CalPERS | Investment Office

Trust Level Review

As of June 30, 2024

Contents

Section I. PERF Summary

As of June 30, 2024

Public Employees' Retirement Fund (PERF) Metrics

$502.9B Assets Under Management	**+6.2%** 10-Yr Total Return	**+9.3%** 1-Yr Total Return	**$0.4B** 5-Yr Cumulative Value Added	**$(4.8)B** 1-Yr Cumulative Value Added
13.5% Forecasted Volatility	**15 bps** Forecasted Actionable Tracking Error	**30.3%** Allocation to Private Assets	**2.2x** 30-Day Tier 1 Stress Liquidity Coverage Ratio	**61.1%** Allocation to Actively Managed Assets

Report Highlights

Capital Markets

- Global public equity (GPE) markets continued to rise gradually in Q2 2024, as strong economic data continued, offset by expectations of higher for longer interest rates
- The GPE portfolio gained 2.2% in Q2 2024, bringing its 1-Yr return to +17.5%; the portfolio outperformed its benchmark by +16 bps in Q2 2024 and +46 bps for the 1-Yr period
- The Income portfolio was ~ flat in Q2 2024, finishing the year up 3.7%, with strong absolute returns in the High Yield and EM Debt segments, and outperforming the benchmark by +11bps

Private Markets

- Positive Total Returns for Private Debt and Private Equity, +17% and +10.9% respectively, with a detraction from Real Assets
- Positive Relative Returns for Real Assets of +473 bps and Private Debt of +345 bps, with a detraction from Private Equity
- The focus on cost efficient alternative investment implementation led to the deployment of $11 billion in co-investments

Total Fund

- Expanded active management in public markets, with net $17 billion new deployments across public strategies
- Continued strategic build out of private asset allocations, with $28 billion in total new deployments ($18 billion net increase in private allocations)
- Portfolio positioning and risk remains within expected ranges. PERF's dominating risk factor exposure is the equity market and other growth sensitive assets closely correlated to equities

Operational

- Several key senior leader positions have been filled, including the Chief Investment Officer, Chief Operating Investment Officer, and Head of Investment Operations
- Chief Operating Investment Officer Michael Cohen was appointed Steering Committee chair of Climate Action 100+, a global investor organization addressing climate change with the world's largest companies
- Defined a comprehensive technology modernization strategy including the governance and management to achieve strategic objectives and foster success

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

Section II. Highlights

Portfolio Objectives

Our foremost objective is to build a portfolio that contributes to the sustainability of the plan over the long run. A key step in this process is the selection and implementation by the Board of a Strategic Asset Allocation (SAA) that embodies the risk tolerance and return objectives of the plan. The SAA sets a benchmark asset mix that is expected to have a reasonable probability of achieving the target discount rate over the long term. As seen in the following exhibit, while 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

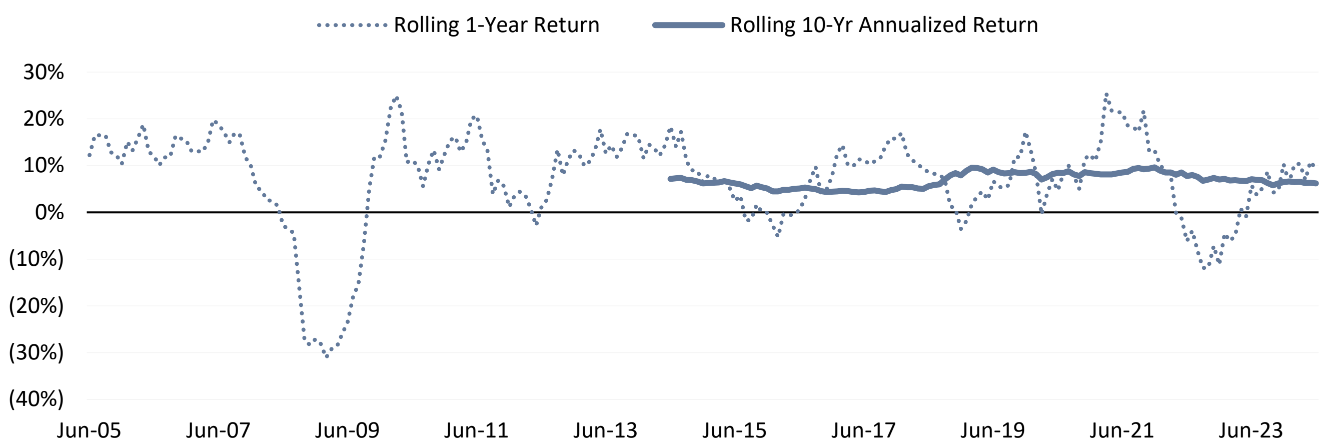


Exhibit 2.1

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. CalPERS active strategies have added roughly $400 million over the last five years. (Detailed discussion and analysis of excess returns begins on page 49).

Rolling 5-Yr Cumulative Value Added

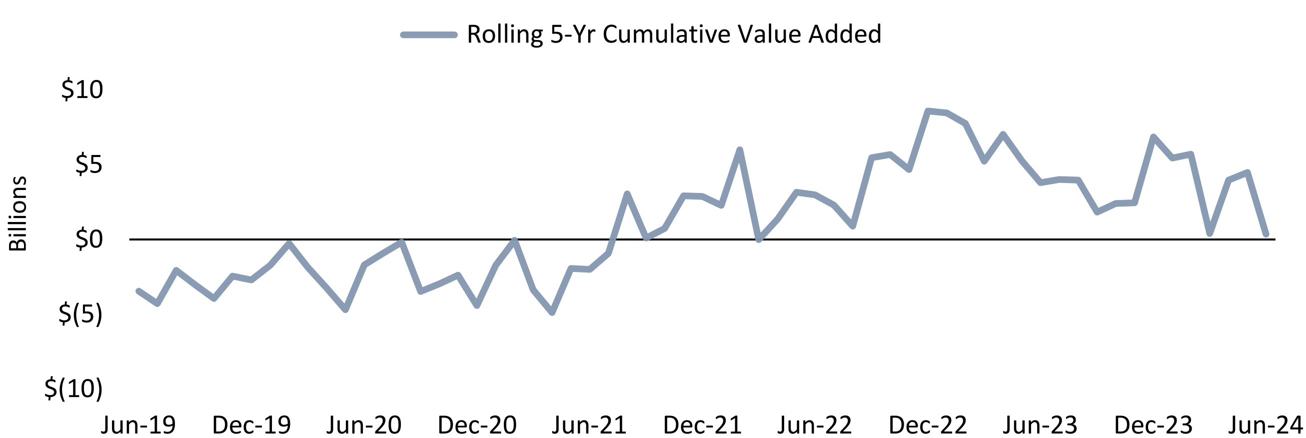


Exhibit 2.2

Section II. Highlights

As of June 30, 2024

Performance by Segment

Cap Weighted equities and Private Debt performed strongly in fiscal year

- Cap Weighted and Private Debt significantly outperformed all other segments for the fiscal year with respective returns of +19.9% and +17.0%
- Income segment fiscal year performance was somewhat mixed with Treasuries returning (3.6)% vs. High Yield's return of +9.9%
- Private asset fiscal year performance was also mixed with Real Assets returning (7.1)% vs Private Equity and Private Debt's respective performance of +10.9% and +17.0%

Segment Total Returns as of June 30, 2024

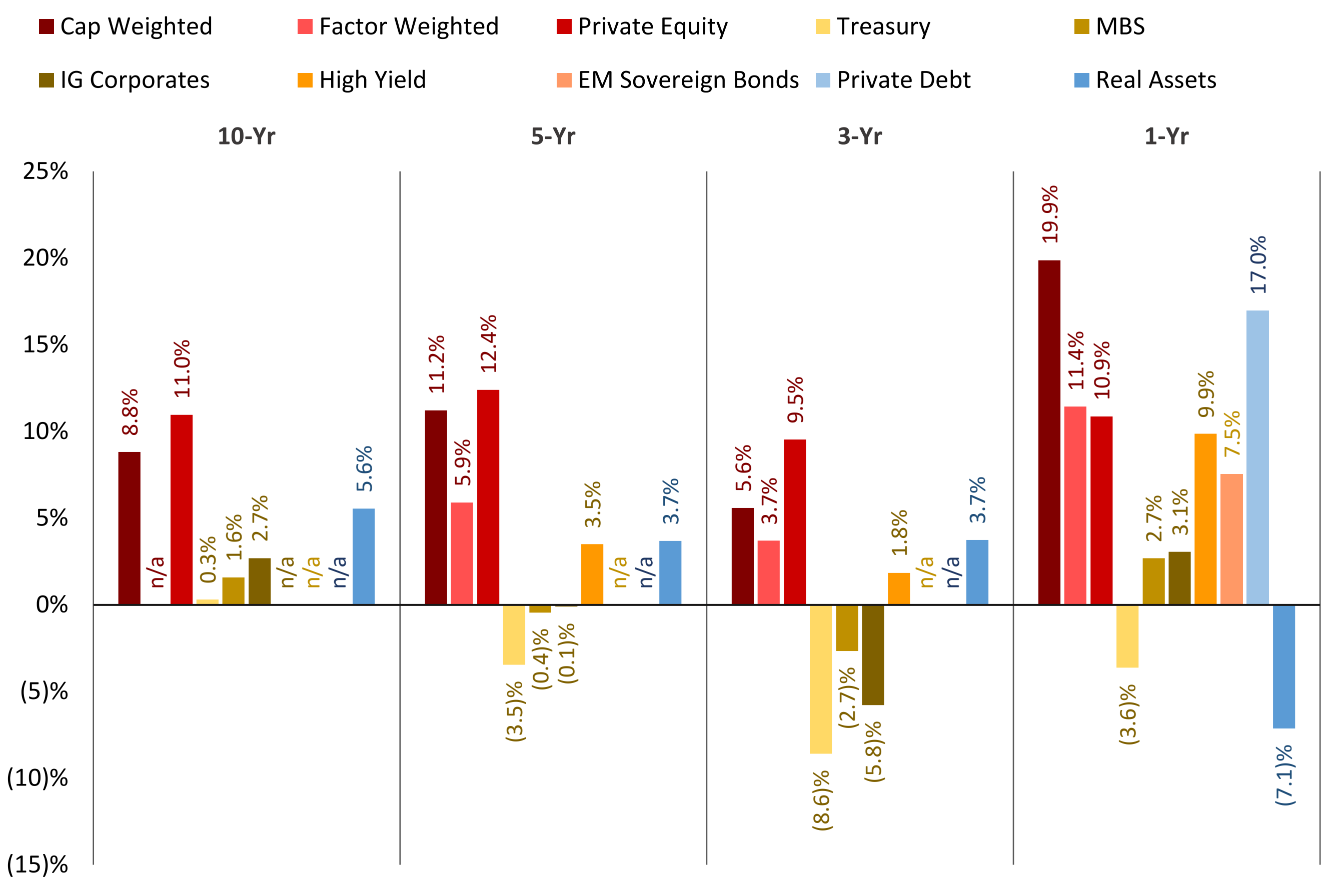


Exhibit 2.3

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

Section II. Highlights

PERF Allocation Highlights

Strategically increasing private asset allocations

- PERF continues to methodically increase allocations to private markets in a steady, fee-aware manner

40% *New Strategic Asset Allocation target to private asset classes adopted by Investment Committee in March 2024*

$28B *Total deployments into private assets this fiscal year ($18 billion net increase in private assets)*

$11B *Total commitments into fee-saving co-invest structures during the fiscal year*

Public assets used to seek returns and manage overall risk profile

- Publicly traded assets remain the workhorse of the PERF asset allocation. Public Programs are expected to earn market risk premiums, provide diversification, and realize value-adding opportunities. Allocations are continuously fine tuned to balance flows in and out of private assets to maintain a stable risk allocation

$17B *Net deployment into active public strategies*

$39B *Gross notional value transacted across public markets to implement mid-cycle changes to Strategic Asset Allocation risk profile*

Taking action to mitigate climate transition risk in the portfolio

- CalPERS took several actions towards value generating investments in the global transition to a low-carbon economy in its Climate Action Plan, including new commitments in private assets and implementation of a customized climate transition index in public equities

$5B *Commitment to public equity climate transition index*

Section II. Highlights

Risk Highlights

Risk Drivers

PERF risk is dominated by equity market and other growth-oriented factors

- 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
- The dominating risk factor in the portfolio is the equity market (75% of total volatility) and more broadly growth-oriented factors, which also include privates and credit spreads
- Despite the relatively longer maturity of PERF's fixed income assets, interest rate risk (Rates) has negligible contribution to total volatility, reflecting its diversifying characteristics

Decomposition of Volatility by Risk Factor

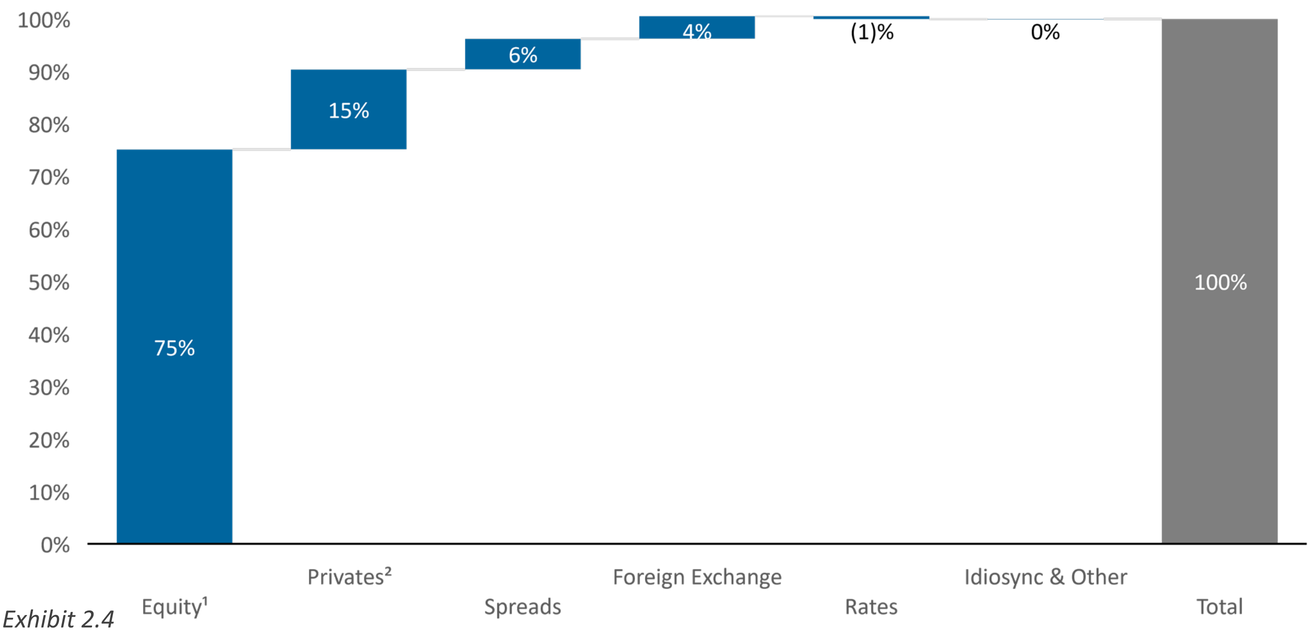


Exhibit 2.4

Quantitative Risk Metrics

Total and Active risk metrics have been consistent with expectations

- The total risk of the portfolio, as measured by volatility, was 13.5% at the end of the fiscal year compared to 13.7% in the previous year. Total fund tracking error increased to 2% from 1.8%, due to the higher weight of private assets, which exhibit greater deviation relative to their benchmarks
- Actionable tracking error, which quantifies divergence from the policy benchmark primarily in public markets, has been fluctuating within a narrow range and was 15 basis points at the end of the fiscal year

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

[2] *"Privates" includes contribution from Real Assets, Private Debt, and 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

- PERF total fund leverage as of the end of the fiscal year was 6.9%, of which 3% was strategic leverage, a 1% increase from the prior year as we move towards the 5% SAA target.
- Strategic leverage is a risk-reducing strategy, enabling higher allocations to diversifying, but lower-returning, assets (e.g. Income), while maintaining similar long term return expectations
- Total fund active leverage (incremental to the benchmark) was 3.9%. Active leverage is driven by slightly higher-than-benchmark leverage in core Real Estate, and our Low Liquidity Enhanced Return program
- Liquidity Coverage Ratio (LCR) in the 30-day Tier 1 stress scenario was 2.2x at fiscal year-end. CalPERS manages its financing and cash holdings to maintain adequate coverage and the ability to 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. 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 22% 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 4% to total risk. The potential risk reduction benefits of hedging are balanced against offsetting cashflow, operational, and timing considerations
- CalPERS’ industry exposures are diversified with no single industry exceeding 10% of the fund. Global weighting for equities 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 returns with acceptable risk to pay benefits now and into the future

Key Operational Metrics

10 # of Trusts Managed	**308** # of Team Members	**26.6 bps** FY Total PERF Costs	**9 bps** 5-Yr CEM Cost Savings	**5** FY 2023-24 Strategic Initiatives

Investment Controls & Operational Risk

- Researched, reviewed, and implemented enhanced embedded monitoring process and forensic testing for the public asset classes
- Implemented new systematic private asset compliance reporting
- Conducted mandatory compliance training for INVO team members focused on investment-related conflicts of interest and regulatory and other issues relevant to INVO's business mode

Investment Operations

- Efficiently and effectively processed a net total of ~200,000 public market trade flows and private asset capital movements; managed and reported the Investment Office's operational and investment expenses, oversaw market data and other investment vendor contracts, and supported Investment Office's strategic planning.

Investment Relations

- Led a stakeholder engagement initiative to enhance relationships, streamline communication, and update reporting processes. This included revising board reporting templates for consistency and redesigning the external investment website, in alignment with organization-wide efforts

Investment Talent & Culture

- In collaboration with CalPERS Human Resources, completed the recruitment and onboarding of over 70 investment professionals (19% reduction in vacancy rate) thereby strengthening the talent, depth, and resourcing of our INVO "People"
- Filled several key senior leader positions, including the Chief Investment Officer, Chief Operating Investment Officer, and Head of Investment Operations
- Established the Long-Term Investing Fellowship Program (LTIF), in partnership with Stanford University School of Engineering, aims to develop future institutional investor talent through a one-year rotation of learning, research, work, and investing. The inaugural cohort will start in September 2024

Investment Technology, Data & Performance

- Successfully drafted, obtained approval for the Data and Tech Modernization Initiative charter, and formed the core project team
- Realigned Tech/Data teams to better support asset classes and the upcoming Data and Tech Modernization Initiative

Section II. Highlights

Operational Highlights

Fiscal Year 2023-24 Strategic Initiatives

Driving efficiency, innovation, and cultural transformation

- Five strategic initiatives were selected to focus on transitioning to a more actively managed portfolio, operational efficiencies, culture change, aiming to increase dollar value-add in both the short and long-term. These initiatives align with INVO's four pillars: People, Process, Portfolio, and Performance.
    - **People:** Focus on talent and culture
    - **Process:** Focus on data and technology, operational excellence, governance, and stakeholder engagement.
    - **Portfolio:** Focus on strategic asset allocation, risk management, and innovation.
    - **Performance:** Focus on absolute and relative returns.
- Initiative details include:
    - 18 workstreams led by 13 senior leaders
    - 109 identified deliverables

- Insights and advancements from these initiatives help progress toward a "Best-in-Class" Investment Office and define the strategic initiatives for fiscal year 2024-25.

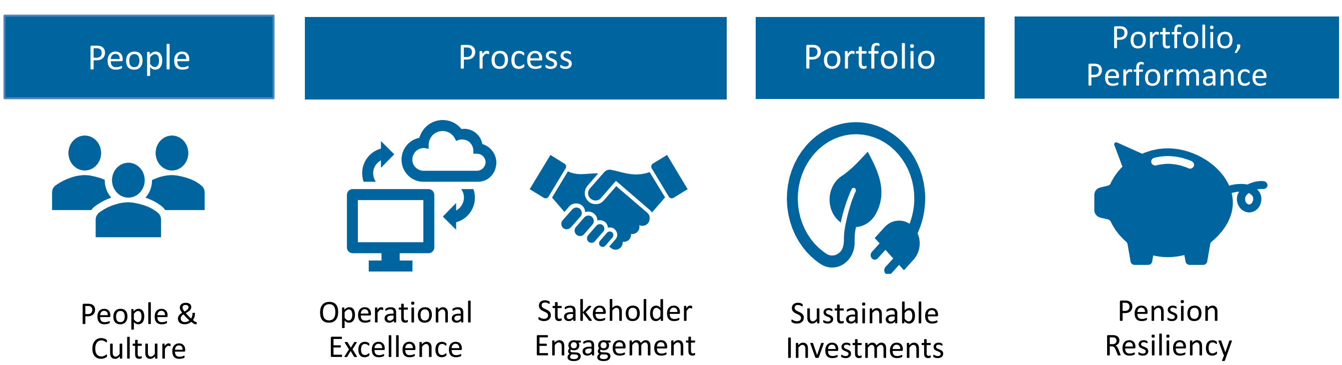


Exhibit 2.5

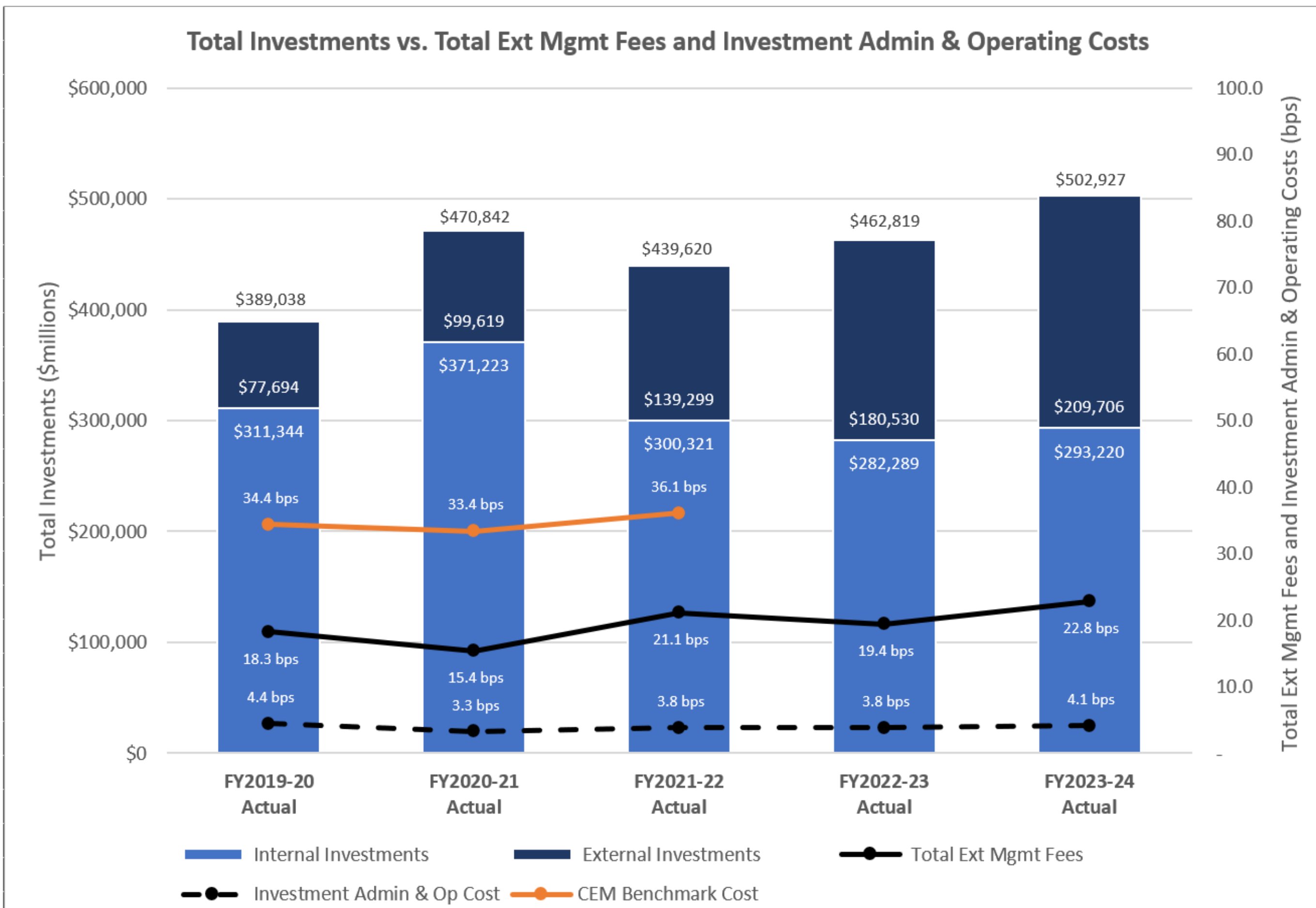
Section II. Highlights

Operational Highlights

PERF Investment Expenses Fiscal Years 2019-20 thru 2023-24

Managing costs to promote long-term sustainability

- From fiscal years 2019-20 to 2020-21, the percentage of externally managed assets decreased, lowering External Management Fee basis points. However, under the new SAA, an increase in private assets and external active management led to higher External Management Fee basis points from fiscal years 2021-22 through FY 2023-24
- Controllable Investment Admin & Operating Cost basis points 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] Basis points 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 2.6

Section III. Performance Tables

As of June 30, 2024

PERF Returns

Total PERF fiscal year performance reflects strong equity returns in the year

- PERF fiscal year performance was +9.3% vs. a benchmark return of +10.3%, for excess return of (105) basis points
- Public Equity was the top performing asset class for the Fiscal Year with a +17.5% return
- PERF fiscal year excess performance driven primarily by Private Equity underperforming its public market benchmark. Over shorter horizons, valuations between public and private assets can diverge significantly

	End Value (B)	20-Yr	10-Yr	5-Yr	1-Yr	FYTD	1-Qtr
Total PERF	**$ 502.9**	**6.7%**	**6.2%**	**6.6%**	**9.3%**	**9.3%**	**1.4%**
Benchmark		7.2%	6.3%	6.6%	10.3%	10.3%	1.8%
Excess		(50) bps	(9) bps	5 bps	(105) bps	(105) bps	(40) bps
Cumulative Value Added (B)		$ (19.7)	$ (3.1)	$ 0.4	$ (4.8)	$ (4.8)	$ (2.0)
Public Equity	**$ 210.6**	**7.9%**	**8.2%**	**9.8%**	**17.5%**	**17.5%**	**2.2%**
Benchmark		8.0%	8.2%	9.6%	17.1%	17.1%	2.0%
Excess		(12) bps	6 bps	21 bps	46 bps	46 bps	16 bps
Cumulative Value Added (B)		$ (0.1)	$ 1.3	$ 2.0	$ 0.8	$ 0.8	$ 0.3
Income	**$ 149.8**	**4.5%**	**2.0%**	**(0.1)%**	**3.7%**	**3.7%**	**(0.1)%**
Benchmark		3.9%	1.6%	(0.3)%	3.5%	3.5%	(0.2)%
Excess		54 bps	37 bps	18 bps	13 bps	13 bps	5 bps
Cumulative Value Added (B)		$ 5.1	$ 2.7	$ 1.1	$ 0.2	$ 0.2	$ 0.1
Private Equity	**$ 78.2**	**12.1%**	**11.0%**	**12.4%**	**10.9%**	**10.9%**	**3.5%**
Benchmark		13.5%	11.6%	12.9%	25.4%	25.4%	8.5%
Excess		(136) bps	(65) bps	(50) bps	(1,456) bps	(1,456) bps	(500) bps
Cumulative Value Added (B)		$ (16.3)	$ (8.7)	$ (7.5)	$ (9.8)	$ (9.8)	$ (3.9)
Real Assets	**$ 66.4**	**4.6%**	**5.6%**	**3.7%**	**(7.1)%**	**(7.1)%**	**(0.8)%**
Benchmark		7.3%	5.5%	2.5%	(11.9)%	(11.9)%	(2.5)%
Excess		(264) bps	5 bps	116 bps	473 bps	473 bps	168 bps
Cumulative Value Added (B)		$ (10.8)	$ 0.5	$ 2.3	$ 3.3	$ 3.3	$ 1.1
Private Debt	**$ 13.9**	**-**	**-**	**-**	**17.0%**	**17.0%**	**5.2%**
Benchmark		-	-	-	13.5%	13.5%	2.3%
Excess		-	-	-	345 bps	345 bps	294 bps
Cumulative Value Added (B)		-	-	-	$ 0.3	$ 0.3	$ 0.4
Net Financing	**$ (26.9)**	**-**	**-**	**-**	**-**	**-**	**-**
Other Trust Level	**$ 11.0**	**-**	**-**	**-**	**-**	**-**	**-**

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

As of June 30, 2024

PERF Capital Market Returns

Capital market returns reflected the strong growth environment

- In total return terms, Cap Weighted Equities has been the highest performing capital market segment across time periods, capturing returns from broad global equity markets
- Credit-sensitive segments also did well over the recent period, while those segments most exposed to rising interest rates (Treasury, MBS, Investment Grade Corporates) lagged
- In relative terms, all actively managed segments added value over their benchmarks over the last 5 years

	End Value (B)	20-Yr	10-Yr	5-Yr	1-Yr	FYTD	1-Qtr
Cap Weighted	**$ 160.2**	**8.2%**	**8.8%**	**11.2%**	**19.9%**	**19.9%**	**2.7%**
Benchmark		8.3%	8.7%	11.0%	19.3%	19.3%	2.5%
Excess		(12) bps	8 bps	25 bps	57 bps	57 bps	17 bps
Cumulative Value Added (B)		$ (0.4)	$ 1.0	$ 1.7	$ 0.7	$ 0.7	$ 0.3
Factor Weighted	**$ 50.4**	**-**	**-**	**5.9%**	**11.4%**	**11.4%**	**0.7%**
Benchmark		-	-	5.8%	11.3%	11.3%	0.6%
Excess		-	-	6 bps	18 bps	18 bps	11 bps
Cumulative Value Added (B)		-	-	$ 0.2	$ 0.1	$ 0.1	$ 0.1
Treasury	**$ 36.6**	**-**	**0.3%**	**(3.5)%**	**(3.6)%**	**(3.6)%**	**(1.3)%**
Benchmark		-	0.3%	(3.4)%	(3.6)%	(3.6)%	(1.3)%
Excess		-	(2) bps	(7) bps	0 bps	0 bps	0 bps
Cumulative Value Added (B)		-	$ (0.2)	$ (0.2)	$ 0.0	$ 0.0	$ 0.0
MBS	**$ 26.7**	**3.6%**	**1.6%**	**(0.4)%**	**2.7%**	**2.7%**	**0.3%**
Benchmark		2.9%	1.0%	(0.6)%	2.4%	2.4%	0.1%
Excess		65 bps	62 bps	19 bps	30 bps	30 bps	16 bps
Cumulative Value Added (B)		$ 1.3	$ 0.8	$ 0.3	$ 0.1	$ 0.1	$ 0.0
IG Corporates	**$ 32.1**	**5.5%**	**2.7%**	**(0.1)%**	**3.1%**	**3.1%**	**(1.1)%**
Benchmark		4.9%	2.4%	(0.3)%	3.2%	3.2%	(1.1)%
Excess		55 bps	28 bps	22 bps	(14) bps	(14) bps	(2) bps
Cumulative Value Added (B)		$ 1.2	$ 0.4	$ 0.2	$ (0.0)	$ (0.0)	$ (0.0)
High Yield	**$ 26.9**	**-**	**-**	**3.5%**	**9.9%**	**9.9%**	**1.3%**
Benchmark		-	-	3.5%	9.9%	9.9%	1.2%
Excess		-	-	2 bps	(5) bps	(5) bps	8 bps
Cumulative Value Added (B)		-	-	$ 0.0	$ (0.0)	$ (0.0)	$ 0.0
EM Sovereign Bonds	**$ 26.7**	**-**	**-**	**-**	**7.5%**	**7.5%**	**0.4%**
Benchmark		-	-	-	7.0%	7.0%	0.4%
Excess		-	-	-	57 bps	57 bps	1 bps
Cumulative Value Added (B)		-	-	-	$ 0.1	$ 0.1	$ 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

As of June 30, 2024

PERF Private Market Returns

Private asset returns generally also benefited from positive growth environment. Continued markdowns in Real Estate

- Private Debt and Private Equity had the highest private market fiscal year returns at +17.0% and +10.9% respectively
- Real Estate was the only private asset class with negative fiscal year performance at (10.8)%

	End Value (B)	20-Yr	10-Yr	5-Yr	1-Yr	FYTD	1-Qtr
Private Equity	**$ 78.2**	**12.1%**	**11.0%**	**12.4%**	**10.9%**	**10.9%**	**3.5%**
Benchmark		13.5%	11.6%	12.9%	25.4%	25.4%	8.5%
Excess		(136) bps	(65) bps	(50) bps	(1,456) bps	(1,456) bps	(500) bps
Cumulative Value Added (B)		$ (16.3)	$ (8.7)	$ (7.5)	$ (9.8)	$ (9.8)	$ (3.9)
Private Debt	**$ 13.9**	**-**	**-**	**-**	**17.0%**	**17.0%**	**5.2%**
Benchmark		-	-	-	13.5%	13.5%	2.3%
Excess		-	-	-	345 bps	345 bps	294 bps
Cumulative Value Added (B)		-	-	-	$ 0.3	$ 0.3	$ 0.4
Infrastructure	**$ 16.5**	**-**	**9.5%**	**6.5%**	**6.1%**	**6.1%**	**2.6%**
Benchmark		-	4.1%	2.5%	(11.9)%	(11.9)%	(2.5)%
Excess		-	547 bps	397 bps	1,798 bps	1,798 bps	514 bps
Cumulative Value Added (B)		-	$ 4.2	$ 3.1	$ 2.8	$ 2.8	$ 0.8
Real Estate	**$ 49.6**	**4.1%**	**5.2%**	**2.9%**	**(10.8)%**	**(10.8)%**	**(1.9)%**
Benchmark		7.7%	5.8%	2.5%	(11.9)%	(11.9)%	(2.5)%
Excess		(357) bps	(57) bps	35 bps	109 bps	109 bps	58 bps
Cumulative Value Added (B)		$ (14.5)	$ (2.9)	$ (0.7)	$ 0.4	$ 0.4	$ 0.3
Forestland	**$ 0.3**	**-**	**0.0%**	**3.9%**	**2.0%**	**2.0%**	**(0.5)%**
Benchmark		-	4.0%	2.5%	(11.9)%	(11.9)%	(2.5)%
Excess		-	(396) bps	136 bps	1,382 bps	1,382 bps	204 bps
Cumulative Value Added (B)		-	$ (0.9)	$ (0.1)	$ 0.0	$ 0.0	$ 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

As of June 30, 2024

Affiliate Investments Returns

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 (M)	20-Yr	10-Yr	5-Yr	1-Yr	FYTD	1-Qtr
Judges' Retirement Fund	**$ 52.7**	**1.7%**	**1.7%**	**2.3%**	**5.7%**	**5.7%**	**1.4%**
Benchmark		1.6%	1.5%	2.2%	5.4%	5.4%	1.3%
Excess		15 bps	16 bps	18 bps	26 bps	26 bps	4 bps
Judges' Retirement System Fund II	**$ 2,623.8**	**6.4%**	**5.6%**	**6.1%**	**11.4%**	**11.4%**	**0.8%**
Benchmark		6.3%	5.3%	5.8%	11.1%	11.1%	0.7%
Excess		13 bps	26 bps	27 bps	25 bps	25 bps	11 bps
Legislators' Retirement System Fund	**$ 92.5**	**5.1%**	**3.4%**	**2.8%**	**5.5%**	**5.5%**	**0.1%**
Benchmark		5.0%	3.3%	2.7%	5.5%	5.5%	0.1%
Excess		10 bps	16 bps	8 bps	(5) bps	(5) bps	3 bps
Health Care Fund	**$ 73.4**	**3.2%**	**1.4%**	**(0.3)%**	**2.5%**	**2.5%**	**0.1%**
Benchmark		3.0%	1.3%	(0.2)%	2.6%	2.6%	0.1%
Excess		11 bps	6 bps	(3) bps	(10) bps	(10) bps	(1) bps
Long-Term Care Fund	**$ 4,355.6**	**4.6%**	**3.2%**	**2.9%**	**8.9%**	**8.9%**	**0.8%**
Benchmark		4.5%	3.1%	2.9%	9.1%	9.1%	0.7%
Excess		13 bps	7 bps	4 bps	(24) bps	(24) bps	10 bps
CERBT Strategy 1 Fund	**$18,167.7**	**-**	**5.6%**	**6.2%**	**11.0%**	**11.0%**	**0.7%**
Benchmark		-	5.3%	6.0%	10.8%	10.8%	0.6%
Excess		-	30 bps	22 bps	19 bps	19 bps	10 bps
CERBT Strategy 2 Fund	**$ 2,013.1**	**-**	**4.4%**	**4.3%**	**8.2%**	**8.2%**	**0.4%**
Benchmark		-	4.2%	4.2%	8.1%	8.1%	0.3%
Excess		-	24 bps	14 bps	11 bps	11 bps	10 bps
CERBT Strategy 3 Fund	**$ 782.9**	**-**	**3.5%**	**3.1%**	**6.3%**	**6.3%**	**0.1%**
Benchmark		-	3.3%	3.0%	6.2%	6.2%	0.1%
Excess		-	21 bps	10 bps	10 bps	10 bps	9 bps
CEPPT Strategy 1 Fund	**$ 205.2**	**-**	**-**	**-**	**8.7%**	**8.7%**	**0.6%**
Benchmark		-	-	-	8.6%	8.6%	0.6%
Excess		-	-	-	4 bps	4 bps	2 bps
CEPPT Strategy 2 Fund	**$ 57.5**	**-**	**-**	**-**	**6.1%**	**6.1%**	**0.4%**
Benchmark		-	-	-	6.1%	6.1%	0.4%
Excess		-	-	-	1 bps	1 bps	1 bps

Exhibit 3.4

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

Section III. Performance Tables

As of June 30, 2024

Affiliate Investments Returns

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 (M)	20-Yr	10-Yr	5-Yr	1-Yr	FYTD	1-Qtr
Target Income Fund	**$ 187.4**	**-**	**3.6%**	**4.0%**	**8.1%**	**8.1%**	**1.0%**
Benchmark		-	3.5%	3.9%	8.0%	8.0%	1.0%
Excess		-	12 bps	13 bps	1 bps	1 bps	6 bps
Target 2020 Fund	**$ 163.8**	**-**	**4.2%**	**5.3%**	**9.1%**	**9.1%**	**1.2%**
Benchmark		-	4.1%	5.1%	9.1%	9.1%	1.1%
Excess		-	13 bps	16 bps	1 bps	1 bps	6 bps
Target 2025 Fund	**$ 232.3**	**-**	**5.1%**	**6.6%**	**11.2%**	**11.2%**	**1.4%**
Benchmark		-	5.0%	6.4%	11.2%	11.2%	1.4%
Excess		-	15 bps	17 bps	(0) bps	(0) bps	6 bps
Target 2030 Fund	**$ 260.1**	**-**	**5.8%**	**7.7%**	**12.9%**	**12.9%**	**1.7%**
Benchmark		-	5.7%	7.5%	12.9%	12.9%	1.6%
Excess		-	12 bps	12 bps	(2) bps	(2) bps	6 bps
Target 2035 Fund	**$ 188.7**	**-**	**6.5%**	**8.9%**	**14.7%**	**14.7%**	**1.9%**
Benchmark		-	6.4%	8.7%	14.7%	14.7%	1.8%
Excess		-	13 bps	14 bps	(3) bps	(3) bps	6 bps
Target 2040 Fund	**$ 179.5**	**-**	**7.3%**	**9.9%**	**16.7%**	**16.7%**	**2.2%**
Benchmark		-	7.1%	9.8%	16.8%	16.8%	2.1%
Excess		-	13 bps	13 bps	(4) bps	(4) bps	6 bps
Target 2045 Fund	**$ 110.7**	**-**	**7.6%**	**10.2%**	**17.6%**	**17.6%**	**2.3%**
Benchmark		-	7.5%	10.0%	17.6%	17.6%	2.2%
Excess		-	13 bps	14 bps	(4) bps	(4) bps	6 bps
Target 2050 Fund	**$ 70.7**	**-**	**7.6%**	**10.2%**	**17.6%**	**17.6%**	**2.3%**
Benchmark		-	7.5%	10.0%	17.6%	17.6%	2.2%
Excess		-	13 bps	14 bps	(4) bps	(4) bps	6 bps
Target 2055 Fund	**$ 29.0**	**-**	**7.6%**	**10.2%**	**17.6%**	**17.6%**	**2.3%**
Benchmark		-	7.5%	10.0%	17.6%	17.6%	2.2%
Excess		-	14 bps	14 bps	(4) bps	(4) bps	6 bps
Target 2060 Fund	**$ 14.2**	**-**	**-**	**10.2%**	**17.6%**	**17.6%**	**2.3%**
Benchmark		-	-	10.0%	17.6%	17.6%	2.2%
Excess		-	-	11 bps	(4) bps	(4) bps	6 bps
Target 2065 Fund[1]	**$ 3.7**	**-**	**-**	**-**	**17.6%**	**17.6%**	**2.3%**
Benchmark		-	-	-	17.6%	17.6%	2.2%
Excess		-	-	-	(4) bps	(4) bps	6 bps

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

As of June 30, 2024

Affiliate Investments Returns

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 (M)	20-Yr	10-Yr	5-Yr	1-Yr	FYTD	1-Qtr
SSgA STIF	**$ 119.7**	**-**	**1.7%**	**2.3%**	**5.7%**	**5.7%**	**1.4%**
Benchmark		-	1.5%	2.2%	5.4%	5.4%	1.3%
Excess		-	19 bps	19 bps	27 bps	27 bps	5 bps
SIP US Short Term Bond Core	**$ 38.4**	**-**	**1.3%**	**1.2%**	**4.8%**	**4.8%**	**1.0%**
Benchmark		-	1.4%	1.2%	4.9%	4.9%	1.0%
Excess		-	(8) bps	(4) bps	(4) bps	(4) bps	0 bps
SIP US Bond Core	**$ 51.5**	**-**	**1.4%**	**(0.2)%**	**2.6%**	**2.6%**	**0.1%**
Benchmark		-	1.3%	(0.2)%	2.6%	2.6%	0.1%
Excess		-	4 bps	1 bps	1 bps	1 bps	7 bps
SIP Real Asset Core	**$ 17.8**	**-**	**3.1%**	**6.6%**	**5.7%**	**5.7%**	**1.5%**
Benchmark		-	3.1%	6.5%	5.8%	5.8%	1.5%
Excess		-	0 bps	8 bps	(5) bps	(5) bps	0 bps
SIP Russell All Cap Core	**$ 806.5**	**-**	**12.2%**	**14.2%**	**23.1%**	**23.1%**	**3.2%**
Benchmark		-	12.1%	14.1%	23.1%	23.1%	3.2%
Excess		-	3 bps	3 bps	2 bps	2 bps	(2) bps
SIP Global All Cap EX-US	**$ 78.6**	**-**	**4.1%**	**5.8%**	**11.4%**	**11.4%**	**1.1%**
Benchmark		-	3.9%	5.6%	11.6%	11.6%	0.9%
Excess		-	23 bps	23 bps	(14) bps	(14) bps	18 bps

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

Section IV. Markets and Economy

As of June 30, 2024

Asset Returns

Growth and credit-related asset classes performed well

Most asset markets posted positive returns over FY 2023-24. Growth related asset classes – public and private equity – performed well, as did credit-related assets; such as private credit and corporate bonds. The post-pandemic secular trends continued to drag on real asset and Treasury returns.

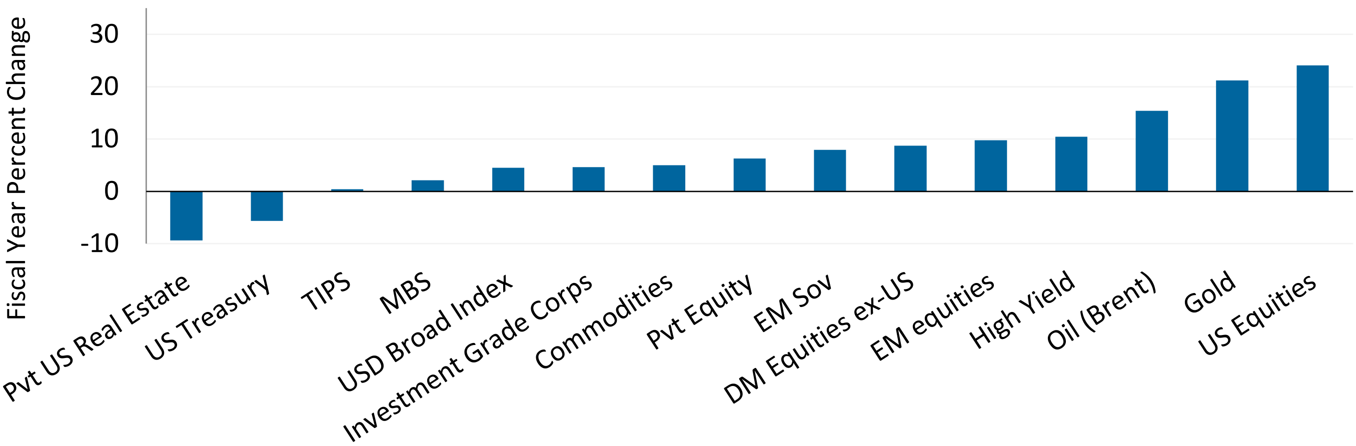


Exhibit 4.1 Sources: StateStreet, Haver Analytics, Bloomberg Financial L.P., MSCI, CalPERS calculations. This chart highlights broad market movements across categories. Total return except gold, oil, and US dollar

Policy easing will help to extend global growth

Global economic growth improved throughout FY 2023-24. For some countries, Q1 outturns were stronger than analyst expectations. In the US, the economy accelerated in Q2 faster than expectations, rising 2.8% qoq saar (2.9% yoy). The resilient economic activity and positive surprises boosted growth-related assets and tightened credit spreads.

The global economy is in an uneasy equilibrium. There is a lack of synchronicity in economic growth across large economies, caused by multiple factors. The outlook depends on the degree by which central banks can support moderating growth and how well economies can withstand any negative shocks. The IMF expects world real economic growth to post 3.2% yoy in December 2024.

Real economic activity improved throughout the year

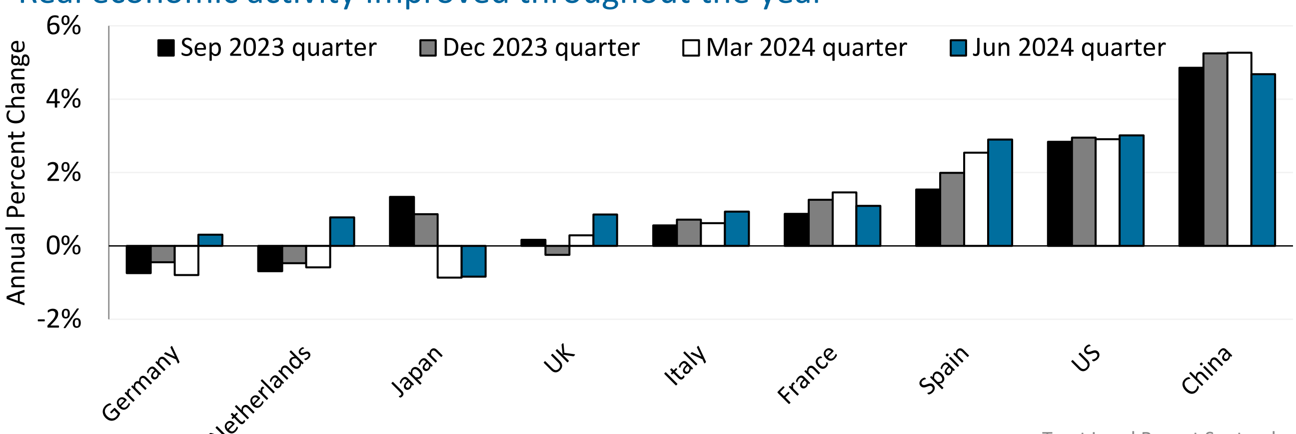


Exhibit 4.2 Source: Haver Analytics. Data are annual percent change for the quarter specified. Reporting large economies that have reported Q2 2024 data.

Section IV. Markets and Economy

Macroeconomic Drivers of 2024 Returns

Growth supported earnings and profits: equities outperformed

Economic activity over the year was supported by robust employment growth and low unemployment rates, positive real wage growth, and positive (but fading) fiscal impetus. Coupled with disinflation trends, corporate profitability remained strong, lifting equity returns. Companies exposed to growing AI trends and related technology outperformed, pulling the overall S&P 500 total return index 26% higher over the fiscal year.

S&P 500 rolling 10-year total return vs to US 10-year Treasury note return

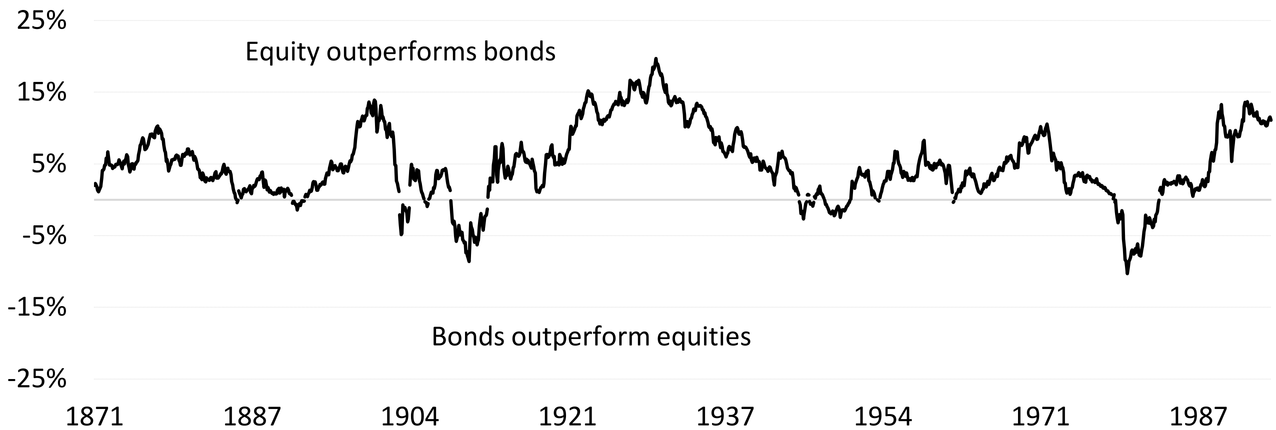


Exhibit 4.3 Source: Shiller, CalPERS' calculations. Data to June 2024

Global disinflation continued; inflation expected to reach target by 2025

The annual rate of change in the Consumer Price Index continued to ease back over FY 2023-24, although its pace has slowed. Early in the calendar year, central banks indicated they may slow the pace of rate reductions if the data continued to be strong, although this rhetoric has softening more recently. Financial market participants are pricing most central banks to steadily ease policy over the coming 12 months as inflation settles back towards 2% (China and Japan are two exceptions.).

Inflation expected to continue to moderate, reaching the 2% targets in 2025

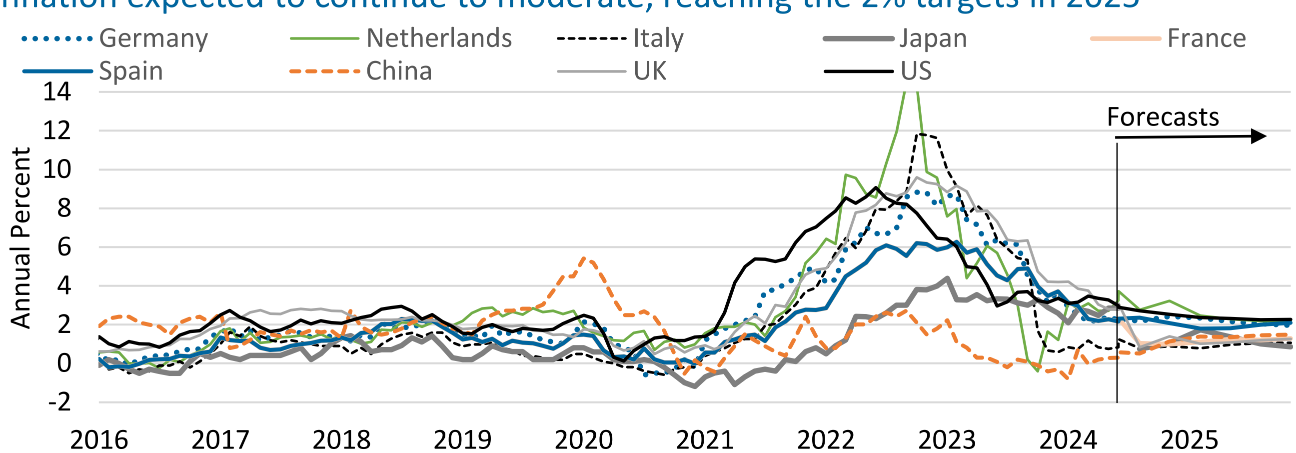


Exhibit 4.4 Sources: Haver Analytics, Consensus Economics, CalPERS' calculations

Section IV. Markets and Economy

Recent trends in inflation are anticipated to continue

US labor market eases; the unemployment rate rises from low levels

Non-farm payroll employment has halved from its 2022 pace, reporting a three-month average gain of 169k in July – still favorable compared to history. The easing labor market is in part due to slowing demand by firms but also an increase in supply of workers. Unemployment is rising from its historical low levels, most recently to 4.3% s.a. Looking ahead, households have depleted their excess savings, and some consumers are financially stressed: employment remains critical for US spending growth ahead.

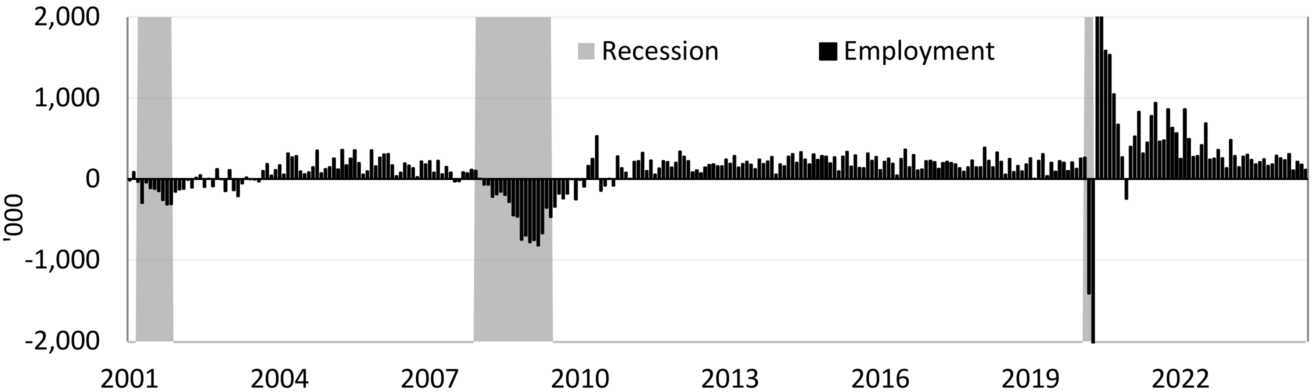


Exhibit 4.5 Source: Haver Analytics. Chart axis setting curtails monthly data outturns in 2020.

Market pricing is reliant on continued growth and disinflation

Over the coming year, financial market pricing is anticipating easier monetary policy to support economies as activity stabilizes and inflation returns to target. A 'soft-landing' (no recession) would be an exceptional outcome, given central banks tightened policy in 2022 at the fastest pace since the 1970s. Recent market volatility highlights the vulnerability to negative surprises and sentiment shifts.

Market volatility spiked in early August

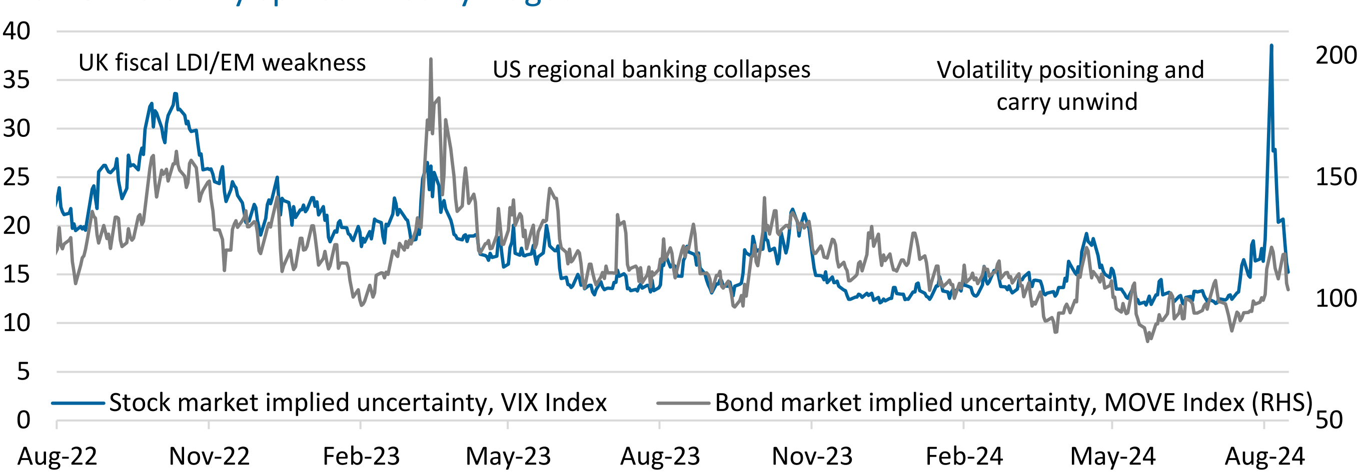


Exhibit 4.6 Source: Haver Analytics. The VIX Index is Chicago Board Option Exchange Volatility Index of the S&P500 stock index. Based on a weighted average of various implied volatilities. Percent. The MOVE Index is the ICE/BoA/Merrill Lynch Option Volatility Estimate. It is a weighted average of implied volatility of one month Treasury options (normalised).

Section V. PERF Allocation

As of June 30, 2024

Strategic Asset Allocation

Current allocation reflects ongoing transition to more private assets

Portfolio vs. Long-Term Strategic Asset Allocation (SAA)

- During FY 2023-24, the Investment Committee adjusted the Strategic Asset Allocation in the context of the mid-cycle ALM review
- The new SAA increased target allocations to Private Equity by 4% and Private Debt by 3%, along with a 5% reduction to Public Equity
- Relative to the SAA, PERF is currently overweight Equities and Income and underweight private assets. Weights are expected to fluctuate with relative changes in valuation between asset classes

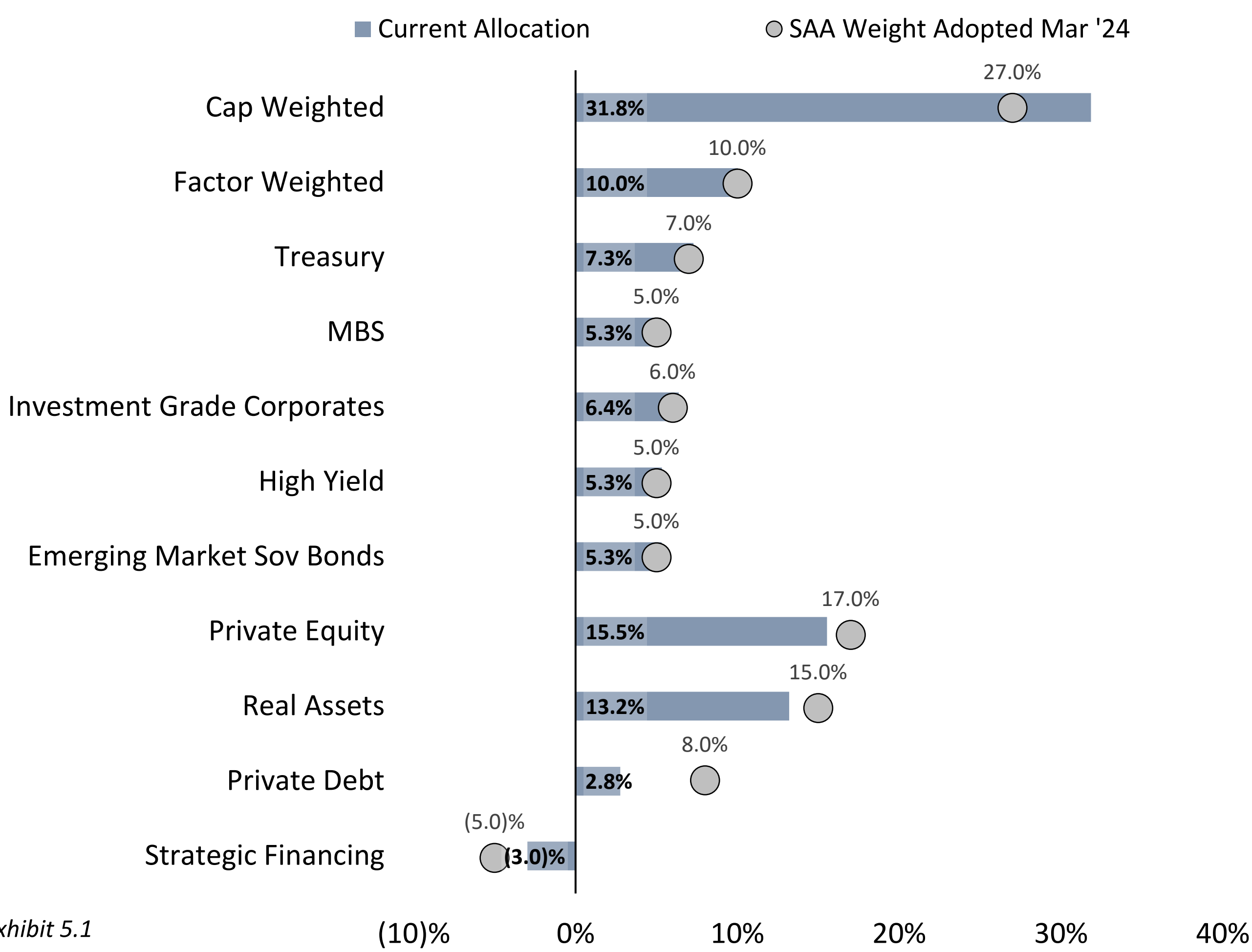


Exhibit 5.1

Section V. PERF Allocation

Strategic Asset Allocation

Allocation changes driven by investment activity towards new SAA targets and ongoing markdown in Real Estate assets

Changes vs. Prior Year

- CalPERS traded around $39 billion in gross notional exposure in our public market segments to reflect adjustments in the strategic asset allocation (SAA) adopted by the Investment Committee in March. These changes contributed to the reduction in Cap Weighted and Factor Weighted Equity segments and increase in Treasuries shown below
- Private Equity and Private Debt allocations increased, a function of both positive net deployments and positive returns
- Real Asset allocation fell, driven by ongoing markdowns in the real estate sector

1-Yr Allocation Change

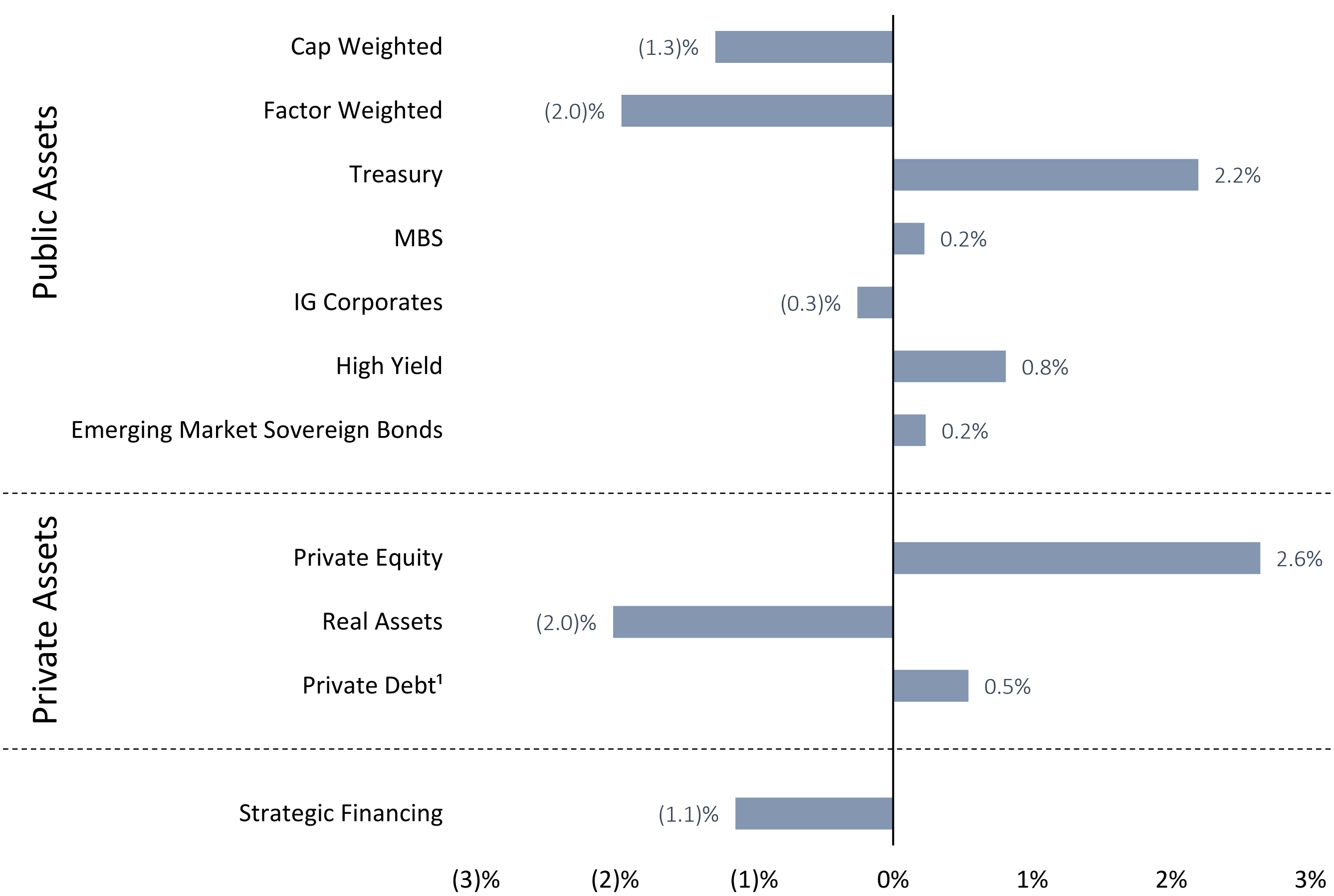


Exhibit 5.2

[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
- 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

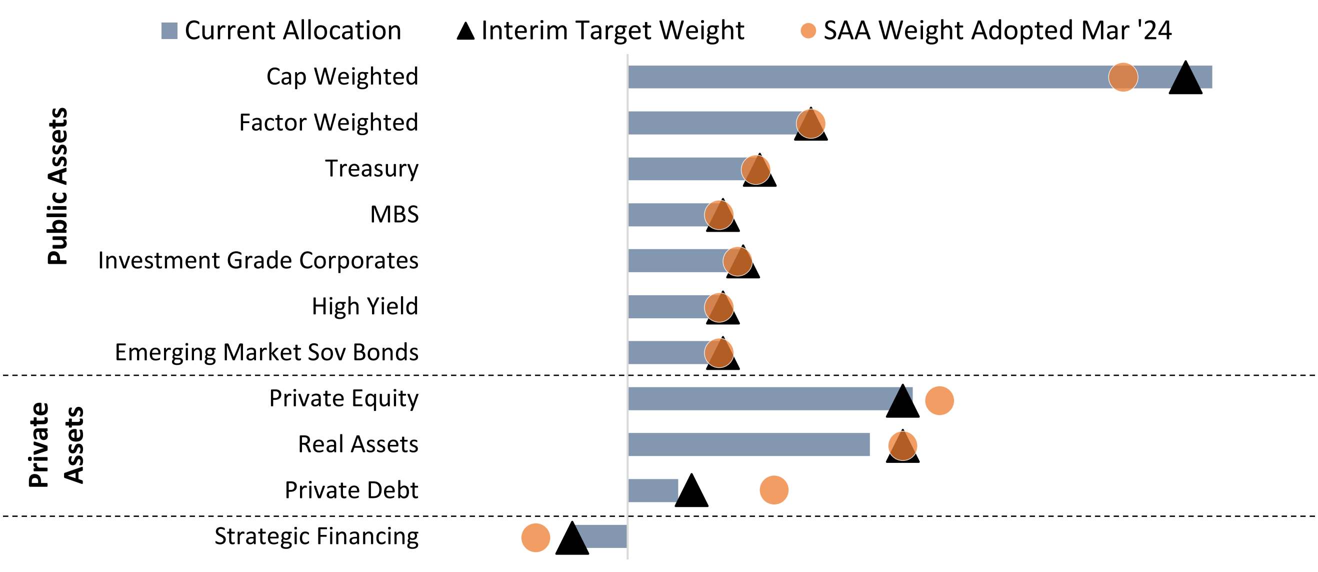


Exhibit 5.3

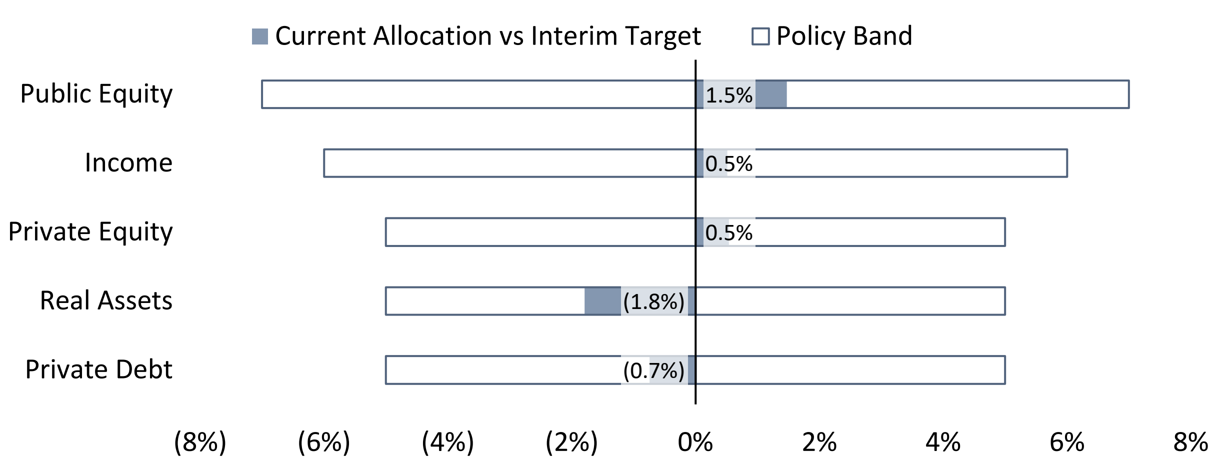


Exhibit 5.4

Section V. PERF Allocation

Private Assets Pacing

CalPERS deployed $27.9B into private market programs in FY 2023-24

- Net capital deployed (i.e., contributions minus distributions) was +$14.1 billion
- The net total change in private program investments, also factoring in valuation changes, was +$18.0 billion

Drivers of One Year Change in Net Asset Value

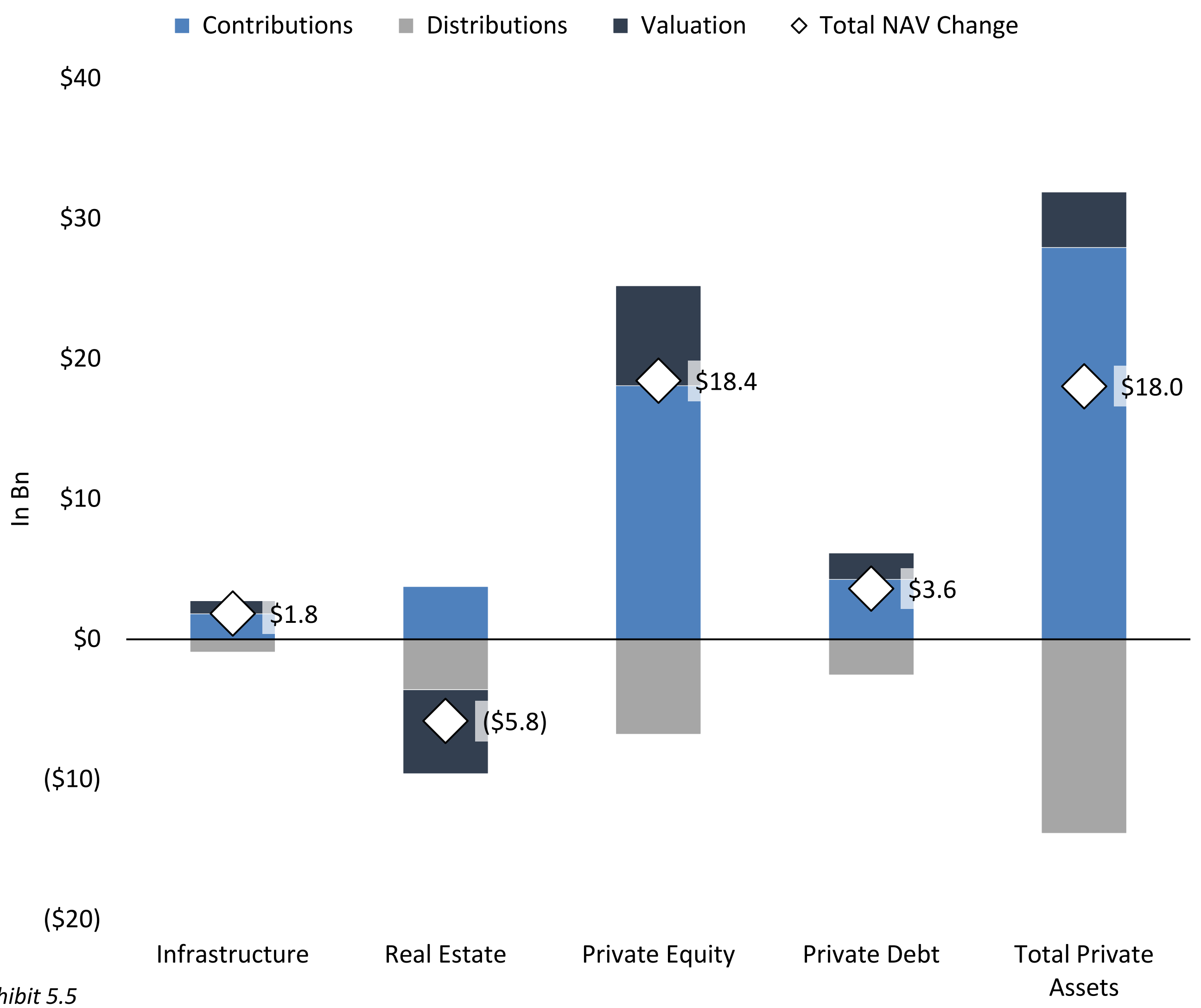


Exhibit 5.5

Sources: State Street, AREIS, PEARS

Section V. PERF Allocation

Private Assets Pacing

Contractual unfunded commitments at $53.3B

- Total contractual unfunded commitments to private assets at fiscal year-end were $53.3 billion, an increase of $11.6 billion from the prior fiscal year-end value
- Unfunded commitments shown here are primarily due to obligations of PERF as a Limited Partner in externally managed funds. These commitments represent a potential future draw on PERF liquidity which CalPERS has little or no ability to influence
- Liquidity to fund these outstanding commitments is maintained by retaining sufficient capacity in certain public asset classes, which are systematically sold down as commitments are called
- Contractual unfunded commitments are a subset of potential future capital deployments. For some asset classes, e.g. Real Estate, CalPERS deploys capital through annual revocable allocations to separately managed accounts. In others, co-investment capital, where deployment is controlled by CalPERS, can represent a meaningful share of investments

Asset Class	Net Asset Value ($M)	Contractual Unfunded Commitments ($M)	Prior Year (6/30/23) Contractual Unfunded Commitments ($M)
Private Equity	77,718	29,912	24,906
Real Estate	49,667	2,649	1,370
Infrastructure	16,481	5,082	2,141
Private Debt	13,858	15,717	13,299
Total Private Assets	**157,724**	**53,359**	**41,716**

Exhibit 5.6
Sources: Aladdin, AREIS, PEARS

Section V. PERF Allocation

Internal vs. External Management

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

- Roughly 2/3 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 cost-efficient external partnerships to generate value add and complement internal skillsets

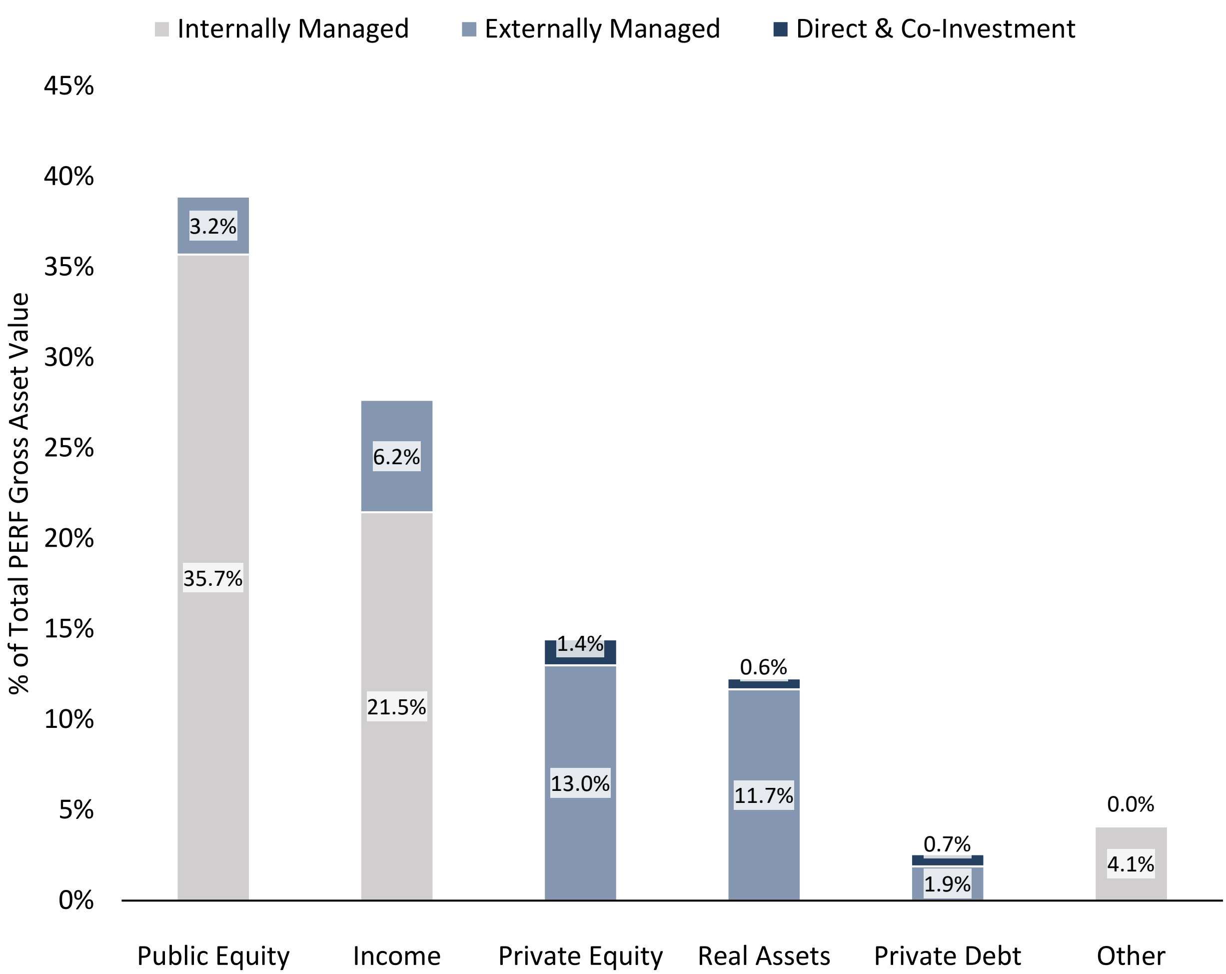


Exhibit 5.7

Section V. PERF Allocation

Active vs. Indexed Management

61% of PERF is actively managed

- Active management means the asset class is managed with the intention to outperform its benchmark
- In contrast, indexing seeks to replicate the benchmark as cheaply and efficiently as possible
- 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
- CalPERS corporate governance activities are enabled regardless of management style
- Within Income, the Treasury segment is considered indexed but is managed to facilitate PERF’s liquidity and financing activities

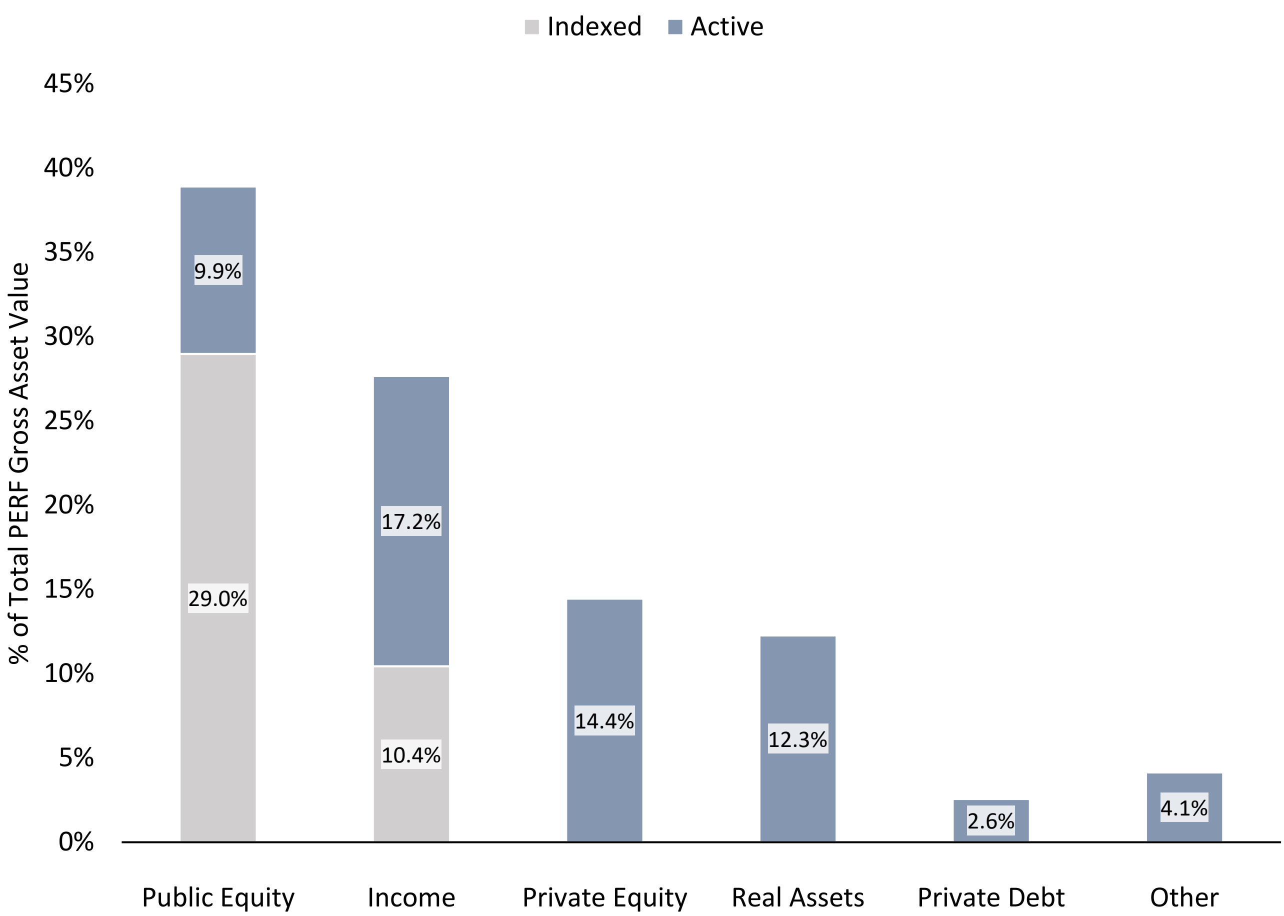


Exhibit 5.8

Section VI. Program Overviews

As of June 30, 2024

Global Public Equity Markets Investment Highlights

Thoughtfully delivers multiple equity betas and risk-managed systematic and opportunistic alpha in a risk and cost aware manner

- Factor-weighted segment posted a 5-Yr return of +5.9%, which was in line with its benchmark, while Cap-weighted segment 5-Yr return of +11.2% was 20 basis points above its benchmark
- Deployed $14 billion to active strategies in a risk and cost-aware manner, resulting in active strategies ending the fiscal year at 26% of the portfolio
- Implemented a net $32 billion in Total Fund rebalancing and mid-cycle SAA adjustments
- 92% of the total GPE portfolio is invested in cost-efficient, internally managed strategies

Key Performance and Risk Metrics

$210.6B	8.2%	$2.0B	17.3%	32 bps
Ending Asset Value	10-Yr Annualized Total Return	5-Yr Cumulative Value Added	Forecasted Volatility	Forecasted Tracking Error

Strategy Allocation ($B)

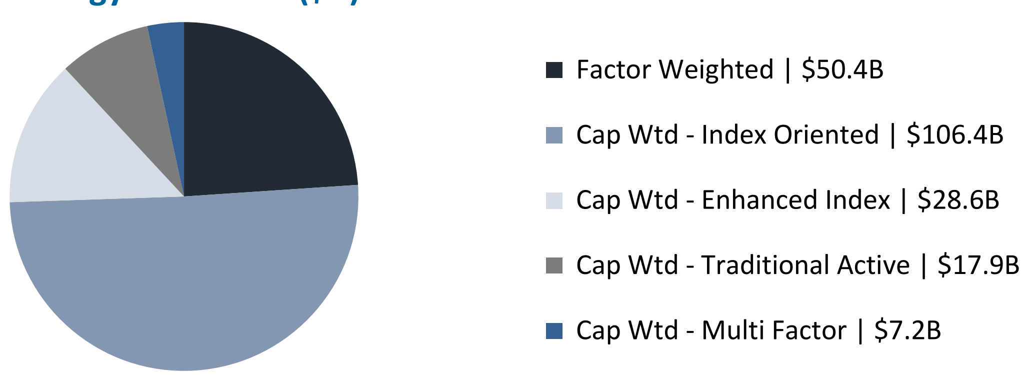


Exhibit 6.1

Strategy 5-Year Performance

	Total Return	Benchmark Return	Excess Return (basis points)	Value Added ($M)
Factor Weighted	**5.9%**	**5.8%**	**6**	**163.8**
Cap Weighted	**11.2%**	**11.0%**	**25**	**1,683.9**
Index Oriented	11.0%	10.8%	14	938.8
Enhanced Index	14.6%	14.2%	43	201.0
Traditional Active	13.3%	10.3%	302	1,089.4
Multi Factor	11.2%	11.0%	25	5.2

Exhibit 6.2

Section VI. Program Overviews

Global Public Equity Markets Operational Highlights

Enhanced efficiency and reduced latency in the external manager/strategy search process. Championed shareowner rights and corporate accountability

- Progressed effective stewardship by taking leadership role in protecting shareowner rights and holding corporate board directors accountable through notable proxy votes such as Exxon and Tesla
- Piloted and formalized the new Manager Universe Continuous Search (MUCS) process
- Collaborated with FTSE Russell on the customized CalPERS FTSE Climate Transition Index (CTI), a rules-based, scalable alternative to capitalization-weighting, aiming to capture the equity risk premium in a climate-resilient manner

Key Operational Metrics

26	92%	93,553	416	3 bps
# of Team Members	Internally-Managed	Proxy Voting/ Ballot Items	Companies Engaged	FY Total Program Fees Paid [3]

Expense Type	FY 2023-24			FY 2022-23		
	Avg AUM ($M)	Fees Paid ($M)	Fees Paid[3] (BPS)	Avg AUM ($M)	Fees Paid ($M)	Fees Paid[3] (BPS)
Internal Management[1]	$ 195,259	$ 10.6	0.5	$ 197,760	$ 7.2	0.4
External Management[2]	$ 14,448	$ 47.1	33	$ 9,751	$ 32.2	33
Consultants Expense	N/A	$ 1.3	0.1	N/A	$ 1.4	0.1
Technology & Operating Expense	N/A	$ 13.6	0.6	N/A	$ 13.7	0.7
Total Program	$ 209,706	$ 72.6	3	$ 207,511	$ 54.5	3

[1] Internal Management Fees includes internal model provider fees
[2] Includes base and performance fees
[3] Management Fee basis points calculated on Int/Ext Avg AUM. Consultants and Technology & Operating Expense basis points calculated on Total Program Avg AUM

Executing Our Strategic Initiatives

Building on FY 2023-24 success, key focus areas for the coming year include:

- Enhancing the Active Risk framework and Portfolio Construction
- Advancing Data and technology modernization
- Progressing the Sustainable Investments 2030 Strategy

Section VI. Program Overviews

Global Fixed Income Investment Highlights

Understanding Our Returns: Key Drivers

Serve as a long-term economic diversifier to equity risk and be a reliable source of income and liquidity

- All five Segments met or outperformed their respective benchmarks over the last five years
- The newly created Emerging Market Sovereign Segment was the best performing segment in the past year relative to its benchmark. +7.55% absolute return and 57 basis points of relative return
- Implementation of the SAA mid-cycle adjustments resulted in approximately $20 billion of allocation changes across the five GFI Segments

Key Performance and Risk Metrics

$149.8B	**2.0%**	**$1.1B**	**6.5%**	**30 bps**
Ending Asset Value	10-Yr Annualized Total Return	5-Yr Cumulative Value Added	Forecasted Volatility	Forecasted Tracking Error

Strategy Allocation ($B)

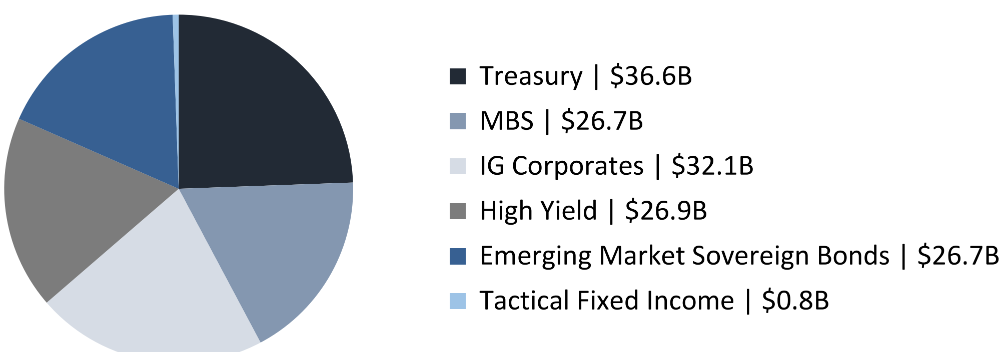


Exhibit 6.4

Strategy 5-Year Performance

	Total Return	Benchmark Return	Excess Return (basis points)	Value Added ($M)
Treasury	(3.5)%	(3.4)%	(7)	(221.5)
MBS	(0.4)%	(0.6)%	19	251.0
IG Corporates	(0.1)%	(0.3)%	22	240.7
High Yield	3.5%	3.5%	2	30.6
Emerging Mkt Sov Bonds[1]	-	-	-	-
Tactical Fixed Income[1]	-	-	-	-

Exhibit 6.5

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

Section VI. Program Overviews

Global Fixed Income Operational Highlights

Enhancing portfolio management efficiency and reducing operational risk

- In collaboration with the Liquidity Management Group, re-designed Treasury segment portfolio architecture to increase Total Fund collateral availability, reduce operational risk, enhance transparency, and improve portfolio management efficiency
- Continued the value-add efforts by moving 90% of the High Yield Segment from Internally-Managed Passive mandate to Externally-Managed Active mandate
- Hired four Investment Managers on the Investment Grade Credit and Structured Products team

Key Operational Metrics

28	77.5%	5	$48.6M	5 bps
# of Team Members	Internally-Managed	# of Segments	Fiscal Year Mgt Fees[1]	FY Total Program Fees Paid [2]

Expense Type	FY 2023-24			FY 2022-23		
	Avg AUM ($M)	Fees Paid ($M)	Fees Paid[2] (BPS)	Avg AUM ($M)	Fees Paid ($M)	Fees Paid[2] (BPS)
Internal Management	$ 100,575	$ 11.8	1	$ 104,811	$ 8.8	1
External Management[1]	$ 28,133	$ 48.6	17	$ 7,841	$ 9.4	12
Consultants Expense	N/A	$ .0	0	N/A	$ .0	0
Technology & Operating Expense	N/A	$ 9.0	1	N/A	$ 7.8	1
Total Program	$ 128,708	$ 69.4	5	$ 112,651	$ 26.0	2

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

Exhibit 6.6

Executing Our Strategic Initiatives

Over the past fiscal year, the team has consistently evaluated opportunistic fixed income allocation options in the Tactical Fixed Income portfolio. Allocations made in Q4 of 2023 has added ~115 basis points of cumulative outperformance, resulting in ~$31 million in active dollar value added since trade inception.

Looking forward, the team will continue to collaborate with the Liquidity Management Group to optimize reliability and cost of Total Fund leverage implementation across GFI segment portfolios.

Section VI. Program Overviews

Private Equity Investment Highlights

Understanding Our Returns: Key Drivers

Focusing on manager selection and scaling co-investments to enhance net returns and reduce costs

- Prioritizing vintage year consistency, manager selection, increased co-investments, and sustainable investment frameworks
- Reducing Large Buyout exposure by diversifying into Venture, Growth, and Middle Market Buyout
- Short term underperformance relative to the benchmark driven by the lag in private market valuations
- The 2022 strategy overhaul tackles long term underperformance from inconsistent allocation, under-allocation to Growth and Venture, and missing longstanding co-investment goals
- While early, the first six quarters of performance data are showing promising results for the new strategy

Key Performance and Risk Metrics

$78.2B	11.0%	$(7.5)B	$29.9B	26.9%
Ending Asset Value	10-Yr Annualized Total Return	5-Yr Cumulative Value Added	Contractual Unfunded Commitments	Forecasted Volatility

Strategy Allocation ($B)

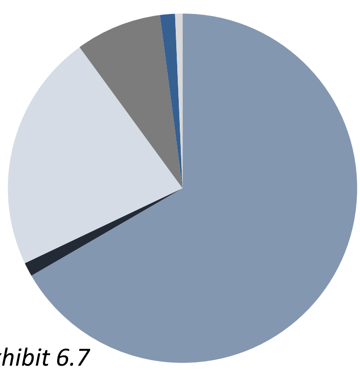


Exhibit 6.7

Strategy 5-Year Performance

	Total Return	Private Equity Benchmark Return	Excess Return (basis points)	Value Added ($M) [1]
Buyout	13.3%	12.9%	45	(3,408.5)
Credit	4.8%	12.9%	(814)	(670.5)
Growth/Expansion	11.9%	12.9%	(94)	(2,421.7)
Opportunistic	12.2%	12.9%	(73)	(826.3)
Venture	9.5%	12.9%	(337)	(208.4)

Exhibit 6.8

[1]For the Buyout strategy, the opposite signs between excess return and dollar value add are due to methodological differences. Excess return (basis points) 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

Enhancing returns by building a more sustainable portfolio

- This fiscal year, committed over $4 billion to diverse managers in the non-intermediated portfolio (i.e., beyond Project Mosaic)
- Co-hosted Catalyst Forum to connect institutional investors with diverse investment leaders
- Worked to increase participation of active Buyout managers in the ESG Data Convergence Initiative
- PE total program costs as a percentage of average AUM declined 6% from 143 basis points in FY 2022-23 to 134 basis points in FY 2023-24, largely due to a decrease in fees and profit sharing paid

Key Operational Metrics

35	126	363 [1]	2,329 [2]	134 bps
# of Team Members	# of Managers	# of Funds	# of Portfolio Companies	FY Total Program Fees Paid [4]

Expense Type	FY 2023-24			FY 2022-23		
	Avg AUM ($M)	Fees & Profit Sharing Paid ($M)	Fees & Profit Sharing Paid[4] (BPS)	Avg AUM ($M)	Fees & Profit Sharing Paid ($M)	Fees & Profit Sharing Paid[4] (BPS)
Internal Management	$ 0	$ 11.6	2	$ 0	$ 9.4	2
External Management[3]	$ 67,742	$ 885.1	131	$ 52,073	$ 721.7	139
Consultants Expense	N/A	$ 2.0	0	N/A	$ 2.2	0
Technology & Operating Expense	N/A	$ 11.0	2	N/A	$ 9.7	2
Total Program	$ 67,742	$ 909.8	134	$ 52,073	$ 743.0	143

[1] Including Funds, Fund-of-Funds, and Customized Investment Accounts as of March 31, 2024, due to quarter-lag reporting
[2] Accounting for 95% of total company value as of March 31, 2024, due to quarter-lag reporting
[3] Includes management base fees inclusive of offsets and waivers and profit sharing paid
[4] All basis points fees paid figures are calculated on Total Program AUM

Exhibit 6.9

Executing Our Strategic Initiatives

During the fiscal year, the Private Equity team prioritized:

- Committing capital consistently by vintage year
- Enhancing net returns and reducing costs through scale co-investments
- Engaging with investment partners to prioritize sustainable investment frameworks
- Diversifying the PE Program by increasing Growth/Venture and adding more Middle Market Buyout

Section VI. Program Overviews

Real Assets Investment Highlights

Understanding Our Returns: Key Drivers

Driven to focus on core assets that offer resiliency through cycles

- The portfolio of high-quality, essential assets with modest leverage has provided stability, even amid challenging market conditions.
- For the 5-Yr period, Real Estate and Infrastructure generated excess return of 35 and 397 basis points respectively
- The strategic focus on growing the infrastructure portfolio has increased NAV from $6 billion in 2020 to $15.5 billion in 2024
- There is increased focus on sustainable investments including energy transition, renewables, carbon-neutral and sustainability certified assets

Key Performance and Risk Metrics

$66.4B	5.6%	$2.3B	$7.7B	12.8%
Ending Asset Value	10-Yr Annualized Total Return	5-Yr Cumulative Value Added	Contractual Unfunded Commitments	Forecasted Volatility

Strategy Allocation ($B)

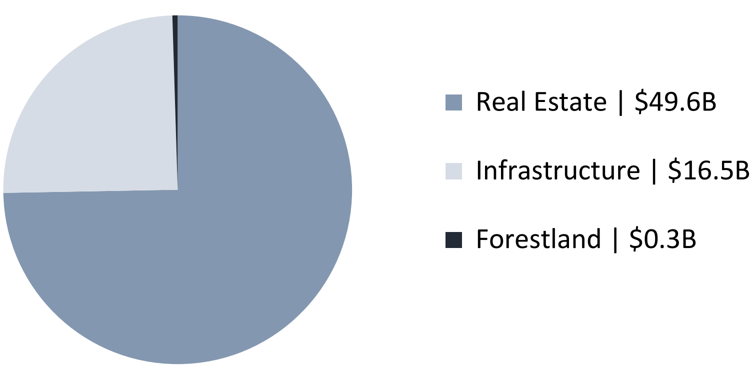


Exhibit 6.10

Strategy 5-Year Performance

	Total Return	Benchmark Return	Excess Return (basis points)	Value Added ($M)
Real Estate	2.9%	2.5%	35	(721.6)
Infrastructure	6.5%	2.5%	397	3,097.8
Forestland	3.9%	2.5%	136	(83.2)

Exhibit 6.11

Section VI. Program Overviews

Real Assets Operational Highlights

Continued focus on deploying capital at scale while maintaining high underwriting standards

- External management fees increased by 11 basis points or 23% compared to the prior year largely due to an increase in incentive fees
- Scaling co-investments in Infrastructure impacts fees favorably
- Fee-structures renegotiated to better align incentives to performance

Key Operational Metrics

37	68 [1]	85% [2]	62 bps
# of Team Members	# of Partnerships	Into GRESB Assessment	FY Total Program Fees Paid [4]

Expense Type	FY 2023-24			FY 2022-23		
	Avg AUM ($M)	Fees Paid ($M)	Fees Paid[4] (BPS)	Avg AUM ($M)	Fees Paid ($M)	Fees Paid[4] (BPS)
Internal Management	$ 0	$ 13.1	2	$ 0	$ 11.4	2
External Management[3]	$ 68,364	$ 394.2	58	$ 71,892	$ 339.1	47
Consultants Expense	N/A	$ 2.2	0	N/A	$ 1.4	0
Technology & Operating Expense	N/A	$ 14.2	2	N/A	$ 13.8	2
Total Program	$ 68,364	$ 423.7	62	$ 71,892	$ 365.6	51

[1] As of March 31, 2024, due to Quarter-lag reporting
[2] % of the portfolio submitted into GRESB Assessment in 2023
[3] Includes base and performance fees
[4] All basis points fees paid figures are calculated on Total Program AUM

Exhibit 6.12

Executing Our Strategic Initiatives

The Real Assets team continues to make progress on its strategic initiatives, including:

- Continued focus on best-in-class managers
- Seeking to prudently add more non-core managers to the portfolio in both real estate and infrastructure, with a focus on co-investment vehicles for cost-efficiency
- Seek out sustainable investment opportunities

Section VI. Program Overviews

Private Debt Investment Highlights

Understanding Our Returns: Key Drivers

Continued pace in growing the program

- Although a relatively new asset class, Private Debt continues to be on pace in growing the program with a portfolio construction approach focused on strong partnerships with high quality managers while ensuring diversification across vintage, manager and strategy.
- Inception to date, the Private Debt program has outperformed the benchmark by 250 basis points while the 3-Yr and 1-Yr performance has exceeded the benchmark by 254 and 345 basis points respectively.
- Private Debt continues to be focused on the deployment in attractive risk-adjusted opportunities and through co-investments that will continue to help drive performance for the program.

Key Performance and Risk Metrics

$13.9B	10.5%	$0.5B	$15.7B	6.8%
Ending Asset Value	3-Yr Total Return[1]	3-Yr Cumulative Value Added[1]	Contractual Unfunded Commitments	Forecasted Volatility

Strategy Allocation ($B)

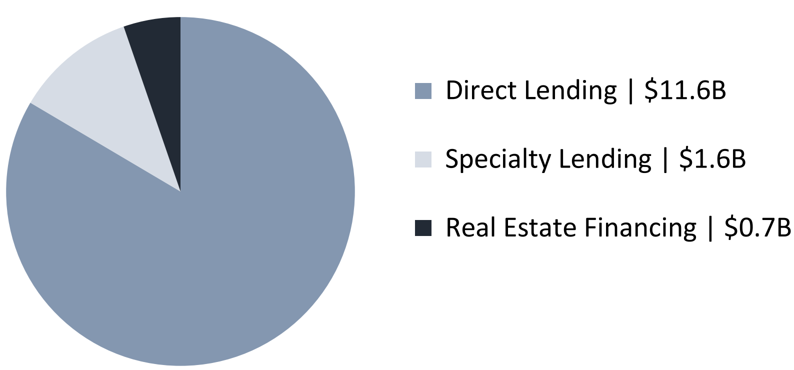


Exhibit 6.13

Strategy 3-Year Performance[1]

	Total Return	Private Debt Benchmark Return	Excess Return (basis points)	Value Added ($M)
Direct Lending	10.9%	8.0%	292	537.4
Specialty Lending	10.0%	8.0%	201	4.3
Real Estate Financing	7.8%	8.0%	(15)	(22.1)

Exhibit 6.14

[1] Includes periods prior to 7/1/2022 when Private Debt was part of Opportunistic Strategies

Section VI. Program Overviews

Private Debt Operational Highlights

Increased efficiency through enhanced monitoring and underwriting processes

- The team continues to enhance the efficiency of the credit underwriting process and strengthen the portfolio monitoring capabilities.
- Private Debt added five new team members and continues to actively recruit investment staff to expand the team.
- External management fee has increased year over year due to an increase in profit sharing paid.

Key Operational Metrics

11	2.8%	9 [1]	45	52 bps
# of Team Members	Current Allocation	# of External Managers	# of Funds	FY Total Program Fees Paid [3]

Expense Type	FY 2023-24			FY 2022-23		
	Avg AUM ($M)	Fees & Profit Sharing Paid ($M)	Fees & Profit Sharing Paid[3] (BPS)	Avg AUM ($M)	Fees & Profit Sharing Paid ($M)	Fees & Profit Sharing Paid[3] (BPS)
Internal Management	$ 11,848	$ 4.6	4	$ 13,824	$ 3.5	3
External Management[2]	$ 11,793	$ 115.8	98	$ 8,492	$ 66.7	79
Consultants Expense	N/A	$ .1	0	N/A	$ .0	0
Technology & Operating Expense	N/A	$ 1.6	1	N/A	$ 1.9	1
Total Program	**$ 23,642**	**$ 122.1**	**52**	**$ 22,316**	**$ 72.0**	**32**

[1] As of March 31, 2024, due to Quarter-lag reporting
[2] Includes base and performance fees
[3] Management Fee basis points calculated on Int/Ext Avg AUM. Consultants and Technology & Operating Expense basis points calculated on Total Program Avg AUM

Exhibit 6.15

Executing Our Strategic Initiatives

As the Private Debt team continues to expand its capabilities, strategic focus includes:

- Climate Market mapping and understanding the various climate-themed fund offerings in Private Debt
- External manager Sustainability engagement, including understanding manager-specific views on asset materiality
- Identification of relevant Sustainability metrics/ KPI

Section VI. Program Overviews

Low Liquidity Enhanced Returns Highlights

Understanding Our Returns: Key Drivers

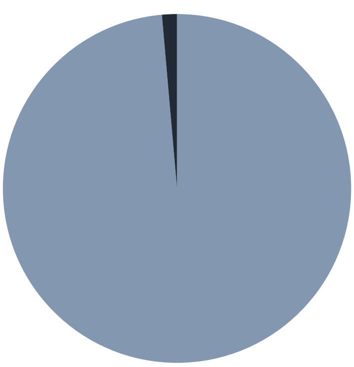
Current market environment tightens CLO AAA Spreads

- 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
- The CLO market has seen repayment rates increase substantially in 2024 and is on pace to match the record high of 2021. This inflow of capital from repayments and the need to redeploy has led to a compression in CLO AAA spreads.
- CLO AAA coupons, 6.5% currently, remain attractive due to the higher SOFR base rate.
- Given the higher interest rate burden on the borrowers, loans in the CLO portfolio may experience credit deterioration and create downgrade migration for lower rated CLO tranches.
- Team hired an Investment Manager in 2Q 2024 to redeploy the CLO portfolio.

Key Performance and Risk Metrics

$10.6B	3.8%	$0.8B	2.3%	2.3%
Ending Asset Value	5-Yr Total Return	5-Yr Cumulative Value Added	Forecasted Volatility	Forecasted Tracking Error

Strategy Allocation ($B)



Collateralized Loan Obligations (CLOs) | $10.5B

Other | $0.1B

Exhibit 6.16

Strategy 5-Year Performance

	Total Return	Benchmark Return	Excess Return (basis points)	Value Added ($M)
Low Liquidity Enhanced Returns	3.8%	2.3%	149	868.9

Exhibit 6.17

Section VI. Program Overviews

Sustainable Investments

Leading the charge in sustainable investing

Our Sustainable Investments team continues to lead and strategize across all asset classes on sustainable investment topics. Throughout the year, they have driven the Sustainable Investments 2030 Strategy, Climate Action 100+, and focused on human capital management and climate risk oversight.

Sustainable Investments 2030 Strategy

In November 2023, the Board approved the Sustainable Investments 2030 Strategy, which focuses on five objectives:

- Generate portfolio alpha
- Improve portfolio resilience
- Implement an ambitions Net Zero Plan through investments, engagement, and advocacy
- Promote greater inclusion and representation in the financial industry and global economy
- Build and promote efficient and equitable financial markets

$100B Climate Action Plan

Included within the SI 2030 Strategy is a commitment to a target of $100 billion in climate solutions by the end of 2030. To date, CalPERS has announced almost $10 billion in new actions aimed at investing in the global transition to a low-carbon economy, including new private market investments and a customized public equity index to enhance the pension fund's climate-aware investing.

The new actions, totaling more than $9.7 billion, include:

- A customized Climate Transition Index, committing $5 billion in public equity investments to a scalable alternative to capitalization-weighting. The index will evaluate both the risks and opportunities of the global energy transition.
- Nine signed commitments of more than $1.1 billion in private market investments in sectors supporting energy production and distribution as well as freight and supply chain optimization.
- Additional private market investments, currently under review, totaling $3.6 billion. Some of these investments are expected to be final in the coming weeks and months.

Climate Action 100+

Chief Operating Investment Officer Michael Cohen was appointed Steering Committee chair of Climate Action 100+, a global investor organization addressing climate change with the world's largest companies.

Climate Action 100+ represents more than 600 institutional investors engaging companies to improve their climate change governance, cut emissions, and strengthen climate-related financial disclosures.

Section VI. Program Overviews

Sustainable Investments

Creating meaningful relationships with high-performing, next-generation managers

CalPERS' Emerging and Diverse Manager Program

CalPERS invests in emerging and diverse managers to create meaningful relationships with next generation managers who demonstrate a strong potential for success. Our Mosaic platform, managed by GCM (Elevate) and TPG (Next), establishes an ecosystem that helps emerging and diverse managers mitigate risk, unlock alpha, accelerate growth, and provide CalPERS with good risk-adjusted returns. The ability to invest in managers earlier and across their lifecycles is a key differentiator and facilitates deeper relationships, discounted terms and co-investment opportunities. To date, both consultants have each committed to two emerging and diverse managers.

Diversity, Equity, and Inclusion Survey

CalPERS executes an annual DEI Survey of our external managers. The survey provides us with greater insight into the investment industry workforce, leadership, and decision-making practices of the managers in our own portfolio. We will track and report on the characteristics of our portfolio as it relates to DEI, measure our progress over time, and benchmark ourselves to peers and the industry broadly. In addition, the Survey provides CalPERS asset classes with additional data that serves as a potential risk mitigant.

A new focus on human capital management

Labor Principles

CalPERS made significant progress on implementing Labor Principles, a five-point framework of beliefs that are fundamental to our investment strategy. Following a comprehensive assessment of current practices, the Board approved the CalPERS Labor Principles and revisions to the CalPERS Total Fund Policy, including Governance and Sustainability Principles in November 2023. In Spring 2024, the CalPERS Labor Principles attestation process was launched, sending attestation requests to all current private asset managers. This requires CalPERS investment managers to review and confirm their broad alignment with CalPERS Labor Principles.

Responsible Contractor Policy

CalPERS has strong interest in the condition of workers employed by CalPERS, managers, and delegates. CalPERS is undergoing an extensive review and refresh of the Responsible Contractor Program (RCP) Policy. The RCP covers U.S. Real Estate and Infrastructure assets where CalPERS holds greater than 50% interest on contracts of $100k or more.

In reviewing the Policy for potential updates, we seek to strengthen manager responsibilities, clarify reporting guidance, strengthen the policy's risk management function, streamline policy implementation, and facilitate communication between stakeholders and managers. Work on refreshing the RCP Policy will continue into the fiscal year 2024-2025.

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, liquidity, and allocation activities.

Key Accomplishments Fiscal Year FY 2023-24

- Led Midterm ALM Planning and Portfolio Optimization
- Coordinated trading process across public markets to implement interim SAA changes
- Researched and developed approach to access diversified multi-asset strategies to enable access to innovative opportunities not currently in portfolio
- Iterated on integrated active risk process, establishing consistent expectations across Programs
- Continuing to enhance our liquidity management, including broadening our financing channels

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
Liquidity and Financing	Manage PERF liquidity posture through the integration of holistic cash and financing functions
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

As of June 30, 2024

Realized Outcomes vs Expectations

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 +25.5% while long-term returns (10-Yr) remain relatively stable in the range of +4.3% to +9.7%
- Outcomes for the first 2-years of the current ALM cycle (July 2022 to June 2024) are within the range of expectations

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

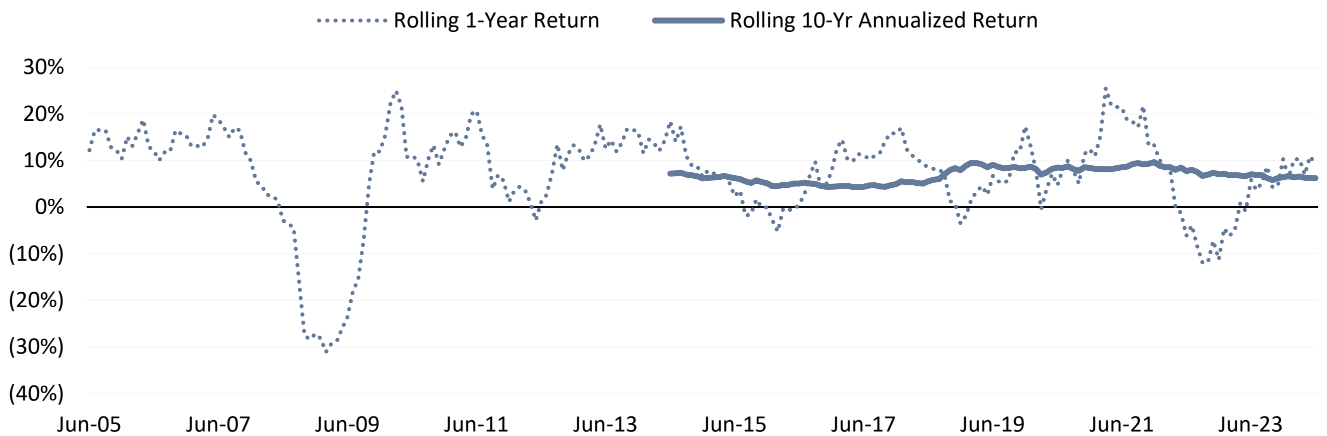


Exhibit 7.1

Current ALM Cycle: Realized Outcome vs 2021 ALM Expectations

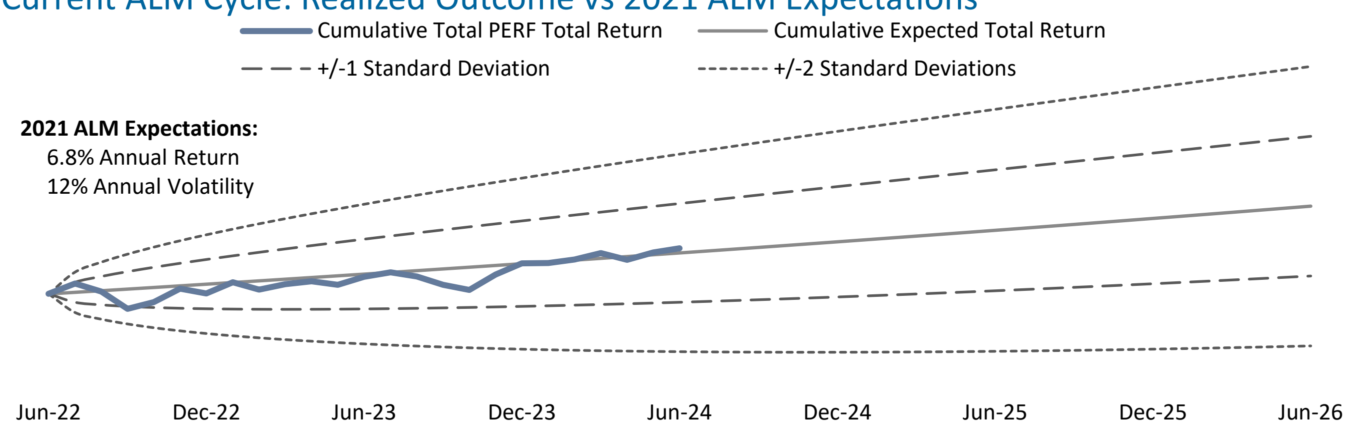


Exhibit 7.2

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

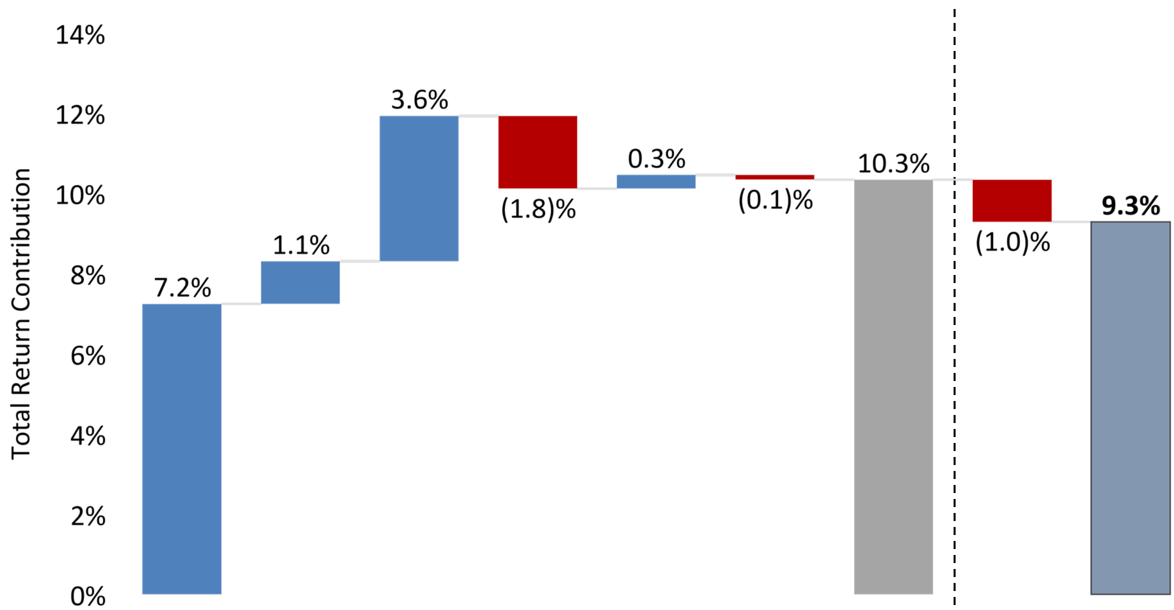
Section VII. PERF Performance Detail

Sources of PERF NAV Change and Total Return

Public Equity drove FY 2023-24 return

- PERF NAV increased by more than $40 billion during the fiscal year, most of which was driven by public equities, which returned +17.1%
- Large positive contributions from Public Equity and Private Equity were partially offset by Real Assets' negative fiscal year return

1-Yr Total Return Contribution



	Contribution from Policy Benchmark Components								
	Public Equity	Income	Private Equity	Real Assets	Private Debt	Strategic Leverage	Total Policy BM	Value Added	Total Fund
Average Weight	44.0%	26.9%	14.4%	14.3%	2.5%	(2.1)%	100%	-	**-**
Return	17.1%	3.6%	25.4%	(11.9)%	13.5%	-	10.3%	-	**9.3%**
Cumul Dollar Return (B)	$33.2	$4.8	$16.9	$(8.4)	$1.6	$(0.6)	$47.6	$(4.8)	**$42.8**

Exhibit 7.3
All performance reported net of investment expenses

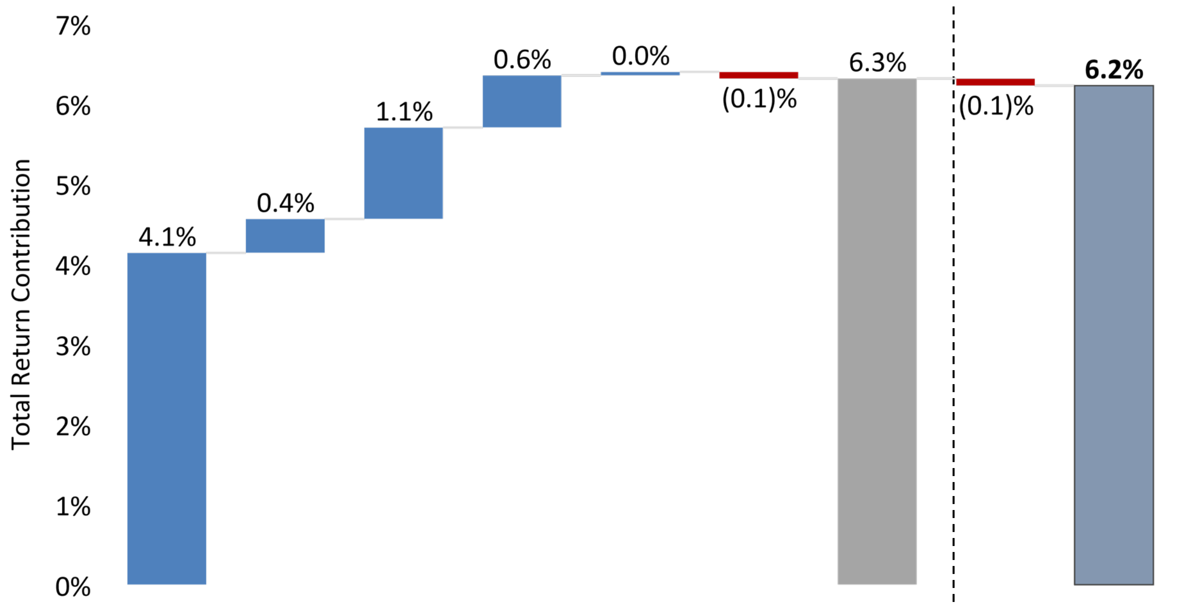
Section VII. PERF Performance Detail

Sources of PERF NAV Change and Total Return

Growth assets drove 10-Yr return

- Over the past 10 years, the PERF NAV has increased by over $200 billion
- Over longer periods, all current 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 +5.2% (or >80%) of the PERF Total return of +6.2%

10-Yr Total Return Contribution



	Contribution from Policy Benchmark Components								
	Public Equity	**Income**	**Private Equity**	**Real Assets**	**Private Debt[1]**	**Other[2]**	**Total Policy BM**	**Value Added**	**Total Fund**
Average Weight	48.9%	24.4%	9.4%	12.6%	0.4%	4.2%	100%	-	-
Return	8.2%	1.6%	11.6%	5.5%	-	-	6.3%	-	**6.2%**
Cumul Dollar Return (B)	$158.1	$10.9	$45.7	$21.2	$2.0	$(2.3)	$235.6	$(3.1)	**$232.5**

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

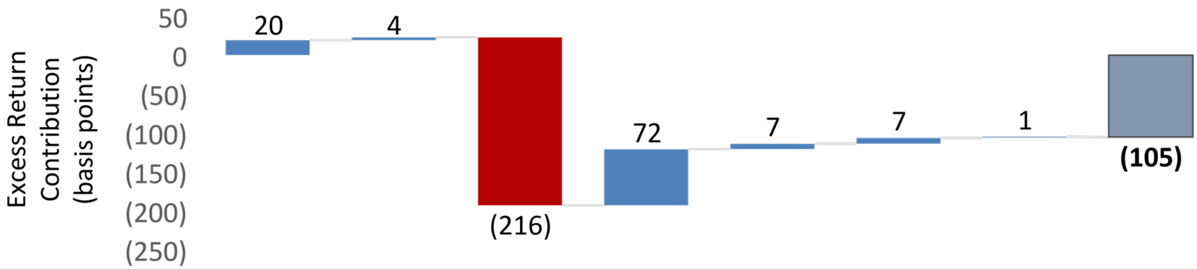
Section VII. PERF Performance Detail

Attribution of PERF Excess Return

Private assets dominate PERF Excess Return

- Although Private Assets comprised about 20-30% of PERF NAV, those programs account for an outsized share of active returns
- The largest driver of active returns for 1- and 5-Yr periods is Private Equity, with the 5-Yr period significantly impacted by Private Equity's more recent underperformance
- Private asset excess performance is best evaluated over longer periods, as in the short-term variations in valuation approach cause significant variation between private assets and their public benchmarks

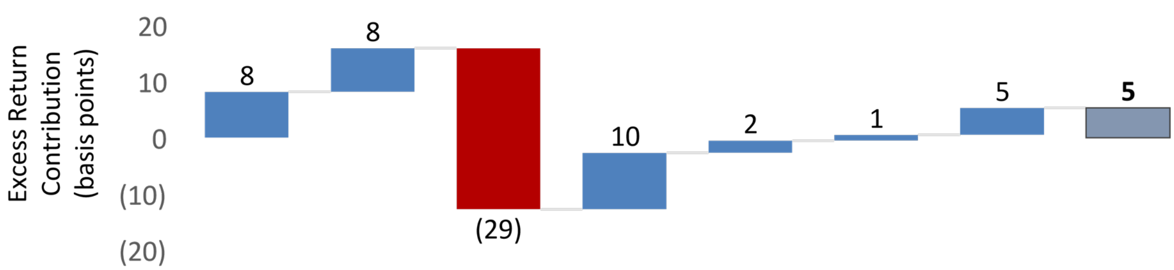
1-Yr Excess Return Attribution



	Public Equity	Income	Private Equity	Real Assets	Private Debt	LLER	Allocation & Other[2]	Total Fund
Average Weight	44.4%	27.0%	14.2%	14.4%	2.5%	2.5%	-	**100%**
Return	17.5%	3.7%	10.9%	(7.1)%	17.0%	8.7%	-	**9.3%**
Benchmark Return	17.1%	3.6%	25.4%	(11.9)%	13.5%	5.5%	-	**10.3%**
Excess Return (basis points)	46	11	(1,456)	473	345	320	-	**(105)**
Cumul Value Added (B)	$0.8	$0.1	$(9.8)	$3.3	$0.3	$0.3	$0.2	**$(4.8)**

Exhibit 7.5

5-Yr Excess Return Attribution



	Public Equity	Income	Private Equity	Real Assets	Private Debt[1]	LLER	Allocation & Other[2]	Total Fund
Average Weight	48.8%	27.5%	9.9%	12.7%	0.9%	2.6%	-	**100%**
Return	9.8%	(0.1)%	12.4%	3.7%	-	3.8%	-	**6.6%**
Benchmark Return	9.6%	(0.3)%	12.9%	2.5%	-	2.3%	-	**6.6%**
Excess Return (basis points)	21	17	(50)	116	-	149	-	**5**
Cumul Value Added (B)	$2.0	$1.0	$(7.5)	$2.3	$0.5	$0.8	$1.3	**$0.4**

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

As of June 30, 2024

Volatility

Total portfolio volatility has been in line with expectations

Current Levels

- Total Fund Volatility has been stable for the past year. Total Fund Tracking Error has been increasing in line with an increasing % of private assets that exhibit higher tracking errors, especially private equity
- The Actionable Tracking Error metric captures deviations from benchmarks for all public market programs, out-of-benchmark opportunistic investments, and asset allocation. The current level of 15 basis points relative to the Policy Limit of 100 basis points indicates available leeway to increase active management in these spheres. There is no equivalent quantitative metric for private programs due to inherent limitations in modeling, measurement, and benchmarking

	Policy Limit	Current 6/30/2024	Last Qtr 3/31/2024	Last Year 6/30/2023
Total Fund Volatility (%)	-	13.5	14.0	13.7
Policy Benchmark Volatility (%)	-	12.0	12.5	12.5
Tracking Error (%)				
Actionable	< 1.00	0.15	0.14	0.14
Total Fund	-	2.02	1.95	1.84
Allocation	-	0.03	0.01	0.01

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

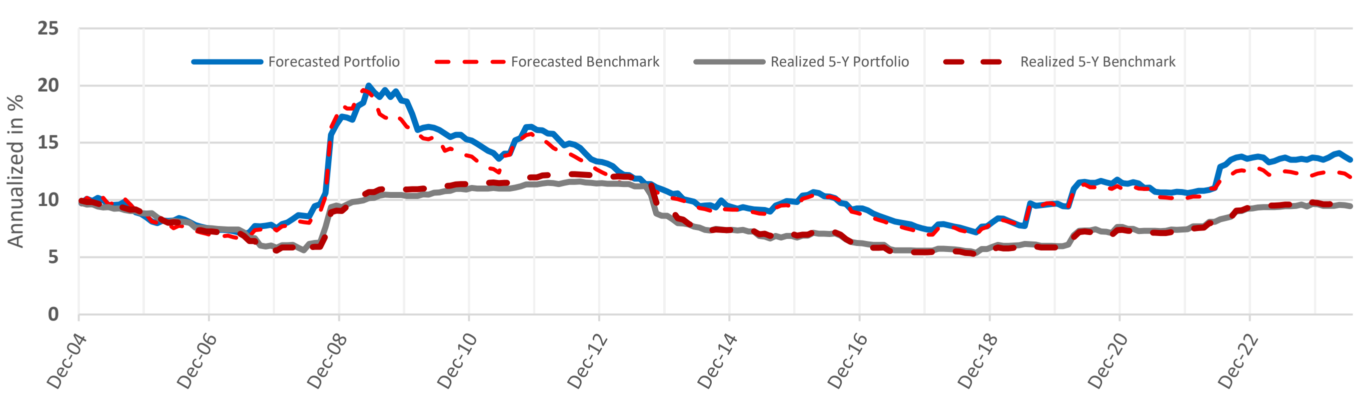


Exhibit 8.2

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 equity-heavy and growth-sensitive composition
- Stress testing also reveals the portfolio could experience higher than benchmark losses in some extreme market scenarios. However, note these estimates are based on the risk model's factor representation of the portfolio and do not consider lagged valuation effects in private markets, which would mute the reported return impact in a rapid market drawdown

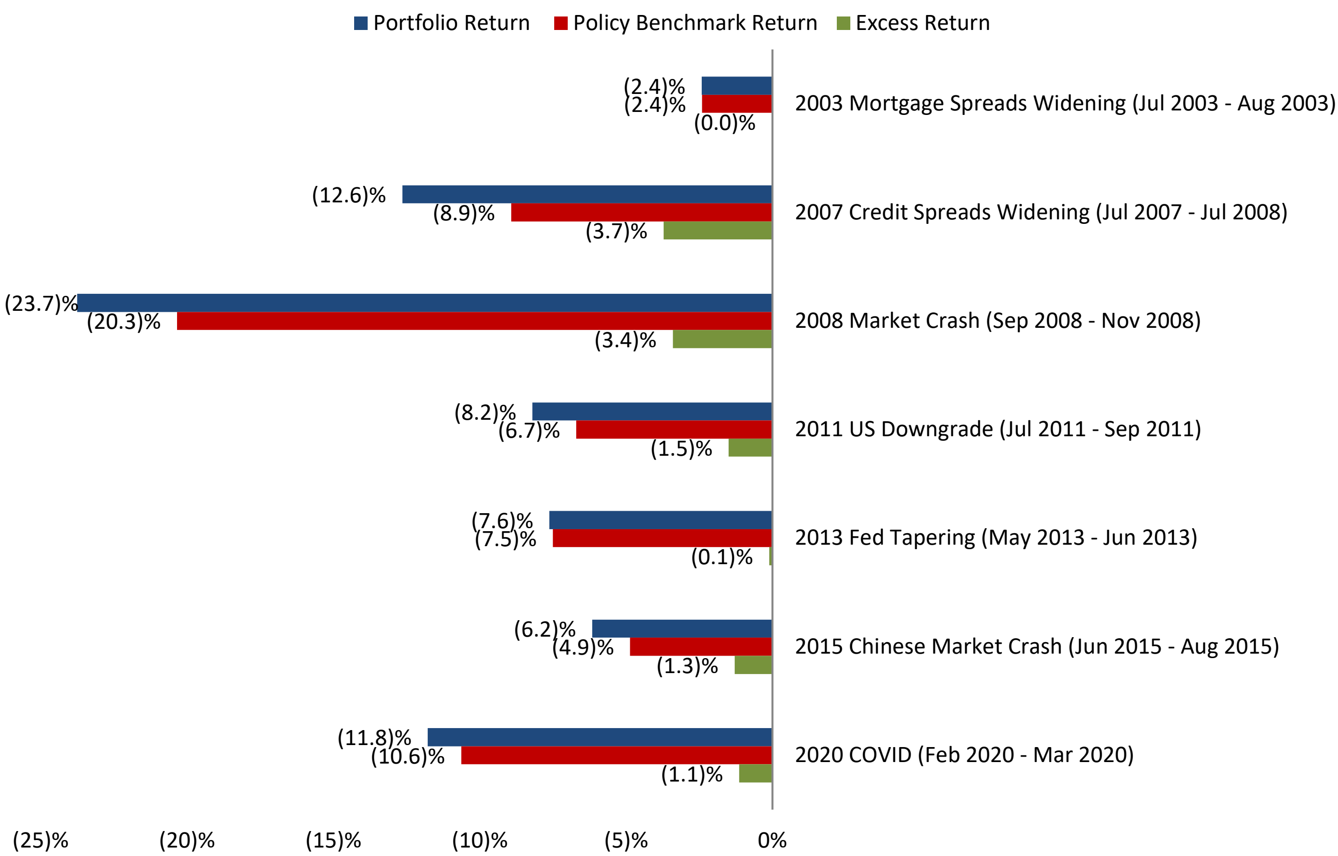


Exhibit 8.3

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

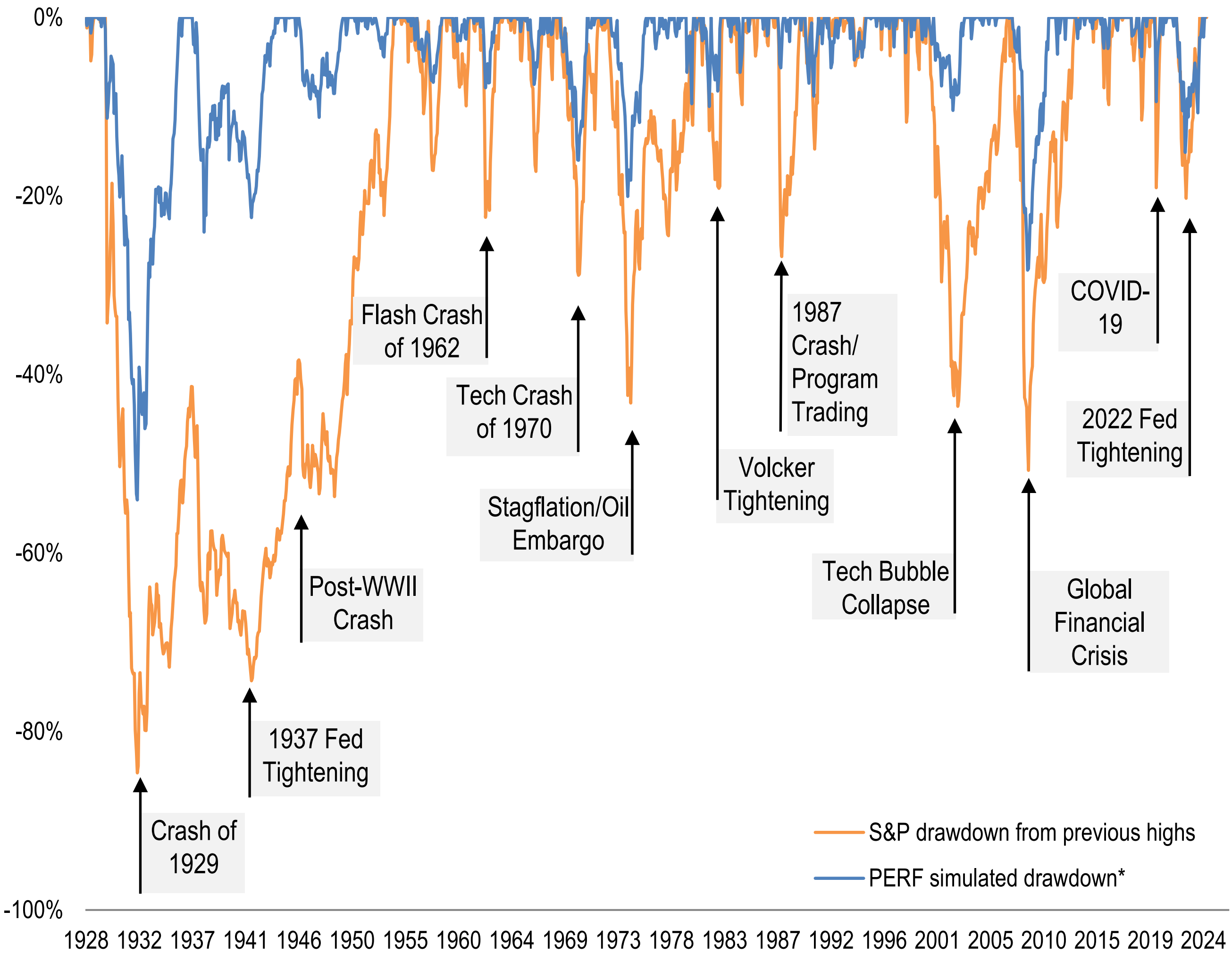


Exhibit 8.4

** 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

Growth oriented asset classes dominate overall volatility

% Contribution to Total Portfolio Volatility

- Growth-oriented assets dominate Total Fund Volatility: public and private equities contribute approximately 82% and the remaining asset classes have also significant growth component. For Income, diversification benefits offset much of the inherent volatility

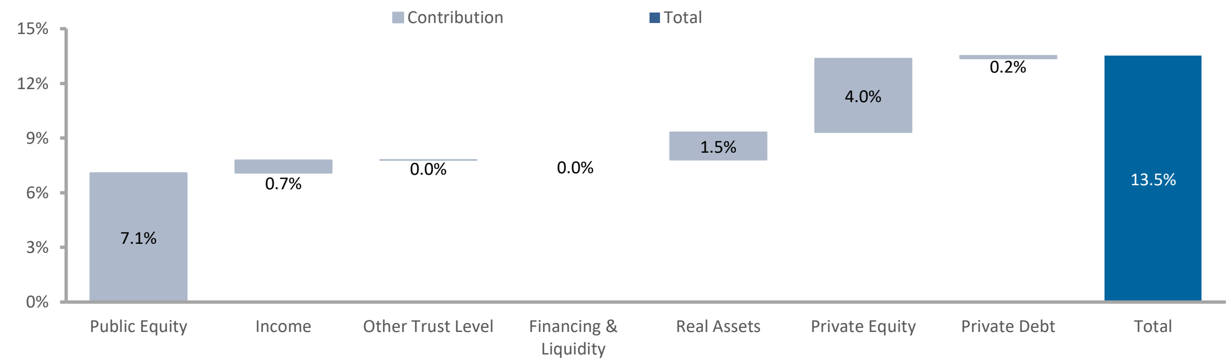


Exhibit 8.5

Asset Class	Market Value[1] ($ Millions)	Total Forecasted Volatility (%)	% Contribution to Total Volatility	5-Year Realized Volatility (%)
Public Asset Classes				
Public Equity	**210,172**	**17.3**	**52.5**	**16.3**
Cap Weighted	159,798	18.3	42.2	17.7
Factor Weighted	50,375	14.2	10.3	13.3
Income	**148,926**	**6.5**	**5.1**	**9.1**
Treasury	36,594	10.8	-0.2	12.4
IG Corp	32,082	9.8	1.5	13.1
High Yield	26,857	5.1	1.4	9.1
EM Sov Debt	26,747	7.9	2.0	-
MBS	26,645	5.7	0.3	6.3
Other Trust Level	**11,827**	**2.1**	**0.2**	**-**
LLER	10,594	2.3	0.2	3.1
Opportunistic	230	2.8	0.0	-
Tactical Fixed Income	825	1.3	0.0	-
Other	178	11.9	0.0	-
Financing & Liquidity	**(27,919)**	**-**	**0.0**	**-**
Liquidity	10,133	0.0	0.0	0.0
Trust Level Financing	(38,052)	-	0.0	-
Private Asset Classes				
Private Equity	**77,718**	**26.9**	**29.9**	**10.5**
Real Assets	**66,471**	**12.8**	**11.2**	**6.1**
Private Debt	**13,858**	**6.8**	**1.2**	**-**
TOTAL PERF	**501,054**	**13.5**	**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.)

Active strategies in public equities is the largest contributor to Actionable TE

% Contribution to Actionable Tracking Error

- Total Fund Actionable Tracking Error (TE) is at 15 basis points vs. a policy limit of 100 basis points
- The primary contributors are external public equity managers; other meaningful contributors are allocation management and the Low Liquidity Enhanced Return (LLER) program

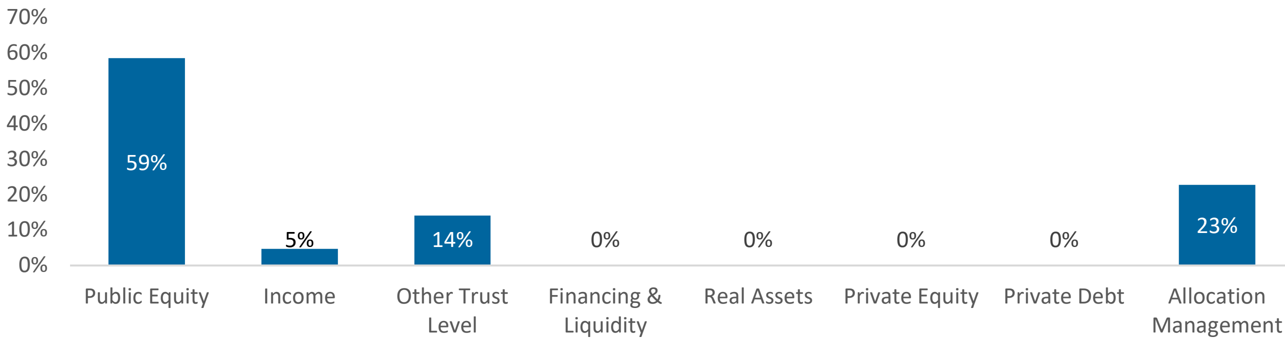


Exhibit 8.7

Asset Class	Forecasted Tracking Error (basis points)	% Contribution to Actionable TE	5-Year Realized TE (basis points)
Public Equity	**32**	**59**	**18**
Cap Weighted	38	58	24
Factor Weighted	6	0	12
Income	**30**	**5**	**23**
Treasury	9	1	37
IG Corp	28	-1	44
High Yield	54	-5	29
EM Sov Debt	47	6	-
MBS	44	3	33
Other Trust Level	**214**	**14**	**-**
LLER	225	13	299
Opportunistic	277	1	-
Tactical Fixed Income	132	0	-
Other	1,187	1	-
Financing & Liquidity	**-**	**0**	**-**
Liquidity	17	0	-
Trust Level Financing	-	0	-
Allocation Management	**3**	**23**	-
TOTAL PERF Actionable	**15**	**100**	**16**
Private Equity	**1,080**		**1,344**
Real Assets	**356**		**280**
Private Debt	**475**		**-**
TOTAL PERF	**202**		**171**

Exhibit 8.8

Section VIII. PERF Risk Detail

Diversification Characteristics

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

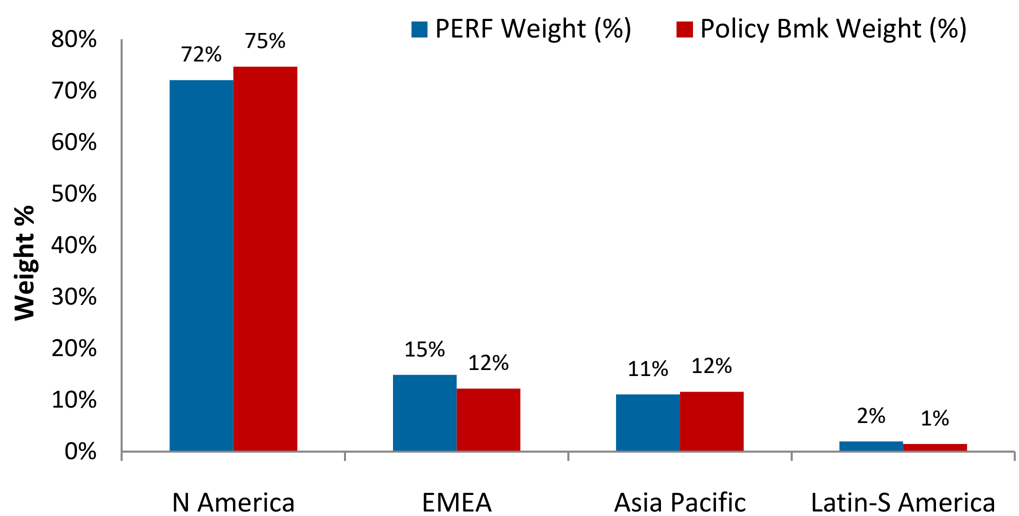


Exhibit 8.9

Top 10 Countries	PERF Weight (%)	Policy Benchmark Weight (%)	Active Weight (%)
United States	68.9	71.2	(2.3)
Japan	3.3	3.9	(0.6)
United Kingdom	3.2	2.1	1.2
Canada	2.1	2.1	0.0
China[1]	1.9	1.9	0.0
Germany	1.7	1.2	0.5
Switzerland	1.3	1.5	(0.2)
India	1.3	1.3	(0.1)
France	1.2	1.3	(0.1)
Taiwan	1.2	1.4	(0.2)

Exhibit 8.10

[1] Including Hong Kong

Section VIII. PERF Risk Detail

Diversification Characteristics (cont.)

21% foreign currency exposure

Foreign Currency Exposures

- PERF non-USD exposure is 21.4% versus 22.0% 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

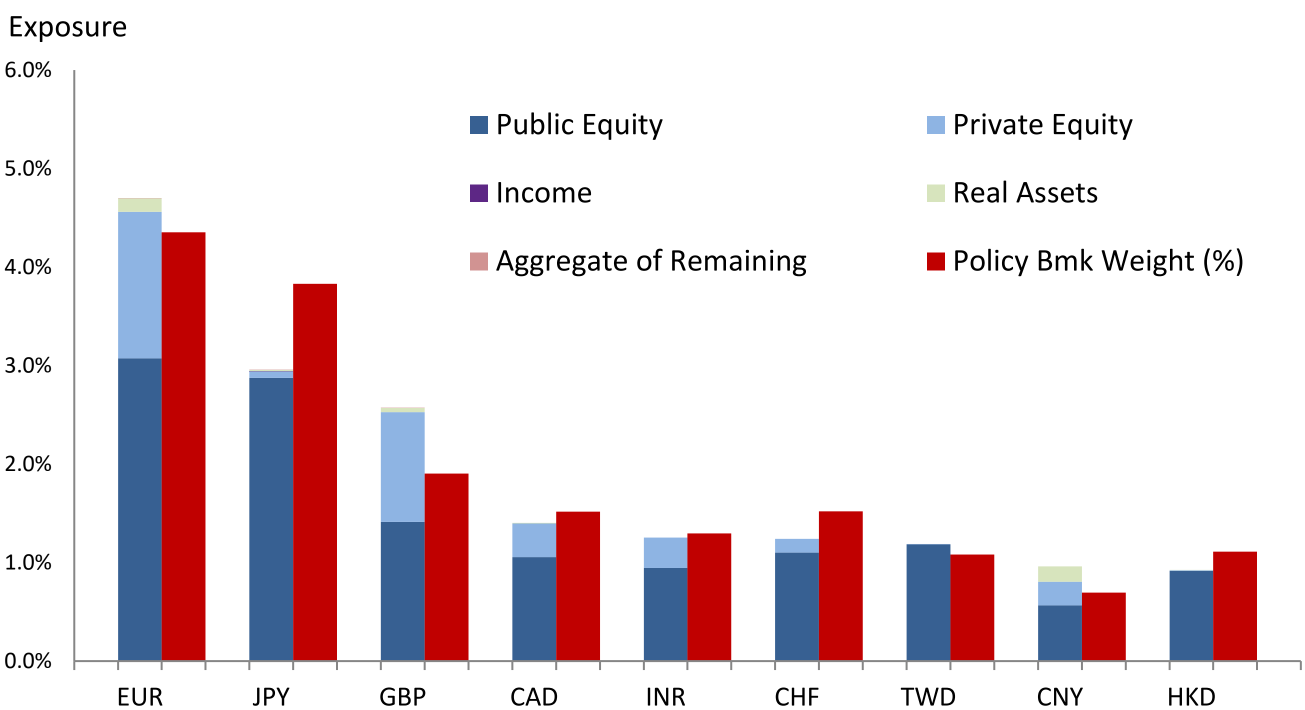


Exhibit 8.11

Section VIII. PERF Risk Detail

Diversification Characteristics (cont.)

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

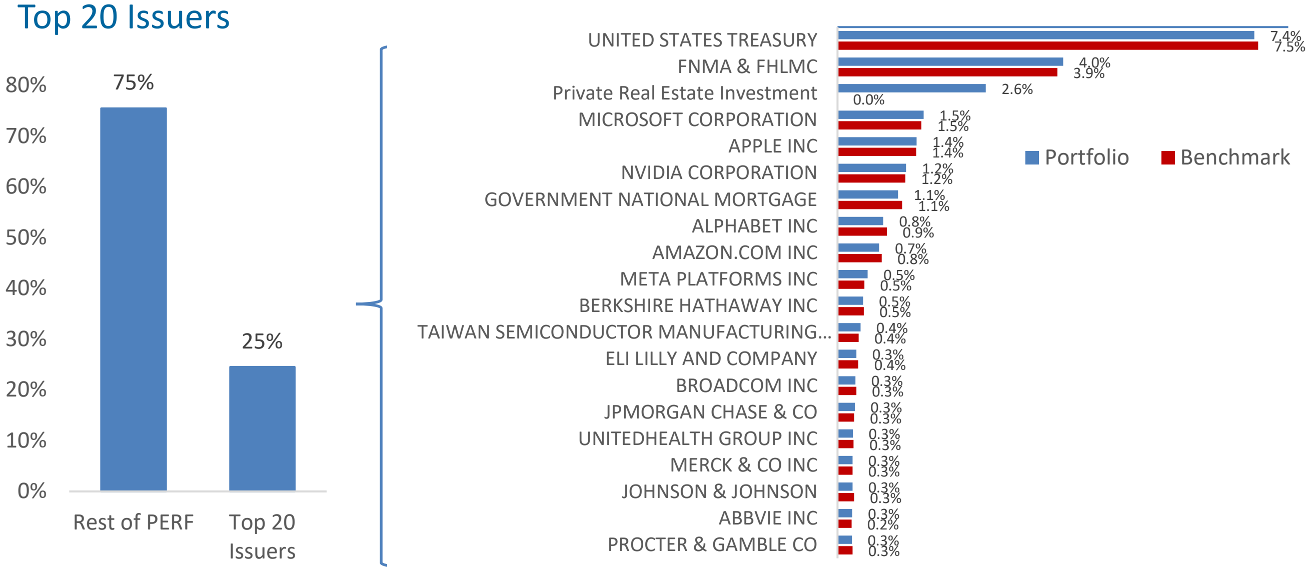


Exhibit 8.12

Industry Concentration* – Top 10

- PERF is diversified across industries with the largest deviations from benchmark in private equity

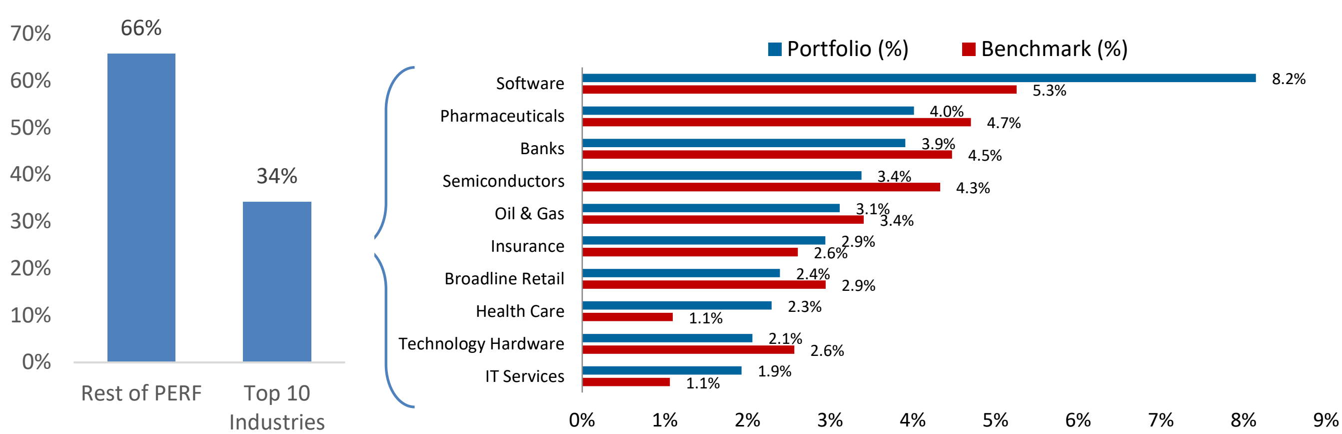


Exhibit 8.13

** Industry Concentration report covers Public Equity, IG Corp, High Yield and Private Equity segments*

Section VIII. PERF Risk Detail

Leverage

PERF maintains modest leverage

Policy Leverage

- As of June 30, 2024, PERF total leverage was 6.9%, of which 3.9% 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 ($M)	Share of PERF NAV (%)
Fund Level		
LLER	10,594	2.1%
Opportunistic Strategies	230	0.0%
Forward Sale of Private Equity Holdings	22	0.0%
Other Trust Level	156	0.0%
Tactical Fixed Income	825	0.2%
Strategic Leverage - Portfolio	16,092	3.2%
Total - Fund Level	27,919	5.6%
Program Level vs Benchmark		
Public Equity	156	0.0%
Private Equity[3]	N/A	N/A
Income	(298)	(0.1%)
Real Assets (Incremental to Benchmark)	6,917	1.4%
Private Debt[3]	N/A	N/A
Other Trust Level (Forward Settlements)	0	0.0%
Total - Program Level	6,775	1.4%
Total - PERF	**34,693**	**6.9%**
Strategic Leverage – Benchmark	**15,032**	**3.0%**
Active Leverage	**19,661**	**3.9%**

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 leverage in this exhibit is recourse to CalPERS, except for Real Assets*
[3] *Leverage in Private Equity and Private Debt is implemented at the individual fund- or portfolio company-level and is non-recourse*

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 day-to-day portfolio management. Rather, it informs our understanding of the risk profile of these asset classes, which in turn influences portfolio construction decisions. For example, the leverage embedded in equities is one of the drivers of their relatively higher return and risk expectations, and Private Debt managers typically embed leverage at the fund level. These forms of leverage, and their resulting risks, are embedded in the Capital Market Assumptions which form the basis of our asset allocation decisions

Asset Class	Embedded Leverage[1,2]
Public Equity	~ 1.5 x
Private Equity	1.4 – 1.8 x
Private Debt	1.8 – 2.8 x
Real Estate (Benchmark)	~ 1.4 x

Exhibit 8.15

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

[2] Public Equity, Private Equity, and Real Estate (Benchmark) are estimates at the company/property level and Private Debt is an estimate at the fund level

- Subscription financing, which allows managers to deploy capital in funds without immediately calling capital, is monitored separately and shown below

Asset Class	Subscription Financing ($mm)[3]
Private Equity	3,310
Private Debt	4,172

Exhibit 8.16

[3] As of March 31, 2024. Subscription financing is a loan to a fund, where the banks base credit on the committed capital to be contributed from the limited partners

Sources: FactSet, MSCI, PEARS, Cliffwater

Section VIII. PERF Risk Detail

Liquidity

PERF maintains excess liquidity to buffer against unforeseen events

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]

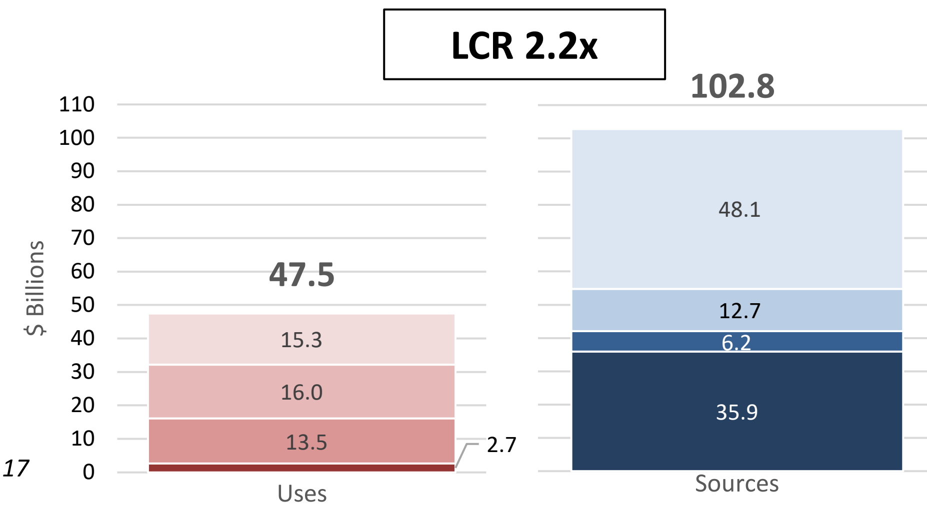


Exhibit 8.17

Historical Worst[2]

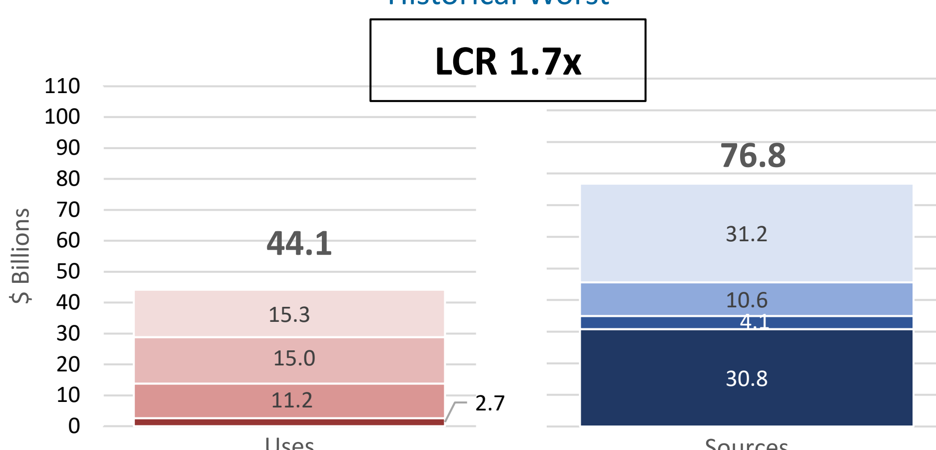


Exhibit 8.18

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

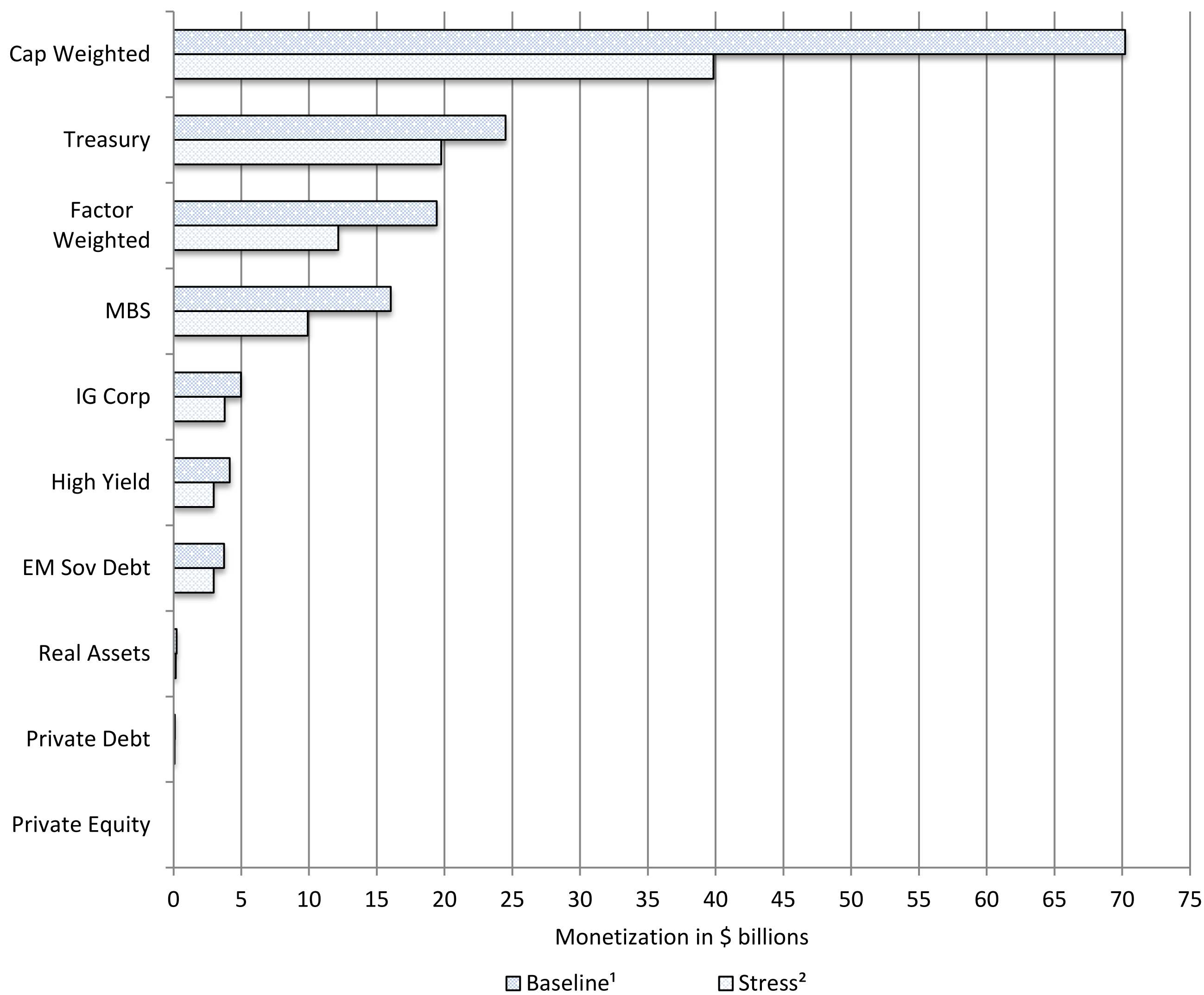


Exhibit 8.19

[1] ***Baseline*** *- Aladdin Liquidity Model with share of 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

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 December 2010 – Present)

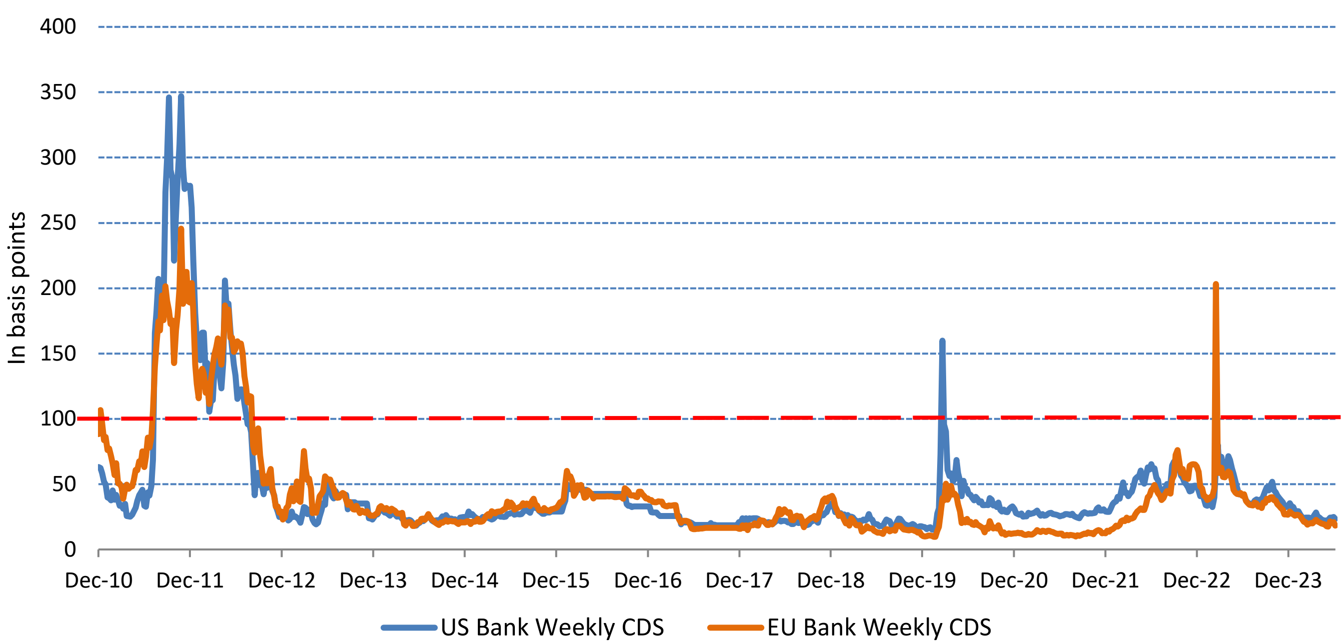


Exhibit 8.20

Source: Bloomberg

Section VIII. PERF Risk Detail

Counterparty Risk *(cont.)*

Majority of counterparty exposure is collateralized

- The tables that follow show 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 ($M) (+) = CalPERS is due money (-) = CalPERS owes money	Collateral Posted ($M) (+) = CalPERS has posted (-) = Counterparty has posted	Net Exposure ($M) (+) = CalPERS exposed to Counterparty
Bank of America N.A.	19.5	(19.2)	0.3
BNP Paribas	(19.4)	19.5	0.0
Barclays Bank PLC	(54.7)	54.7	0.0
Citigroup N.A.	(13.5)	12.9	(0.6)
Canadian Imperial Bank of Commerce	1.1	(1.1)	(0.1)
Deustche Bank AG	(1.5)	1.5	(0.0)
Goldman Sachs Bank	(127.9)	127.9	0.0
Goldman Sachs Intl	231.4	(231.4)	(0.0)
HSBC Bank USA	0.6	(0.6)	0.0
JP Morgan Chase	34.4	(34.6)	(0.2)
Morgan Stanley Capital Services Inc.	43.6	(43.6)	(0.0)
Royal Bank of Canada	(2.7)	2.7	0.0
Standard Chartered Bank	0.0	0.0	0.0
Societe Generale	(1.2)	1.6	0.4
State Street Bank & Trust	0.0	0.0	0.0
Toronto Dominion Bank	(0.0)	0.0	(0.0)
UBS AG	(207.8)	208.0	0.2
Wells Fargo Bank	(27.3)	27.3	0.0
Total	**(114.1)**	**125.5**	**0.0**

Exhibit 8.21
Source: Aladdin

Section VIII. PERF Risk Detail

Counterparty Risk *(cont.)*

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

Counterparty	Net MTM Total ($M) (+) = CalPERS is due money (-) = CalPERS owes money	Collateral Posted ($M) (+) = CalPERS has posted (-) = Counterparty has posted	Net Exposure ($M) (+) = CalPERS exposed to Counterparty
Bank of America Securities Inc.	(3,252.9)	3,227.7	(25.2)
Bank of Montreal	(366.1)	366.1	0.0
Bank of Nova Scotia	(366.3)	364.8	(1.4)
BNP Paribas SA	(1,052.4)	1,062.3	9.9
Barclays Capital Inc.	(99.7)	97.8	(1.9)
Credit Agricole	(2,163.4)	2,163.4	0.0
Citigroup Global Markets Inc.	(507.9)	505.6	(2.3)
Canadian Imperial Bank of Commerce	(2,090.9)	2,088.5	(2.4)
Deustche Bank Securities Inc.	202.4	(207.4)	(5.0)
Daiwa Capital Markets	(326.0)	324.2	(1.9)
Goldman Sachs Bank	(702.2)	698.1	(4.1)
Goldman Sachs & Co.	(2,064.3)	2,036.4	(27.9)
HSBC Bank	(196.2)	195.2	(1.0)
ING FINANCIAL MARKETS	(201.8)	201.8	(0.0)
JP Morgan Securities LLC	(2,743.8)	2,738.5	(5.2)
MUFG Securities	(2,549.3)	2,543.6	(5.7)
NATIXIS	(2,081.9)	2,073.2	(8.7)
Nomura	(242.1)	241.0	(1.2)
Royal Bank of Canada	(3,554.0)	3,538.0	(16.0)
Santander US Capital Markets	(130.3)	129.9	(0.4)
Standard Chartered	99.0	(119.5)	(20.4)
State Street Bank	(98.9)	98.9	0.0
SMBC	620.8	(646.9)	(26.1)
Toronto Dominion	(2,038.3)	2,014.6	(23.7)
Wells Fargo Bank	(311.3)	311.3	0.0
Wells Fargo Securities, LLC.	(310.0)	308.8	(1.2)
Total	**(26,527.8)**	**26,356.1**	**(171.7)**

Exhibit 8.22
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 ($M) (+) = CalPERS lent securities	Collateral Posted ($M) (Cash or Securities) (+) = CalPERS has posted (-) = Counterparty has posted	Net Exposure ($M) (+) = CalPERS exposed to Counterparty
ABN AMRO Group N.V.	0.0	(0.0)	(0.0)
Banco Santander SA	14.7	(15.0)	(0.3)
Bank of Montreal	32.1	(33.9)	(1.7)
Bank of New York Mellon	56.1	(57.3)	(1.2)
Bank of Nova Scotia	5,380.9	(5,667.0)	(286.1)
BankAmerica	925.1	(947.2)	(22.1)
Barclays Group	13,169.4	(13,916.3)	(746.9)
BNP Paribas Group	840.1	(890.0)	(49.9)
Caisse de depot et placement du Quebec	10.2	(11.3)	(1.1)
Canadian Imperial Bank of Commerce	272.1	(278.9)	(6.9)
Citigroup	129.6	(140.8)	(11.2)
Goldman Sachs Group	12,915.2	(13,205.2)	(290.0)
Healthcare of Ontario Pension Plan	121.2	(130.1)	(8.9)
HSBC Group	13.3	(14.5)	(1.2)
ING Group	608.4	(635.2)	(26.8)
J.P. Morgan Group	4,369.0	(4,512.1)	(143.1)
Macquarie Bank Group	0.2	(0.3)	(0.1)
Mitsubishi UFJ Financial Group	122.7	(129.0)	(6.2)
Mizuho Financial Group Inc.	25.7	(26.2)	(0.5)
Morgan Stanley Group	3,555.5	(3,668.3)	(112.7)
National Bank of Canada	400.5	(427.8)	(27.3)
NATIXIS group	2,501.7	(2,710.7)	(209.0)
Nomura Holdings, Inc.	52.9	(54.1)	(1.2)
Royal Bank of Canada	299.6	(317.3)	(17.6)
Societe Generale Group	611.2	(661.8)	(50.6)
Sumitomo Mitsui Banking Corporation	238.8	(257.9)	(19.1)
TD Securities	24.7	(25.6)	(0.9)
UBS Group	849.6	(970.1)	(120.4)
Total	**47,540.7**	**(49,703.9)**	**(2,163.2)**

Exhibit 8.23

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 ($M) (+) = CalPERS is due money (-) = CalPERS owes money	Collateral Posted ($M) (+) = CalPERS has posted (-) = Counterparty has posted	Net Exposure ($M) (+) = CalPERS exposed to Counterparty
BNP Paribas Securities Corp	0.0	0.0	0.0
Barclays Capital Inc.	4.4	(4.6)	(0.2)
Citigroup Global Markets, Inc.	3.5	(4.7)	(1.2)
Daiwa Capital Markets America Inc.	(0.0)	0.2	0.2
Goldman Sachs & Co.	(1.3)	1.2	(0.1)
JP Morgan Securities Inc.	4.5	(5.0)	(0.5)
Merrill Lynch, Pierce, Fenner, Smith Inc.	1.5	(1.8)	(0.4)
Mizuho Securities	(0.0)	0.9	0.8
Morgan Stanley & Co	11.0	(10.9)	0.1
Nomura Securities Intrntl. Inc.	0.9	(2.1)	(1.2)
Wells Fargo Securities, LLC	(2.8)	2.7	(0.2)
Total	**21.7**	**(24.2)**	**(2.6)**

Exhibit 8.24

- 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 ($M)
Citigroup Global Markets Inc.	281.0
BOFA Securities Inc.	187.7
Goldman Sachs	45.0
Total	**513.7**

Exhibit 8.25

- CalPERS has pledged $2.7 billion in Regulatory Initial Margin (UMR IM), and each counterparty (for non-cleared SWAPS) has pledged to CalPERS the same. Eligible collateral (IM) is pledged to a segregated third-party custodian. Each secured party has security interest, lien, and right of set-off against the non-secured party in the event of default and liquidation

Source: Aladdin

Appendix 1: PERF Benchmarks

Asset Class	Policy Benchmark
Public Equity – Cap Weighted	Custom FTSE All World, All Cap Equity
Public Equity – Factor Weighted	Custom FTSE Factor Weighted Index
Private Equity	Custom FTSE All World, All Cap Equity + 150 basis points, Quarter Lag
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	Morningstar LSTA U.S. Leveraged Loan 100 Index +125 basis points, Quarter Lag
Strategic Leverage	ICE BofA US 3-Month Treasury Bill Index +50 basis points

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 (LCR)	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.