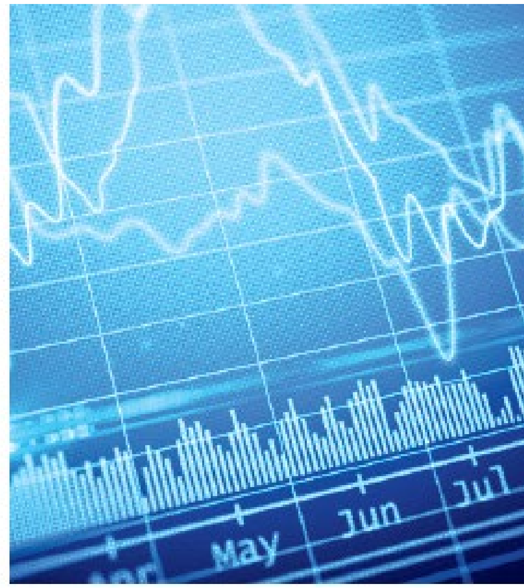
CalPERS | Investment Office



Trust Level Review

As of June 30, 2023

Contents

Section I. Our Objectives

SAA Benchmark Implementation and Value Add

Our first and foremost objective is implementing the Board-approved Strategic Asset Allocation (SAA). The SAA is the single most important Board investment decision, setting a benchmark asset mix having a reasonable probability of achieving the target discount rate over the long term. As seen in the following exhibit, one-year returns can vary significantly from the discount rate. Ten-year returns are steadier, though still modestly varying over time. (Detailed discussion and analysis on Total Returns begins on page 46).

Rolling 10-Yr Annualized Total Return vs Rolling 1-Yr Total Return

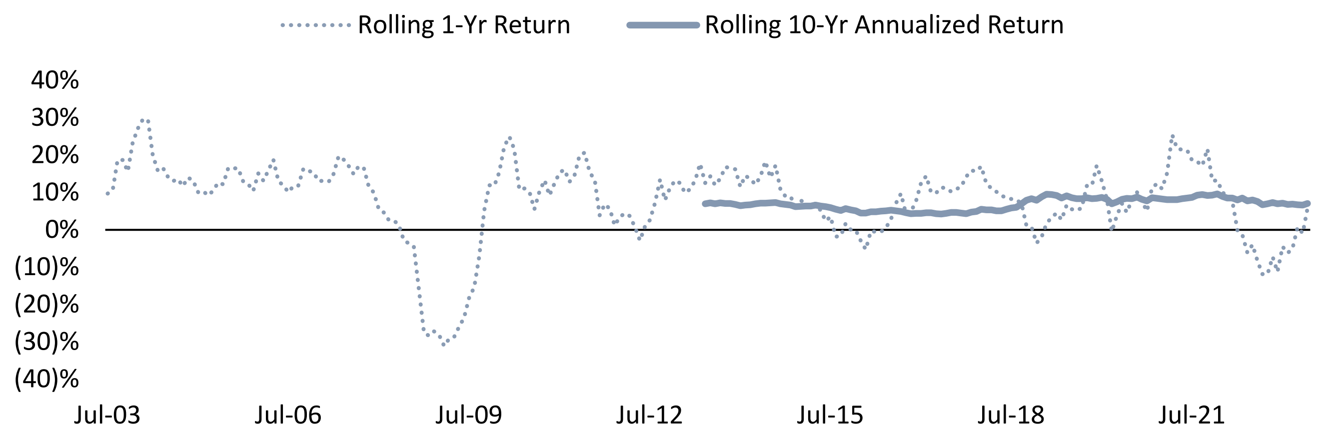


Exhibit 1.1

Our second objective is implementing active strategies with the potential for adding value relative to the SAA benchmark and doing so without materially increasing total portfolio risk. As seen in the next exhibit, CalPERS active strategies have been limited, adding roughly $3.8B in the last five years. We intend to expand our active programs as we build out new capabilities, with the focus of increasing our value add. (Detailed discussion and analysis of excess returns begins on page 49).

Rolling 5-Yr Cumulative Value Added

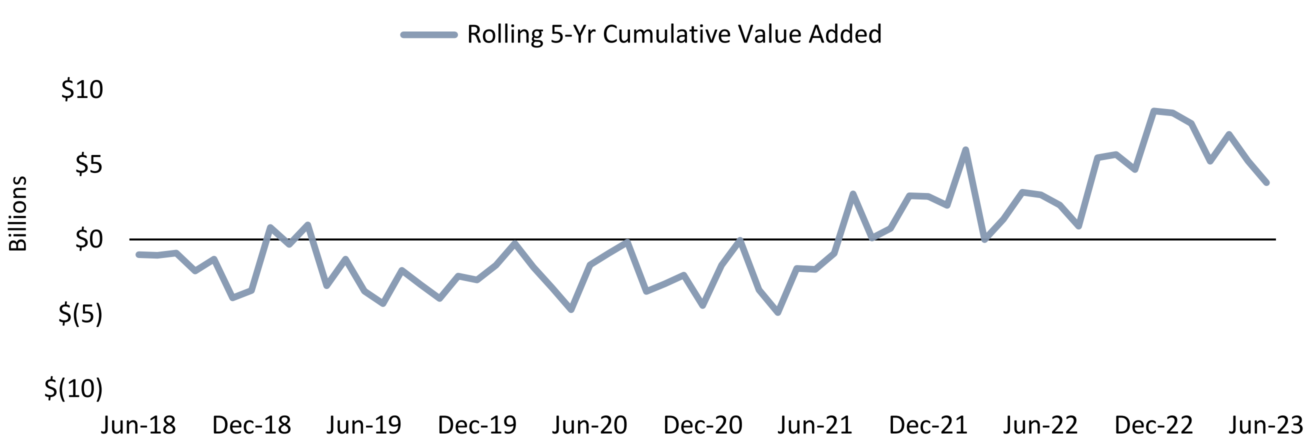


Exhibit 1.2

Section II. Highlights

Public Employees’ Retirement Fund (PERF) Metrics

As of June 30, 2023

$462.8bn Assets Under Management	**7.1%** 10-Yr Total Return	**5.8%** 1-Yr Total Return	**$3.8bn** 5-Yr Cumulative Value Added	**$0.6bn** 1-Yr Cumulative Value Added
13.7% Forecasted Volatility	**14 bps** Forecasted Actionable Tracking Error	**30.3%** Allocation to Private Assets	**2.6x** Tier 1 Liquidity Coverage	**0.1%**[1] 5-Yr CEM Net Value- Added vs US Peers

Report Highlights

Capital Markets

As of June 30, 2023:

- PERF NAV increased by more than $25bn, most of which was driven by public equities, which returned 14.1%
- Fixed Income’s MBS and High Yield 5-Year performance outperformed the benchmark by 17 and 11 basis points respectively, while the IG Corporates outperformed by 33 basis points
- Emerging Market Debt active management deployed $22bn of capital

Private Markets

As of June 30, 2023:

- CalPERS deployed $30.4bn into private assets; net capital deployed (i.e., contributions minus distributions) was +$14.7bn
- Total unfunded commitments to private assets was $66.7bn, an increase of $15.5bn from the prior fiscal year value of $51.2bn
- The growth in commitments reflects our belief in the potential of private asset classes to provide incremental return and diversification benefits

Total Fund

- All key risk metrics (e.g., liquidity, tracking error) remain within standard thresholds
- Total risk, as measured by volatility, was up slightly from prior year by 0.8% to 13.7% on June 30, 2023, in line with expectations for the Strategic Asset Allocation (SAA) implementation path
- Committed $1bn to supporting diverse and underrepresented managers through partnerships with TPG Next and GRM Grosvenor Elevate

Investment Operations

- During the fiscal year PERF allocation underwent substantial changes to implement the Board-adopted SAA from prior year, including continued deployment into private markets and significant realignment of the public market portfolio
- Several key senior leader positions were filled, including the Deputy Chief Investment Officer of Private Markets, Managing Investment Director (MID) of Private Equity, and MID of Sustainable Investing

All performance reported net of investment expenses and annualized for periods greater than 1-Yr.
**Committed Capital amount includes revocable and opt-out commitments*
[1] *For Calendar Year 2021 survey; 2022 data not yet available*

Section II. Highlights

Performance by Segment

Equities performed strongly in fiscal year with other assets mixed

- Cap Weighted significantly outperformed all other segments for the fiscal year with a return of 16.7%
- Income segment fiscal year performance was mixed with Treasury returning (5.6)% vs. High Yield's return of 9.1%
- Private asset fiscal year performance was also mixed with Private Equity and Real Assets respectively returning (2.3)% and (3.1)% vs Private Debt performance of 6.5%

Segment Total Returns as of June 30, 2023

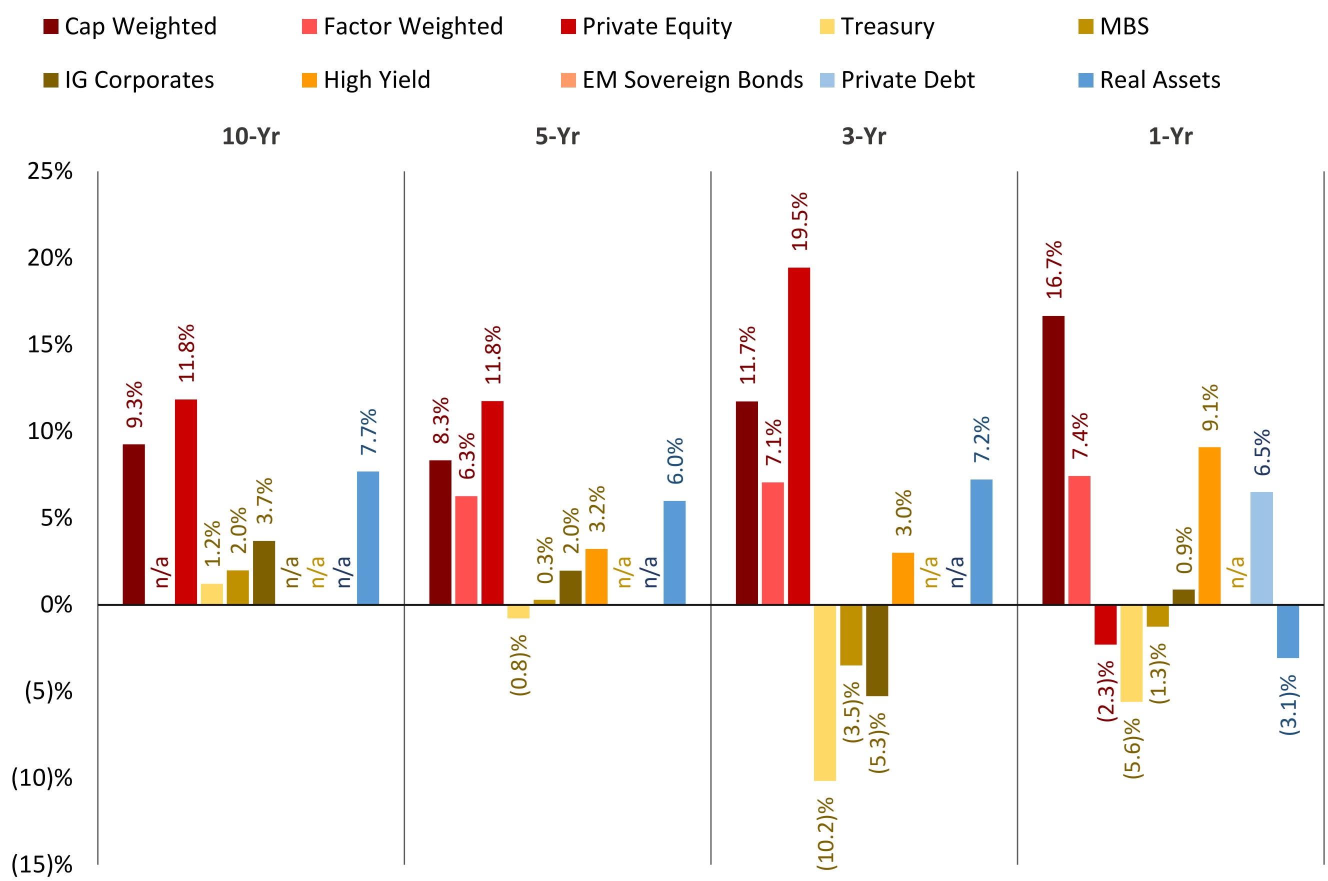


Exhibit 2.1
All performance reported net of investment expenses and annualized for periods greater than 1-Yr.

Section II. Highlights

PERF Allocation Highlights

Significant strategic allocation changes during the fiscal year

- FY 2022-23 saw material changes in PERF's asset mix, reflecting both ongoing emphasis on expanding private market programs, as well as the re-orientation of the public portfolio to improve diversification
- These changes were in line with the Board's 2021 adopted SAA, which increased portfolio complexity in exchange for better diversification and risk adjusted returns
- Key changes include:

2 — *New asset segments introduced: Private Debt and Emerging Market Sovereigns*

$120bn — *Gross notional value transacted across public markets during the year to implement allocation shifts*

$30.4bn — *Gross new deployments into Private Programs ($14.7bn net of distributions)*

2% — *Current level of strategic leverage. This initial step towards Board-adopted 5% target introduces a helpful diversification-enhancing tool in the portfolio*

$10bn — *Increase in CalPERS' effective bank repo funding capacity, improving financing flexibility and available liquidity*

Adoption of active risk budgeting to manage value add

- Introduction of an Active Risk Budgeting framework to help manage CalPERS' internal investment process, focusing on improving benchmark-relative performance
- Risk Budgeting is a staff-level process to facilitate planning, cross-asset risk management, and accountability in value-add activities across public and private asset classes
- Ensures team is targeting appropriate returns for risks being taken

Section II. Highlights

Risk Highlights

Quantitative Risk Metrics

Total and active risk measures increased slightly in FY 2022-23

- The total risk of the portfolio, as measured by volatility, was 13.7% at the end of the fiscal year, an increase of 0.8% from the prior year. This change was in line with expectations for implementation of the new asset allocation
- Actionable tracking error, which quantifies divergence from the policy benchmark primarily in public markets, increased from 10 to 14 bps vs. prior year, in line with initial increases in active management

Risk Drivers

PERF risk is dominated by equities and growth-related assets

- The dominating risk factor in the portfolio is equities, and more broadly growth-oriented factors, which also includes real estate and credit spreads
- The chart below is a "factor decomposition" of PERF risk from the Aladdin risk model. Factors map somewhat to asset classes but offer a cleaner decomposition for assets that combine various drivers. Per this model, equity market risk makes up 74% of total volatility, and the other material contributors (privates, spreads, and foreign exchange) also have highly correlated growth biases
- Recent changes to the SAA do improve diversification across these factors, but have not fundamentally altered the overall growth bias in the portfolio

Risk Factor Decomposition

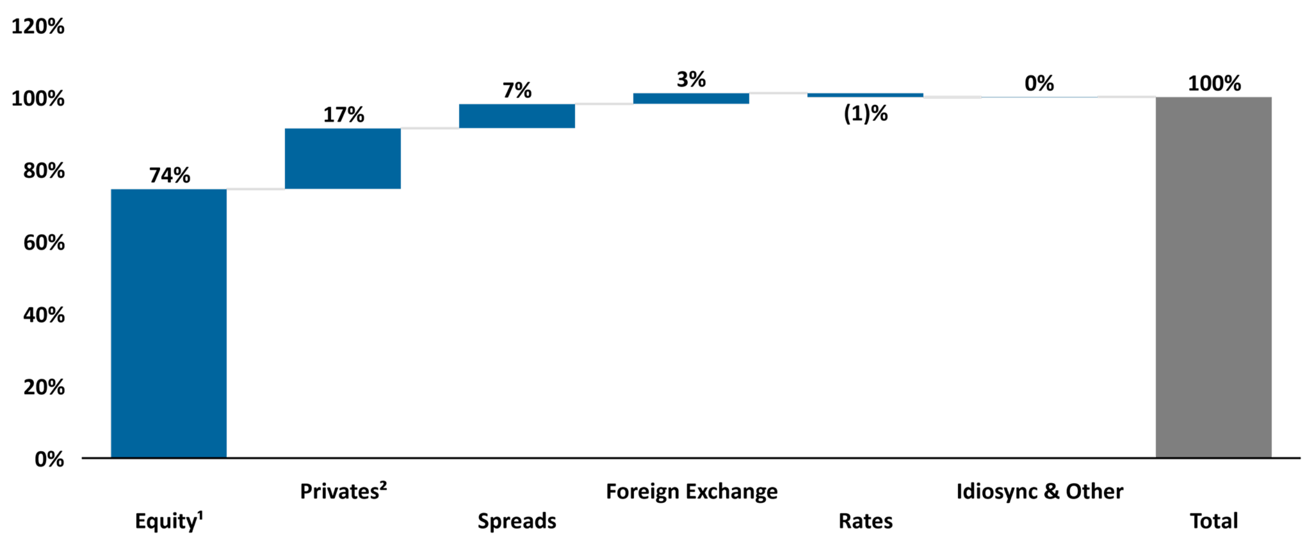


Exhibit 2.2

[1] *"Equity" factor includes the portion of private equity risk explained by public equity factors*

[2] *"Privates" includes contribution from Real Assets plus residual Private Equity risk not explained by public equity factors*

Section II. Highlights

Risk Highlights (cont.)

Liquidity and Leverage

CalPERS liquidity coverage remained adequate as strategic leverage is phased in

- As of June 30, 2023, PERF total leverage was 7.1%, of which 5.1% was active leverage incremental to the benchmark
- Our Strategic Asset Allocation includes leverage, used to improve portfolio diversification and reduce total portfolio risk. We also use leverage actively to support active strategies
- Active Leverage is primarily supporting the Low Liquidity Enhanced Return program assets and slightly above-benchmark leverage in stable core Real Estate
- Liquidity Coverage Ratio (LCR) in the 30-day Tier 1 stress scenario was 2.6x at fiscal year-end. CalPERS manages its financing and cash holdings to maintain adequate coverage and dynamically adjust with financial conditions. The conservative process stress-tests the portfolio across a range of scenarios while optimizing costs and taking advantage of tactical opportunities to provide liquidity when funding markets are inefficiently priced

Diversification

PERF’s size and broad range of assets limits concentration risk

- The PERF holds over 10,000 individual securities and investments across a broad range of asset classes, limiting concentration to any single issuer. The largest issuers are the US Government and its housing finance arms
- Non-US assets comprise 31% of the portfolio, primarily in developed markets and closely tracking global equity benchmarks. Non-US exposures in aggregate are expected to offer either diversification or return benefits as compensation for country-specific risk
- Non-USD currency exposure comprises 24% of the portfolio (the difference between country and currency risk is mainly attributed to FX hedging activities as some non-US assets are currency hedged) and contributes 3% to total risk. The potential risk reduction benefits of hedging are balanced against offsetting cashflow, operational, and timing considerations
- CalPERS’ industry exposures closely track global cap weighted equities. Global weighting helps further diversify industry exposure as different countries can be concentrated in certain sectors

Section II. Highlights

Operational Highlights

Driving Long-Term Sustainability

Managing the CalPERS investment portfolio in an efficient and sustainable manner to generate risk-adjusted returns to pay benefits now and into the future

Key Operational Metrics

10	283/344	23.3bps	8bps	9
# of Trusts Managed	Filled/Total # of Team Members	FY Total PERF Costs	5-Yr CEM Cost Savings	FY 2022-23 Strategic Initiatives

Investment Controls & Operational Risk

- Substantially completed the implementation of physical and technological barriers needed to control the flow of Material Non-Public Information (MNPI), in support of information barriers
- Completed mandatory compliance training for INVO team members focused on investment-related conflicts of interest and regulatory and other issues relevant to INVO's business model
- Updated the investment proposal system to comply with accessibility requirements
- Completed a review of the investment control framework, in support of the CalPERS compliance operating model

Investment Talent & Culture

- FY 2022-23 marked the inception of an Investment Office Talent and Culture Program.
- Several key senior leader positions were filled, including the DCIO Private Markets, the MID, Sustainable Investing, and the MID, Private Equity
- In collaboration with CalPERS Human Resources, completed and/or advanced strategic business initiatives including INVO's Investment Associate, Informal Mentoring, and Onboarding Programs
- Launched "Best-in-Class" mindset to achieve INVO recognition as a destination employer focused on continuous improvement and a performance-driven culture that values Diversity, Equity and Inclusion (DE&I), teamwork, humility, agility, innovation, and resilience

Investment Technology, Data & Performance

- Revamped CIO Report provided to Investment Committee to better synthesize and highlight key information
- Defined Data & Tech Strategy to enable INVO to achieve 2030 investment objectives. Work includes future state architecture and operating model (implementation to be initiated in FY 2023-24, pending approval)

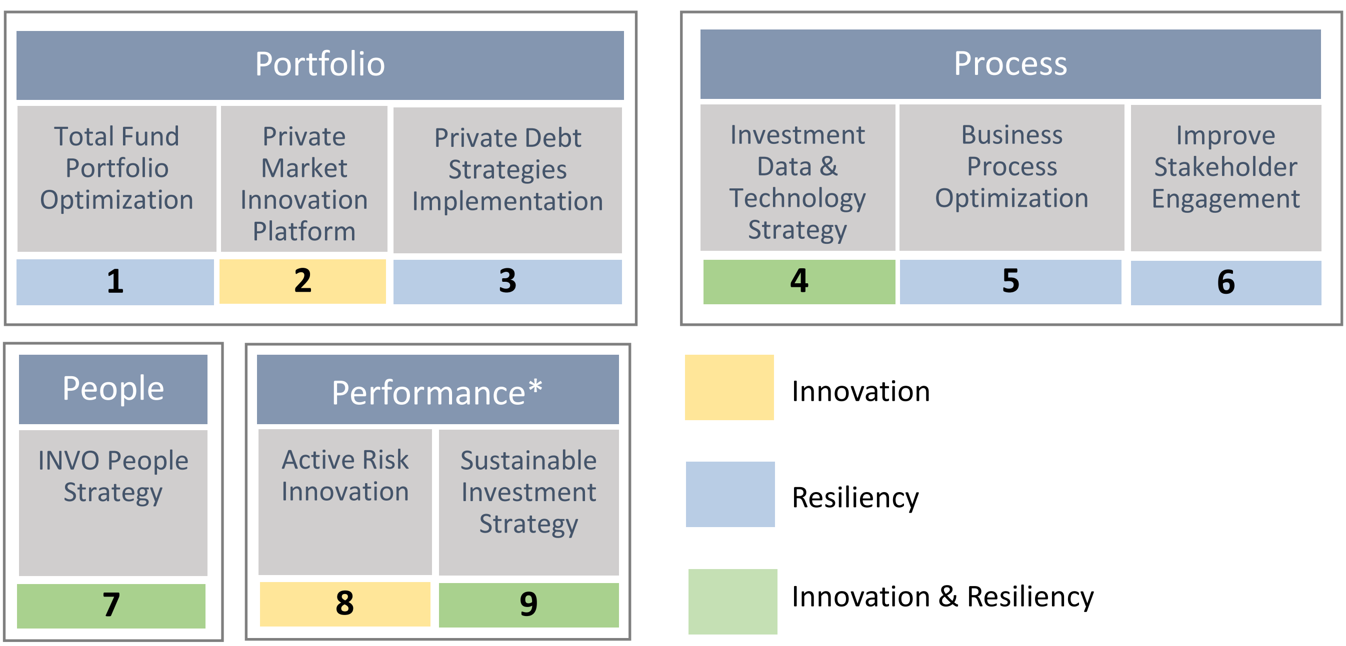
Section II. Highlights

Operational Highlights

FY 2022-23 Strategic Initiatives

Building new capabilities, with the focus on innovation and resiliency

- Nine strategic initiatives were selected based on their abilities to increase dollars value add in both the short and long-term
- The initiatives supported INVO's four Pillars of Portfolio, Process, People, and Performance and drove forward INVOs goals of innovation and resiliency
- Details of the initiatives included:
    - 22 workstreams (approximately 2-3 workstreams per strategic initiative) led by senior managers
    - 147 identified deliverables
    - 85 cross asset class and program area team members, working with the support from technical and analyst team members and consultants
- Insights and advancements gained from these initiatives help to lay the groundwork in becoming a "Best-in-Class" Investment Office



**Introducing new or reviewing existing strategies to drive alpha*

Exhibit 2.3

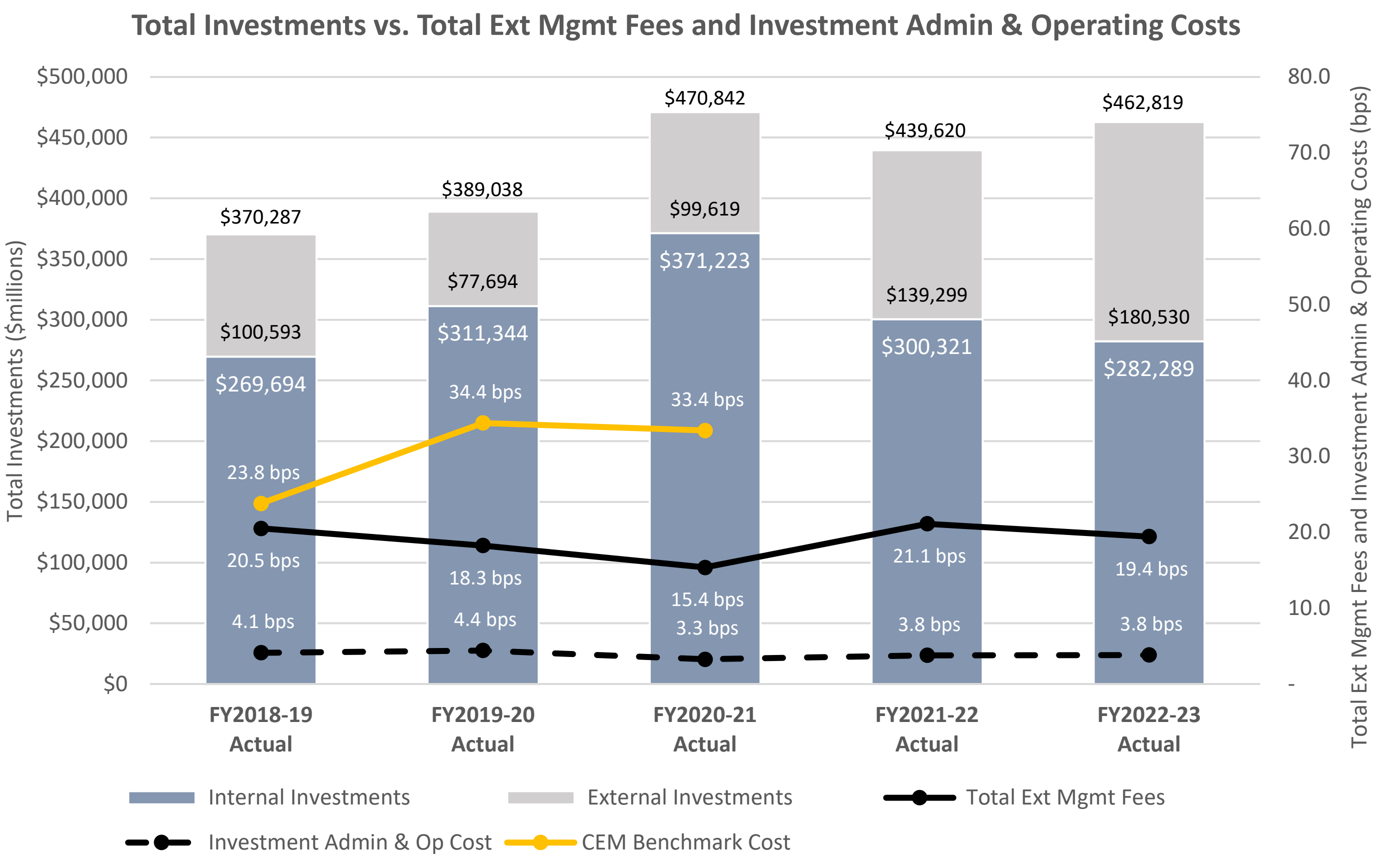
Section II. Highlights

Operational Highlights

PERF Investment Expenses FY 2018-19 thru FY 2022-23

Managing costs to promote long-term sustainability

- From FY 2018-19 through FY 2020-21, PERF External Management Fee bps share of assets decreased
- Under the new SAA, private assets and active management increased in FY 2021-22 and FY 2022-23, which resulted in an increase in External Management Fee bps compared to prior years
- Controllable Investment Admin & Operating Cost bps have remained relatively flat over the five-year period
- As responsible stewards of the fund, we have continued to focus on being deliberate and cost effective when incurring expenses, which has allowed us to consistently remain low cost compared to our peers



[1] Bps calc based on total AUM and expense type
[2] PE profit sharing paid included in unrealized gain/loss general ledger. Dollars paid included in Investment Section of Annual Consolidated Financial Report
[3] CEM Benchmark Costs are through the current CEM report. Incomplete data due to lag in CEM reporting.

Exhibit 2.4

Section II. Highlights

Operational Highlights

Investment Office Functional Org Chart

Innovative functional design to boost Investment Office efficiency

Over the last fiscal year, strategic organizational structure design adjustments were made to optimize efficiencies and better align roles and responsibilities in support of INVO's mission. These include:

- Creation of the *Investment Technology, Data, & Performance* unit to further build out investment technology infrastructure and performance reporting necessary to support and execute on CalPERS investment strategies within the context of the new strategic asset allocation
- Creation of the *Investment Talent & Culture* Program to dedicate focus on building a high-performance culture, unlocking a continuous growth mindset, and advancing recognition of CalPERS Investment Office as a "best-in-class" destination employer
- Creation of the *INVO Relations* team to apply a strategic focus on improving our communications with our Board, and internal and external stakeholders
- The *Board Governance and Sustainability* moved into the Investment office and rebranded as *Sustainable Investing,* with an emphasis on integration of sustainability themes into the investment activity across the asset classes
- Integration of investment risk functions into the Total Fund Portfolio Management (TFPM) Program to more closely align with TFPM's responsibility for SAA implementation, investment risk oversight, and portfolio design

INVO Functional Org Chart

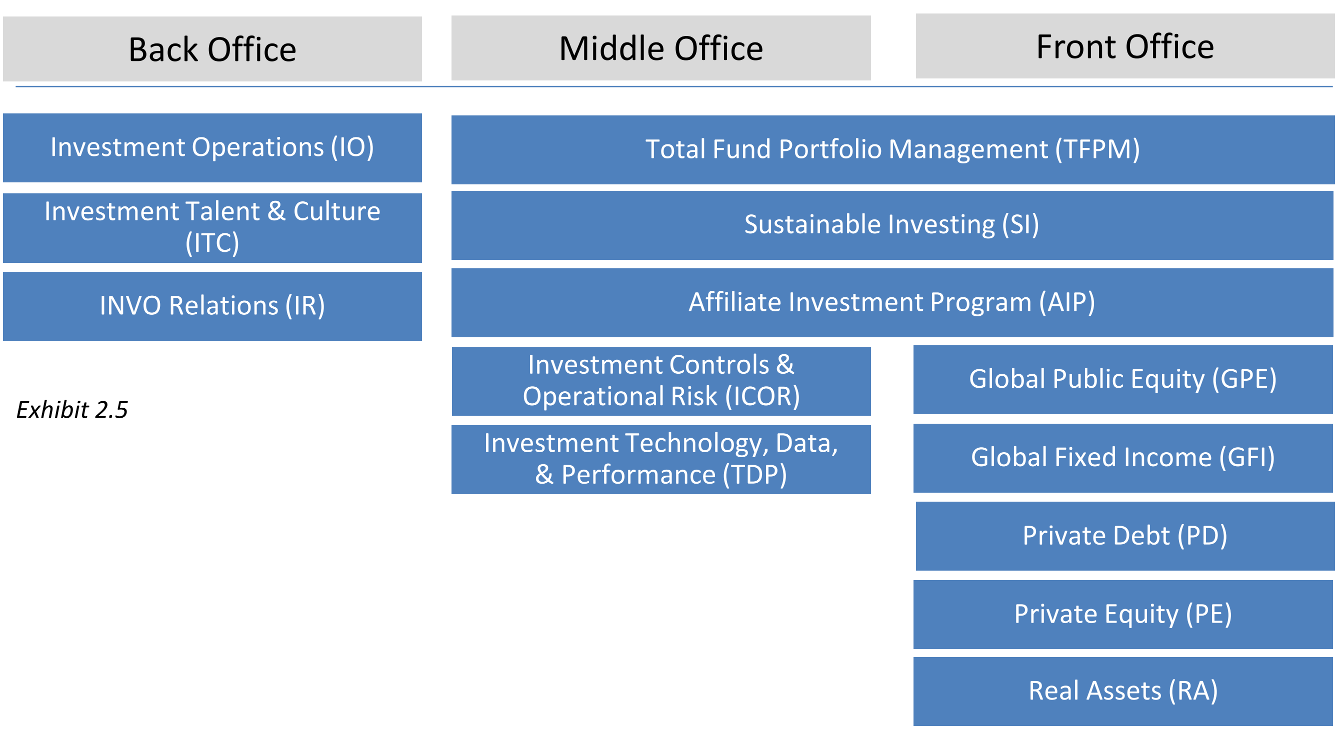


Exhibit 2.5

Section III. Performance Tables

PERF Returns As of June 30, 2023

Total PERF performance was driven by Public Equity performance

- Returns for the 10-Yr and 20-Yr periods were at or above a 7.0% return
- PERF FY 2022-23 performance was 5.8% vs. benchmark return of 5.6%, for excess return of 25 bps
- Public Equity was the top performing asset class for the Fiscal Year with a 14.1% return
- Over the past 5 years, the PERF has generated 17 bps/yr of excess performance, or +$3.8bn in value add above benchmark

	End Value (bn)	20-Yr	10-Yr	5-Yr	1-Yr	FYTD	1-Qtr
Total PERF	**$ 462.8**	**7.0%**	**7.1%**	**6.1%**	**5.8%**	**5.8%**	**2.4%**
Benchmark		7.4%	7.0%	5.9%	5.6%	5.6%	2.7%
Excess		(39) bps	5 bps	17 bps	25 bps	25 bps	(33) bps
Cumulative Value Added (bn)		$ (13.0)	$ 2.8	$ 3.8	$ 0.6	$ 0.6	$ (1.5)
Public Equity	**$ 208.8**	**8.2%**	**8.9%**	**7.6%**	**14.1%**	**14.1%**	**5.2%**
Benchmark		8.3%	8.8%	7.5%	14.1%	14.1%	5.3%
Excess		(13) bps	7 bps	9 bps	(7) bps	(7) bps	(3) bps
Cumulative Value Added (bn)		$ (0.6)	$ 1.1	$ 0.9	$ (0.1)	$ (0.1)	$ (0.1)
Private Equity	**$ 59.7**	**12.2%**	**11.8%**	**11.8%**	**(2.3)%**	**(2.3)%**	**2.8%**
Benchmark		12.7%	11.4%	8.7%	(5.9)%	(5.9)%	7.6%
Excess		(56) bps	42 bps	300 bps	362 bps	362 bps	(478) bps
Cumulative Value Added (bn)		$ (6.1)	$ 0.2	$ 3.5	$ (0.0)	$ (0.0)	$ (2.7)
Income	**$ 122.2**	**4.4%**	**2.4%**	**1.0%**	**(0.0)%**	**(0.0)%**	**(0.2)%**
Benchmark		3.8%	2.0%	0.8%	(0.0)%	(0.0)%	(0.2)%
Excess		65 bps	47 bps	21 bps	(1) bps	(1) bps	5 bps
Cumulative Value Added (bn)		$ 5.8	$ 3.0	$ 1.2	$ 0.0	$ 0.0	$ 0.1
Real Assets	**$ 70.4**	**5.7%**	**7.7%**	**6.0%**	**(3.1)%**	**(3.1)%**	**(1.8)%**
Benchmark		8.4%	8.0%	6.5%	(4.0)%	(4.0)%	(3.4)%
Excess		(277) bps	(36) bps	(49) bps	97 bps	97 bps	159 bps
Cumulative Value Added (bn)		$ (13.7)	$ (2.3)	$ (2.1)	$ 0.4	$ 0.4	$ 1.1
Private Debt	**$ 10.3**	**-**	**-**	**-**	**6.5%**	**6.5%**	**3.3%**
Benchmark		-	-	-	3.7%	3.7%	3.2%
Excess		-	-	-	280 bps	280 bps	0 bps
Cumulative Value Added (bn)		-	-	-	$ 0.1	$ 0.1	$ (0.0)
Net Financing	**$ (24.3)**	**-**	**-**	**-**	**-**	**-**	**-**
Other Trust Level	**$ 15.7**	**-**	**-**	**-**	**-**	**-**	**-**

Exhibit 3.1
All performance reported net of investment expenses and annualized for periods greater than 1-Yr unless noted as cumulative.

Section III. Performance Tables

PERF Capital Market Returns As of June 30, 2023

Cap Weighted equities outperformed all other public market segments

- Cap Weighted was the highest performing segment across all time periods with total return exceeding +8% for the 5-, 10-, and 20-year periods

	End Value (bn)	20-Yr	10-Yr	5-Yr	1-Yr	FYTD	1-Qtr
Cap Weighted	**$ 153.3**	**8.4%**	**9.3%**	**8.3%**	**16.7%**	**16.7%**	**6.2%**
Benchmark		8.5%	9.2%	8.2%	16.8%	16.8%	6.2%
Excess		(12) bps	7 bps	10 bps	(11) bps	(11) bps	(5) bps
Cumulative Value Added (bn)		$ (0.8)	$ 0.8	$ 0.7	$ (0.1)	$ (0.1)	$ (0.1)
Factor Weighted	**$ 55.4**	**-**	**-**	**6.3%**	**7.4%**	**7.4%**	**2.7%**
Benchmark		-	-	6.3%	7.4%	7.4%	2.7%
Excess		-	-	1 bps	(0) bps	(0) bps	2 bps
Cumulative Value Added (bn)		-	-	$ 0.0	$ 0.0	$ 0.0	$ 0.0
Treasury	**$ 17.1**	**-**	**1.2%**	**(0.8)%**	**(5.6)%**	**(5.6)%**	**(2.1)%**
Benchmark		-	1.2%	(0.7)%	(5.6)%	(5.6)%	(2.1)%
Excess		-	(1) bps	(8) bps	0 bps	0 bps	(0) bps
Cumulative Value Added (bn)		-	$ (0.2)	$ (0.2)	$ 0.0	$ 0.0	$ (0.0)
MBS	**$ 23.5**	**3.5%**	**2.0%**	**0.3%**	**(1.3)%**	**(1.3)%**	**(0.6)%**
Benchmark		2.9%	1.2%	0.1%	(1.5)%	(1.5)%	(0.6)%
Excess		64 bps	81 bps	17 bps	24 bps	24 bps	7 bps
Cumulative Value Added (bn)		$ 1.2	$ 0.9	$ 0.2	$ 0.1	$ 0.1	$ 0.0
IG Corporates	**$ 30.7**	**5.3%**	**3.7%**	**2.0%**	**0.9%**	**0.9%**	**(0.5)%**
Benchmark		4.7%	3.2%	1.6%	1.3%	1.3%	(0.5)%
Excess		60 bps	48 bps	33 bps	(40) bps	(40) bps	5 bps
Cumulative Value Added (bn)		$ 0.3	$ 0.3	$ 0.3	$ (0.1)	$ (0.1)	$ 0.0
High Yield	**$ 20.9**	**-**	**-**	**3.2%**	**9.1%**	**9.1%**	**1.5%**
Benchmark		-	-	3.1%	8.9%	8.9%	1.4%
Excess		-	-	11 bps	16 bps	16 bps	7 bps
Cumulative Value Added (bn)		-	-	$ 0.1	$ 0.0	$ 0.0	$ 0.0
EM Sovereign Bonds	**$ 23.5**	**-**	**-**	**-**	**-**	**-**	**1.2%**
Benchmark		-	-	-	-	-	1.0%
Excess		-	-	-	-	-	17 bps
Cumulative Value Added (bn)		-	-	-	-	-	$ 0.0

Exhibit 3.2
All performance reported net of investment expenses and annualized for periods greater than 1-Yr unless noted as cumulative.

Section III. Performance Tables

PERF Private Market Returns As of June 30, 2023

Private asset results were mixed for the fiscal year

- Private Debt and Infrastructure respectively returned positive +6.5% and +4.8% for the fiscal year while Private Equity and Real Estate respectively returned (2.3)% and (5.1)%
- Private Equity and Infrastructure total returns exceeded +11% for the 10-year period ending 6/30/2023

	End Value (bn)	20-Yr	10-Yr	5-Yr	1-Yr	FYTD	1-Qtr
Private Equity	**$ 59.7**	**12.2%**	**11.8%**	**11.8%**	**(2.3)%**	**(2.3)%**	**2.8%**
Benchmark		12.7%	11.4%	8.7%	(5.9)%	(5.9)%	7.6%
Excess		(56) bps	42 bps	300 bps	362 bps	362 bps	(478) bps
Cumulative Value Added (bn)		$ (6.1)	$ 0.2	$ 3.5	$ (0.0)	$ (0.0)	$ (2.7)
Private Debt	**$ 10.3**	**-**	**-**	**-**	**6.5%**	**6.5%**	**3.3%**
Benchmark		-	-	-	3.7%	3.7%	3.2%
Excess		-	-	-	280 bps	280 bps	0 bps
Cumulative Value Added (bn)		-	-	-	$ 0.1	$ 0.1	$ (0.0)
Infrastructure	**$ 14.6**	**-**	**11.2%**	**7.5%**	**4.8%**	**4.8%**	**2.3%**
Benchmark		-	6.0%	6.5%	(4.0)%	(4.0)%	(3.4)%
Excess		-	519 bps	99 bps	883 bps	883 bps	571 bps
Cumulative Value Added (bn)		-	$ 1.6	$ 0.5	$ 1.2	$ 1.2	$ 0.8
Real Estate	**$ 55.5**	**5.4%**	**7.8%**	**5.9%**	**(5.1)%**	**(5.1)%**	**(2.8)%**
Benchmark		8.9%	8.4%	6.5%	(4.0)%	(4.0)%	(3.4)%
Excess		(350) bps	(60) bps	(54) bps	(102) bps	(102) bps	56 bps
Cumulative Value Added (bn)		$ (14.6)	$ (2.9)	$ (2.2)	$ (0.9)	$ (0.9)	$ 0.3
Forestland	**$ 0.3**	**-**	**0.1%**	**1.2%**	**13.4%**	**13.4%**	**(1.0)%**
Benchmark		-	6.3%	6.5%	(4.0)%	(4.0)%	(3.4)%
Excess		-	(621) bps	(531) bps	1,745 bps	1,745 bps	242 bps
Cumulative Value Added (bn)		-	$ (1.1)	$ (0.4)	$ 0.1	$ 0.1	$ 0.0

Exhibit 3.3
All performance reported net of investment expenses and annualized for periods greater than 1-Yr unless noted as cumulative.

Section III. Performance Tables

Affiliate Investment Program Returns As of June 30, 2023

Affiliate returns were in line with respective asset allocations

- Affiliate funds are largely passively managed strategies, with realized returns and volatility in line with the assigned asset allocation and benchmarks
- Positive excess returns are largely due to structural tax advantages of non-US equities vs their respective benchmarks

Defined Benefit, Health, and OPEB Plans	End Value (mm)	20-Yr	10-Yr	5-Yr	1-Yr	FYTD	1-Qtr
Judges' Retirement Fund	**$ 47.0**	**1.5%**	**1.1%**	**1.7%**	**4.1%**	**4.1%**	**1.3%**
Benchmark		1.4%	1.0%	1.6%	3.6%	3.6%	1.2%
Excess		14 bps	13 bps	15 bps	51 bps	51 bps	13 bps
Judges' Retirement System Fund II	**$ 2,319.1**	**6.6%**	**6.2%**	**5.2%**	**7.1%**	**7.1%**	**2.7%**
Benchmark		6.4%	6.0%	4.9%	6.7%	6.7%	2.7%
Excess		12 bps	26 bps	29 bps	32 bps	32 bps	8 bps
Legislators' Retirement System Fund	**$ 95.7**	**5.3%**	**4.1%**	**3.1%**	**0.8%**	**0.8%**	**0.2%**
Benchmark		5.2%	3.9%	3.0%	0.7%	0.7%	0.2%
Excess		15 bps	21 bps	13 bps	6 bps	6 bps	1 bps
Health Care Fund	**$ 205.1**	**3.1%**	**1.6%**	**0.8%**	**(1.0)%**	**(1.0)%**	**(0.9)%**
Benchmark		3.0%	1.5%	0.8%	(0.9)%	(0.9)%	(0.8)%
Excess		10 bps	13 bps	(1) bps	(5) bps	(5) bps	(1) bps
Long-Term Care Fund	**$ 4,845.3**	**4.9%**	**3.3%**	**2.6%**	**(0.6)%**	**(0.6)%**	**0.0%**
Benchmark		4.8%	3.2%	2.5%	(0.7)%	(0.7)%	(0.0)%
Excess		14 bps	13 bps	7 bps	7 bps	7 bps	6 bps
CERBT Strategy 1 Fund	**$14,982.6**	**-**	**6.3%**	**5.3%**	**6.4%**	**6.4%**	**2.6%**
Benchmark		-	6.0%	5.0%	6.3%	6.3%	2.5%
Excess		-	32 bps	22 bps	16 bps	16 bps	6 bps
CERBT Strategy 2 Fund	**$ 1,859.5**	**-**	**5.1%**	**4.1%**	**3.6%**	**3.6%**	**1.5%**
Benchmark		-	4.9%	4.0%	3.5%	3.5%	1.4%
Excess		-	27 bps	14 bps	10 bps	10 bps	3 bps
CERBT Strategy 3 Fund	**$ 773.2**	**-**	**4.2%**	**3.3%**	**1.6%**	**1.6%**	**0.6%**
Benchmark		-	3.9%	3.2%	1.5%	1.5%	0.6%
Excess		-	26 bps	10 bps	7 bps	7 bps	2 bps
CEPPT Strategy 1 Fund	**$ 96.7**	**-**	**-**	**-**	**5.2%**	**5.2%**	**1.8%**
Benchmark		-	-	-	5.1%	5.1%	1.8%
Excess		-	-	-	11 bps	11 bps	2 bps
CEPPT Strategy 2 Fund	**$ 43.5**	**-**	**-**	**-**	**2.3%**	**2.3%**	**0.6%**
Benchmark		-	-	-	2.4%	2.4%	0.6%
Excess		-	-	-	(5) bps	(5) bps	(0) bps

Exhibit 3.4

All performance reported net of investment expenses and annualized for periods greater than 1-Yr.

Section III. Performance Tables

Affiliate Investment Program Returns (cont.) As of June 30, 2023

Target Date Fund returns were in line with respective asset allocations

- Longer dated funds outperformed, in line with more aggressive risk profiles (higher equity allocations)

Supplemental Income Plans (457/SCP Plan)	End Value (mm)	20-Yr	10-Yr	5-Yr	1-Yr	FYTD	1-Qtr
Target Income Fund	**$ 184.0**	**-**	**3.6%**	**3.7%**	**4.8%**	**4.8%**	**1.5%**
Benchmark		-	3.5%	3.6%	4.6%	4.6%	1.5%
Excess		-	14	15	11	11	4
Target 2020 Fund	**$ 161.2**	**-**	**4.5%**	**4.6%**	**6.4%**	**6.4%**	**2.2%**
Benchmark		-	4.3%	4.4%	6.3%	6.3%	2.2%
Excess		-	14	18	12	12	4
Target 2025 Fund	**$ 220.4**	**-**	**5.4%**	**5.4%**	**8.6%**	**8.6%**	**3.1%**
Benchmark		-	5.2%	5.2%	8.5%	8.5%	3.0%
Excess		-	17	20	14	14	5
Target 2030 Fund	**$ 221.5**	**-**	**6.1%**	**6.0%**	**10.5%**	**10.5%**	**3.8%**
Benchmark		-	5.9%	5.9%	10.3%	10.3%	3.7%
Excess		-	14	14	16	16	6
Target 2035 Fund	**$ 152.4**	**-**	**6.9%**	**6.8%**	**12.9%**	**12.9%**	**4.8%**
Benchmark		-	6.7%	6.6%	12.7%	12.7%	4.7%
Excess		-	15	17	17	17	6
Target 2040 Fund	**$ 141.9**	**-**	**7.6%**	**7.4%**	**15.0%**	**15.0%**	**5.5%**
Benchmark		-	7.4%	7.2%	14.8%	14.8%	5.5%
Excess		-	17	17	19	19	7
Target 2045 Fund	**$ 85.3**	**-**	**7.9%**	**7.6%**	**15.4%**	**15.4%**	**5.6%**
Benchmark		-	7.7%	7.4%	15.2%	15.2%	5.6%
Excess		-	16	17	20	20	7
Target 2050 Fund	**$ 53.1**	**-**	**7.9%**	**7.6%**	**15.4%**	**15.4%**	**5.6%**
Benchmark		-	7.7%	7.4%	15.2%	15.2%	5.6%
Excess		-	17	17	20	20	7
Target 2055 Fund	**$ 20.2**	**-**	**-**	**7.6%**	**15.4%**	**15.4%**	**5.6%**
Benchmark		-	-	7.4%	15.2%	15.2%	5.6%
Excess		-	-	17	20	20	7
Target 2060 Fund	**$ 9.9**	**-**	**-**	**-**	**15.4%**	**15.4%**	**5.6%**
Benchmark		-	-	-	15.2%	15.2%	5.6%
Excess		-	-	-	20	20	7
Target 2065 Fund[1]	**$ 1.0**	**-**	**-**	**-**	**-**	**-**	**5.6%**
Benchmark		-	-	-	-	-	5.6%
Excess		-	-	-	-	-	7

Exhibit 3.5
All performance reported net of investment expenses and annualized for periods greater than 1-Yr.
[1] FYTD performance is not shown for the Target 2065 Fund, because it incepted Nov 2022.

Section III. Performance Tables

Affiliate Investment Program Returns (cont.) As of June 30, 2023

Core Fund returns were in line with benchmarks

- Core Funds closely track their respective benchmarks
- Positive excess returns in ex-US equities (Global All Cap) are driven by structural tax advantages vs its benchmark

Supplemental Income Plans (457/SCP Plan) (cont.)	End Value (mm)	20-Yr	10-Yr	5-Yr	1-Yr	FYTD	1-Qtr
SSgA STIF	**$ 122.6**	**-**	**1.1%**	**1.8%**	**4.1%**	**4.1%**	**1.3%**
Benchmark		-	1.0%	1.6%	3.6%	3.6%	1.2%
Excess		-	16	21	53	53	14
SIP US Short Term Bond Core	**$ 37.4**	**-**	**-**	**1.1%**	**0.6%**	**0.6%**	**(0.4)%**
Benchmark		-	-	1.1%	0.5%	0.5%	(0.4)%
Excess		-	-	-4	3	3	-2
SIP US Bond Core	**$ 52.9**	**-**	**-**	**0.8%**	**(0.9)%**	**(0.9)%**	**(0.8)%**
Benchmark		-	-	0.8%	(0.9)%	(0.9)%	(0.8)%
Excess		-	-	2	0	0	0
SIP Real Asset Core	**$ 19.9**	**-**	**-**	**5.8%**	**(0.7)%**	**(0.7)%**	**(1.9)%**
Benchmark		-	-	5.7%	(0.7)%	(0.7)%	(1.9)%
Excess		-	-	8	1	1	0
SIP Russell All Cap Core	**$ 677.2**	**-**	**-**	**11.4%**	**18.9%**	**18.9%**	**8.4%**
Benchmark		-	-	11.4%	19.0%	19.0%	8.4%
Excess		-	-	3	-2	-2	0
SIP Global All Cap EX-US	**$ 71.9**	**-**	**-**	**3.7%**	**13.0%**	**13.0%**	**2.6%**
Benchmark		-	-	3.4%	12.5%	12.5%	2.4%
Excess		-	-	32	54	54	18

Exhibit 3.6
All performance reported net of investment expenses and annualized for periods greater than 1-Yr

Section III. Performance Tables

Affiliate Investment Program Returns (cont.) As of June 30, 2023

Target Date Fund returns were in line with respective asset allocations

- Longer dated funds outperformed, in line with more aggressive risk profiles (higher equity allocations)

Supplemental Income Plans (457/SCP Plan)	End Value (mm)	20-Yr	10-Yr	5-Yr	1-Yr	FYTD	1-Qtr
Target Income Fund	**$ 184.0**	**-**	**3.6%**	**3.7%**	**4.8%**	**4.8%**	**1.5%**
Benchmark		-	3.5%	3.6%	4.6%	4.6%	1.5%
Excess		-	14	15	11	11	4
Target 2020 Fund	**$ 161.2**	**-**	**4.5%**	**4.6%**	**6.4%**	**6.4%**	**2.2%**
Benchmark		-	4.3%	4.4%	6.3%	6.3%	2.2%
Excess		-	14	18	12	12	4
Target 2025 Fund	**$ 220.4**	**-**	**5.4%**	**5.4%**	**8.6%**	**8.6%**	**3.1%**
Benchmark		-	5.2%	5.2%	8.5%	8.5%	3.0%
Excess		-	17	20	14	14	5
Target 2030 Fund	**$ 221.5**	**-**	**6.1%**	**6.0%**	**10.5%**	**10.5%**	**3.8%**
Benchmark		-	5.9%	5.9%	10.3%	10.3%	3.7%
Excess		-	14	14	16	16	6
Target 2035 Fund	**$ 152.4**	**-**	**6.9%**	**6.8%**	**12.9%**	**12.9%**	**4.8%**
Benchmark		-	6.7%	6.6%	12.7%	12.7%	4.7%
Excess		-	15	17	17	17	6
Target 2040 Fund	**$ 141.9**	**-**	**7.6%**	**7.4%**	**15.0%**	**15.0%**	**5.5%**
Benchmark		-	7.4%	7.2%	14.8%	14.8%	5.5%
Excess		-	17	17	19	19	7
Target 2045 Fund	**$ 85.3**	**-**	**7.9%**	**7.6%**	**15.4%**	**15.4%**	**5.6%**
Benchmark		-	7.7%	7.4%	15.2%	15.2%	5.6%
Excess		-	16	17	20	20	7
Target 2050 Fund	**$ 53.1**	**-**	**7.9%**	**7.6%**	**15.4%**	**15.4%**	**5.6%**
Benchmark		-	7.7%	7.4%	15.2%	15.2%	5.6%
Excess		-	17	17	20	20	7
Target 2055 Fund	**$ 20.2**	**-**	**-**	**7.6%**	**15.4%**	**15.4%**	**5.6%**
Benchmark		-	-	7.4%	15.2%	15.2%	5.6%
Excess		-	-	17	20	20	7
Target 2060 Fund	**$ 9.9**	**-**	**-**	**-**	**15.4%**	**15.4%**	**5.6%**
Benchmark		-	-	-	15.2%	15.2%	5.6%
Excess		-	-	-	20	20	7
Target 2065 Fund[1]	**$ 1.0**	**-**	**-**	**-**	**-**	**-**	**5.6%**
Benchmark		-	-	-	-	-	5.6%
Excess		-	-	-	-	-	7

Exhibit 3.7
All performance reported net of investment expenses and annualized for periods greater than 1-Yr
[1] FYTD performance is not shown for the Target 2065 Fund, because it incepted Nov 2022

Section III. Performance Tables

Affiliate Investment Program Returns (cont.) As of June 30, 2023

Core Fund returns were in line with benchmarks

- Core Funds closely track their respective benchmarks
- Positive excess returns in ex-US equities (Global All Cap) are driven by structural tax advantages versus its benchmark

Supplemental Income Plans (457/SCP Plan) (cont.)	**End Value (mm)**	**20-Yr**	**10-Yr**	**5-Yr**	**1-Yr**	**FYTD**	**1-Qtr**
SSgA STIF	**$ 122.6**	**-**	**1.1%**	**1.8%**	**4.1%**	**4.1%**	**1.3%**
Benchmark		-	1.0%	1.6%	3.6%	3.6%	1.2%
Excess		-	16	21	53	53	14
SIP US Short Term Bond Core	**$ 37.4**	**-**	**-**	**1.1%**	**0.6%**	**0.6%**	**(0.4)%**
Benchmark		-	-	1.1%	0.5%	0.5%	(0.4)%
Excess		-	-	-4	3	3	-2
SIP US Bond Core	**$ 52.9**	**-**	**-**	**0.8%**	**(0.9)%**	**(0.9)%**	**(0.8)%**
Benchmark		-	-	0.8%	(0.9)%	(0.9)%	(0.8)%
Excess		-	-	2	0	0	0
SIP Real Asset Core	**$ 19.9**	**-**	**-**	**5.8%**	**(0.7)%**	**(0.7)%**	**(1.9)%**
Benchmark		-	-	5.7%	(0.7)%	(0.7)%	(1.9)%
Excess		-	-	8	1	1	0
SIP Russell All Cap Core	**$ 677.2**	**-**	**-**	**11.4%**	**18.9%**	**18.9%**	**8.4%**
Benchmark		-	-	11.4%	19.0%	19.0%	8.4%
Excess		-	-	3	-2	-2	0
SIP Global All Cap EX-US	**$ 71.9**	**-**	**-**	**3.7%**	**13.0%**	**13.0%**	**2.6%**
Benchmark		-	-	3.4%	12.5%	12.5%	2.4%
Excess		-	-	32	54	54	18

Exhibit 3.8
All performance reported net of investment expenses and annualized for periods greater than 1-Yr

Section IV. Markets and Economy

Asset Returns FY 2022-23

Multiple influences impacted market returns over the fiscal year

Returns over the first half of FY 2022-23 were weak to modest, whereas in the second half of the fiscal year growth assets appreciated strongly. Equity markets reported the largest positive return over the fiscal year; most of the returns occurred in the second half. The following discussion describes the drivers behind these moves.

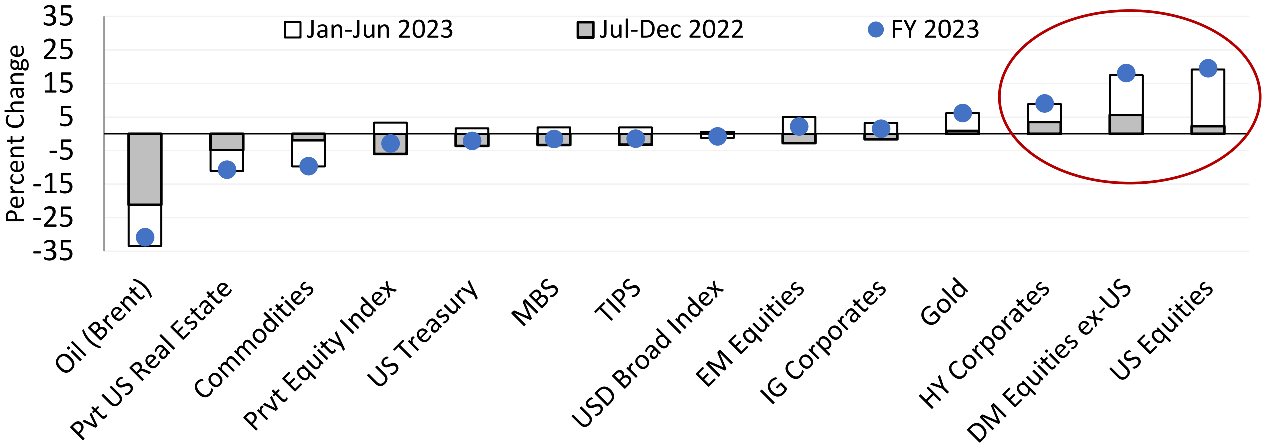


Exhibit 4.1 Sources: FactSet, Haver Analytics, CalPERS calculations. Total return, except gold, oil, commodities, US dollar

Weak expectations for growth over 2022 and 2023 were not realized

In the first half of FY 2022-23, economists anticipated a recession in Europe in 2022 and a recession in the US in 2023. Europe avoided a material contraction after a mild winter and fiscal policies that addressed high energy prices bolstered consumption (compared to expectations). In the US, a tight labor market; solid household balance sheets; and the deployment of excess savings accumulated during the pandemic supported robust spending. Expectations for firms' earnings commensurately improved from its lows in October 2022. This provided a tailwind to equity returns, which ended the fiscal year 14% higher, bolstered by a narrow group of leaders. Credit spreads tightened in response to better-than-expected economic fundamentals.

Expectations for 2023 real economic activity followed a U-shape over the fiscal year

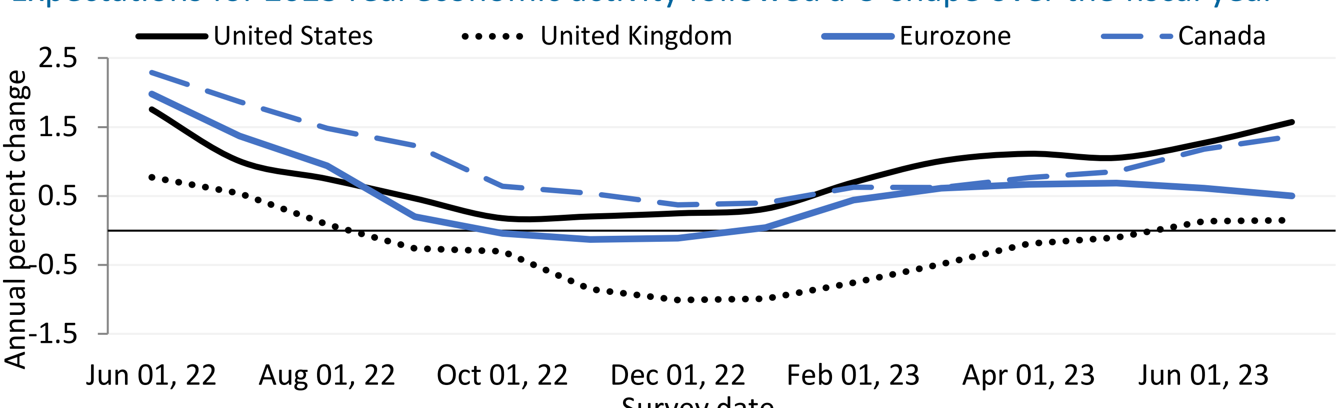


Exhibit 4.2 Source: Consensus Economics Inc. Expectations for December 2023

Section IV. Markets and Economy

Macroeconomic Drivers of 2023 Returns

Policy support provided a cushion for decelerating economic growth

Official policy support quelled bouts of volatility over the fiscal year, cushioning against a potential protracted downturn in asset markets. There were several notable events: the UK LDI crisis; a rapid deterioration in market dynamics for some fragile Emerging Market and Developing Economics; and the US regional banking turmoil in early 2023. Official policy intervention responded rapidly; while the US debt ceiling deliberations in mid-2023 were agreed before the debt-ceiling limit was reached. Consequently, the periods of rising market volatility and greater uncertainty were short-lived.

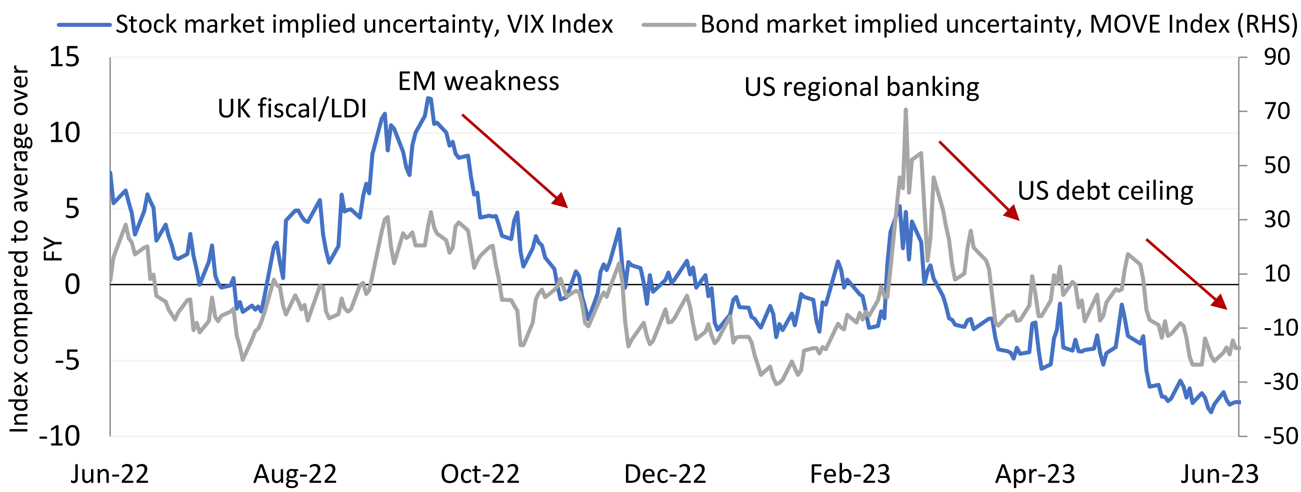


Exhibit 4.3 Sources: FactSet, Bloomberg Financial L.P, CalPERS' calculations

Policy normalization continued

Central banks continued to raise interest rates, albeit at a slower pace in 2023. Higher interest rates revalued asset classes such as real assets, while presenting a more challenging environment for private equity. More generally though, the synchronized monetary policy tightening – both in pace and in size – did not slow economic growth to the extent many commentators expected. Financial conditions are a drag on growth but are not considered exceptionally tight compared to history.

Central banks simultaneously lift short-term interest rates towards historical averages

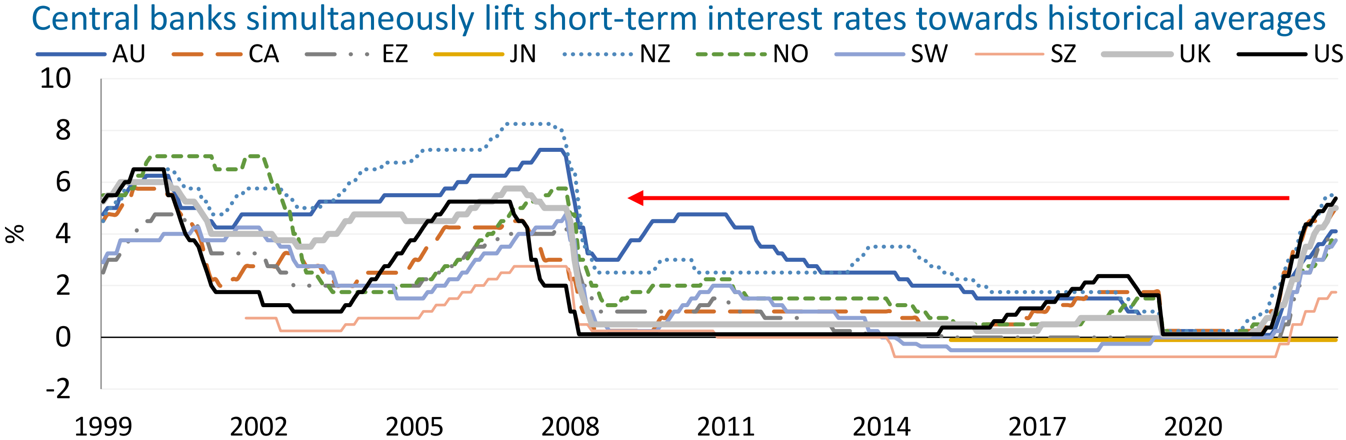


Exhibit 4.4 Sources: Haver Analytics, central bank websites, CalPERS' calculations

Section IV. Markets and Economy

Recent trends in inflation are anticipated to continue

Headline inflation improved, in line with expectations

Headline inflation improved (fell) over the fiscal year, broadly in line with expectations. Looking ahead, analysts anticipate headline inflation to continue to ease back to 2-2½% over 2024. Risks are delicately balanced. If economic activity slows faster than expected, weaker demand will translate into weaker price pressure. By contrast, if consumption or employment surprises to the upside, inflation may not slow as anticipated compared to the FOMC's *Economic Projections*, putting pressure on the Federal Reserve to tighten policy further.

Inflation expected to continue to moderate, reaching target in 2024

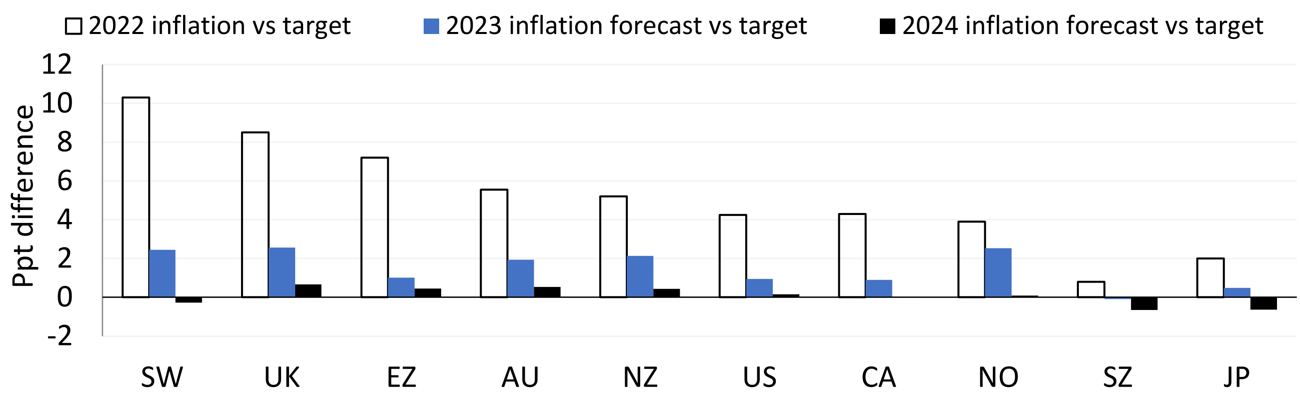


Exhibit 4.5 Sources: Consensus Economics Inc, central bank websites, Haver Analytics, CalPERS' calculations. As at December

Tight policy acts with a lag, real interest rates are expected to move higher

Historically, disinflation has acted as a tailwind for asset returns such as global equity. Investors' beliefs, as indicated by financial market pricing, anticipate short-term interest rates will decline as inflation wanes, while real interest rates will rise at longer maturities (see chart). Rising real interest rates constrain interest rate-sensitive sectors and is a headwind for overall economic activity.

Market pricing of US real yield curve points to tighter policy from here

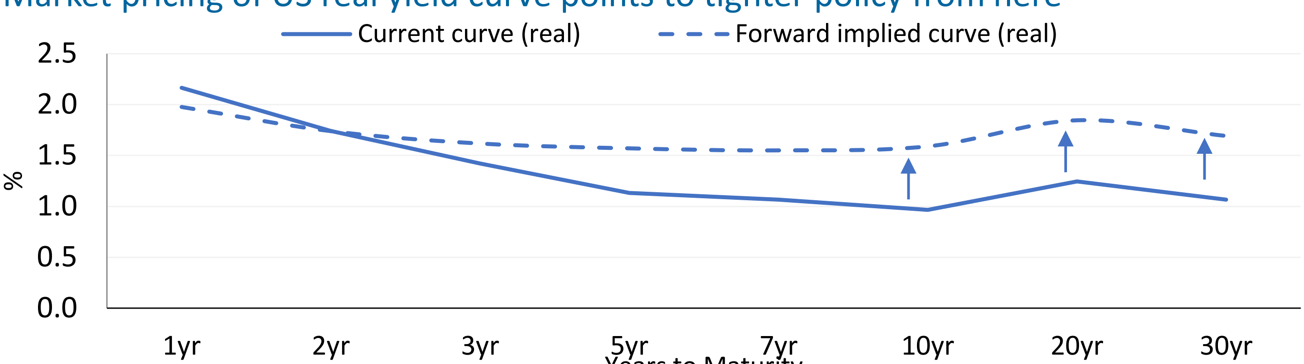


Exhibit 4.6 Sources: Haver Analytics, Bloomberg Financial L.P., Consensus Economics Inc. Current rates deflated by July CPI. Implied forward nominal rates deflated by average analyst expectation for headline inflation as of Sep 2024

Section IV. Markets and Economy

Macroeconomic Outlook

Recession risk: wide range of expectations

The extent to which policy tightening (both monetary policy and less fiscal easing) has and will impact the economy is currently under debate. The path to a US soft landing (no recession) is possible but the path is narrow. If the degree of policy tightening to date is sufficient to continue to moderate economic growth, inflation could track steadily back towards target. Equally, some indicators suggest the US economy is running out of steam. The outlook is delicately balanced.

The strength in the economy over this past fiscal year has pushed out the expectations for a recession in 2023 into 2024 and some analysts have revised away any recession expectation. The response by the FOMC is key to the direction from here. If the slowdown is milder than policy-makers' expectations, there could be positive inflation surprises (that is, not falling fast enough). This will put pressure on the Fed to keep policy tight and for longer than financial markets have priced in.

The official liquidity programs put in place to support the global economy over the past year are a timely reminder not to underestimate the power of policy actions on market outcomes. While the support is a positive impulse, the need for this support highlights outstanding vulnerabilities as the global economy and asset prices continue to normalize following the pandemic and post-pandemic recovery. The balance of risks to global and US economic outlook remain to the downside.

Selection of Federal Reserve models: US recession probabilities

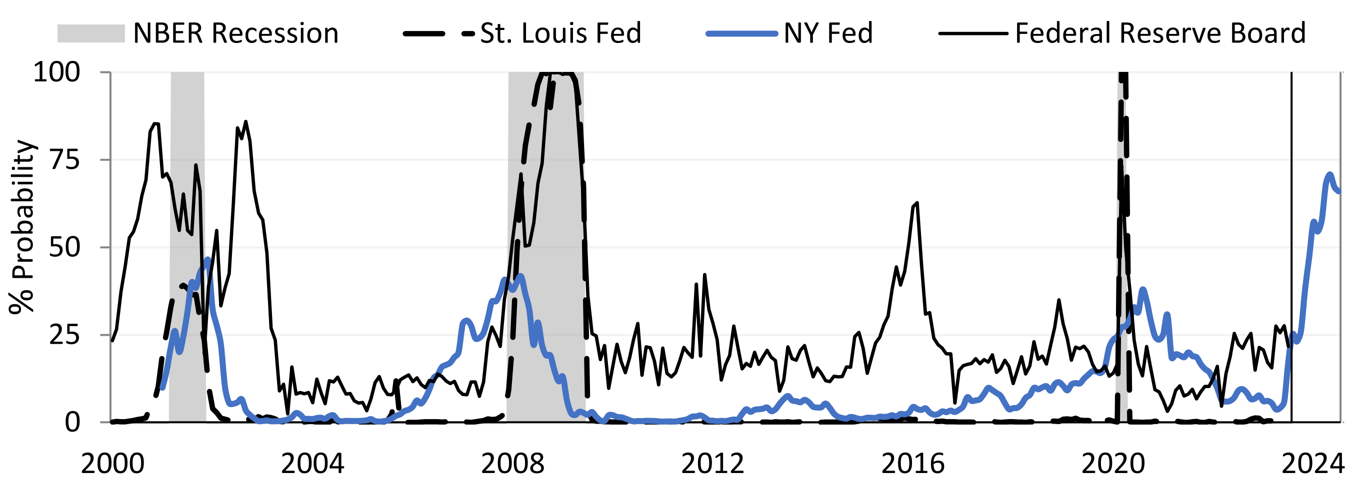


Exhibit 4.7 Sources: Haver Analytics. Federal Reserve Board implied over coming 12months; NY Fed 12months ahead; St. Louis Fed indicator is contemporaneous

Section V. PERF Allocation

Strategic Asset Allocation

Current allocation reflects ongoing transition to more private assets and use of leverage to diversify from equities

Portfolio vs. Long-Term Strategic Asset Allocation

- During FY 2022-23, PERF implemented the bulk of the Strategic Asset Allocation (SAA) approved by the Investment Committee in November 2021
- The new SAA features increased allocation to existing private assets, the introduction of Private Debt and Emerging Market Sovereign Bonds segments, and the introduction of strategic leverage
- Relative to the Long-Term SAA, PERF is currently overweight Equities and underweight Investment Grade corporates, reflecting a measured approach to implementing leverage

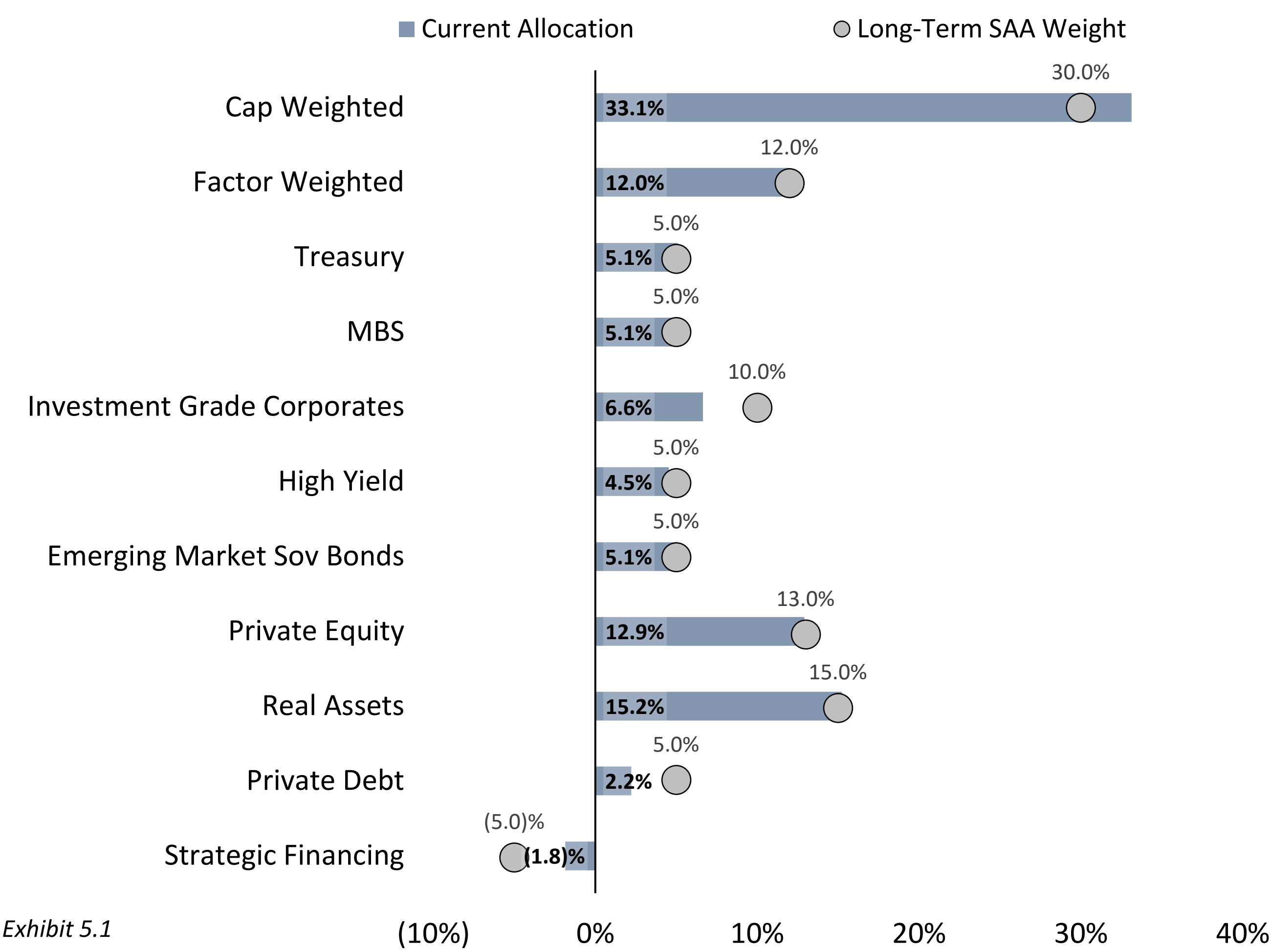


Exhibit 5.1

Section V. PERF Allocation

Strategic Asset Allocation

Significant allocation changes in FY 2022-23 reflecting implementation of new Strategic Asset Allocation

Changes vs. Prior Year

- Over the course of the fiscal year, CalPERS traded around $100bn in gross notional exposure in our public market segments. These changes were designed to rapidly approach the return and risk profile of the long-term SAA while prudently managing transaction costs
- Net capital deployed into private assets during the year was $14.7bn. New investment flows were partially offset by lower relative performance of Private Equity and Real Assets vs. public markets

1-Yr Allocation Change

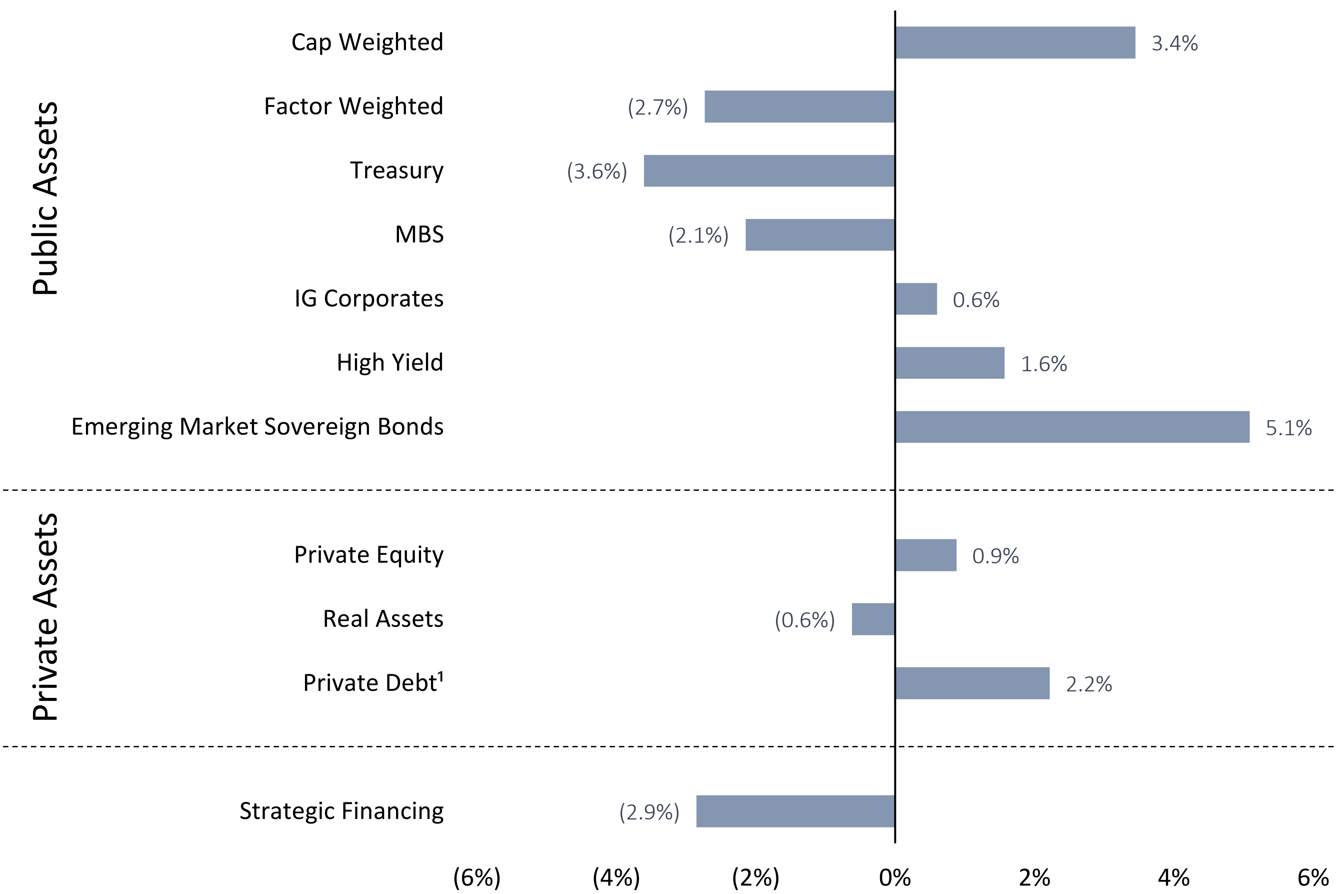


Exhibit 5.2

[1]Private Debt change includes the transfer of Private Debt assets out of Opportunistic Strategies at the beginning of the fiscal year.

Section V. PERF Allocation

Strategic Asset Allocation

Allocation remains within policy bands

Interim Targets and Policy Bands

- The Board's General Pension Consultant, in consultation with the Investment Committee and staff, establishes Interim Allocation Targets to roughly reflect expected pacing towards the long-term SAA
- The charts below show current positioning versus current interim targets. In contrast to positioning versus the long-term SAA shown earlier, PERF is "ahead of schedule" in all private assets relative to these interim targets
- Private allocations cannot be explicitly targeted and fluctuate significantly due to public vs. private valuation changes. The policy bands exist in part to allow for a reasonable level of variation over time

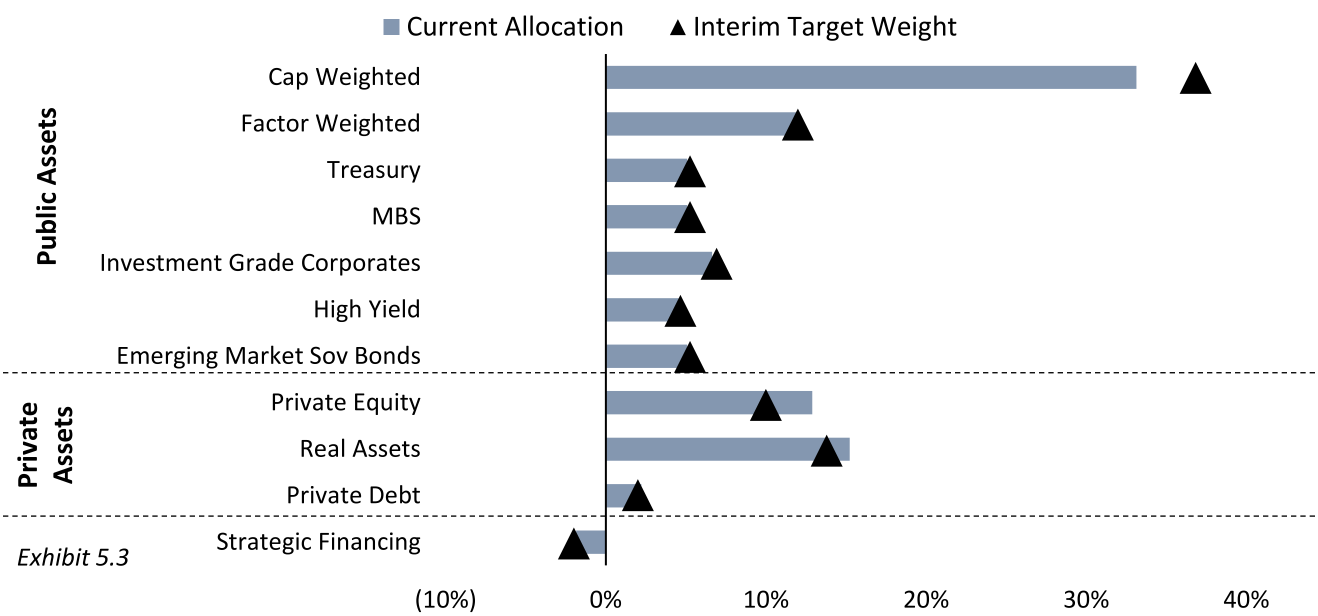


Exhibit 5.3

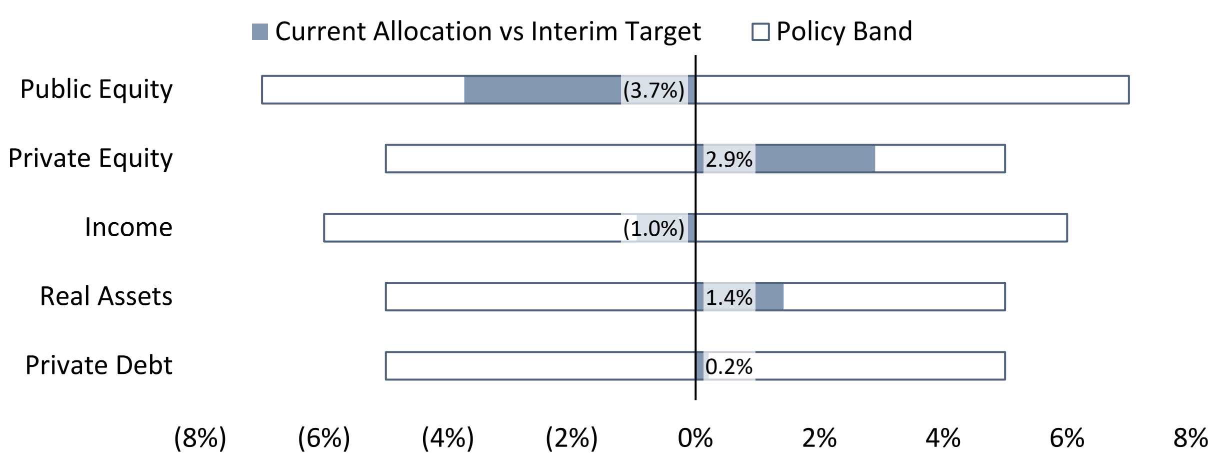


Exhibit 5.4

Section V. PERF Allocation

Private Assets Commitments and Pacing

Ongoing growth in private asset commitments

- Total unfunded commitments to private assets ended June 30, 2023 at $66.7bn, an increase of $15.5bn from the prior fiscal year value of $51.2bn
- The growth in commitments reflects CalPERS' belief in the potential of private asset classes to provide incremental return and diversification benefits relative to public markets. The new SAA, adopted in November 2021, called for increased allocation to Private Equity and Real Assets and established an allocation to the Private Debt program
- Liquidity to fund outstanding commitments is maintained by retaining sufficient capacity in certain public asset classes, which are systematically sold down as commitments are called

		Unfunded Commitments ($mm)	
Asset Class	**Net Asset Value ($mm)**	**Total**	**Excluding opt-out and revocable commitments**
Private Equity	59,668	35,254	24,906
Real Estate	55,451	8,032	1,370
Infrastructure	14,651	4,624	2,141
Private Debt	10,255	18,758	13,299
Total	-	66,669	41,716

Exhibit 5.5

Unfunded Commitments / 12 Month Average PERF NAV

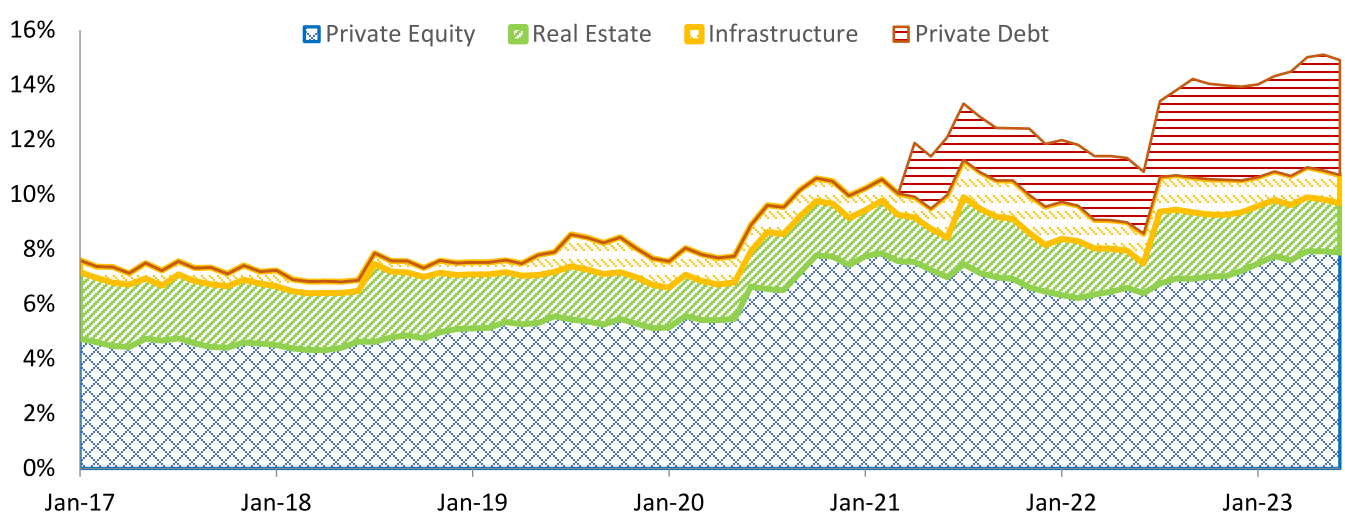


Exhibit 5.6

Sources: Aladdin, AREIS, PEARS

Section V. PERF Allocation

Private Assets Commitments and Pacing

CalPERS deployed $30.4bn into private market programs in FY 2022-23

- Net capital deployed (i.e., contributions minus distributions) was +$14.7bn
- The net total change in private program investments, also factoring in valuation changes, was +$12.0bn

Drivers of One Year Change in Net Asset Value

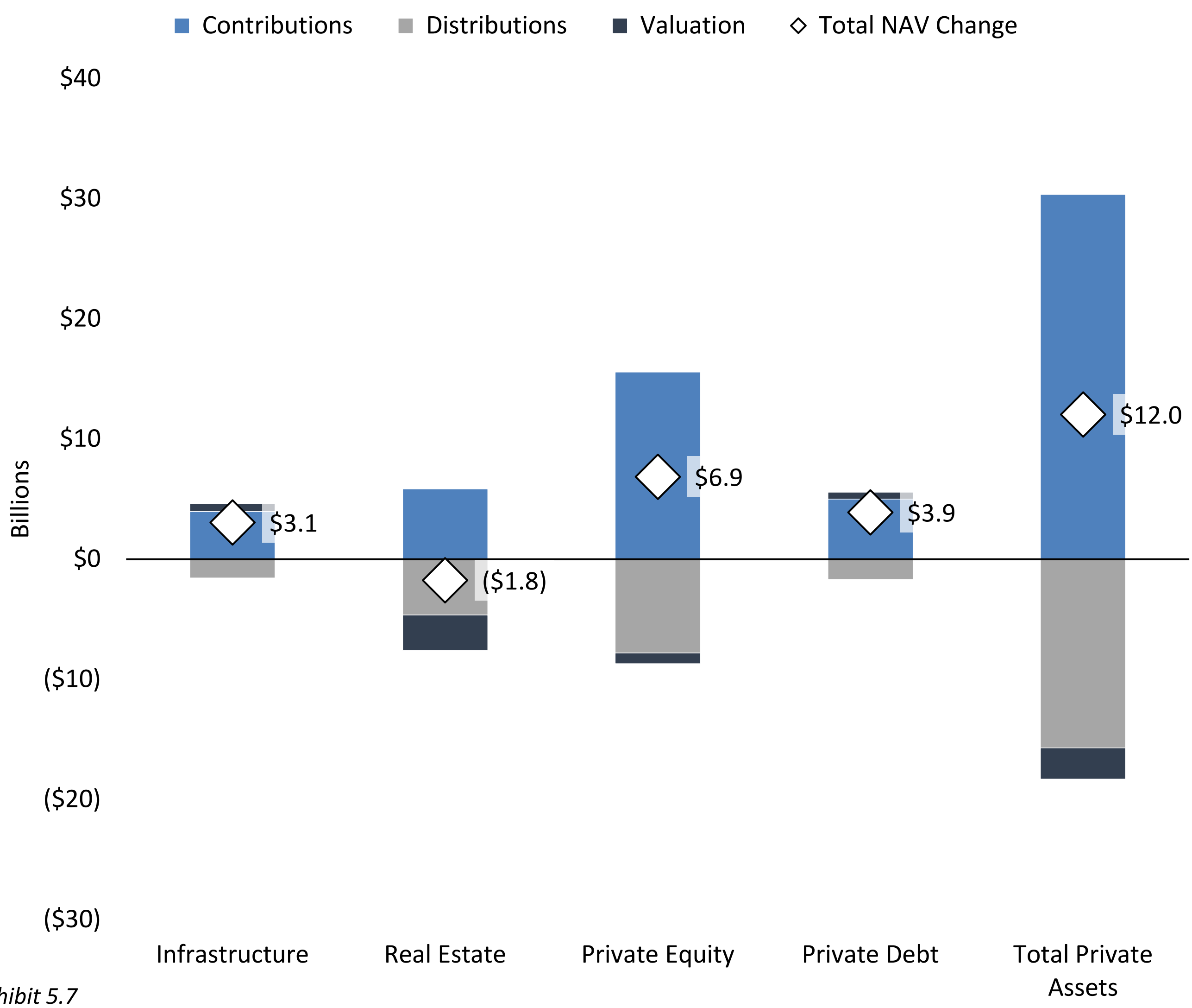


Exhibit 5.7

Section V. PERF Allocation

Internal vs. External Management

PERF may have opportunities to add value by adjusting internal/external management mix over time

- Roughly two-thirds of PERF assets are internally managed, generally split along public/private lines
- In private assets, the preponderance of external management today may offer opportunities for cost reduction, because greater internal or co-invest share can be achieved
- In contrast, in public markets, there may be opportunity to make greater use of external partnerships to generate value add and complement internal skillsets

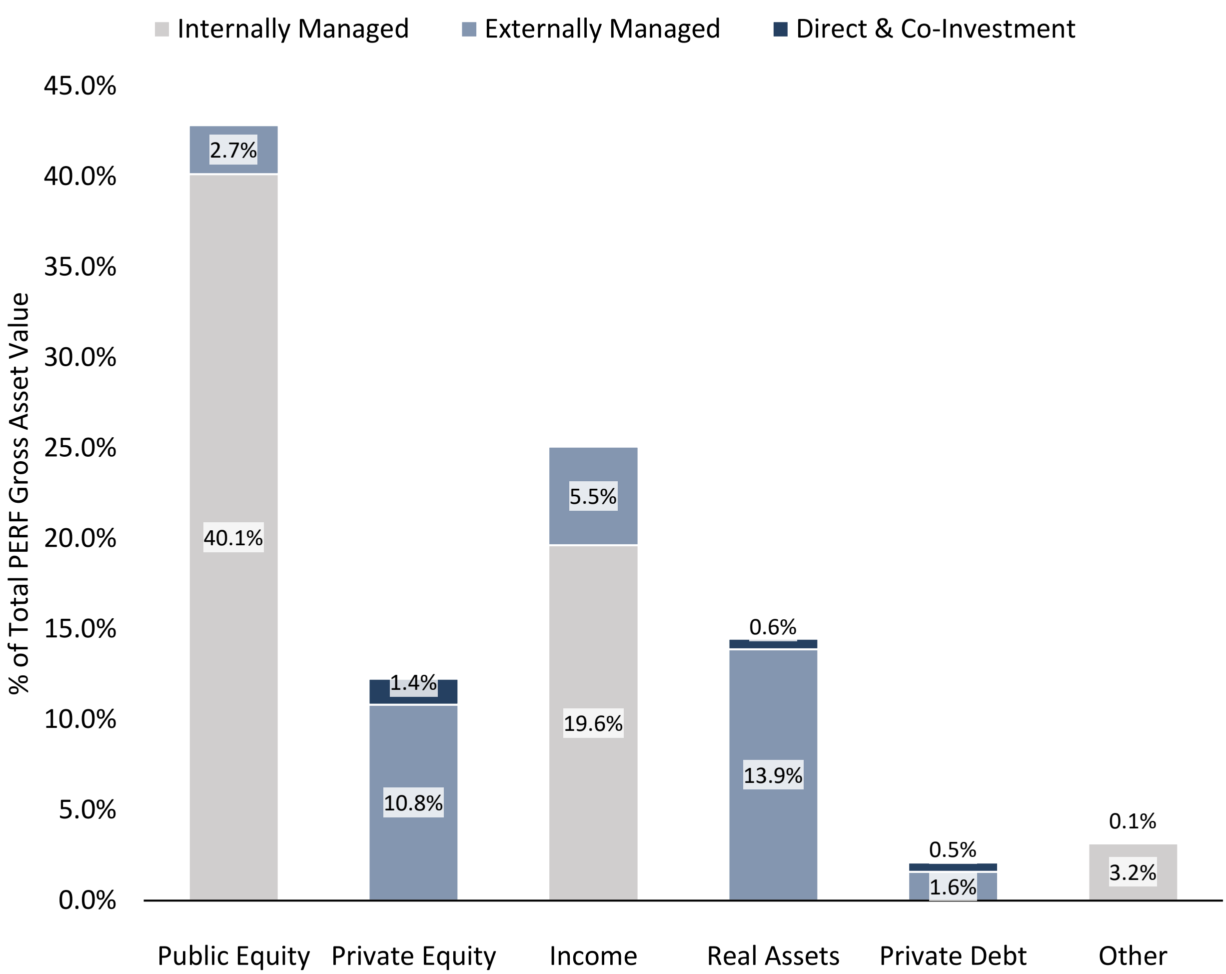


Exhibit 5.8

Section V. PERF Allocation

Active vs. Passive Management

Public Equity is the primary asset class using indexing strategies

- Overall, 45% of PERF is managed via indexed strategies
- Indexed approaches are dominant in public equity, in part reflecting the size of the asset class that makes material departures from market weighting difficult or expensive
- Indexed strategies do not imply “passive” investing
- The Factor Weighted segment is a deliberate departure from cap weighting that is managed in an indexed fashion
- Within the Cap Weighted segment, indexing offers opportunities to optimize the trade off between costs and tracking error
- CalPERS’ corporate governance activities are enabled regardless of management style

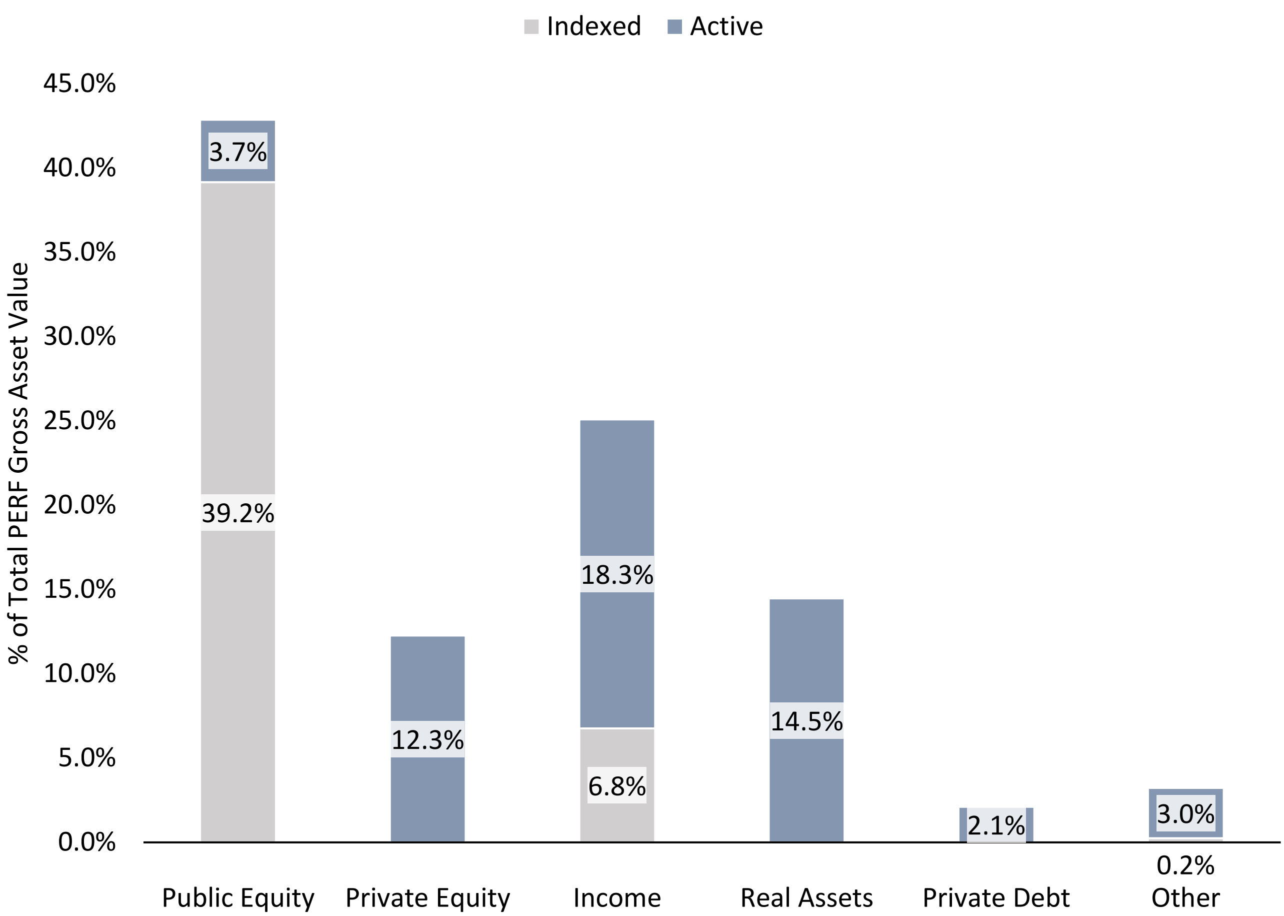


Exhibit 5.9

Section VI. Program Overviews

Global Public Equity Investment Highlights

Understanding Our Returns: Key Drivers

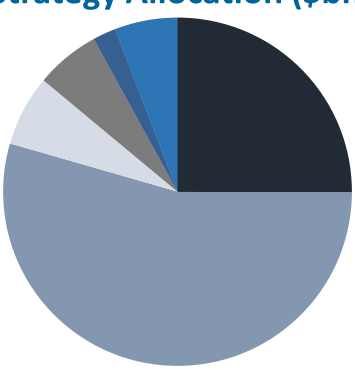
Over the long-term, equity markets have generated positive absolute returns despite periods of intermediate drawdowns

- A long-term investment horizon provides the ability to withstand short-term market volatility while prudently increasing active risk to seek to add value
- Strategic Asset Allocation (SAA) targets were efficiently implemented, additional capital deployed to active strategies, and the multi-factor strategies were re-weighted in a risk-controlled manner
- Factor-weighted segment posted a 5-Yr return of 6.3%, which was in line with its benchmark, while Cap-weighted segment 5-Yr return of 8.3% was 10bps above its benchmark. Segment 2 was adopted as part of the 2017 ALM process, with the objective to reduce overall volatility relative to the cap-weighted segment, and thus improve Total Fund portfolio risk and return characteristics

Key Performance and Risk Metrics

$208.8bn	8.9%	$0.9bn	17.5%	23bps
Ending Asset Value	10-Yr Total Return	5-Yr Cumulative Value Added	Forecasted Volatility	Forecasted Tracking Error

Strategy Allocation ($bn)



- Factor Weighted | $55.4bn
- Cap Wtd - Index Oriented | $120.7bn
- Cap Wtd - Enhanced Index | $14.6bn
- Cap Wtd - Traditional Active | $13.3bn
- Cap Wtd - Multi Factor | $4.8bn

Exhibit 6.1

Strategy 5-Year Performance

	Total Return	Benchmark Return	Excess Return (bps)	Value Added ($mm)
Factor Weighted	**6.3%**	**6.3%**	**0**	**49.1**
Cap Weighted	**8.3%**	**8.2%**	**10**	**732.6**
Index Oriented	8.3%	8.1%	14	889.3
Enhanced Index	11.9%	11.6%	30	100.7
Traditional Active	9.6%	7.6%	204	463.1
Multi Factor	8.1%	8.2%	(12)	(190.3)

Exhibit 6.2

Section VI. Program Overviews

Global Public Equity Operational Highlights

Delivered multiple equity betas with low active risk and an efficient cost structure

- External management fees have decreased year over year in both dollars and bps, which is primarily due to lower performance fee payments to external managers
- The Corporate Governance team actively engaged portfolio companies on compensation, corporate board diversity, climate change, and human capital management, among other sustainability topic

Key Operational Metrics

22/24	94% [1]	88,983	400+	3bps
Filled/ Total # of Team Members	Internally-Managed	Proxy Voting/ Ballot Items	Companies Engaged	FY Total Program Fees Paid [4]

Expense Type	FY 2022-23			FY 2021-22		
	Avg AUM ($millions)	Fees Paid ($millions)	Fees Paid[4] (BPS)	Avg AUM ($millions)	Fees Paid ($millions)	Fees Paid[4] (BPS)
Internal Management[2]	$ 197,760	$ 7.2	0.4	$ 226,935	$ 5.7	0.3
External Management[3]	$ 9,751	$ 32.2	33	$ 8,343	$ 40.0	48
Consultants Expense	N/A	$ 1.4	0.1	N/A	$ .8	0.0
Technology & Operating Expense	N/A	$ 13.7	0.7	N/A	$ 13.3	0.6
Total Program	**$ 207,511**	**$ 54.5**	**3**	**$ 235,278**	**$ 59.8**	**3**

[1] Based upon June 30, 2023 AUM
[2] Internal Management Fees include internal model provider fees
[3] External Management Fees include base and performance fees
[4] Management Fee BPS calculated on Int/Ext Avg AUM. Internal Management, Consultants and Technology & Operating Expense BPS calculated on Total Program Avg AUM

Exhibit 6.3

Executing Our Strategic Initiatives

Over the last fiscal year, the team successfully executed Global Public Equity's strategic initiatives, as follows:

- Implementation of the Board-approved SAA in an efficient and risk-controlled manner and collaborated across various INVO teams in the design of transition plans
- Deployment of additional capital to active strategies, which increased the active book from 8% to 16% of the GPE portfolio
- Implementation of the Total Fund Governance & Sustainability Strategic Plan with particular focus on climate change, corporate board diversity, executive compensation, and human capital management

Section VI. Program Overviews

Fixed Income Investment Highlights

Understanding Our Returns: Key Drivers

Although challenging in 2022, Bond markets remained attractive while interest rate volatility impacted Treasury.

- Long-tenured and deep investment management expertise of senior leadership
- In FY 2022-23, Emerging Market Debt active management deployed $22bn of capital
- MBS and High Yield 5-Year performance outperformed the benchmark by 17 and 11 basis points respectively, while the IG Corporates outperformed by 33 basis points
- As markets normalize, the long duration segments are more likely to provide diversification during periods when markets and rates decline

Key Performance and Risk Metrics

$122.2bn	2.4%	$1.2bn	6.7%	50bps
Ending Asset Value	10-Yr Total Return	5-Yr Cumulative Value Added	Forecasted Volatility	Forecasted Tracking Error

Strategy Allocation ($bn)

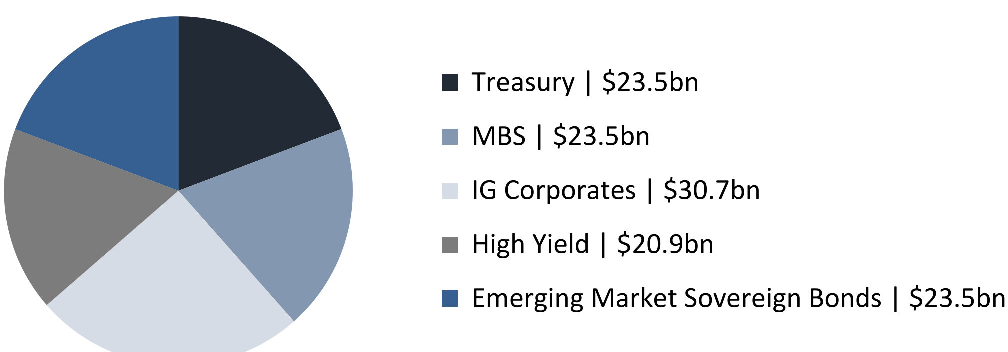


Exhibit 6.4

Strategy 5-Year Performance

	Total Return	Benchmark Return	Excess Return (bps)	Value Added ($mm)
Treasury	(0.8)%	(0.7)%	(8)	(233.9)
MBS	0.3%	0.1%	17	211.1
IG Corporates	2.0%	1.6%	33	338.4
High Yield	3.2%	3.1%	11	74.9
Emerging Mkt Sov Bonds[1]	-	-	-	-

Exhibit 6.5

[1]The strategy does not have 5-years of performance history.

Section VI. Program Overviews

Fixed Income Operational Highlights

Significant in-house portfolio management capabilities with a strong long-term value proposition

- External management fee decrease can be attributed to renegotiation of existing High Yield manager contracts and timing of fee payments related to the new EM Sovereign Debt mandate
- Although, GFI did engage in more external active management with a great portion of it at the end of the fiscal year, fees are expected to increase

Key Operational Metrics

22/28	77.9%	5	$26.0mm	2bps
Filled/ Total # of Team Members	Internally-Managed	# of Segments	Fiscal Year Mgt Fees[1]	FY Total Program Fees Paid [2]

Expense Type	FY 2022-23			FY 2021-22		
	Avg AUM ($millions)	Fees Paid ($millions)	Fees Paid[2] (BPS)	Avg AUM ($millions)	Fees Paid ($millions)	Fees Paid[2] (BPS)
Internal Management	$ 104,811	$ 8.8	1	$ 132,913	$ 8.7	1
External Management[1]	$ 7,841	$ 9.4	12	$ 3,371	$ 15.0	44
Consultants Expense	N/A	$ .0	0	N/A	$ .0	0
Technology & Operating Expense	N/A	$ 7.8	1	N/A	$ 13.5	1
Total Program	**$ 112,651**	**$ 26.0**	**2**	**$ 136,284**	**$ 37.2**	**3**

[1] Includes base and performance fees
[2] Management Fee BPS calculated on Int/Ext Avg AUM. Internal Management, Consultants and Technology & Operating Expense BPS calculated on Total Program Avg AUM

Exhibit 6.6

Executing Our Strategic Initiatives

Like in prior years that spans decades, GFI has had significant in-house portfolio management capabilities with a strong long-term value proposition and has also allowed for collaboration across INVO asset classes with GFI analysts serving as industry experts for Private Equity, Real Assets, and Private Debt co-invests.

As we moved into more active management, a larger allocation of assets has increased towards external management, and we will continue to evaluate external manager capabilities to enhance alpha potential. We will also continue to collaborate with the Sustainable Investing team to develop INVO's Net Zero Strategy as well as the evolution of Sustainable Investing strategies across GFI sectors.

Section VI. Program Overviews

Private Equity Investment Highlights

Understanding Our Returns: Key Drivers

Focusing on scaling co-investments will drive greater returns in Private Equity over the long-term

- Long-term priorities for the asset class include vintage year consistency, forming deep partnerships with high-quality managers, ramping the co-investment program, building out a venture program, and integrating data analytics more deeply into all aspects of the program
- The portfolio is diversified across managers, industries, and underlying portfolio companies
- Buyout, Opportunistic, and Venture strategies outperformed policy benchmark by greater than 300 basis points

Key Performance and Risk Metrics

$59.7bn	11.8%	$3.5bn	$35.3bn	25.3%
Ending Asset Value	10-Yr Total Return	5-Yr Cumulative Value Added	Unfunded Commitments[1]	Forecasted Volatility

Strategy Allocation ($bn)

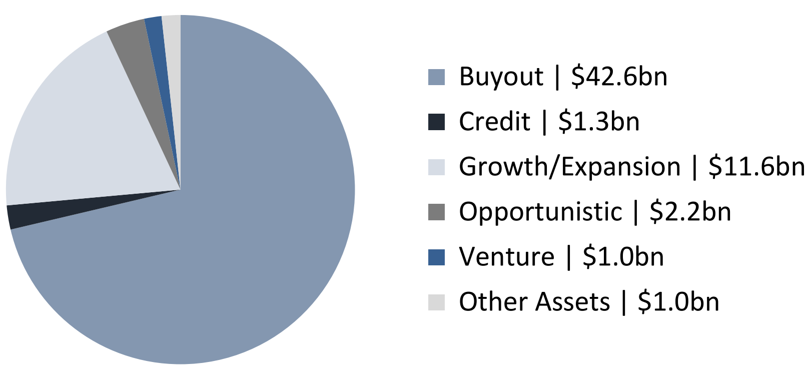


Exhibit 6.7

Strategy 5-Year Performance

	Total Return	Private Equity Benchmark Return	Excess Return (bps)	Value Added ($mm) [2]
Buyout	12.7%	8.7%	393	3,892.9
Credit	5.1%	8.7%	(364)	(449.3)
Growth/Expansion	10.6%	8.7%	188	(236.0)
Opportunistic	12.3%	8.7%	353	196.6
Venture	12.4%	8.7%	366	42.6

Exhibit 6.8

[1]Includes $10.3bn in opt-out commitments.
[2]For Growth segment, the opposite signs between excess return and dollar value add are due to methodological differences. Excess return reflects a time weighted average, whereas dollar value add includes the effect of variations in asset value through the calculation period.

Section VI. Program Overviews

Private Equity Operational Highlights

Continued focus on integrating ESG factors into investment and monitoring processes

- Catalyzing and leading the ESG Data Convergence Initiative to standardize ESG metrics
- Continued focus on greater cost-efficiency across the Private Equity program, with scaling co-investment a CalPERS priority
- PE total program costs as a percentage of average AUM declined 39% from 235 basis points in FY 2021-22 to 143 basis points in FY 2022-23, largely due to a decrease in profit sharing paid

Key Operational Metrics

36/45	114	380 [1]	2080 [2]	143bps
Filled/ Total # of Team Members	# of Managers	# of Funds	# of Portfolio Companies	FY Total Program Fees Paid [3]

Expense Type	FY 2022-23			FY 2021-22		
	Avg AUM ($millions)	Fees & Profit Sharing Paid ($millions)	Fees & Profit Sharing Paid[4] (BPS)	Avg AUM ($millions)	Fees & Profit Sharing Paid ($millions)	Fees & Profit Sharing Paid[4] (BPS)
Internal Management	$ 0	$ 9.4	2	$ 0	$ 8.3	2
External Management[3]	$ 52,073	$ 721.7	139	$ 47,414	$ 1,094.6	231
Consultants Expense	N/A	$ 2.2	0	N/A	$ 1.1	0
Technology & Operating Expense	N/A	$ 9.7	2	N/A	$ 8.6	2
Total Program	**$ 52,073**	**$ 743.0**	**143**	**$ 47,414**	**$ 1,112.5**	**235**

[1] Including Funds, Fund-of-Funds, and Customized Investment Accounts
[2] Accounting for 95% of total company value
[3] Includes management base fees inclusive of offsets and waivers and only profit sharing paid
[4] All BPS fees paid figures are calculated on Total Program AUM

Exhibit 6.9

Executing Our Strategic Initiatives

During FY 2022-23, the Private Equity team prioritized ongoing strategic initiatives, which include:

- Deployment of capital consistently over time
- Continued focus on managers that employ ESG framework
- Increasing co-investment's share of total commitment to lower costs and improve net returns
- Implementing a comprehensive venture strategy
- Partnering with hard-to-access, high conviction managers for both co-mingled funds and co-investments

Section VI. Program Overviews

Real Assets Investment Highlights

Understanding Our Returns: Key Drivers

Higher rates, economic uncertainty, and a more challenging capital raising environment contributed to decreased returns

- CalPERS' Real Estate portfolio suffered annual markdown as higher interest rates adversely affected underlying values albeit on low transaction volumes. However, our underlying portfolio is focused on high quality assets, so we do not expect the same level of permeant impairments that the industry faces in certain sectors
- Infrastructure assets are much more heterogenous, and the sector broadly continues to demonstrate resilience despite a challenging economic backdrop; outperforming its policy benchmark by 99 basis points for the 5-Yr performance period
- Increased focus on sustainable investment opportunities including energy transition, renewables, carbon-neutral and sustainability certified assets

Key Performance and Risk Metrics

$70.4bn	7.7%	$(2.1)bn	$12.7bn	15.2%
Ending Asset Value	10-Yr Total Return	5-Yr Cumulative Value Added	Unfunded Commitments*	Forecasted Volatility

Strategy Allocation ($B)

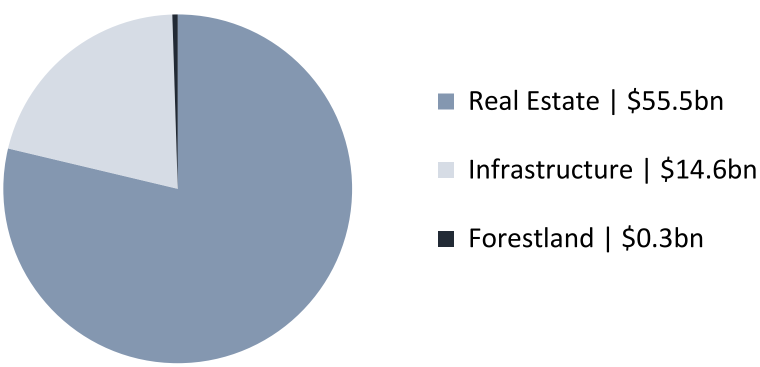


Exhibit 6.10

Strategy 5-Year Performance

	Total Return	Benchmark Return	Excess Return (bps)	Value Added ($mm)
Real Estate	5.9%	6.5%	(54)	(2,173.5)
Infrastructure	7.5%	6.5%	99	463.2
Forestland	1.2%	6.5%	(531)	(380.8)

Exhibit 6.11

*Includes $9.1bn in revocable commitments.

Section VI. Program Overviews

Real Assets Operational Highlights

Continued focus on efficiently and cost-effectively managing a growing portfolio

- External management fees decreased by 35 bps or 43% compared to the prior year largely due to a decrease in incentive fees
- Scaling co-investments in Infrastructure impacts fees favorably
- Fee-structures renegotiated to better align incentives to performance

Key Operational Metrics

36/42	**67**	**87%** [1]	**100%** [2]	**51bps**
Filled/ Total # of Team Members	# of Partnerships	Into GRESB Assessment	RCP Compliance	FY Total Program Fees Paid [3]

Expense Type	Avg AUM ($millions)	Fees Paid ($millions)	Fees Paid[4] (BPS)	Avg AUM ($millions)	Fees Paid ($millions)	Fees Paid[4] (BPS)
Internal Management	$ 0	$ 11.4	2	$ 0	$ 10.6	2
External Management[3]	$ 71,892	$ 339.1	47	$ 54,726	$ 450.2	82
Consultants Expense	N/A	$ 1.4	0	N/A	$ 1.5	0
Technology & Operating Expense	N/A	$ 13.8	2	N/A	$ 12.8	2
Total Program	**$ 71,892**	**$ 365.6**	**51**	**$ 54,726**	**$ 475.1**	**87**

[1] % of the portfolio submitted into GRESB Assessment in 2022
[2] At or near 100% since the Responsible Contractor Program (RCP) policy was enhanced and revised in 2015)
[3] Includes base and performance fees
[4] All BPS fees paid figures are calculated on Total Program AUM

Exhibit 6.12

Executing Our Strategic Initiatives

As with the past fiscal year, the Real Assets team continues to focus on making progress on its strategic initiatives which are:

- Continue to increase allocation to Infrastructure portfolio (YoY growth of 26%)
- Focus on tactical opportunities to diversify risk exposures
- Restructure fees to manage external management costs and improve alignment with managers
- Increase focus on sustainable investment opportunities including energy transition, renewables, carbon-neutral and sustainability certified assets

[1] 87% of the portfolio submitted into GRESB Assessment in 2022
[2] At or near 100% since the Responsible Contractor Program (RCP) policy was enhanced and revised in 2015)

Section VI. Program Overviews

Private Debt Investment Highlights

Understanding Our Returns: Key Drivers

The floating rate nature of the portfolio and the rise in rates translated into higher returns in FY 2022-23

- Although early in its development, the program is performing as expected in current market environment
- Direct Lending and Specialty Lending 1-Yr performance outpaced the benchmark by 323 and 425 basis points, respectively
- The focus for the portfolio is to continue to look for deployment opportunities with high quality managers and issuers to benefit from the rate increase while avoiding default and/or losses

Key Performance and Risk Metrics

$10.3bn	6.5%	$0.1bn	$18.8bn	5.3%
Ending Asset Value	10-Yr Total Return	5-Yr Cumulative Value Added	Unfunded Commitments*	Forecasted Volatility

Strategy Allocation ($bn)

Exhibit 6.13

Strategy 1-Year Performance

	Total Return	Private Debt Benchmark Return	Excess Return (bps)	Value Added ($mm)
Direct Lending	6.9%	3.7%	323	137.1
Specialty Lending	8.1%	3.7%	445	9.7
Real Estate Financing	0.9%	3.7%	(275)	(24.7)

Exhibit 6.14

*Includes $5.5bn in opt-out commitments

Section VI. Program Overviews

Private Debt Operational Highlights

Private Debt program remains committed to cost management and seeks co-investment opportunities to further drive cost-efficiency

- Strong progress was made on buildout of the private debt program, which has a 5% allocation in the new SAA
- External average AUM nearly doubled year over year as the program has grown
- External management fees increased 11 basis points year-over-year, due to increase in profit sharing paid

Key Operational Metrics

7/12	2.2%	9	32	32bps
Filled/ Total # of Team Members	Current Allocation	# of External Managers	# of Funds	FY Total Program Fees Paid [2]

Expense Type	FY 2022-23			FY 2021-22		
	Avg AUM ($millions)	Fees & Profit Sharing Paid ($millions)	Fees & Profit Sharing Paid[2] (BPS)	Avg AUM ($millions)	Fees & Profit Sharing Paid ($millions)	Fees & Profit Sharing Paid[2] (BPS)
Internal Management	$ 13,824	$ 3.5	3	$ 8,518	$ 3.3	4
External Management[1,3]	$ 8,492	$ 66.7	79	$ 4,359	$ 29.8	68
Consultants Expense	N/A	$ .0	0	N/A	$ .1	0
Technology & Operating Expense	N/A	$ 1.9	1	N/A	$ 1.0	1
Total Program	$ 22,316	$ 72.0	32	$ 12,877	$ 34.1	27

[1] Includes base and performance fees
[2] Management Fee BPS calculated on Int/Ext Avg AUM. Internal Management, Consultants and Technology & Operating Expense BPS calculated on Total Program Avg AUM
[3] External management fees include some preliminary profit-sharing paid data

Exhibit 6.15

Executing Our Strategic Initiatives

- Portfolio is comprised predominantly of floating rate loans. Given the floating rate nature of the portfolio, rise in rates should translate into higher returns in the next fiscal year
- The focus for the portfolio is to continue to look for deployment opportunities with high quality managers and issuers to benefit from the rate increase while avoiding default and/or losses

Section VI. Program Overviews

Low Liquidity Enhanced Returns Highlights

Understanding Our Returns: Key Drivers

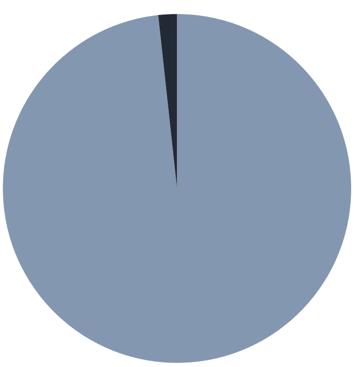
Current market environment offers lower supplies of CLOs

- The Low Liquidity Enhanced Return Portfolio utilizes excess liquidity to generate excess returns
- CalPERS invests in AAA and AA securities and the default rate for AAA and AA CLOs remain at zero
- CLO market saw weak supplies in 2022 and issuance amount is expected to remain low in 2023. Due to reduced supply, AAA CLO spread began to tighten in Q2 of 2023 and is expected to tighten further by year end
- The LIBOR to SOFR conversion implementation continued through 2023 and conversion implementation has gone smoothly for CalPERS CLO portfolio
- Given the higher interest rate burden on the borrowers, loans under the CLO portfolio may experience credit deterioration and create down grade migration for lower tranche CLOs

Key Performance and Risk Metrics

$14.1bn	2.7%	$0.6bn	2.8%	2.8%
Ending Asset Value	5-Yr Total Return	5-Yr Cumulative Value Added	Forecasted Volatility	Forecasted Tracking Error

Strategy Allocation ($bn)



Collateralized Loan Obligations (CLOs) | $13.9bn

Other | $0.2bn

Exhibit 6.16

Strategy 5-Year Performance

	Total Return	Benchmark Return	Excess Return (bps)	Value Added ($mm)
Low Liquidity Enhanced Returns	2.7%	1.7%	107	630.2

Exhibit 6.17

Section VI. Program Overviews

Sustainable Investing

Anchoring sustainability to long-term value creation

Our Sustainable Investing team is responsible for working across all asset classes to provide centralized leadership and strategy related to sustainable investment topics. Over the calendar year, there was continued leadership in the Climate Action 100+ coalition and focus on key themes of human capital management and climate risk and oversight.

Additionally, the team drafted the CalPERS' Sustainable Investments 2030 Strategy to propose to the Board of Administration, which focuses on five objectives:

- **Generate portfolio alpha**[1]
    - By investing in the transition to a low carbon economy, including climate solutions and brown-to-green transitioning assets, and
    - By investing in niche opportunities through our Emerging and Diverse Managers Program
- **Improve portfolio resilience**
    - By accelerating the integration of ESG analysis, including climate risk analysis, into the investment diligence process and portfolio management
- **Implement an ambitious Net Zero plan through investments, engagement and advocacy**
    - Make our own portfolio Net Zero by 2050 through investments in climate solutions
    - Engage the largest emitting companies without robust Net Zero strategies through shareowner action
    - Engage the investment industry and government regulators to support the transition of the broader economy to Net Zero
- **Promote greater inclusion and representation in the financial industry and the global economy**
    - By promoting Diversity, Equity and Inclusion through advocacy and shareowner action
- **Build and promote efficient and equitable financial markets**
    - Through advocacy and regulatory action including the promotion of responsible human capital management business practices and living wage for workers

To make progress on these objectives, we will utilize a four-pillar approach: **engagement** with companies we invest in, **advocacy** in support of relevant policies and regulations, and **integration and investment** to ensure consideration of ESG risk and opportunity into our investment decision-making. The fourth pillar is based on **partnerships and coalitions** with our fellow investors and international bodies, such as United Nations Net Zero Asset Owner Alliance and ESG Data Convergence Initiative.

Exhibit 6.18

Section VI. Program Overviews

Sustainable Investments

Identifying and supporting the next generation of investor entrepreneurs in the private markets

CalPERS' Diverse Manager Program Platform (Mosaic)

In January 2023, CalPERS announced a $1bn commitment, $500mm each to GCM Grosvenor and TPG to establish an ecosystem that helps emerging firms mitigate risk, unlock alpha and accelerate growth and risk-adjusted returns.

- CalPERS will directly invest in entrepreneurs to create meaningful relationships with high-performing, next generation managers with a strong potential for success
- The GCM Elevate and TPG Next funds are designed to utilize both GP and LP perspectives to better leverage the skills and resources of our strategic partners to add value to early-stage entrepreneurs
- The platform is also intended to better integrate strategic planning, capital allocation and manager evaluation so that we can leverage best practices
    - This knowledge transfer will allow us to improve our own investment processes and deploy it into a thesis we believe in
- The ability to invest in managers earlier and across lifecycles is a key differentiator with the target to facilitate deeper relationships, discounted terms, and co-investment opportunities

Catalyst: California's Diverse and Investment Management Forum

Held on June 27-28 in San Francisco, CA, CalPERS and CalSTRS hosted the Catalyst event. Institutional investors and other global allocators were brought together to meet and engage with diverse investor entrepreneurs and general partners with a total attendance of 572 people, including:

- 272 investment entrepreneurs and GPs
- 112 other institutional investors and allocators
- 94 industry partners

Discussions included how institutional investors and allocators can build a diverse emerging manager portfolio, as well as shared insights and lessons learned from investor entrepreneurs and general partners who overcame funding obstacles

The event paired investors and allocators with entrepreneurs and general partners with 368 one-on-one meeting between GPs and LPs (378 total meetings). Our Post-Conference survey results markedly show it as a success, with:

- 89% of survey participants noted it met expectations
- 93% of survey participants would attend Catalyst Conference in the future
- Average rating for quality and effectiveness score was 8.7 out of 10

Section VI. Program Overviews

Total Fund Portfolio Management

Total Fund Portfolio Management is responsible for ensuring effective integration of all PERF investment activities towards achievement of our overall strategic and value add return objectives in a risk-controlled manner. The program acts in both a research capacity as well as directly managing financing, trading, and allocation activities.

Key Accomplishments Fiscal Year FY 2022-23

- Upgraded liquidity and financing infrastructure and operating models
- Coordinated trading process across public markets to implement new SAA
- Executed Active Risk Innovation (ARI) Business Initiative
- Developed and socialized new risk budgeting framework
- Led Midterm ALM Planning and Portfolio Optimization

Areas of Responsibility

Function	Description
Strategic Asset Allocation	Support Investment Committee (IC) in establishing Strategic Asset Allocation targets via research, portfolio modeling, and portfolio options
Strategy Development & Research	Research and propose new cross-asset strategies, including both strategic allocation and value add opportunities
Economics	Provide macro-economic analytics and commentary to support Investment Committee, CIO, and Programs
Financing and Trading	Oversee PERF funding desk and conduct majority of PERF trading activities
Active Risk Budgeting	Support CIO and Deputy CIOs in integrated management of value add (benchmark-relative) investment activities
Allocation Implementation	Manage daily exposure of PERF allocation toward strategic and tactical targets including cashflows and completion activities
Portfolio Analytics	Provide integrated perspectives on portfolio positioning and risk to internal and external stakeholders

Section VII. PERF Performance Detail

Realized Outcomes vs Expectations As of June 30, 2023

Despite volatility, returns are within long-term expectations

- The PERF Strategic Asset Allocation (SAA) has long term expected annualized return of 6.8%, with a volatility of roughly 12% (based on Capital market assumptions approved in 2021)
- An annualized volatility of around 12%, means 7 out of 10 years the PERF is expected to generate a return between (5.2)% and 18.8%. The other 3 years the PERF is expected to generate a return below (5.2)% or above 18.8%
- This range of outcomes accounts for uncertainty in markets over short time periods and assumes returns will average out over time
- This volatility is reflected in actual PERF returns. Over shorter 1-Yr periods, we see returns ranging from (31.1)% to 29.6% while long-term returns (10-Yr) remain relatively stable in the range of 4.3% to 9.7%
- Outcomes for the first 12-months of the current ALM cycle (July 2022 to June 2023) are within the range of expectations

Rolling 10-Yr Annualized Total Return vs Rolling 1-Yr Total Return

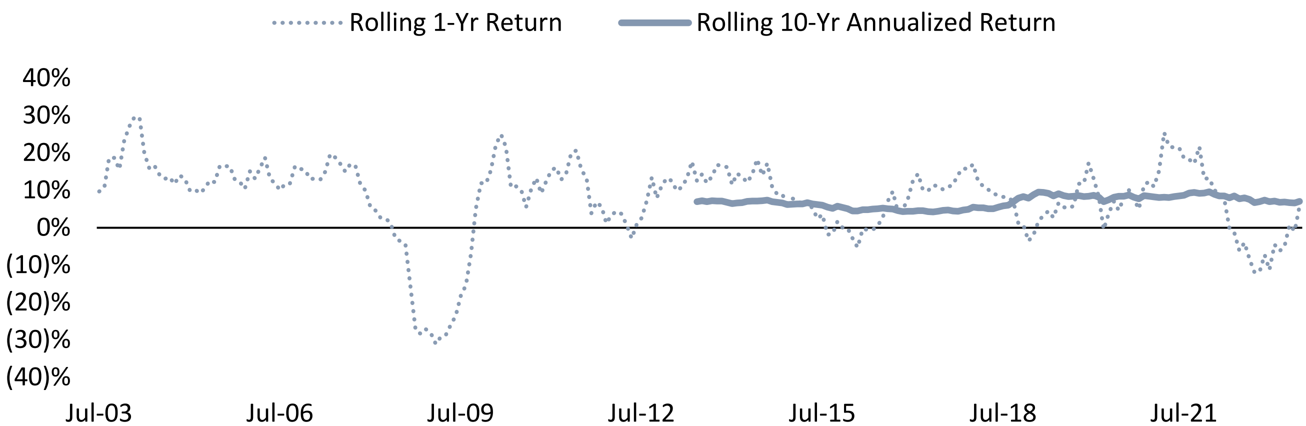


Exhibit 7.1

Current ALM Cycle: Realized Outcome vs 2021 ALM Expectations

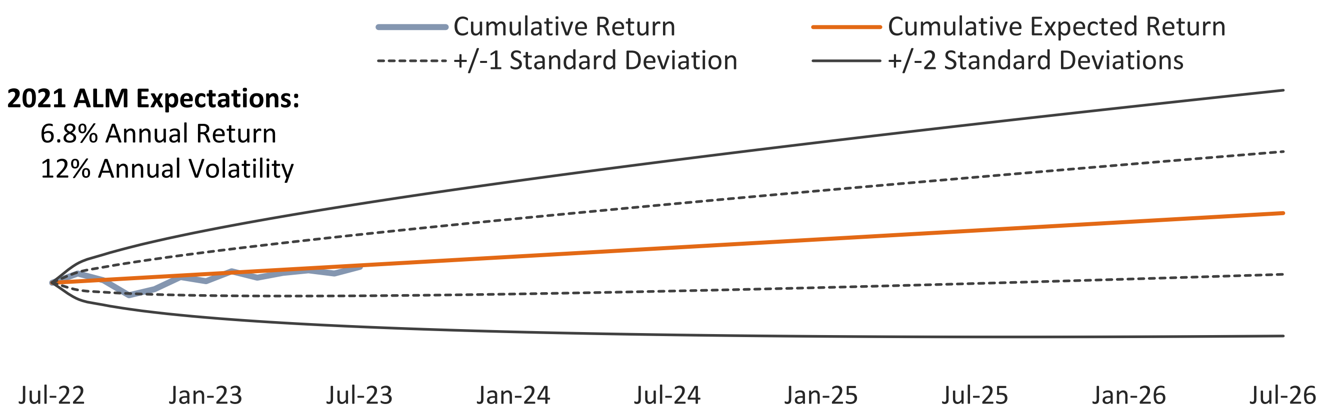


Exhibit 7.2

All performance reported net of investment expenses and annualized for periods greater than 1-Yr unless noted as cumulative

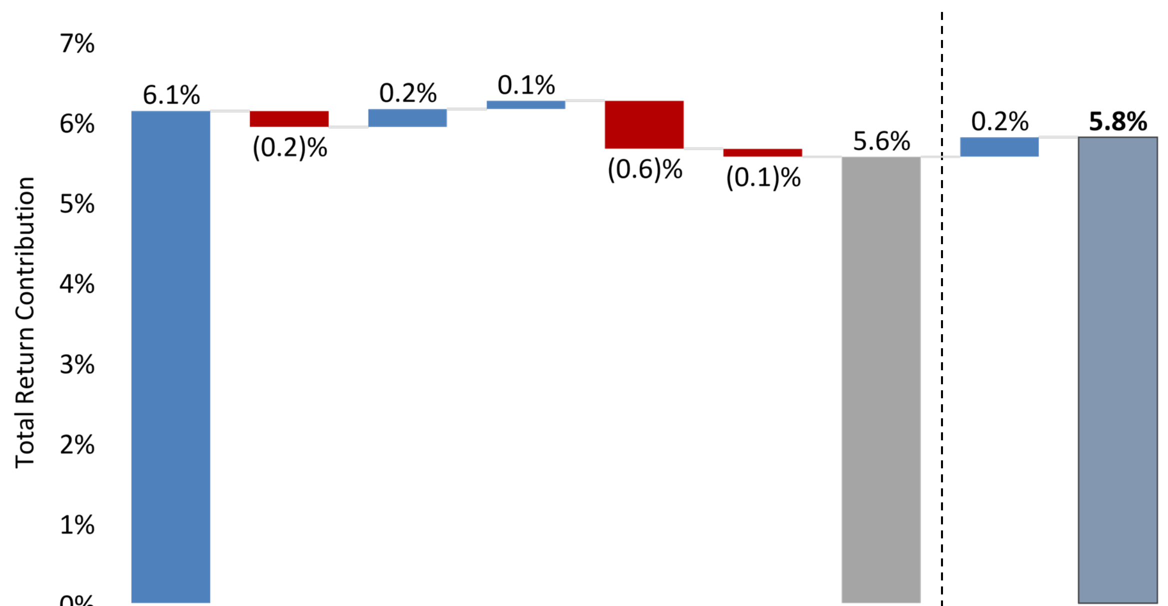
Section VII. PERF Performance Detail

Sources of PERF NAV Change and Total Return As of June 30, 2023

Public Equity drove FY 2022-23 return

- PERF NAV increased by more than $25bn during FY 2022-23, most of which was driven by public equities, which returned 14.1%
- Public equities' contribution was slightly offset by negative performance in Private Equity and Real Assets

1-Yr Total Return Contribution



	Contribution from Policy Benchmark Components								
	Public Equity	**Private Equity**	**Income**	**Private Debt[1]**	**Real Assets**	**Other[2]**	**Total Policy BM**	**Value Added**	**Total Fund**
Average Weight	46.8%	11.6%	25.2%	1.9%	16.0%	(1.6)%	100%	-	-
Return	14.1%	(5.9)%	0.7%	3.7%	(4.0)%	-	5.6%	-	**5.8%**
Cumul Dollar Return (bn)	$27.4	$(0.9)	$1.0	$0.4	$(2.6)	$(0.4)	$24.8	$0.6	**$25.4**

Exhibit 7.3

All performance reported net of investment expenses

[1] Private Debt was part of the Opportunistic Strategies Program prior to 7/1/2022

[2] Other includes strategic leverage and impact from historical Policy Benchmark allocations that are not part of the current Policy Benchmark

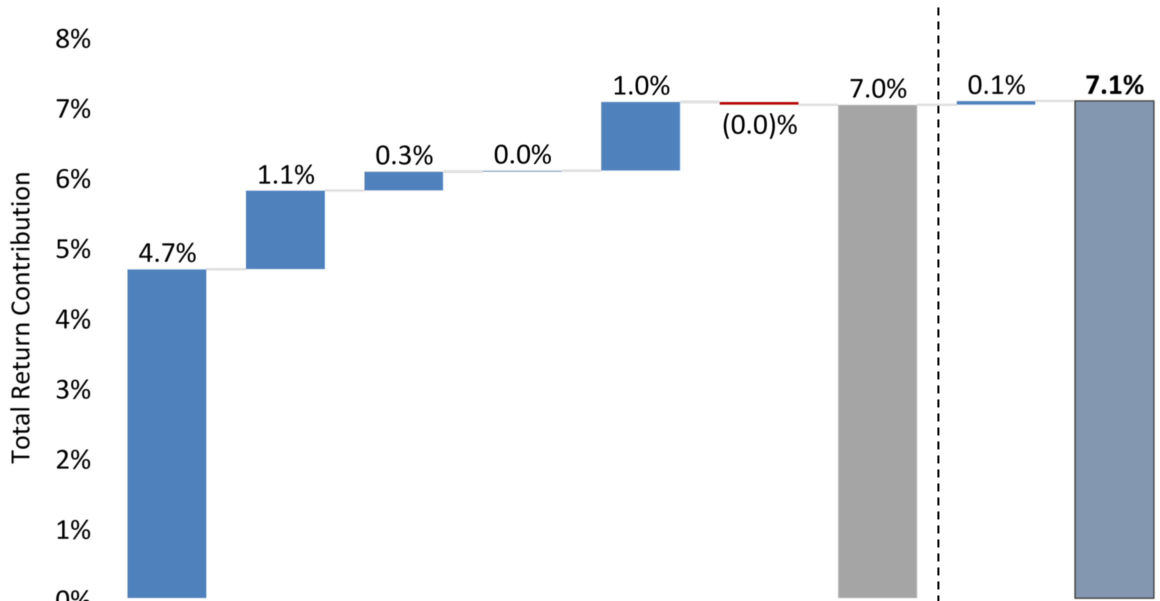
Section VII. PERF Performance Detail

Sources of PERF NAV Change and Total Return *(as of 06/30/2023)*

Growth assets drove 10-Yr return

- Over the past 10 years, the PERF NAV has increased by over $200bn
- Over longer periods, all programs generated positive returns
- PERF returns are typically driven by "growth" assets (e.g., public and private equity). Looking at 10-Yr performance, we see Public and Private Equity account for 5.8% (or >80%) of the PERF Total return of 7.1%

10-Yr Total Return Contribution



	Contribution from Policy Benchmark Components								
	Public Equity	**Private Equity**	**Income**	**Private Debt[1]**	**Real Assets**	**Other[2]**	**Total Policy BM**	**Value Added**	**Total Fund**
Average Weight	49.5%	9.4%	23.4%	0.2%	12.3%	5.2%	100%	-	-
Return	8.8%	11.4%	2.0%	-	8.0%	-	7.0%	-	**7.1%**
Cumul Dollar Return (bn)	$155.1	$37.7	$9.2	$0.4	$32.8	$(1.2)	$234.0	$2.8	**$236.8**

Exhibit 7.4

All performance reported net of investment expenses and annualized unless noted as cumulative

[1] Private Debt was part of the Opportunistic Strategies Program prior to 7/1/2022

[2] Other includes impact from benchmark leverage and historical Policy Benchmark allocations that are not part of the current Policy Benchmark

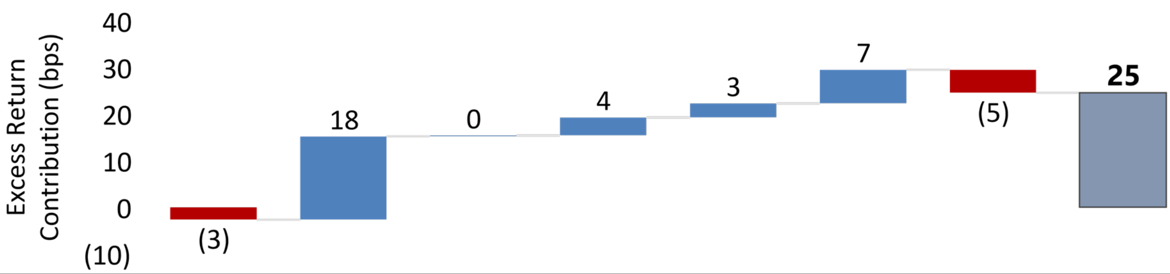
Section VII. PERF Performance Detail

Attribution of PERF Excess Return As of June 30, 2023

Private assets dominate PERF Excess Return

- Although Private Assets comprised about 20-30% of PERF NAV, those programs account for the majority of the 1-Yr excess return and nearly 50% of the 5-Yr excess return
- The largest driver of excess returns for 1-Yr and 5-Yr periods is Private Equity, with the 5-Yr period being significantly impacted by Private Equity's more recent outperformance
- Private asset excess performance is best evaluated over longer periods, as over the short term variations in valuation approaches between the assets and their benchmarks can dominate

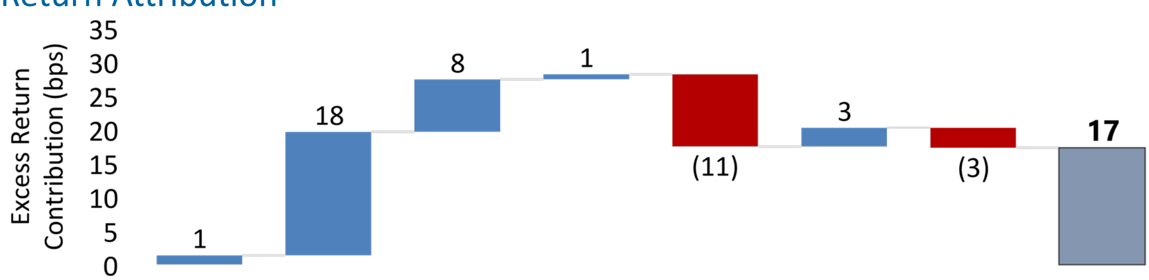
1-Yr Excess Return Attribution



	Public Equity	Private Equity	Income	Private Debt[1]	Real Assets	LLER	Allocation & Other[2]	Total Fund
Average Weight	46.6%	11.7%	23.7%	1.9%	16.1%	3.1%	-	**100%**
Return	14.1%	(2.3)%	(0.0)%	6.5%	(3.1)%	6.5%	-	**5.8%**
Benchmark Return	14.1%	(5.9)%	(0.0)%	3.7%	(4.0)%	4.1%	-	**5.6%**
Excess Return (bps)	(7)	362	(1)	280	97	245	-	**25**
Cumul Value Added (bn)	$(0.1)	$(0.0)	$0.0	$0.1	$0.4	$0.3	$(0.3)	**$0.6**

Exhibit 7.5

5-Yr Excess Return Attribution



	Public Equity	Private Equity	Income	Private Debt[1]	Real Assets	LLER	Allocation & Other[2]	Total Fund
Average Weight	49.6%	8.7%	27.4%	0.4%	12.1%	2.8%	-	**100%**
Return	7.6%	11.8%	1.0%	-	6.0%	2.7%	-	**6.1%**
Benchmark Return	7.5%	8.7%	0.8%	-	6.5%	1.7%	-	**5.9%**
Excess Return (bps)	9	300	21	-	(49)	107	-	**17**
Cumul Value Added (bn)	$0.9	$3.5	$1.2	$0.1	$(2.1)	$0.6	$(0.8)	**$3.8**

Exhibit 7.6

All performance reported net of investment expenses and annualized for periods greater than 1-Yr unless noted as cumulative

[1] Private Debt was part of the Opportunistic Strategies Program prior to 7/1/2022

[2] Other includes impact from strategic financing and investments in Non-SAA segments

Section VIII. PERF Risk Detail

Volatility

Slight increase in volatility from prior year in line with implementation of new Strategic Asset Allocation

Current Levels

- Total Forecasted Volatility for PERF increased by 0.8% from the prior year, in line with expectations and driven by trading to implement the new Strategic Asset Allocation (SAA) adopted in November 2021
- Actionable Tracking Error is well below the Policy Limit of 100 bps and indicative of opportunities to increase active management once appropriate resources and systems in place. This metric captures deviations from benchmarks for all public market programs, out of benchmark opportunistic investments, and asset allocation. There is no equivalent quantitative metric for private programs due to inherent limitations in modeling, measurement, and benchmarking

	Policy Limit	Current[1] 6/30/2023	Last Qtr 3/31/2023	Last Year 6/30/2022
Total Fund Volatility (%)	-	13.7	13.3	12.9
Policy Benchmark Volatility (%)	-	12.5	12.2	11.7
Tracking Error (%)				
Actionable	< 1.00	0.14	0.15	0.10
Total Fund	-	1.84	1.68	1.63
Allocation	-	0.01	0.04	0.00

Exhibit 8.1

Trends

- Forecasted and realized volatility metrics indicate that active strategies in the portfolio have generally not materially increased overall volatility relative to the benchmark
- Fluctuations in forecasted volatility are only partly driven by changes in the portfolio. Most of the variation visible below is the result of changing market conditions and changes in risk measurement methodology
- Similarly, comparison of forecasted vs. realized volatility is also challenging, as realized volatility is lagged and biased downwards due to smoothed valuations in private assets

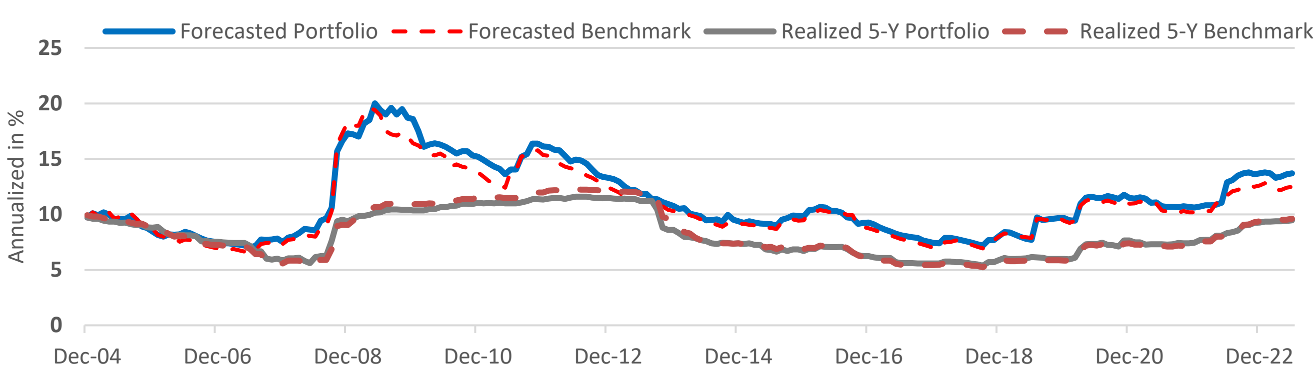


Exhibit 8.2

[1] *Tracking Error estimates are as of 7/5/2023 to reduce impact of fiscal year-end transition activities on accuracy of reported figures*

Section VIII. PERF Risk Detail

Historical Simulation

Significant PERF drawdowns should be expected in stress scenarios

Historical Stress Scenarios

- Historical stress testing is a complementary way to model the level of risk in a portfolio. It can provide a more intuitive understanding than the statistical metric of standard deviation (volatility), while also exploring tail events
- The current PERF portfolio would have incurred significant drawdowns in recent market stress events, most notably the Global Financial Crisis of 2008. This result is in line with expectations given the portfolio's growth-sensitive composition
- Stress testing also reveals the portfolio could experience higher than benchmark losses in some extreme market scenarios

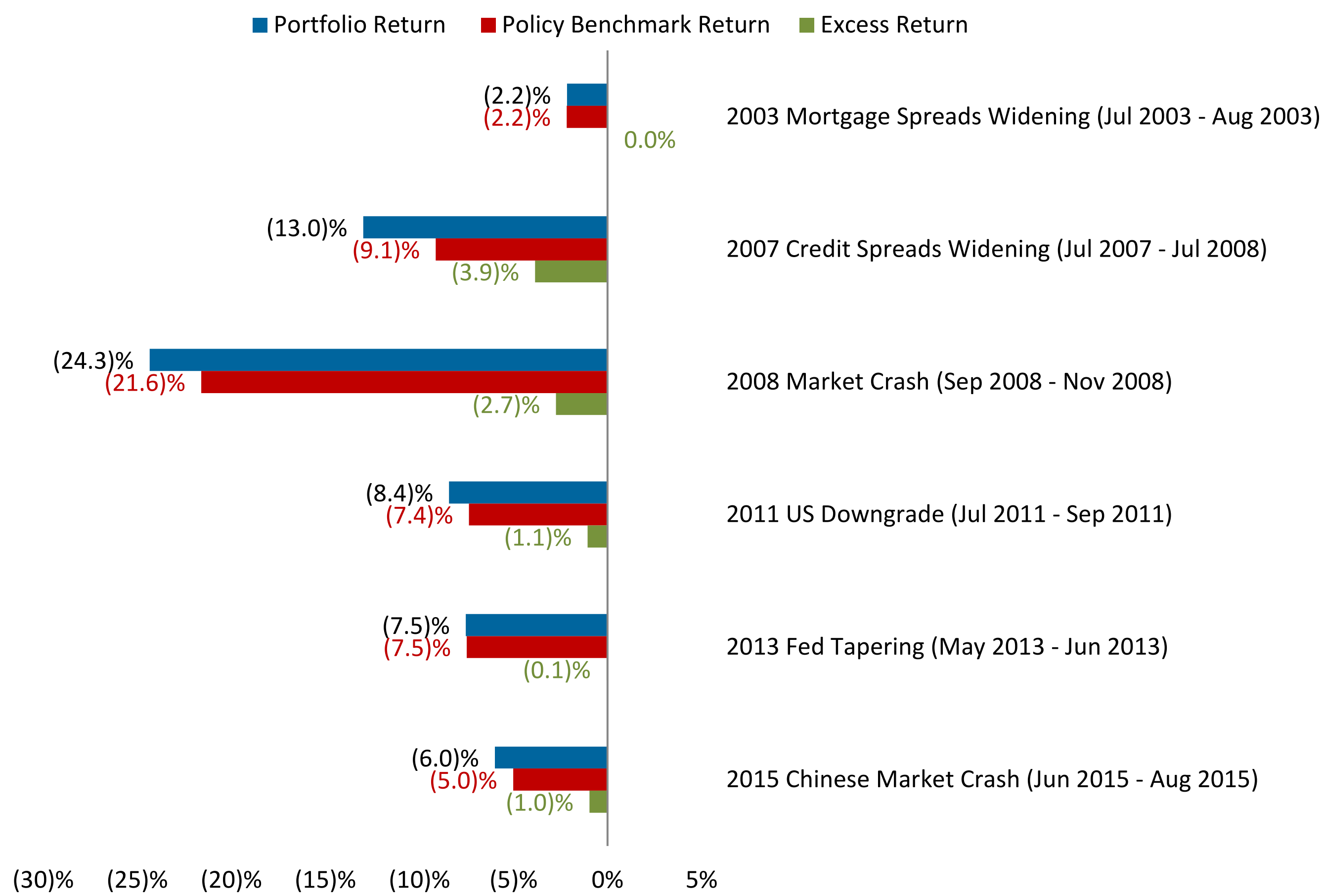


Exhibit 8.3

Section VIII. PERF Risk Detail

Historical Simulation (cont.)

PERF risk profile closely tracks the equity market, though with lower overall risk

Simulated Drawdowns of PERF Strategic Allocation vs. S&P 500

- Longer-term historical simulation underscores a strong relationship between PERF's allocation and the stock market. That said, the level of drawdowns is generally lower than equity markets, reflecting the impact of diversification and a lower absolute risk level
- The analytical technique employed here provides a broader historical perspective than the stress tests shown on the prior page. However, it employs a less robust proxy-based methodology and only simulates the policy benchmark, not active positions

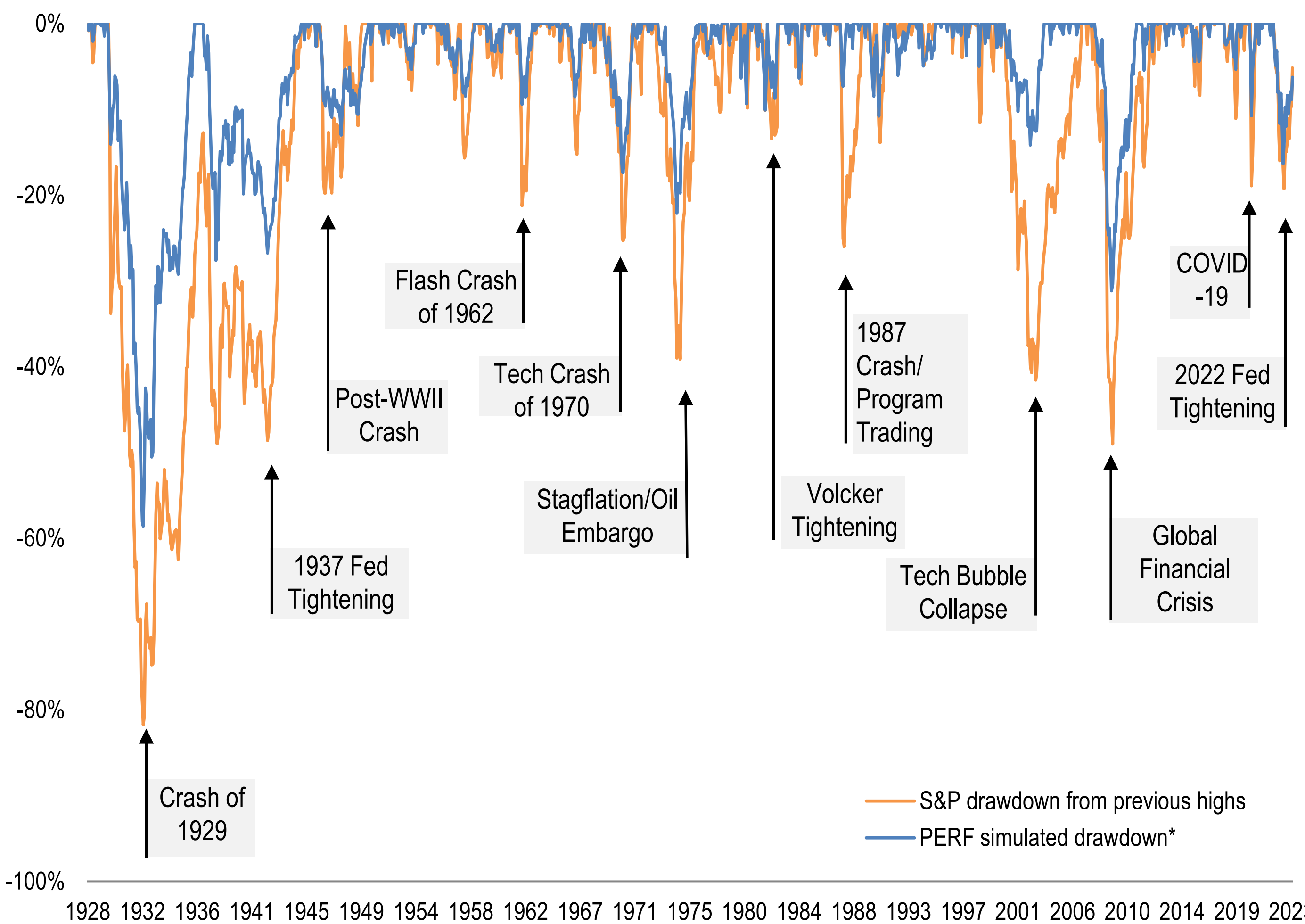


Exhibit 8.4

** Simulated performance of PERF asset allocation rebalanced quarterly to the current policy targets assuming historical returns for current benchmarks. For historical periods when performance data is not available for some asset classes, risk-comparable proxies are used.*

Section VIII. PERF Risk Detail

Risk Decomposition As of June 30, 2023

Growth oriented asset classes dominate overall volatility

% Contribution to Total Portfolio Volatility

- Public and Private Equities contribute approximately 80% of Total Fund Volatility. The remaining asset classes are also either growth-oriented (e.g., Real Assets) or contain growth-oriented components (e.g., High Yield in fixed income)

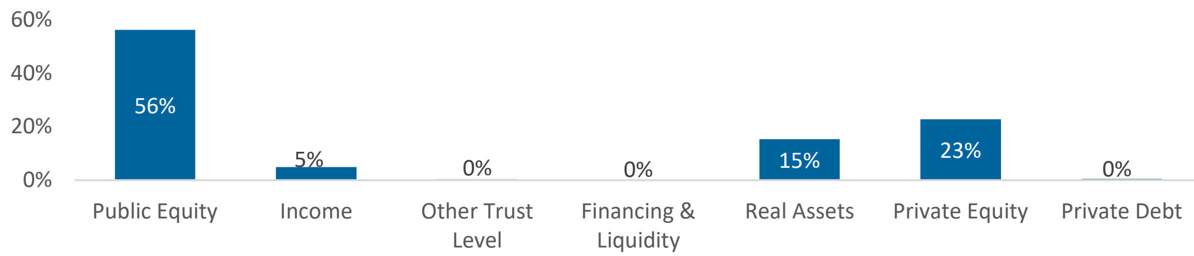


Exhibit 8.5

Asset Class		Market Value[1] ($ Millions)	Total Forecasted Volatility (%)	% Contribution to Total Volatility	5-Year Realized Volatility (%)
Public Asset Classes					
Public Equity	**$**	**208,632**	**17.5**	**56.3**	**17.1**
Cap Weighted	$	153,238	18.8	44.3	18.2
Factor Weighted	$	55,394	14.1	12.0	13.7
Income	**$**	**122,173**	**6.7**	**4.8**	**9.2**
IG Corp	$	30,720	10.1	1.5	11.7
EM Sov Debt	$	23,531	8.2	2.0	-
MBS	$	23,486	6.0	0.2	5.1
High Yield	$	20,934	6.8	1.5	9.2
Treasury	$	17,124	11.2	-0.2	11.5
Total Fund Income	$	6,379	11.3	-0.1	-
Other Trust Level	**$**	**15,695**	**2.7**	**0.3**	**-**
LLER	$	14,084	2.8	0.3	3.0
Opportunistic	$	248	3.5	0.0	-
Other	$	1,363	4.2	0.0	-
Financing & Liquidity	**$**	**(23,711)**	**18.9**	**0.0**	**-**
Liquidity	$	14,100	0.0	0.0	0.0
Trust Level Financing	$	(37,812)	18.9	0.0	-
Private Asset Classes					
Real Assets	**$**	**70,450**	**15.2**	**15.3**	**5.4**
Private Equity	**$**	**59,668**	**25.3**	**22.8**	**10.7**
Private Debt	**$**	**10,255**	**5.3**	**0.4**	**-**
TOTAL PERF	**$**	**463,161**	**13.7**	**100.0**	**9.5**

Exhibit 8.6

[1]*Data source: Aladdin risk system; some differences with custodial data primarily due to timing of recording some cash flows*

Section VIII. PERF Risk Detail

Risk Decomposition (cont.) As of June 30, 2023 [1]

Active equities and LLER are the largest contributors to Actionable TE

% Contribution to Actionable Tracking Error

- Total Fund Actionable Tracking Error (TE) is at 14 bps vs. a policy limit of 100 bps
- The primary contributors are external public equity managers and the Low Liquidity Enhanced Return (LLER) program, which is an active strategy that makes use of leverage to earn incremental returns

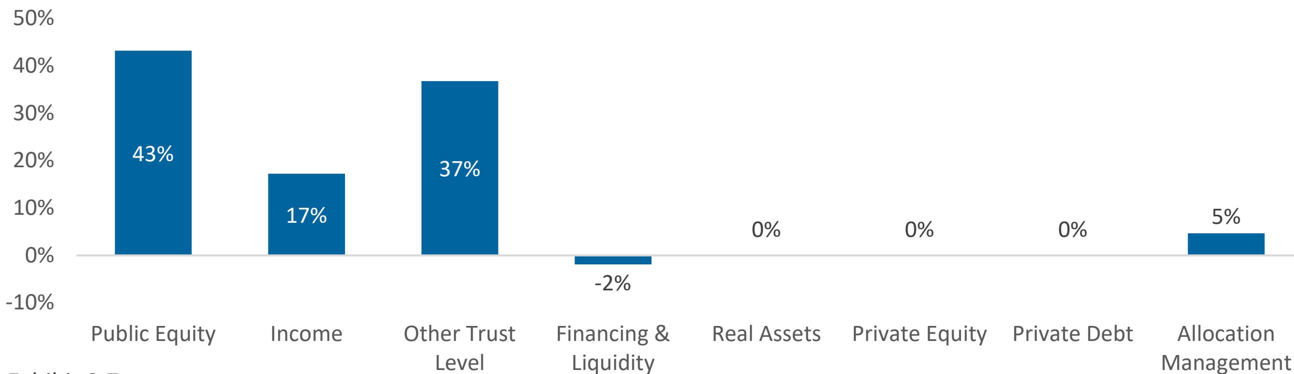


Exhibit 8.7

Asset Class	Forecasted Tracking Error (bps)	% Contribution to Actionable TE	5-Year Realized TE (bps)
Public Equity	**23**	**43**	**20**
Cap Weighted	31	44	25
Factor Weighted	5	0	10
Income	**50**	**17**	**27**
IG Corp	43	5	44
EM Sov Debt	80	11	-
MBS	31	2	31
High Yield	54	-3	30
Treasury	33	2	77
Total Fund Income	42	0	-
Other Trust Level	**266**	**37**	**-**
LLER	280	36	298
Opportunistic	349	1	-
Other	421	0	-
Financing & Liquidity	**-**	**-2**	**-**
Liquidity	16	1	-
Trust Level Financing	-	-3	-
Allocation Management	-	**5**	-
TOTAL PERF Actionable	**14**	**100**	**20**
Real Assets	**551**		**272**
Private Equity	**976**		**1,390**
Private Debt	**176**		**-**
TOTAL PERF	**184**		**163**

Exhibit 8.8

[1] *Estimated TE on this page is based on 7/5/2023 data to reduce impact of fiscal year-end transition activities on accuracy of reported figures*

Section VIII. PERF Risk Detail

Diversification Characteristics As of June 30, 2023

PERF is mainly invested in the United States

Regional Exposures

- Non-US portfolio holdings are approximately 31% and widely diversified across regions and countries
- Lower portfolio weight in US relative to Policy Benchmark is primarily due to international investments in Real Estate and Infrastructure

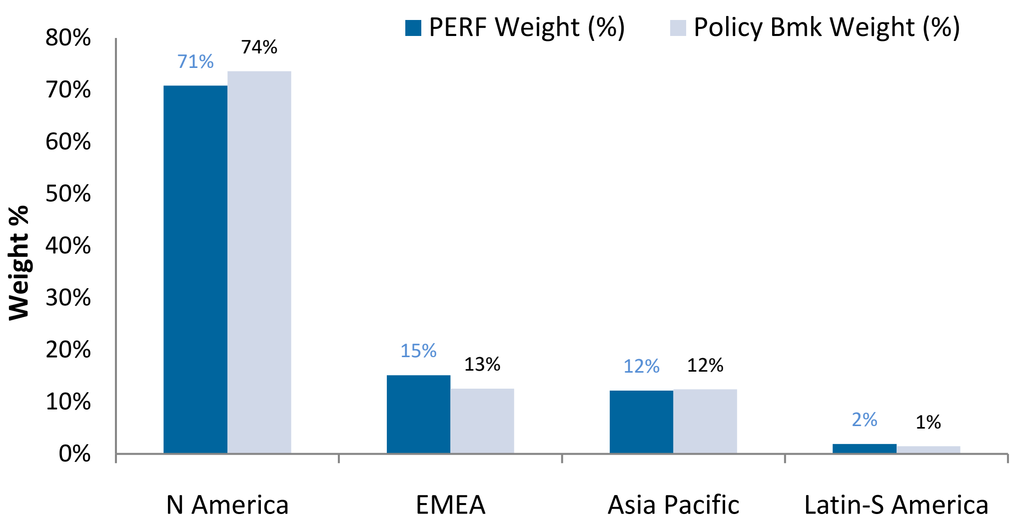


Exhibit 8.9

Top 10 Countries	PERF Weight (%)	Policy Benchmark Weight (%)	Active Weight (%)
United States	68.6%	71.2%	-2.6%
Japan	3.6%	4.1%	-0.5%
United Kingdom	3.4%	2.1%	1.3%
China[1]	2.3%	2.4%	-0.1%
Canada	1.7%	1.9%	-0.2%
Switzerland	1.3%	1.8%	-0.5%
Taiwan	1.1%	1.3%	-0.1%
Germany	1.1%	1.1%	0.0%
France	1.1%	1.4%	-0.3%
India	1.0%	0.9%	0.1%

Exhibit 8.10

[1] Including Hong Kong

Section VIII. PERF Risk Detail

Diversification Characteristics (cont.) As of June 30, 2023

24% foreign currency exposure

Foreign Currency Exposures

- PERF non-USD exposure is 24.2% versus 23.7% in the Policy Benchmark. Foreign currency exposure in the Policy Benchmark comes entirely from the public and private equity segments, which are global capitalization weighted
- PERF non-USD active exposure is small and primarily reflects foreign unhedged holdings in Real Assets and differences between portfolio and benchmark country allocations in Private Equity

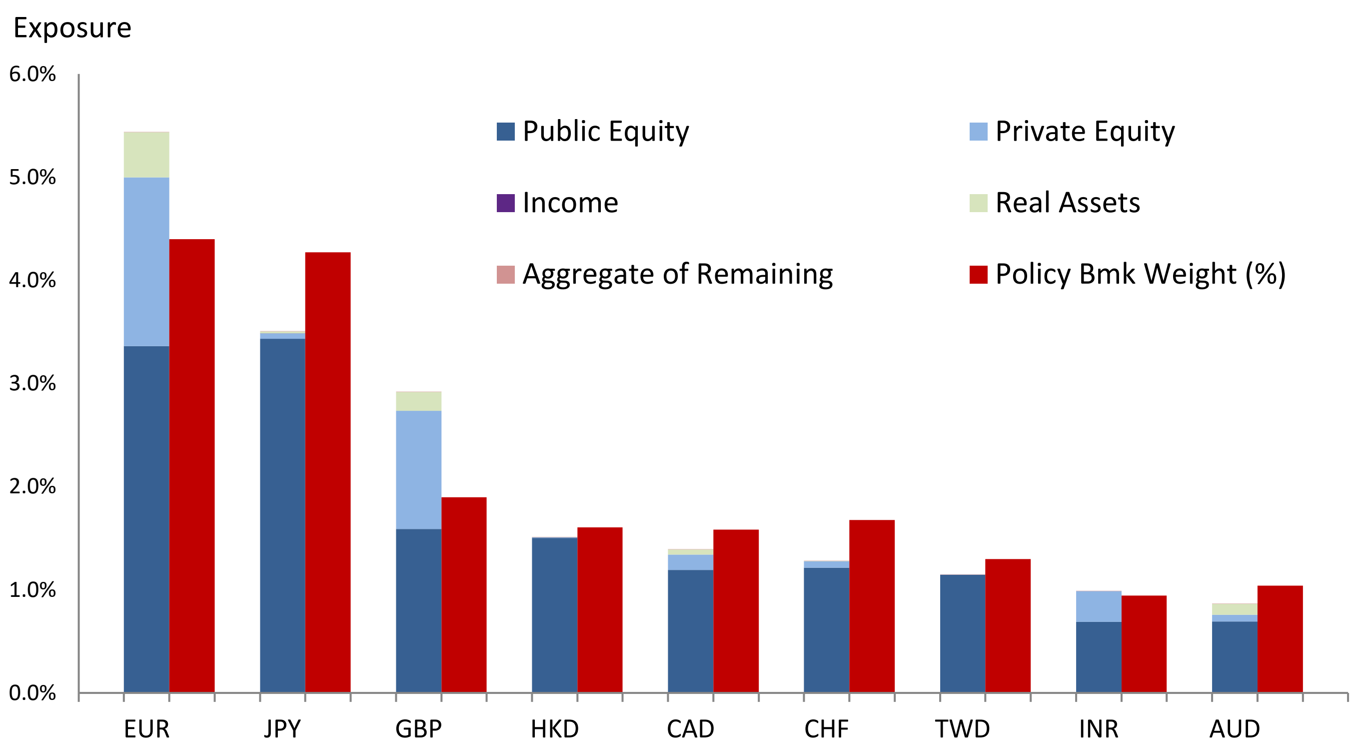


Exhibit 8.11

Section VIII. PERF Risk Detail

Diversification Characteristics (cont.) As of June 30, 2023

PERF is diversified to individual issuers and industries

Issuer Concentration

- PERF is diversified across individual issuers
- The largest issuers are the United States Government (US Treasuries) and its housing finance arms (Government Sponsored Enterprises)

Top 20 Issuers

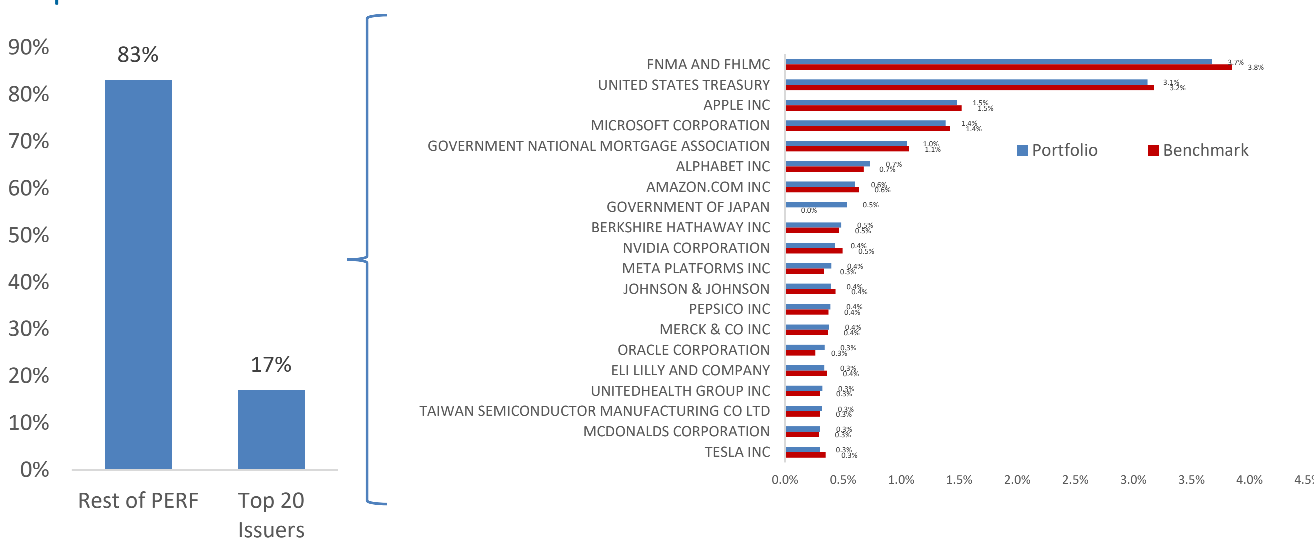


Exhibit 8.12

Industry Concentration – Top 10

- PERF industry mix closely tracks broad market's distribution

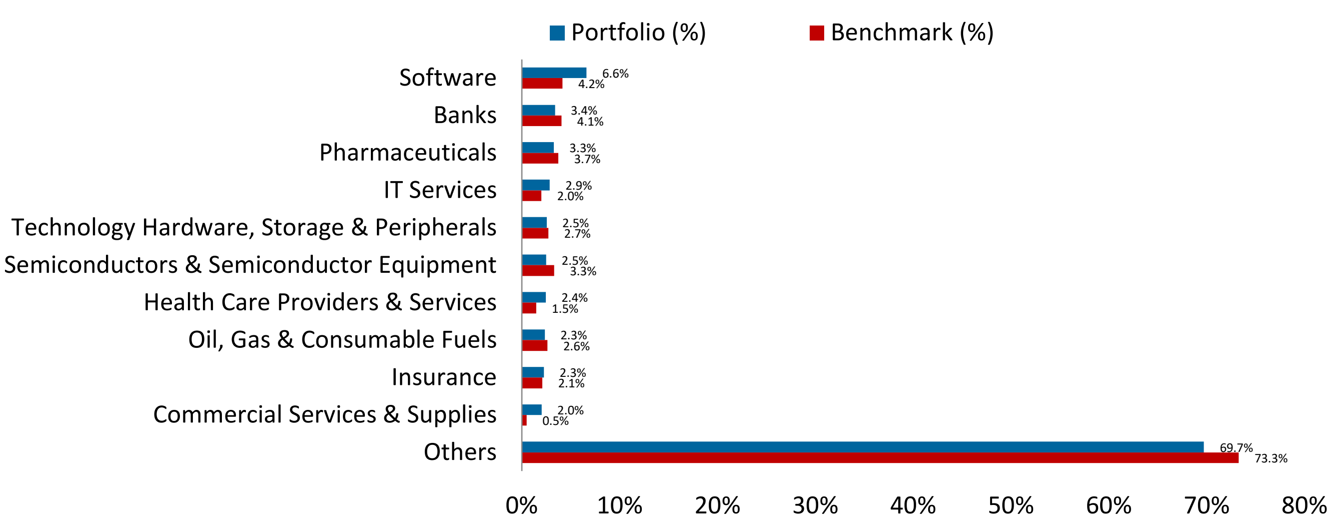


Exhibit 8.13

Section VIII. PERF Risk Detail

Leverage *(as of 06/30/2023)*

PERF maintains modest leverage

Policy Leverage

- As of June 30, 2023, PERF total leverage was 7.1%, of which 5.1% was active leverage incremental to the benchmark
- Strategic leverage is on path towards the 5% target established in the November 2021 Strategic Asset Allocation
- Active leverage remains within the 15% policy limit and primarily supports the Low Liquidity Enhanced Return Program (LLER)

PERF Leverage Breakdown[1,2]	**Value ($mm)**		**Share of PERF NAV (%)**
Fund Level			
LLER	14,084		3.0%
Opportunistic Strategies	248		0.1%
Forward Sale of Private Equity Holdings	1,184		0.3%
Other Trust Level	178		0.0%
Strategic Leverage - Portfolio	8,016		1.7%
Total - Fund Level	23,711		5.1%
Program Level vs Benchmark			
Public Equity	341		0.1%
Private Equity	0		0.0%
Income	1,098		0.2%
Real Assets	7,629		1.6%
Real Estate (Program Leverage)		23,419	
Real Estate (Benchmark Leverage)		(15,790)	
Private Debt	0		0.0%
Other Trust Level (Forward Settlements)	0		0.0%
Total - Program Level	9,069		2.0%
Total - PERF	**32,780**		**7.1%**
Strategic Leverage – Benchmark	**9,263**		**2.0%**
Active Leverage	**23,517**		**5.1%**

Exhibit 8.14

[1] FX Forwards used for hedging are not counted as leverage. Options are included based on delta adjusted notional value
[2] All debt, including Real Assets, is non-recourse, unless specifically stated

Sources: Aladdin, AREIS. Strategic leverage reported here may differ slightly from aggregate allocation reporting due to minor cashflow timing mismatches between systems

Section VIII. PERF Risk Detail

Leverage (cont.)

Implicit Leverage

- The prior page describes leverage managed and measured explicitly as part of implementation of the PERF portfolio, in line with the Total Fund Leverage Policy. In general, this leverage reflects deliberate investment choices made by CalPERS staff or its agents
- There is additional leverage in the portfolio that is an implicit characteristic of many of the assets we hold. For example, most private and public companies in the portfolio use leverage on their balance sheets
- This type of leverage is not a direct lever of portfolio management decisions. However, it forms part of the considerations that inform overall portfolio construction. For example, the leverage embedded in equities is one of the drivers of their relatively higher return and risk expectations, which are embedded in the Capital Market Assumptions which in turn impact asset allocation decisions
- The table below provides an indication of the level of embedded leverage in the three primary asset classes employed in PERF (in this representation, "1.59x" equates to 59% as reported for PERF policy leverage)

Asset Class	Embedded Leverage[1]
Public Equity	1.59 x
Private Equity	2.00 x
Real Estate (Benchmark)	1.31 x

Exhibit 8.15

[1] Embedded leverage shown represents Enterprise Value to Equity Ratio. Embedded leverage for Public Equity and Private Equity is estimated based on industry research.

Sources: FactSet, MSCI

Section VIII. PERF Risk Detail

Liquidity As of June 30, 2023

PERF remains highly liquid

30-Day Operating Liquidity Coverage

- Liquidity ratios shown below are designed to measure PERF's ability to maintain operation of all current and planned investment strategies under extreme stress scenarios without forced selling of assets. This is a higher bar than ratios typically employed in the financial sector to measure solvency

Stress (Current Regime)[1]

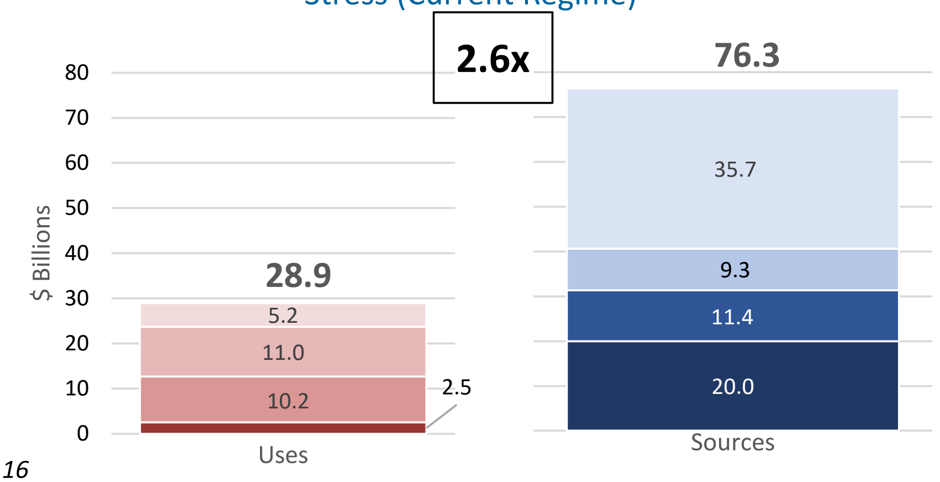


Exhibit 8.16

Historical Worst[2]

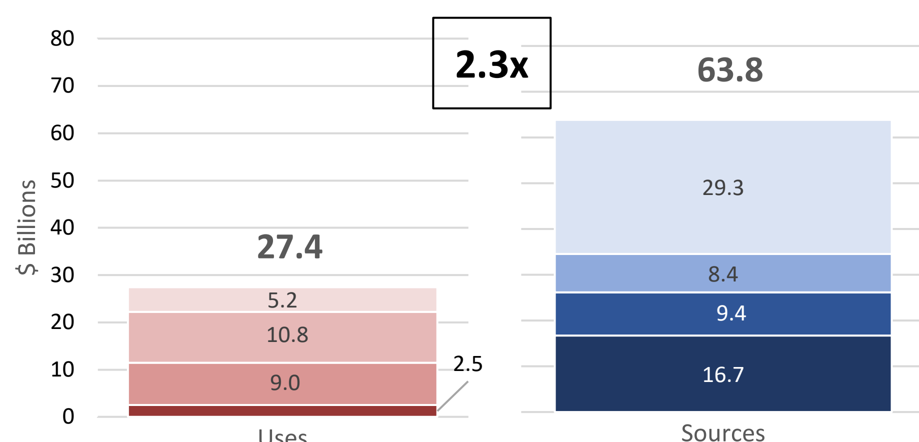


Exhibit 8.17

Maturing Derivatives/Repos & Others
Contingent
Private Asset Funding
Pension Benefits

Liquidity on Demand
Internal Funding
Pension Contribution & Other Inflows
Cash Equivalents

[1] ***Stress (Current Regime)*** *- Regime-dependent scenario to capture a "worst contemplated" outcome across liquidity uses and sources given current market conditions*

[2] ***Historical Worst*** *- Historical experience for the 30-day period: 9/27/08-10/27/08 (the worst 30-day equity drawdown in the past 20 years) applied to current portfolio*

Sources: Aladdin, Sec Lending

Section VIII. PERF Risk Detail

Liquidity *(cont.)*

30-Day Liquidity by Asset Class

- The estimates below indicate the monetization capacity per asset class within a 30-day period under current markets and stress scenarios
- The chart illustrates both the relatively large amount of liquidity at CalPERS' disposal as well as the relative liquidity of the various asset segments

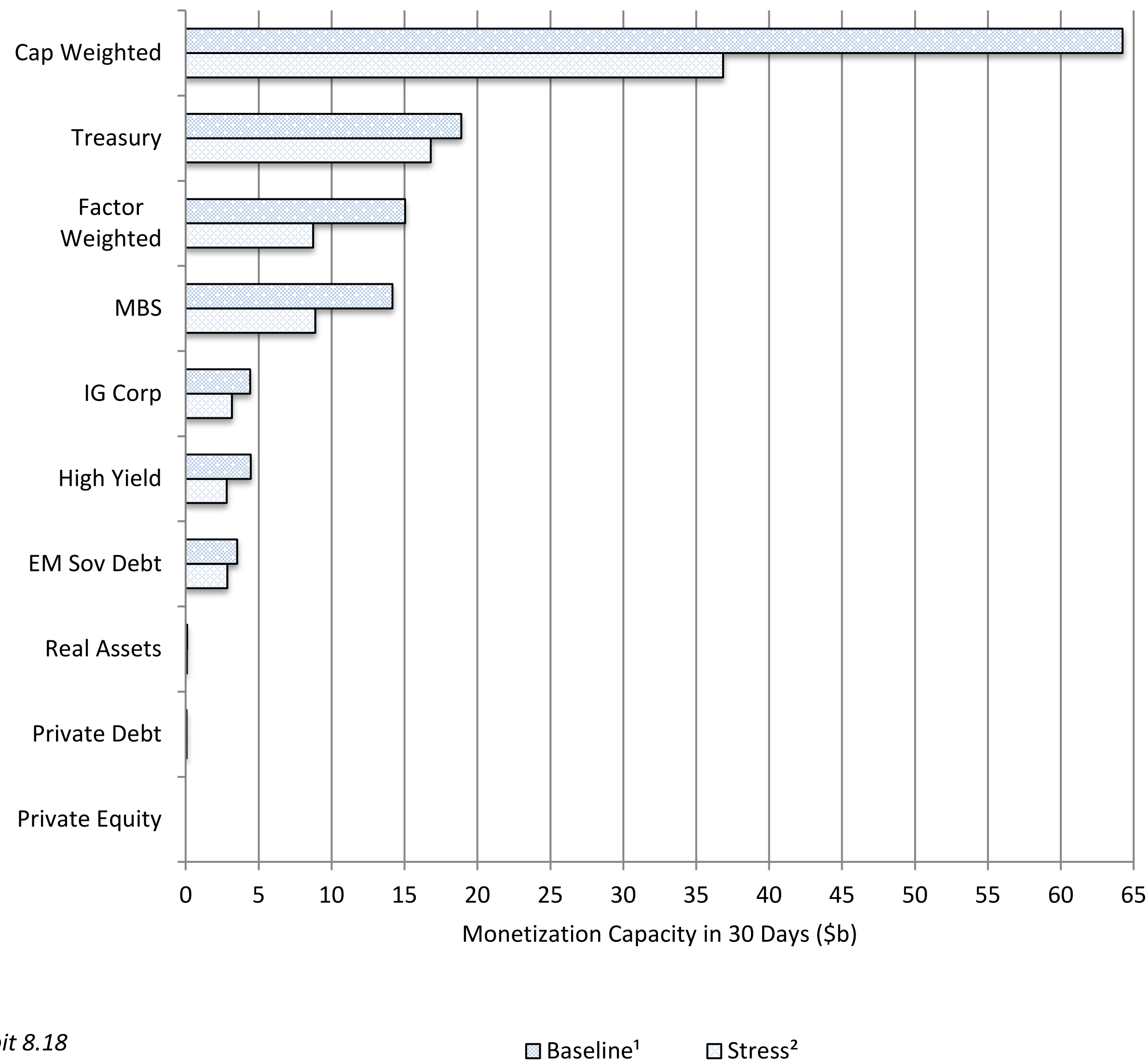


Exhibit 8.18

[1] ***Baseline*** *- Aladdin Liquidity Model with Average Daily Volume set at 2.5%.*
[2] ***Stress*** ***-*** *Baseline settings with COVID-19 stress scenario applied*

Source: Aladdin

Section VIII. PERF Risk Detail

Counterparty Risk As of June 30, 2023

Counterparty risk is managed via monitoring and collateralization

- Counterparty risk is the risk that, in the event a counterparty fails, CalPERS does not receive the value owed to us by the counterparty, for example, outstanding P&L on a derivatives contract
- CalPERS holds positions in swaps, options, futures, rights and warrants, forward foreign currency exchange, repurchase and reverse repurchase, and forward purchase and securities lending contracts -- all of which may create counterparty exposure
- CalPERS seeks to control this risk through two primary channels: active collateralization of exposures (typically daily) and a comprehensive regime of monitoring and review. The latter includes counterparty credit evaluations and approvals, counterparty credit limits, monitoring procedures, and use of market accepted standard agreements
- This report describes exposures directly contracted by CalPERS, and not by the external investment managers. External investment managers are required to have strict guidelines to manage and control counterparty risk

Current aggregate financial conditions are moderate

- Most counterparty risk management takes place at the individual counterparty level. However, aggregate market risks are also monitored, with additional oversight measures implemented during crisis periods

Historical Bank Credit Default Swap Spreads (From June 2007 – Present)

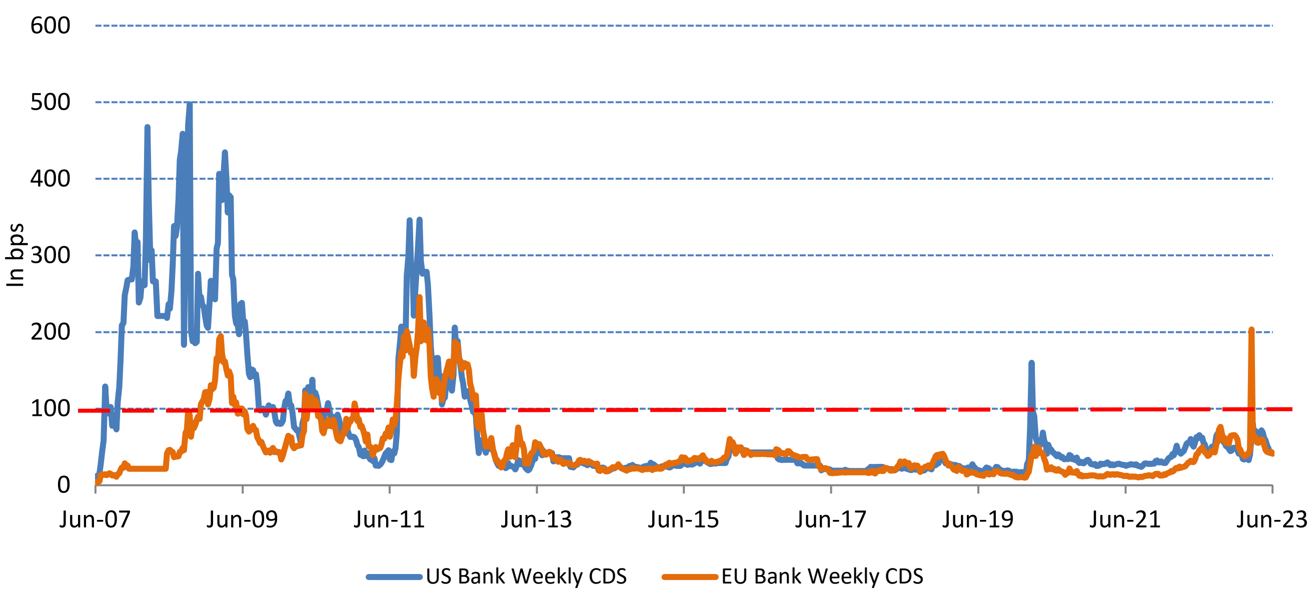


Exhibit 8.19

Source: Bloomberg

Section VIII. PERF Risk Detail

Counterparty Risk *(cont.)*

Majority of counterparty exposure is collateralized

- The tables that follow reflect a snapshot of counterparty exposures across the various types of contracts CalPERS uses that can create counterparty exposure
- In general, money owed to or by CalPERS is collateralized daily, resulting in little net exposure

International Swaps and Derivatives Association (ISDA) Master Agreement
Includes FX forwards, equity swaps, interest rate swaps, cross-currency swaps, total return swaps, and options

Counterparty	Net MTM Total ($mm) (+) = CalPERS is due money (-) = CalPERS owes money	Collateral Posted ($mm) (+) = CalPERS has posted (-) = Counterparty has posted	Net Exposure ($mm) (+) = CalPERS exposed to Counterparty
Bank of Montreal	3.6	(3.5)	0.1
Bank of America N.A.	24.0	(24.6)	(0.6)
BNP Paribas	31.9	(32.0)	(0.1)
Barclays Bank PLC	2.5	(2.6)	(0.1)
Citigroup N.A.	10.7	(12.0)	(1.3)
Canadian Imperial Bank of Commerce	1.3	(1.1)	0.1
Goldman Sachs Bank	(174.8)	169.6	(5.2)
Goldman Sachs Intl	237.4	(238.7)	(1.3)
HSBC Bank USA	0.9	(1.1)	(0.2)
JP Morgan Chase	42.9	(42.2)	0.7
Morgan Stanley Capital Services Inc.	42.7	(43.2)	(0.5)
Royal Bank of Canada	99.9	(73.3)	26.6
Standard Chartered Bank	2.1	(2.1)	(0.1)
Societe Generale	21.3	(19.0)	2.2
State Street Bank & Trust	5.6	(5.6)	(0.0)
Toronto Dominion Bank	16.1	(14.6)	1.5
UBS AG	20.1	(20.1)	(0.0)
Wells Fargo Bank	13.6	(13.1)	0.5
Total	**401.7**	**(379.4)**	**22.2**

Exhibit 8.20

Source: Aladdin

Section VIII. PERF Risk Detail

Counterparty Risk *(cont.)*

Master Repurchase Agreement (MRA)
Includes repurchase and reverse purchase agreements

Counterparty	Net MTM Total ($mm) (+) = CalPERS is due money (-) = CalPERS owes money	Collateral Posted ($mm) (+) = CalPERS has posted (-) = Counterparty has posted	Net Exposure ($mm) (+) = CalPERS exposed to Counterparty
Bank of America Securities Inc.	(2,933.3)	2,930.9	(2.4)
Bank of Montreal	(105.5)	105.7	0.3
Barclays Capital Inc.	100.0	(102.0)	(2.0)
Credit Agricole	(1,092.0)	1,094.3	2.3
Citigroup Global Markets Inc.	334.0	(345.5)	(11.5)
Canadian Imperial Bank of Commerce	(648.3)	638.3	(10.0)
Deustche Bank Securities Inc.	250.0	(255.0)	(5.0)
Goldman Sachs Bank	(105.4)	105.6	0.2
Goldman Sachs International	(917.2)	910.2	(7.0)
HSBC Bank	(206.5)	206.5	(0.0)
JP Morgan Securities LLC	(2,533.2)	2,538.5	5.3
MUFG Securities	(1,826.2)	1,826.2	0.0
NATIXIS	(948.9)	950.1	1.3
Royal Bank of Canada	(4,078.7)	4,076.5	(2.2)
SMBC	1,000.0	(1,020.0)	(20.0)
Standard Chartered	(7.6)	(11.4)	(19.0)
Toronto Dominion	(2,420.1)	2,420.2	0.2
Wells Fargo Securities, LLC.	(327.5)	316.4	(11.1)
Total	**(16,466.2)**	**16,385.7**	**(80.5)**

Exhibit 8.21

Source: Aladdin

Section VIII. PERF Risk Detail

Counterparty Risk *(cont.)*

Securities Lending Agreement (SLA)
Includes collateralized loan of securities

Counterparty	Market Value of Securities Out on Loan ($mm) (+) = CalPERS lent securities	Collateral Posted ($mm) (Cash or Securities) (+) = CalPERS has posted (-) = Counterparty has posted	Net Exposure ($mm) (+) = CalPERS exposed to Counterparty
ABN AMRO Group N.V.	0.0	(0.0)	(0.0)
Bank of Montreal	58.3	(59.8)	(1.5)
Bank of New York Mellon	27.3	(27.9)	(0.6)
Bank of Nova Scotia	6,093.0	(6,401.2)	(308.2)
BankAmerica	122.2	(128.5)	(6.3)
Barclays Group	9,691.1	(10,225.4)	(534.4)
BNP Paribas Group	419.2	(442.2)	(23.0)
Canadian Imperial Bank of Commerce	72.8	(78.8)	(5.9)
Citigroup	190.1	(231.3)	(41.1)
Deutsche Bank Group	0.2	(0.3)	(0.1)
Goldman Sachs Group	9,078.3	(9,314.5)	(236.2)
Healthcare of Ontario Pension Plan	1,101.8	(1,179.1)	(77.3)
HSBC Group	24.5	(26.6)	(2.1)
ING Group	47.2	(51.0)	(3.8)
J.P. Morgan Group	965.1	(1,020.9)	(55.8)
Macquarie Bank Group	1.2	(1.4)	(0.2)
Mitsubishi UFJ Financial Group	89.9	(93.6)	(3.8)
Mizuho Financial Group Inc.	8.7	(8.9)	(0.2)
Morgan Stanley Group	726.8	(779.0)	(52.2)
National Bank of Canada	478.4	(513.6)	(35.3)
NATIXIS group	4,200.8	(4,536.5)	(335.7)
Nomura Holdings, Inc.	159.4	(162.8)	(3.4)
Royal Bank of Canada	635.1	(676.5)	(41.4)
Societe Generale Group	908.1	(953.8)	(45.8)
Sumitomo Mitsui Banking Corporation	403.3	(435.7)	(32.4)
TD Securities	19.8	(20.3)	(0.4)
UBS Group	1,746.6	(1,940.2)	(193.7)
Wells Fargo & Co.	1.0	(1.0)	(0.0)
Total	**37,270.3**	**(39,311.0)**	**(2,040.7)**

Exhibit 8.22

Source: Sec Lending

Section VIII. PERF Risk Detail

Counterparty Risk *(cont.)*

Master Securities Forward Transaction Agreement (MSFTA)
Includes forward purchase/sale of mortgage bonds and TBAs

Counterparty	Net MTM Total ($mm) (+) = CalPERS is due money (-) = CalPERS owes money	Collateral Posted ($mm) (+) = CalPERS has posted (-) = Counterparty has posted	Net Exposure ($mm) (+) = CalPERS exposed to Counterparty
Barclays Capital Inc.	(0.2)	0.0	(0.2)
Citigroup Global Markets, Inc.	(0.4)	0.4	0.0
Fannie Mae	(0.1)	0.0	(0.1)
Goldman Sachs & Co.	(0.8)	1.0	0.2
JP Morgan Securities Inc.	0.7	(0.9)	(0.1)
Merrill Lynch, Pierce, Fenner, Smith Inc.	(0.2)	0.2	(0.0)
Morgan Stanley Capital	(0.3)	0.1	(0.2)
Wells Fargo Securities	(0.8)	0.8	0.0
Total	**(2.1)**	**1.8**	**(0.3)**

Exhibit 8.23

- Custodial risk is the risk that, in the event a depository institution or counterparty fails, CalPERS would not be able to recover the value of its deposits, investments, or collateral securities. This risk arises in exchange traded derivatives, where CalPERS posts margin to engage in exchange traded derivatives via a Futures Commission Merchant (FCM)
- FCMs are highly regulated financial entities that accept orders for exchange traded contracts in Central Clearing Counterparties (CCPs). Collateral posted at the FCM is mostly used to meet the margin requirements at the CCPs
- The collateral below has been provided to the FCM to post at the CCPs on behalf of CalPERS and bridging operational, timing and processing gaps in collateral transfer

Futures Commission Merchant (FCM) Exposure
Includes exchange traded futures

Counterparty	Collateral Posted ($mm)
Citigroup Global Markets Inc.	380.6
BOFA Securities Inc.	427.7
Total	**808.3**

Exhibit 8.24

Source: Aladdin

Appendix 1: PERF Benchmarks

Asset Class	**Policy Benchmark**
Public Equity – Cap Weighted	CalPERS Custom FTSE All World, All Cap Equity Benchmark
Public Equity – Factor Weighted	CalPERS Custom FTSE Factor Weighted Index
Private Equity	CalPERS Custom FTSE Global Benchmark +150 bps, Quarter Lage
Income - Treasury	Custom Bloomberg Government
Income - MBS	Custom Bloomberg Mortgage
Income - IG Corporates	Custom Bloomberg Corporate ex Sov
Income - High Yield	Custom Bloomberg High Yield
Income - EM Sovereign Bonds	Custom JP Morgan EMBIG Diversified
Real Assets	MSCI/PREA U.S. ACOE Quarterly Property Fund index (Unfrozen), Quarter Lag
Private Debt	S&P/ LSTA U.S. Leveraged Loan 100 Index +125 bps, Quarter Lag
Strategic Leverage	ICE BofA US 3-Month Treasury Bill Index +50 bps

Appendix 2: Definitions

Term	Definition
10 Year U.S. Treasury	The 10-Yr Treasury note (bond) is a debt obligation issued by the United States government with a maturity of 10 years upon initial issuance. A 10-Yr Treasury note pays interest at a fixed rate once every six months and pays the face value to the holder at maturity. The "10-Yr" is viewed as a sign of investor sentiment about the economy. A rising yield for the 10-Yr indicates falling demand for Treasury bonds, which means investors prefer higher-risk, higher-reward investments. A falling yield suggests the opposite.
Annual average percent change (aapc)	The change in a variable between one entire year and the prior entire year. This differs to an annual percent change, which looks at one point in time compared with the same point in time a year earlier.
Actionable Tracking Error	Investment Policy definition of the Total Fund tracking error that excludes the effect of active exposure from private asset classes arising from the modeling challenges and the non-investible nature of their benchmarks.
Active Leverage	The portion of Total Fund leverage that is controlled by staff and used to fund exposures incremental to the Strategic Asset Allocation.
Alpha	The measure of the return of an investment relative to an appropriate benchmark.
Basis Point (BP)	1 basis point is 1/100 of a percent or 0.01%
Beta	A statistical measure of investment or portfolio return sensitivity to the market where the market is typically defined by a market index. A beta of 1.0 means the investment moves in synch with the market. A beta of 0.5 means the investment moves 50% as much as the market. A beta of 1.5 means the investment moves 150% as much as the market. For example, a portfolio with a beta of 0.8 is expected to have an 8% return when the market returns 10%.
Benchmark	A collection of assets to compare against the portfolio's assets. These are typically market indices (e.g., SP500 or Bloomberg Barclays Global Aggregate). Benchmarks can be a useful tool to evaluate performance and risk.
Central Banks	The principal monetary authority of a nation, a central bank performs several key functions, including issuing currency and regulating the supply of credit in the economy. The Federal Reserve is the central bank of the United States.

Term	Definition
Consensus Economics	Consensus Economics is a global macroeconomic survey firm that polls more than 700 economists monthly for their forecasts for over 2,000 macroeconomic indicators in 115 countries. The company is headquartered in London, United Kingdom.
Consumer Prices Index (CPI)	An index which measures changes in the prices of a (weighted average) basket of goods and services. This basket is representative of aggregate U.S. consumer spending and is a common reference point for inflation.
Counterparty	The legal entity that holds the other side of a contract or financial transaction.
Economic Activity	Any action that involves producing, distributing, or consuming products or services is an economic activity. Used synonymously with real GDP growth.
Event Risk	Refers to any future potential occurrence that can cause losses for investors or other stakeholders in a company or investment.
Excess Return	The portfolio return minus the portfolio benchmark return. Time-weighted excess return is not affected by the amount of capital invested.
Federal Reserve Open Market Committee (FOMC)	A twelve-member committee made up of the seven members of the Board of Governors; the president of the Federal Reserve Bank of New York; and, on a rotating basis, the presidents of four other Reserve Banks. The FOMC meets eight times a year to set Federal Reserve guidelines regarding the purchase and sale of government securities in the open market and the policy (overnight) interest rate as a means of influencing the volume of bank credit and money in the economy.
Financial Market Pricing	Current price at which an asset or service can be bought or sold. The market price of an asset or service is determined by the forces of supply and demand and, when traded in real time on global financial markets, can be influenced by (unrealized) expectations around the future.
Future Commission Merchant (FCM)	Highly regulated entities that accept orders for exchange traded contracts in Central Counterparty Clearing House (CCPs). Collateral posted at the FCM is mostly used to meet the margin requirements at the CCPs. The collateral in the counterparty section has been provided to the FCM to post at the CCPs on behalf of CalPERS and bridging operational timing and processing gaps in collateral transfer.
High Yield (HY)	Compared to Investment Grade, these bonds have a lower credit rating meaning they have a relatively higher risk of default. Due to their higher probability of default, they pay a higher yield to compensate investors for the additional risk.

Term	Definition
Inflation	A rate of increase in the general price level of goods and services. The general term 'inflation' usually refers to the change in the CPI index over one year.
International Monetary Fund (IMF)	An international organization with 146 members, including the United States. The main functions of the IMF are to lend funds to member nations to finance temporary balance of payments problems, to facilitate the expansion and balanced growth of international trade, and to promote international monetary cooperation among nations. The IMF also creates special drawing rights (SDR's), which provide member nations with a source of additional reserves. Member nations are required to subscribe to a Fund quota, paid mainly in their own currency. The IMF grew out of the Bretton Woods Conference of 1944.
International Swaps and Derivatives Association (ISDA)	A trade organization of market participants that facilitates standardization of contractual agreements to trade over-the-counter derivative contacts. CalPERS enters into ISDA agreements to trade derivatives; for example, FX forwards, total return and interest rate swaps.
Investment Grade (IG)	Bonds with a higher credit rating meaning they have a relatively low risk of default.
Liquidity Coverage Ratio	Metric refers to the proportion of liquid assets to meet short term obligations under a stress scenario (within 30 days). The ratio divides Sources of Liquidity by Uses of Liquidity.
Liquidity (sources of)	Includes: Cash Equivalents, Pension Contributions & Other Inflows, Internal Funding and Liquidity on Demand.
Liquidity (uses of)	Includes: Pension Benefits, Private Asset Funding, Contingent uses and Maturing Derivatives/Repos & Others.
Macroeconomics	A branch of economics that studies how an overall economy (markets, businesses, consumers, and governments) behave. Macroeconomics examines economy-wide phenomena such as inflation, price levels, rate of economic growth, national income, gross domestic product (GDP), and changes in unemployment.
Master Repurchase Agreement (MRA)	The bilateral agreement that governs the collateralized loans of securities. CalPERS uses this contract to enter into forward purchase/repurchase of US Treasuries and Mortgage securities and to post/receive collateral in return (also known as Repo and Reverse Repo).

Term	Definition
Master Securities Forward Transaction Agreement (MSFTA)	The bilateral agreement that CalPERS uses to enter into forward purchase or sale of mortgage bonds and "TBA" instruments.
Net Asset Value (NAV)	The value of an investment fund's assets less its liabilities.
Net Return	Performance net of internal and external investment office management expenses. CalPERS' performance uses a daily Modified-Dietz methodology which is geometrically linked to produce time-weighted returns for longer periods. Daily Rate of Return Formula • 6/30/2016 & Prior: Dollar Value Added / (Beginning Market Value + Net Cash Flows) • 7/1/2016 to Present: Dollar Value Added / Beginning Market Value • Dollar Value Added = Gains/losses due to price appreciation and income Daily returns are geometrically linked to produce longer period returns.
Unfunded Commitments	A legally binding commitment to a private asset investment fund/vehicle for which the capital has not yet been drawn.
Oil (Brent)	A crude oil blend commonly referred to as Brent Blend, London Brent, or Brent petroleum. It is the main global benchmark for oil prices.
Oil (WTI)	West Texas Intermediate is also crude oil blend. It serves as the main US benchmark for oil prices.
Over the Counter (OTC)	A decentralized market where participants trade stocks, bonds, currencies, or derivatives without a centralized exchange or broker.
Public Employee's Retirement Fund (PERF)	An investment fund created under California state statute and exclusively controlled by the CalPERS Board. The fund is managed with the expressed purpose of paying retirement benefits to participating members.
Policy Rate	The policy interest rate is that at which the central bank will pay or charge commercial banks for their deposits or loans. This rate affects the interest rate that commercial banks apply with their customers, both borrowers and depositors, and more generally, impacts on the general price (rate) of credit in the economy.

Term	Definition
Portfolio Market Value	The sum of the underlying investment values +/- any open receivables or payables (uninvested assets), consistent with the Net Asset Value or Total Net Assets reported in accounting. • Public Asset Market Values are calculated as units held x price per unit + accrued income. • Private Asset Market Values represent an opinion of value as of a certain date as stated by either the investment advisor or independent appraiser. Market value differs from amount funded or net investment in that the value includes unrealized gains or losses during the holding period.
Real Gross Domestic Product (GDP)	Measures the total economic output of a country over a specified period (often a year) adjusted for changes in price. The total economic output refers to the volume of all goods and services produced by an economy. It is often referred to as constant-price GDP or constant dollar GDP.
SLA/Sec Lending	Refers to the Securities Lending Agreement ("SLA") under which CalPERS lends securities and receives either cash or other securities as collateral.
Supply-Chain	A network of individuals and companies who are involved in creating a product and delivering it to the consumer. Links on the chain begin with the producers of the raw materials and end when the finished product is delivered to the end user.
Supplemental Income Plans (SIP)	Refers to the combined program for the Public Employees' Deferred Compensation Fund and the Supplemental Contributions Program.
Tracking Error	Standard deviation of the differential return between the portfolio and an equal investment in the benchmark.
Uncertainty	The range of possible values or paths. These are unknown.
Value Added	The incremental gain or loss in dollars resulting from portfolio implementation, active management, and imperfectly investible benchmarks. Over shorter time horizons, the benchmark component can create significant variability in outcomes. Unlike a time-weighted excess return which does not account for the size of the investment, value added will vary with the amount of capital invested. Also referred to as “Dollar Value Added”.
Volatility	A measure of the distribution of portfolio returns (or a given security). It is typically defined as the statistical standard deviation of returns, annualized.

Term	Definition
Wage Growth	Wages are the compensation paid to employees for the work or services they perform over a specified period. In the US it is often described as average hourly earnings. Wage growth typically refers to the annual change in wages.
Yield Curve	A yield curve is a line that plots yields (interest rates) of bonds having equal credit quality but differing maturity dates. The slope of the yield curve gives an idea of future interest rate changes and economic activity. There are three main yield curve shapes: normal (upward sloping curve), inverted (downward sloping curve), and flat.