

CalPERS Trust Level Monthly Update - Performance & Risk

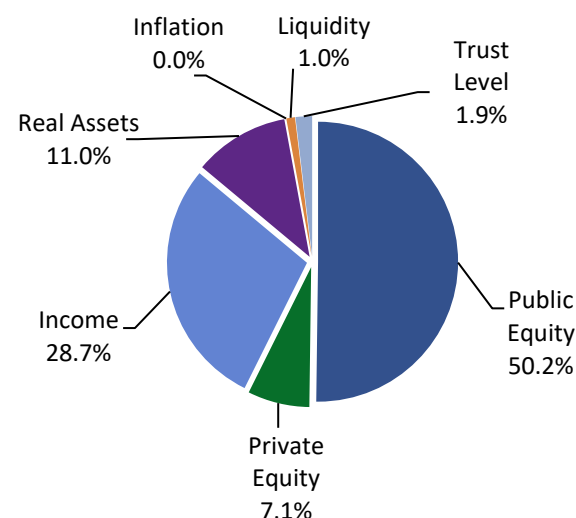


Public Employees Retirement Fund (PERF) As of June 30, 2019

Asset Allocation

Asset Allocation	EMV	(bil)	Current Allocation (%)	Interim Policy Weight (%) ¹	Variance (%)	Policy Range
Public Equity	\$	185.9	50.2%	50.0%	0.2%	± 7%
Cap Weighted	\$	131.4	35.5%	35.0%	0.5%	
Factor Weighted	\$	54.6	14.7%	15.0%	(0.3%)	
Private Equity	\$	26.5	7.1%	8.0%	(0.9%)	± 4%
Income	\$	106.3	28.7%	28.0%	0.7%	± 6%
Long Spread	\$	56.7	15.3%	10.0%	5.3%	
Long Treasury	\$	37.8	10.2%	15.0%	(4.8%)	
High Yield	\$	11.7	3.2%	3.0%	0.2%	
Real Assets	\$	40.9	11.0%	13.0%	(2.0%)	± 5%
Inflation ²	\$	0.0	0.0%	0.0%	0.0%	+ 3%/ 0%
Liquidity	\$	3.7	1.0%	1.0%	0.0%	+ 3%/ - 6%
Trust Level ³	\$	7.0	1.9%	-	1.9%	-
Total PERF	\$	370.3	100.0%	100.0%	0.0%	

Current Total Fund Allocation



TAP ⁴	\$	0.2
Total PERF Plus TAP	\$	370.5

Performance Summary

Performance Summary	10-Yr			5-Yr			3-Yr			1-Yr			5-Yr Realized Information Ratio ⁵
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	
Public Equity	11.1%	10.9%	20	6.7%	6.7%	(8)	12.3%	12.5%	(25)	6.1%	6.2%	(16)	(0.3)
Cap Weighted	11.0%	10.8%	20	6.5%	6.5%	(9)	11.9%	12.2%	(27)	5.1%	5.3%	(20)	(0.3)
Factor Weighted	-	-	-	-	-	-	-	-	-	13.4%	13.5%	(10)	-
Private Equity	14.0%	16.6%	(254)	9.6%	10.3%	(80)	12.5%	14.1%	(156)	7.7%	4.0%	368	-
Income	6.6%	5.2%	137	4.1%	3.5%	56	3.3%	2.7%	62	9.6%	9.3%	31	1.2
Long Spread	-	-	-	-	-	-	-	-	-	9.5%	9.0%	49	-
Long Treasury	-	-	-	-	-	-	-	-	-	10.5%	10.5%	(3)	-
High Yield	-	-	-	-	-	-	-	-	-	8.4%	8.0%	40	-
Real Assets	4.1%	8.4%	(430)	7.5%	8.6%	(111)	6.4%	6.8%	(42)	3.7%	6.5%	(283)	-
Inflation ²	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	-
Liquidity	1.1%	1.2%	(9)	1.3%	1.2%	10	1.7%	1.3%	37	2.6%	2.2%	45	-
Trust Level ³	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PERF	9.1%	9.5%	(33)	5.8%	6.1%	(23)	8.8%	9.0%	(21)	6.7%	7.1%	(42)	-
TAP ⁴	-	-	-	3.7%	-	-	2.4%	-	-	7.0%	-	-	-

¹ Interim policy weight reflects the weights in effect at the beginning of the first day of the subsequent month.

² As of February 2019, the Inflation program has been liquidated and subsequently linked historical returns are no longer meaningful.

³ Trust Level includes Multi Asset Class, Completion Overlay, Risk Mitigation, Absolute Return Strategies, Plan Level Transition and other Total Fund level portfolios.

⁴ Terminated Agency Pool (TAP) funded in July 2013 and exists to provide benefit payments to members who are employees of agencies that have terminated their contract with CalPERS.

⁵ Information Ratio is excess return divided by realized tracking error. This presents a perspective on risk adjusted performance. The metric is not meaningful for illiquid assets where realized volatility tends to be muted by valuation based pricing and benchmark issues.

Public Employees Retirement Fund (PERF)

As of June 30, 2019

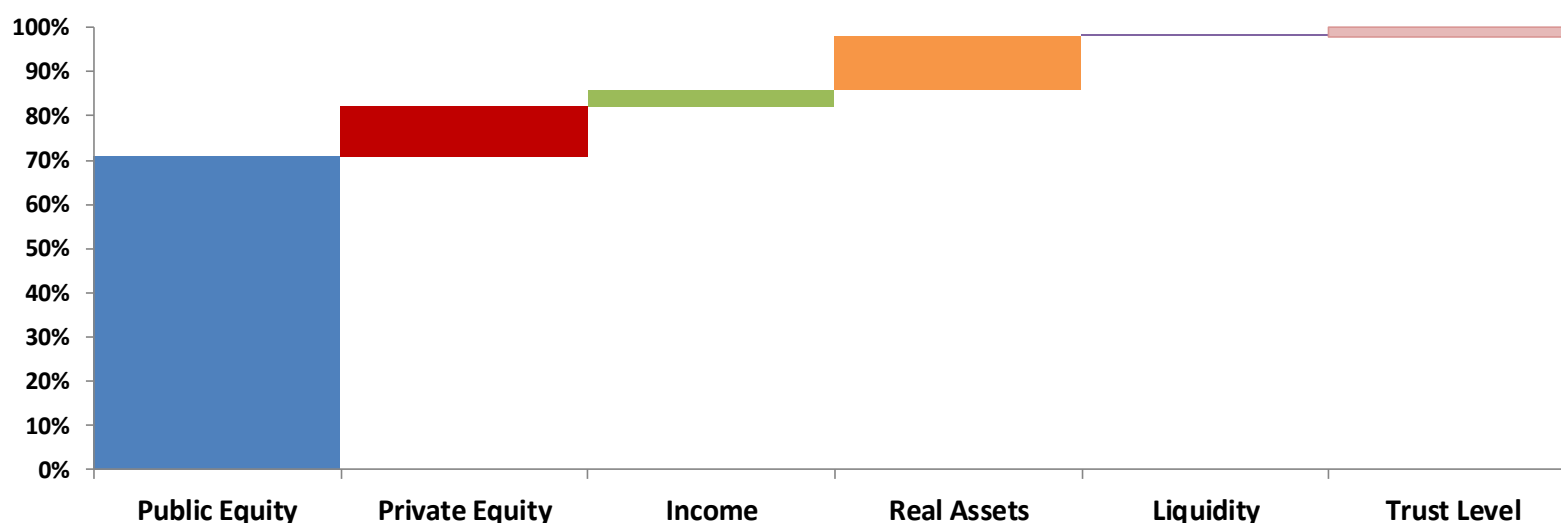
Total PERF Risk

Risk Measure	6/30/2019	5/31/2019	Explanation of Risk Measures:
Forecast Volatility			The total (absolute) volatility is the annualized standard deviation of the PERF's total return distribution and is indicative of the plan's short-term return dispersion given the current environment. The metric is model-based and could underestimate potential drawdowns.
Portfolio	7.7%	7.8%	
Benchmark	7.9%	7.9%	
Forecast Tracking Error			Forecast tracking error is the annualized standard deviation of the differential return between the portfolio and an equal investment in the benchmark.
Portfolio	0.5%	0.5%	

June 30, 2019	Portfolio Volatility		Tracking Error	
	Projected	Realized	Projected	Realized
Asset Class	Annualized Projected Volatility (%)	5-Year Realized Volatility (%) ¹	Annualized Projected Tracking Error (%)	5-Year Realized Tracking Error (%) ¹
Public Equity	11.2%	11.5%	0.2%	0.3%
Cap Weighted	12.2%	11.8%	0.3%	0.3%
Factor Weighted	9.2%	-	0.0%	-
Private Equity	14.8%	4.2%	4.3%	8.7%
Income	4.6%	4.7%	0.2%	0.5%
Long Spread	4.1%	-	0.3%	-
Long Treasury	7.2%	-	0.3%	-
High Yield	3.6%	-	0.1%	-
Real Assets	11.1%	3.5%	2.1%	3.5%
Liquidity	0.1%	0.7%	0.0%	0.4%
Trust Level	8.7%	-	1.8%	-
Total PERF	7.7%	6.2%	0.5%	1.0%

¹Realized Volatility and Tracking Error for private asset classes are computed from quarterly net returns

Contribution to Total PERF Volatility



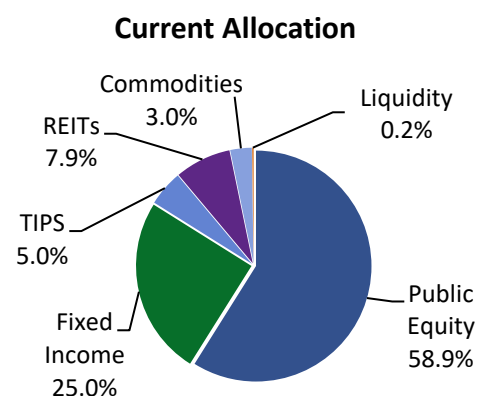
Affiliate Investment Program

CERBT Strategy 1 Fund (CERBT 1) & CERBT Strategy 2 Fund (CERBT 2)

As of June 30, 2019

Asset Allocation, Performance & Realized Risk Summary - CERBT 1

Asset Allocation	EMV (mil)	Current Allocation (%)	Policy Weight (%) ¹	Variance (%)	Policy Range
Public Equity	\$ 4,640.9	58.9%	59%	(0.1%)	± 5%
Fixed Income	\$ 1,967.0	25.0%	25%	(0.0%)	± 5%
TIPS	\$ 392.2	5.0%	5%	(0.0%)	± 3%
REITs	\$ 619.9	7.9%	8%	(0.1%)	± 5%
Commodities	\$ 236.7	3.0%	3%	0.0%	± 3%
Liquidity	\$ 20.3	0.2%	0%	0.2%	+ 2%
Total CERBT 1	\$ 7,876.9	100.0%	100.0%	0.0%	



Performance Summary ²	10-Yr			5-Yr			3-Yr			1-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Public Equity	10.7%	10.4%	24	6.4%	6.0%	36	11.8%	11.4%	36	4.9%	4.6%	31
Fixed Income	6.8%	5.7%	115	4.6%	4.0%	55	3.5%	2.9%	58	10.2%	10.1%	4
TIPS	-	-	-	1.7%	1.8%	(3)	2.1%	2.1%	2	4.8%	4.8%	(3)
REITs	11.5%	11.1%	46	5.4%	4.5%	84	5.0%	4.2%	85	9.1%	8.1%	104
Commodities	-	-	-	(13.3%)	(13.3%)	2	1.7%	1.6%	13	(11.5%)	(11.5%)	(1)
Total CERBT 1	9.4%	9.1%	33	5.0%	4.7%	38	8.2%	7.8%	39	6.2%	6.0%	18

5-Yr Realized Volatility:

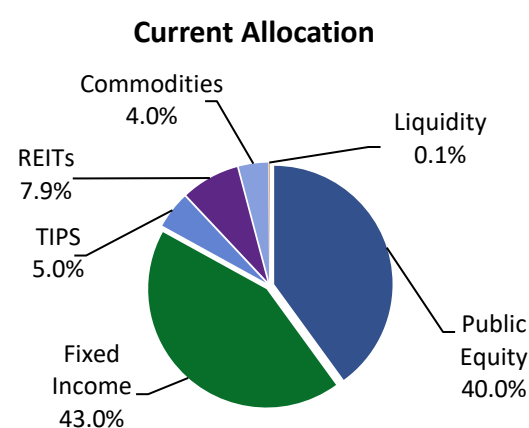
8.0%

5-Yr Realized Tracking Error:

0.1%

Asset Allocation, Performance & Realized Risk Summary - CERBT 2

Asset Allocation	EMV (mil)	Current Allocation (%)	Policy Weight (%) ¹	Variance (%)	Policy Range
Public Equity	\$ 519.6	40.0%	40%	(0.0%)	± 5%
Fixed Income	\$ 558.7	43.0%	43%	0.0%	± 5%
TIPS	\$ 64.8	5.0%	5%	(0.0%)	± 3%
REITs	\$ 102.4	7.9%	8%	(0.1%)	± 5%
Commodities	\$ 52.2	4.0%	4%	0.0%	± 3%
Liquidity	\$ 1.4	0.1%	0%	0.1%	+ 2%
Total CERBT 2	\$ 1,299.0	100.0%	100.0%	0.0%	



Performance Summary ²	10-Yr			5-Yr			3-Yr			1-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Public Equity	-	-	-	6.4%	6.0%	34	11.8%	11.4%	37	4.9%	4.6%	32
Fixed Income	-	-	-	4.6%	4.0%	54	3.5%	2.9%	58	10.2%	10.1%	3
TIPS	-	-	-	1.7%	1.8%	(4)	2.1%	2.1%	4	4.9%	4.8%	6
REITs	-	-	-	5.4%	4.5%	82	5.0%	4.2%	88	9.2%	8.1%	110
Commodities	-	-	-	(13.2%)	(13.3%)	17	1.9%	1.6%	34	(10.9%)	(11.5%)	57
Total CERBT 2	-	-	-	4.6%	4.2%	35	6.8%	6.4%	39	7.0%	6.9%	11

5-Yr Realized Volatility:

6.4%

5-Yr Realized Tracking Error:

0.2%

¹ Allocations approved by the Board at the May 2018 IC Meeting

² Liquidity is for operational purposes rather than a strategic allocation target and is not included in the performance summary table due to negligible impact on performance

Affiliate Investment Program

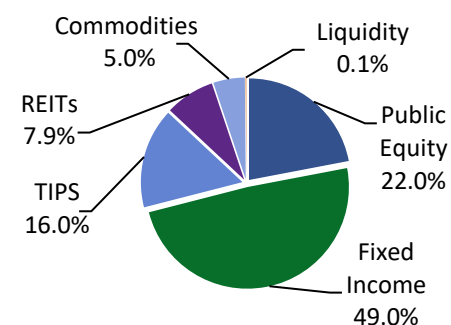
CERBT Strategy 3 Fund (CERBT 3) & Legislators' Retirement System Fund (LRF)

As of June 30, 2019

Asset Allocation, Performance & Realized Risk Summary - CERBT 3

Asset Allocation	EMV (mil)	Current Allocation (%)	Policy Weight (%) ¹	Variance (%)	Policy Range
Public Equity	\$ 137.4	22.0%	22%	(0.0%)	± 5%
Fixed Income	\$ 306.1	49.0%	49%	0.0%	± 5%
TIPS	\$ 99.6	16.0%	16%	(0.0%)	± 3%
REITs	\$ 49.2	7.9%	8%	(0.1%)	± 5%
Commodities	\$ 31.3	5.0%	5%	0.0%	± 3%
Liquidity	\$ 0.9	0.1%	0%	0.1%	+ 2%
Total CERBT 3	\$ 624.6	100.0%	100.0%	0.0%	

Current Allocation



Performance Summary ²	10-Yr			5-Yr			3-Yr			1-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Public Equity	-	-	-	6.4%	6.0%	34	11.8%	11.4%	34	4.9%	4.6%	34
Fixed Income	-	-	-	4.5%	4.0%	49	3.4%	2.9%	54	10.1%	10.1%	1
TIPS	-	-	-	1.8%	1.8%	0	2.1%	2.1%	4	4.9%	4.8%	6
REITs	-	-	-	5.3%	4.5%	81	5.0%	4.2%	82	9.2%	8.1%	118
Commodities	-	-	-	(12.9%)	(13.3%)	42	2.3%	1.6%	71	(10.3%)	(11.5%)	119
Total CERBT 3	-	-	-	4.0%	3.7%	33	5.3%	5.0%	34	7.2%	7.1%	10

5-Yr Realized Volatility:

5.1%

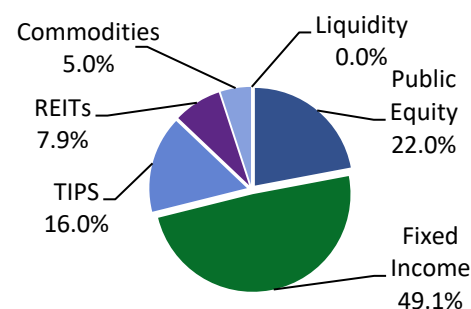
5-Yr Realized Tracking Error:

0.2%

Asset Allocation, Performance & Realized Risk Summary - LRF

Asset Allocation	EMV (mil)	Current Allocation (%)	Policy Weight (%) ¹	Variance (%)	Policy Range
Public Equity	\$ 25.2	22.0%	22%	0.0%	± 5%
Fixed Income	\$ 56.2	49.1%	49%	0.1%	± 5%
TIPS	\$ 18.3	16.0%	16%	(0.0%)	± 3%
REITs	\$ 9.0	7.9%	8%	(0.1%)	± 5%
Commodities	\$ 5.8	5.0%	5%	0.0%	± 3%
Liquidity	\$ 0.0	0.0%	0%	0.0%	+ 2%
Total LRF	\$ 114.4	100.0%	100.0%	0.0%	

Current Allocation



Performance Summary ²	10-Yr			5-Yr			3-Yr			1-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Public Equity	10.9%	10.8%	11	6.6%	6.4%	18	12.2%	11.9%	24	5.0%	4.6%	44
Fixed Income	6.8%	5.7%	114	4.6%	4.0%	53	3.4%	2.9%	56	10.1%	10.1%	(1)
TIPS	3.6%	3.6%	(6)	1.7%	1.8%	(1)	2.1%	2.1%	5	4.9%	4.8%	6
REITs	-	-	-	5.9%	5.7%	18	5.6%	5.2%	33	9.0%	8.1%	96
Commodities	-	-	-	(12.9%)	(13.3%)	43	2.1%	1.6%	58	(10.4%)	(11.5%)	110
Total LRF	7.7%	7.2%	50	4.1%	3.8%	24	5.5%	5.2%	32	7.3%	7.1%	22

5-Yr Realized Volatility:

5.1%

5-Yr Realized Tracking Error:

0.2%

¹ Allocations approved by the Board at the May 2018 IC Meeting

² Liquidity is for operational purposes rather than a strategic allocation target and is not included in the performance summary table due to negligible impact on performance

Affiliate Investment Program

Judges' Retirement Fund (JRF) & Judges Retirement System Fund II (JRF II)

As of June 30, 2019

Asset Allocation, Performance & Realized Risk Summary - JRF

Asset Allocation	EMV (mil)	Current Allocation (%)	Policy Weight (%)	Variance (%)	Policy Range
Cash	\$ 15.8	100.0%	100%	0.0%	± 0%
Total JRF	\$ 15.8	100.0%	100%	0.0%	

Current Allocation



Performance Summary	10-Yr			5-Yr			3-Yr			1-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Cash	0.6%	0.5%	8	1.0%	0.9%	14	1.5%	1.4%	16	2.4%	2.3%	10
Total JRF	0.6%	0.5%	8	1.0%	0.9%	14	1.5%	1.4%	16	2.4%	2.3%	10

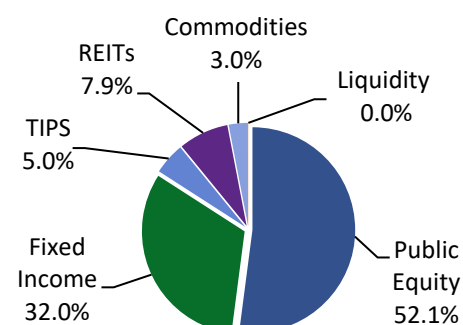
5-Yr Realized Volatility: **0.2%**

5-Yr Realized Tracking Error: **0.0%**

Asset Allocation, Performance Realized Risk Summary - JRF II

Asset Allocation	EMV (mil)	Current Allocation (%)	Policy Weight (%) ¹	Variance (%)	Policy Range
Public Equity	\$ 882.7	52.1%	52%	0.1%	± 5%
Fixed Income	\$ 543.3	32.0%	32%	0.0%	± 5%
TIPS	\$ 84.6	5.0%	5%	(0.0%)	± 3%
REITs	\$ 133.8	7.9%	8%	(0.1%)	± 5%
Commodities	\$ 51.1	3.0%	3%	0.0%	± 3%
Liquidity	\$ 0.0	0.0%	0%	0.0%	+ 2%
Total JRF II	\$ 1,695.5	100.0%	100.0%	0.0%	

Current Allocation



Performance Summary ²	10-Yr			5-Yr			3-Yr			1-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Public Equity	10.8%	10.7%	11	6.6%	6.4%	17	12.2%	11.9%	24	5.0%	4.6%	44
Fixed Income	6.8%	5.7%	115	4.6%	4.0%	54	3.5%	2.9%	59	10.2%	10.1%	6
TIPS	-	-	-	1.7%	1.8%	(4)	2.1%	2.1%	2	4.8%	4.8%	(1)
REITs	12.0%	11.9%	7	5.9%	5.7%	18	5.6%	5.2%	33	9.0%	8.1%	98
Commodities	-	-	-	(13.1%)	(13.3%)	23	1.7%	1.6%	18	(11.4%)	(11.5%)	6
Total JRF II	9.4%	9.1%	32	5.0%	4.8%	25	8.0%	7.6%	36	6.7%	6.4%	33

5-Yr Realized Volatility: **7.4%**

5-Yr Realized Tracking Error: **0.2%**

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Affiliate Investment Program

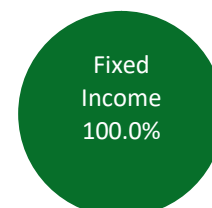
Health Care Fund (HCF) & Long-Term Care Fund (LTCF)

As of June 30, 2019

Asset Allocation, Performance & Realized Risk Summary - HCF

Asset Allocation	EMV (mil)	Current Allocation (%)	Policy Weight (%) ¹	Variance (%)	Policy Range
Fixed Income	\$ 478.2	100.0%	100%	0.0%	± 0%
Total HCF	\$ 478.2	100.0%	100%	0.0%	

Current Allocation



Performance Summary	10-Yr			5-Yr			3-Yr			1-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Fixed Income	4.5%	3.9%	59	3.1%	2.9%	16	2.3%	2.3%	3	7.9%	7.9%	(0)
Total HCF	4.5%	3.9%	59	3.1%	2.9%	16	2.3%	2.3%	3	7.9%	7.9%	(0)

5-Yr Realized Volatility:

3.0%

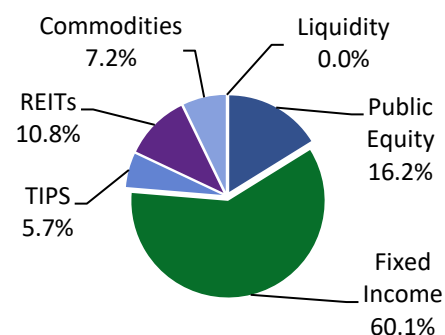
5-Yr Realized Tracking Error:

0.2%

Asset Allocation, Performance & Realized Risk Summary - LTCF

Asset Allocation	EMV (mil)	Current Allocation (%)	Policy Weight (%) ¹	Variance (%)	Policy Range
Public Equity	\$ 770.9	16.2%	15%	1.2%	± 4%
Fixed Income	\$ 2,869.0	60.1%	60%	0.1%	± 5%
TIPS	\$ 272.0	5.7%	6%	(0.3%)	± 2%
REITs	\$ 515.0	10.8%	11%	(0.2%)	± 4%
Commodities	\$ 342.9	7.2%	8%	(0.8%)	± 2%
Liquidity	\$ 0.0	0.0%	0%	0.0%	± 2%
Total LTCF	\$ 4,769.9	100.0%	100.0%	0.0%	

Current Allocation



Performance Summary ²	10-Yr			5-Yr			3-Yr			1-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Public Equity	10.8%	10.6%	19	6.3%	6.0%	31	11.7%	11.4%	32	4.9%	4.6%	31
Fixed Income	6.3%	5.7%	68	4.1%	4.0%	1	2.9%	2.9%	3	10.2%	10.1%	3
TIPS	3.6%	3.6%	(6)	1.8%	1.8%	(0)	2.1%	2.1%	(1)	4.8%	4.8%	(1)
REITs	11.6%	11.1%	48	5.3%	4.5%	81	5.0%	4.2%	84	9.1%	8.1%	104
Commodities	-	-	-	(13.3%)	(13.3%)	(1)	1.4%	1.6%	(17)	(11.5%)	(11.5%)	(3)
Total LTCF	7.0%	6.7%	30	3.4%	3.3%	11	4.2%	4.2%	1	7.1%	7.2%	(8)

5-Yr Realized Volatility:

5.1%

5-Yr Realized Tracking Error:

0.3%

¹ Allocations approved by the Board at the June 2018 IC Meeting

² Liquidity is for operational purposes rather than a strategic allocation target and is not included in the performance summary table due to negligible impact on performance

Affiliate Investment Program

Supplemental Income Plan (SIP)

As of June 30, 2019

Asset Allocation - SIP

Asset Allocation	EMV (mil)	Global Equity			US Fixed Income			Real Assets			Cash and Cash Equivalents		
		Actual	Policy	Policy Range	Actual	Policy	Policy Range	Actual	Policy	Policy Range	Actual	Policy	Policy Range
Target Income Fund	\$ 102.5	30.0%	30.0%	± 4%	60.0%	60.0%	± 4%	5.0%	5.0%	± 1%	5.0%	5.0%	± 1%
Target 2015 Fund	\$ 89.2	37.0%	37.0%	± 4%	54.0%	54.0%	± 4%	5.0%	5.0%	± 1%	4.0%	4.0%	± 1%
Target 2020 Fund	\$ 166.3	50.0%	50.0%	± 4%	43.0%	43.0%	± 4%	4.0%	4.0%	± 1%	3.0%	3.0%	± 1%
Target 2025 Fund	\$ 167.6	62.0%	62.0%	± 4%	32.0%	32.0%	± 4%	4.0%	4.0%	± 1%	2.0%	2.0%	± 1%
Target 2030 Fund	\$ 144.8	75.0%	75.0%	± 4%	20.0%	20.0%	± 2%	4.0%	4.0%	± 1%	1.0%	1.0%	± 1%
Target 2035 Fund	\$ 84.4	87.0%	87.0%	± 4%	10.0%	10.0%	± 2%	3.0%	3.0%	± 1%	0.0%	0.0%	± 0.25%
Target 2040 Fund	\$ 75.9	92.0%	92.0%	± 4%	5.0%	5.0%	± 1%	3.0%	3.0%	± 1%	0.0%	0.0%	± 0.25%
Target 2045 Fund	\$ 40.0	92.0%	92.0%	± 4%	5.0%	5.0%	± 1%	3.0%	3.0%	± 1%	0.0%	0.0%	± 0.25%
Target 2050 Fund	\$ 19.7	92.0%	92.0%	± 4%	5.0%	5.0%	± 1%	3.0%	3.0%	± 1%	0.0%	0.0%	± 0.25%
Target 2055 Fund	\$ 8.6	92.0%	92.0%	± 4%	5.0%	5.0%	± 1%	3.0%	3.0%	± 1%	0.0%	0.0%	± 0.25%
Target 2060 Fund	\$ 1.9	92.0%	92.0%	± 4%	5.0%	5.0%	± 1%	3.0%	3.0%	± 1%	0.0%	0.0%	± 0.25%
SSgA STIF	\$ 105.8	0.0%	0.0%	-	0.0%	0.0%	-	0.0%	0.0%	-	100.0%	100.0%	-
SIP US ST Bond Core	\$ 35.4	0.0%	0.0%	-	100.0%	100.0%	-	0.0%	0.0%	-	0.0%	0.0%	-
SIP US Bond Core	\$ 59.4	0.0%	0.0%	-	100.0%	100.0%	-	0.0%	0.0%	-	0.0%	0.0%	-
SIP Real Asset Core	\$ 7.3	0.0%	0.0%	-	0.0%	0.0%	-	100.0%	100.0%	-	0.0%	0.0%	-
SIP Russell All Cap Core	\$ 558.6	100.0%	100.0%	-	0.0%	0.0%	-	0.0%	0.0%	-	0.0%	0.0%	-
SIP Gbl All Cap EX-US	\$ 67.6	100.0%	100.0%	-	0.0%	0.0%	-	0.0%	0.0%	-	0.0%	0.0%	-

Performance Summary - SIP

Performance Summary	10-Yr			5-Yr			3-Yr			1-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Target Income Fund	5.5%	5.5%	(9)	3.3%	3.1%	11	4.2%	4.1%	8	6.5%	6.4%	10
Target 2015 Fund	6.6%	6.7%	(13)	3.2%	3.1%	11	4.1%	4.0%	8	6.1%	6.0%	10
Target 2020 Fund	7.1%	7.2%	(9)	3.1%	3.0%	11	4.5%	4.4%	7	5.4%	5.3%	11
Target 2025 Fund	7.9%	8.0%	(6)	3.7%	3.6%	12	5.8%	5.8%	6	5.1%	5.0%	13
Target 2030 Fund	8.6%	8.7%	(7)	3.9%	3.8%	11	6.6%	6.6%	4	4.5%	4.4%	12
Target 2035 Fund	9.2%	9.4%	(13)	4.2%	4.1%	12	7.6%	7.6%	2	4.0%	3.9%	13
Target 2040 Fund	9.7%	9.8%	(10)	4.6%	4.5%	13	8.7%	8.7%	0	3.9%	3.8%	14
Target 2045 Fund	10.0%	10.1%	(11)	5.1%	5.0%	13	9.7%	9.7%	(1)	4.3%	4.1%	14
Target 2050 Fund	9.9%	10.1%	(12)	5.1%	5.0%	13	9.7%	9.7%	(1)	4.3%	4.1%	14
Target 2055 Fund	-	-	-	5.1%	5.0%	14	9.7%	9.7%	(1)	4.3%	4.1%	13
Target 2060 Fund	-	-	-	-	-	-	-	-	-	-	-	-
SSgA STIF	-	-	-	1.1%	0.9%	19	1.6%	1.4%	24	2.7%	2.3%	37
SIP US ST Bond Core	-	-	-	1.3%	1.5%	(12)	1.5%	1.6%	(11)	4.2%	4.3%	(7)
SIP US Bond Core	-	-	-	3.0%	2.9%	6	2.3%	2.3%	2	7.9%	7.9%	6
SIP Real Asset Core	-	-	-	(0.2%)	(0.1%)	(11)	4.0%	4.2%	(17)	1.9%	2.0%	(17)
SIP Russell All Cap Core	-	-	-	10.2%	10.2%	4	14.0%	14.0%	(1)	9.0%	9.0%	2
SIP Gbl All Cap EX-US	-	-	-	2.5%	2.2%	22	9.2%	9.2%	1	0.6%	0.3%	33

Affiliate Investment Program

Supplemental Income Plan (SIP)

As of June 30, 2019

Realized Risk - SIP

Realized Risk	Annualized 5-Yr Realized Volatility	Tracking Error ¹
Target Income Fund	3.4%	0.1%
Target 2015 Fund	3.8%	0.1%
Target 2020 Fund	4.9%	0.1%
Target 2025 Fund	6.3%	0.1%
Target 2030 Fund	7.7%	0.1%
Target 2035 Fund	9.1%	0.2%
Target 2040 Fund	10.1%	0.2%
Target 2045 Fund	10.5%	0.2%
Target 2050 Fund	10.5%	0.2%
Target 2055 Fund	10.5%	0.2%
Target 2060 Fund	-	-
SSgA STIF	0.3%	0.1%
SIP US ST Bond Core	0.9%	0.0%
SIP US Bond Core	3.0%	0.1%
SIP Real Asset Core	8.5%	0.2%
SIP Russell All Cap Core	12.3%	0.1%
SIP Gbl All Cap EX-US	12.4%	0.3%

¹ Due to the impact of Fair Value Pricing adjustment, the tracking error is based on a rolling 12 month calculation

CalPERS Trust Level

Trust Level Benchmarks

As of June 30, 2019

Public Employee's Retirement Fund and Affiliate Investment Program Policy Benchmarks

Trust	Asset Class Benchmark	Policy Benchmark
Public Employees Retirement Fund	Public Equity - Cap Weighted Public Equity - Factor Weighted Private Equity Income - Long Spread Income - Long Treasury Income - High Yield Real Assets Inflation Liquidity	Custom FTSE All World, All Cap Equity MSCI ACWI Select Factor Weighted Index Custom FTSE All World, All Cap Equity + 150bps, Quarter Lag Custom Bloomberg Barclays Long Spread Custom Bloomberg Barclays Long Government Custom Bloomberg Barclays High Yield MSCI/PREA U.S. ACOE Quarterly Property Fund Index (Unfrozen) 50 % Bloomberg Barclays Inflation Linked U.S. + 25% Universal Government Inflation Linked Index ex-U.S. + 25% S&P GSCI TR 30-Day Treasury Bill
Judge's Retirement System Fund	Cash	91-day Treasury Bill
Judge's Retirement System II Fund	Global Equity U.S. Fixed Income TIPS Commodities REITs	MSCI ACWI IMI (Net) Bloomberg Barclays Long Liability Index Bloomberg Barclays U.S. TIPS Index, Series L S&P GSCI Total Return Daily FTSE EPRA/NAREIT Developed Liquid (Net)
Legislators' Retirement System Fund	Global Equity U.S. Fixed Income TIPS Commodities REITs	MSCI ACWI IMI (Net) Bloomberg Barclays Long Liability Index Bloomberg Barclays U.S. TIPS Index, Series L S&P GSCI Total Return Daily FTSE EPRA/NAREIT Developed Liquid (Net)
Public Employees' Health Care Fund	U.S. Fixed Income	Bloomberg Barclays U.S. Aggregate Bond Index
Long-Term Care Fund	Global Equity U.S. Fixed Income TIPS Commodities REITs	MSCI ACWI IMI (Net) Bloomberg Barclays Long Liability Index Bloomberg Barclays U.S. Treasury Inflation Protected Securities (TIPS) Index S&P GSCI Total Return Daily FTSE EPRA/NAREIT Developed Liquid (Net)
California Employers' Retiree Benefit Trust (CERBT) Funds 1, 2 & 3	Global Equity U.S. Fixed Income TIPS Commodities REITs	MSCI ACWI IMI (Net) Bloomberg Barclays Long Liability Index Bloomberg Barclays U.S. TIPS Index, Series L S&P GSCI Total Return Daily FTSE EPRA/NAREIT Developed Liquid (Net)

CalPERS Trust Level

Trust Level Benchmarks

As of June 30, 2019

Supplemental Income Plan Policy Benchmarks

Policy Weights							
Supplemental Income Plan	Global Equity	US Equity	In'l Equity	US Income		Real Assets	Cash & Cash Equivalents
	Russell 3000 / MSCI ACWI ex US	Russell 3000	MSCI ACWI ex US	Bloomberg Barclays US Ag Bond Index	Bloomberg Barclays US 1-3 Year Govt/Credit Bond Index	SSGA Real Asset	BofA ML 3 mo T-bill
Target Income Fund	30.0%	16.0%	14.0%	60.0%	-	5.0%	5.0%
Target 2015 Fund	37.0%	20.0%	17.0%	54.0%	-	5.0%	4.0%
Target 2020 Fund	50.0%	27.0%	23.0%	43.0%	-	4.0%	3.0%
Target 2025 Fund	62.0%	33.0%	29.0%	32.0%	-	4.0%	2.0%
Target 2030 Fund	75.0%	40.0%	35.0%	20.0%	-	4.0%	1.0%
Target 2035 Fund	87.0%	46.0%	41.0%	10.0%	-	3.0%	-
Target 2040 Fund	92.0%	49.0%	43.0%	5.0%	-	3.0%	-
Target 2045 Fund	92.0%	49.0%	43.0%	5.0%	-	3.0%	-
Target 2050 Fund	92.0%	49.0%	43.0%	5.0%	-	3.0%	-
Target 2055 Fund	92.0%	49.0%	43.0%	5.0%	-	3.0%	-
Target 2060 Fund	92.0%	49.0%	43.0%	5.0%	-	3.0%	-
SSgA STIF	-	-	-	-	-	-	100.0%
SIP US ST Bond Core	-	-	-	-	100.0%	-	-
SIP US Bond Core	-	-	-	100.0%	-	-	-
SIP Real Asset Core	-	-	-	-	-	100.0%	-
SIP Russell All Cap Core	100.0%	100.0%	-	-	-	-	-
SIP Global All Cap ex US	100.0%	-	100.0%	-	-	-	-