, Multi-Strategy	$45,306,630	0.5%		
Laurion Capital Management, LP	Volatility Arbitrage	$50,704,459	0.5%		
Two Sigma Risk Premia Enhanced Fund, LP	Alternative Risk Premia	$39,629,070	0.4%		
Winton Diversified Futures Fund, L.P.	Systematic Global Macro	$35,360,570	0.4%		
Graham Tactical Trend Fund , L.P.	Systematic Global Macro	$33,977,123	0.4%		

Table 11: Real Return Asset Category **Allowable Range: 14-18%**

	Market Value	Actual	Target	Delta %
REAL RETURN ASSET CATEGORY	**$1,577,032,175**	**17.1%**	**16.0%**	**1.1%**

Table 12: Real Estate Asset Class **Allowable Range: 5-9%**

Real Estate	Sub-Asset Class	Market Value	Actual	Target	Delta %
		$852,859,483	**9.2%**	**7.0%**	**2.2%**
Blackrock Realty Advisors Portfolio I	Core Real Estate	$1,105,196	0.0%		
Brookfield Premier Real Estate Partners, LP	Core Real Estate	$102,760,552	1.1%		
Clarion Lion Properties Fund, LP	Core Real Estate	$125,799,872	1.4%		
Cornerstone Realty Advisors	Core Real Estate	$340,472	0.0%		
Jamestown Premier Property Fund LP	Core Real Estate	$0	0.0%		
MetLife Core Property Fund, LP	Core Real Estate	$63,779,327	0.7%		
Morgan Stanley Prime Property Fund	Core Real Estate	$63,986,014	0.7%		
Principal US Property Account	Core Real Estate	$48,746,390	0.5%		
Prologis Targeted Europe Logistics Fund, LP	Core Real Estate	$54,125,367	0.6%		
Prologis Targeted US Logistics Fund, LP	Core Real Estate	$78,658,387	0.9%		
Townsend Real Estate Fund, LP	Core Real Estate	$118,099,379	1.3%		
Carlyle China Realty, L.P.	Non-Core Real Estate - Opportunistic	$7,627,705	0.1%		
Carlyle China Rome Logistics, L.P.	Non-Core Real Estate - Opportunistic	$36,975,776	0.4%		
KKR Real Estate Partners Americas, LP	Non-Core Real Estate - Opportunistic	$4,346,336	0.0%		
Sculptor Real Estate Fund III, LP	Non-Core Real Estate - Opportunistic	$13,501,235	0.1%		
A.E.W Value Investors II, LP	Non-Core Real Estate - Value-Added	$0	0.0%		
Asana Partners Fund II, L.P.	Non-Core Real Estate - Value-Added	$2,425,575	0.0%		
CIM Opportunity Fund VIII, LP	Non-Core Real Estate - Value-Added	$38,381,204	0.4%		
DRC European Real Estate Debt Fund II, LP	Non-Core Real Estate - Value-Added	$6,826,884	0.1%		
ECE European Prime Shopping Centre Fund II, SCS-S	Non-Core Real Estate - Value-Added	$29,110,619	0.3%		
Hammes Partners II, LP	Non-Core Real Estate - Value-Added	$2,979,480	0.0%		
Hammes Partners III, LP	Non-Core Real Estate - Value-Added	$5,258,579	0.1%		
Hines US Office Value Added Fund II, LP	Non-Core Real Estate - Value-Added	$0	0.0%		
NREP Nordic Strategies Fund, FCP-FIS	Non-Core Real Estate - Value-Added	$4,042,024	0.0%		
NREP Nordic Strategies Fund II, FCP-FIS	Non-Core Real Estate - Value-Added	$29,189,718	0.3%		
NREP Nordic Strategies Fund III, FCP-FIS	Non-Core Real Estate - Value-Added	$14,713,958	0.2%		
NREP Nordic Strategies Fund IV, FCP-FIS	Non-Core Real Estate - Value-Added	$0	0.0%		
UBS (Allegis Value Trust)	Non-Core Real Estate - Value-Added	$79,431	0.0%		

Table 13: Real Assets Asset Class — **Allowable Range: 5-9%**

Real Assets	**Sub-Asset Class**	**Market Value**	**Actual**	**Target**	**Delta %**
		$609,160,172	**6.6%**	**7.0%**	**-0.4%**
ACM Fund II, LP	Agriculture	$17,385,423	0.2%		
Paine Schwartz Food Chain Fund V, L.P.	Agriculture	$2,840,873	0.0%		
EnCap Energy Capital Fund IX, LP	Energy	$16,524,920	0.2%		
EnCap Energy Capital Fund X, LP	Energy	$35,307,241	0.4%		
Tailwater Energy Fund III, LP	Energy	$25,303,648	0.3%		
Tailwater Energy Fund IV, LP	Energy	$6,445,396	0.1%		
Quantum Energy Partners VI, LP	Energy	$35,544,118	0.4%		
Quantum Energy Partners VII, LP	Energy	$19,851,114	0.2%		
ArcLight Energy Partners Fund VI, LP	Infrastructure	$35,299,727	0.4%		
Brookfield Infrastructure Fund III, LP	Infrastructure	$32,217,740	0.3%		
Brookfield Infrastructure Fund IV, LP	Infrastructure	$15,013,643	0.0%		
EnCap Flatrock Midstream Fund III, LP	Infrastructure	$16,776,098	0.2%		
EnCap Flatrock Midstream Fund IV, LP	Infrastructure	$8,831,009	0.1%		
EQT Infrastructure IV, SCSp	Infrastructure	$15,218,570	0.2%		
First Reserve Energy Infrastructure Fund II, LP	Infrastructure	$23,122,029	0.3%		
IFM Global Infrastructure Fund	Infrastructure	$130,267,875	1.4%		
ISQ Global Infrastructure Fund II, LP	Infrastructure	$31,977,072	0.3%		
Meridiam Infrastructure North America III, LP	Infrastructure	$905,137	0.0%		
Pantheon SCERS SIRF, LLC	Infrastructure	$72,757,506	0.8%		
Wastewater Opportunity Fund, LLC	Infrastructure	$21,072,594	0.2%		
Atalaya SCERS SMA, LLC	Infrastructure Debt	$16,971,490	0.2%		
Carlyle Power Partners II, LP	Power Generation	$29,526,948	0.3%		

Table 14: Liquid Real Return Asset Class — **Allowable Range: 0-3%**

Liquid Real Return	**Sub-Asset Class**	**Market Value**	**Actual**	**Target**	**Delta %**
		$115,012,519	**1.2%**	**2.0%**	**-0.8%**
SSGA Real Return Overlay Strategy	Passive Liquid Real Return Proxy	29,809,211	0.3%		
Brookfield Liquid Real Return	Active Liquid Real Return	$85,203,308	0.9%		

Table 15: Opportunities Asset Class **Allowable Range: 0-5%**

OPPORTUNITIES	Sub-Asset Class	Market Value	Actual	Target	Delta %
		$6,691,685	**0.1%**	**0.0%**	**0.1%**
Atalaya Special Opportunities Fund V, LP*	Opportunities - Credit	$6,691,685	0.1%		

*Capital is drawn from Private Equity

Table 16: Cash **Allowable Range: 0-2%**

Cash	Market Value	Actual	Target	Delta %
	$167,303,904	**1.8%**	**2.0%**	**-0.2%**
Cash Account	$71,406,100	0.8%	-	
Dedicated Cash Account	$95,897,804	1.0%	1.0%	0.0%

Table 17: Overlay

Overlay	Market Value	Actual	Target	Delta %
	$108,579,244	**1.2%**	**-**	
SSgA Overlay Account	$108,579,244	1.2%	-	

Appendix B: Overlay Proxies

Growth Asset Category Proxy:	Policy Allocation	Benchmark	Overlay Implementation
Domestic Equities	20%	Russell 3000 Index	Basket of S&P 500; S&P 400; and Russell 2000 futures
International Equities	20%	MSCI ACWI ex-US Index	Basket of Local Index, EAFE, EM Futures plus currency
Private Equity	9%	Cambridge Associates PE/VC Index	Basket of 85% Gobal Equity and 15% US TSY
Public Credit	2%	50% BofA High Yield/50% CS Leveraged Loan	Basket of 85% Gobal Equity and 15% US TSY
Private Credit	4%	CS Leveraged Loan + 2%	Basket of 85% Gobal Equity and 15% US TSY
Growth Absolute Return	3%	HFRI FoF Composite Index + 1%	Basket of 85% Gobal Equity and 15% US TSY

Diversifying Asset Category Proxy:	Policy Allocation	Benchmark	Overlay Implementation
Core/Core Plus Fixed Income	10%	Bloomberg Barclays Aggregate Index	Baskets of Treasury Futures and TBAs
US Treasury	5%	Bloomberg Barclays UST Index	Baskets of Treasury Futures and TBAs
Global Fixed Income	3%	80% Citi WGBI/20% JPM GBI EM Global	Baskets of Treasury Futures and TBAs
Diversifying Absolute Return	7%	HFRI FoF Conservative Index	Baskets of Treasury Futures and TBAs

Real Return Asset Category Proxy:	Policy Allocation*	Benchmark/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	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

SCERS

Education Presentation: Portfolio Allocation and Rebalance Report

May 20, 2020

Introduction

- Objectives and layout of quarterly portfolio allocation and rebalancing report
- Overview of SCERS rebalancing tools and policies
  - Overlay program rebalancing
  - Physical rebalancing
- First quarter rebalance, and investment activity and considerations

Portfolio Allocation and Rebalancing Report

Why is this report provided?

- Holistic quarterly snapshot of SCERS' portfolio
- Portfolio allocations and positioning relative to strategic asset allocation targets
  - Asset categories
  - Asset classes
  - Sub-asset classes
  - Investment managers

Why is this report provided (cont'd)?

- Overlay rebalancing activity
- Physical rebalancing activity and considerations
- Quarterly investment activity
- Cash levels

Portfolio Allocation and Rebalancing Report

Report Layout

- Summary section upfront
- Recap rebalancing approaches – overlay vs. physical
- Dedicated sections for each asset category and underlying asset class in detail
  - Information on whether physical rebalancing should be considered

Rebalancing Overview

- Protocols identified in Master Investment Policy Statement
- Overlay vs. Physical rebalancing
- Under the direction and supervision of the CIO
- All rebalancing activity reported on a quarterly basis, or more frequently as warranted

Overlay Program Recap

- Managed by State Street Global Advisors
- Objectives: rebalance strategic asset allocation to policy targets and invest available cash
- Reduces the need for more expensive and less efficient physical rebalancing, but does not eliminate it

Overlay Program Recap (cont'd)

- Uses proxies at the asset category level to replicate underlying exposures
- Methodology: quarter end with intra-quarter rebalancing upon breach of a band
- More effective for public markets vs. alternative assets

Overlay Program Recap

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

Overlay Proxies

- Growth and Diversifying – liquid and efficient futures contracts
- Real Return – physical exposure to commingled funds

Growth Asset Category Proxy	Policy Allocation	Benchmark	Overlay Implementation
Domestic Equities	20.0%	Russell 3000 Index	Basket of S&P 500, S&P 400, and Russell 2000 futures
International Equities	20.0%	MSCI ACWI ex-US Index	Basket of Local Index, EAFE, EM Futures + currency
Private Equity	9.0%	Cambridge Associates CE/VC Index	Basket of 85% Global Equity and 50% TSY
Public Credit	2.0%	50% BofA High Yield/50% CS Leveraged Loan	Basket of 85% Global Equity and 50% TSY
Private Credit	4.0%	CS Leveraged Loan + 2%	Basket of 85% Global Equity and 50% TSY
Growth Absolute Return	3.0%	HFRI FoF Composite Index + 1%	Basket of 85% Global Equity and 50% TSY

Overlay Proxies

Diversifying Asset Category Proxy	Policy Allocation	Benchmark	Overlay Implementation
Core/Core + Fixed Income	10.0%	Bloomberg Barclays Aggregate Index	Baskets of Treasury Futures and TBAs
US Treasury	5.0%	Bloomberg Barclays UST Index	Baskets of Treasury Futures and TBAs
Global Fixed Income	3.0%	80% Citi WGBI/ 20% JPM GBI EM Global	Baskets of Treasury Futures and TBAs
Diversifying Absolute Return	7.0%	HFRI FoF Conservative Index	Baskets of Treasury Futures and TBAs

Real Return Asset Category Proxy	Policy Allocation (Relative to Real Return Asset Category)	Benchmark/Overlay Implementation
Global Real Estate (REITs)	15.0%	FTSE EPRA/NAREIT Developed Liquid Index
Global Infrastructure Equity	25.0%	S&P Global Infrastructure Index
Global Natural Resources	10.0%	S&P Global Large Mid Cap Commodity and Resources Index
Commodities	10.0%	Bloomberg Roll Select Commodity Index
US Intermediate TIPS	30.0%	Bloomberg Barclays 1-10 Year US Tips Index
Floating Rate Notes	10.0%	Bloomberg Barclays US Dollar Floating Rate Note < 5 Years Index

Physical Rebalancing

When is it used?

Low correlation between the overlay proxies and asset classes/managers

- i.e., most alternative assets
  - Domestic stocks used to replicate private equity
  - Core bonds used to replicate absolute return
- Persistently large difference between physical assets and the target allocation
  - i.e., a public markets asset class is outside of its designated range

Asset Class	Current Allocation	Target Minimum	Target Allocation	Target Maximum
International Equity	17%	18%	20%	22%

Portfolio Allocations

Significant asset class movements during the first quarter

- Public equity decreased
- Public fixed income increased
- Private markets show inflated allocations due to lagged valuations
  - Will adjust over subsequent quarters
- Variances are rebalanced at asset category level using Overlay Program

Portfolio Allocations as of March 31, 2020

Asset Category	Asset Class	Current Allocation	Target Allocation	Difference
Growth*		**54.0%**	**58.0%**	**-4.0%**
	Domestic Equity	20.0%	20.0%	0.0%
	International Equity	17.0%	20.0%	-3.0%
	Private Equity	10.3%	9.0%	1.3%
	Public Credit	1.7%	2.0%	-0.3%
	Private Credit	2.3%	4.0%	-1.7%
	Growth Absolute Return	2.8%	3.0%	-0.2%
Diversifying*		**25.6%**	**25.0%**	**0.6%**
	Public Fixed Income	18.1%	18.0%	0.1%
	Diversifying Absolute Return	7.5%	7.0%	0.5%
Real Return**		**17.1%**	**16.0%**	**1.1%**
	Real Estate	9.2%	7.0%	2.2%
	Real Assets	6.6%	7.0%	-0.4%
	Liquid Real Return	1.2%	2.0%	-0.8%
Opportunities		**0.1%**	**0.0%**	**0.1%**
Cash		**1.8%**	**1.0%**	**0.8%**
Overlay		**1.2%**	**0.0%**	**1.2%**

*Does not include Overlay exposures, which are included in the Overlay allocation **Includes Overlay proxy exposures

First Quarter Rebalancing – Overlay Program

- Implemented intra-quarter and quarter end rebalances
- Intra-quarter bands triggered
  - Rare in modeled historical back tests
  - Demonstrates severity of market sell-off

First Quarter Rebalancing – Overlay Program

Timing	Date	Asset Category	Transaction	Amount
Intra-quarter	3/17/2020			
		Growth	Purchased	$200m
		Diversifying	Sold	$150m
		Real Return	Sold	$50m
Quarter end	3/31/2020			
		Growth	Purchased	$44m
		Diversifying	Sold	$44m
		Real Return	-	$0

Physical Rebalancing Considerations

International Equity underweight and U.S. Treasuries overweight

- Physical rebalance vs. wait for private valuations to catch up

International Equity	Sub-Asset Class	Market Value (in millions)	Actual	Target	Delta %	Target Low	Target High
		$1,568	**17.0%**	**20.0%**	**-3.0%**	**18.0%**	**22.0%**
Lazard Asset Management	ACWI Ex-US	$308	3.3%	4.0%	-0.7%		
LSV Large Cap International Value	International Equity Large Cap Value	$320	3.5%	5.0%	-1.5%		
Walter Scott	International Equity Large Cap Growth	$498	5.4%	5.0%	0.4%		
	International Equity Large Cap		12.2%	14.0%	-1.8%		

Public Fixed Income	Sub-Asset Class	Market Value (in millions)	Actual	Target	Delta %	Target Low	Target High
		$1,670	**18.1%**	**18.0%**	**0.1%**	**13.0%**	**23.0%**
Prudential Investment Management	Core Plus Active Fixed Income	$472	5.1%	5.0%			
TCW	Core Plus Active Fixed Income	$469	5.1%	5.0%			
	Core Plus		10.2%	10.0%			
Neuberger Berman	U.S. Treasuries	$499	5.4%	5.0%			

Private Equity	Sub-Asset Class	Market Value (in millions)	Actual	Target	Delta %	Target Low	Target High
		$950	**10.3%**	**9.0%**	**1.3%**	**7.0%**	**11.0%**

First Quarter Investment Activity

Combination of physical rebalancing and implementation of strategic asset allocation toward targets

First Quarter Investment Activity

Core Real Estate Redemptions

- Part of 2020 annual Real Estate investment plan

Diversifying Absolute Return

- Fully redeemed from AQR Delta Fund II ($34 million)
- Additional investment of $12 million in Davidson Kempner Institutional Partners, LP
- $45 million investment to BlackRock Event Driven Equity Fund

Private Equity

- €20 million commitment to Summit Partners Europe Growth Equity Fund III, LP

Questions?